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F. PROCEDURES TO PREVENT HAZARDS

F.1 Security

Section F.1 of this plan has been developed using the Code of Federal Regulations (CFR), Title 40 CFR 264.14 (Security), for guidance. Federal hazardous waste regulations require that stringent security measures be implemented at all hazardous waste sites in order to prevent unknown and unauthorized entry and minimize unauthorized entry of persons and livestock to active portions of the facility. Measures are taken to ensure security of the facility and all associated hazardous waste(s) managed at the site. These measures include a combination of the following:

- Provision of site surveillance to monitor and control entry onto the active portion of the facility,
- Provision of artificial or natural barriers to surround the facility and provide a means to control access,
- Provisions to control entry into the active portions of the facility interior, and
- Provide signage with that reads "DANGER – UNAUTHORIZED PERSONNEL KEEP OUT" at each entrance to the active portions of the facility and other locations such that the signs may be seen from any approach to the facility.

Described in this section of the application are the security precautions taken by CS Clean Solutions, Inc. (CS Clean) to meet security requirements described above.

F.1.1 Facility Monitoring, Surveillance, and Entrance Control

Prevention of unauthorized entry and access to the active portions of the CS Clean facility is accomplished by a combination of surveillance and barriers.

The CS Clean facility and paved areas at 2453 West Parkside Lane are protected by an approximate six-foot high chain link fence around the entire perimeter to prevent access to the western rear of the building (location of the shipping and receiving area) from I-17. Additionally, a concrete block wall, approximately eight feet in height, is installed in portions of the western side and along the northern corridor of the site to further secure the site from neighboring residential properties and I-17.

Pedestrian and vehicular access to the site is unimpeded from the east and south directions. Intended vehicular access is provided to the site via West Parkside Lane to the east, which leads to a paved asphalt parking lot and private drive surrounding the site building. Bollards are installed along the southern edge of the building, surrounding CS Clean's Clean-Protect CS 1000 system and generator for additional contact protection. Additionally, several neighboring facilities are adjacent to CS Clean's location with the same site access. CS Clean's facility building is surrounded by four walls, a roof, and has five exterior access points via doorways as highlighted below.

There are five exterior entrance doors that provide access to the CS Clean's portion of the building:

- The main entrance along the eastern face of the building.

- An auxiliary entrance man door and adjacent loading dock roll-up door on the southwestern rear of facility.
- A dedicated shipping and receiving roll-up door and associated man door for waste in the northwestern portion of the facility.

These doors are depicted on the floor plan in **Appendix F.1** of this application. All standard entry doors can only be activated with electronic access cards. All visitors and contractors are required to enter the facility through the main entrance on the eastern face of the building. Unauthorized entry through other exterior building doors is prevented by keeping all entryway doors locked at all times. Additionally, during normal site operating hours (from 8:00 AM through 5:00 PM, Monday through Friday), all areas of the facility are manned, during normal operating hours, to monitor and impede unauthorized entry to the building.

CS Clean utilizes an electronic access control system, which is installed throughout the facility to secure both exterior entrance doors and interior entrance doors which lead into process and RCRA waste handling areas. Through this technology, CS Clean is also able to effectively track facility access. The access control system maintains a computer-based access log to monitor and document use for each key card issued through the system, enabling CS Clean to supervise access to all areas of the facility at all times.

Each CS Clean employee is issued a unique electronic access key card, which must be maintained on the individual's person at all times. Each keycard provides one of two levels of access based on the individual's role and responsibilities. Level 1 Access is provided for all card holders and will access all non-waste processing exterior entrances of the CS Clean facility. Level 2 Access will access the hazardous waste processing areas. Level 2 access is only provided to employees expected to perform work activities within the process areas of the building and who have been properly trained in all of CS Clean's process area hazards, safeguards, and operating procedures per **Section H**.

Records of all access cards that have been requested and issued are retained in the main office via completed Access Card Authorization Request Forms (**Appendix F.2**). When an employee's employment has been terminated, all access cards must be returned, information pertaining to this is noted on the relevant request form.

Contractors are not issued electronic access cards. All contractor-related work is supervised by internal CS Clean staff and contractors are always escorted in the facility by a CS Clean employee with the appropriate level of access.

F.1.2 Surveillance

The facility is equipped with security cameras to monitor both interior and exterior locations. The site is also equipped with adequate lighting in exterior areas to help detect acts of vandalism or other unauthorized activity during nighttime hours.

F.1.3 Warning Signs

There are warning signs posted at each entrance around the CS Clean facility, at both exterior entry doors and interior doors accessing the hazardous waste process areas within the facility. The signs

are written in English and are legible during daylight hours from a distance of at least twenty-five feet.

The specific location and wording of each warning sign is listed below.

Warning Sign Descriptions

- One sign posted on the main front entrance on the eastern face of the facility reading "Danger—Unauthorized Personnel Keep Out"
- One sign posted on the external auxiliary entrance on the southwestern rear of facility reading "Danger—Unauthorized Personnel Keep Out"
- One sign posted on the exterior roll-up loading dock door adjacent to the auxiliary entrance in the southwestern rear of the facility reading "Danger—Unauthorized Personnel Keep Out"
- One sign posted on the external shipping and receiving door for waste in the northwestern portion of the facility reading "Danger—Unauthorized Personnel Keep Out"
- One sign posted on each of the interior doors to the dedicated process areas handling waste reading "Danger—Unauthorized Personnel Keep Out"

F.2 Inspection Schedule

This section has been prepared to:

- Identify which areas, equipment, and other items will be inspected at the facility and the frequency with which they will be inspected,
- Identify what types of problems to be reviewed for during each inspection,
- Develop and follow a written inspection schedule,
- Ensure the inspection of all process areas, equipment, monitoring devices, storage vessels and containers, loading and unloading areas, safety and emergency equipment, security devices and structural equipment, and
- Describe documented inspection log(s) that are used and retained to memorialize each inspection.

In addition to the line items listed above, CS Clean fulfills the following inspection principles:

- Inspect the facility for malfunctions and deterioration, operator errors, and discharges which could result in the release of hazardous waste or pose a threat to human health.
- Conduct routine inspections often enough to identify problems in time to correct them before risking harm to human health or the environment.
- Develop and follow a written inspection schedule which must be retained at the facility. This inspection schedule will identify specific types of problems which must be looked for.
- Remedy any deterioration or malfunction that the inspection reveals and take remedial action any time an incident is identified.

- Record all inspections, including the date and time of inspection, name of the inspector, notation of observations made, and the date and nature of any repairs made and keep these records for a five-year period.

F.2.1 Inspection Schedule for Process Areas

This section delineates the areas and equipment at CS Clean which require routine inspections. A summary of the inspection areas and inspection frequency are provided in **Table F.1**. The inspection schedule provided as **Table F.1** may be revised as necessary to reflect process area changes.

Provided in **Sections F.2.1** through **F.2.7** are descriptions of the inspections which are performed at CS Clean for the hazardous waste process areas of the facility (waste storage area, waste material transfer room, preparation area, shipping and receiving area, and donning and doffing pass through) and process, safety, and emergency equipment located in these areas.

Table F.1
Inspection Schedule

Area/ Equipment	Specific Item	Types of Problems	Freq. of Inspection
Waste Storage Area	Spills/releases	Accumulated liquid, wet spots	Daily
	Drum and storage containers placement and stacking	Drum aisle spacing: 6-'9" (minimum) Storage bulk container aisle spacing: 2'-0" (minimum) Height of stacks: 2 high maximum for all containers	Daily
	Closing of containers and storage	Open lids or bungs	Daily
	Labeling of containers and storage bulk containers	Improper identification, date missing	Daily
	Floor of storage room/ Berm	Cracks, spalling, uneven settlement, erosion, wet spots	Daily
	Debris and refuse	Obstruction, aesthetics, possible reaction with leaks	Daily
	Warning signs	Damaged, missing	Daily
	Storage capacity	>10 55-gallon containers >10 spent columns >2 275-gallon totes	Daily
Preparation Area	Spills/releases	Accumulated liquid, wet spots	Weekly
	Floor of area/Berm	Cracks, spalling, uneven settlement, erosion, wet spots	Weekly
	Debris and refuse	Obstruction, aesthetics, possible reaction with leaks	Weekly
	Spent column containers	Being stored outside waste storage area	Weekly
	Warning signs	Damaged, missing	Weekly
Waste Material Transfer Room	Spills/releases	Accumulated liquid, wet spots	Weekly
	Spent column containers	Being stored outside waste storage area	Weekly
	Labeling of storage	Improper identification	Weekly
	Floor of area/Berm	Cracks, spalling, uneven settlement, erosion, wet spots	Weekly
	Debris and refuse	Obstruction, aesthetics, possible reaction with leaks	Weekly
	Warning signs	Damaged, missing	Weekly

Table F.1
Inspection Schedule

Area/ Equipment	Specific Item	Types of Problems	Freq. of Inspection
Shipping and Receiving	Spill Leaks	Accumulated liquid, wet spots	Weekly
	Floor of area/Berm	Cracks, spalling, uneven settlement, erosion, wet spots	Weekly
	Debris and refuse	Obstruction, aesthetics, possible reaction with leaks	Weekly
	Warning signs	Damaged, missing	Weekly
Donning and Doffing Passthrough	Spill Leaks	Accumulated liquid, wet spots	Weekly
	Floor of area/Berm	Cracks, spalling, uneven settlement, erosion, wet spots	Weekly
	Debris and refuse	Obstruction, aesthetics, possible reaction with leaks	Weekly
	Warning signs	Damaged, missing	Weekly
Safety and Emergency Equipment for the following areas: • Waste Storage Area • Preparation Area • Waste Material Transfer Room • Shipping and Receiving	Spill Kits	Out of stock	Monthly
	Goggles and Protective glasses	Out of stock, Broken or dirty equipment	Weekly
	Rubber gloves	Out of stock, broken or dirty equipment	Weekly
	Chemical protective clothing	Out of stock, broken or dirty equipment	Weekly
	Respirators and equipment	Out of stock, broken or dirty equipment	Weekly
	Emergency Shower/Eyewash	Water pressure, leaking, drainage	Weekly
	First Aid Equipment and Supplies	Out of stock	Monthly
	Telephone / Paging System	Power loss, voice test or signal	Monthly
	Fire Extinguishers	Damage, missing	Monthly
	Fire Alarm System – pull boxes	Power failure, audible alarm	Monthly
	Sprinkler System	Loss of water pressure, signal to audible alarm	Monthly
	Chemical and O_2 High Level Alarms	Audible alarm	Monthly
	Warning Signs	Damaged, missing	Monthly
	Doors (Electronic)	Damaged, cannot close or lock	Monthly
	Uninterruptible Power Supply	Operational, maintained	Monthly
	Emergency Generator	Operational, maintained	Monthly
	Ventilation	Cleanprotect functioning, high efficiency particulate air (HEPA) filter, adequate flow	Monthly

F.2.2 Containers

Spent columns are stored either in the waste storage area once moved from the shipping/receiving area; all waste granulate storage containers are stored within the waste storage room. The waste storage room is used to store 55-gallon containers and various sizes of spent columns (ranging from 25 to 200 liters (L) in size, containing up to approximately 125 pounds of spent granulate). These storage containers are visually inspected for condition (dents, signs of corrosion, deterioration, and leaks), whether they are open or closed, whether they are properly labeled, and placement (proper aisle clearance and space).

The waste storage area also has the capability of storing a maximum of two 275-gallon bulk containers for the wastewater from the spent column decontamination and copper sulfate treatment processes.

Since wastes are managed and stored in these areas, the waste storage area, waste material storage area, shipping and receiving, preparation area, donning and doffing passthrough themselves are inspected for the presence of leaks/spills; if cracks, settlement, or erosion are present in the concrete floor (base); if warning signs are damaged or missing; if debris/refuse is present, and if total storage capacity is exceeded. These inspections are performed daily by the facility personnel for the containers stored in the waste storage area.

The results of these inspections are recorded on the waste storage area daily inspection logs (**Appendix F.3**).

F.2.3 Site Capacity

To ensure the storage capacities of the waste storage area are not exceeded, facility personnel verify that the capacities listed below are not exceeded on a daily basis.

Table F.2
Container Capacity

Type of Container	Maximum Number of Containers	Maximum Storage Volume
WASTE STORAGE AREA (Room)		
55-gallon containers or Spent Columns	12	660 gallons
	TOTAL	660 gallons
WASTE STORAGE AREA (IBCs by Preparation Area)		
275-gallon bulk containers	2	550 gallons
	TOTAL	550 gallons

The results of this inspection are recorded on the waste storage area daily inspection logs (**Appendix F.3**).

F.2.4 Emergency Equipment Inspection

This section addresses the frequency and type of inspections conducted with regard to communication and alarm systems, fire extinguishing equipment, safety equipment and spill control equipment. The general locations and list of the emergency equipment are provided in **Section G** (Contingency Plan, Table 3 and Figure 3). Inspections for all emergency equipment in this section are recorded in process area weekly and monthly inspection logs (**Appendix F.3**) and are maintained in the facility's records.

All portable fire extinguishers located in the building are inspected monthly for damage and location. These monthly inspections are performed by facility personnel and are maintained in the facility's records.

At least annually, each portable fire extinguisher is subjected to an annual maintenance inspection in accordance with Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.157(e)(3) and National Fire Protection Association (NFPA) Standard 10, Section 4-4. The annual inspection is currently performed by Aero Automatic Sprinkler Company in Phoenix, Arizona. Copies of these annual inspections are maintained in facility records.

All personal protective equipment (PPE) maintained at the facility (protective glasses, gloves, first aid kits, and emergency shower/eyewash) are inventoried and checked for full operational status on a weekly basis. These weekly inspections are performed by facility personnel and are maintained in the facility's records.

At least once each month, the spill kit(s) and/or boxes maintained at the facility are inventoried and checked for operational status. These monthly inspections are performed by facility personnel and are maintained in the facility's records.

The communication systems employed at CS Clean include telephones and a telephone paging system. The telephones and telephone paging system are used daily by CS Clean. Therefore, any operational problems associated with these communication devices should be detected that same day.

The fire alarm system located throughout the facility will activate an audible and visual fire alarm, as well as a 24-hour monitoring service, AZ Security Control of Tempe, Arizona, who will then alert the local fire department. The sprinkler system in this area is inspected annually by an outside contractor. The results of these annual inspections are maintained in facility records. Specifications and design information for the fire sprinkler system installed at the facility are provided in **Appendix F.4** and are summarized in **Table F.3** below.

Table F.3
Sprinkler Drawings

Drawing Number	Description	Revision Date
FP1	Site Sprinkler Plan	11/16/2021
FP2	South System 1 Piping Plan	11/16/2021
FP3	North System 2 Piping Plan	11/16/2021
FP4	Building Section	11/16/2021

Several safeguards have been incorporated into the design of the process. Specifically, these include the following:

- Duct Flow Pressure Gauge: In the event that the dedicated ventilation system utilized within the waste material transfer room fails to operate correctly, the operator is alerted by a visual indication. This visual indication will alert the operator to suspend further activities until the ventilation system is fully operational.
    - Columns and containers of waste are only opened in the waste material transfer room during hours of normal operation with an operator present. Columns and containers of waste are otherwise stored closed in the waste storage area. The

waste storage area is equipped with localized ventilation as well. However, duct flow pressure gauges are only relied upon during active waste treatment and transfer operations in the waste material transfer room.

- Ventilation: The waste process area has a dedicated exhaust ventilation system. The exhaust is equipped with a HEPA filter, and all exhausts are ventilated through CS Clean's Clean-Protect CS 1000 system. The Clean-Protect CS 1000 and HEPA filtration system will be inspected monthly. Additionally, the HEPA filters will be changed periodically, and the CS 1000 will receive annual maintenance and servicing by CS Clean's technician.
- Liquid Level Switch: In the event of a fluid leak associated with the copper sulfate solution re-circulation pumps and adjacent fittings, a liquid level switch in the catch pan underneath will activate and automatically disable pump operation. This will cease further transfer of fluids and minimize the release of the solution.
- Electrochemical Gas and Oxygen (O^2) Detection System: In order to monitor for system leaks or any potential release of material, Electrochemical Gas and O^2 Detection is incorporated into the system function. Specifically, gas sensors for the monitoring of hydrides and acid gases are located within the waste storage room and waste material transfer room. The alarm limit is established at fifty percent (50%) of the Threshold Limit Value (TLV) of the associated constituent. The gas detection alarm is a visual indication. In addition to gas sensors, O^2 sensors are also utilized at the material transfer room. The O^2 alarm is a 90 decibels (dB) audible alarm.
- Emergency Generator and Uninterruptible Power Supply (UPS) backup: The facility is equipped with a fail-safe redundant safety system should the facility lose power with a backup emergency generator and a UPS backup system. The emergency generator and UPS are tested monthly as part of the facility emergency inspection process and are maintained by an outside contractor annually.

Each of the safeguards noted is inspected for proper operation on a monthly basis and the inspections are maintained in the facility's records.

Security system safeguards such as lighting, emergency lighting, warning signs, fencing, and building security systems are inspected monthly.

At the close of each operating day, doors and loading bay doorways are locked. The locations of the doors and loading bay doorways are shown in **Appendix F.1**. On a monthly basis, doors, loading bay doorways, and warning signs are inspected for damage. The results of these monthly inspections are recorded on the process area monthly inspection logs (**Appendix F.3**).

Remedial actions are noted on each inspection log. In case of a spill, fire or explosion, the procedures listed in the Contingency Plan (**Section G**) will be implemented.

All inspection records are kept on-site for at least three years from the date of inspection. These records include the date and time of the inspection, the name of the inspector, any problems identified, and the date and type of any repairs performed. All facility inspection logs are provided as **Appendix F.3**. These log sheets are updated, as necessary.

F.2.5 Inspection Schedule for Non-Permitted Hazardous Waste Storage Areas

This section identifies the equipment and structures at the non-permitted hazardous waste storage areas which are inspected. The only non-permitted hazardous waste storage area currently planned for use by CS Clean at its Phoenix facility is the less than or equal to (≤) 90-day container accumulation area. The inspection items and inspection frequencies for this area are provided in **Table F.4** below.

Table F.4
Inspection Schedule For Non-Permitted Hazardous Waste Storage Areas

Area/ Equipment	Specific Item	Types of Problems	Frequency of Inspection
≤ 90 Day Hazardous Waste Accumulation Area (Waste Storage Area)			
55-gallon containers and 275- gallon totes	Condition	Dents, corrosion, leaking	Daily
	Tops/Bungs	Open when not in use; spillage	Daily
	Empties	Not stored on side with bungs closed, etc.	Daily
	Waste Stored	Incompatible with container, not segregated	Daily
	Labels	Missing or illegible; not labeled "Hazardous Waste," waste not identified; accumulation date missing or older than thirty days; old labels present	Daily
Secondary Containment Area	Containment	Missing, damaged	Daily
	Containers	Stored outside of containment	Daily
	Floor	Spill or spill residue	Daily
	Aisle Space	Inadequate to reach all containers	Daily

F.2.6 Other Inspections and Inspection Areas

CS Clean does not manage or treat hazardous waste in any of the following, as such inspections for these systems are not performed.

- Tanks,
- Waste piles,
- Surface impoundments,
- Incinerators,
- Land treatment,
- Miscellaneous units,
- Boilers or industrial furnaces,
- Containment buildings,
- Drip Pads

F.3 Documented Arrangements

CS Clean has made documented arrangements with local first responders as part of their Contingency Plan under **Section G**. The Contingency Plan was provided to local first responders. Copies of the letters sent by certified mail of the documented arrangements are also provided under **Appendix F.5**. No local emergency response agency has notified CS Clean of refusal to coordinate at this time.

F.4 Prevention Procedures, Structures, and Equipment

F.4.1 Loading, Unloading, and Runoff

All unloading and loading of hazardous waste at the facility occurs in the dedicated shipping and receiving area that is part of the process area at the facility. Based on the volume a box truck, once per week, and a semi-trailer, once per month, will make a delivery or pickup. The transport vehicle will enter through West Parkside Lane and stop at the shipping and receiving dock, for all waste shipments in the northwest portion of the facility. This dock is directly located in the shipping and receiving area of the process area for waste. All shipments will connect to the manual dock lock and be transported directly to shipping and receiving area from the transport vehicle. The exterior portion of the shipping and receiving area is bermed. All shipments will be unloaded or loaded directly to and from shipping and receiving via forklift, pallet jack, drum runner, or similar device with the transporter parked, parking brake engaged, and dock lock engaged through the roll-up door directly to and from the transport vehicle. The truck will be backed up directly to the dock, to minimize any gap and hazard of a container falling off the truck. Containers of waste transported to and from the facility will only be loaded directly from the dedicated waste shipping and receiving loading dock and not the exterior of the building. Furthermore, to minimize stormwater pollution and runoff contamination the catch basins will be covered with a spill mat during loading and unloading, with all loading and unloading occurring directly to the truck from the loading dock. Loading docks will be equipped with bumpers to help prevent run-on of stormwater and allow for a "seal" to prevent containers from falling off. Should a truck show up with a leaking container or a container become damaged during unloading or loading, Section 3.5.3 of the Contingency Plan, under **Section G**, will be invoked for the spill response. The exterior of the Shipping and Receiving area is bermed. Local spill kits will be utilized to contain the spill and an emergency contractor, if needed, will be contacted. A waste acceptance criteria is highlighted below for all waste shipped to CS Clean.

Any spent column shipped to CS Clean from an end user is accepted only if it arrives with all proper waste profiling, transportation, and CS Clean-required documentation. Spent column shipments that arrive without all the required documentation (i.e., waste manifest, CS Clean waste approval, and waste profile) will be refused. An example waste profile, blank waste profile, end user declaration, and hazardous waste manifest, highlighting the required paperwork, are provided in **Appendix F.6**. Wastes will not be accepted if the waste description or amount deviates from the profile, end user declaration, or manifest, in which case the shipment would be refused and would be returned to the generator. Waste presenting an obvious hazard (i.e., leak, bulging containers, incompatibles, etc.) will also be refused and may lead to invoking the Contingency Plan per **Section G**.

After the waste shipment has met the acceptance criteria, the column is transferred from shipping/receiving area to the waste storage area for all spent columns, where it is temporarily staged until the CS Clean technician is ready to continue the processing operation. The designated

waste storage area is located next to the shipping and receiving area with dedicated spill pallets, a spill kit, an overpack, and additional emergency equipment is maintained readily available. This area is utilized for both inbound and outbound solid waste storage. As such, a similar procedure would be used to ship generated hazardous waste or treated waste for final disposal at an approved treatment, storage, and disposal location. The waste would be first verified for acceptance via a waste profile and have a waste manifest for the waste shipped.

Spill kits are described in Table 3 of the Contingency Plan in **Section G**. Provided below is a list of materials included in the spill kits. **Table F.5** provides a list of spill response equipment.

Table F.5
Spill Response Equipment

Equipment	Description	Location
55-Gallon Drums	22" diameter X 34" lined and unlined steel tight head drums.	Figure 3 of **Section G**
95-Gallon Overpack Spill Kits	Material used to absorb and contain spill of liquid material.	Figure 3 of **Section G**
Spill Blocker Dike	A dike that can be set up around spills to help contain runoff from spills.	Figure 3 of **Section G**
5-Gallon Universal Spill Kit	A spill kit with absorbent materials to clean up spills of universal waste.	Figure 3 of **Section G**
5-Gallon Oil Spill Kit	A spill kit with absorbent materials to clean up spills of oil.	Figure 3 of **Section G**
5-Gallon Acid Spill Kit	A spill kit with absorbent materials to clean up spills of acid.	Figure 3 of **Section G**
Battery Acid Spill Kit	A spill kit with absorbent materials to clean up spills of battery acid (ex. Baking Soda).	Figure 3 of **Section G**
Universal Spill Kit Chest	A large chest with absorbent materials to clean up spills of universal waste.	Figure 3 of **Section G**

CS Clean maintains several spare 55-gallon drums in the general storage warehouse. CS Clean also maintains two spill kits in the Waste Storage Area, One spill kit in the waste material transfer room, and one spill kit in the general facility warehouse.

F.4.2 Water Supplies

CS Clean's waste treatment operation will be fully self-contained inside the process treatment area. The process treatment area's exterior walls and entries are improved with a 1.5-inch berm, and the concrete floor has been improved with a seamless epoxy floor coating to create an impermeable barrier, as highlighted in **Appendix D.4**. No floor drains are present in this space, and all areas receive a daily or weekly inspection, per **Appendix F.3**, to review for any cracks or defects in containment/flooring structures. CS Clean also utilizes secondary spill containment pallets in the waste storage area to store spent columns and/or drums of hazardous waste in the waste storage area.

All wastewater and liquids generated from the spent column cleaning process, rinsing sinks, wash basin, and copper sulfate treatment process is piped directly to totes in the waste storage area. No connections to the municipal sanitary sewer system or other municipal water disposal system occur from the waste processing area. Plumbing drawings are included in **Appendix F.7**. The drawings are described in detail in **Table F.6** below.

Table F.6
Plumbing Drawings

Drawing Number	Description	Revision Date
P-01	Plumbing and piping details	10/9/2024
P-02	Plumbing specifications	10/9/2024
P-03	Equipment list	10/9/2024
P-100	Process schematic	10/9/2024
P-101	Plumbing floor plan	10/9/2024

Municipal water inlets do connect to the sinks, wash basin, and copper sulfate tank, but the water are inlets only and no drains or outlets exist.

F.4.3 Equipment and Power Failure

CS Clean employs a redundant safety system via an emergency generator and an UPS. The CS Clean facility is equipped with a Kohler KG6208 77-kilowatt (kW) natural gas fueled emergency electrical generator, which will supply power to all of the following:

- Chemical and O^2 detection sensors and monitoring system in the process areas,
- All process and recirculation pumps,
- The electronic key card access and control system for the building doors, and
- The dedicated ventilation and dust collection systems in the waste material transfer room.

Specifications for the generator are provided with in **Appendix F.8**.

The generator has an automatic transfer switch that switches the electrical load from the facility electrical utility to that of the generator in the event of a power loss. Additionally, an in-line Riello S3U 10-A0 SW UPS is provided to ensure instantaneous protection from input power interruptions. The runtime of the UPS system is sufficiently long enough to enable the emergency generator to begin providing sufficient power before switching the electrical system to the generator's current.

In the event that a power loss occurs at the site, the contingency plan (**Section G**) will be implemented, and all waste treatment and transfer operations will cease.

Additionally, the facility is equipped with adequate emergency lighting to aid in an evacuation.

F.4.4 Personnel Protective Measures

CS Clean has implemented various personnel protective measures utilizing the hierarchy of controls to reduce and mitigate hazards associated with hazardous waste to facility personnel and the public.

F.4.4.1 Engineering controls

Controls include the purge gas and copper sulfate treatment processes described in **Section A.5**. The purge gas involves connecting the spent Cleansorb column to an air, nitrogen, or argon purge prior to remove any residual gas and inert the waste materials inside the column prior to opening. The copper sulfate bath is utilized to quench the waste of the chemical vapor deposition (CVD) and ion implant column waste upon emptying it to a waste drum. This prevents the waste from reacting or igniting during the transfer process and treats the waste to reduce its reactive and ignitable hazards. CS Clean also employs a dedicated ventilation system for the processing area with vents located in the waste store area and the waste material transfer room. The dedicated ventilation system is equipped with MERV-14 HEPA filters to filter out fine particles and is vented to a Clean-Protect CS 1000 scrubber system for gases.

Mechanical drawings for the specification are provided in **Appendix F.7**. The table below summarizes the mechanical drawings provided.

Table F.7
Mechanical Drawings

Drawing Number	Description	Revision Date
M-01	Mechanical specification, legend, and notes	11/18/2024
M-02	Mechanical details and calculations	10/9/2024
M-03	Mechanical specifications	11/18/2024
M-100	Mechanical plan for roof	11/18/2024
M-101	Local exhaust for first floor	12/11/2024

The specifications for CS Clean's Clean-Protect CS 1000 air scrubber are provided in **Appendix F.8**. The scrubber is designed to abate a wide range of hazardous gases generated from the spent columns. The scrubber and exhaust system will be operated at 2,300 cubic feet per minute (cfm). Trunk lines are located throughout the process area in the waste storage area and where treatment occurs in the waste material transfer room.

Additionally, a lifting device (i.e., drum runner) or similar device is used to dump columns.

Furthermore, as highlighted in **Section F.1**, CS Clean maintains the waste areas under lock via an electronic key card system.

F.4.4.2 Administrative and Work Practice Controls

CS Clean has developed various safety standard operating procedures (SOPs) and spent column handling SOPs to be followed by employees. Safety SOPs and the treatment process SOPs are

provided in **Appendix F.9**. Additionally, CS Clean trains all employees with Level 2 access to the waste handling areas per **Section H** of this application. All employees also receive training on contingency plan activation under **Section G**. Additionally a robust daily, weekly, and monthly inspection schedule is followed to inspect for deficiencies per **Section F.2**.

F.4.4.3 Personal Protective Equipment

CS Clean provides PPE in the preparation room and provides a Donning and Doffing room for the inspection of PPE, donning of PPE, doffing of PPE, and decontamination of employees. PPE is collected in a satellite accumulation area for disposal, pending a hazardous waste determination, as part of the sites generated waste streams. PPE employed during treatment activities in the waste material storage room (when spent columns are opened and transfer occurs) includes:

- Tyvek suit with booties or boot covers,
- Full-face supplied air respirator (supplied to an air compressor),
- Nitrile gloves, and
- Steel toe or like safety shoes.

F.4.5 Procedures to Minimize Release to the Atmosphere

CS Clean also employs a dedicated ventilation system for the processing area with vents located in the waste store area and the waste material transfer room. The dedicated ventilation system is equipped with MERV-14 HEPA filters to filter out fine particles and is vented to a Clean-Protect CS 1000 scrubber system for gases.

Mechanical drawings for the specification are provided in **Appendix F.7** and the specifications for the Clean-Protect CS 1000 scrubber system are provided in **Appendix F.8**. All other previous ventilation for the process area has been abandoned in place.

F.5 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste

CS Clean has taken precautions for the management of hazardous waste to prevent the ignition of waste, reaction of waste, and incompatible waste from mixing.

CS Clean does not allow smoking in the facility and has "No Smoking" signs posted on exterior door entrances.

CS Clean utilizes the purge and copper sulfate treatment processes, as described in **Appendix F.9** to minimize any potential reaction or ignition during treatment. The purging process removes any residual gases and inert the column prior to the CS Clean technician opening. The copper sulfate treatment process quenches the spent CVD, ion implant, cobalt, or silicon epi waste granulate upon emptying out of the column to a 55-gallon waste drum, this prevents a reaction from occurring for the reactive waste streams. Then emptied Cleansorb columns are cleaned in the sinks and wash basin, dried, and then are considered RCRA-empty before being returned to service for refill and regeneration with granulate.

Spent columns and 55-gallon drums are stored on spill pallets in the waste storage area. A review utilizing the U.S. Environmental Protection Agency's (EPA) "A Method for Determining The Compatibility of Hazardous Waste" was conducted against the profiles based on the waste stream characteristics and information specified from spent columns manufacturing processes received by the facility per waste profiles provided in **Appendix C.2** (**Section C**). The review, provided in **Appendix F.10**, was developed for the composition associated with the six spent column waste streams. Please note that the waste streams are in mixtures (at various percentages). Upon review several waste streams contain chemicals, that per the "A Method for Determining The Compatibility of Hazardous Waste" contain water reactive chemicals in mixtures. Upon further review and consultation, with CS Clean's chemical engineering team it was determined that these wastes are not water reactive as the chemicals contained within are not in pure form and are in salt mixture. The chemical compatibility review is based on the spent granulates mixtures in salt mixture forms and was matched to Reactive Group Names based on the form and compound reported in the waste profiles.

Based on the chemical compatibility review and information on salt mixtures provided the "Method for Determining The Compatibility of Hazardous Waste" did not identify waste storage or chemical compatibility restrictions.

Only one spent column will be processed at a time to minimize the hazard of incompatible wastes mixing. All wastes will be shipped offsite for final disposal to an approved treatment, storage, and disposal approved for that waste stream to minimize incompatible wastes being disposed of together. Shipments of waste will be adequately segregated per the Department of Transportation (DOT) Segregation Table for Hazardous Materials.

The facility is equipped with a fire sprinkler system as described in **Appendix F.4** should a fire occur and also have made portable fire extinguishers available.

All waste will undergo reactivity, ignitability, and other testing per the waste determination and profiling process described under the waste characteristics section prior to acceptance as outlined in **Section C**.

The waste storage area and waste material transfer room, located in the west-central area of the building, where ignitable and reactive waste is stored and treated onsite, is greater than 50 feet from the property line. A figure showing 50 feet from the property line is provided in **Appendix F.11**.

APPENDIX F.1
Floor Plan

CS CLEAN

City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT
This set of plans has been reviewed by the City of Phoenix Planning & Development Department for compliance with applicable City codes and ordinances and shall be kept at the construction site. Such review shall not prevent the City from requiring correction of errors in the plans where such errors are subsequently found to be in violation of any code, law, ordinance, health, safety, or other design issues.

IBC - Aaron LeGendre 602-534-7265

A Design InVision
INTERIOR ARCHITECTURE & DESIGN

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: K.AMEN
Drawn by: E. BAILEY
Checked by: D.CURTIS
Project Number: 22317

REGISTERED ARCHITECT CERTIFICATE NO. 71 DANIEL J. CURTIS 2-04-25 Date Signed ARIZONA, U.S.A.
Expires 6.30.26

GENERAL NOTES

1. THE SUBCONTRACTOR WILL INSPECT THE PREMISES IMMEDIATELY TO VERIFY EXISTING WORKING CONDITIONS. SHOULD THE SUBCONTRACTOR FIND CONDITIONS WHICH HE BELIEVES WOULD IMPEDE HIS WORK, THEN SUCH CONDITIONS MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT FAILURE TO SO ADVISE WILL CONSTITUTE NOTICE THAT SUBCONTRACTOR IS FULLY SATISFIED WITH THE EXISTING CONDITIONS AND THAT HE INTENDS TO PERFORM HIS OBLIGATIONS WITH NO ALLOWANCE IN EITHER TIME OR MONEY FOR ANY IMPEDIMENTS TO HIS WORK.
2. SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD. IF DIMENSIONAL ERROR OCCURS OR CONDITIONS NOT COVERED IN THE DRAWINGS ARE ENCOUNTERED, SUBCONTRACTOR SHALL NOTIFY THE ARCHITECT BEFORE COMMENCING THAT PORTION OF THE WORK.
3. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, FEDERAL, STATE AND LOCAL LAWS.
4. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, AND ERECTED. USED, CLEANED AND CONDITIONED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS AND INSTRUCTIONS UNLESS HEREIN AFTER SPECIFIED TO THE CONTRARY.
5. CUTTING AND PATCHING WHERE EXISTING CONSTRUCTION IS CUT OR OTHERWISE DISTURBED TO PERMIT INSTALLATION OF NEW WORK, MATCH AND PATCH EXISTING DISTURBED CONSTRUCTION. USE METHODS AND MATERIALS SIMILAR IN APPEARANCE AND EQUAL IN QUALITY TO AREAS OR SURFACES BEING REPAIRED.
6. DIMENSIONS TAKE PRECEDENCE OVER SCALE ON CONSTRUCTION DOCUMENTS.
7. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER ACCEPTABLE TO OWNER.
8. WHEN WORK NOT SPECIFICALLY CALLED OUT IS REQUIRED TO COMPLETE THE PROJECT, IT SHALL BE PROVIDED AND BE OF THE BEST MATERIALS AND WORKMANSHIP.
9. UNLESS OTHERWISE NOTED, THE SUBCONTRACTOR SHALL PROVIDE AND PAY FOR ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY, TRANSPORTATION, AND OTHER FACILITIES AND SERVICES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK.
10. SUBCONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
11. THE SUBCONTRACTOR SHALL VERIFY ALL MECHANICAL. PLUMBING AND ELECTRICAL REQUIREMENTS PRIOR TO COMMENCEMENT OF THE JOB,
12. THE SUBCONTRACTOR WARRANTS TO THE OWNER AND THE ARCHITECT THAT ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT WILL BE NEW UNLESS OTHERWISE SPECIFIED; AND THAT ALL WORK WILL BE GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. ALL WORK NOT SO CONFORMING TO THESE STANDARDS MAY BE CONSIDERED DEFECTIVE. IT IS UNDERSTOOD THAT NO INFERIOR OR NON-CONFORMING WORK OR MATERIALS WILL BE ACCEPTED. WHETHER DISCOVERED AT THE TIME THEY ARE INCORPORATED IN THE WORK, OR AT ANY TIME BEFORE OR AFTER THE FINAL ACCEPTANCE. IF REQUIRED BY THE ARCHITECT, THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT.
13. THE WARRANTIES AND GUARANTIES PROVIDED IN THE CONSTRUCTION DOCUMENTS SHALL BE IN ADDITION TO AND NOT IN LIMITATION OF ANY OTHER WARRANTY OR GUARANTY OR REMEDY REQUIRED BY LAW OR BY THE CONSTRUCTION DOCUMENTS.
14. ANY ANTICIPATED CUTTING, DRILLING OR ANCHORING OF POST TENSIONED CONCRETE SLABS SHALL BE REQUIRED TO BE APPROVED IN WRITING BY THE OWNER BEFORE PROCEEDING. SUBCONTRACTOR SHALL X-RAY PENETRATION LOCATIONS PRIOR TO BEGINNING THE WORK AND PROVIDE EVIDENCE OF SAME TO THE OWNER.
15. SUBCONTRACTOR SHALL REVIEW FIELD CONDITIONS AND FURRED OUT PERIMETER WALLS. MAKING ALLOWANCE TO INSURE THAT ALL ELECTRICAL/TELEPHONE AND MISCELLANEOUS COVER PLATES AND JUNCTION BOXES WILL FLUSH OUT EXACTLY TO FINISHED FACE, SUCH THAT NO GAPS ARE EVIDENT.
16. WHERE NECESSARY TO FURR OUT COLUMNS, HOLD NEW CONSTRUCTION AS TIGHT AS POSSIBLE TO EXISTING.
17. PHONE & DATA CABLE WORK BY TENANT EXCEPT AS NOTED ON PLANS.
18. REROUTE EXISTING FIRE ALARM AND SMOKE DETECTION SYSTEM AS REQUIRED. COMPLY WITH THE CITY OF PHOENIX FIRE DEPARTMENT REQUIREMENTS.
19. PROVIDE NECESSARY CONDUIT AND WIRE, SMOKE DETECTORS AND ANNUNCIATION SPEAKERS. FURNISH AND INSTALL FIRE ALARM DETECTION AND ANNUNCIATION DEVICES AND INTERFACE TO THE SHELL BUILDING ALARM SYSTEM.
20. NOTIFY ARCHITECT, IF DUE TO CODE OR FIELD CONDITIONS, IF EXIT SIGNS, LIFE SAFETY DEVICES AND FIRE EXTINGUISHES CABINETS ARE TO BE PLACED IN ADDITIONAL OR DIFFERENT LOCATIONS THAN PLANS INDICATE. ARCHITECT TO APPROVE AESTHETIC PRIOR TO INSTALLATION.
21. LOCATION OF PLAN ELEMENTS:

PARTITIONS:

PARTITIONS, ENDS OF PARTITIONS, AND OTHER PLAN ELEMENTS WHICH APPEAR TO ALIGN ARE INTENDED TO ALIGN UNLESS OTHERWISE DIMENSIONED.

CENTER PARTITION ON COLUMN; BY-PASS SIDE OF COLUMN; OR ALIGN WITH ONE SIDE OF COLUMN (OR OTHER PLAN ELEMENT); AS INDICATED ON PLAN.

CENTER PARTITION ON CENTERLINE OF EXTERIOR WINDOW WALL MULLION UNLESS NOTED OTHERWISE. DIMENSIONS ARE FROM FINISHED FACE TO FINISHED FACE UNLESS NOTED OTHERWISE.

ALL OBLIQUE ANGLES SHOWN ON PLAN ARE AT 45° UNLESS NOTED OTHERWISE.

DOORS:

CENTERLINE ON WALL; OR 5 3/4" FROM JAMS TO CENTERLINE OF ADJACENT INTERSECTING WALL; OR AS DIMENSIONED.

32" MIN. CLEAR OPENING AT ALL DOORS.

22. BLOCKING IS REQUIRED BEHIND ALL WALL MOUNTED MILLWORK, DOOR STOPS, AND ANY OTHER FURNITURE OR EQUIPMENT. ALL WOOD BLOCKING AND BACKING SHALL BE FIRE RETARDANT TREATED; OR USE METAL.
23. CONCRETE FLOORS ARE TO BE FILLED AND FLOATED TO MEET MANUFACTURER'S REQUIREMENTS FOR SMOOTHNESS AND LEVELING PER FLOORING MATERIALS BEING INSTALLED.
24. SHOP DRAWINGS SHALL BE SUBMITTED FOR ANY AND ALL MILLWORK, FOR REVIEW BY THE ARCHITECT PRIOR TO FABRICATION AND SHALL BE COMPLETE IN ALL DETAIL. MILLWORK CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH FINISH SUBMITTALS PRIOR TO FINAL FABRICATION.
25. ALL COUNTERTOPS TO BE SCRIBED TO WALL WHEREVER BACKSPLASH DOES NOT OCCUR.
26. ALL WOOD CASEWORK SHALL CONFORM TO AWI STANDARDS FOR "PREMIUM GRADE" AND WIC (WOODWORKING INSTITUTE OF CALIFORNIA) UNLESS NOTED OTHERWISE.
27. ALL PLASTIC LAMINATE CASEWORK TO CONFORM TO AWI STANDARDS FOR "CUSTOM GRADE" UNLESS NOTED OTHERWISE.
28. CONTACT ARCHITECT IMMEDIATLY SHOULD THE CONTRACTOR OR SUB CONTRACTOR FIND ANY DISCREPENCIES WITH THESE DOCUMENTS.
29. ARCHITECT'S REVIEW OF SHOP DRAWINGS SHALL BE FOR GENERAL CONFORMANCE TO THE DESIGN CONCEPT AND SHALL NOT RELIEVE ANY CONTRACTOR OR SUB CONTRACTOR FROM THEIR OBLIGATION TO COMPLY WITH THE CONTRACT DOCUMENTS

PLUMBING CALCULATIONS

EXISTING:

OFFICE PLUMBING OCCUPANT LOAD: 17 OCCUPANTS
23 MALE/ 23 FEMALE

REQUIRED	NO. OF W.C.	NO. OF LAVS
1 ACCESSIBLE UNISEX R.R.	1	1

PROVIDED	NO. OF W.C.	NO. OF LAVS
2 ACCESSIBLE UNISEX R.R.	1	1

WAREHOUSE PLUMBING OCCUPANT LOAD: 29 OCCUPANTS
(WAREHOUSE (1PER 100) 15 MALE/15 FEMALE

REQUIRED	NO. OF W.C.	NO. OF LAVS
1 ACCESSIBLE UNISEX	1	1

PROVIDED	NO. OF W.C.	NO. OF LAVS
1 ACCESSIBLE UNISEX	1	1

REQUIRED AND PROVIDED
1 MOP SINK
1 WATER COOLER

PER IBC TABLE 2902.1

CITY OF PHOENIX DEFERRED/SEPARATE SUBMITTALS

FIRE ALARM
FIRE SPRINKLER
TENANT PROVIDED SHELVING

Plans and specifications for deferred submittal items shall be submitted to the Planning & Development Department after being reviewed for conformance with the building or structure design by the registered design professional in responsible charge and shall have PDD approval prior to erection, construction or installation in the field. The registered design professional in responsible charge shall provide a notation on all deferred documents that acknowledges review of such documents. A separate permit for the installation of a deferred item shall not be required unless specified in this CODE. In all cases, deferred submittal documents shall bear a stamp or note from the engineer and architect of record indicating that they have reviewed the documents for general conformance with the design of the building PRIOR to submitting them to the building inspector or the plan reviewer.

NON-STRUCTURAL SUITE DEVELOPEMENT

PROJECT ADDRESS:	2453 W PARKSIDE LN SUITES 150 PHOENIX, AZ 85203
ZONING:	A-1 (PER PHO CASE)
OCCUPANCY TYPE:	CURRENT: B (BUSINESS)/ S-1 (WAREHOUSE)/ THIS SCOPE ADDING: F-1(INDUSTRIAL) AND H-2(ASSESORY USE LIMITED)
TENANT AREA SQ. FT.:	± 11,261 SF
CONTRUCTION TYPE:	III-B W/ A.F.S.
OCCUPANCY(MAX.):	OFFICE 2,407 USF/150 = 17 OCCUPANTS WAREHOUSE 5,361 USF/500 = 11 OCCUPANTS INDUSTRIAL 2,514 USF/200 = 13 OCCUPANTS H-2 USE (RMS 115/118 ONLY) 1,036 USF/200 = 5 OCCUPANTS TOTAL: 46 OCCUPANTS
REQ'D EXITS:	2
PROVIDED EXITS:	3
FIRE SPRINKLERS:	YES - DEFERRED
FIRE ALARMS:	YES - DEFERRED
EMERGENGY LIGHTING:	YES
AGE OF BUILDING:	2022
NUMBER OF STORIES:	1
BOOK-MAP-PARCEL:	209-03-209A

APPLICABLE CODES WITH CITY OF PHOENIX

2018 INTERNATIONAL BUILDING CODE W/ CITY AMENDMENTS
2018 INTERNATIONAL MECHANICAL CODE W/ CITY AMENDMENTS
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL PLUMBING CODE
2017 NATIONAL ELECTRICAL CODE/NFPA-70
2018 IECC
2010 ADA STANDARDS/ ICC A117.1-2009
2018 ASME

PROJECT DATA

IA-1	COVER DRAWING
IA-2	ARCHITECTURAL FLOOR PLAN
IA-2.1	REFLECTED CEILING PLAN/MILLWORK
IA-3	WALL TYPES/SCHEDULES
IA-4	DETAILS
E-01	ELECTRICAL GENERAL NOTES
E-02	ELECTRICAL SPECIFICATIONS
E-100	ELECTRICAL LIGHTING PLANS
E-101	ELECTRICAL POWER PLANS
E-501	ELECTRICAL DETAILS
E-601	ELECTRICAL PANEL SCHEDULES/ONE LINE DIAGRAMS
M-01	MECHANICAL GENERAL NOTES
M-02	MECHAINCAL SPECIFICATIONS
M-03	MECHAINCAL SPECIFICATIONS
M-100	MECHANICAL FLOOR PLAN
M-101	LOCAL EXHAUST PLAN
P-01	PLUMBING DETAILS
P-02	PLUMBING SPECIFICATIONS
P-03	EQUIPMENT SCHEDULE
P-100	PLUMBING PROCESS SCHEMATIC
P-101	PLUMBING FLOOR PLAN

DRAWING INDEX

THE SCOPE OF THIS PROJECT IS NEW WORK AREA(F-1) WITHIN THE WAREHOUSE PORTION OF THE TENANT SUITE. PREVIOUS OFFICE/WAREHOUSE TENANT IMPROVEMENT IS UNDER SEPARATE PERMIT. WAREHOUSE/WORK AREA USE IS WAREHOUSE NON COMBUSTIBLE PARTS STORAGE AND WORK ROOMS.

SCOPE OF WORK

TENANT NAME: CS CLEAN

THE TENANT HAS EXAMINED THE INFORMATION CONTAINED IN THESE DRAWINGS FOR COMPLIANCE WITH THEIR REQUIREMENTS AND HEREBY APPROVES THEIR RELEASE FOR CONSTRUCTION.

APPROVED BY: _____

PRINTED NAME: _____

DATE: _____

CLIENT APPROVAL

PROJECT DIRECTORY

OWNER/TENANT:	CS CLEAN
INTERIOR ARCHITECTURE:	A Design InVision LLC Goodyear, AZ 85338 Kathi Amen 623-535-5526 623-535-5546 fax
MECH. & PLUMBING CONSULTANT:	DC ENGINEERING INC 60 Newton Rd Danbury, CT David Cruz 203-300-2408
ELECTRICAL CONSULTANT:	Southport Engineering Associates 11 Bailey Ave Ridgefield, CT 203-431-6844
CONTRACTOR:	TBD

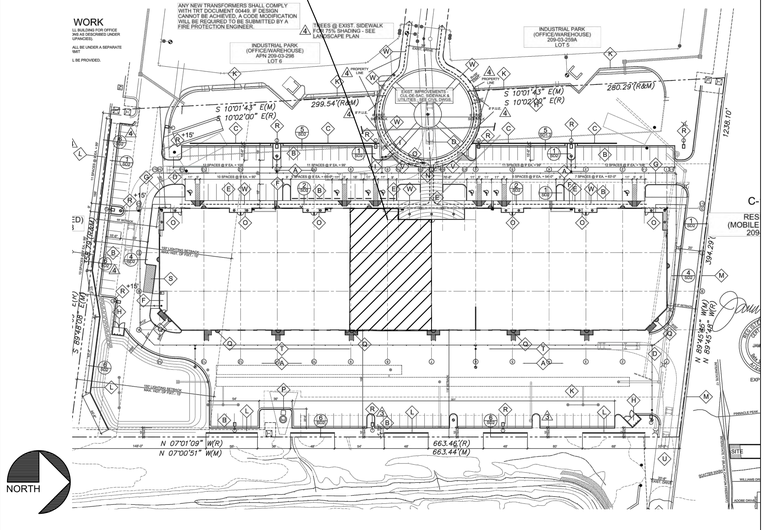
SYMBOLS

ROOM NAME / ROOM NUMBER
DOOR NUMBER
PARTITION TYPE
HEAD CONDITION
DETAIL NUMBER / DRAWING NUMBER
EXIT SIGN
KEYNOTE
DELTA SYMBOL WITH CLOUD INDICATES REVISION NUMBER
SEMI-RECESSED FIRE EXTINGUISHER CABINET

PARKING DATA:
PARKING OCCUPANCY FACTOR - 300 OFFICE/1,000 WAREHOUSE
WAREHOUSE - 8,911 S.F./1,000 = 9 SPACES REQUIRED
OFFICE - 2,407 S.F./300 = 8 SPACES REQUIRED

17 TOTAL SPACES REQUIRED
147 SPACES PROVIDED ON SITE

SCOPE OF PROJECT



SITE PLAN

CS CLEAN
2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

1	CITY COMMENTS 10/2/23
2	OWNER COMMENTS 10/2/23
3	CITY COMMENTS 3/18/23
4	OWNER COMMENTS 1/31/25

DATE: 4/12/23
ISSUED FOR: PERMIT

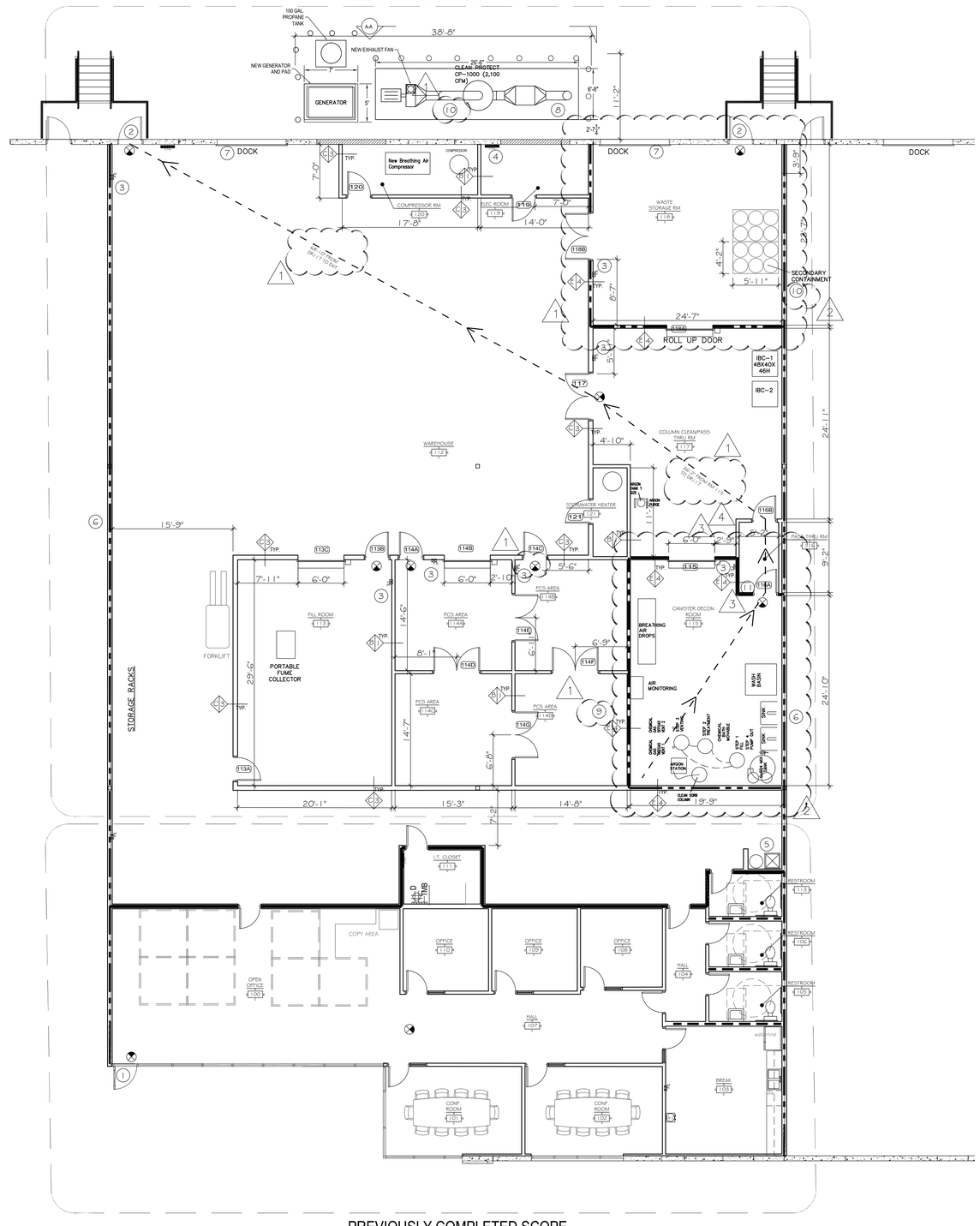
SHEET: IA-1

FNAME
REVDATE

REV Plan #: 2302856-01-RVSN Date: 02/12/25

REV Plan #: 2302856-01-RVSN Date: 02/12/25

DESIGNATED SCOPE



PREVIOUSLY COMPLETED SCOPE

NORTH

FLOOR PLAN

SCALE: 1/8" = 1'-0"

STANDARD KEY NOTES

1. EXISTING BUILDING STANDARD TENANT ENTRY.
2. EXISTING BUILDING STANDARD SECONDARY TENANT ENTRY.
3. SEMI-RECESSED FIRE EXTINGUISHER CABINET W/ TEMPERED GLASS DOOR AND (1) 10 LB. PORTABLE FIRE EXTINGUISHER. (7 NEW) FINAL TOTAL APPROVED BY FIRE.
4. NEW RECESSED/SURFACE ELECTRICAL PANELS. (REFER TO E-SHEETS)
5. EXISTING MOP SINK AND WATER HEATER. PROVIDE FRP SURROUND AS REQUIRED BY CODE.
6. EXISTING DEMISING WALL. GC TO VERIFY FIRE RATING. PROVIDE IF DOES NOT EXIST.
7. EXISTING WAREHOUSE ROLLER DOOR.
8. NEW EXTERIOR EQUIPMENT. REFER TO ENGINEERING SHEETS. OUTDOOR AREA HAS BEEN SUBMITTED FOR MINOR SITE PLAN AMENDMENT.
9. GC TO PROVIDE WATER RESISTANT GYP. BD. WITH 8' AFF FRP.
10. REFER TO MECH SHEETS FOR DETAILS.
11. NOTE REMOVED

GENERAL NOTES

A. SCOPE OF THIS PROJECT IS A NEW TENANT IMPROVEMENT IN AN EXISTING BUILDING TENANT SPACE. WORK INCLUDES NEW NON-BEARING PARTITIONS, NEW CEILING, NEW CASE WORK, NEW FINISHES, NEW MECHANICAL, PLUMBING AND ELECTRICAL. TYPICAL WALL TO GO 6" ABOVE CEILING GRID.

B. NEW CEILING GRID, TEES, MAINS, AND TILES TO BE ARMSTRONG, DUNE, 2X4 TEGULAR AT 12'-0" A.F.F. UNLESS NOTED OTHERWISE. HOLD AS HIGH AS POSSIBLE.

C. PROVIDE NEW LIGHT FIXTURES AS INDICATED ON PLAN. PROVIDE ONE LIGHT FIXTURE FOR 75 SQUARE FEET OF TENANT FLOOR AREA UNLESS NOTED OTHERWISE.

D. NEW AND EXISTING HVAC SYSTEM, NEW AND EXISTING SPRINKLERS AND LIFE SAFETY DEVICES PER LAYOUT AND APPLICABLE CODES. CONTRACTOR TO PRICE NEW LIFE SAFETY DEVICES IF NONE EXIST. SPRINKLER HEADS IN THE CONTROL ZONE AREA SHOULD BE FLUSH OR SEMI RECESSED. THE COVER PLATES ARE TO BE WHITE FINISHED OR PAINTED TO MATCH THE CEILING COLOR.

E. VERIFY INSULATION AT ALL EXISTING INTERIOR AND EXTERIOR WALLS PROVIDE NEW IF NONE EXISTS.

F. ALIGNING WALLS WITH EXISTING COLUMN PLACEMENT PER PLAN TAKES PRECEDENCE OVER DIMENSIONS.

G. PROVIDE FURRING AS REQUIRED TO ACCOMMODATE POWER ON NON FURRED SHELL WALLS AND COLUMNS.

H. DEMO EXISTING WINDOW COVERINGS DURING CONSTRUCTION.

I. PARTITIONS SHOWN AS "ALIGNING" WITH COLUMNS ARE INTENDED TO HAVE FINISHED GYP. BD. FACE ALIGN WITH THE FINISHED GYP. BD. FACE.

J. PREPARE WALL AND FLOOR SURFACES TO RECEIVE NEW FINISHES AS SPECIFIED IN THE FINISH SCHEDULE.

K. PROVIDE BLOCKING IN WALL FOR ALL WALL MOUNTED MILLWORK SUPPLIED AND INSTALLED BY CONTRACTOR. WOOD BLOCKING IS TO BE FIRE-RETARDANT TREATED PER IBC.

L. ALL PLASTIC LAMINATED MILLWORK MUST CONFORM TO AWI STANDARDS FOR CUSTOM GRADE.

M. ALL FURNITURE/EQUIPMENT IN PLAN IS SHOWN FOR EXITING PURPOSES ONLY AND IS NOT IN CONTRACT UNLESS OTHERWISE NOTED.

N. CONTRACTOR TO PROVIDE THE CORRECT NUMBER OF FIRE LIFE SAFETY DEVICES (FIRE EXTINGUISHERS & HORNS/STROBES) AS REQUIRED BY CODE. EXACT LOCATION AND QUANTITY TO BE DETERMINED.

O. ALL DOORS TO HAVE LEVER STYLE HARDWARE SCHLAGE KEY C KEYWAY, UNLESS OTHERWISE NOTED.

P. CONTRACTOR TO PROVIDE INSULATION TO BE WIRED IN AT ALL EXTERIOR WALLS. R-19 AT EXTERIOR WALLS AND R-30 AT ROOF CAVITIES. PROVIDE TYPE X GYP. BD. AT ALL EXTERIOR WALLS.

Q. PROVIDE SOUND BATT INSULATION IN WALLS AND CEILING AS INDICATED PER PLAN.

R. CONTRACTOR TO VERIFY REVEALS AT EACH WINDOW AND FURR AS NEEDED PER FIELD CONDITIONS.

S. VERIFY WITH EQUIPMENT VENDORS SPECIAL EQUIPMENT NEEDS PRIOR TO CONSTRUCTION.

T. SMOKE AND FLAME SPREAD FOR INTERIOR WALLS AND CEILINGS PER ASTM E-84 AND PER THE IBC 803. CLASS C FINISHES REQUIRED FOR "B" OCCUPANCIES PER IBC SECTION 803 TABLE 803.5

U. THERMAL AND ACOUSTIC INSULATION SHALL COMPLY WITH IBC AND ASTM E-84.

WALL LEGEND

- PARTITION TYPE: SEE PAGE IA-3. (B1)
- PARTITION TYPE: SEE PAGE IA-3 (D1)
- PARTITION TYPE: SEE PAGE IA-3 (C1)
- PARTITION TYPE: SEE PAGE IA-3 (C3)
- PARTITION TYPE: SEE PAGE IA-3 (E4)

A Design IN VISION
INTERIOR ARCHITECTURE & DESIGN

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: K.AMEN
Drawn by: E. BAILEY
Checked by: D.CURTIS
Project Number: 22350

REGISTERED ARCHITECT CERTIFICATE NO. 60858 DANIEL CURTIS 2-04-25 Signed ARIZONA, U.S.A.
Expires 6.30.26

CS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

1	CITY COMMENTS 10/2/23
2	TENANT COORDINATION 10/2/
3	CITY COMMENTS 2/12/24
4	TENANT COORDINATION 1/31/

DATE:	ISSUED FOR:
4/12/23	PERMIT

SHEET:

IA-2

REV Plan #: 2302856-01-RVSN Date: 02/12/25

REV Plan #: 2302856-01-RVSN Date: 02/12/25

APPENDIX F.2
Access Control Request Form

CS CLEAN SOLUTIONS INC
ACCESS CARD AUTHORIZATION REQUEST FORM

Card Number _____
To be completed by Security

Tenants: _____

Employee Name _____

Contact Number: _____

Email: _____

Please choose one:

☐ New Card ☐ Replacement Card ☐ Reassign Existing Card Number _____

☐ Terminate Access Card Number

Please choose one:

☐ New Employee ☐ Current Employee ☐ Contractor ☐ Other

Authorized Request: (Please check one):

☐ Level 1 (general building access)

☐ Level 2 (process area access)

THE OFFICE OF THE BUILDING MUST BE NOTIFIED IMMEDIATELY IF ACCESS CARD IS LOST OR STOLEN OR IF EMPLOYEE IS NO LONGER AUTHORIEZED FOR AFTER-HOURS ACCESS TO THE BUILDING.

Date: _____ Authorized representative: _____

Print Name of Representative: _____

APPENDIX F.3
Inspection Logs

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or secondary containment, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Containers and bulk containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Placement and storage acceptable	Drum aisle spacing: 30" (minimum), height of stack: 1 high maximum		
Containers, bulk containers, and columns closed and secured	Open lids or bungs		
Labeling of containers and storage bulk containers	Improper identification, missing labels, accumulation date missing		
Storage capacity is not exceeded	$\geq$10 55-gallon containers, $\geq$10 spent columns, >2 275-gallon totes		
Wastewater bulk container is provided with start accumulation date	Missing label, date		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Waste material holding time within maximum limit	1-year maximum handling time for spent granulate material from delivery to disposal (applies only to off-site, non-reclaimed waste storage). 90-days for onsite generated wastes.		
Secondary Containment	Secondary containment present and capable of supporting 110% of largest container		
Compatible Waste	Incompatible waste is stored so that spill will not comingle		
Wastewater generation log is available and in-use	Missing generation log, not in use		
Wastewater storage duration has not exceeded permit limitations	Limitations based on hazardous waste generator status (<90 days)		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **PREPARATION AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle Space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping and pumps in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns or waste		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **WASTE MATERIAL TRANSFER AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Tanks and bulk containers in good condition	Leaks, dents, corrosion, deterioration		
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns, only satellite storage area		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Shipping containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG

DONNING AND DOFFING PASSTHROUGH AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (if applicable)
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
All fire extinguishers visible and accessible	Not properly identified, missing, not mounted securely		
All fire extinguishers fully charged	Not adequately charged		
Fire alarm system functioning properly and has been tested in the past year	Pull boxes not functioning properly, loss of water pressure or alarm signal for sprinklers		
At least 18-inch clearance provided for all sprinkler heads	Material or equipment storage issues		
Smoke alarms functioning correctly	Loss of power, blocked, damaged		
All exits marked with exit signs and illuminated	Missing signage, loss of power, damaged		
Evacuation plans posted near doors and/or common areas	Missing signage, not accurate, not sufficient size		
All doorways and hallways leading to an exit free and clear and provided illumination	Material or equipment storage issues, loss, or power, damaged		
Emergency notification equipment including telephone and/or paging system operational	Loss of power, blocked, damaged		
Emergency phone numbers posted	Missing signage, not accurate		
Emergency lights functioning correctly	Loss of power, blocked, damaged		
First aid kits visible and accessible	Not properly identified, missing, not accessible		
First aid kits stocked as required and expiration dates current	Depleted or missing inventory, expired components		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available and in good condition	Broken, dirty, missing equipment (includes air supply system, respirators, chemical resistant clothing, eye protection, gloves)		
Spill kits readily available and include adequate materials	Missing, damaged, not accessible		
Duct flow pressure gauge operating correctly	Damaged, loss of power, faulted		
Ventilation	HEPA present and functioning, Cleanprotect operating		
Liquid level switch operating correctly	Damaged, loss of power, faulted		
Gas/O_2 Detection System calibrated and operating correctly	Expired calibration, damaged, loss of power, faulted		
Emergency Generator	Checked for operation in loss of power, maintained		
Uninterruptible Power Supply (UPS)	Checked for operation in loss of power, maintained		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available	Includes air supply system, respirators, chemical resistant clothing, eye protection, gloves in stock		
Respirators in good condition	Respirator components (mouthpiece, supplied air systems, connections), broken or damaged, dirty.		
Chemical resistant clothing	Good condition, no holes, damage, or dirty/used equipment.		
Gloves	Good condition, no holes, damage, or dirty/used equipment.		
Eye protection	Good condition, no holes, damage, or dirty/used equipment.		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

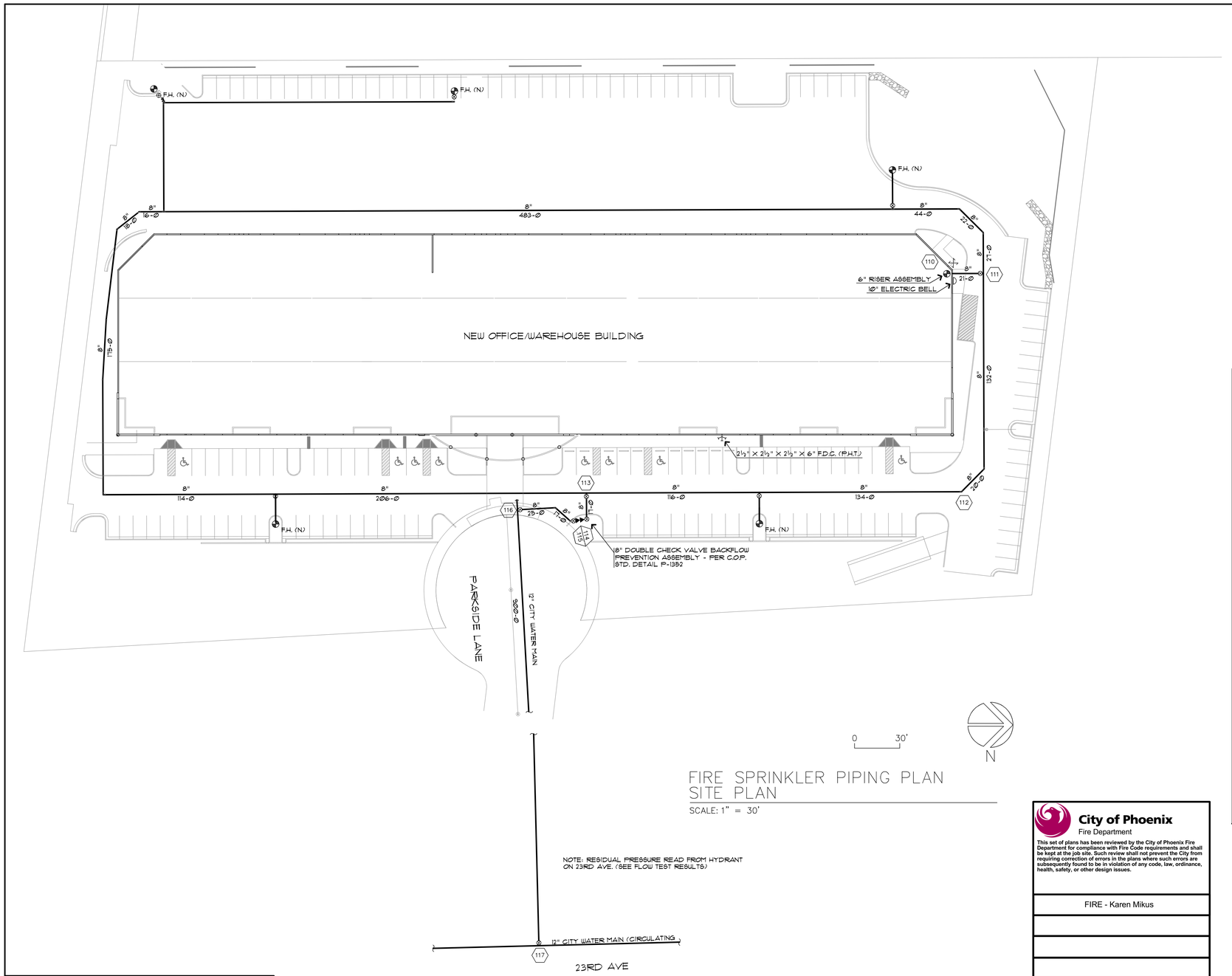
MONTHLY INSPECTION LOG – SECURITY

WASTE MATERIAL TRANSFER ROOM. WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Yes/No	Date and Type of Repair Performed (Location if applicable)
Facility perimeter fence in acceptable condition	Damaged, deteriorated, missing		
Warning signs posted and in acceptable condition	Missing, damaged		
Building security system operating correctly	Damaged, loss of power, notifications not provided		
All doors and key card system operational	Damaged, cannot close or lock		
Lighting on interior and exterior adequate	Damaged bulbs, loss of power		

APPENDIX F.4
Fire Sprinkler Design



FIRE SPRINKLER PIPING PLAN SITE PLAN

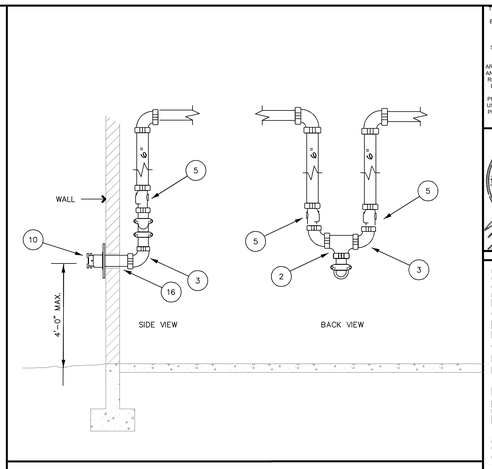
SCALE: 1" = 30'

NOTE: RESIDUAL PRESSURE READ FROM HYDRANT ON 23RD AVE. (SEE FLOW TEST RESULTS)

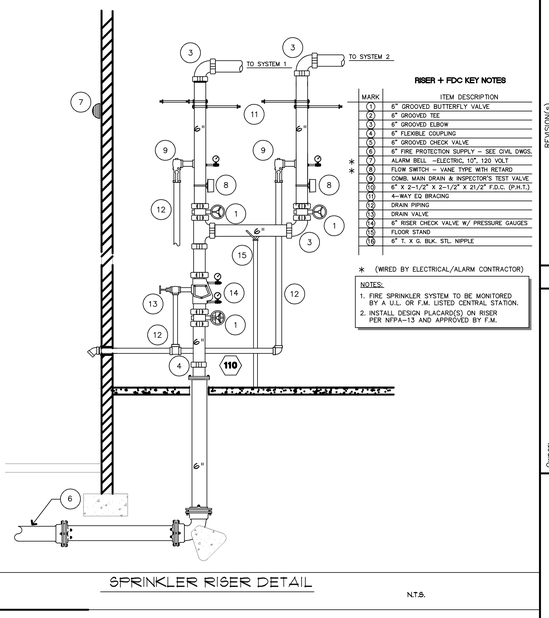
12" CITY WATER MAIN (CIRCULATING)

117

23RD AVE



REMOTE F.D.C. DETAIL



RISER + FDC KEY NOTES

MARK	ITEM DESCRIPTION
1	6" GROOVED BUTTERFLY VALVE
2	6" GROOVED TEE
3	6" GROOVED ELBOW
4	6" FLEXIBLE COUPLING
5	6" GROOVED CHECK VALVE
6	6" FIRE PROTECTION SUPPLY – SEE CIVIL DWGS.
7	ALARM BELL –ELECTRIC, 10", 120 VOLT
8	FLOW SWITCH – VANE TYPE WITH RETARD
9	COMB. MAIN DRAIN & INSPECTOR'S TEST VALVE
10	6" X 2-1/2" X 2-1/2" X 21/2" F.D.C. (P.H.T.)
11	4-WAY EQ BRACING
12	DRAIN PIPING
13	DRAIN VALVE
14	6" RISER CHECK VALVE W/ PRESSURE GAUGES
15	FLOOR STAND
16	6" T. X Q. BLK. STL. NIPPLE

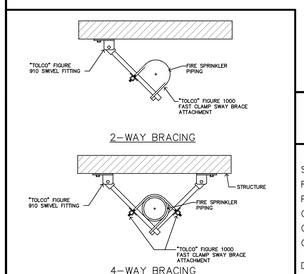
* (WIRED BY ELECTRICAL/ALARM CONTRACTOR)

NOTES:
1. FIRE SPRINKLER SYSTEM TO BE MONITORED BY A U.L. OR F.M. LISTED CENTRAL STATION.
2. INSTALL DESIGN PLACARD(S) ON RISER PER NFPA-13 AND APPROVED BY F.M.

SPRINKLER RISER DETAIL N.T.S.

GENERAL NOTES:

1. SYSTEM DESIGN, MATERIAL, AND INSTALLATION SHALL BE PER NFPA 13 (2019), AND CITY OF PHOENIX FIRE CODES.
2. THREADED PIPE SHALL BE Sch. 40 BLACK STEEL.
   ROLL GROOVED PIPE SHALL BE Sch. 10 BLACK STEEL.
   CAST IRON FITTINGS SHALL BE LISTED BY U.L. FOR USE IN FIRE PROTECTION, AND A WORKING PRESSURE OF 175 P.S.I., GROOVED FITTINGS, GROOVED COUPLINGS, MECHANICAL TEE'S, SHALL BE LISTED BY U.L. FOR USE IN FIRE PROTECTION.
4. ALL RELATED ELECTRICAL WORK SHALL BE PERFORMED BY OTHERS.
5. ALL PIPE PENETRATIONS THROUGH MASONRY WALLS SHALL BE PATCHED AND SEALED WITH APPROVED SEALANT.
6. HYDRAULIC CALCULATION DECAL(S) SHALL BE ATTACHED TO THE FIRE SPRINKLER RISER.
7. ALL PIPE DIMENSIONS ARE CENTER TO CENTER UNLESS NOTED OTHERWISE.
8. SPARE HEAD CABINET(S), SPARE SPRINKLER HEADS PER N.F.P.A. #13, SPRINKLER WRENCH, AND N.F.P.A. #25 SHALL BE LOCATED AT THE RISER LOCATION.
9. ALL VALVES SHALL HAVE A PERMANENTLY AFFIXED SIGN INDICATING ITS FUNCTION.
10. ALL SYTEM PIPING SHALL BE HYDROSTATICALLY TESTED AT 200 P.S.I. FOR 2 HOURS OR 50 P.S.I. ABOVE THE SYSTEMS NORMAL WORKING PRESSURE, WHICHEVER IS GREATER. PRESSURE AND ACCEPTANCE TESTS SHALL BE PERFORMED BY THE SPRINKLER CONTRACTOR AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.
11. DURING INSTALLATION OF THE FIRE SPRINKLER SYSTEM, AN APPROVED SET OF PLANS MUST BE ON SITE AT ALL TIMES.
12. THIRD PARTY MONITORING REQUIRED (BY OTHERS).



NOTE:
1. INSTALL PER N.F.P.A. #13

SWAY BRACE DETAIL N.T.S.

FLOW TEST SUMMARY

STATIC PSI	83
RESIDUAL PSI	80
PITOT PSI	58/44
ORIFICE DIAMETER	4" & 4"
COEFFICIENT OF DISCHARGE	0.9
GPM	6121
DATE:	11/20/20 9:00 AM
LOCATION:	2453 W. PARKSIDE LANE
CONDUCTED BY:	CITY OF PHOENIX
WITNESSED BY:	

FLOW TEST UTILIZED

STATIC PSI	79
RESIDUAL PSI	70
PITOT PSI	58/44
ORIFICE DIAMETER	4" & 4"
COEFFICIENT OF DISCHARGE	0.9
GPM	6121

ALLOWS FOR 10PSI SAFETY FACTOR

LEGEND

- INDICATES 4-WAY SWAY BRACE
- INDICATES HANGER LOCATION
- INDICATES TRAPEZE HANGER LOCATION
- INDICATES HYDRAULIC CALCULATION NODE

T.O.R.	TOP OF RISER
B.O.R.	BOTTOM OF RISER
A.S.R.	AUTOMATIC SPRINKLER RISER
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
C.H.	CEILING HEIGHT A.F.F.
R.N.	RISER NIPPLE
TYP.	TYPICAL
D.D.	DROP DOWN
R.U.	RISE UP

City of Phoenix
Fire Department

This set of plans has been reviewed by the City of Phoenix Fire Department for compliance with Fire Code requirements and shall be kept at the job site. Such review shall not prevent the City from requiring correction of errors in the plans where such errors are subsequently found to be in violation of any code, law, ordinance, health, safety, or other design issues.

FIRE - Karen Mikus

PROJECT DATA:

BUILDING AREA: = 71,518 SQ. FT.

OCCUPANCIES/HAZARDS PER NFPA 13, 2019 & C.O.P. FIRE CODE

SYSTEM DESIGN TO MEET C.O.P. REQUIREMENTS FOR SPECULATIVE OFFICE/WAREHOUSE SHELL BUILDING TO MEET REQUIREMENTS FOR HIGH-PILED STORAGE OF CARTONED NONEXPANDED CLASS A PLASTIC PER NFPA 13, 2019, TABLES 23.4.2 & 23.6.1

ESFR SYSTEM
MAXIMUM CEILING/ROOF HEIGHT OF 30 FEET (27 FEET ACTUAL)
STORAGE HEIGHT OF 25 FEET (23 FEET ACTUAL)

SYSTEM 1 (SOUTH) IS THE REMOTE SYSTEM FROM RISER. SYSTEM 2 (NORTH) PIPING SIZES ARE SAME AS SYSTEM 2 AND THEREFORE NOT CALCULATED.

OWNER

ARIZONA OPPORTUNITY FUND, LLC
15900 N. 78TH ST., SUITE 100
SCOTTSDALE, AZ 85260
PHONE: 610-442-8244

THESE FIRE SPRINKLER DRAWINGS HAVE BEEN REVIEWED BY:

JOHN A. MULL JR. 11/16/21
SPRINKLER ENGINEERING TECHNICIAN DATE
NICET LEVEL IV
CERTIFICATE NO. 072059
EXPIRATION DATE: 8/1/2023

THE PROFESSIONAL REGISTRANT ACTIVITIES CONSIDERED FOR THIS PROJECT BY BDB ENGINEERING COMPANY, LLC, "BDB" ARE AS FOLLOWS: RANGE OF HAZARDS; HAZARD ANALYSIS; HAZARD CLASSIFICATION; DETERMINATION OF APPLICABLE CODES, STANDARDS AND PRACTICES; AVAILABILITY AND ADEQUACY OF THE WATER SUPPLY; DETERMINATION OF DESIGN DENSITY AND AREA OF OPERATION FOR EACH HAZARD AREA. ANY REGISTRANT ACTIVITIES OR ENGINEERING REVIEWS PERFORMED FOR THIS PROJECT BY BDB ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND PROTECTED AS SUCH. IT IS PROPRIETARY AND SHALL NOT BE REPRODUCED OR USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECTS OR PURPOSES, OR BY ANY OTHER PARTIES, WITHOUT THE WRITTEN AUTHORIZATION OF BDB.

Registered Professional Engineering Representative
CERTIFICATE NO.
30980
TODD A. BUDDIK
Date 9/1/21
Signed
Expiration 6/30/22

AMS FIRE PROTECTION
PO BOX 2018
CHANDLER, ARIZONA 85224
PHONE #: 480-347-8900
FAX #: 480-306-5005
R.O.C. LICENSE #: 301058

REVISION(S)

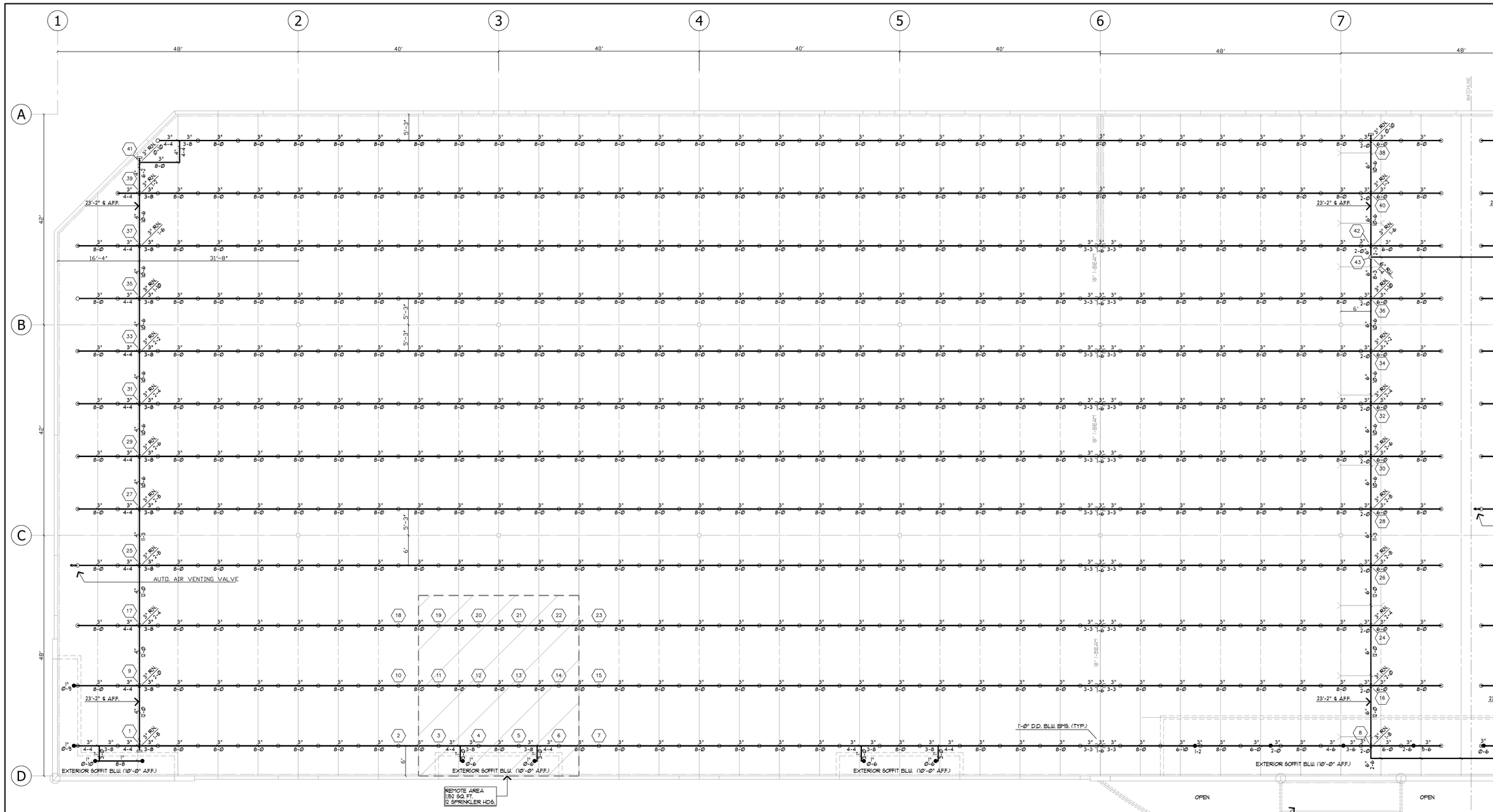
Owner:

Project:
Arizona Opportunity Fund
FIRE SPRINKLER SYSTEM
2453 W. PARKSIDE LANE
PHOENIX, ARIZONA 85203

Sheet Title
Fire Protection Plan

Date: 11/16/21
Job Number:
Drawn by: JM
Checked by:
Sheet No.
FP1
of 4

City of Phoenix Plan #: 211827-FPPD Date: 01/14/22



SYSTEM 1 PIPING PLAN (SOUTH)

SCALE: 1/8" = 1'-0"

HEAD COUNT

QTY	SYMBOL	MAKE	MODEL	THREAD SIZE	K FACTOR	DEGREE F	HEAD FINISH	ESCUTCHEON STYLE & FINISH	DEFLECTOR STYLE	REMARKS
417	○	RELIABLE	N25	1"	25.2	212 DEG F	BRASS	N/A	PENDENT	ESFR
12	●	RELIABLE	F1FR	1/2"	5.6	200 DEG F	CHROME	CHROME SEMI-RECESSED	PENDENT	QUICK RESPONSE

429 TOTAL FOR SYSTEM 1 (SOUTH)

CALCULATION DESIGN INFORMATION

AREA OF SYSTEM: SOUTH PART OF FLR. AREA
OCCUPANCY: SPECULATIVE
HAZARD: HIGH-PILED STORAGE
DISCHARGE DENSITY: 1.02
AREA OF APPLICATION: 1,152 SQ. FT. (12 HDS.)
COVERAGE PER SPKR.: 96 SQ. FT.
HOSE STREAM ALLOWANCE:
INSIDE: - OUTSIDE: 250

SYSTEM DEMAND

FLOW & PRESS. @ B.O.R. REQ'D 1181 GPM@ 52 PSI
PSI LOSS FOR BACKFLOW PREV. : 8
BFP MODEL : WILKINS 450 OR EQUAL
FLOW & PRESS. @ SOURCE REQ'D 1431 GPM@ 74 PSI
FLOW & PRESS. AVAIL.@ SOURCE 1431 GPM@ 78 PSI

SYSTEM NO. 1 R.A. NO.

DESIGNED FOR GROUP A CARTONED UNEXPANDED PLASTICS PER NFPA 13 (2019), TABLE 23.4.2 & 23.6.1
MAX. CLG. HT. = 30' (ACTUAL = 27')
MAX. STORAGE HT. = 25' (ACTUAL 23')

THESE FIRE SPRINKLER DRAWINGS HAVE BEEN REVIEWED BY:

JOHN A. MULL JR. 11/16/21
SPRINKLER ENGINEERING TECHNICIAN DATE
NICET LEVEL IV
CERTIFICATE NO. 072059
EXPIRATION DATE: 8/1/2023

THE PROFESSIONAL REGISTRANT ACTIVITIES CONSIDERED FOR THIS PROJECT BY BDB ENGINEERING COMPANY, LLC, "BDB" ARE AS FOLLOWS: RANGE OF HAZARDS; HAZARD ANALYSIS; HAZARD CLASSIFICATION; DETERMINATION OF APPLICABLE CODES, STANDARDS AND PRACTICES; AVAILABILITY AND ADEQUACY OF THE WATER SUPPLY; DETERMINATION OF DESIGN DENSITY AND AREA OF OPERATION FOR EACH HAZARD AREA. ANY REGISTRANT ACTIVITIES OR ENGINEERING REVIEWS PERFORMED FOR THIS PROJECT BY BDB ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND PROTECTED AS SUCH. IT IS PROPRIETARY AND NOT TO BE COPIED OR OTHERWISE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECTS OR PURPOSES, OR BY ANY OTHER PARTIES, WITHOUT THE WRITTEN AUTHORIZATION OF BDB.

Registered Professional Engineer Certificate No. 30950 TODD A. BUDDE 9-30-22 Arizona U.S.A.

AMS FIRE PROTECTION
PO BOX 2018
CHANDLER, ARIZONA 85224
PHONE #: 480-347-8900
FAX #: 480-306-5005
R.O.C. LICENSE #: 301058

REVISION(S)

Owner:

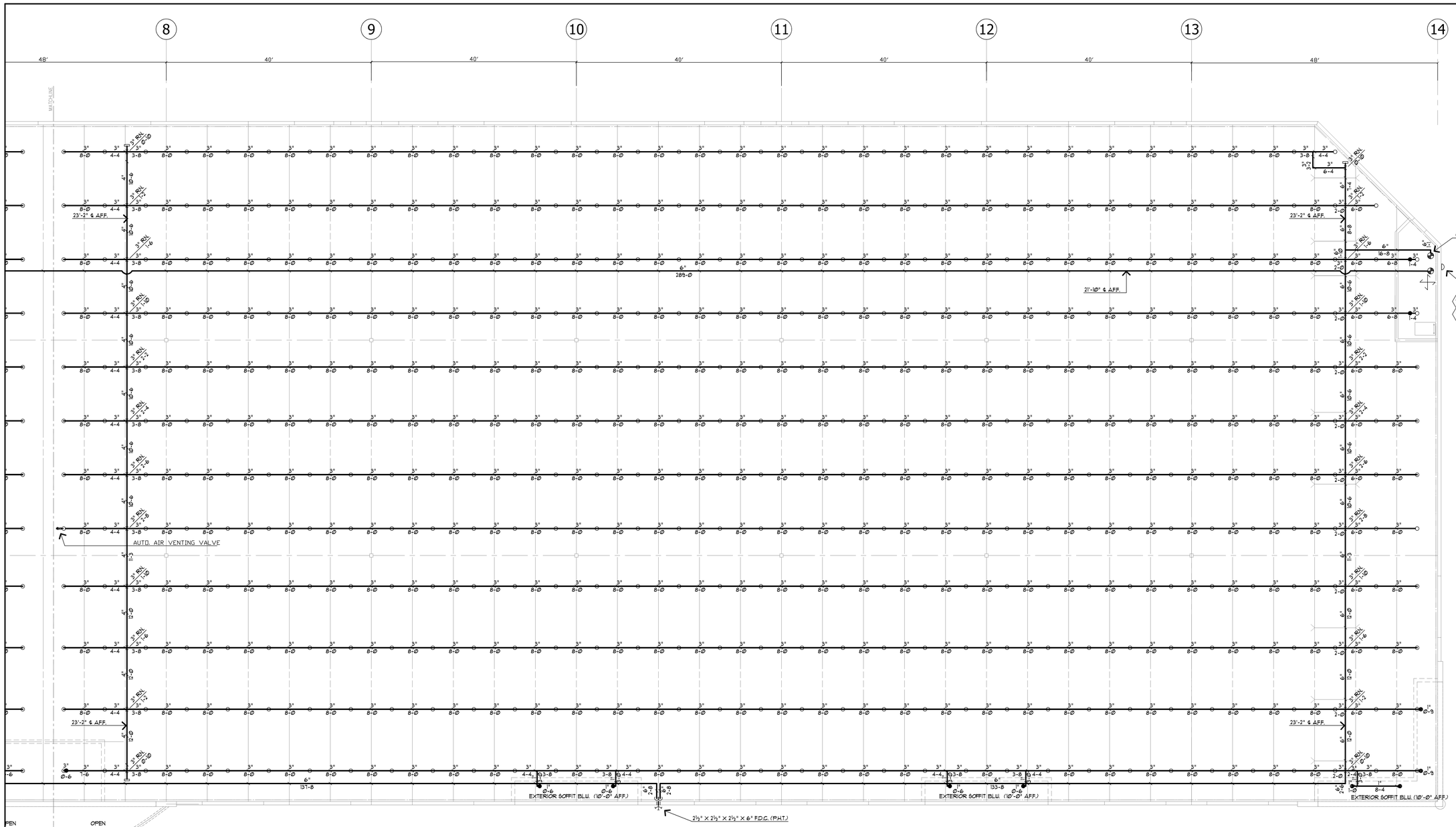
Project:
Arizona Opportunity Fund
FIRE SPRINKLER SYSTEM
2453 W. PARKSIDE LANE
PHOENIX, ARIZONA 85203

Sheet Title
Fire Protection Plan

Date: 11/16/21
Job Number:
Drawn by: JM
Checked by:
Sheet No.
FP2
of 4

City of Phoenix Plan #: 211827-FPPD Date: 01/14/22

City of Phoenix Plan #: 211827-FPPD Date: 01/14/22



SYSTEM 2 PIPING PLAN (NORTH)

SCALE: 1/8" = 1'-0"

HEAD COUNT

QTY	SYMBOL	MAKE	MODEL	THREAD SIZE	k FACTOR	DEGREE F	HEAD FINISH	ESCUTCHEON STYLE & FINISH	DEFLECTOR STYLE	REMARKS
405	○	RELIABLE	N25	1"	25.2	212 DEG F	BRASS	N/A	PENDENT	ESFR
11	●	RELIABLE	F1FR	1/2"	5.6	200 DEG F	CHROME	CHROME 401 STYLE	PENDENT	QUICK RESPONSE
416	TOTAL FOR SYSTEM 2 (NORTH)									

THESE FIRE SPRINKLER DRAWINGS HAVE BEEN REVIEWED BY:

JOHN A. MULL JR. — 11/16/21 DATE
SPRINKLER ENGINEERING TECHNICIAN
NICET LEVEL IV
CERTIFICATE NO. 072059
EXPIRATION DATE: 8/1/2023

THE PROFESSIONAL REGISTRANT ACTIVITIES CONSIDERED FOR THIS PROJECT BY BDB ENGINEERING COMPANY, LLC, "BDB" ARE AS FOLLOWS: RANGE OF HAZARDS; HAZARD ANALYSIS; HAZARD CLASSIFICATION; DETERMINATION OF APPLICABLE CODES, STANDARDS AND PRACTICES; AVAILABILITY AND ADEQUACY OF THE WATER SUPPLY; DETERMINATION OF DESIGN DENSITY AND AREA OF OPERATION FOR EACH HAZARD AREA. ANY REGISTRANT ACTIVITIES OR ENGINEERING REVIEWS PERFORMED FOR THIS PROJECT BY BDB ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND PROTECTED AS SUCH. IT IS PROPRIETARY AND NOT TO BE COPIED OR USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECTS OR PURPOSES, OR BY ANY OTHER PARTIES, WITHOUT THE WRITTEN AUTHORIZATION OF BDB.

Professional Engineer Registration — CERTIFICATE NO. 30880 — TODD A. BUDZIK — 11.17.21 — Registered — ARIZONA U.S.A.

AMS FIRE PROTECTION
PO BOX 2018
CHANDLER, ARIZONA 85224
PHONE #: 480-347-8900
FAX #: 480-306-5005
R.O.C. LICENSE #: 301058

REVISION(S)

Owner:

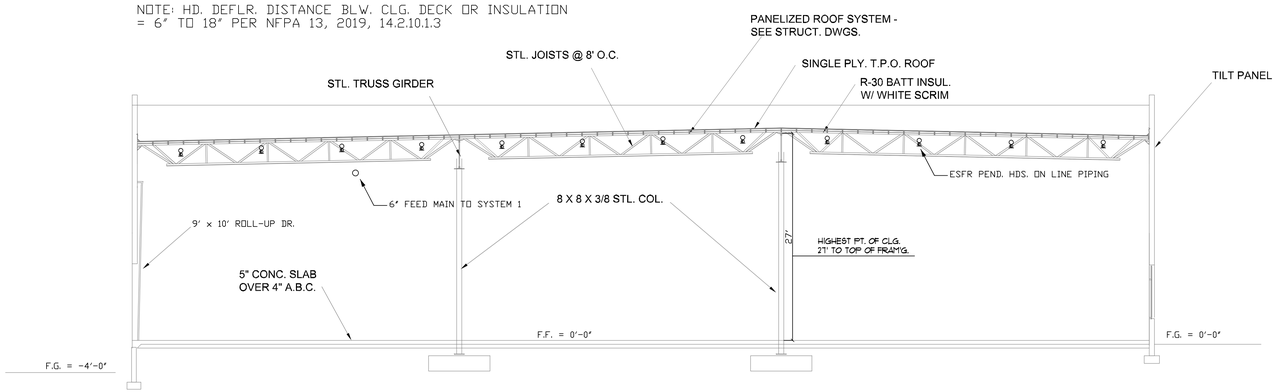
Project:
Arizona Opportunity Fund
FIRE SPRINKLER SYSTEM
2453 W. PARKSIDE LANE
PHOENIX, ARIZONA 85203

Sheet Title:
Fire Protection Plan

Date: 11/16/21
Job Number:
Drawn by: JM
Checked by:
Sheet No.
FP3
of 4

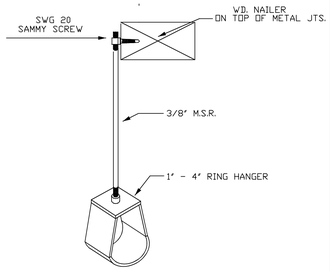
City of Phoenix Plan #: 211827-FPPD Date: 01/14/22

NOTE: HD. DEFLR. DISTANCE BLW. CLG. DECK OR INSULATION = 6" TO 18" PER NFPA 13, 2019, 14.2.10.1.3



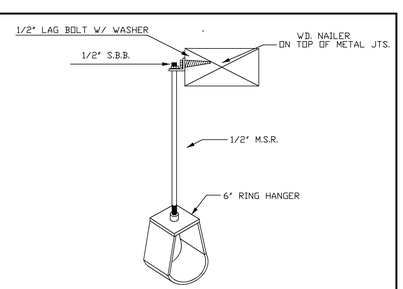
BUILDING SECTION

SCALE: 1/8" = 1'-0"



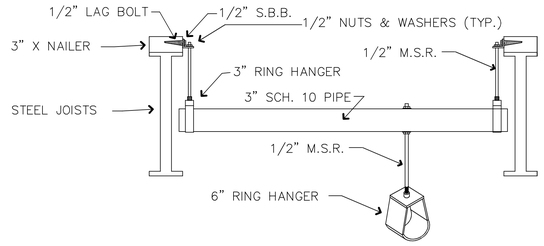
HANGER DETAIL N.T.S.

NOTE :
1. INSTALL PER NFPA 13 AND SAMMY SCREW SPECIFICATIONS.



HANGER DETAIL N.T.S.

NOTE :
1. INSTALL PER NFPA 13



TRAPEZE HANGER DETAIL NTS

THESE FIRE SPRINKLER DRAWINGS HAVE BEEN REVIEWED BY:

11/16/21
JOHN A. MULL JR. DATE
SPRINKLER ENGINEERING TECHNICIAN
NICET LEVEL IV
CERTIFICATE NO. 072059
EXPIRATION DATE: 8/1/2023

THE PROFESSIONAL REGISTRANT ACTIVITIES CONSIDERED FOR THIS PROJECT BY BDB ENGINEERING COMPANY, LLC, "BDB" ARE AS FOLLOWS: RANGE OF HAZARDS; HAZARD ANALYSIS; HAZARD CLASSIFICATION; DETERMINATION OF APPLICABLE CODES, STANDARDS AND PRACTICES; AVAILABILITY AND ADEQUACY OF THE WATER SUPPLY; DETERMINATION OF DESIGN DENSITY AND AREA OF OPERATION FOR EACH HAZARD AREA. ANY REGISTRANT ACTIVITIES OR ENGINEERING REVIEWS PERFORMED FOR THIS PROJECT BY BDB ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND PROTECTED AS SUCH. IT IS PROPRIETARY AND SHALL NOT BE COPIED OR USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECTS OR PURPOSES, OR BY ANY OTHER PARTIES, WITHOUT THE WRITTEN AUTHORIZATION OF BDB.

Professional Engineer Registration CERTIFICATE NO. 30980 TODD A. BUDDIE 9/30/21 Renewal Date Arizona U.S.A.

AMS FIRE PROTECTION
PO BOX 2018
CHANDLER, ARIZONA 85224
PHONE #: 480-347-8900
FAX #: 480-306-5005
R.O.C. LICENSE #: 301058

REVISION(s)

Owner:

Project:
Arizona Opportunity Fund
FIRE SPRINKLER SYSTEM
2453 W. PARKSIDE LANE
PHOENIX, ARIZONA 85203

Sheet Title
Fire Protection Plan

Date: 11/16/21
Job Number:
Drawn by: JM
Checked by:
Sheet No.
FP4
of 4

APPENDIX F.5
First Responder Arrangements

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Mike Duran III
Fire Chief
City of Phoenix Fire Department
2409 W Cactus Road
Phoenix, AZ 85029

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Chief Duran:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with applicable federal and state regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared For:

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

Issued On: March 12, 2025

Revised On: October 27, 2025

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GENERAL INFORMATION

Project/Site Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Consultant Information:
HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032
Phone: 860-674-9570
Fax: 860-674-9624
E-mail: David.Webster@hrpassociates.com
Project Number: CSC0011.PS

Client Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Report Date: October 27, 2025

Report Author:
Chelsea Thompson
Associate EH&S Consultant

Client Manager:
David Webster
Senior EH&S Project Manager

Reviewed By:
David Webster
Senior EH&S Project Manager

1.0 EXECUTIVE SUMMARY

Executive Summary

This Emergency Action and Contingency Plan has been updated for CS Clean Systems (CS Clean) in order to comply with State and Federal Hazardous Waste Regulations and Occupational Safety and Health Administration (OSHA) Emergency Response Plan regulations. The purpose of this plan is to act as a guide during an actual emergency, to minimize hazards to human health and the environment from fires, explosions, and other releases, and to familiarize local emergency response personnel with the types and locations of materials kept onsite.

Contingency Plan Submittal

A copy of this updated Contingency Plan must be submitted to the following agencies:

- Local Police Department
- Local Fire Department
- Local Hospital/Urgent Care
- Local Emergency Planning Committee (LEPC)
- State Emergency Response Commission (SERC)

Implementation of the Contingency Plan

The Contingency Plan should be implemented under any of the following situations:

- Fire/Explosion
- Spill/Release
- Flood
- Other Emergencies

Initial Notifications

The following people are responsible for implementing this plan (See **Section 3.2** for details.):

- Jacob Newman – Emergency Coordinator
    - 24-Hour Phone: (360) 852-6410
- Jason Dugay – Alternate Emergency Coordinator
    - 24-Hour Phone: (203) 648-0881
- Adam Furphy – Alternate Emergency Coordinator
    - 24-Hour Phone: (845) 337-7385

Emergency Procedures

Emergency procedures are in the sections noted below:

- Immediate Procedures (**Section 3.4.1**)
- During Emergency (**Section 3.4.2**)
- Follow-up Procedures (**Section 3.4.3**)

Control Procedures

Emergency Procedural Flow Charts for the following situations are included in the sections noted below:

- Fires/Explosions (**Section 3.5.4**)
- Spills/Releases (**Section 3.5.5**)

Emergency Equipment

The locations of emergency equipment at CS Clean can be found on **Figure 3** and are posted around the facility. **Table 3** describes the facility's emergency equipment as well as its uses and locations.

Evacuation

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. **Figures 1** and **3** show CS Clean evacuation routes and **Section 3.7** includes procedural details.

Reporting of Emergency Incidents

Immediately after an environmental emergency the event must be reported to the Commissioner of the Arizona Department of Environmental Protection (ADEQ) as well as the Regional Administrator of the U.S. Environmental Protection Agency (EPA). A written report must be filed within fifteen days of an environmental emergency, the Emergency Coordinator must report to ADEQ and EPA. Any work-related accidents that result in the death of an employee must be reported to OSHA within eight hours of the incident occurring and report any employee in-patient hospitalization, amputation, or loss of an eye within twenty-four hours.

Locations of Contingency Plan

Copies of this Contingency Plan are maintained at the facility on the internal CS Clean internet page. Access can be granted at the Administrative Assistant's office and the Environmental, Health and Safety Director's office.

Contingency Plan Revision

This Contingency Plan must be revised under any of the following conditions (but may not be limited to):

- Regulations are revised;
- Plan fails in an emergency;
- Facility changes (design, operation) which increases the potential of a fire, spill, or release;
- List of emergency coordinators changes; or
- List of emergency equipment changes.

2.0 INTRODUCTION

2.1 General Background

This combined Hazardous Waste Contingency and Emergency Response Plan has been created to help eliminate confusion for facility first responders during an emergency and to avoid duplication in the preparation and use of emergency response plans at CS Clean. The use of this single plan should also improve coordination between facility response personnel and local, state, and federal emergency response personnel.

The purpose of this plan is to comply with OSHA and EPA regulations under 29 Code of Federal Regulations (CFR) 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, respectively, as well as the Large Quantity Generator (LQG) Hazardous Waste Contingency Plan regulations under Sections R18-08-262, and Treatment, Storage, and Disposal facility (TSDF) requirements under 40 CFR 270.14(b)(7), 264.56, and Arizona Administrative Code (AAC) R-18-8-264. The goal of the combined plan is three-fold:

1. To act as a guide during actual emergency situations;
2. To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soils, or surface water; and
3. To familiarize local emergency response personnel (i.e., police, fire, and rescue departments, hospital, and governmental personnel) with the types of material handled at the facility and internal emergency response procedures.

CS Clean, located at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona, is a hazardous TSDF, generator of hazardous waste, and transfer of hazardous secondary materials (HSM) for reclaim. The primary role of the facility is to service gas abatement systems (columns), treatment, and storage of the waste contained in the columns. The North American Industry Classification System (NAICS) code for the facility is 333413 (Industrial/Commercial Fan and Blower and Air Purification Equipment Manufacturing) and the Standard Industrial Classification (SIC) code is 3564 (Air Purification Equipment). The plant consists of one main building that contains offices, waste storage, and waste repackaging areas. The facility has no onsite storage of liquid fuels for the site as the

facility runs on natural gas, aside from two to three cannisters of Propane for the Powered Industrial Trucks (PITs) onsite. Hazardous waste contained in containers and totes are stored within the main building in various designated areas. The Site Location is indicated on **Figure 1**.

CS Clean has up to eight employees onsite and usually operates one eight-hour shift Monday through Friday. On occasion there may be employees onsite during off-hours for miscellaneous/non-routine activities.

The manufacturing processes at CS Clean produce several different hazardous waste streams, treat, and store various hazardous waste streams. A list of potential waste streams and hazardous waste streams was previously reported to Phoenix Fire Department using the Hazardous Materials Identification System (HMIS). The generation rate, storage location, and handling methods for these wastes are discussed further in this section.

The following are the key elements of the Hazardous Waste Management Program as they apply to CS Clean:

- Identification and Listing Hazardous Waste
- Standards for Generators and Transporters of Hazardous Waste
- Hazardous Waste Facility Standards and Permit Requirements
- Hazardous Waste Shipping and Manifest Requirements

CS Clean operates as a TSDF station per AAC R-18-8-264. The facility receives spent Cleansorb columns of hazardous waste to treat the waste so Cleansorb columns can be utilized as part of a column regeneration process. Cleansorb vessels are designed to be reusable. A Cleansorb column is initially filled with virgin granulate, is installed in a manufacturing process exhaust scrubber at an offsite location, and will abate hazardous gases until such time that the granulate within it is spent. At that time, the end user purges the column with inert gas to remove any hazardous vapors which may remain in the column, removes the spent column for shipping, and installs a new Cleansorb column filled with virgin granulate. The spent column is then returned to CS Clean who then treats the waste and stores the waste prior to offsite disposal and decontamination of the Cleansorb column for reuse. The process is described in detail below for the treatment, storage, and disposal of spent columns.

- The receipt of spent scrubber columns containing potentially hazardous spent granulate from end product users;
- Removal of the spent granulate from the columns, which is then transferred into approved shipping containers at the CS Clean facility, followed by either:
    - Treatment and transportation of the spent granulate offsite for disposal via a third-party environmental services vendor.

      OR
    - Transferal of the spent granulate to a permitted reclamation facility for the recovery of precious metals, where possible.

- Decontamination, fine cleaning, testing, and refilling of the spent columns with virgin granulate; and,
- Shipping of the cleaned and regenerated columns to service at the end users' facilities.

Additionally, the facility is a permitted LQG, EPA I.D. #AZR000528570, with one hazardous waste Central Accumulation Area (CAA) storage. Waste is stored initially in Satellite Accumulation Areas (SAA) located throughout the waste process area. Once the SAA waste is removed the waste is transported to and stored in the CAA located to the west, within the waste storage area. The waste is stored for less than ninety days onsite prior to removal by a permitted hazardous waste transporter. The CAA is routinely inspected, and a copy of the Hazardous Waste Inspection Log is included as **Appendix A**.

Further information on the hazardous wastes and hazardous materials stored at CS Clean can be found in **Appendix B** identifies the storage location and applicable notes for each waste.

When disposing of a hazardous waste, the generator must fill out a Hazardous Waste Manifest form (with help from the hazardous waste transporter) which lists facility information, type and volume of waste being shipped offsite, transporter information, and details of the destination facility. CS Clean must retain copies of each manifest.

CS Clean utilizes hazardous materials in its production processes. Hazardous materials are stored throughout the facility. The hazardous materials are stored in containers with sizes ranging up to and including 55-gallon drums and 275-gallon totes. The hazardous constituents of the drums and totes are classified as flammable, pyrophoric, irritants, compressed gases, corrosive, or toxic materials. Other areas of hazardous material storage include a generator onsite with propane. Safety Data Sheets (SDSs) shall be maintained by the site and be made accessible for more specific information on the summarized hazards below in an emergency situation. Hazardous materials reported to the Phoenix Fire Department previously are included in the HMIS spreadsheet attached in **Appendix B**.

2.2 Amendments

This plan must be reviewed, and immediately amended, if necessary, whenever:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The generator facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Table 1 AMENDMENTS			
Section Amended	**Date**	**Description**	**Name of Amender**
Throughout	10/20/25	Updated Primary Coordinator Contact	Chelsea Thompson, Associate Consultant
Throughout	10/20/25	Update to inspections and TSDF	David Webster, Senior Project Manager

3.0 HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

3.1 Purpose

In accordance with 29 CFR 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, 40 CFR 264.56, and 40 CFR 270.14, respectively, as well as the ADEQ Hazardous Waste Contingency Plan regulations under Sections R18-08-262 and R18-08-262, this plan will be used in the event of an emergency.

The intent and purpose of this plan are:

- To act as a guide during actual emergency situations;
- To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or their constituents to the air, soils, or surface water; and
- To familiarize local emergency response personnel (e.g., police, fire, hospitals) with the types of material used and stored, and internal emergency response procedures.

The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

3.2 Initial Notifications

At CS Clean, the following personnel must be notified in the case of a sudden or non-sudden release of hazardous wastes, fire, or explosion.

The phone number at the plant to be used by persons outside the facility (e.g., police, fire, spill contractors, etc.) is (520) 263-0235.

TABLE 2 EMERGENCY CONTACTS				
Role	**Name**	**Address**	**Home/ Cell Phone**	**Facility Phone**
Emergency Coordinator	Jacob Newman	2453 West Parkside Lane, Suite 150, Phoenix, AZ	(360) 852-6410	(520) 263-0235
Alternate Emergency Coordinator	Jason Dugay	26 Commerce Drive, Danbury, CT	(203) 648-0881	(203) 797-8155
Alternate Emergency Coordinator	Adam Furphy	26 Commerce Drive, Danbury, CT	(845) 337-7385	(203) 797-8155

In case of an imminent, actual emergency at the plant, the Emergency Coordinator, or the Alternate, shall be contacted first. The Emergency Coordinator shall carry out the emergency plan agreed upon by local police, fire department, hospitals, contractors, and state and local emergency response teams.

Upon being notified, the **Emergency Coordinator** will obtain the following information:

1. Nature of Emergency (i.e., fire or spill);
2. Location of Emergency;
3. Size and Extent of Emergency;
4. Hazardous Materials Involved (if any); and
5. Injury to Personnel.

Emergency Coordinator Qualifications:

The Emergency Coordinator and the Alternates have been chosen based upon the following required qualifications:

- The Coordinator or Alternates must be onsite or on-call at all times;
- Must be familiar with the facility layout;
- Must know the locations and characteristics of the waste handled;
- Must be thoroughly familiar with contingency and emergency plans;
- Must be familiar with all operations and activities at the facility;
- Must know the locations of all records; and
- Must have the **authority** to commit facility resources in the event of an emergency.

3.3 Implementation of the Contingency Plan

The decision to implement the Contingency Plan depends upon whether an actual situation could threaten human health or the environment. This section outlines the decision making criteria that the Emergency Coordinator will use to define situations in which the Contingency Plan will be implemented. The Contingency Plan will be implemented in the following situations, or other situations upon the judgment of the Emergency Coordinator or, in his or her absence, the Alternate Emergency Coordinator.

Fire and/or Explosion

- A fire causes the release of toxic fumes.
- The fire spreads and could possibly ignite materials at other locations onsite or could cause heat induced explosions.
- The fire could possibly spread to offsite areas.
- Use of water or chemical fire suppressant could result in contaminated run-off.
- An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- An imminent danger exists that an explosion could ignite other hazards waste at the facility.
- An imminent danger exists that an explosion could result in the release of toxic materials.
- An explosion has occurred.

Spills or Material Release

- The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
- The spill could cause the release of toxic liquids or fumes.
- The spill can be contained onsite, but the potential exists for ground water contamination.
- The spill cannot be contained onsite, resulting in offsite soil contamination, air, or ground water or surface water pollution.

Floods

- Floods occur from rain, snow, storms, storm surges, or overflows of dams and water systems.
- Floods can lead to power outages, gas line emergencies, damage to the building and its contents, and create landslides.
- Flood water can become energized by electrical equipment exposed to flood waters.

Power Outage and Natural Gas Emergency

- The potential exists for power outages and natural gas emergencies, which could create an employee safety hazard or damage onsite machinery/equipment. In addition, in the event of a power outage, ventilation could be turned off, which establishes a dangerous environment due to fumes.
- Emergency Response Coordinators are responsible for evacuation and determining conditions under which hazardous conditions may exist due to power failure.

Natural Disasters and Inclement Weather

- The potential exists for natural disasters, such as hurricanes or tornadoes, as well as other types of inclement weather.

Bomb Threats, Civil Disturbances, Workplace Violence, and Suspicious Mail

- The potential exists for area bomb threats, civil disturbances, workplace violence, and/or suspicious mail.

Medical Responses

- Due to the inherent nature of the activities conducted at the facility, a potential exists for both serious medical and non-serious/non-emergency situations.

3.4 Emergency Procedures

3.4.1 Immediate

Emergency procedures are the responsibility of the Emergency Coordinator or his/her Alternate. Immediate procedures are outlined below.

1. If necessary, the Emergency Coordinator will activate internal facility alarms or communication systems to notify all facility personnel.
2. If safety permits, each operator should shut down his/her operations; most importantly turn off running processes, if safe to do so. See supervisor if unsure of procedure.
3. All personnel and visitors shall exit using predetermined routes described in this plan.
4. If their help is needed, the Emergency Coordinator will notify the appropriate State and local agencies included in the emergency procedural flow diagrams.
5. The Emergency Coordinator must identify the character, exact source, amount, and extent of any release materials and assess possible hazards to human health or the environment.
6. If the Emergency Coordinator determines that there is a threat to human health or the environment outside the facility, or if greater than the reportable quantity (RQ) of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance or a Superfund Amendments and Reauthorization Act (SARA)

Extremely Hazardous Material (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) is released, it must reported to:

- Emergency Spill Clean Up Contractor: Veolia
  - **Telephone Number: (602) 233-2955**
- ADEQ spill hotline
  - **Telephone Number: (602) 771-8786**
- LEPC for CERCLA/SARA release greater than the RQ
  - **Telephone Number: (602) 273-1411**
- National Response Center (NRC)
  - **Telephone Number: 1-800-424-8802**

The following information must be provided to ADEQ, the LEPC, and the NRC when contacted:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident (e.g., release, fire, etc.);
- Where did the incident occur;
- How did the incident occur;
- Name and quantity of material(s) involved, to the extent known;
- What actions were taken to respond and contain the incident;
- The possible hazards to human health or the environment outside the facility; and
- The extent of injuries, if any.

3.4.2 During Emergency

During an emergency, the Emergency Coordinator or his/her alternate must be aware of the following possible problems:

- If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure build up, gas generation, or ruptures in the valves, pipes, or other equipment as appropriate.
- In the affected areas of the facility, no waste that may be incompatible with the released material should be treated, stored, or disposed of until after the cleanup procedures have been completed.

It should be noted that in the event of an emergency, the Emergency Coordinator is not the incident commander. The role of the incident commander will be assumed by the "senior" member of one of the responding agencies (i.e., fire or police department).

3.4.3 Follow-Up

Immediately after an emergency, the Emergency Coordinator must ensure the following:

- All emergency equipment, listed in the Contingency Plan and used during the emergency, is cleaned, decontaminated, and is fit for reuse or replaced.
- All waste materials generated during the emergency must be properly identified, stored, and disposed of in accordance with State and Federal regulations.
- Notify the EPA Regional Administrator and the local authorities that all of the actions have been completed before resuming operations.
- Write a summary of the incident for the company's record files and forward a copy to the EPA Regional Administrator and ADEQ officials within fifteen days.

3.5 Control Procedures

Sections 3.5.3 through **3.5.6** provide detailed information for the handling of each classification of emergency. The plan includes tabbed dividers directing facility personnel to sections outlining emergency control procedures for each type of incident. Immediately following the section are procedural flow diagrams for each of the emergencies listed above.

3.5.1 Establishment of Control Zones

During an emergency incident, if the Emergency Coordinator or Alternate determines that evacuation is **NOT** necessary, for spills other than incidental spills the Emergency Coordinator must establish control zones around the affected area(s). Incidental spills do not require establishment of control zones. The purpose of setting up control zones is to minimize the potential adverse impact of the incident on employees, citizens, responders, the environment, and property.

The Emergency Coordinator will designate three major zones around the affected area. Personnel should move through access control points only.

1. **Hot Zone (Exclusion Zone)**

   This is the area of most concern. Only trained emergency responders with the use of proper personal protective equipment (PPE) and the buddy system may have access into this area. The area of the Hot Zone shall extend far enough to prevent adverse effects from hazardous materials. Only those emergency responders necessary to control the incident or to rescue others may enter into this area.

2. **Warm Zone (Contamination Reduction Zone)**

   The Warm Zone is an area of limited access. The purpose of the Warm Zone is to reduce the spread of contamination and control access to and from the Hot Zone. It also serves as a buffer zone and, at least initially, is not contaminated. Contamination in this zone should remain in the "Decontamination Corridor" that is located in this zone. Decontamination will take place in the Decontamination Corridor. PPE will be worn as required in this area. The size of the Warm Zone will be determined by the nature of the

incident and the size of decontamination operations to be conducted within. The Emergency Coordinator will make this decision.

3. **Cold Zone (Support Zone)**

   The Cold Zone is the area that borders the outer perimeter of the Warm Zone and is a clean area set up for support operations. It will be upwind from the Hot and Warm Zones and as far away from the Hot Zone as necessary for safe operations. This zone will have a secure outer boundary.

3.5.2 Fire and/or Explosion

Immediate procedures are the responsibility of the Emergency Coordinator, and not the general occupants, although general occupants may contact "911" as well. Immediate procedures are outlined below:

1. The Emergency Coordinator will activate the fire alarm and use the intercom system to notify all facility personnel to evacuate and contact "911" via telephone. List the following information for the emergency responders.
   a. Name;
   b. Address of the facility;
   c. Extent of fire;
   d. Possible chemicals involved; and
   e. Approximate quantity of chemicals involved.
2. The Emergency Coordinator will initiate full evacuation of the affected area(s) as necessary, if not already accomplished by the sounding of the fire alarm. Evacuation procedures are contained in **Section 3.7**. Upon emergency responders arriving, the Emergency Coordinator will turn over all emergency coordinator duties to unified command until the event is concluded.
3. If a spill of material occurs, then the Spill Control Procedure (**Section 3.5.3**) will be followed. **NOTE: Fire emergencies supersede spill emergencies.**
4. In the event of the active and uncontrolled release of hazardous materials reporting will occur per **Section 4.0**.
5. As necessary, the Emergency Coordinator should notify the appropriate federal, state, and local agencies, included in **Section 4.0**, for all releases to the environment based on the extent and conditions of the emergency.
6. The Emergency Coordinator and first responders must monitor for leaks, pressure build up, gas generation, or ruptures in valves, pipes, or other equipment as appropriate.

Fire-fighting will not be performed by the CS Clean personnel unless trained in the use of portable fire extinguishers for small incipient fires. Fires judged to be of greater magnitude will be referred to the local fire-fighting officials. CS Clean will use the "911" telephone emergency service which contacts the Phoenix Fire Department.

Outside calls will not be accepted unless absolutely necessary so that the phone lines remain free to handle only emergency calls.

Area or plant evacuation will be necessary in case of a major fire or explosion. All personnel have been trained in evacuation procedures and means of exit from their respective work areas.

The Emergency Coordinator will be responsible for determining if personnel who are not in the affected area will stay in their respective work area. Supervisors of unaffected areas will stay with their personnel and be ready to evacuate. Accountability Coordinators will be ready to account for the persons under their supervision.

An "all clear" signal will be given, at the discretion of the Emergency Coordinator, when the fire has been extinguished, and the safety of personnel is no longer endangered. The Emergency Coordinator will determine when the emergency has passed and the "all clear" signal can be given. All emergency equipment must be cleaned and fit for reuse prior to resuming plant operations in the affected areas.

In the event of a small controllable fire such as a small incipient fire, the following procedures should be followed by employees trained with portable fire extinguishers:

1. Notify Emergency Coordinator.
2. Obtain fire extinguisher; extinguish flames.
3. Eliminate and continue to restrict all sources of ignition so the fire will not re-ignite.
4. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow the procedures below.
5. Implement measures to control any water run-off, if contaminated, or any material that has been released.

EMERGENCY PROCEDURE-FIRE AND/OR EXPLOSION

CONTACT EMERGENCY COORDINATOR:	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) Nature of Emergency;
2) Location of Emergency;
3) Size and Extent of Emergency;
4) Hazardous Materials involved (if any); and
5) Whether any Personnel are injured.

PERSONNEL INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911	FIRE DEPARTMENT:	911
POLICE:	911	URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100	POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

THE AREA WILL BE CLEARED OF ALL PERSONNEL. THESE PERSONS ARE TO REPORT TO THE RALLY POINT FOR ACCOUNTABILITY.

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS:

- FIRE DEPARTMENT: 602-262-6297 (NON-EMERGENCY)
- MEDICAL SERVICES: 602-943-2381 (NON-EMERGENCY)
- POLICE DEPARTMENT: 602-262-6151 (NON-EMERGENCY)
- FIRE MARSHAL: 602-262-6771
- ARIZONA DEQ: 602-771-2300
- NRC: 1-800-424-8802
- VEOLIA SPILL RESPONSE: 602-233-2955

IS THERE A SPILL OR RELEASE OF ANY HAZARDOUS MATERIALS?

NO

YES

FOLLOW PROCEDURES IN THE CONTINGENCY PLAN

FIRE EXTINGUISHED BY OFFSITE RESPONSE PERSONNEL

REPORTING REQUIREMENTS MET

EVENT CONCLUDED

3.5.3 Spills

All spills/releases of hazardous materials must be reported to the Emergency Coordinator. Spills are defined as an unexpected release of any hazardous substance from a container, and a leak is defined as a release from a container via a puncture or a weak spot. It should be noted that personnel will not conduct emergency responses to spill or releases of hazardous materials that may threaten one's safety, health, or the environment without Hazardous Waste Operations and Emergency Response (HAZWOPER) training per 29 CFR 1910.120(e). Thus, any spill that is not small enough to be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area or poses an adverse exposure hazard to employees, will be considered an emergency response, and may not be handled by untrained personnel. Any incidental spill may be cleaned up by personnel, and the release does not constitute a safety, health, or environmental hazard. The Emergency Coordinator will determine the proper response in accordance with the control procedures outlined with this section.

Emergency procedures are the responsibility of the Emergency Coordinator, and not the general occupants. Procedures are outlined below:

1. If a leak develops or a spill of chemicals or oil develops, the person discovering the discharge will leave the immediate area and contact the Emergency Coordinator. The Emergency Coordinator will obtain the following information:
    - Person(s) injured and seriousness of injury;
    - Location of the spill or leak, material involved, and source;
    - The approximate amount spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving; and
    - Whether a fire is involved.
2. Next, the Emergency Coordinator or Alternate will:
    - Initiate evacuation of the hazard area, as necessary. Evacuation procedures are contained in **Section 3.7**. For small spills or leaks, isolate at least 50 feet in all directions. For large spills, initially isolate at least 100 feet in all directions and keep all personnel upwind of the release.
    - Call for emergency, fire, and medical services if a fire or medical emergency is involved by calling "911." IF A HISSING SOUND COMES FROM A VENTING DEVICE OR IF A DRUM BEGINS TO DISCOLOR, WITHDRAW FROM THE AREA IMMEDIATELY.
    - If the spill can be contained using the equipment onsite and if the containment operation will not involve employee exposure or reasonable possibility for employee exposure to safety or health hazards, then the procedure in **Step 3** (below) may be used. If not, proceed as follows.
        - Contact the commercial emergency clean-up firm and dispatch emergency personnel to the site to take appropriate action.

- Contact the proper authorities to report the spill or release. Reporting requirements are contained in **Section 4.0**. Contact local authorities first so that, if necessary, downstream water users and/or persons downwind of the vapor can be notified and, if necessary, removed.

3. If the spill is an incidental release that is small enough to be absorbed, neutralized, or otherwise controlled at the time of release, and does not pose an adverse exposure hazard to employees or the environment, then the spill will be handled by CS Clean personnel. The CS Clean trained emergency response team may respond when the spill is more significant than an incidental release, but only if it can be safely handled by properly trained personnel using proper PPE. General spill response procedures include the following:
4. Make sure all unnecessary persons are removed from the hazard area.
5. If flammable waste is involved, remove all ignition sources.
6. The Emergency Coordinator must immediately restrict access in the affected area to only essential emergency response personnel. All entry points must be secured, if possible.
7. The Emergency Coordinator must establish Control Zones if a spill is greater than an incidental spill and therefore requires the trained Emergency Response Team.
8. During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility. These measures must include, where applicable, stopping processes and operations, collecting, and containing released materials, and removing or isolating containers. The Emergency Coordinator must ensure that no hazardous material/waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.
9. For emergency personnel containing/cleaning the spill, don necessary PPE. The type of respiratory protection needed will be determined by the type, quantity, and location of material involved in the incident and will be prescribed by the Emergency Coordinator.
10. If possible, try to stop the leak.
11. Dike the spill with Standard Industrial Absorbent as required.
12. Position ABC fire extinguishers near immediate clean-up area.
13. Remove all surrounding materials that could be especially reactive with the materials in the waste. Determine the major components in the waste at the time of the spill.
14. Pump standing liquids to available empty containers/tanks compatible with material/waste. For the remainder of spilled material use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, neutralize, and clean up a spill if it has not been contained by a dike or a sump. Most spills contained within a dike or sump can be pumped back into the appropriate storage tank or drum.
15. Procedure to follow for leaking container (drum, ton-pack, etc.):
    a) Move container into or construct a containment area;

b) Roll container or stand up on end away from leak;

c) Drain contents (transfer to clean container);

d) Label container accordingly;

e) Absorb spillage of leakage with absorbent;

f) Transfer absorbent waste to drum or other container, label accordingly; and

g) Store until final disposal.

16. If waste reaches a storm sewer, try to stop flow from the source by using sand, soil, sandbags, etc. If this is done, pump this material out into a temporary holding tank as soon as possible. The Phoenix Water Services Department (602-262-6251) must be notified if the spill accesses the storm sewer.
17. If the spill accesses a sanitary sewer, the Arizona Water Company Regional Water Authority (602-240-6860) must be notified along with notifications noted in **Section 4.0**.
18. Decontaminate all PPE that will not be disposed of, as noted in the Decontamination Procedures (**Section 3.8**)
19. Place all containment and clean-up materials in drums for proper disposal. Some items, such as absorbent rags or booms, may have to be cut up.
20. Place all recovered liquid wastes in drums, label drums in accordance with all applicable hazardous waste rules and regulations, for proper disposal.
21. It should be noted that CS Clean personnel will not assist in handling significant hazardous materials spills that pose a risk to plant personnel and which the Emergency Response Coordinator determines are beyond the scope of safe handling by the CS Clean Emergency Response Team. For these more significant hazardous materials spills, the Emergency Coordinator will utilize the services of a qualified clean up contractor, Veolia.
22. All emergency equipment used in the emergency will be returned to ready status prior to resuming plant operation in the affected area.

EMERGENCY PROCEDURE
SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL

CONTACT EMERGENCY COORDINATOR	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) WHETHER ANY PERSONNEL ARE INJURED;
2) LOCATION OF EMERGENCY, MATERIAL INVOLVED;
3) SIZE AND EXTENT OF EMERGENCY; AND
4) WHETHER A FIRE IS INVOLVED.

PERSONNEL INJURED?

YES

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911
FIRE DEPARTMENT:	911
POLICE:	911
URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100
POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

NO

IN THE CASE OF A FIRE, THE EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING, AND FOLLOWS FIRE/EXPLOSION PROCEDURES IN 2.5.1 OF THE CONTINGENCY PLAN.

FIRE DEPARTMENT: 911

BE PREPARED TO GIVE NAME, ADDRESS, EXTENT OF FIRE, AND POSSIBLE CHEMICALS INVOLVED

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

CAN THE SPILL BE ABSORBED, NEUTRALIZED, OR OTHERWISE CONTROLLED AT THE TIME OF RELEASE BY EMPLOYEES IN THE IMMEDIATE RELEASE AREA OR BY MAINTENANCE PERSONNEL WITHOUT POSING A SAFETY OR HEALTH HAZARD?

YES

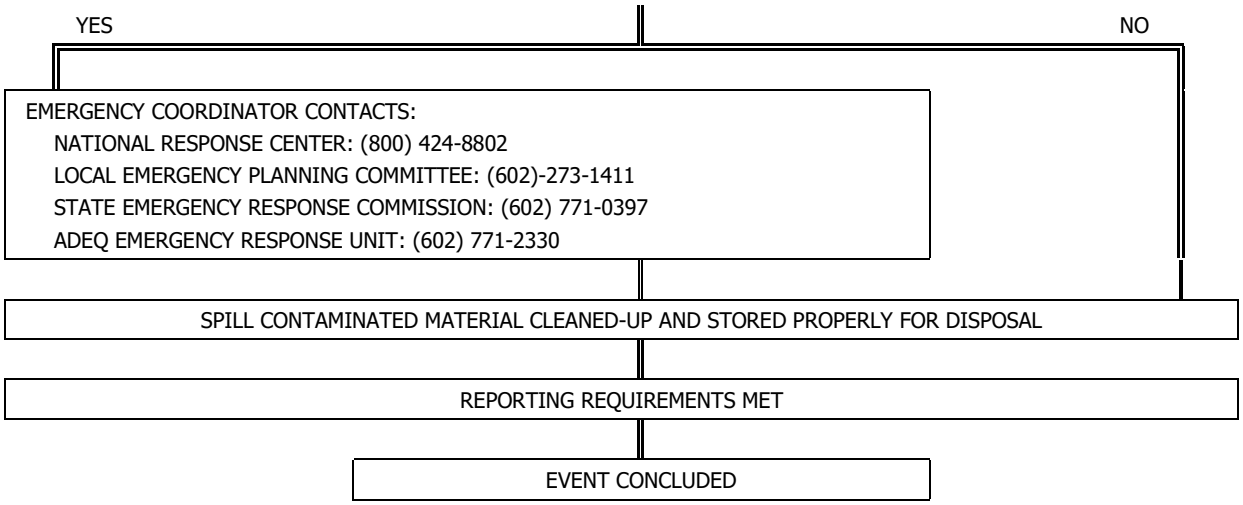
CONTAIN SPILL, CLEAN-UP SPILLED MATERIAL, STORE PROPERLY FOR DISPOSAL

NO

EMERGENCY COORDINATOR CONTACTS:
Phoenix Fire Department: 911
Veolia: (602) 233-2955

HAS SPILL REACHED OR THREATENED NAVIGABLE WATERS OR IS SPILL A CERCLA/SARA EXTREMELY HAZARDOUS MATERIAL AND GREATER THAN THE REPORTABLE QUANTITY?
(SEE http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf)

(Continued on next page)


YES
NO
EMERGENCY COORDINATOR CONTACTS:
NATIONAL RESPONSE CENTER: (800) 424-8802
LOCAL EMERGENCY PLANNING COMMITTEE: (602)-273-1411
STATE EMERGENCY RESPONSE COMMISSION: (602) 771-0397
ADEQ EMERGENCY RESPONSE UNIT: (602) 771-2330
SPILL CONTAMINATED MATERIAL CLEANED-UP AND STORED PROPERLY FOR DISPOSAL
REPORTING REQUIREMENTS MET
EVENT CONCLUDED

3.5.4 Floods

In the case of impending flood, it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home. If a flood strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to sufficiently high enough ground. Evacuation procedures are contained in **Section 3.7**.

1. Relocate to an area of high ground above rising flood waters.
2. If there is a sufficient warning attempt to sandbag areas of concern to prevent rising flood waters from entering the facility.
3. Do not attempt to drive or walk through flood waters. Waters can potentially wash away vehicles or pedestrians.
4. Remain in a protected area until instructed by the Emergency Coordinator to resume normal activity.

3.5.5 Other Emergency Procedures

Listed below are the procedures that will be followed for other potential emergencies at the discretion of the Emergency Coordinator. Due to the fact that these types of emergencies are inherently local in nature, the Emergency Coordinator at the facility will rely on the Local Emergency Management Office for assistance. This office can be contacted as follows:

Maricopa County Local Emergency Planning Committee
5630 E McDowell Road
Phoenix, AZ 85003
(602) 273-1411
IN AN EMERGENCY DIAL 911

3.5.6 Natural Disaster

In the case of impending natural disaster (i.e., hurricane, tornado, flash floods, etc.), it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home or provide a safe environment at the plant until severe weather has passed. If a natural disaster strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to an internal rally point. Evacuation procedures are contained in **Section 3.7**.

Basic Procedures to Follow During Natural Disasters Are:

1. Do not stay where exposed or in personal vehicles.
2. Do not seek shelter near windows, openings, or doorways.
3. Relocate to an area of high structural integrity.
4. Remain in a protective area until instructed by the Emergency Coordinator to resume normal activity.

3.5.7 Bomb Threat:

In the case of a bomb threat, the Emergency Coordinator will call for full facility evacuation in accordance with the procedures contained in **Section 3.7**. In addition, the fire department and police will be notified. The individual who received the bomb threat should obtain the following information for the authorities:

1. Sound of the caller's voice,
2. Area of danger,
3. Type of bomb, and
4. Date and time of call.

3.5.8 Civil Disturbance/Workplace Violence:

In the case of a civil disturbance, the police will be contacted. If necessary, the Emergency Coordinator will initiate evacuation to an internal or external rally point in accordance with procedures contained in **Section 3.7**. The Emergency Coordinator can determine if it is safer to shelter in place. Procedures to be followed by employees identifying civil disturbances or workplace violence should be as follows:

1. Evacuate.
    a. If there is an accessible escape path, attempt to evacuate the premises.
    b. Evacuate regardless of whether others agree to follow.
    c. Leave your belongings behind.
    d. Help others evacuate, if possible.
    e. Call 911 when you are safe.
    f. Prevent individuals from entering an area where the violent person may be.
    g. Keep your hands visible.
    h. Follow the instructions of any police officers.
    i. Do not attempt to move wounded people.

2. Shelter in place.
    a. If evacuation is not possible, find a place to hide where the violent person is less likely to find you. Your hiding place should be out of the violent person's view.
    b. Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door).
    c. To prevent a violent person from entering your hiding place lock the door or blockade the door with heavy furniture.
    d. Silence your cell phone.
    e. Turn off any source of noise (i.e., radio, television).
    f. Hide behind large items (i.e., cabinets, desks).
    g. Remain quiet.
3. Protect Yourself.
    a. As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the violent person by:
        i. Acting as aggressively as possible against him/her.
        ii. Throwing items and improvising weapons.
        iii. Yelling.
    b. When police arrive:
        i. Put down any items in your hands.
        ii. Keep hands visible.
        iii. Follow all instructions.
        iv. Avoid making quick movements towards officers.
        v. Do not stop to ask officers for help or direction when evacuating, just proceed in the direction from which officers are entering the premises.

At the end of the emergency event, the Emergency Coordinator should conduct a thorough investigation into the cause of the emergency incident. Ensure that necessary procedural or process modifications are made to prevent reoccurrences or potential emergencies. Critique the emergency action procedures followed and make any changes to procedures as needed where deficiencies may have occurred.

3.5.9 Power Outage

In the event of a power outage, all employees and visitors are to go to the outside rally point until further instruction. The Emergency Coordinator will then determine if it is safe for employees to go to the internal rally point where they will remain until further instruction. Evacuation procedures are contained in **Section 3.7**. The facility is equipped with an emergency lighting system. Subsequently, the Emergency Coordinator will contact the local power company, Arizona Public Service (1-800-

240-2014), to determine the next course of action (i.e. sending workers home) and ensure the facility is in safe condition when power is restored.

3.5.10 Suspicious Mail

If an employee observes a piece of mail that appears suspicious (i.e., excessive postage, excessive tape, lopsided or lumpy in appearance, marked with "personal" or "confidential", handwritten with no return address, unexpected or from an unknown party, or addressed to someone no longer employed at the facility), then they should follow the following procedure:

1. Do not handle a letter or package that you suspect is contaminated.
2. Do not shake it, bump it, or sniff it.
3. Wash your hands thoroughly with soap and water.
4. Notify local law enforcement authorities.
5. Notify the Emergency Coordinator of the situation.

3.5.11 Natural Gas Emergency

If a strong odor or gas leak is noted, then employees will be instructed **not** to:

1. Use the telephone,
2. Operate any gas or electric machinery,
3. Light a match, or
4. Turn light switches on and off.

The Emergency Coordinator will instruct all employees to evacuate the building, if necessary, to the external rally point. Once outside, the Emergency Coordinator will contact the local power company, gas company, and, if necessary, the local Fire Department and LEPC.

3.5.12 Medical Response Procedures

After discovery of a medical response situation and a determination that entry to the emergency area will not cause further harm to the injured or yourself, an employee should quickly survey the scene prior to calling the ambulance (911). The employee should indicate to the dispatcher the following information:

- Is the scene safe?
- What happened?
- How many people are injured?
- Is the victim's airway blocked?
- Is the victim breathing?
- Can you feel the victim's pulse?

CS Clean has emergency equipment such as eyewashes located throughout the facility and are indicated on **Figure 3**. This equipment is available to provide immediate emergency use in case of chemical splash. Additionally, first aid kits and automated external defibrillators (AEDs) are present throughout the facility and noted on **Figure 3**.

3.5.13 First Aid Response

1. Move victim to fresh air; call emergency response number: 911.
2. If not breathing, give artificial respiration.
3. In case of contact with material, immediately flush skin and eyes with running water for at least fifteen minutes.
4. Remove and isolate contaminated clothing and shoes.
5. Administer additional first aid as appropriate.
6. Keep victim warm and await arrival of emergency medical response unit.

CS Clean works closely with NextCare Urgent Care (602-547-2600) located at 18589 N 59th Ave, Glendale, AZ 85308 to make them aware of the hazardous materials onsite. NextCare Urgent Care can provide necessary first aid supplies needed for medical emergencies at CS Clean.

3.5.14 Serious Medical Emergencies

In case of serious medical emergency, an ambulance will be summoned by calling 911. Examples of serious medical emergencies include the following:

- Persons with burns from fire and/or chemical spills,
- Heart attacks, cardiac arrest, or strokes,
- Persons undergoing shock,
- Chemical poisoning, and
- Severe seizures.

The Honor Health Deer Valley Medical Center (623-879-6100), located at 19829 N 27th Ave, Phoenix, AZ 85027 has been selected as the receiving facility for all medical emergency situations due to its close proximity. The direct phone number for the Honor Health Deer Valley Medical Center is 623-879-6100.

3.5.15 Non-Serious Medical Emergencies

In the case of non-serious, non-emergency situations where medical attention is needed, the employee will be taken to NextCare Urgent Care (602-547-2600), for treatment. Examples of non-serious/non-emergency situations include the following:

1. Minor bleeding,
2. Fractures, dislocations, sprains, and strains,

3. Minor eye/nose injuries, and
4. Temperature extremes.

CS Clean has first aid supplies in cabinets throughout the facility shown on **Figure 3**.

3.6 Emergency Equipment/Containment Structures

Location of emergency equipment is shown on **Figure 3** and briefly described in **Table 3**. All existing equipment must be inspected routinely and maintained to ensure its quality and efficiency.

Spills and leaks from the container storage area and tank storage area will be contained by virtue of the walls, impervious base, and berm. An impervious base provides spill containment of up to ten percent of the stored wastes.

Access to emergency communications and alarm systems (either permanent or portable), are available to all personnel operating the facility. Warning signs and 24-hour surveillance of all facilities will preclude any unauthorized personnel from coming in contact with hazardous materials at the facility.

Table 3
EMERGENCY EQUIPMENT

Item	Description/Capabilities	Location
Emergency Communication		
Telephone Systems	Capable of internal and external communication.	Main Offices
Fire Alarm System	Audible warning device with remote central monitoring.	Throughout Facility (**Figure 3**)
Fire Suppression System	A system of sprinklers that release water to control and extinguish fires.	Throughout Facility (**Figure 3**)
First Aid		
Emergency Eye Wash	Provide flooding spray of potable water at an angle to flood both eyes simultaneously to flush toxic chemical splashed in eyes.	**Figure 3**
Emergency Shower	Provide shower of potable water to flush toxic chemicals splashed on body.	**Figure 3**
Emergency Eye Wash Bottles	Provide flooding spray of potable water to flood eye(s) to flush toxic chemical splashed in eyes.	**Figure 3**
First Aid Kit	A collection of supplies and equipment used for administering First Aid.	**Figure 3**
AED	A device that detects sustained ventricular tachycardia or fibrillation and terminates it by a shock or shocks delivered directly to the myocardium, thus preventing sudden cardiac death.	Throughout Facility (**Figure 3**)

Table 3 EMERGENCY EQUIPMENT		
Item	**Description/Capabilities**	**Location**
Spill Response		
55-Gallon Drums	22" diameter X 34" lined and unlined steel tight head drums.	**Figure 3**
95-Gallon Overpack Spill Kits	Material used to absorb and contain spill of liquid material.	**Figure 3**
Spill Blocker Dike	A dike that can be set up around spills to help contain runoff from spills.	**Figure 3**
5-Gallon Universal Spill Kit	A spill kit with absorbent materials to clean up spills of universal waste.	**Figure 3**
5-Gallon Oil Spill Kit	A spill kit with absorbent materials to clean up spills of oil.	**Figure 3**
5-Gallon Acid Spill Kit	A spill kit with absorbent materials to clean up spills of acid.	**Figure 3**
Battery Acid Spill Kit	A spill kit with absorbent materials to clean up spills of battery acid (ex. Baking Soda).	**Figure 3**
Universal Spill Kit Chest	A large chest with absorbent materials to clean up spills of universal waste.	**Figure 3**
Fire Extinguishers	Wall-Mounted portable fire-fighting apparatus. The following types of fire extinguisher are used: Dry Chemical, CO_2; Class ABC.	Throughout Facility (**Figure 3**)
Personal Protective Equipment		
Gloves and Aprons	Rubber gloves and aprons for protection against harmful chemicals.	Throughout Facility
Goggles/ Safety Glasses	Eye/Face Protection.	Throughout Facility
Lock-out Tag-out Equipment	Equipment that allows for proper protection from and the locking out of energized devices, to prevent energy.	**Figure 3**

3.7 Evacuation Plan

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. The facility employs an internal phone system which can be used to evacuate the facility as well as contact key plant personnel to inform them as to the nature of the emergency and recommend plan of action. Total plant evacuation is initiated only by the Emergency Coordinator or his/her Alternate.

In the event that a plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

1. The signal for plant evacuation will be activated (alarm).
2. If safety permits, each operator should shut down his/her operations. Most importantly, turn off the running processes, if safe to do so. (Do not attempt to obtain personal

belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.)

3. ALL personnel, visitors, and contractors will immediately leave the operations area and congregate at the designated Rally Point via routes designated on **Figure 1**.
4. No persons shall remain or re-enter the location unless specifically authorized by the person(s) calling for evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter.
5. All persons will be accounted for by their respective accountability coordinator. The Supervisor will designate certain doors as the safest exists for his/her employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the Supervisors as necessary, to inform them of the nature of the emergency.
6. During exit, Accountability Coordinators should try to keep his/her group together, rallying at the designated locations on **Figure 1**, located in the north parking lot. Immediately upon exit, the Accountability Coordinators will prepare a list of all employees at the exit point. All other personnel who have persons reporting to them should report immediately to the rally point for final accounting.
7. Employees should remain in the area and stand upwind. (If any chemicals are released into the air around the building exterior, employees should move to a position where the chemicals would be blowing away from them.)
8. Upon completion of the employee list, the Accountability Coordinator in charge shall hand-carry the list to the Emergency Coordinator. All other personnel will remain at the rally point.
9. Contract personnel should also be listed with the name of their company.
10. A final tally of persons will be made by the Emergency Coordinator.
11. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
12. Re-entry into the area will be made only after clearance is given by the Emergency Coordinator. At his/her direction, a signal or other notification will be given for re-entry into the plant. If re-entry is not possible, non-essential personnel may be sent home.
13. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibilities of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.
14. Emergency drills will be conducted to practice all of these procedures and will be treated with the same seriousness as an actual emergency. Emergency drills are to be conducted periodically.

3.7.1 Internal Evacuation

In the event of a natural disaster (i.e., tornado) where the Emergency Coordinator has deemed the situation unsafe to send facility personnel home, the Emergency Coordinator will signal an internal evacuation.

1. The internal evacuation signal will be accomplished by intercom notification.
2. All traffic to and from the facility will cease, and each operator shall shut down his/her operations where safety permits. Turning off running water in respective areas is of primary importance. Do not attempt to gather personal belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.
3. Water supply for operation lines should be shut off.
4. All facility personnel will precede to the center of the building in a room without windows. Under no circumstances will any facility personnel leave.
5. Each Accountability Coordinators will take a head count of the employees in their department and will report any missing persons to the Emergency Coordinator.
6. In addition, the Administrative Assistant will remove the visitors' log upon evacuation and give it to the Emergency Coordinator, who will account for any visitors.
7. Clearance to resume work assignments or go home will be given by the Emergency Coordinator.
8. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.

3.7.2 Offsite Notification/Evacuation Procedure

To notify the neighboring properties in an emergency, CS Clean will contact the Phoenix Fire Department (phone number: 911). If necessary, an evacuation of the neighboring properties will be done by the Phoenix Police Department under the direction of the Phoenix Fire Department.

3.7.3 Shut-down of Operations

In the event of an emergency, critical operations will be shut down, if safe to do so.

3.8 Decontamination and Disposal

3.8.1 Decontamination Procedures

Decontamination of personnel and equipment must be conducted to reduce or eliminate the transport of contaminants from the emergency area into other areas of the facility or out into the environment where unprotected personnel may be exposed. Decontamination methods for personnel will depend on the type of contaminants, protection level, and work assignment and operation

location. CS Clean personnel will not respond to spills or any other emergency incident which is not incidental and poses a safety or health hazard. An outside contractor will be contacted if a spill or any other emergency incident poses a safety and/or health hazard to CS Clean personnel, or the environment. If a contractor has to be called in, the contractor will be responsible for the decontamination of their own equipment.

The following decontamination procedures are to be followed for the CS Clean emergency response team.

Each incident may require different decontamination operations. The nature of the incident, the chemical, the weather, the temperature, the number of people to be decontaminated, and the number of trained personnel available are a few of the factors which dictate the method, size, and type of decontamination operation that will be required. Basic decontamination procedures are described below:

Personal Protective Equipment and Other Items

1. Cover the Decontamination Corridor with plastic and place booms or dikes to control runoff from decontamination operations.
2. Use collection containers to hold decontamination water runoff.
3. Identify the Decontamination Corridor with tape, cones, ropes, or other markers.
4. Have a segregated equipment drop at the edge of the Hot Zone for contaminated equipment. This equipment may be reused in the Hot Zone without decontaminating.
5. Have a primary decontamination wash and rinse as the first step near the Hot Zone to wash the most significant contamination off of the equipment.
6. Have a secondary wash and rinse about ten to fifteen, or more, away from the first wash to assure thorough decontamination of equipment.
7. Have a clean area either before or after the secondary wash to change self-contained breathing apparatuses (SCBAs).
8. An area near the Cold Zone and at the end of the Decontamination Corridor should be established to remove chemical suits, respiratory equipment, and other items.
9. All used equipment and supplies or contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.
10. All contaminated items must be disposed of properly.

Victims/Personnel

1. The person(s) performing the decontamination should protect themselves from the contaminant by using the proper PPE.
2. Carefully remove respirators and PPE from the victim. If protective clothing or suits cannot be removed easily, they may be cut off.

3. Washing of PPE worn by the victim may be effective if it will not cause further harm.
4. When it is not possible to thoroughly decontaminate the victim or the PPE, the victim may be placed on plastic or other material to avoid spreading the contamination.
5. Medical personnel and facilities will be advised immediately whenever a victim is being transported or cared for and has not been thoroughly decontaminated. Medical personnel must be advised of the chemical, its properties, its hazards, known antidotes, or any other pertinent information. A copy of the SDSs will be given to medical personnel.

3.8.2 Disposal Procedures

All discarded materials, waste materials, or other objects shall be handled in such a way to avoid the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left onsite. All material that has visible signs of contamination (e.g., waste chemicals, contaminated soil, etc.) will be classified as potentially contaminated material. All potentially contaminated materials (i.e., PPE, clothing, disposable equipment, etc.) will be double bagged or drummed as necessary and segregated for temporary storage onsite for eventual disposal. All decontamination liquids will be collected, drummed, and stored onsite for eventual disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as normal domestic waste. It is important to note that a hazardous waste determination (either by knowledge of the waste or by analytical testing) must be performed on all waste materials destined for disposal, and all appropriate approvals, handling, transportation, and disposal methods must observe applicable Resource Conservation and Recovery Act (RCRA) regulations. Hazardous Waste shall be transported by an EPA licensed hazardous waste transporter to an EPA licensed hazardous waste treatment, storage, or disposal facility.

3.9 Contingency Plan Review and Submittal

In accordance with 40 CFR 265.54 and 29 CFR 1910.120, under the following conditions, the Contingency Plan should be reviewed and immediately revised:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

New employees should be familiarized with all emergency response procedures.

In accordance with 40 CFR 265.53, a copy of the Contingency Plan and all revisions must be maintained at the facility and submitted to the following parties:

1. Local Police Department
   Phoenix Police Department
   620 W Washington Street
   Phoenix, AZ 85003
2. Local Fire Department
   Phoenix Fire Department
   2409 W Cactus Road
   Phoenix, AZ 85029
3. Local Hospital
   Honor Health Deer Valley Medical Center
   19829 N 27th Ave,
   Phoenix, AZ 85027
4. Local Emergency Planning Committee (LEPC)
   Maricopa County
   5630 E. McDowell Road
   Phoenix, AZ 85008
5. Arizona State Emergency Response Commission (SERC)
   SERC
   c/o Department of Environmental Quality
   1110 W Washington Street
   Phoenix, AZ 85007

CS Clean will complete the following:

Familiarize the police and fire departments with:

- The layout of the facility
- Properties and hazards associated with the wastes handled at the facility
- Places where facility personnel would normally be working
- Entrances to the facility
- Evacuation routes

The Phoenix Police Department will be requested to provide the following assistance during an emergency:

- Immediate response
- Crowd control assistance
- Security to affected area
- Evacuation of surrounding areas, if required

- Communications support, if required

The Phoenix Fire Department will be requested to provide:

- Primary emergency authority
- Immediate response
- Primary fire-fighting services

Honor Health Deer Valley Medical Center will be requested to provide:

- Transfer to hospital
- Primary medical services
- Rescue services

3.10 Location of Contingency Plan

Copies of the Contingency Plan will be kept on an internal internet page CS Clean offered to all employees, in the main office area, and at the administrative assistant's office at the front entry.

4.0 FEDERAL, STATE, AND LOCAL REPORTING REQUIREMENTS

A variety of Federal, State, and Local reporting requirements exist for the reporting of emergencies and chemical releases. Provided below is a general description of the criteria for reporting under various regulations. It is the Emergency Coordinator's responsibility to follow the reporting requirements when applicable. The Emergency Coordinator may also designate a competent person to conduct these activities.

For the readers' convenience the table below summarizes reporting contacts.

Table 4
EMERGENCY REPORTING LIST

Report Contact Name	Type	Phone Number
Emergency	**N/A**	**911**
National Response Center	Federal	800-424-8802
EPA Region 9	Federal	800-300-2193
Arizona DEQ – Spill Hotline	State	602-771-2330 or 800-234-5677
Arizona – State Emergency Response Commission	State	602-771-8786
Maricopa County Local Emergency Planning Committee	LEPC	602-273-1411
Arizona Occupations Safety and Health Administration – Phoenix Office	Federal	602-542-5795
Phoenix Fire Department	City	602-495-5555

Table 4 EMERGENCY REPORTING LIST		
Report Contact Name	**Type**	**Phone Number**
Phoenix Police Department	State	602-262-6151
Phoenix Water Services Department	Water / Sewer Authority	602-262-6251

Section 311(b)(5) of the Clean Water Act (CWA), codified as 40 CFR 110, establishes reporting requirements for the release of oils into navigable waters, including wetlands. Releases of oil to navigable waters that: (1) cause a sheen to appear on the surface; (2) violate applicable water quality standards; or (3) cause a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines must be reported to the NRC at 800-424-8802. Notification must be submitted as soon as the facility Emergency Coordinator has knowledge of any discharge.

In the event a release threatens drinking water, stormwater, or sewer system contact the Phoenix Water Services Department (602-262-6251) and ADEQ (602-771-2330 or 800-234-5677).

If a spill of material of any amount threatens to reach navigable waters, the NRC (800-424-8802) shall be contacted.

The Emergency Coordinator should be ready to report the following information:

- Your name, location, organization, and telephone number;
- Name and address of the party responsible for the incident;
- Date and time of the incident;
- Location of the incident;
- Source and cause of the release or spill;
- Types of material(s) released or spilled;
- Quantity of materials released or spilled;
- Danger or threat posed by the release or spill;
- Number and types of injuries (if any);
- Weather conditions at the incident location; and
- Any other information that may help emergency personnel respond to the incident.

Navigable waters of U.S. are defined in 40 CFR Part 110.1 to include interstate waterways or intrastate waterways including lakes, rivers, and streams which may be utilized by interstate travelers for recreational purposes. Navigable waters also include lakes, rivers, and streams from which fish or shellfish are taken. The complete definition may be found in Section 502(7) of the Federal Water Pollution Control Act. In the event of a large volume release, oil products and reportable quantities of materials could potentially enter the nearby Mill River.

After a spill or release of oil greater than 1,000 gallons or after two spills of oil greater than 42 gallons within any twelve-month period, or if the spill impacted a navigable waterway, the Emergency Coordinator will report the event(s) to the following agency within sixty days.

The Regional Administrator
U.S. Environmental Protection Agency – Region 9
U.S. EPA Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Phone: 415-947-8000

The EPA report will include:

- Name of the facility;
- Your name;
- Location of the facility;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Corrective action and countermeasures you have taken, including a description of equipment repairs and replacement;
- An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- The cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and
- Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event.

As required by EPA Federal Regulation 40 CFR 112.5(c), a copy of the EPA report will also be submitted to ADEQ at the following address:

Arizona Department of Environmental Quality
Attn: Emergency Response and Spill Prevention
1110 W. Washington St.
Phoenix, AZ 85007

4.1 Comprehensive Environmental Response, Compensation, and Liability Act Releases (Federal)

Section 104 of CERCLA (also known as "Superfund"), codified at 40 CFR 302, requires that if greater than the RQ of a CERCLA hazardous substance is released from a facility over a 24-hour period, the Emergency Coordinator, as soon as they have knowledge of the release, must notify the NRC (800-424-8802). Reportable releases include any release to the environment, either to air, land, or water,

except for certain continuous releases. It should be noted that a release contained entirely within the building constitutes a release under CERCLA, and if more than the RQ is released to air, land or water, the release is reportable.

4.2 Hazardous Materials Transportation Act (HMTA) Notification (Federal)

Under 49 CFR 171.15, if a release of hazardous materials occurs in transport (including loading or unloading) which causes injury or death, property damage over $50,000, public evacuation or major road closure lasting more than one hour, aircraft re-routing, spillage or fire of a radioactive or disease-causing material, or continuing endangerment of life at the scene of the incident exists, then the carrier must notify the Department of Transportation via the NRC at 1-800-424-8802. Each notice must include the following information:

1. Name of Reporter;
2. Name and address of carrier;
3. Phone number where reporter can be reached;
4. Date, time, and location of incident;
5. The extent of injuries, if any;
6. Type and quantity of materials involved; and
7. Type of incident and whether continuing danger of life exists at the scene.

The carrier must also submit a written report regarding the incident within thirty days, and if any unintentional release of hazardous material occurs (under conditions not necessarily listed above), a written report must be submitted.

4.3 Superfund Amendments and Re-Authorization Act Releases (Federal)

Under 40 CFR 355.40, releases of CERCLA hazardous substances of Extremely Hazardous Substances (EHSs) (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) above the RQ must be reported to the SERC at 602-771-0397 and the LEPC at 602-273-1411 by the owner or operator of the facility, and must include the following information:

- The chemical name of identity of the substance released;
- Whether the substance is an EHS;
- The quantity released;
- Time and duration of the release;
- The medium or media into which the release occurred;
- Any relevant medical information (health risks, etc.);
- Precautions to take, including evacuation; and
- The name and telephone number of the person to contact for further information.

As soon as practicable after reporting the release, the owner or operator must submit a written report of the incident and information listed above which additionally includes the following information:

- Actions taken to respond to and contain the release;
- Any acute and chronic health effects from the release; and
- Any advice regarding medical attention necessary for exposed individuals.

Several exemptions to this reporting requirement are provided under paragraph 355.40(a) (2), which should be carefully reviewed to determine if reporting is required.

4.4 State Spill and Release Requirements

Under Arizona's statutes, any oil or petroleum products, chemical or waste that is released in any manner and in any amount constitutes a "spill" and must immediately be reported to the Oil and Chemical Spills section of the ADEQ at 602-771-2330. Providing the following information:

- Name, address, and telephone number of the reporter;
- Name and address of the facility;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to public health, or the environment, outside the facility.

A follow-up written report to the same section of the ADEQ is required to be completed within fifteen days. The written report will include:

- Name, address, and telephone number of the generator;
- Date, time, and type of incident (i.e., fire, explosion);
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- An assessment of actual or potential hazards to public health or the environment; and
- Estimated quantity and disposition of recovered material from the incident.

5.0 TRAINING

5.1 Contingency Plan and Emergency Action Plan Training

To comply with both state and federal regulations, CS Clean must provide and maintain a training program that will ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. This training program consists of both in-house classroom training as well as on-the-job training.

In-house training will be conducted by a competent and qualified training instructor familiar with this Plan's requirements. On-the-job training consists of employees completing job tasks under the guidance and supervision of another fully-trained employee. No person will be allowed to work with hazardous materials unsupervised until the training requirements set forth as appropriate for the particular job title have been successfully completed. Newly hired or newly assigned employees will have the necessary job training completed within six months of their job placement. Also, employees involved in hazardous waste management will be provided training annually.

The intent of the training program is to provide the employee with the necessary knowledge and skills to perform the functions of their job title in a safe manner and to maintain compliance with state and federal regulations.

Pursuant to 40 CFR 262.17(a)(7) and 29 CFR 1910.38(e), personnel will be specifically trained in the following emergency response areas:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- Key parameters for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Response to fires or explosions;
- Response to groundwater contamination incidents;
- Shutdown operations; and
- Train employees to assist in a safe and orderly evacuation of other employees.

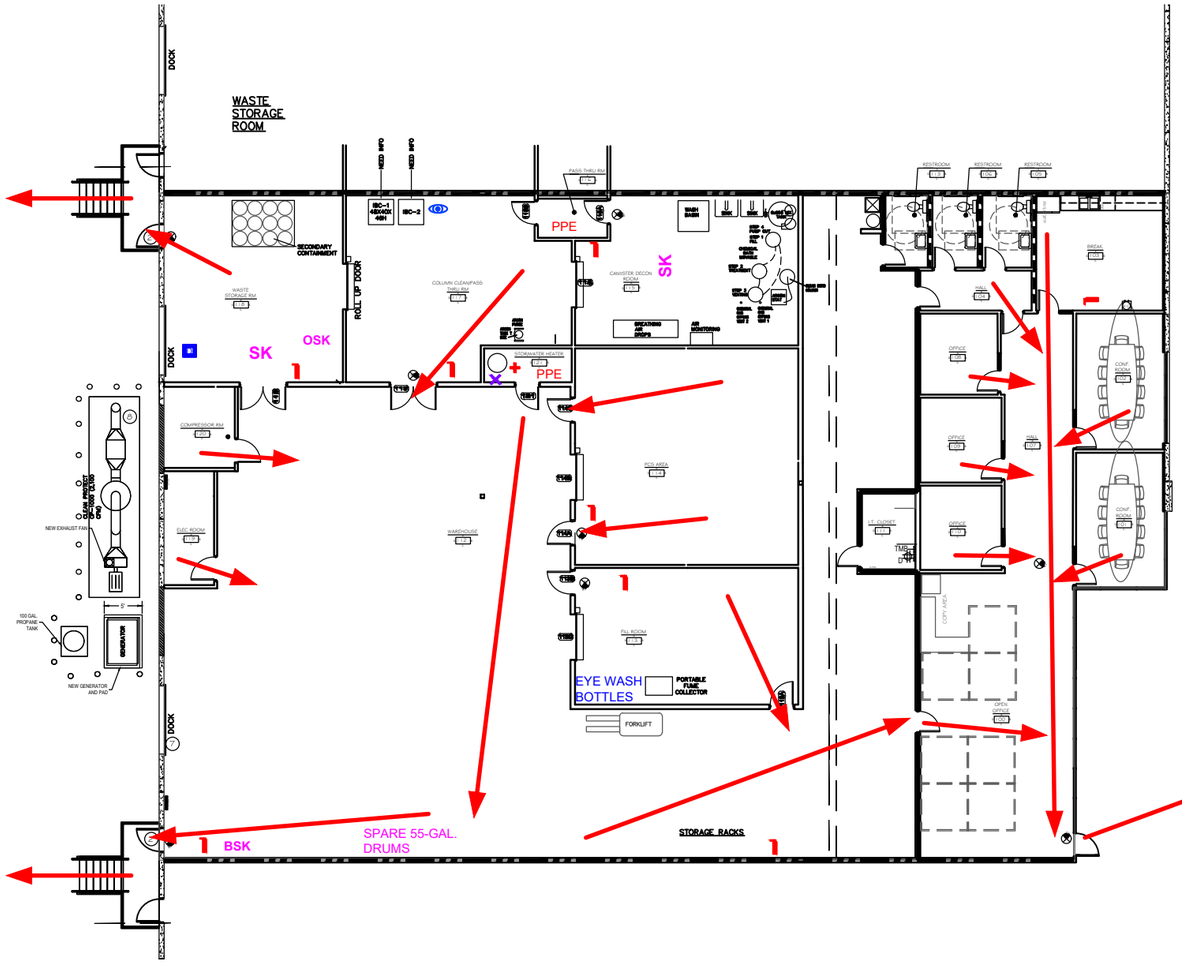
Hazardous waste management duties and responsibilities vary for each job title. Also, the training for certain jobs may overlap with the training for similar jobs. Therefore, there is variation associated with the necessary training for each job title. Training records shall be maintained for the duration of an employee's employment to satisfy OSHA emergency action plan training requirements.

5.2 Emergency Response Drills

Per the National Fire Protection Association (NFPA) 101 (2015), CS Clean will perform periodic emergency response drills (i.e., annually). The drill procedures, schedule, and log are maintained separately in company files.

FIGURES

DRAWING NAME: J:\C\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 - EMERGENCY EVACUATION PLOT DATE: May 23, 2025 - 11:40am OPERATOR: BOB



SECONDARY RALLY POINT (IN PARKING LOT)

PRIMARY RALLY POINT (ON SIDE OF PARKING LOT CIRCLE)

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

NORTH

0 10' 20'

REVISIONS

NO.	DATE

DESIGNED BY:	REVIEWED BY:	ISSUE DATE:
DSW	DSW	05/23/2025
DRAWN BY:	PROJECT NUMBER:	SHEET SIZE:
BOB	CSC0011.PS	11"x17"

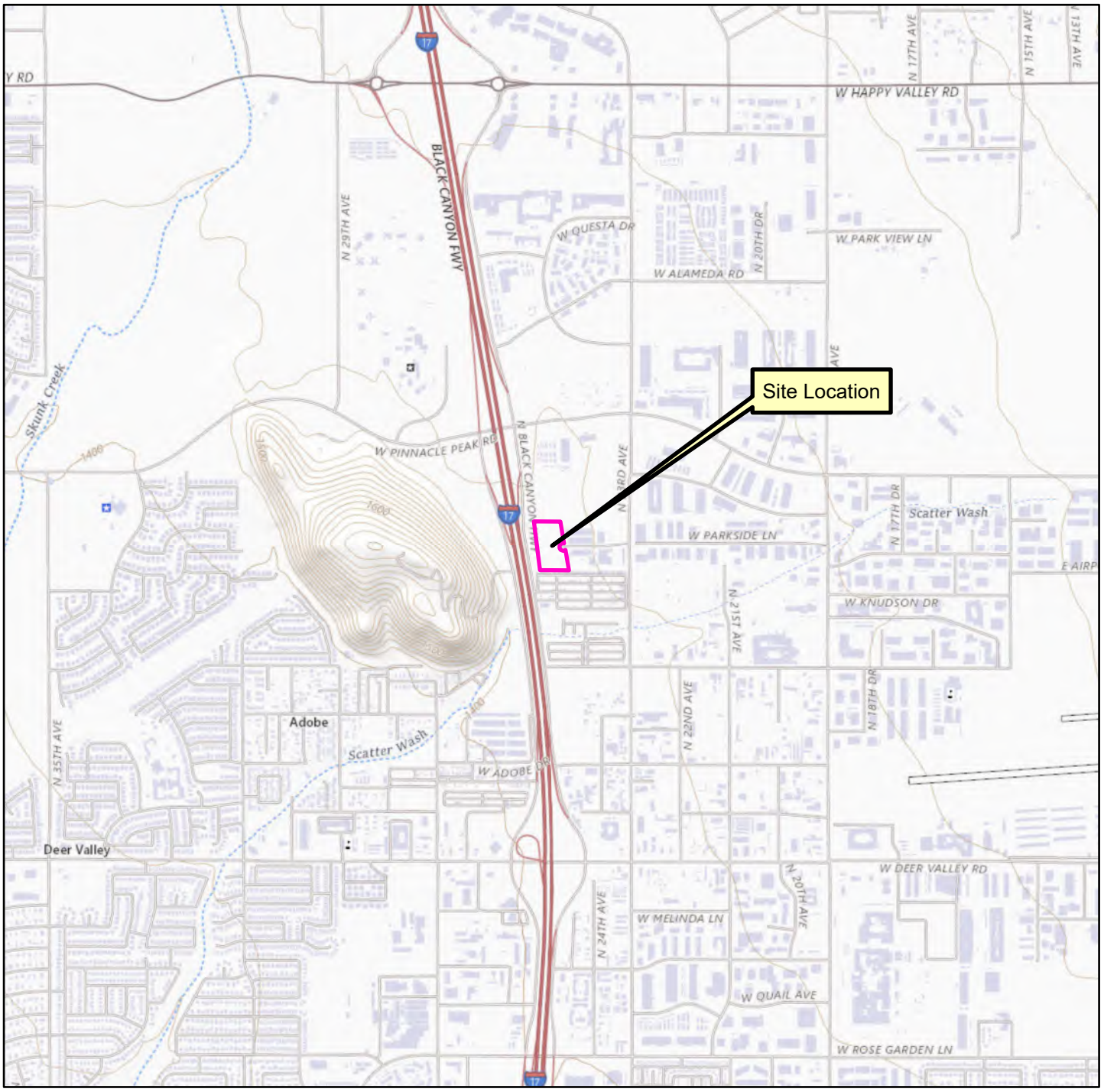
SITE PLAN

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150
PHOENIX, ARIZONA

FIGURE NO.

1



0 1,000 2,000 4,000 6,000 8,000

Feet

1:24,000

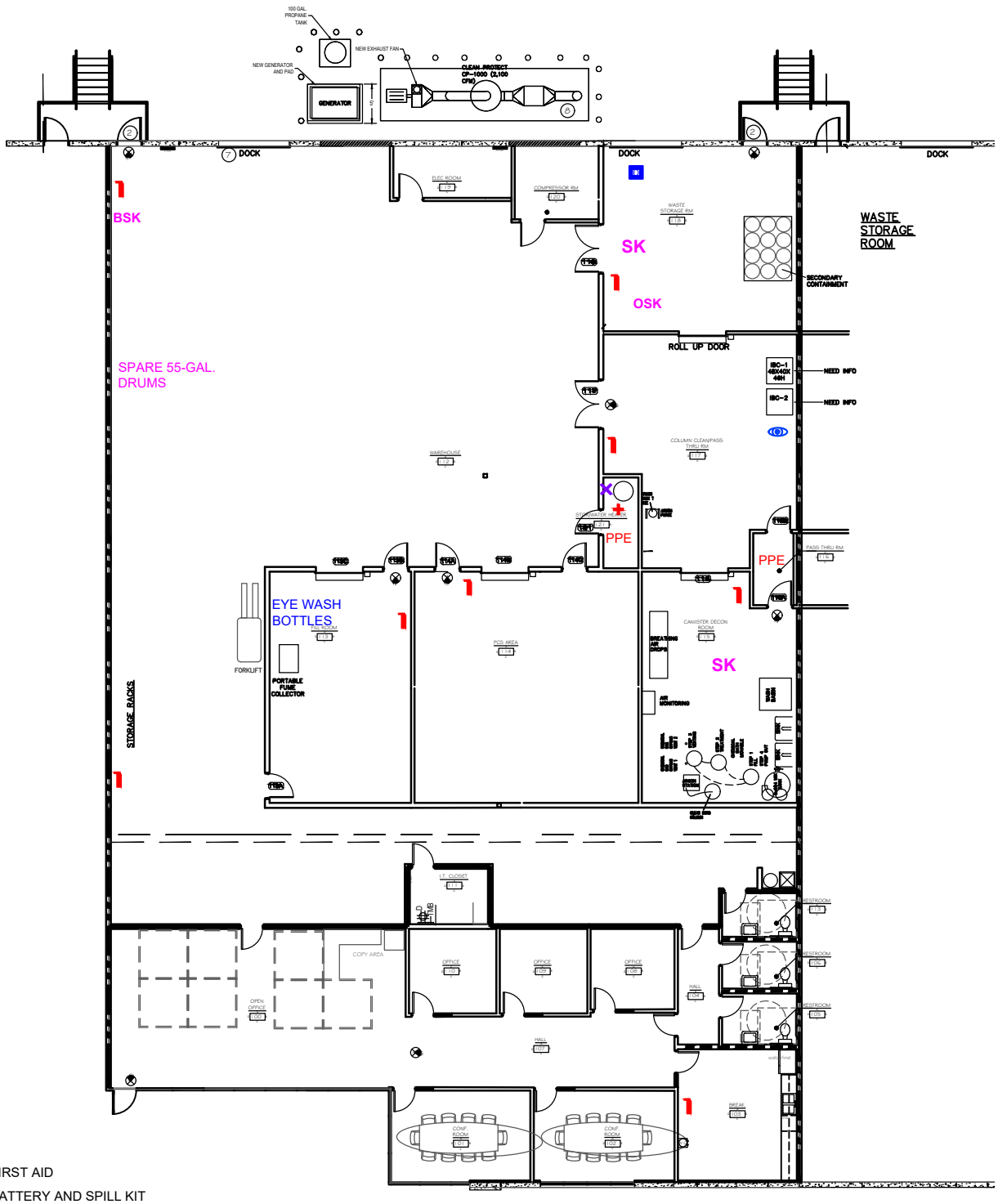
N

USGS Quadrangle Information
Quad ID: 33112-F1
Name: Union Hills, Arizona

Figure 2
Site Location
CS Clean Systems, Inc.
2453 W Parkside Lane
Suites 150
Phoenix, Arizona
HRP # CSC0011.PS
Scale 1" = 2,000'

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

Path: J:\CIC\SCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\GIS\Figures\Figures.aprx



✚-FIRST AID
BSK-BATTERY AND SPILL KIT
SK -SPILL KIT, (WASTE OIL, WATER, UNIVERSAL WASTE, COOLANT, SOLVENTS)
✕-LOTO EQUIPMENT
OSK-95 GAL. OVERPACK SPILL KIT
-SPILL BLOCKER DIKE
-FIRE EXTINGUISHER
-EYEWASH

0 10' 20'

NORTH

MAP REFERENCE: SHEET IA-2, CS CLEAN SYSTEMS INC. 2453 W PARKSIDE LN, SUITES 150, PHOENIX, AZ BY A DESIGN IN VISION OF GOODYEAR, ARIZONA; PROJECT NO. 22350; DATE: 4/12/23.

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

EMERGENCY EQUIPMENT

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150, PHOENIX, AZ

SCALE: 1" = 20'

ISSUE DATE: 02/27/2025

PROJECT NUMBER: CSC0011.PS

Fig. 3

SHEET NO.

DRAWING NAME: J:\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 SITE PLAN PLOT DATE: Feb 27, 2025 - 9:49am OPERATOR: BOB

APPENDIX A
Hazardous Waste Inspections

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG WASTE STORAGE AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or secondary containment, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Containers and bulk containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Placement and storage acceptable	Drum aisle spacing: 30" (minimum), height of stack: 1 high maximum		
Containers, bulk containers, and columns closed and secured	Open lids or bungs		
Labeling of containers and storage bulk containers	Improper identification, missing labels, accumulation date missing		
Storage capacity is not exceeded	$\geq$10 55-gallon containers, $\geq$10 spent columns, >2 275-gallon totes		
Wastewater bulk container is provided with start accumulation date	Missing label, date		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Waste material holding time within maximum limit	1-year maximum handling time for spent granulate material from delivery to disposal (applies only to off-site, non-reclaimed waste storage). 90-days for onsite generated wastes.		
Secondary Containment	Secondary containment present and capable of supporting 110% of largest container		
Compatible Waste	Incompatible waste is stored so that spill will not comingle		
Wastewater generation log is available and in-use	Missing generation log, not in use		
Wastewater storage duration has not exceeded permit limitations	Limitations based on hazardous waste generator status (<90 days)		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG PREPARATION AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle Space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping and pumps in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns or waste		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG WASTE MATERIAL TRANSFER AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Tanks and bulk containers in good condition	Leaks, dents, corrosion, deterioration		
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns, only satellite storage area		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Shipping containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **DONNING AND DOFFING PASSTHROUGH AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
All fire extinguishers visible and accessible	Not properly identified, missing, not mounted securely		
All fire extinguishers fully charged	Not adequately charged		
Fire alarm system functioning properly and has been tested in the past year	Pull boxes not functioning properly, loss of water pressure or alarm signal for sprinklers		
At least 18-inch clearance provided for all sprinkler heads	Material or equipment storage issues		
Smoke alarms functioning correctly	Loss of power, blocked, damaged		
All exits marked with exit signs and illuminated	Missing signage, loss of power, damaged		
Evacuation plans posted near doors and/or common areas	Missing signage, not accurate, not sufficient size		
All doorways and hallways leading to an exit free and clear and provided illumination	Material or equipment storage issues, loss, or power, damaged		
Emergency notification equipment including telephone and/or paging system operational	Loss of power, blocked, damaged		
Emergency phone numbers posted	Missing signage, not accurate		
Emergency lights functioning correctly	Loss of power, blocked, damaged		
First aid kits visible and accessible	Not properly identified, missing, not accessible		
First aid kits stocked as required and expiration dates current	Depleted or missing inventory, expired components		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available and in good condition	Broken, dirty, missing equipment (includes air supply system, respirators, chemical resistant clothing, eye protection, gloves)		
Spill kits readily available and include adequate materials	Missing, damaged, not accessible		
Duct flow pressure gauge operating correctly	Damaged, loss of power, faulted		
Ventilation	HEPA present and functioning, Cleanprotect operating		
Liquid level switch operating correctly	Damaged, loss of power, faulted		
Gas/O_2 Detection System calibrated and operating correctly	Expired calibration, damaged, loss of power, faulted		
Emergency Generator	Checked for operation in loss of power, maintained		
Uninterruptible Power Supply (UPS)	Checked for operation in loss of power, maintained		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS **WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available	Includes air supply system, respirators, chemical resistant clothing, eye protection, gloves in stock		
Respirators in good condition	Respirator components (mouthpiece, supplied air systems, connections), broken or damaged, dirty.		
Chemical resistant clothing	Good condition, no holes, damage, or dirty/used equipment.		
Gloves	Good condition, no holes, damage, or dirty/used equipment.		
Eye protection	Good condition, no holes, damage, or dirty/used equipment.		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – SECURITY **WASTE MATERIAL TRANSFER ROOM. WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Yes/No**	**Date and Type of Repair Performed (Location if applicable)**
Facility perimeter fence in acceptable condition	Damaged, deteriorated, missing		
Warning signs posted and in acceptable condition	Missing, damaged		
Building security system operating correctly	Damaged, loss of power, notifications not provided		
All doors and key card system operational	Damaged, cannot close or lock		
Lighting on interior and exterior adequate	Damaged bulbs, loss of power		

APPENDIX B

Hazardous Materials Identification System Spreadsheet

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Argon	100%	7440-37-1	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Nitrogen	100%	7727-37-9	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Copper Sulfate Pentahydrate	99%	7758-99-8	Toxic	Solid	100 lbs	2	0	0	1
X		CLEANSORB CS3F	100%	Proprietary Copper Compound	Toxic	Solid	22,000 lbs	2	0	0	0
X		CLEANSORB CS3G	<20%	Proprietary Copper Compound	Corrosive	Solid	1,325 lbs	1	0	0	0
X		CLEANSORB CS5	MIX	1313-13-9 <100% 1317-38-0 <25%	Toxic	Solid	1,325 lbs	2	0	1	0

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Waste - MOCVD Tool Exhaust	MIX	1317-38-0 10-50% 12005-75-3 10-30% 12019-57-7 10-30%	Pyrophoric Unstable / Reactive Toxic	Solid	880 lbs	2*	0	0	0
X		Waste - Ion Implant abatement	MIX	7440-38-2 >1% 142844-00-6 20-40% 1309-48-4 20-40%	Toxic	Solid	1760 lbs	3*	0	0	0
X		Waste - Exhaust Scrubber Granular	MIX	7784-18-1 20-40% 7783-40-6 20-40%	Corrosive	Solid	1760 lbs	2*	0	0	0

Insert additional lines as needed.

* NFPA 704 for highest hazard component that is apart of waste stream.

APPENDIX C
Notifications to Local Agencies

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Mike Duran III
Fire Chief
City of Phoenix Fire Department
2409 W Cactus Road
Phoenix, AZ 85029

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Chief Duran:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with applicable federal and state regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Honor Health Deer Valley Medical Center
19829 N 27th Avenue,
Phoenix, AZ 85027

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

To Whom It May Concern:

Attached please find the contingency plan for CS Clean Systems (CS Clean) at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Urgent Care Facility in compliance with applicable state and federal regulations. Should the need to send an employee of CS Clean to Honor Health Medical Center due to a work-related injury or an overexposure to any chemicals onsite, CS Clean will submit all SDSs (Safety Data Sheets) for chemicals that the employee had encountered.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Michael Branham
Maricopa County LEPC
5630 E. McDowell Road
Phoenix, AZ 85008

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Mr. Branham:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Chief Michael Sullivan
City of Phoenix Interim Police Chief
620 W Washington Street
Phoenix, AZ 85003

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

Dear Chief Sullivan:

Attached please find the contingency plan for CS Cean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the City of Phoenix Police Department in compliance with applicable state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Laura Malone
AZ State Emergency Response Commission
City of Phoenix
1110 W Washington Street
Phoenix, Arizona 85007

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Ms. Malone:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the City of Phoenix in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Honor Health Deer Valley Medical Center
19829 N 27th Avenue,
Phoenix, AZ 85027

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

To Whom It May Concern:

Attached please find the contingency plan for CS Clean Systems (CS Clean) at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Urgent Care Facility in compliance with applicable state and federal regulations. Should the need to send an employee of CS Clean to Honor Health Medical Center due to a work-related injury or an overexposure to any chemicals onsite, CS Clean will submit all SDSs (Safety Data Sheets) for chemicals that the employee had encountered.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared For:

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

Issued On: March 12, 2025

Revised On: October 27, 2025

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GENERAL INFORMATION

Project/Site Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Consultant Information:
HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032
Phone: 860-674-9570
Fax: 860-674-9624
E-mail: David.Webster@hrpassociates.com
Project Number: CSC0011.PS

Client Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Report Date: October 27, 2025

Report Author:
Chelsea Thompson
Associate EH&S Consultant

Client Manager:
David Webster
Senior EH&S Project Manager

Reviewed By:
David Webster
Senior EH&S Project Manager

1.0 EXECUTIVE SUMMARY

Executive Summary

This Emergency Action and Contingency Plan has been updated for CS Clean Systems (CS Clean) in order to comply with State and Federal Hazardous Waste Regulations and Occupational Safety and Health Administration (OSHA) Emergency Response Plan regulations. The purpose of this plan is to act as a guide during an actual emergency, to minimize hazards to human health and the environment from fires, explosions, and other releases, and to familiarize local emergency response personnel with the types and locations of materials kept onsite.

Contingency Plan Submittal

A copy of this updated Contingency Plan must be submitted to the following agencies:

- Local Police Department
- Local Fire Department
- Local Hospital/Urgent Care
- Local Emergency Planning Committee (LEPC)
- State Emergency Response Commission (SERC)

Implementation of the Contingency Plan

The Contingency Plan should be implemented under any of the following situations:

- Fire/Explosion
- Spill/Release
- Flood
- Other Emergencies

Initial Notifications

The following people are responsible for implementing this plan (See **Section 3.2** for details.):

- Jacob Newman – Emergency Coordinator
    - 24-Hour Phone: (360) 852-6410
- Jason Dugay – Alternate Emergency Coordinator
    - 24-Hour Phone: (203) 648-0881
- Adam Furphy – Alternate Emergency Coordinator
    - 24-Hour Phone: (845) 337-7385

Emergency Procedures

Emergency procedures are in the sections noted below:

- Immediate Procedures (**Section 3.4.1**)
- During Emergency (**Section 3.4.2**)
- Follow-up Procedures (**Section 3.4.3**)

Control Procedures

Emergency Procedural Flow Charts for the following situations are included in the sections noted below:

- Fires/Explosions (**Section 3.5.4**)
- Spills/Releases (**Section 3.5.5**)

Emergency Equipment

The locations of emergency equipment at CS Clean can be found on **Figure 3** and are posted around the facility. **Table 3** describes the facility's emergency equipment as well as its uses and locations.

Evacuation

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. **Figures 1** and **3** show CS Clean evacuation routes and **Section 3.7** includes procedural details.

Reporting of Emergency Incidents

Immediately after an environmental emergency the event must be reported to the Commissioner of the Arizona Department of Environmental Protection (ADEQ) as well as the Regional Administrator of the U.S. Environmental Protection Agency (EPA). A written report must be filed within fifteen days of an environmental emergency, the Emergency Coordinator must report to ADEQ and EPA. Any work-related accidents that result in the death of an employee must be reported to OSHA within eight hours of the incident occurring and report any employee in-patient hospitalization, amputation, or loss of an eye within twenty-four hours.

Locations of Contingency Plan

Copies of this Contingency Plan are maintained at the facility on the internal CS Clean internet page. Access can be granted at the Administrative Assistant's office and the Environmental, Health and Safety Director's office.

Contingency Plan Revision

This Contingency Plan must be revised under any of the following conditions (but may not be limited to):

- Regulations are revised;
- Plan fails in an emergency;
- Facility changes (design, operation) which increases the potential of a fire, spill, or release;
- List of emergency coordinators changes; or
- List of emergency equipment changes.

2.0 INTRODUCTION

2.1 General Background

This combined Hazardous Waste Contingency and Emergency Response Plan has been created to help eliminate confusion for facility first responders during an emergency and to avoid duplication in the preparation and use of emergency response plans at CS Clean. The use of this single plan should also improve coordination between facility response personnel and local, state, and federal emergency response personnel.

The purpose of this plan is to comply with OSHA and EPA regulations under 29 Code of Federal Regulations (CFR) 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, respectively, as well as the Large Quantity Generator (LQG) Hazardous Waste Contingency Plan regulations under Sections R18-08-262, and Treatment, Storage, and Disposal facility (TSDF) requirements under 40 CFR 270.14(b)(7), 264.56, and Arizona Administrative Code (AAC) R-18-8-264. The goal of the combined plan is three-fold:

1. To act as a guide during actual emergency situations;
2. To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soils, or surface water; and
3. To familiarize local emergency response personnel (i.e., police, fire, and rescue departments, hospital, and governmental personnel) with the types of material handled at the facility and internal emergency response procedures.

CS Clean, located at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona, is a hazardous TSDF, generator of hazardous waste, and transfer of hazardous secondary materials (HSM) for reclaim. The primary role of the facility is to service gas abatement systems (columns), treatment, and storage of the waste contained in the columns. The North American Industry Classification System (NAICS) code for the facility is 333413 (Industrial/Commercial Fan and Blower and Air Purification Equipment Manufacturing) and the Standard Industrial Classification (SIC) code is 3564 (Air Purification Equipment). The plant consists of one main building that contains offices, waste storage, and waste repackaging areas. The facility has no onsite storage of liquid fuels for the site as the

facility runs on natural gas, aside from two to three cannisters of Propane for the Powered Industrial Trucks (PITs) onsite. Hazardous waste contained in containers and totes are stored within the main building in various designated areas. The Site Location is indicated on **Figure 1**.

CS Clean has up to eight employees onsite and usually operates one eight-hour shift Monday through Friday. On occasion there may be employees onsite during off-hours for miscellaneous/non-routine activities.

The manufacturing processes at CS Clean produce several different hazardous waste streams, treat, and store various hazardous waste streams. A list of potential waste streams and hazardous waste streams was previously reported to Phoenix Fire Department using the Hazardous Materials Identification System (HMIS). The generation rate, storage location, and handling methods for these wastes are discussed further in this section.

The following are the key elements of the Hazardous Waste Management Program as they apply to CS Clean:

- Identification and Listing Hazardous Waste
- Standards for Generators and Transporters of Hazardous Waste
- Hazardous Waste Facility Standards and Permit Requirements
- Hazardous Waste Shipping and Manifest Requirements

CS Clean operates as a TSDF station per AAC R-18-8-264. The facility receives spent Cleansorb columns of hazardous waste to treat the waste so Cleansorb columns can be utilized as part of a column regeneration process. Cleansorb vessels are designed to be reusable. A Cleansorb column is initially filled with virgin granulate, is installed in a manufacturing process exhaust scrubber at an offsite location, and will abate hazardous gases until such time that the granulate within it is spent. At that time, the end user purges the column with inert gas to remove any hazardous vapors which may remain in the column, removes the spent column for shipping, and installs a new Cleansorb column filled with virgin granulate. The spent column is then returned to CS Clean who then treats the waste and stores the waste prior to offsite disposal and decontamination of the Cleansorb column for reuse. The process is described in detail below for the treatment, storage, and disposal of spent columns.

- The receipt of spent scrubber columns containing potentially hazardous spent granulate from end product users;
- Removal of the spent granulate from the columns, which is then transferred into approved shipping containers at the CS Clean facility, followed by either:
    - Treatment and transportation of the spent granulate offsite for disposal via a third-party environmental services vendor.

      OR
    - Transferal of the spent granulate to a permitted reclamation facility for the recovery of precious metals, where possible.

- Decontamination, fine cleaning, testing, and refilling of the spent columns with virgin granulate; and,
- Shipping of the cleaned and regenerated columns to service at the end users' facilities.

Additionally, the facility is a permitted LQG, EPA I.D. #AZR000528570, with one hazardous waste Central Accumulation Area (CAA) storage. Waste is stored initially in Satellite Accumulation Areas (SAA) located throughout the waste process area. Once the SAA waste is removed the waste is transported to and stored in the CAA located to the west, within the waste storage area. The waste is stored for less than ninety days onsite prior to removal by a permitted hazardous waste transporter. The CAA is routinely inspected, and a copy of the Hazardous Waste Inspection Log is included as **Appendix A**.

Further information on the hazardous wastes and hazardous materials stored at CS Clean can be found in **Appendix B** identifies the storage location and applicable notes for each waste.

When disposing of a hazardous waste, the generator must fill out a Hazardous Waste Manifest form (with help from the hazardous waste transporter) which lists facility information, type and volume of waste being shipped offsite, transporter information, and details of the destination facility. CS Clean must retain copies of each manifest.

CS Clean utilizes hazardous materials in its production processes. Hazardous materials are stored throughout the facility. The hazardous materials are stored in containers with sizes ranging up to and including 55-gallon drums and 275-gallon totes. The hazardous constituents of the drums and totes are classified as flammable, pyrophoric, irritants, compressed gases, corrosive, or toxic materials. Other areas of hazardous material storage include a generator onsite with propane. Safety Data Sheets (SDSs) shall be maintained by the site and be made accessible for more specific information on the summarized hazards below in an emergency situation. Hazardous materials reported to the Phoenix Fire Department previously are included in the HMIS spreadsheet attached in **Appendix B**.

2.2 Amendments

This plan must be reviewed, and immediately amended, if necessary, whenever:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The generator facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Table 1 AMENDMENTS			
Section Amended	**Date**	**Description**	**Name of Amender**
Throughout	10/20/25	Updated Primary Coordinator Contact	Chelsea Thompson, Associate Consultant
Throughout	10/20/25	Update to inspections and TSDF	David Webster, Senior Project Manager

3.0 HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

3.1 Purpose

In accordance with 29 CFR 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, 40 CFR 264.56, and 40 CFR 270.14, respectively, as well as the ADEQ Hazardous Waste Contingency Plan regulations under Sections R18-08-262 and R18-08-262, this plan will be used in the event of an emergency.

The intent and purpose of this plan are:

- To act as a guide during actual emergency situations;
- To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or their constituents to the air, soils, or surface water; and
- To familiarize local emergency response personnel (e.g., police, fire, hospitals) with the types of material used and stored, and internal emergency response procedures.

The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

3.2 Initial Notifications

At CS Clean, the following personnel must be notified in the case of a sudden or non-sudden release of hazardous wastes, fire, or explosion.

The phone number at the plant to be used by persons outside the facility (e.g., police, fire, spill contractors, etc.) is (520) 263-0235.

TABLE 2 EMERGENCY CONTACTS				
Role	**Name**	**Address**	**Home/ Cell Phone**	**Facility Phone**
Emergency Coordinator	Jacob Newman	2453 West Parkside Lane, Suite 150, Phoenix, AZ	(360) 852-6410	(520) 263-0235
Alternate Emergency Coordinator	Jason Dugay	26 Commerce Drive, Danbury, CT	(203) 648-0881	(203) 797-8155
Alternate Emergency Coordinator	Adam Furphy	26 Commerce Drive, Danbury, CT	(845) 337-7385	(203) 797-8155

In case of an imminent, actual emergency at the plant, the Emergency Coordinator, or the Alternate, shall be contacted first. The Emergency Coordinator shall carry out the emergency plan agreed upon by local police, fire department, hospitals, contractors, and state and local emergency response teams.

Upon being notified, the **Emergency Coordinator** will obtain the following information:

1. Nature of Emergency (i.e., fire or spill);
2. Location of Emergency;
3. Size and Extent of Emergency;
4. Hazardous Materials Involved (if any); and
5. Injury to Personnel.

Emergency Coordinator Qualifications:

The Emergency Coordinator and the Alternates have been chosen based upon the following required qualifications:

- The Coordinator or Alternates must be onsite or on-call at all times;
- Must be familiar with the facility layout;
- Must know the locations and characteristics of the waste handled;
- Must be thoroughly familiar with contingency and emergency plans;
- Must be familiar with all operations and activities at the facility;
- Must know the locations of all records; and
- Must have the **authority** to commit facility resources in the event of an emergency.

3.3 Implementation of the Contingency Plan

The decision to implement the Contingency Plan depends upon whether an actual situation could threaten human health or the environment. This section outlines the decision making criteria that the Emergency Coordinator will use to define situations in which the Contingency Plan will be implemented. The Contingency Plan will be implemented in the following situations, or other situations upon the judgment of the Emergency Coordinator or, in his or her absence, the Alternate Emergency Coordinator.

Fire and/or Explosion

- A fire causes the release of toxic fumes.
- The fire spreads and could possibly ignite materials at other locations onsite or could cause heat induced explosions.
- The fire could possibly spread to offsite areas.
- Use of water or chemical fire suppressant could result in contaminated run-off.
- An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- An imminent danger exists that an explosion could ignite other hazards waste at the facility.
- An imminent danger exists that an explosion could result in the release of toxic materials.
- An explosion has occurred.

Spills or Material Release

- The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
- The spill could cause the release of toxic liquids or fumes.
- The spill can be contained onsite, but the potential exists for ground water contamination.
- The spill cannot be contained onsite, resulting in offsite soil contamination, air, or ground water or surface water pollution.

Floods

- Floods occur from rain, snow, storms, storm surges, or overflows of dams and water systems.
- Floods can lead to power outages, gas line emergencies, damage to the building and its contents, and create landslides.
- Flood water can become energized by electrical equipment exposed to flood waters.

Power Outage and Natural Gas Emergency

- The potential exists for power outages and natural gas emergencies, which could create an employee safety hazard or damage onsite machinery/equipment. In addition, in the event of a power outage, ventilation could be turned off, which establishes a dangerous environment due to fumes.
- Emergency Response Coordinators are responsible for evacuation and determining conditions under which hazardous conditions may exist due to power failure.

Natural Disasters and Inclement Weather

- The potential exists for natural disasters, such as hurricanes or tornadoes, as well as other types of inclement weather.

Bomb Threats, Civil Disturbances, Workplace Violence, and Suspicious Mail

- The potential exists for area bomb threats, civil disturbances, workplace violence, and/or suspicious mail.

Medical Responses

- Due to the inherent nature of the activities conducted at the facility, a potential exists for both serious medical and non-serious/non-emergency situations.

3.4 Emergency Procedures

3.4.1 Immediate

Emergency procedures are the responsibility of the Emergency Coordinator or his/her Alternate. Immediate procedures are outlined below.

1. If necessary, the Emergency Coordinator will activate internal facility alarms or communication systems to notify all facility personnel.
2. If safety permits, each operator should shut down his/her operations; most importantly turn off running processes, if safe to do so. See supervisor if unsure of procedure.
3. All personnel and visitors shall exit using predetermined routes described in this plan.
4. If their help is needed, the Emergency Coordinator will notify the appropriate State and local agencies included in the emergency procedural flow diagrams.
5. The Emergency Coordinator must identify the character, exact source, amount, and extent of any release materials and assess possible hazards to human health or the environment.
6. If the Emergency Coordinator determines that there is a threat to human health or the environment outside the facility, or if greater than the reportable quantity (RQ) of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance or a Superfund Amendments and Reauthorization Act (SARA)

Extremely Hazardous Material (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) is released, it must reported to:

- Emergency Spill Clean Up Contractor: Veolia
  - **Telephone Number: (602) 233-2955**
- ADEQ spill hotline
  - **Telephone Number: (602) 771-8786**
- LEPC for CERCLA/SARA release greater than the RQ
  - **Telephone Number: (602) 273-1411**
- National Response Center (NRC)
  - **Telephone Number: 1-800-424-8802**

The following information must be provided to ADEQ, the LEPC, and the NRC when contacted:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident (e.g., release, fire, etc.);
- Where did the incident occur;
- How did the incident occur;
- Name and quantity of material(s) involved, to the extent known;
- What actions were taken to respond and contain the incident;
- The possible hazards to human health or the environment outside the facility; and
- The extent of injuries, if any.

3.4.2 During Emergency

During an emergency, the Emergency Coordinator or his/her alternate must be aware of the following possible problems:

- If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure build up, gas generation, or ruptures in the valves, pipes, or other equipment as appropriate.
- In the affected areas of the facility, no waste that may be incompatible with the released material should be treated, stored, or disposed of until after the cleanup procedures have been completed.

It should be noted that in the event of an emergency, the Emergency Coordinator is not the incident commander. The role of the incident commander will be assumed by the "senior" member of one of the responding agencies (i.e., fire or police department).

3.4.3 Follow-Up

Immediately after an emergency, the Emergency Coordinator must ensure the following:

- All emergency equipment, listed in the Contingency Plan and used during the emergency, is cleaned, decontaminated, and is fit for reuse or replaced.
- All waste materials generated during the emergency must be properly identified, stored, and disposed of in accordance with State and Federal regulations.
- Notify the EPA Regional Administrator and the local authorities that all of the actions have been completed before resuming operations.
- Write a summary of the incident for the company's record files and forward a copy to the EPA Regional Administrator and ADEQ officials within fifteen days.

3.5 Control Procedures

Sections 3.5.3 through **3.5.6** provide detailed information for the handling of each classification of emergency. The plan includes tabbed dividers directing facility personnel to sections outlining emergency control procedures for each type of incident. Immediately following the section are procedural flow diagrams for each of the emergencies listed above.

3.5.1 Establishment of Control Zones

During an emergency incident, if the Emergency Coordinator or Alternate determines that evacuation is **NOT** necessary, for spills other than incidental spills the Emergency Coordinator must establish control zones around the affected area(s). Incidental spills do not require establishment of control zones. The purpose of setting up control zones is to minimize the potential adverse impact of the incident on employees, citizens, responders, the environment, and property.

The Emergency Coordinator will designate three major zones around the affected area. Personnel should move through access control points only.

1. **Hot Zone (Exclusion Zone)**

   This is the area of most concern. Only trained emergency responders with the use of proper personal protective equipment (PPE) and the buddy system may have access into this area. The area of the Hot Zone shall extend far enough to prevent adverse effects from hazardous materials. Only those emergency responders necessary to control the incident or to rescue others may enter into this area.

2. **Warm Zone (Contamination Reduction Zone)**

   The Warm Zone is an area of limited access. The purpose of the Warm Zone is to reduce the spread of contamination and control access to and from the Hot Zone. It also serves as a buffer zone and, at least initially, is not contaminated. Contamination in this zone should remain in the "Decontamination Corridor" that is located in this zone. Decontamination will take place in the Decontamination Corridor. PPE will be worn as required in this area. The size of the Warm Zone will be determined by the nature of the

incident and the size of decontamination operations to be conducted within. The Emergency Coordinator will make this decision.

3. **Cold Zone (Support Zone)**

   The Cold Zone is the area that borders the outer perimeter of the Warm Zone and is a clean area set up for support operations. It will be upwind from the Hot and Warm Zones and as far away from the Hot Zone as necessary for safe operations. This zone will have a secure outer boundary.

3.5.2 Fire and/or Explosion

Immediate procedures are the responsibility of the Emergency Coordinator, and not the general occupants, although general occupants may contact "911" as well. Immediate procedures are outlined below:

1. The Emergency Coordinator will activate the fire alarm and use the intercom system to notify all facility personnel to evacuate and contact "911" via telephone. List the following information for the emergency responders.
   a. Name;
   b. Address of the facility;
   c. Extent of fire;
   d. Possible chemicals involved; and
   e. Approximate quantity of chemicals involved.
2. The Emergency Coordinator will initiate full evacuation of the affected area(s) as necessary, if not already accomplished by the sounding of the fire alarm. Evacuation procedures are contained in **Section 3.7**. Upon emergency responders arriving, the Emergency Coordinator will turn over all emergency coordinator duties to unified command until the event is concluded.
3. If a spill of material occurs, then the Spill Control Procedure (**Section 3.5.3**) will be followed. **NOTE: Fire emergencies supersede spill emergencies.**
4. In the event of the active and uncontrolled release of hazardous materials reporting will occur per **Section 4.0**.
5. As necessary, the Emergency Coordinator should notify the appropriate federal, state, and local agencies, included in **Section 4.0**, for all releases to the environment based on the extent and conditions of the emergency.
6. The Emergency Coordinator and first responders must monitor for leaks, pressure build up, gas generation, or ruptures in valves, pipes, or other equipment as appropriate.

Fire-fighting will not be performed by the CS Clean personnel unless trained in the use of portable fire extinguishers for small incipient fires. Fires judged to be of greater magnitude will be referred to the local fire-fighting officials. CS Clean will use the "911" telephone emergency service which contacts the Phoenix Fire Department.

Outside calls will not be accepted unless absolutely necessary so that the phone lines remain free to handle only emergency calls.

Area or plant evacuation will be necessary in case of a major fire or explosion. All personnel have been trained in evacuation procedures and means of exit from their respective work areas.

The Emergency Coordinator will be responsible for determining if personnel who are not in the affected area will stay in their respective work area. Supervisors of unaffected areas will stay with their personnel and be ready to evacuate. Accountability Coordinators will be ready to account for the persons under their supervision.

An "all clear" signal will be given, at the discretion of the Emergency Coordinator, when the fire has been extinguished, and the safety of personnel is no longer endangered. The Emergency Coordinator will determine when the emergency has passed and the "all clear" signal can be given. All emergency equipment must be cleaned and fit for reuse prior to resuming plant operations in the affected areas.

In the event of a small controllable fire such as a small incipient fire, the following procedures should be followed by employees trained with portable fire extinguishers:

1. Notify Emergency Coordinator.
2. Obtain fire extinguisher; extinguish flames.
3. Eliminate and continue to restrict all sources of ignition so the fire will not re-ignite.
4. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow the procedures below.
5. Implement measures to control any water run-off, if contaminated, or any material that has been released.

EMERGENCY PROCEDURE-FIRE AND/OR EXPLOSION

CONTACT EMERGENCY COORDINATOR:	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) Nature of Emergency;
2) Location of Emergency;
3) Size and Extent of Emergency;
4) Hazardous Materials involved (if any); and
5) Whether any Personnel are injured.

PERSONNEL INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911	FIRE DEPARTMENT:	911
POLICE:	911	URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100	POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

THE AREA WILL BE CLEARED OF ALL PERSONNEL. THESE PERSONS ARE TO REPORT TO THE RALLY POINT FOR ACCOUNTABILITY.

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS:

- FIRE DEPARTMENT: 602-262-6297 (NON-EMERGENCY)
- MEDICAL SERVICES: 602-943-2381 (NON-EMERGENCY)
- POLICE DEPARTMENT: 602-262-6151 (NON-EMERGENCY)
- FIRE MARSHAL: 602-262-6771
- ARIZONA DEQ: 602-771-2300
- NRC: 1-800-424-8802
- VEOLIA SPILL RESPONSE: 602-233-2955

IS THERE A SPILL OR RELEASE OF ANY HAZARDOUS MATERIALS?

NO

YES

FOLLOW PROCEDURES IN THE CONTINGENCY PLAN

FIRE EXTINGUISHED BY OFFSITE RESPONSE PERSONNEL

REPORTING REQUIREMENTS MET

EVENT CONCLUDED

3.5.3 Spills

All spills/releases of hazardous materials must be reported to the Emergency Coordinator. Spills are defined as an unexpected release of any hazardous substance from a container, and a leak is defined as a release from a container via a puncture or a weak spot. It should be noted that personnel will not conduct emergency responses to spill or releases of hazardous materials that may threaten one's safety, health, or the environment without Hazardous Waste Operations and Emergency Response (HAZWOPER) training per 29 CFR 1910.120(e). Thus, any spill that is not small enough to be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area or poses an adverse exposure hazard to employees, will be considered an emergency response, and may not be handled by untrained personnel. Any incidental spill may be cleaned up by personnel, and the release does not constitute a safety, health, or environmental hazard. The Emergency Coordinator will determine the proper response in accordance with the control procedures outlined with this section.

Emergency procedures are the responsibility of the Emergency Coordinator, and not the general occupants. Procedures are outlined below:

1. If a leak develops or a spill of chemicals or oil develops, the person discovering the discharge will leave the immediate area and contact the Emergency Coordinator. The Emergency Coordinator will obtain the following information:
    - Person(s) injured and seriousness of injury;
    - Location of the spill or leak, material involved, and source;
    - The approximate amount spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving; and
    - Whether a fire is involved.
2. Next, the Emergency Coordinator or Alternate will:
    - Initiate evacuation of the hazard area, as necessary. Evacuation procedures are contained in **Section 3.7**. For small spills or leaks, isolate at least 50 feet in all directions. For large spills, initially isolate at least 100 feet in all directions and keep all personnel upwind of the release.
    - Call for emergency, fire, and medical services if a fire or medical emergency is involved by calling "911." IF A HISSING SOUND COMES FROM A VENTING DEVICE OR IF A DRUM BEGINS TO DISCOLOR, WITHDRAW FROM THE AREA IMMEDIATELY.
    - If the spill can be contained using the equipment onsite and if the containment operation will not involve employee exposure or reasonable possibility for employee exposure to safety or health hazards, then the procedure in **Step 3** (below) may be used. If not, proceed as follows.
        - Contact the commercial emergency clean-up firm and dispatch emergency personnel to the site to take appropriate action.

- Contact the proper authorities to report the spill or release. Reporting requirements are contained in **Section 4.0**. Contact local authorities first so that, if necessary, downstream water users and/or persons downwind of the vapor can be notified and, if necessary, removed.

3. If the spill is an incidental release that is small enough to be absorbed, neutralized, or otherwise controlled at the time of release, and does not pose an adverse exposure hazard to employees or the environment, then the spill will be handled by CS Clean personnel. The CS Clean trained emergency response team may respond when the spill is more significant than an incidental release, but only if it can be safely handled by properly trained personnel using proper PPE. General spill response procedures include the following:
4. Make sure all unnecessary persons are removed from the hazard area.
5. If flammable waste is involved, remove all ignition sources.
6. The Emergency Coordinator must immediately restrict access in the affected area to only essential emergency response personnel. All entry points must be secured, if possible.
7. The Emergency Coordinator must establish Control Zones if a spill is greater than an incidental spill and therefore requires the trained Emergency Response Team.
8. During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility. These measures must include, where applicable, stopping processes and operations, collecting, and containing released materials, and removing or isolating containers. The Emergency Coordinator must ensure that no hazardous material/waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.
9. For emergency personnel containing/cleaning the spill, don necessary PPE. The type of respiratory protection needed will be determined by the type, quantity, and location of material involved in the incident and will be prescribed by the Emergency Coordinator.
10. If possible, try to stop the leak.
11. Dike the spill with Standard Industrial Absorbent as required.
12. Position ABC fire extinguishers near immediate clean-up area.
13. Remove all surrounding materials that could be especially reactive with the materials in the waste. Determine the major components in the waste at the time of the spill.
14. Pump standing liquids to available empty containers/tanks compatible with material/waste. For the remainder of spilled material use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, neutralize, and clean up a spill if it has not been contained by a dike or a sump. Most spills contained within a dike or sump can be pumped back into the appropriate storage tank or drum.
15. Procedure to follow for leaking container (drum, ton-pack, etc.):
    a) Move container into or construct a containment area;

b) Roll container or stand up on end away from leak;

c) Drain contents (transfer to clean container);

d) Label container accordingly;

e) Absorb spillage of leakage with absorbent;

f) Transfer absorbent waste to drum or other container, label accordingly; and

g) Store until final disposal.

16. If waste reaches a storm sewer, try to stop flow from the source by using sand, soil, sandbags, etc. If this is done, pump this material out into a temporary holding tank as soon as possible. The Phoenix Water Services Department (602-262-6251) must be notified if the spill accesses the storm sewer.
17. If the spill accesses a sanitary sewer, the Arizona Water Company Regional Water Authority (602-240-6860) must be notified along with notifications noted in **Section 4.0**.
18. Decontaminate all PPE that will not be disposed of, as noted in the Decontamination Procedures (**Section 3.8**)
19. Place all containment and clean-up materials in drums for proper disposal. Some items, such as absorbent rags or booms, may have to be cut up.
20. Place all recovered liquid wastes in drums, label drums in accordance with all applicable hazardous waste rules and regulations, for proper disposal.
21. It should be noted that CS Clean personnel will not assist in handling significant hazardous materials spills that pose a risk to plant personnel and which the Emergency Response Coordinator determines are beyond the scope of safe handling by the CS Clean Emergency Response Team. For these more significant hazardous materials spills, the Emergency Coordinator will utilize the services of a qualified clean up contractor, Veolia.
22. All emergency equipment used in the emergency will be returned to ready status prior to resuming plant operation in the affected area.

EMERGENCY PROCEDURE
SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL

CONTACT EMERGENCY COORDINATOR	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) WHETHER ANY PERSONNEL ARE INJURED;
2) LOCATION OF EMERGENCY, MATERIAL INVOLVED;
3) SIZE AND EXTENT OF EMERGENCY; AND
4) WHETHER A FIRE IS INVOLVED.

PERSONNEL INJURED?

YES

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911
FIRE DEPARTMENT:	911
POLICE:	911
URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100
POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

NO

IN THE CASE OF A FIRE, THE EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING, AND FOLLOWS FIRE/EXPLOSION PROCEDURES IN 2.5.1 OF THE CONTINGENCY PLAN.

FIRE DEPARTMENT: 911

BE PREPARED TO GIVE NAME, ADDRESS, EXTENT OF FIRE, AND POSSIBLE CHEMICALS INVOLVED

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

CAN THE SPILL BE ABSORBED, NEUTRALIZED, OR OTHERWISE CONTROLLED AT THE TIME OF RELEASE BY EMPLOYEES IN THE IMMEDIATE RELEASE AREA OR BY MAINTENANCE PERSONNEL WITHOUT POSING A SAFETY OR HEALTH HAZARD?

YES

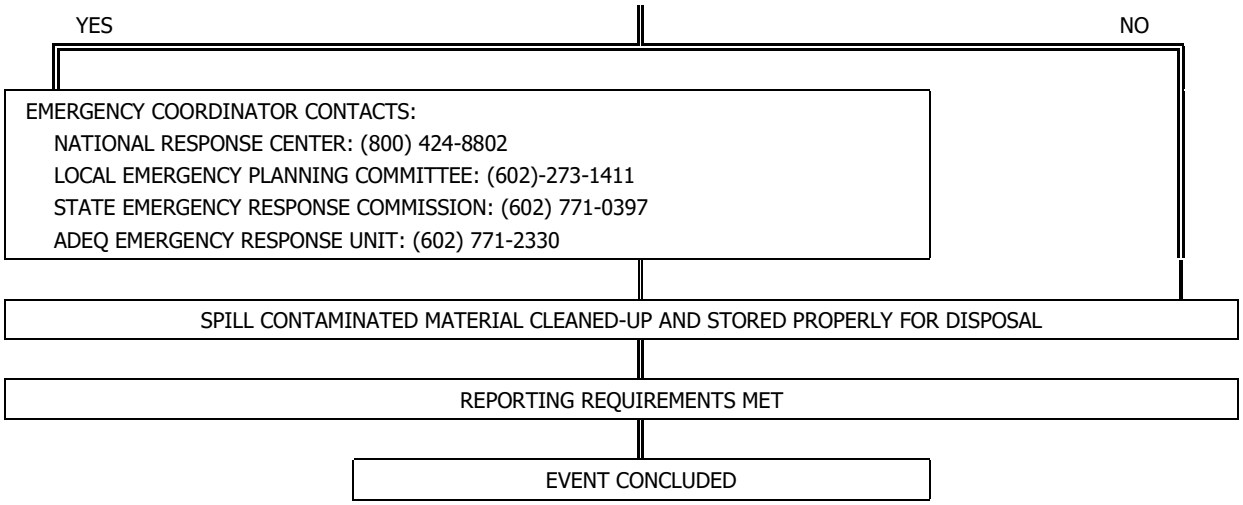
CONTAIN SPILL, CLEAN-UP SPILLED MATERIAL, STORE PROPERLY FOR DISPOSAL

NO

EMERGENCY COORDINATOR CONTACTS:
Phoenix Fire Department: 911
Veolia: (602) 233-2955

HAS SPILL REACHED OR THREATENED NAVIGABLE WATERS OR IS SPILL A CERCLA/SARA EXTREMELY HAZARDOUS MATERIAL AND GREATER THAN THE REPORTABLE QUANTITY?
(SEE http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf)

(Continued on next page)


YES
NO
EMERGENCY COORDINATOR CONTACTS:
NATIONAL RESPONSE CENTER: (800) 424-8802
LOCAL EMERGENCY PLANNING COMMITTEE: (602)-273-1411
STATE EMERGENCY RESPONSE COMMISSION: (602) 771-0397
ADEQ EMERGENCY RESPONSE UNIT: (602) 771-2330
SPILL CONTAMINATED MATERIAL CLEANED-UP AND STORED PROPERLY FOR DISPOSAL
REPORTING REQUIREMENTS MET
EVENT CONCLUDED

3.5.4 Floods

In the case of impending flood, it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home. If a flood strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to sufficiently high enough ground. Evacuation procedures are contained in **Section 3.7**.

1. Relocate to an area of high ground above rising flood waters.
2. If there is a sufficient warning attempt to sandbag areas of concern to prevent rising flood waters from entering the facility.
3. Do not attempt to drive or walk through flood waters. Waters can potentially wash away vehicles or pedestrians.
4. Remain in a protected area until instructed by the Emergency Coordinator to resume normal activity.

3.5.5 Other Emergency Procedures

Listed below are the procedures that will be followed for other potential emergencies at the discretion of the Emergency Coordinator. Due to the fact that these types of emergencies are inherently local in nature, the Emergency Coordinator at the facility will rely on the Local Emergency Management Office for assistance. This office can be contacted as follows:

Maricopa County Local Emergency Planning Committee
5630 E McDowell Road
Phoenix, AZ 85003
(602) 273-1411
IN AN EMERGENCY DIAL 911

3.5.6 Natural Disaster

In the case of impending natural disaster (i.e., hurricane, tornado, flash floods, etc.), it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home or provide a safe environment at the plant until severe weather has passed. If a natural disaster strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to an internal rally point. Evacuation procedures are contained in **Section 3.7**.

Basic Procedures to Follow During Natural Disasters Are:

1. Do not stay where exposed or in personal vehicles.
2. Do not seek shelter near windows, openings, or doorways.
3. Relocate to an area of high structural integrity.
4. Remain in a protective area until instructed by the Emergency Coordinator to resume normal activity.

3.5.7 Bomb Threat:

In the case of a bomb threat, the Emergency Coordinator will call for full facility evacuation in accordance with the procedures contained in **Section 3.7**. In addition, the fire department and police will be notified. The individual who received the bomb threat should obtain the following information for the authorities:

1. Sound of the caller's voice,
2. Area of danger,
3. Type of bomb, and
4. Date and time of call.

3.5.8 Civil Disturbance/Workplace Violence:

In the case of a civil disturbance, the police will be contacted. If necessary, the Emergency Coordinator will initiate evacuation to an internal or external rally point in accordance with procedures contained in **Section 3.7**. The Emergency Coordinator can determine if it is safer to shelter in place. Procedures to be followed by employees identifying civil disturbances or workplace violence should be as follows:

1. Evacuate.
    a. If there is an accessible escape path, attempt to evacuate the premises.
    b. Evacuate regardless of whether others agree to follow.
    c. Leave your belongings behind.
    d. Help others evacuate, if possible.
    e. Call 911 when you are safe.
    f. Prevent individuals from entering an area where the violent person may be.
    g. Keep your hands visible.
    h. Follow the instructions of any police officers.
    i. Do not attempt to move wounded people.

2. Shelter in place.
    a. If evacuation is not possible, find a place to hide where the violent person is less likely to find you. Your hiding place should be out of the violent person's view.
    b. Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door).
    c. To prevent a violent person from entering your hiding place lock the door or blockade the door with heavy furniture.
    d. Silence your cell phone.
    e. Turn off any source of noise (i.e., radio, television).
    f. Hide behind large items (i.e., cabinets, desks).
    g. Remain quiet.
3. Protect Yourself.
    a. As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the violent person by:
        i. Acting as aggressively as possible against him/her.
        ii. Throwing items and improvising weapons.
        iii. Yelling.
    b. When police arrive:
        i. Put down any items in your hands.
        ii. Keep hands visible.
        iii. Follow all instructions.
        iv. Avoid making quick movements towards officers.
        v. Do not stop to ask officers for help or direction when evacuating, just proceed in the direction from which officers are entering the premises.

At the end of the emergency event, the Emergency Coordinator should conduct a thorough investigation into the cause of the emergency incident. Ensure that necessary procedural or process modifications are made to prevent reoccurrences or potential emergencies. Critique the emergency action procedures followed and make any changes to procedures as needed where deficiencies may have occurred.

3.5.9 Power Outage

In the event of a power outage, all employees and visitors are to go to the outside rally point until further instruction. The Emergency Coordinator will then determine if it is safe for employees to go to the internal rally point where they will remain until further instruction. Evacuation procedures are contained in **Section 3.7**. The facility is equipped with an emergency lighting system. Subsequently, the Emergency Coordinator will contact the local power company, Arizona Public Service (1-800-

240-2014), to determine the next course of action (i.e. sending workers home) and ensure the facility is in safe condition when power is restored.

3.5.10 Suspicious Mail

If an employee observes a piece of mail that appears suspicious (i.e., excessive postage, excessive tape, lopsided or lumpy in appearance, marked with "personal" or "confidential", handwritten with no return address, unexpected or from an unknown party, or addressed to someone no longer employed at the facility), then they should follow the following procedure:

1. Do not handle a letter or package that you suspect is contaminated.
2. Do not shake it, bump it, or sniff it.
3. Wash your hands thoroughly with soap and water.
4. Notify local law enforcement authorities.
5. Notify the Emergency Coordinator of the situation.

3.5.11 Natural Gas Emergency

If a strong odor or gas leak is noted, then employees will be instructed **not** to:

1. Use the telephone,
2. Operate any gas or electric machinery,
3. Light a match, or
4. Turn light switches on and off.

The Emergency Coordinator will instruct all employees to evacuate the building, if necessary, to the external rally point. Once outside, the Emergency Coordinator will contact the local power company, gas company, and, if necessary, the local Fire Department and LEPC.

3.5.12 Medical Response Procedures

After discovery of a medical response situation and a determination that entry to the emergency area will not cause further harm to the injured or yourself, an employee should quickly survey the scene prior to calling the ambulance (911). The employee should indicate to the dispatcher the following information:

- Is the scene safe?
- What happened?
- How many people are injured?
- Is the victim's airway blocked?
- Is the victim breathing?
- Can you feel the victim's pulse?

CS Clean has emergency equipment such as eyewashes located throughout the facility and are indicated on **Figure 3**. This equipment is available to provide immediate emergency use in case of chemical splash. Additionally, first aid kits and automated external defibrillators (AEDs) are present throughout the facility and noted on **Figure 3**.

3.5.13 First Aid Response

1. Move victim to fresh air; call emergency response number: 911.
2. If not breathing, give artificial respiration.
3. In case of contact with material, immediately flush skin and eyes with running water for at least fifteen minutes.
4. Remove and isolate contaminated clothing and shoes.
5. Administer additional first aid as appropriate.
6. Keep victim warm and await arrival of emergency medical response unit.

CS Clean works closely with NextCare Urgent Care (602-547-2600) located at 18589 N 59th Ave, Glendale, AZ 85308 to make them aware of the hazardous materials onsite. NextCare Urgent Care can provide necessary first aid supplies needed for medical emergencies at CS Clean.

3.5.14 Serious Medical Emergencies

In case of serious medical emergency, an ambulance will be summoned by calling 911. Examples of serious medical emergencies include the following:

- Persons with burns from fire and/or chemical spills,
- Heart attacks, cardiac arrest, or strokes,
- Persons undergoing shock,
- Chemical poisoning, and
- Severe seizures.

The Honor Health Deer Valley Medical Center (623-879-6100), located at 19829 N 27th Ave, Phoenix, AZ 85027 has been selected as the receiving facility for all medical emergency situations due to its close proximity. The direct phone number for the Honor Health Deer Valley Medical Center is 623-879-6100.

3.5.15 Non-Serious Medical Emergencies

In the case of non-serious, non-emergency situations where medical attention is needed, the employee will be taken to NextCare Urgent Care (602-547-2600), for treatment. Examples of non-serious/non-emergency situations include the following:

1. Minor bleeding,
2. Fractures, dislocations, sprains, and strains,

3. Minor eye/nose injuries, and
4. Temperature extremes.

CS Clean has first aid supplies in cabinets throughout the facility shown on **Figure 3**.

3.6 Emergency Equipment/Containment Structures

Location of emergency equipment is shown on **Figure 3** and briefly described in **Table 3**. All existing equipment must be inspected routinely and maintained to ensure its quality and efficiency.

Spills and leaks from the container storage area and tank storage area will be contained by virtue of the walls, impervious base, and berm. An impervious base provides spill containment of up to ten percent of the stored wastes.

Access to emergency communications and alarm systems (either permanent or portable), are available to all personnel operating the facility. Warning signs and 24-hour surveillance of all facilities will preclude any unauthorized personnel from coming in contact with hazardous materials at the facility.

Table 3
EMERGENCY EQUIPMENT

Item	Description/Capabilities	Location
Emergency Communication		
Telephone Systems	Capable of internal and external communication.	Main Offices
Fire Alarm System	Audible warning device with remote central monitoring.	Throughout Facility (**Figure 3**)
Fire Suppression System	A system of sprinklers that release water to control and extinguish fires.	Throughout Facility (**Figure 3**)
First Aid		
Emergency Eye Wash	Provide flooding spray of potable water at an angle to flood both eyes simultaneously to flush toxic chemical splashed in eyes.	**Figure 3**
Emergency Shower	Provide shower of potable water to flush toxic chemicals splashed on body.	**Figure 3**
Emergency Eye Wash Bottles	Provide flooding spray of potable water to flood eye(s) to flush toxic chemical splashed in eyes.	**Figure 3**
First Aid Kit	A collection of supplies and equipment used for administering First Aid.	**Figure 3**
AED	A device that detects sustained ventricular tachycardia or fibrillation and terminates it by a shock or shocks delivered directly to the myocardium, thus preventing sudden cardiac death.	Throughout Facility (**Figure 3**)

Table 3 EMERGENCY EQUIPMENT		
Item	**Description/Capabilities**	**Location**
Spill Response		
55-Gallon Drums	22" diameter X 34" lined and unlined steel tight head drums.	**Figure 3**
95-Gallon Overpack Spill Kits	Material used to absorb and contain spill of liquid material.	**Figure 3**
Spill Blocker Dike	A dike that can be set up around spills to help contain runoff from spills.	**Figure 3**
5-Gallon Universal Spill Kit	A spill kit with absorbent materials to clean up spills of universal waste.	**Figure 3**
5-Gallon Oil Spill Kit	A spill kit with absorbent materials to clean up spills of oil.	**Figure 3**
5-Gallon Acid Spill Kit	A spill kit with absorbent materials to clean up spills of acid.	**Figure 3**
Battery Acid Spill Kit	A spill kit with absorbent materials to clean up spills of battery acid (ex. Baking Soda).	**Figure 3**
Universal Spill Kit Chest	A large chest with absorbent materials to clean up spills of universal waste.	**Figure 3**
Fire Extinguishers	Wall-Mounted portable fire-fighting apparatus. The following types of fire extinguisher are used: Dry Chemical, CO_2; Class ABC.	Throughout Facility (**Figure 3**)
Personal Protective Equipment		
Gloves and Aprons	Rubber gloves and aprons for protection against harmful chemicals.	Throughout Facility
Goggles/ Safety Glasses	Eye/Face Protection.	Throughout Facility
Lock-out Tag-out Equipment	Equipment that allows for proper protection from and the locking out of energized devices, to prevent energy.	**Figure 3**

3.7 Evacuation Plan

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. The facility employs an internal phone system which can be used to evacuate the facility as well as contact key plant personnel to inform them as to the nature of the emergency and recommend plan of action. Total plant evacuation is initiated only by the Emergency Coordinator or his/her Alternate.

In the event that a plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

1. The signal for plant evacuation will be activated (alarm).
2. If safety permits, each operator should shut down his/her operations. Most importantly, turn off the running processes, if safe to do so. (Do not attempt to obtain personal

belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.)

3. ALL personnel, visitors, and contractors will immediately leave the operations area and congregate at the designated Rally Point via routes designated on **Figure 1**.
4. No persons shall remain or re-enter the location unless specifically authorized by the person(s) calling for evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter.
5. All persons will be accounted for by their respective accountability coordinator. The Supervisor will designate certain doors as the safest exists for his/her employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the Supervisors as necessary, to inform them of the nature of the emergency.
6. During exit, Accountability Coordinators should try to keep his/her group together, rallying at the designated locations on **Figure 1**, located in the north parking lot. Immediately upon exit, the Accountability Coordinators will prepare a list of all employees at the exit point. All other personnel who have persons reporting to them should report immediately to the rally point for final accounting.
7. Employees should remain in the area and stand upwind. (If any chemicals are released into the air around the building exterior, employees should move to a position where the chemicals would be blowing away from them.)
8. Upon completion of the employee list, the Accountability Coordinator in charge shall hand-carry the list to the Emergency Coordinator. All other personnel will remain at the rally point.
9. Contract personnel should also be listed with the name of their company.
10. A final tally of persons will be made by the Emergency Coordinator.
11. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
12. Re-entry into the area will be made only after clearance is given by the Emergency Coordinator. At his/her direction, a signal or other notification will be given for re-entry into the plant. If re-entry is not possible, non-essential personnel may be sent home.
13. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibilities of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.
14. Emergency drills will be conducted to practice all of these procedures and will be treated with the same seriousness as an actual emergency. Emergency drills are to be conducted periodically.

3.7.1 Internal Evacuation

In the event of a natural disaster (i.e., tornado) where the Emergency Coordinator has deemed the situation unsafe to send facility personnel home, the Emergency Coordinator will signal an internal evacuation.

1. The internal evacuation signal will be accomplished by intercom notification.
2. All traffic to and from the facility will cease, and each operator shall shut down his/her operations where safety permits. Turning off running water in respective areas is of primary importance. Do not attempt to gather personal belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.
3. Water supply for operation lines should be shut off.
4. All facility personnel will precede to the center of the building in a room without windows. Under no circumstances will any facility personnel leave.
5. Each Accountability Coordinators will take a head count of the employees in their department and will report any missing persons to the Emergency Coordinator.
6. In addition, the Administrative Assistant will remove the visitors' log upon evacuation and give it to the Emergency Coordinator, who will account for any visitors.
7. Clearance to resume work assignments or go home will be given by the Emergency Coordinator.
8. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.

3.7.2 Offsite Notification/Evacuation Procedure

To notify the neighboring properties in an emergency, CS Clean will contact the Phoenix Fire Department (phone number: 911). If necessary, an evacuation of the neighboring properties will be done by the Phoenix Police Department under the direction of the Phoenix Fire Department.

3.7.3 Shut-down of Operations

In the event of an emergency, critical operations will be shut down, if safe to do so.

3.8 Decontamination and Disposal

3.8.1 Decontamination Procedures

Decontamination of personnel and equipment must be conducted to reduce or eliminate the transport of contaminants from the emergency area into other areas of the facility or out into the environment where unprotected personnel may be exposed. Decontamination methods for personnel will depend on the type of contaminants, protection level, and work assignment and operation

location. CS Clean personnel will not respond to spills or any other emergency incident which is not incidental and poses a safety or health hazard. An outside contractor will be contacted if a spill or any other emergency incident poses a safety and/or health hazard to CS Clean personnel, or the environment. If a contractor has to be called in, the contractor will be responsible for the decontamination of their own equipment.

The following decontamination procedures are to be followed for the CS Clean emergency response team.

Each incident may require different decontamination operations. The nature of the incident, the chemical, the weather, the temperature, the number of people to be decontaminated, and the number of trained personnel available are a few of the factors which dictate the method, size, and type of decontamination operation that will be required. Basic decontamination procedures are described below:

Personal Protective Equipment and Other Items

1. Cover the Decontamination Corridor with plastic and place booms or dikes to control runoff from decontamination operations.
2. Use collection containers to hold decontamination water runoff.
3. Identify the Decontamination Corridor with tape, cones, ropes, or other markers.
4. Have a segregated equipment drop at the edge of the Hot Zone for contaminated equipment. This equipment may be reused in the Hot Zone without decontaminating.
5. Have a primary decontamination wash and rinse as the first step near the Hot Zone to wash the most significant contamination off of the equipment.
6. Have a secondary wash and rinse about ten to fifteen, or more, away from the first wash to assure thorough decontamination of equipment.
7. Have a clean area either before or after the secondary wash to change self-contained breathing apparatuses (SCBAs).
8. An area near the Cold Zone and at the end of the Decontamination Corridor should be established to remove chemical suits, respiratory equipment, and other items.
9. All used equipment and supplies or contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.
10. All contaminated items must be disposed of properly.

Victims/Personnel

1. The person(s) performing the decontamination should protect themselves from the contaminant by using the proper PPE.
2. Carefully remove respirators and PPE from the victim. If protective clothing or suits cannot be removed easily, they may be cut off.

3. Washing of PPE worn by the victim may be effective if it will not cause further harm.
4. When it is not possible to thoroughly decontaminate the victim or the PPE, the victim may be placed on plastic or other material to avoid spreading the contamination.
5. Medical personnel and facilities will be advised immediately whenever a victim is being transported or cared for and has not been thoroughly decontaminated. Medical personnel must be advised of the chemical, its properties, its hazards, known antidotes, or any other pertinent information. A copy of the SDSs will be given to medical personnel.

3.8.2 Disposal Procedures

All discarded materials, waste materials, or other objects shall be handled in such a way to avoid the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left onsite. All material that has visible signs of contamination (e.g., waste chemicals, contaminated soil, etc.) will be classified as potentially contaminated material. All potentially contaminated materials (i.e., PPE, clothing, disposable equipment, etc.) will be double bagged or drummed as necessary and segregated for temporary storage onsite for eventual disposal. All decontamination liquids will be collected, drummed, and stored onsite for eventual disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as normal domestic waste. It is important to note that a hazardous waste determination (either by knowledge of the waste or by analytical testing) must be performed on all waste materials destined for disposal, and all appropriate approvals, handling, transportation, and disposal methods must observe applicable Resource Conservation and Recovery Act (RCRA) regulations. Hazardous Waste shall be transported by an EPA licensed hazardous waste transporter to an EPA licensed hazardous waste treatment, storage, or disposal facility.

3.9 Contingency Plan Review and Submittal

In accordance with 40 CFR 265.54 and 29 CFR 1910.120, under the following conditions, the Contingency Plan should be reviewed and immediately revised:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

New employees should be familiarized with all emergency response procedures.

In accordance with 40 CFR 265.53, a copy of the Contingency Plan and all revisions must be maintained at the facility and submitted to the following parties:

1. Local Police Department
   Phoenix Police Department
   620 W Washington Street
   Phoenix, AZ 85003
2. Local Fire Department
   Phoenix Fire Department
   2409 W Cactus Road
   Phoenix, AZ 85029
3. Local Hospital
   Honor Health Deer Valley Medical Center
   19829 N 27th Ave,
   Phoenix, AZ 85027
4. Local Emergency Planning Committee (LEPC)
   Maricopa County
   5630 E. McDowell Road
   Phoenix, AZ 85008
5. Arizona State Emergency Response Commission (SERC)
   SERC
   c/o Department of Environmental Quality
   1110 W Washington Street
   Phoenix, AZ 85007

CS Clean will complete the following:

Familiarize the police and fire departments with:

- The layout of the facility
- Properties and hazards associated with the wastes handled at the facility
- Places where facility personnel would normally be working
- Entrances to the facility
- Evacuation routes

The Phoenix Police Department will be requested to provide the following assistance during an emergency:

- Immediate response
- Crowd control assistance
- Security to affected area
- Evacuation of surrounding areas, if required

- Communications support, if required

The Phoenix Fire Department will be requested to provide:

- Primary emergency authority
- Immediate response
- Primary fire-fighting services

Honor Health Deer Valley Medical Center will be requested to provide:

- Transfer to hospital
- Primary medical services
- Rescue services

3.10 Location of Contingency Plan

Copies of the Contingency Plan will be kept on an internal internet page CS Clean offered to all employees, in the main office area, and at the administrative assistant's office at the front entry.

4.0 FEDERAL, STATE, AND LOCAL REPORTING REQUIREMENTS

A variety of Federal, State, and Local reporting requirements exist for the reporting of emergencies and chemical releases. Provided below is a general description of the criteria for reporting under various regulations. It is the Emergency Coordinator's responsibility to follow the reporting requirements when applicable. The Emergency Coordinator may also designate a competent person to conduct these activities.

For the readers' convenience the table below summarizes reporting contacts.

Table 4
EMERGENCY REPORTING LIST

Report Contact Name	Type	Phone Number
Emergency	**N/A**	**911**
National Response Center	Federal	800-424-8802
EPA Region 9	Federal	800-300-2193
Arizona DEQ – Spill Hotline	State	602-771-2330 or 800-234-5677
Arizona – State Emergency Response Commission	State	602-771-8786
Maricopa County Local Emergency Planning Committee	LEPC	602-273-1411
Arizona Occupations Safety and Health Administration – Phoenix Office	Federal	602-542-5795
Phoenix Fire Department	City	602-495-5555

Table 4 EMERGENCY REPORTING LIST		
Report Contact Name	**Type**	**Phone Number**
Phoenix Police Department	State	602-262-6151
Phoenix Water Services Department	Water / Sewer Authority	602-262-6251

Section 311(b)(5) of the Clean Water Act (CWA), codified as 40 CFR 110, establishes reporting requirements for the release of oils into navigable waters, including wetlands. Releases of oil to navigable waters that: (1) cause a sheen to appear on the surface; (2) violate applicable water quality standards; or (3) cause a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines must be reported to the NRC at 800-424-8802. Notification must be submitted as soon as the facility Emergency Coordinator has knowledge of any discharge.

In the event a release threatens drinking water, stormwater, or sewer system contact the Phoenix Water Services Department (602-262-6251) and ADEQ (602-771-2330 or 800-234-5677).

If a spill of material of any amount threatens to reach navigable waters, the NRC (800-424-8802) shall be contacted.

The Emergency Coordinator should be ready to report the following information:

- Your name, location, organization, and telephone number;
- Name and address of the party responsible for the incident;
- Date and time of the incident;
- Location of the incident;
- Source and cause of the release or spill;
- Types of material(s) released or spilled;
- Quantity of materials released or spilled;
- Danger or threat posed by the release or spill;
- Number and types of injuries (if any);
- Weather conditions at the incident location; and
- Any other information that may help emergency personnel respond to the incident.

Navigable waters of U.S. are defined in 40 CFR Part 110.1 to include interstate waterways or intrastate waterways including lakes, rivers, and streams which may be utilized by interstate travelers for recreational purposes. Navigable waters also include lakes, rivers, and streams from which fish or shellfish are taken. The complete definition may be found in Section 502(7) of the Federal Water Pollution Control Act. In the event of a large volume release, oil products and reportable quantities of materials could potentially enter the nearby Mill River.

After a spill or release of oil greater than 1,000 gallons or after two spills of oil greater than 42 gallons within any twelve-month period, or if the spill impacted a navigable waterway, the Emergency Coordinator will report the event(s) to the following agency within sixty days.

The Regional Administrator
U.S. Environmental Protection Agency – Region 9
U.S. EPA Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Phone: 415-947-8000

The EPA report will include:

- Name of the facility;
- Your name;
- Location of the facility;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Corrective action and countermeasures you have taken, including a description of equipment repairs and replacement;
- An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- The cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and
- Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event.

As required by EPA Federal Regulation 40 CFR 112.5(c), a copy of the EPA report will also be submitted to ADEQ at the following address:

Arizona Department of Environmental Quality
Attn: Emergency Response and Spill Prevention
1110 W. Washington St.
Phoenix, AZ 85007

4.1 Comprehensive Environmental Response, Compensation, and Liability Act Releases (Federal)

Section 104 of CERCLA (also known as "Superfund"), codified at 40 CFR 302, requires that if greater than the RQ of a CERCLA hazardous substance is released from a facility over a 24-hour period, the Emergency Coordinator, as soon as they have knowledge of the release, must notify the NRC (800-424-8802). Reportable releases include any release to the environment, either to air, land, or water,

except for certain continuous releases. It should be noted that a release contained entirely within the building constitutes a release under CERCLA, and if more than the RQ is released to air, land or water, the release is reportable.

4.2 Hazardous Materials Transportation Act (HMTA) Notification (Federal)

Under 49 CFR 171.15, if a release of hazardous materials occurs in transport (including loading or unloading) which causes injury or death, property damage over $50,000, public evacuation or major road closure lasting more than one hour, aircraft re-routing, spillage or fire of a radioactive or disease-causing material, or continuing endangerment of life at the scene of the incident exists, then the carrier must notify the Department of Transportation via the NRC at 1-800-424-8802. Each notice must include the following information:

1. Name of Reporter;
2. Name and address of carrier;
3. Phone number where reporter can be reached;
4. Date, time, and location of incident;
5. The extent of injuries, if any;
6. Type and quantity of materials involved; and
7. Type of incident and whether continuing danger of life exists at the scene.

The carrier must also submit a written report regarding the incident within thirty days, and if any unintentional release of hazardous material occurs (under conditions not necessarily listed above), a written report must be submitted.

4.3 Superfund Amendments and Re-Authorization Act Releases (Federal)

Under 40 CFR 355.40, releases of CERCLA hazardous substances of Extremely Hazardous Substances (EHSs) (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) above the RQ must be reported to the SERC at 602-771-0397 and the LEPC at 602-273-1411 by the owner or operator of the facility, and must include the following information:

- The chemical name of identity of the substance released;
- Whether the substance is an EHS;
- The quantity released;
- Time and duration of the release;
- The medium or media into which the release occurred;
- Any relevant medical information (health risks, etc.);
- Precautions to take, including evacuation; and
- The name and telephone number of the person to contact for further information.

As soon as practicable after reporting the release, the owner or operator must submit a written report of the incident and information listed above which additionally includes the following information:

- Actions taken to respond to and contain the release;
- Any acute and chronic health effects from the release; and
- Any advice regarding medical attention necessary for exposed individuals.

Several exemptions to this reporting requirement are provided under paragraph 355.40(a) (2), which should be carefully reviewed to determine if reporting is required.

4.4 State Spill and Release Requirements

Under Arizona's statutes, any oil or petroleum products, chemical or waste that is released in any manner and in any amount constitutes a "spill" and must immediately be reported to the Oil and Chemical Spills section of the ADEQ at 602-771-2330. Providing the following information:

- Name, address, and telephone number of the reporter;
- Name and address of the facility;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to public health, or the environment, outside the facility.

A follow-up written report to the same section of the ADEQ is required to be completed within fifteen days. The written report will include:

- Name, address, and telephone number of the generator;
- Date, time, and type of incident (i.e., fire, explosion);
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- An assessment of actual or potential hazards to public health or the environment; and
- Estimated quantity and disposition of recovered material from the incident.

5.0 TRAINING

5.1 Contingency Plan and Emergency Action Plan Training

To comply with both state and federal regulations, CS Clean must provide and maintain a training program that will ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. This training program consists of both in-house classroom training as well as on-the-job training.

In-house training will be conducted by a competent and qualified training instructor familiar with this Plan's requirements. On-the-job training consists of employees completing job tasks under the guidance and supervision of another fully-trained employee. No person will be allowed to work with hazardous materials unsupervised until the training requirements set forth as appropriate for the particular job title have been successfully completed. Newly hired or newly assigned employees will have the necessary job training completed within six months of their job placement. Also, employees involved in hazardous waste management will be provided training annually.

The intent of the training program is to provide the employee with the necessary knowledge and skills to perform the functions of their job title in a safe manner and to maintain compliance with state and federal regulations.

Pursuant to 40 CFR 262.17(a)(7) and 29 CFR 1910.38(e), personnel will be specifically trained in the following emergency response areas:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- Key parameters for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Response to fires or explosions;
- Response to groundwater contamination incidents;
- Shutdown operations; and
- Train employees to assist in a safe and orderly evacuation of other employees.

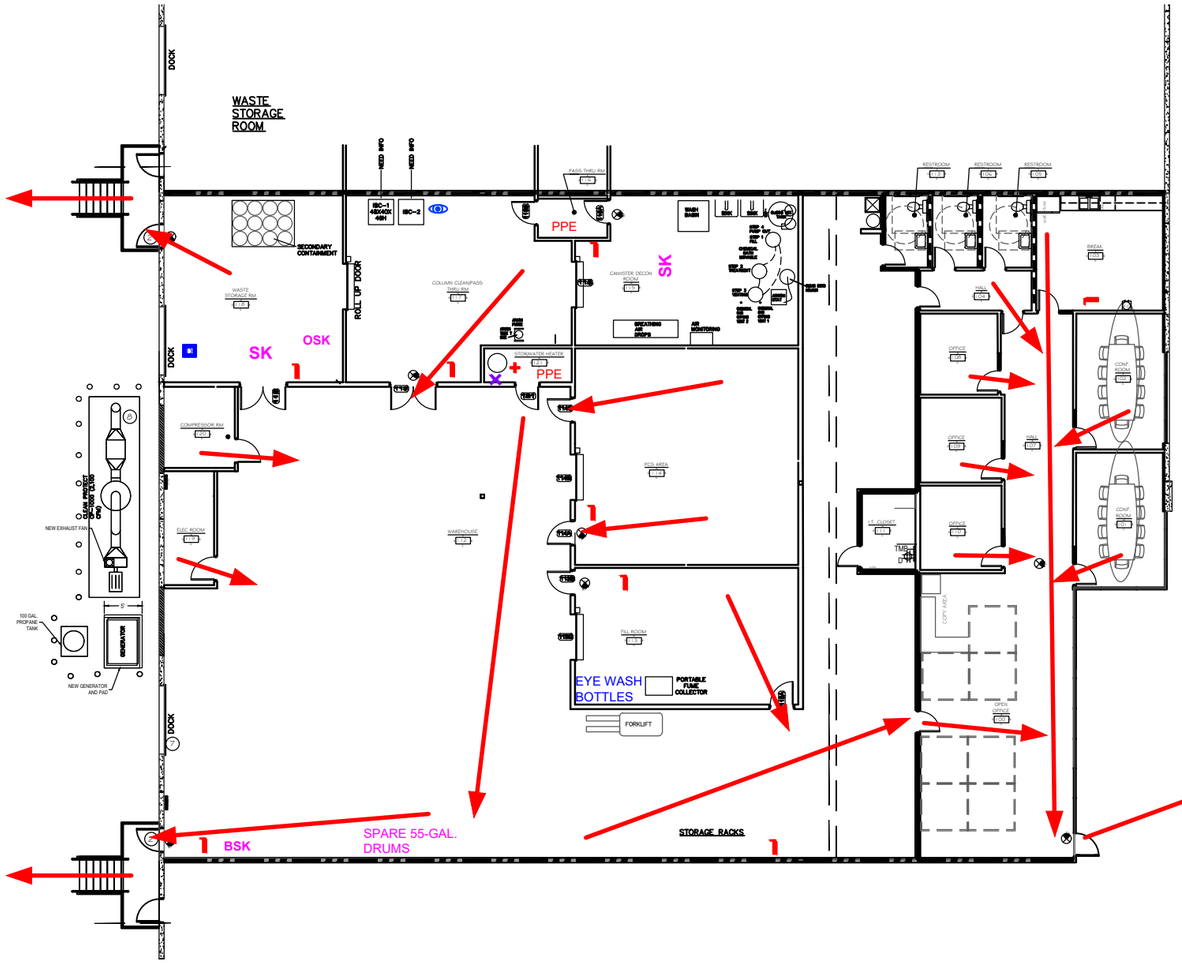
Hazardous waste management duties and responsibilities vary for each job title. Also, the training for certain jobs may overlap with the training for similar jobs. Therefore, there is variation associated with the necessary training for each job title. Training records shall be maintained for the duration of an employee's employment to satisfy OSHA emergency action plan training requirements.

5.2 Emergency Response Drills

Per the National Fire Protection Association (NFPA) 101 (2015), CS Clean will perform periodic emergency response drills (i.e., annually). The drill procedures, schedule, and log are maintained separately in company files.

FIGURES

DRAWING NAME: J:\C\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 - EMERGENCY EVACUATION PLOT DATE: May 23, 2025 - 11:40am OPERATOR: BOB



SECONDARY RALLY POINT (IN PARKING LOT)

PRIMARY RALLY POINT (ON SIDE OF PARKING LOT CIRCLE)

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

NORTH

0 10' 20'

REVISIONS

NO.	DATE

DESIGNED BY:	REVIEWED BY:	ISSUE DATE:
DSW	DSW	05/23/2025
DRAWN BY:	PROJECT NUMBER:	SHEET SIZE:
BOB	CSC0011.PS	11"x17"

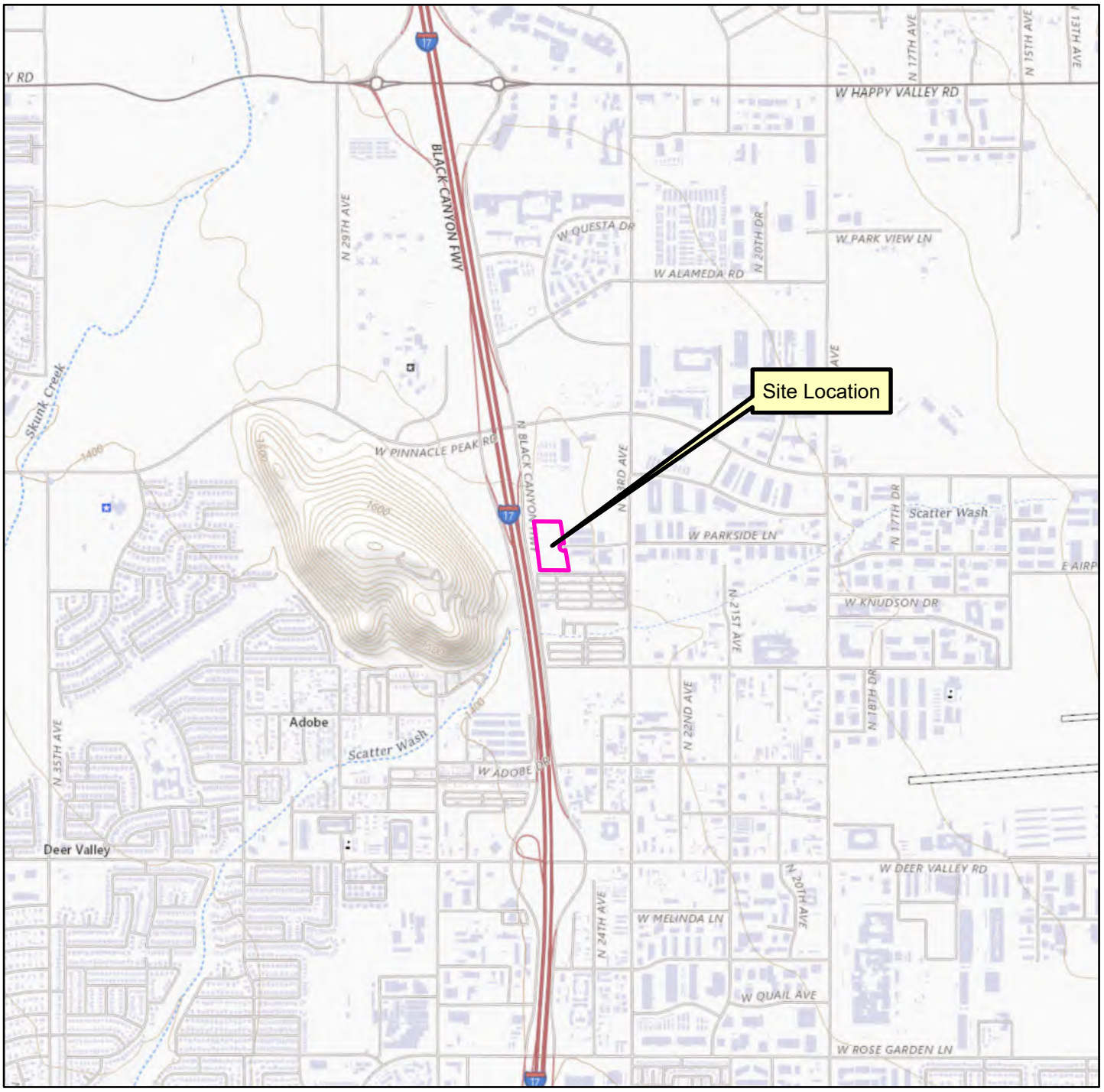
SITE PLAN

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150
PHOENIX, ARIZONA

FIGURE NO.

1



0 1,000 2,000 4,000 6,000 8,000

Feet

1:24,000

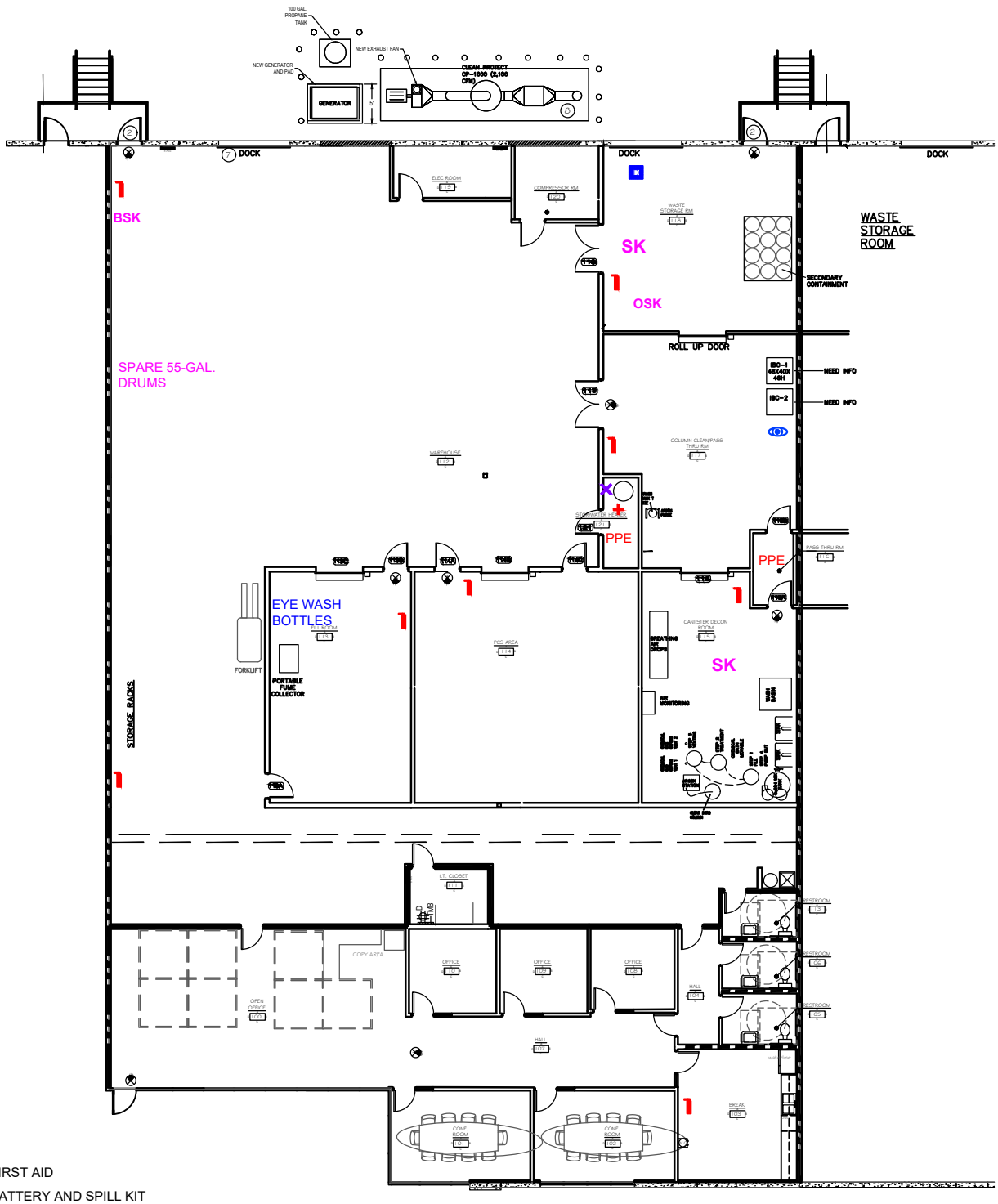
N

USGS Quadrangle Information
Quad ID: 33112-F1
Name: Union Hills, Arizona

Figure 2
Site Location
CS Clean Systems, Inc.
2453 W Parkside Lane
Suites 150
Phoenix, Arizona
HRP # CSC0011.PS
Scale 1" = 2,000'

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

Path: J:\CIC\SCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\GIS\Figures\Figures.aprx



✚-FIRST AID
BSK-BATTERY AND SPILL KIT
SK -SPILL KIT, (WASTE OIL, WATER, UNIVERSAL WASTE, COOLANT, SOLVENTS)
✕-LOTO EQUIPMENT
OSK-95 GAL. OVERPACK SPILL KIT
-SPILL BLOCKER DIKE
-FIRE EXTINGUISHER
-EYEWASH

0 10' 20'

NORTH

MAP REFERENCE: SHEET IA-2, CS CLEAN SYSTEMS INC. 2453 W PARKSIDE LN, SUITES 150, PHOENIX, AZ BY A DESIGN IN VISION OF GOODYEAR, ARIZONA; PROJECT NO. 22350; DATE: 4/12/23.

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

EMERGENCY EQUIPMENT

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150, PHOENIX, AZ

SCALE: 1" = 20'

ISSUE DATE: 02/27/2025

PROJECT NUMBER: CSC0011.PS

Fig. 3

SHEET NO.

DRAWING NAME: J:\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 SITE PLAN PLOT DATE: Feb 27, 2025 - 9:49am OPERATOR: BOB

APPENDIX A
Hazardous Waste Inspections

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG WASTE STORAGE AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or secondary containment, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Containers and bulk containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Placement and storage acceptable	Drum aisle spacing: 30" (minimum), height of stack: 1 high maximum		
Containers, bulk containers, and columns closed and secured	Open lids or bungs		
Labeling of containers and storage bulk containers	Improper identification, missing labels, accumulation date missing		
Storage capacity is not exceeded	$\geq$10 55-gallon containers, $\geq$10 spent columns, >2 275-gallon totes		
Wastewater bulk container is provided with start accumulation date	Missing label, date		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Waste material holding time within maximum limit	1-year maximum handling time for spent granulate material from delivery to disposal (applies only to off-site, non-reclaimed waste storage). 90-days for onsite generated wastes.		
Secondary Containment	Secondary containment present and capable of supporting 110% of largest container		
Compatible Waste	Incompatible waste is stored so that spill will not comingle		
Wastewater generation log is available and in-use	Missing generation log, not in use		
Wastewater storage duration has not exceeded permit limitations	Limitations based on hazardous waste generator status (<90 days)		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG PREPARATION AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle Space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping and pumps in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns or waste		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG WASTE MATERIAL TRANSFER AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Tanks and bulk containers in good condition	Leaks, dents, corrosion, deterioration		
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns, only satellite storage area		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Shipping containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **DONNING AND DOFFING PASSTHROUGH AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
All fire extinguishers visible and accessible	Not properly identified, missing, not mounted securely		
All fire extinguishers fully charged	Not adequately charged		
Fire alarm system functioning properly and has been tested in the past year	Pull boxes not functioning properly, loss of water pressure or alarm signal for sprinklers		
At least 18-inch clearance provided for all sprinkler heads	Material or equipment storage issues		
Smoke alarms functioning correctly	Loss of power, blocked, damaged		
All exits marked with exit signs and illuminated	Missing signage, loss of power, damaged		
Evacuation plans posted near doors and/or common areas	Missing signage, not accurate, not sufficient size		
All doorways and hallways leading to an exit free and clear and provided illumination	Material or equipment storage issues, loss, or power, damaged		
Emergency notification equipment including telephone and/or paging system operational	Loss of power, blocked, damaged		
Emergency phone numbers posted	Missing signage, not accurate		
Emergency lights functioning correctly	Loss of power, blocked, damaged		
First aid kits visible and accessible	Not properly identified, missing, not accessible		
First aid kits stocked as required and expiration dates current	Depleted or missing inventory, expired components		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available and in good condition	Broken, dirty, missing equipment (includes air supply system, respirators, chemical resistant clothing, eye protection, gloves)		
Spill kits readily available and include adequate materials	Missing, damaged, not accessible		
Duct flow pressure gauge operating correctly	Damaged, loss of power, faulted		
Ventilation	HEPA present and functioning, Cleanprotect operating		
Liquid level switch operating correctly	Damaged, loss of power, faulted		
Gas/O_2 Detection System calibrated and operating correctly	Expired calibration, damaged, loss of power, faulted		
Emergency Generator	Checked for operation in loss of power, maintained		
Uninterruptible Power Supply (UPS)	Checked for operation in loss of power, maintained		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS **WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available	Includes air supply system, respirators, chemical resistant clothing, eye protection, gloves in stock		
Respirators in good condition	Respirator components (mouthpiece, supplied air systems, connections), broken or damaged, dirty.		
Chemical resistant clothing	Good condition, no holes, damage, or dirty/used equipment.		
Gloves	Good condition, no holes, damage, or dirty/used equipment.		
Eye protection	Good condition, no holes, damage, or dirty/used equipment.		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – SECURITY **WASTE MATERIAL TRANSFER ROOM. WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Yes/No**	**Date and Type of Repair Performed (Location if applicable)**
Facility perimeter fence in acceptable condition	Damaged, deteriorated, missing		
Warning signs posted and in acceptable condition	Missing, damaged		
Building security system operating correctly	Damaged, loss of power, notifications not provided		
All doors and key card system operational	Damaged, cannot close or lock		
Lighting on interior and exterior adequate	Damaged bulbs, loss of power		

APPENDIX B

Hazardous Materials Identification System Spreadsheet

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Argon	100%	7440-37-1	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Nitrogen	100%	7727-37-9	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Copper Sulfate Pentahydrate	99%	7758-99-8	Toxic	Solid	100 lbs	2	0	0	1
X		CLEANSORB CS3F	100%	Proprietary Copper Compound	Toxic	Solid	22,000 lbs	2	0	0	0
X		CLEANSORB CS3G	<20%	Proprietary Copper Compound	Corrosive	Solid	1,325 lbs	1	0	0	0
X		CLEANSORB CS5	MIX	1313-13-9 <100% 1317-38-0 <25%	Toxic	Solid	1,325 lbs	2	0	1	0

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Waste - MOCVD Tool Exhaust	MIX	1317-38-0 10-50% 12005-75-3 10-30% 12019-57-7 10-30%	Pyrophoric Unstable / Reactive Toxic	Solid	880 lbs	2*	0	0	0
X		Waste - Ion Implant abatement	MIX	7440-38-2 >1% 142844-00-6 20-40% 1309-48-4 20-40%	Toxic	Solid	1760 lbs	3*	0	0	0
X		Waste - Exhaust Scrubber Granular	MIX	7784-18-1 20-40% 7783-40-6 20-40%	Corrosive	Solid	1760 lbs	2*	0	0	0

Insert additional lines as needed.

* NFPA 704 for highest hazard component that is apart of waste stream.

APPENDIX C
Notifications to Local Agencies

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Mike Duran III
Fire Chief
City of Phoenix Fire Department
2409 W Cactus Road
Phoenix, AZ 85029

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Chief Duran:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with applicable federal and state regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Honor Health Deer Valley Medical Center
19829 N 27th Avenue,
Phoenix, AZ 85027

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

To Whom It May Concern:

Attached please find the contingency plan for CS Clean Systems (CS Clean) at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Urgent Care Facility in compliance with applicable state and federal regulations. Should the need to send an employee of CS Clean to Honor Health Medical Center due to a work-related injury or an overexposure to any chemicals onsite, CS Clean will submit all SDSs (Safety Data Sheets) for chemicals that the employee had encountered.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Michael Branham
Maricopa County LEPC
5630 E. McDowell Road
Phoenix, AZ 85008

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Mr. Branham:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Chief Michael Sullivan
City of Phoenix Interim Police Chief
620 W Washington Street
Phoenix, AZ 85003

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

Dear Chief Sullivan:

Attached please find the contingency plan for CS Cean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the City of Phoenix Police Department in compliance with applicable state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Laura Malone
AZ State Emergency Response Commission
City of Phoenix
1110 W Washington Street
Phoenix, Arizona 85007

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Ms. Malone:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the City of Phoenix in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Michael Branham
Maricopa County LEPC
5630 E. McDowell Road
Phoenix, AZ 85008

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Mr. Branham:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared For:

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

Issued On: March 12, 2025

Revised On: October 27, 2025

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GENERAL INFORMATION

Project/Site Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Consultant Information:
HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032
Phone: 860-674-9570
Fax: 860-674-9624
E-mail: David.Webster@hrpassociates.com
Project Number: CSC0011.PS

Client Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Report Date: October 27, 2025

Report Author:
Chelsea Thompson
Associate EH&S Consultant

Client Manager:
David Webster
Senior EH&S Project Manager

Reviewed By:
David Webster
Senior EH&S Project Manager

1.0 EXECUTIVE SUMMARY

Executive Summary

This Emergency Action and Contingency Plan has been updated for CS Clean Systems (CS Clean) in order to comply with State and Federal Hazardous Waste Regulations and Occupational Safety and Health Administration (OSHA) Emergency Response Plan regulations. The purpose of this plan is to act as a guide during an actual emergency, to minimize hazards to human health and the environment from fires, explosions, and other releases, and to familiarize local emergency response personnel with the types and locations of materials kept onsite.

Contingency Plan Submittal

A copy of this updated Contingency Plan must be submitted to the following agencies:

- Local Police Department
- Local Fire Department
- Local Hospital/Urgent Care
- Local Emergency Planning Committee (LEPC)
- State Emergency Response Commission (SERC)

Implementation of the Contingency Plan

The Contingency Plan should be implemented under any of the following situations:

- Fire/Explosion
- Spill/Release
- Flood
- Other Emergencies

Initial Notifications

The following people are responsible for implementing this plan (See **Section 3.2** for details.):

- Jacob Newman – Emergency Coordinator
    - 24-Hour Phone: (360) 852-6410
- Jason Dugay – Alternate Emergency Coordinator
    - 24-Hour Phone: (203) 648-0881
- Adam Furphy – Alternate Emergency Coordinator
    - 24-Hour Phone: (845) 337-7385

Emergency Procedures

Emergency procedures are in the sections noted below:

- Immediate Procedures (**Section 3.4.1**)
- During Emergency (**Section 3.4.2**)
- Follow-up Procedures (**Section 3.4.3**)

Control Procedures

Emergency Procedural Flow Charts for the following situations are included in the sections noted below:

- Fires/Explosions (**Section 3.5.4**)
- Spills/Releases (**Section 3.5.5**)

Emergency Equipment

The locations of emergency equipment at CS Clean can be found on **Figure 3** and are posted around the facility. **Table 3** describes the facility's emergency equipment as well as its uses and locations.

Evacuation

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. **Figures 1** and **3** show CS Clean evacuation routes and **Section 3.7** includes procedural details.

Reporting of Emergency Incidents

Immediately after an environmental emergency the event must be reported to the Commissioner of the Arizona Department of Environmental Protection (ADEQ) as well as the Regional Administrator of the U.S. Environmental Protection Agency (EPA). A written report must be filed within fifteen days of an environmental emergency, the Emergency Coordinator must report to ADEQ and EPA. Any work-related accidents that result in the death of an employee must be reported to OSHA within eight hours of the incident occurring and report any employee in-patient hospitalization, amputation, or loss of an eye within twenty-four hours.

Locations of Contingency Plan

Copies of this Contingency Plan are maintained at the facility on the internal CS Clean internet page. Access can be granted at the Administrative Assistant's office and the Environmental, Health and Safety Director's office.

Contingency Plan Revision

This Contingency Plan must be revised under any of the following conditions (but may not be limited to):

- Regulations are revised;
- Plan fails in an emergency;
- Facility changes (design, operation) which increases the potential of a fire, spill, or release;
- List of emergency coordinators changes; or
- List of emergency equipment changes.

2.0 INTRODUCTION

2.1 General Background

This combined Hazardous Waste Contingency and Emergency Response Plan has been created to help eliminate confusion for facility first responders during an emergency and to avoid duplication in the preparation and use of emergency response plans at CS Clean. The use of this single plan should also improve coordination between facility response personnel and local, state, and federal emergency response personnel.

The purpose of this plan is to comply with OSHA and EPA regulations under 29 Code of Federal Regulations (CFR) 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, respectively, as well as the Large Quantity Generator (LQG) Hazardous Waste Contingency Plan regulations under Sections R18-08-262, and Treatment, Storage, and Disposal facility (TSDF) requirements under 40 CFR 270.14(b)(7), 264.56, and Arizona Administrative Code (AAC) R-18-8-264. The goal of the combined plan is three-fold:

1. To act as a guide during actual emergency situations;
2. To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soils, or surface water; and
3. To familiarize local emergency response personnel (i.e., police, fire, and rescue departments, hospital, and governmental personnel) with the types of material handled at the facility and internal emergency response procedures.

CS Clean, located at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona, is a hazardous TSDF, generator of hazardous waste, and transfer of hazardous secondary materials (HSM) for reclaim. The primary role of the facility is to service gas abatement systems (columns), treatment, and storage of the waste contained in the columns. The North American Industry Classification System (NAICS) code for the facility is 333413 (Industrial/Commercial Fan and Blower and Air Purification Equipment Manufacturing) and the Standard Industrial Classification (SIC) code is 3564 (Air Purification Equipment). The plant consists of one main building that contains offices, waste storage, and waste repackaging areas. The facility has no onsite storage of liquid fuels for the site as the

facility runs on natural gas, aside from two to three cannisters of Propane for the Powered Industrial Trucks (PITs) onsite. Hazardous waste contained in containers and totes are stored within the main building in various designated areas. The Site Location is indicated on **Figure 1**.

CS Clean has up to eight employees onsite and usually operates one eight-hour shift Monday through Friday. On occasion there may be employees onsite during off-hours for miscellaneous/non-routine activities.

The manufacturing processes at CS Clean produce several different hazardous waste streams, treat, and store various hazardous waste streams. A list of potential waste streams and hazardous waste streams was previously reported to Phoenix Fire Department using the Hazardous Materials Identification System (HMIS). The generation rate, storage location, and handling methods for these wastes are discussed further in this section.

The following are the key elements of the Hazardous Waste Management Program as they apply to CS Clean:

- Identification and Listing Hazardous Waste
- Standards for Generators and Transporters of Hazardous Waste
- Hazardous Waste Facility Standards and Permit Requirements
- Hazardous Waste Shipping and Manifest Requirements

CS Clean operates as a TSDF station per AAC R-18-8-264. The facility receives spent Cleansorb columns of hazardous waste to treat the waste so Cleansorb columns can be utilized as part of a column regeneration process. Cleansorb vessels are designed to be reusable. A Cleansorb column is initially filled with virgin granulate, is installed in a manufacturing process exhaust scrubber at an offsite location, and will abate hazardous gases until such time that the granulate within it is spent. At that time, the end user purges the column with inert gas to remove any hazardous vapors which may remain in the column, removes the spent column for shipping, and installs a new Cleansorb column filled with virgin granulate. The spent column is then returned to CS Clean who then treats the waste and stores the waste prior to offsite disposal and decontamination of the Cleansorb column for reuse. The process is described in detail below for the treatment, storage, and disposal of spent columns.

- The receipt of spent scrubber columns containing potentially hazardous spent granulate from end product users;
- Removal of the spent granulate from the columns, which is then transferred into approved shipping containers at the CS Clean facility, followed by either:
    - Treatment and transportation of the spent granulate offsite for disposal via a third-party environmental services vendor.

      OR
    - Transferal of the spent granulate to a permitted reclamation facility for the recovery of precious metals, where possible.

- Decontamination, fine cleaning, testing, and refilling of the spent columns with virgin granulate; and,
- Shipping of the cleaned and regenerated columns to service at the end users' facilities.

Additionally, the facility is a permitted LQG, EPA I.D. #AZR000528570, with one hazardous waste Central Accumulation Area (CAA) storage. Waste is stored initially in Satellite Accumulation Areas (SAA) located throughout the waste process area. Once the SAA waste is removed the waste is transported to and stored in the CAA located to the west, within the waste storage area. The waste is stored for less than ninety days onsite prior to removal by a permitted hazardous waste transporter. The CAA is routinely inspected, and a copy of the Hazardous Waste Inspection Log is included as **Appendix A**.

Further information on the hazardous wastes and hazardous materials stored at CS Clean can be found in **Appendix B** identifies the storage location and applicable notes for each waste.

When disposing of a hazardous waste, the generator must fill out a Hazardous Waste Manifest form (with help from the hazardous waste transporter) which lists facility information, type and volume of waste being shipped offsite, transporter information, and details of the destination facility. CS Clean must retain copies of each manifest.

CS Clean utilizes hazardous materials in its production processes. Hazardous materials are stored throughout the facility. The hazardous materials are stored in containers with sizes ranging up to and including 55-gallon drums and 275-gallon totes. The hazardous constituents of the drums and totes are classified as flammable, pyrophoric, irritants, compressed gases, corrosive, or toxic materials. Other areas of hazardous material storage include a generator onsite with propane. Safety Data Sheets (SDSs) shall be maintained by the site and be made accessible for more specific information on the summarized hazards below in an emergency situation. Hazardous materials reported to the Phoenix Fire Department previously are included in the HMIS spreadsheet attached in **Appendix B**.

2.2 Amendments

This plan must be reviewed, and immediately amended, if necessary, whenever:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The generator facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Table 1 AMENDMENTS			
Section Amended	**Date**	**Description**	**Name of Amender**
Throughout	10/20/25	Updated Primary Coordinator Contact	Chelsea Thompson, Associate Consultant
Throughout	10/20/25	Update to inspections and TSDF	David Webster, Senior Project Manager

3.0 HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

3.1 Purpose

In accordance with 29 CFR 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, 40 CFR 264.56, and 40 CFR 270.14, respectively, as well as the ADEQ Hazardous Waste Contingency Plan regulations under Sections R18-08-262 and R18-08-262, this plan will be used in the event of an emergency.

The intent and purpose of this plan are:

- To act as a guide during actual emergency situations;
- To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or their constituents to the air, soils, or surface water; and
- To familiarize local emergency response personnel (e.g., police, fire, hospitals) with the types of material used and stored, and internal emergency response procedures.

The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

3.2 Initial Notifications

At CS Clean, the following personnel must be notified in the case of a sudden or non-sudden release of hazardous wastes, fire, or explosion.

The phone number at the plant to be used by persons outside the facility (e.g., police, fire, spill contractors, etc.) is (520) 263-0235.

TABLE 2 EMERGENCY CONTACTS				
Role	**Name**	**Address**	**Home/ Cell Phone**	**Facility Phone**
Emergency Coordinator	Jacob Newman	2453 West Parkside Lane, Suite 150, Phoenix, AZ	(360) 852-6410	(520) 263-0235
Alternate Emergency Coordinator	Jason Dugay	26 Commerce Drive, Danbury, CT	(203) 648-0881	(203) 797-8155
Alternate Emergency Coordinator	Adam Furphy	26 Commerce Drive, Danbury, CT	(845) 337-7385	(203) 797-8155

In case of an imminent, actual emergency at the plant, the Emergency Coordinator, or the Alternate, shall be contacted first. The Emergency Coordinator shall carry out the emergency plan agreed upon by local police, fire department, hospitals, contractors, and state and local emergency response teams.

Upon being notified, the **Emergency Coordinator** will obtain the following information:

1. Nature of Emergency (i.e., fire or spill);
2. Location of Emergency;
3. Size and Extent of Emergency;
4. Hazardous Materials Involved (if any); and
5. Injury to Personnel.

Emergency Coordinator Qualifications:

The Emergency Coordinator and the Alternates have been chosen based upon the following required qualifications:

- The Coordinator or Alternates must be onsite or on-call at all times;
- Must be familiar with the facility layout;
- Must know the locations and characteristics of the waste handled;
- Must be thoroughly familiar with contingency and emergency plans;
- Must be familiar with all operations and activities at the facility;
- Must know the locations of all records; and
- Must have the **authority** to commit facility resources in the event of an emergency.

3.3 Implementation of the Contingency Plan

The decision to implement the Contingency Plan depends upon whether an actual situation could threaten human health or the environment. This section outlines the decision making criteria that the Emergency Coordinator will use to define situations in which the Contingency Plan will be implemented. The Contingency Plan will be implemented in the following situations, or other situations upon the judgment of the Emergency Coordinator or, in his or her absence, the Alternate Emergency Coordinator.

Fire and/or Explosion

- A fire causes the release of toxic fumes.
- The fire spreads and could possibly ignite materials at other locations onsite or could cause heat induced explosions.
- The fire could possibly spread to offsite areas.
- Use of water or chemical fire suppressant could result in contaminated run-off.
- An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- An imminent danger exists that an explosion could ignite other hazards waste at the facility.
- An imminent danger exists that an explosion could result in the release of toxic materials.
- An explosion has occurred.

Spills or Material Release

- The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
- The spill could cause the release of toxic liquids or fumes.
- The spill can be contained onsite, but the potential exists for ground water contamination.
- The spill cannot be contained onsite, resulting in offsite soil contamination, air, or ground water or surface water pollution.

Floods

- Floods occur from rain, snow, storms, storm surges, or overflows of dams and water systems.
- Floods can lead to power outages, gas line emergencies, damage to the building and its contents, and create landslides.
- Flood water can become energized by electrical equipment exposed to flood waters.

Power Outage and Natural Gas Emergency

- The potential exists for power outages and natural gas emergencies, which could create an employee safety hazard or damage onsite machinery/equipment. In addition, in the event of a power outage, ventilation could be turned off, which establishes a dangerous environment due to fumes.
- Emergency Response Coordinators are responsible for evacuation and determining conditions under which hazardous conditions may exist due to power failure.

Natural Disasters and Inclement Weather

- The potential exists for natural disasters, such as hurricanes or tornadoes, as well as other types of inclement weather.

Bomb Threats, Civil Disturbances, Workplace Violence, and Suspicious Mail

- The potential exists for area bomb threats, civil disturbances, workplace violence, and/or suspicious mail.

Medical Responses

- Due to the inherent nature of the activities conducted at the facility, a potential exists for both serious medical and non-serious/non-emergency situations.

3.4 Emergency Procedures

3.4.1 Immediate

Emergency procedures are the responsibility of the Emergency Coordinator or his/her Alternate. Immediate procedures are outlined below.

1. If necessary, the Emergency Coordinator will activate internal facility alarms or communication systems to notify all facility personnel.
2. If safety permits, each operator should shut down his/her operations; most importantly turn off running processes, if safe to do so. See supervisor if unsure of procedure.
3. All personnel and visitors shall exit using predetermined routes described in this plan.
4. If their help is needed, the Emergency Coordinator will notify the appropriate State and local agencies included in the emergency procedural flow diagrams.
5. The Emergency Coordinator must identify the character, exact source, amount, and extent of any release materials and assess possible hazards to human health or the environment.
6. If the Emergency Coordinator determines that there is a threat to human health or the environment outside the facility, or if greater than the reportable quantity (RQ) of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance or a Superfund Amendments and Reauthorization Act (SARA)

Extremely Hazardous Material (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) is released, it must reported to:

- Emergency Spill Clean Up Contractor: Veolia
  - **Telephone Number: (602) 233-2955**
- ADEQ spill hotline
  - **Telephone Number: (602) 771-8786**
- LEPC for CERCLA/SARA release greater than the RQ
  - **Telephone Number: (602) 273-1411**
- National Response Center (NRC)
  - **Telephone Number: 1-800-424-8802**

The following information must be provided to ADEQ, the LEPC, and the NRC when contacted:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident (e.g., release, fire, etc.);
- Where did the incident occur;
- How did the incident occur;
- Name and quantity of material(s) involved, to the extent known;
- What actions were taken to respond and contain the incident;
- The possible hazards to human health or the environment outside the facility; and
- The extent of injuries, if any.

3.4.2 During Emergency

During an emergency, the Emergency Coordinator or his/her alternate must be aware of the following possible problems:

- If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure build up, gas generation, or ruptures in the valves, pipes, or other equipment as appropriate.
- In the affected areas of the facility, no waste that may be incompatible with the released material should be treated, stored, or disposed of until after the cleanup procedures have been completed.

It should be noted that in the event of an emergency, the Emergency Coordinator is not the incident commander. The role of the incident commander will be assumed by the "senior" member of one of the responding agencies (i.e., fire or police department).

3.4.3 Follow-Up

Immediately after an emergency, the Emergency Coordinator must ensure the following:

- All emergency equipment, listed in the Contingency Plan and used during the emergency, is cleaned, decontaminated, and is fit for reuse or replaced.
- All waste materials generated during the emergency must be properly identified, stored, and disposed of in accordance with State and Federal regulations.
- Notify the EPA Regional Administrator and the local authorities that all of the actions have been completed before resuming operations.
- Write a summary of the incident for the company's record files and forward a copy to the EPA Regional Administrator and ADEQ officials within fifteen days.

3.5 Control Procedures

Sections 3.5.3 through **3.5.6** provide detailed information for the handling of each classification of emergency. The plan includes tabbed dividers directing facility personnel to sections outlining emergency control procedures for each type of incident. Immediately following the section are procedural flow diagrams for each of the emergencies listed above.

3.5.1 Establishment of Control Zones

During an emergency incident, if the Emergency Coordinator or Alternate determines that evacuation is **NOT** necessary, for spills other than incidental spills the Emergency Coordinator must establish control zones around the affected area(s). Incidental spills do not require establishment of control zones. The purpose of setting up control zones is to minimize the potential adverse impact of the incident on employees, citizens, responders, the environment, and property.

The Emergency Coordinator will designate three major zones around the affected area. Personnel should move through access control points only.

1. **Hot Zone (Exclusion Zone)**

   This is the area of most concern. Only trained emergency responders with the use of proper personal protective equipment (PPE) and the buddy system may have access into this area. The area of the Hot Zone shall extend far enough to prevent adverse effects from hazardous materials. Only those emergency responders necessary to control the incident or to rescue others may enter into this area.

2. **Warm Zone (Contamination Reduction Zone)**

   The Warm Zone is an area of limited access. The purpose of the Warm Zone is to reduce the spread of contamination and control access to and from the Hot Zone. It also serves as a buffer zone and, at least initially, is not contaminated. Contamination in this zone should remain in the "Decontamination Corridor" that is located in this zone. Decontamination will take place in the Decontamination Corridor. PPE will be worn as required in this area. The size of the Warm Zone will be determined by the nature of the

incident and the size of decontamination operations to be conducted within. The Emergency Coordinator will make this decision.

3. **Cold Zone (Support Zone)**

   The Cold Zone is the area that borders the outer perimeter of the Warm Zone and is a clean area set up for support operations. It will be upwind from the Hot and Warm Zones and as far away from the Hot Zone as necessary for safe operations. This zone will have a secure outer boundary.

3.5.2 Fire and/or Explosion

Immediate procedures are the responsibility of the Emergency Coordinator, and not the general occupants, although general occupants may contact "911" as well. Immediate procedures are outlined below:

1. The Emergency Coordinator will activate the fire alarm and use the intercom system to notify all facility personnel to evacuate and contact "911" via telephone. List the following information for the emergency responders.
   a. Name;
   b. Address of the facility;
   c. Extent of fire;
   d. Possible chemicals involved; and
   e. Approximate quantity of chemicals involved.
2. The Emergency Coordinator will initiate full evacuation of the affected area(s) as necessary, if not already accomplished by the sounding of the fire alarm. Evacuation procedures are contained in **Section 3.7**. Upon emergency responders arriving, the Emergency Coordinator will turn over all emergency coordinator duties to unified command until the event is concluded.
3. If a spill of material occurs, then the Spill Control Procedure (**Section 3.5.3**) will be followed. **NOTE: Fire emergencies supersede spill emergencies.**
4. In the event of the active and uncontrolled release of hazardous materials reporting will occur per **Section 4.0**.
5. As necessary, the Emergency Coordinator should notify the appropriate federal, state, and local agencies, included in **Section 4.0**, for all releases to the environment based on the extent and conditions of the emergency.
6. The Emergency Coordinator and first responders must monitor for leaks, pressure build up, gas generation, or ruptures in valves, pipes, or other equipment as appropriate.

Fire-fighting will not be performed by the CS Clean personnel unless trained in the use of portable fire extinguishers for small incipient fires. Fires judged to be of greater magnitude will be referred to the local fire-fighting officials. CS Clean will use the "911" telephone emergency service which contacts the Phoenix Fire Department.

Outside calls will not be accepted unless absolutely necessary so that the phone lines remain free to handle only emergency calls.

Area or plant evacuation will be necessary in case of a major fire or explosion. All personnel have been trained in evacuation procedures and means of exit from their respective work areas.

The Emergency Coordinator will be responsible for determining if personnel who are not in the affected area will stay in their respective work area. Supervisors of unaffected areas will stay with their personnel and be ready to evacuate. Accountability Coordinators will be ready to account for the persons under their supervision.

An "all clear" signal will be given, at the discretion of the Emergency Coordinator, when the fire has been extinguished, and the safety of personnel is no longer endangered. The Emergency Coordinator will determine when the emergency has passed and the "all clear" signal can be given. All emergency equipment must be cleaned and fit for reuse prior to resuming plant operations in the affected areas.

In the event of a small controllable fire such as a small incipient fire, the following procedures should be followed by employees trained with portable fire extinguishers:

1. Notify Emergency Coordinator.
2. Obtain fire extinguisher; extinguish flames.
3. Eliminate and continue to restrict all sources of ignition so the fire will not re-ignite.
4. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow the procedures below.
5. Implement measures to control any water run-off, if contaminated, or any material that has been released.

EMERGENCY PROCEDURE-FIRE AND/OR EXPLOSION

CONTACT EMERGENCY COORDINATOR:	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) Nature of Emergency;
2) Location of Emergency;
3) Size and Extent of Emergency;
4) Hazardous Materials involved (if any); and
5) Whether any Personnel are injured.

PERSONNEL INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911	FIRE DEPARTMENT:	911
POLICE:	911	URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100	POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

THE AREA WILL BE CLEARED OF ALL PERSONNEL. THESE PERSONS ARE TO REPORT TO THE RALLY POINT FOR ACCOUNTABILITY.

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS:

- FIRE DEPARTMENT: 602-262-6297 (NON-EMERGENCY)
- MEDICAL SERVICES: 602-943-2381 (NON-EMERGENCY)
- POLICE DEPARTMENT: 602-262-6151 (NON-EMERGENCY)
- FIRE MARSHAL: 602-262-6771
- ARIZONA DEQ: 602-771-2300
- NRC: 1-800-424-8802
- VEOLIA SPILL RESPONSE: 602-233-2955

IS THERE A SPILL OR RELEASE OF ANY HAZARDOUS MATERIALS?

NO

YES

FOLLOW PROCEDURES IN THE CONTINGENCY PLAN

FIRE EXTINGUISHED BY OFFSITE RESPONSE PERSONNEL

REPORTING REQUIREMENTS MET

EVENT CONCLUDED

3.5.3 Spills

All spills/releases of hazardous materials must be reported to the Emergency Coordinator. Spills are defined as an unexpected release of any hazardous substance from a container, and a leak is defined as a release from a container via a puncture or a weak spot. It should be noted that personnel will not conduct emergency responses to spill or releases of hazardous materials that may threaten one's safety, health, or the environment without Hazardous Waste Operations and Emergency Response (HAZWOPER) training per 29 CFR 1910.120(e). Thus, any spill that is not small enough to be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area or poses an adverse exposure hazard to employees, will be considered an emergency response, and may not be handled by untrained personnel. Any incidental spill may be cleaned up by personnel, and the release does not constitute a safety, health, or environmental hazard. The Emergency Coordinator will determine the proper response in accordance with the control procedures outlined with this section.

Emergency procedures are the responsibility of the Emergency Coordinator, and not the general occupants. Procedures are outlined below:

1. If a leak develops or a spill of chemicals or oil develops, the person discovering the discharge will leave the immediate area and contact the Emergency Coordinator. The Emergency Coordinator will obtain the following information:
    - Person(s) injured and seriousness of injury;
    - Location of the spill or leak, material involved, and source;
    - The approximate amount spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving; and
    - Whether a fire is involved.
2. Next, the Emergency Coordinator or Alternate will:
    - Initiate evacuation of the hazard area, as necessary. Evacuation procedures are contained in **Section 3.7**. For small spills or leaks, isolate at least 50 feet in all directions. For large spills, initially isolate at least 100 feet in all directions and keep all personnel upwind of the release.
    - Call for emergency, fire, and medical services if a fire or medical emergency is involved by calling "911." IF A HISSING SOUND COMES FROM A VENTING DEVICE OR IF A DRUM BEGINS TO DISCOLOR, WITHDRAW FROM THE AREA IMMEDIATELY.
    - If the spill can be contained using the equipment onsite and if the containment operation will not involve employee exposure or reasonable possibility for employee exposure to safety or health hazards, then the procedure in **Step 3** (below) may be used. If not, proceed as follows.
        - Contact the commercial emergency clean-up firm and dispatch emergency personnel to the site to take appropriate action.

- Contact the proper authorities to report the spill or release. Reporting requirements are contained in **Section 4.0**. Contact local authorities first so that, if necessary, downstream water users and/or persons downwind of the vapor can be notified and, if necessary, removed.

3. If the spill is an incidental release that is small enough to be absorbed, neutralized, or otherwise controlled at the time of release, and does not pose an adverse exposure hazard to employees or the environment, then the spill will be handled by CS Clean personnel. The CS Clean trained emergency response team may respond when the spill is more significant than an incidental release, but only if it can be safely handled by properly trained personnel using proper PPE. General spill response procedures include the following:
4. Make sure all unnecessary persons are removed from the hazard area.
5. If flammable waste is involved, remove all ignition sources.
6. The Emergency Coordinator must immediately restrict access in the affected area to only essential emergency response personnel. All entry points must be secured, if possible.
7. The Emergency Coordinator must establish Control Zones if a spill is greater than an incidental spill and therefore requires the trained Emergency Response Team.
8. During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility. These measures must include, where applicable, stopping processes and operations, collecting, and containing released materials, and removing or isolating containers. The Emergency Coordinator must ensure that no hazardous material/waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.
9. For emergency personnel containing/cleaning the spill, don necessary PPE. The type of respiratory protection needed will be determined by the type, quantity, and location of material involved in the incident and will be prescribed by the Emergency Coordinator.
10. If possible, try to stop the leak.
11. Dike the spill with Standard Industrial Absorbent as required.
12. Position ABC fire extinguishers near immediate clean-up area.
13. Remove all surrounding materials that could be especially reactive with the materials in the waste. Determine the major components in the waste at the time of the spill.
14. Pump standing liquids to available empty containers/tanks compatible with material/waste. For the remainder of spilled material use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, neutralize, and clean up a spill if it has not been contained by a dike or a sump. Most spills contained within a dike or sump can be pumped back into the appropriate storage tank or drum.
15. Procedure to follow for leaking container (drum, ton-pack, etc.):
    a) Move container into or construct a containment area;

b) Roll container or stand up on end away from leak;

c) Drain contents (transfer to clean container);

d) Label container accordingly;

e) Absorb spillage of leakage with absorbent;

f) Transfer absorbent waste to drum or other container, label accordingly; and

g) Store until final disposal.

16. If waste reaches a storm sewer, try to stop flow from the source by using sand, soil, sandbags, etc. If this is done, pump this material out into a temporary holding tank as soon as possible. The Phoenix Water Services Department (602-262-6251) must be notified if the spill accesses the storm sewer.
17. If the spill accesses a sanitary sewer, the Arizona Water Company Regional Water Authority (602-240-6860) must be notified along with notifications noted in **Section 4.0**.
18. Decontaminate all PPE that will not be disposed of, as noted in the Decontamination Procedures (**Section 3.8**)
19. Place all containment and clean-up materials in drums for proper disposal. Some items, such as absorbent rags or booms, may have to be cut up.
20. Place all recovered liquid wastes in drums, label drums in accordance with all applicable hazardous waste rules and regulations, for proper disposal.
21. It should be noted that CS Clean personnel will not assist in handling significant hazardous materials spills that pose a risk to plant personnel and which the Emergency Response Coordinator determines are beyond the scope of safe handling by the CS Clean Emergency Response Team. For these more significant hazardous materials spills, the Emergency Coordinator will utilize the services of a qualified clean up contractor, Veolia.
22. All emergency equipment used in the emergency will be returned to ready status prior to resuming plant operation in the affected area.

EMERGENCY PROCEDURE
SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL

CONTACT EMERGENCY COORDINATOR	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) WHETHER ANY PERSONNEL ARE INJURED;
2) LOCATION OF EMERGENCY, MATERIAL INVOLVED;
3) SIZE AND EXTENT OF EMERGENCY; AND
4) WHETHER A FIRE IS INVOLVED.

PERSONNEL INJURED?

YES

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911
FIRE DEPARTMENT:	911
POLICE:	911
URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100
POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

NO

IN THE CASE OF A FIRE, THE EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING, AND FOLLOWS FIRE/EXPLOSION PROCEDURES IN 2.5.1 OF THE CONTINGENCY PLAN.

FIRE DEPARTMENT: 911

BE PREPARED TO GIVE NAME, ADDRESS, EXTENT OF FIRE, AND POSSIBLE CHEMICALS INVOLVED

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

CAN THE SPILL BE ABSORBED, NEUTRALIZED, OR OTHERWISE CONTROLLED AT THE TIME OF RELEASE BY EMPLOYEES IN THE IMMEDIATE RELEASE AREA OR BY MAINTENANCE PERSONNEL WITHOUT POSING A SAFETY OR HEALTH HAZARD?

YES

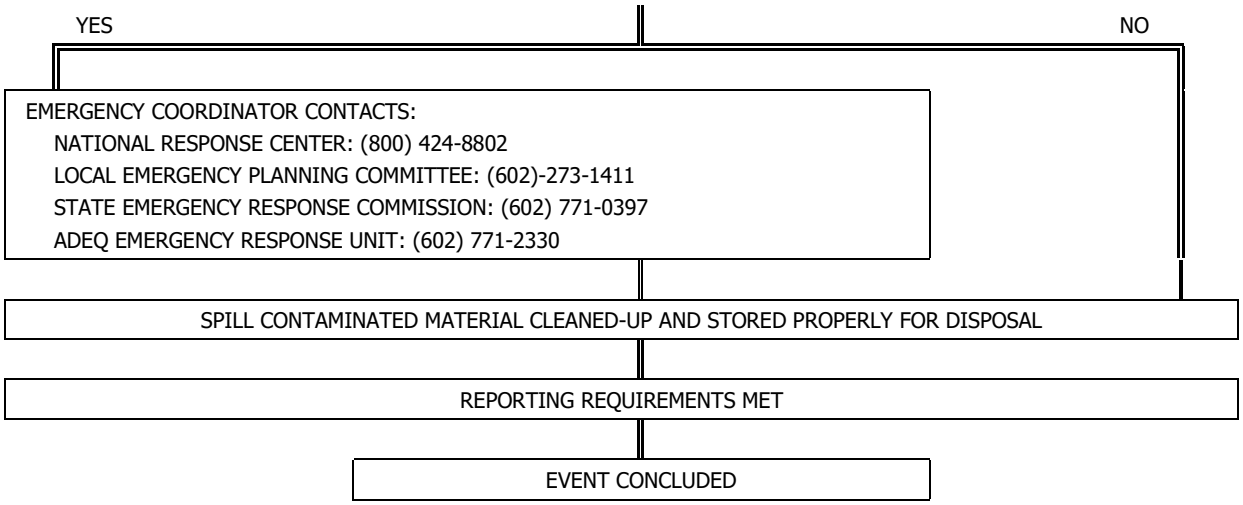
CONTAIN SPILL, CLEAN-UP SPILLED MATERIAL, STORE PROPERLY FOR DISPOSAL

NO

EMERGENCY COORDINATOR CONTACTS:
Phoenix Fire Department: 911
Veolia: (602) 233-2955

HAS SPILL REACHED OR THREATENED NAVIGABLE WATERS OR IS SPILL A CERCLA/SARA EXTREMELY HAZARDOUS MATERIAL AND GREATER THAN THE REPORTABLE QUANTITY?
(SEE http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf)

(Continued on next page)


YES
NO
EMERGENCY COORDINATOR CONTACTS:
NATIONAL RESPONSE CENTER: (800) 424-8802
LOCAL EMERGENCY PLANNING COMMITTEE: (602)-273-1411
STATE EMERGENCY RESPONSE COMMISSION: (602) 771-0397
ADEQ EMERGENCY RESPONSE UNIT: (602) 771-2330
SPILL CONTAMINATED MATERIAL CLEANED-UP AND STORED PROPERLY FOR DISPOSAL
REPORTING REQUIREMENTS MET
EVENT CONCLUDED

3.5.4 Floods

In the case of impending flood, it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home. If a flood strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to sufficiently high enough ground. Evacuation procedures are contained in **Section 3.7**.

1. Relocate to an area of high ground above rising flood waters.
2. If there is a sufficient warning attempt to sandbag areas of concern to prevent rising flood waters from entering the facility.
3. Do not attempt to drive or walk through flood waters. Waters can potentially wash away vehicles or pedestrians.
4. Remain in a protected area until instructed by the Emergency Coordinator to resume normal activity.

3.5.5 Other Emergency Procedures

Listed below are the procedures that will be followed for other potential emergencies at the discretion of the Emergency Coordinator. Due to the fact that these types of emergencies are inherently local in nature, the Emergency Coordinator at the facility will rely on the Local Emergency Management Office for assistance. This office can be contacted as follows:

Maricopa County Local Emergency Planning Committee
5630 E McDowell Road
Phoenix, AZ 85003
(602) 273-1411
IN AN EMERGENCY DIAL 911

3.5.6 Natural Disaster

In the case of impending natural disaster (i.e., hurricane, tornado, flash floods, etc.), it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home or provide a safe environment at the plant until severe weather has passed. If a natural disaster strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to an internal rally point. Evacuation procedures are contained in **Section 3.7**.

Basic Procedures to Follow During Natural Disasters Are:

1. Do not stay where exposed or in personal vehicles.
2. Do not seek shelter near windows, openings, or doorways.
3. Relocate to an area of high structural integrity.
4. Remain in a protective area until instructed by the Emergency Coordinator to resume normal activity.

3.5.7 Bomb Threat:

In the case of a bomb threat, the Emergency Coordinator will call for full facility evacuation in accordance with the procedures contained in **Section 3.7**. In addition, the fire department and police will be notified. The individual who received the bomb threat should obtain the following information for the authorities:

1. Sound of the caller's voice,
2. Area of danger,
3. Type of bomb, and
4. Date and time of call.

3.5.8 Civil Disturbance/Workplace Violence:

In the case of a civil disturbance, the police will be contacted. If necessary, the Emergency Coordinator will initiate evacuation to an internal or external rally point in accordance with procedures contained in **Section 3.7**. The Emergency Coordinator can determine if it is safer to shelter in place. Procedures to be followed by employees identifying civil disturbances or workplace violence should be as follows:

1. Evacuate.
    a. If there is an accessible escape path, attempt to evacuate the premises.
    b. Evacuate regardless of whether others agree to follow.
    c. Leave your belongings behind.
    d. Help others evacuate, if possible.
    e. Call 911 when you are safe.
    f. Prevent individuals from entering an area where the violent person may be.
    g. Keep your hands visible.
    h. Follow the instructions of any police officers.
    i. Do not attempt to move wounded people.

2. Shelter in place.
    a. If evacuation is not possible, find a place to hide where the violent person is less likely to find you. Your hiding place should be out of the violent person's view.
    b. Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door).
    c. To prevent a violent person from entering your hiding place lock the door or blockade the door with heavy furniture.
    d. Silence your cell phone.
    e. Turn off any source of noise (i.e., radio, television).
    f. Hide behind large items (i.e., cabinets, desks).
    g. Remain quiet.
3. Protect Yourself.
    a. As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the violent person by:
        i. Acting as aggressively as possible against him/her.
        ii. Throwing items and improvising weapons.
        iii. Yelling.
    b. When police arrive:
        i. Put down any items in your hands.
        ii. Keep hands visible.
        iii. Follow all instructions.
        iv. Avoid making quick movements towards officers.
        v. Do not stop to ask officers for help or direction when evacuating, just proceed in the direction from which officers are entering the premises.

At the end of the emergency event, the Emergency Coordinator should conduct a thorough investigation into the cause of the emergency incident. Ensure that necessary procedural or process modifications are made to prevent reoccurrences or potential emergencies. Critique the emergency action procedures followed and make any changes to procedures as needed where deficiencies may have occurred.

3.5.9 Power Outage

In the event of a power outage, all employees and visitors are to go to the outside rally point until further instruction. The Emergency Coordinator will then determine if it is safe for employees to go to the internal rally point where they will remain until further instruction. Evacuation procedures are contained in **Section 3.7**. The facility is equipped with an emergency lighting system. Subsequently, the Emergency Coordinator will contact the local power company, Arizona Public Service (1-800-

240-2014), to determine the next course of action (i.e. sending workers home) and ensure the facility is in safe condition when power is restored.

3.5.10 Suspicious Mail

If an employee observes a piece of mail that appears suspicious (i.e., excessive postage, excessive tape, lopsided or lumpy in appearance, marked with "personal" or "confidential", handwritten with no return address, unexpected or from an unknown party, or addressed to someone no longer employed at the facility), then they should follow the following procedure:

1. Do not handle a letter or package that you suspect is contaminated.
2. Do not shake it, bump it, or sniff it.
3. Wash your hands thoroughly with soap and water.
4. Notify local law enforcement authorities.
5. Notify the Emergency Coordinator of the situation.

3.5.11 Natural Gas Emergency

If a strong odor or gas leak is noted, then employees will be instructed **not** to:

1. Use the telephone,
2. Operate any gas or electric machinery,
3. Light a match, or
4. Turn light switches on and off.

The Emergency Coordinator will instruct all employees to evacuate the building, if necessary, to the external rally point. Once outside, the Emergency Coordinator will contact the local power company, gas company, and, if necessary, the local Fire Department and LEPC.

3.5.12 Medical Response Procedures

After discovery of a medical response situation and a determination that entry to the emergency area will not cause further harm to the injured or yourself, an employee should quickly survey the scene prior to calling the ambulance (911). The employee should indicate to the dispatcher the following information:

- Is the scene safe?
- What happened?
- How many people are injured?
- Is the victim's airway blocked?
- Is the victim breathing?
- Can you feel the victim's pulse?

CS Clean has emergency equipment such as eyewashes located throughout the facility and are indicated on **Figure 3**. This equipment is available to provide immediate emergency use in case of chemical splash. Additionally, first aid kits and automated external defibrillators (AEDs) are present throughout the facility and noted on **Figure 3**.

3.5.13 First Aid Response

1. Move victim to fresh air; call emergency response number: 911.
2. If not breathing, give artificial respiration.
3. In case of contact with material, immediately flush skin and eyes with running water for at least fifteen minutes.
4. Remove and isolate contaminated clothing and shoes.
5. Administer additional first aid as appropriate.
6. Keep victim warm and await arrival of emergency medical response unit.

CS Clean works closely with NextCare Urgent Care (602-547-2600) located at 18589 N 59th Ave, Glendale, AZ 85308 to make them aware of the hazardous materials onsite. NextCare Urgent Care can provide necessary first aid supplies needed for medical emergencies at CS Clean.

3.5.14 Serious Medical Emergencies

In case of serious medical emergency, an ambulance will be summoned by calling 911. Examples of serious medical emergencies include the following:

- Persons with burns from fire and/or chemical spills,
- Heart attacks, cardiac arrest, or strokes,
- Persons undergoing shock,
- Chemical poisoning, and
- Severe seizures.

The Honor Health Deer Valley Medical Center (623-879-6100), located at 19829 N 27th Ave, Phoenix, AZ 85027 has been selected as the receiving facility for all medical emergency situations due to its close proximity. The direct phone number for the Honor Health Deer Valley Medical Center is 623-879-6100.

3.5.15 Non-Serious Medical Emergencies

In the case of non-serious, non-emergency situations where medical attention is needed, the employee will be taken to NextCare Urgent Care (602-547-2600), for treatment. Examples of non-serious/non-emergency situations include the following:

1. Minor bleeding,
2. Fractures, dislocations, sprains, and strains,

3. Minor eye/nose injuries, and
4. Temperature extremes.

CS Clean has first aid supplies in cabinets throughout the facility shown on **Figure 3**.

3.6 Emergency Equipment/Containment Structures

Location of emergency equipment is shown on **Figure 3** and briefly described in **Table 3**. All existing equipment must be inspected routinely and maintained to ensure its quality and efficiency.

Spills and leaks from the container storage area and tank storage area will be contained by virtue of the walls, impervious base, and berm. An impervious base provides spill containment of up to ten percent of the stored wastes.

Access to emergency communications and alarm systems (either permanent or portable), are available to all personnel operating the facility. Warning signs and 24-hour surveillance of all facilities will preclude any unauthorized personnel from coming in contact with hazardous materials at the facility.

Table 3
EMERGENCY EQUIPMENT

Item	Description/Capabilities	Location
Emergency Communication		
Telephone Systems	Capable of internal and external communication.	Main Offices
Fire Alarm System	Audible warning device with remote central monitoring.	Throughout Facility (**Figure 3**)
Fire Suppression System	A system of sprinklers that release water to control and extinguish fires.	Throughout Facility (**Figure 3**)
First Aid		
Emergency Eye Wash	Provide flooding spray of potable water at an angle to flood both eyes simultaneously to flush toxic chemical splashed in eyes.	**Figure 3**
Emergency Shower	Provide shower of potable water to flush toxic chemicals splashed on body.	**Figure 3**
Emergency Eye Wash Bottles	Provide flooding spray of potable water to flood eye(s) to flush toxic chemical splashed in eyes.	**Figure 3**
First Aid Kit	A collection of supplies and equipment used for administering First Aid.	**Figure 3**
AED	A device that detects sustained ventricular tachycardia or fibrillation and terminates it by a shock or shocks delivered directly to the myocardium, thus preventing sudden cardiac death.	Throughout Facility (**Figure 3**)

Table 3 EMERGENCY EQUIPMENT		
Item	**Description/Capabilities**	**Location**
Spill Response		
55-Gallon Drums	22" diameter X 34" lined and unlined steel tight head drums.	**Figure 3**
95-Gallon Overpack Spill Kits	Material used to absorb and contain spill of liquid material.	**Figure 3**
Spill Blocker Dike	A dike that can be set up around spills to help contain runoff from spills.	**Figure 3**
5-Gallon Universal Spill Kit	A spill kit with absorbent materials to clean up spills of universal waste.	**Figure 3**
5-Gallon Oil Spill Kit	A spill kit with absorbent materials to clean up spills of oil.	**Figure 3**
5-Gallon Acid Spill Kit	A spill kit with absorbent materials to clean up spills of acid.	**Figure 3**
Battery Acid Spill Kit	A spill kit with absorbent materials to clean up spills of battery acid (ex. Baking Soda).	**Figure 3**
Universal Spill Kit Chest	A large chest with absorbent materials to clean up spills of universal waste.	**Figure 3**
Fire Extinguishers	Wall-Mounted portable fire-fighting apparatus. The following types of fire extinguisher are used: Dry Chemical, CO_2; Class ABC.	Throughout Facility (**Figure 3**)
Personal Protective Equipment		
Gloves and Aprons	Rubber gloves and aprons for protection against harmful chemicals.	Throughout Facility
Goggles/ Safety Glasses	Eye/Face Protection.	Throughout Facility
Lock-out Tag-out Equipment	Equipment that allows for proper protection from and the locking out of energized devices, to prevent energy.	**Figure 3**

3.7 Evacuation Plan

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. The facility employs an internal phone system which can be used to evacuate the facility as well as contact key plant personnel to inform them as to the nature of the emergency and recommend plan of action. Total plant evacuation is initiated only by the Emergency Coordinator or his/her Alternate.

In the event that a plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

1. The signal for plant evacuation will be activated (alarm).
2. If safety permits, each operator should shut down his/her operations. Most importantly, turn off the running processes, if safe to do so. (Do not attempt to obtain personal

belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.)

3. ALL personnel, visitors, and contractors will immediately leave the operations area and congregate at the designated Rally Point via routes designated on **Figure 1**.
4. No persons shall remain or re-enter the location unless specifically authorized by the person(s) calling for evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter.
5. All persons will be accounted for by their respective accountability coordinator. The Supervisor will designate certain doors as the safest exists for his/her employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the Supervisors as necessary, to inform them of the nature of the emergency.
6. During exit, Accountability Coordinators should try to keep his/her group together, rallying at the designated locations on **Figure 1**, located in the north parking lot. Immediately upon exit, the Accountability Coordinators will prepare a list of all employees at the exit point. All other personnel who have persons reporting to them should report immediately to the rally point for final accounting.
7. Employees should remain in the area and stand upwind. (If any chemicals are released into the air around the building exterior, employees should move to a position where the chemicals would be blowing away from them.)
8. Upon completion of the employee list, the Accountability Coordinator in charge shall hand-carry the list to the Emergency Coordinator. All other personnel will remain at the rally point.
9. Contract personnel should also be listed with the name of their company.
10. A final tally of persons will be made by the Emergency Coordinator.
11. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
12. Re-entry into the area will be made only after clearance is given by the Emergency Coordinator. At his/her direction, a signal or other notification will be given for re-entry into the plant. If re-entry is not possible, non-essential personnel may be sent home.
13. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibilities of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.
14. Emergency drills will be conducted to practice all of these procedures and will be treated with the same seriousness as an actual emergency. Emergency drills are to be conducted periodically.

3.7.1 Internal Evacuation

In the event of a natural disaster (i.e., tornado) where the Emergency Coordinator has deemed the situation unsafe to send facility personnel home, the Emergency Coordinator will signal an internal evacuation.

1. The internal evacuation signal will be accomplished by intercom notification.
2. All traffic to and from the facility will cease, and each operator shall shut down his/her operations where safety permits. Turning off running water in respective areas is of primary importance. Do not attempt to gather personal belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.
3. Water supply for operation lines should be shut off.
4. All facility personnel will precede to the center of the building in a room without windows. Under no circumstances will any facility personnel leave.
5. Each Accountability Coordinators will take a head count of the employees in their department and will report any missing persons to the Emergency Coordinator.
6. In addition, the Administrative Assistant will remove the visitors' log upon evacuation and give it to the Emergency Coordinator, who will account for any visitors.
7. Clearance to resume work assignments or go home will be given by the Emergency Coordinator.
8. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.

3.7.2 Offsite Notification/Evacuation Procedure

To notify the neighboring properties in an emergency, CS Clean will contact the Phoenix Fire Department (phone number: 911). If necessary, an evacuation of the neighboring properties will be done by the Phoenix Police Department under the direction of the Phoenix Fire Department.

3.7.3 Shut-down of Operations

In the event of an emergency, critical operations will be shut down, if safe to do so.

3.8 Decontamination and Disposal

3.8.1 Decontamination Procedures

Decontamination of personnel and equipment must be conducted to reduce or eliminate the transport of contaminants from the emergency area into other areas of the facility or out into the environment where unprotected personnel may be exposed. Decontamination methods for personnel will depend on the type of contaminants, protection level, and work assignment and operation

location. CS Clean personnel will not respond to spills or any other emergency incident which is not incidental and poses a safety or health hazard. An outside contractor will be contacted if a spill or any other emergency incident poses a safety and/or health hazard to CS Clean personnel, or the environment. If a contractor has to be called in, the contractor will be responsible for the decontamination of their own equipment.

The following decontamination procedures are to be followed for the CS Clean emergency response team.

Each incident may require different decontamination operations. The nature of the incident, the chemical, the weather, the temperature, the number of people to be decontaminated, and the number of trained personnel available are a few of the factors which dictate the method, size, and type of decontamination operation that will be required. Basic decontamination procedures are described below:

Personal Protective Equipment and Other Items

1. Cover the Decontamination Corridor with plastic and place booms or dikes to control runoff from decontamination operations.
2. Use collection containers to hold decontamination water runoff.
3. Identify the Decontamination Corridor with tape, cones, ropes, or other markers.
4. Have a segregated equipment drop at the edge of the Hot Zone for contaminated equipment. This equipment may be reused in the Hot Zone without decontaminating.
5. Have a primary decontamination wash and rinse as the first step near the Hot Zone to wash the most significant contamination off of the equipment.
6. Have a secondary wash and rinse about ten to fifteen, or more, away from the first wash to assure thorough decontamination of equipment.
7. Have a clean area either before or after the secondary wash to change self-contained breathing apparatuses (SCBAs).
8. An area near the Cold Zone and at the end of the Decontamination Corridor should be established to remove chemical suits, respiratory equipment, and other items.
9. All used equipment and supplies or contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.
10. All contaminated items must be disposed of properly.

Victims/Personnel

1. The person(s) performing the decontamination should protect themselves from the contaminant by using the proper PPE.
2. Carefully remove respirators and PPE from the victim. If protective clothing or suits cannot be removed easily, they may be cut off.

3. Washing of PPE worn by the victim may be effective if it will not cause further harm.
4. When it is not possible to thoroughly decontaminate the victim or the PPE, the victim may be placed on plastic or other material to avoid spreading the contamination.
5. Medical personnel and facilities will be advised immediately whenever a victim is being transported or cared for and has not been thoroughly decontaminated. Medical personnel must be advised of the chemical, its properties, its hazards, known antidotes, or any other pertinent information. A copy of the SDSs will be given to medical personnel.

3.8.2 Disposal Procedures

All discarded materials, waste materials, or other objects shall be handled in such a way to avoid the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left onsite. All material that has visible signs of contamination (e.g., waste chemicals, contaminated soil, etc.) will be classified as potentially contaminated material. All potentially contaminated materials (i.e., PPE, clothing, disposable equipment, etc.) will be double bagged or drummed as necessary and segregated for temporary storage onsite for eventual disposal. All decontamination liquids will be collected, drummed, and stored onsite for eventual disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as normal domestic waste. It is important to note that a hazardous waste determination (either by knowledge of the waste or by analytical testing) must be performed on all waste materials destined for disposal, and all appropriate approvals, handling, transportation, and disposal methods must observe applicable Resource Conservation and Recovery Act (RCRA) regulations. Hazardous Waste shall be transported by an EPA licensed hazardous waste transporter to an EPA licensed hazardous waste treatment, storage, or disposal facility.

3.9 Contingency Plan Review and Submittal

In accordance with 40 CFR 265.54 and 29 CFR 1910.120, under the following conditions, the Contingency Plan should be reviewed and immediately revised:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

New employees should be familiarized with all emergency response procedures.

In accordance with 40 CFR 265.53, a copy of the Contingency Plan and all revisions must be maintained at the facility and submitted to the following parties:

1. Local Police Department
   Phoenix Police Department
   620 W Washington Street
   Phoenix, AZ 85003
2. Local Fire Department
   Phoenix Fire Department
   2409 W Cactus Road
   Phoenix, AZ 85029
3. Local Hospital
   Honor Health Deer Valley Medical Center
   19829 N 27th Ave,
   Phoenix, AZ 85027
4. Local Emergency Planning Committee (LEPC)
   Maricopa County
   5630 E. McDowell Road
   Phoenix, AZ 85008
5. Arizona State Emergency Response Commission (SERC)
   SERC
   c/o Department of Environmental Quality
   1110 W Washington Street
   Phoenix, AZ 85007

CS Clean will complete the following:

Familiarize the police and fire departments with:

- The layout of the facility
- Properties and hazards associated with the wastes handled at the facility
- Places where facility personnel would normally be working
- Entrances to the facility
- Evacuation routes

The Phoenix Police Department will be requested to provide the following assistance during an emergency:

- Immediate response
- Crowd control assistance
- Security to affected area
- Evacuation of surrounding areas, if required

- Communications support, if required

The Phoenix Fire Department will be requested to provide:

- Primary emergency authority
- Immediate response
- Primary fire-fighting services

Honor Health Deer Valley Medical Center will be requested to provide:

- Transfer to hospital
- Primary medical services
- Rescue services

3.10 Location of Contingency Plan

Copies of the Contingency Plan will be kept on an internal internet page CS Clean offered to all employees, in the main office area, and at the administrative assistant's office at the front entry.

4.0 FEDERAL, STATE, AND LOCAL REPORTING REQUIREMENTS

A variety of Federal, State, and Local reporting requirements exist for the reporting of emergencies and chemical releases. Provided below is a general description of the criteria for reporting under various regulations. It is the Emergency Coordinator's responsibility to follow the reporting requirements when applicable. The Emergency Coordinator may also designate a competent person to conduct these activities.

For the readers' convenience the table below summarizes reporting contacts.

Table 4
EMERGENCY REPORTING LIST

Report Contact Name	Type	Phone Number
Emergency	**N/A**	**911**
National Response Center	Federal	800-424-8802
EPA Region 9	Federal	800-300-2193
Arizona DEQ – Spill Hotline	State	602-771-2330 or 800-234-5677
Arizona – State Emergency Response Commission	State	602-771-8786
Maricopa County Local Emergency Planning Committee	LEPC	602-273-1411
Arizona Occupations Safety and Health Administration – Phoenix Office	Federal	602-542-5795
Phoenix Fire Department	City	602-495-5555

Table 4 EMERGENCY REPORTING LIST		
Report Contact Name	**Type**	**Phone Number**
Phoenix Police Department	State	602-262-6151
Phoenix Water Services Department	Water / Sewer Authority	602-262-6251

Section 311(b)(5) of the Clean Water Act (CWA), codified as 40 CFR 110, establishes reporting requirements for the release of oils into navigable waters, including wetlands. Releases of oil to navigable waters that: (1) cause a sheen to appear on the surface; (2) violate applicable water quality standards; or (3) cause a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines must be reported to the NRC at 800-424-8802. Notification must be submitted as soon as the facility Emergency Coordinator has knowledge of any discharge.

In the event a release threatens drinking water, stormwater, or sewer system contact the Phoenix Water Services Department (602-262-6251) and ADEQ (602-771-2330 or 800-234-5677).

If a spill of material of any amount threatens to reach navigable waters, the NRC (800-424-8802) shall be contacted.

The Emergency Coordinator should be ready to report the following information:

- Your name, location, organization, and telephone number;
- Name and address of the party responsible for the incident;
- Date and time of the incident;
- Location of the incident;
- Source and cause of the release or spill;
- Types of material(s) released or spilled;
- Quantity of materials released or spilled;
- Danger or threat posed by the release or spill;
- Number and types of injuries (if any);
- Weather conditions at the incident location; and
- Any other information that may help emergency personnel respond to the incident.

Navigable waters of U.S. are defined in 40 CFR Part 110.1 to include interstate waterways or intrastate waterways including lakes, rivers, and streams which may be utilized by interstate travelers for recreational purposes. Navigable waters also include lakes, rivers, and streams from which fish or shellfish are taken. The complete definition may be found in Section 502(7) of the Federal Water Pollution Control Act. In the event of a large volume release, oil products and reportable quantities of materials could potentially enter the nearby Mill River.

After a spill or release of oil greater than 1,000 gallons or after two spills of oil greater than 42 gallons within any twelve-month period, or if the spill impacted a navigable waterway, the Emergency Coordinator will report the event(s) to the following agency within sixty days.

The Regional Administrator
U.S. Environmental Protection Agency – Region 9
U.S. EPA Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Phone: 415-947-8000

The EPA report will include:

- Name of the facility;
- Your name;
- Location of the facility;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Corrective action and countermeasures you have taken, including a description of equipment repairs and replacement;
- An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- The cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and
- Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event.

As required by EPA Federal Regulation 40 CFR 112.5(c), a copy of the EPA report will also be submitted to ADEQ at the following address:

Arizona Department of Environmental Quality
Attn: Emergency Response and Spill Prevention
1110 W. Washington St.
Phoenix, AZ 85007

4.1 Comprehensive Environmental Response, Compensation, and Liability Act Releases (Federal)

Section 104 of CERCLA (also known as "Superfund"), codified at 40 CFR 302, requires that if greater than the RQ of a CERCLA hazardous substance is released from a facility over a 24-hour period, the Emergency Coordinator, as soon as they have knowledge of the release, must notify the NRC (800-424-8802). Reportable releases include any release to the environment, either to air, land, or water,

except for certain continuous releases. It should be noted that a release contained entirely within the building constitutes a release under CERCLA, and if more than the RQ is released to air, land or water, the release is reportable.

4.2 Hazardous Materials Transportation Act (HMTA) Notification (Federal)

Under 49 CFR 171.15, if a release of hazardous materials occurs in transport (including loading or unloading) which causes injury or death, property damage over $50,000, public evacuation or major road closure lasting more than one hour, aircraft re-routing, spillage or fire of a radioactive or disease-causing material, or continuing endangerment of life at the scene of the incident exists, then the carrier must notify the Department of Transportation via the NRC at 1-800-424-8802. Each notice must include the following information:

1. Name of Reporter;
2. Name and address of carrier;
3. Phone number where reporter can be reached;
4. Date, time, and location of incident;
5. The extent of injuries, if any;
6. Type and quantity of materials involved; and
7. Type of incident and whether continuing danger of life exists at the scene.

The carrier must also submit a written report regarding the incident within thirty days, and if any unintentional release of hazardous material occurs (under conditions not necessarily listed above), a written report must be submitted.

4.3 Superfund Amendments and Re-Authorization Act Releases (Federal)

Under 40 CFR 355.40, releases of CERCLA hazardous substances of Extremely Hazardous Substances (EHSs) (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) above the RQ must be reported to the SERC at 602-771-0397 and the LEPC at 602-273-1411 by the owner or operator of the facility, and must include the following information:

- The chemical name of identity of the substance released;
- Whether the substance is an EHS;
- The quantity released;
- Time and duration of the release;
- The medium or media into which the release occurred;
- Any relevant medical information (health risks, etc.);
- Precautions to take, including evacuation; and
- The name and telephone number of the person to contact for further information.

As soon as practicable after reporting the release, the owner or operator must submit a written report of the incident and information listed above which additionally includes the following information:

- Actions taken to respond to and contain the release;
- Any acute and chronic health effects from the release; and
- Any advice regarding medical attention necessary for exposed individuals.

Several exemptions to this reporting requirement are provided under paragraph 355.40(a) (2), which should be carefully reviewed to determine if reporting is required.

4.4 State Spill and Release Requirements

Under Arizona's statutes, any oil or petroleum products, chemical or waste that is released in any manner and in any amount constitutes a "spill" and must immediately be reported to the Oil and Chemical Spills section of the ADEQ at 602-771-2330. Providing the following information:

- Name, address, and telephone number of the reporter;
- Name and address of the facility;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to public health, or the environment, outside the facility.

A follow-up written report to the same section of the ADEQ is required to be completed within fifteen days. The written report will include:

- Name, address, and telephone number of the generator;
- Date, time, and type of incident (i.e., fire, explosion);
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- An assessment of actual or potential hazards to public health or the environment; and
- Estimated quantity and disposition of recovered material from the incident.

5.0 TRAINING

5.1 Contingency Plan and Emergency Action Plan Training

To comply with both state and federal regulations, CS Clean must provide and maintain a training program that will ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. This training program consists of both in-house classroom training as well as on-the-job training.

In-house training will be conducted by a competent and qualified training instructor familiar with this Plan's requirements. On-the-job training consists of employees completing job tasks under the guidance and supervision of another fully-trained employee. No person will be allowed to work with hazardous materials unsupervised until the training requirements set forth as appropriate for the particular job title have been successfully completed. Newly hired or newly assigned employees will have the necessary job training completed within six months of their job placement. Also, employees involved in hazardous waste management will be provided training annually.

The intent of the training program is to provide the employee with the necessary knowledge and skills to perform the functions of their job title in a safe manner and to maintain compliance with state and federal regulations.

Pursuant to 40 CFR 262.17(a)(7) and 29 CFR 1910.38(e), personnel will be specifically trained in the following emergency response areas:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- Key parameters for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Response to fires or explosions;
- Response to groundwater contamination incidents;
- Shutdown operations; and
- Train employees to assist in a safe and orderly evacuation of other employees.

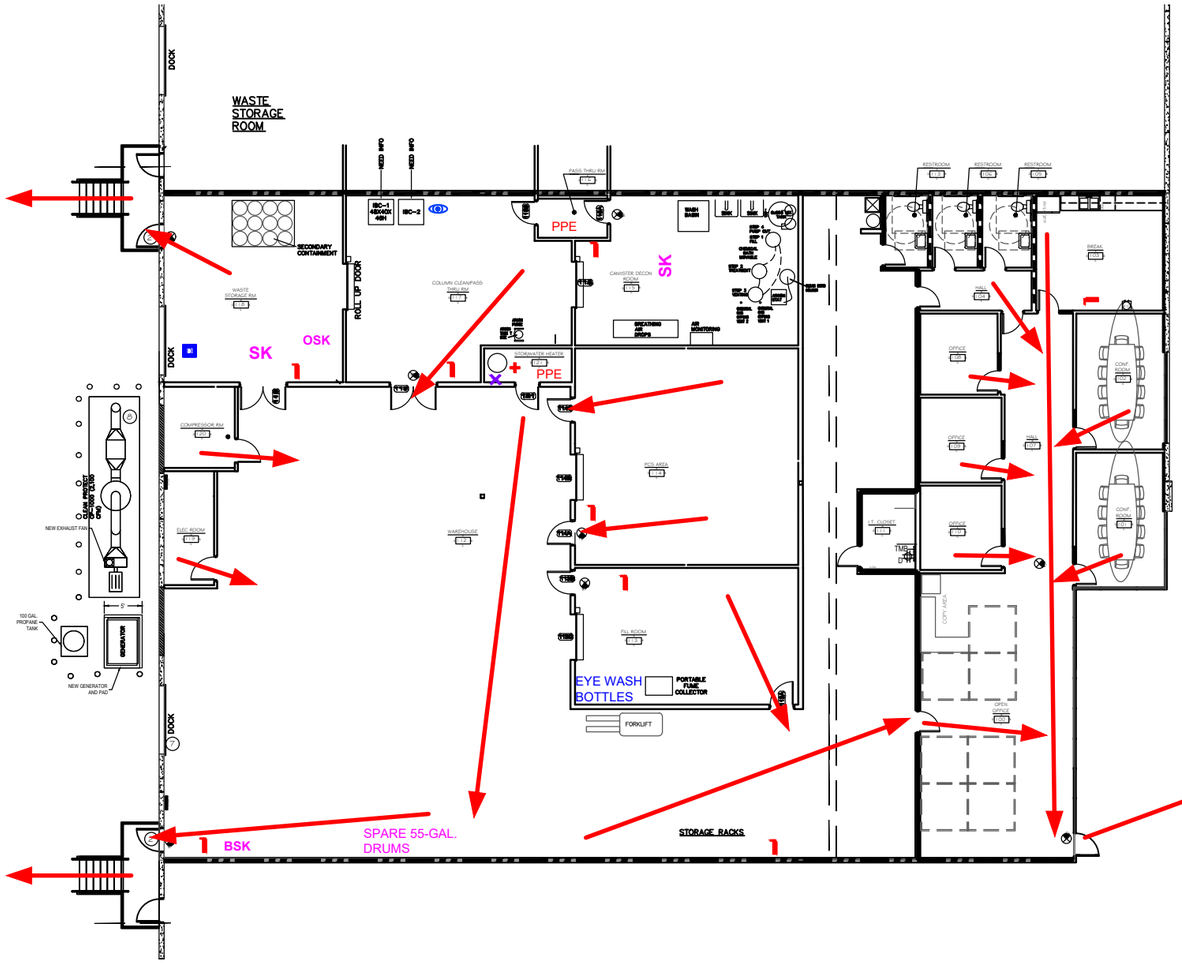
Hazardous waste management duties and responsibilities vary for each job title. Also, the training for certain jobs may overlap with the training for similar jobs. Therefore, there is variation associated with the necessary training for each job title. Training records shall be maintained for the duration of an employee's employment to satisfy OSHA emergency action plan training requirements.

5.2 Emergency Response Drills

Per the National Fire Protection Association (NFPA) 101 (2015), CS Clean will perform periodic emergency response drills (i.e., annually). The drill procedures, schedule, and log are maintained separately in company files.

FIGURES

DRAWING NAME: J:\C\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 - EMERGENCY EVACUATION PLOT DATE: May 23, 2025 - 11:40am OPERATOR: BOB



SECONDARY RALLY POINT (IN PARKING LOT)

PRIMARY RALLY POINT (ON SIDE OF PARKING LOT CIRCLE)

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

NORTH

0 10' 20'

REVISIONS

NO.	DATE

DESIGNED BY:	REVIEWED BY:	ISSUE DATE:
DSW	DSW	05/23/2025
DRAWN BY:	PROJECT NUMBER:	SHEET SIZE:
BOB	CSC0011.PS	11"x17"

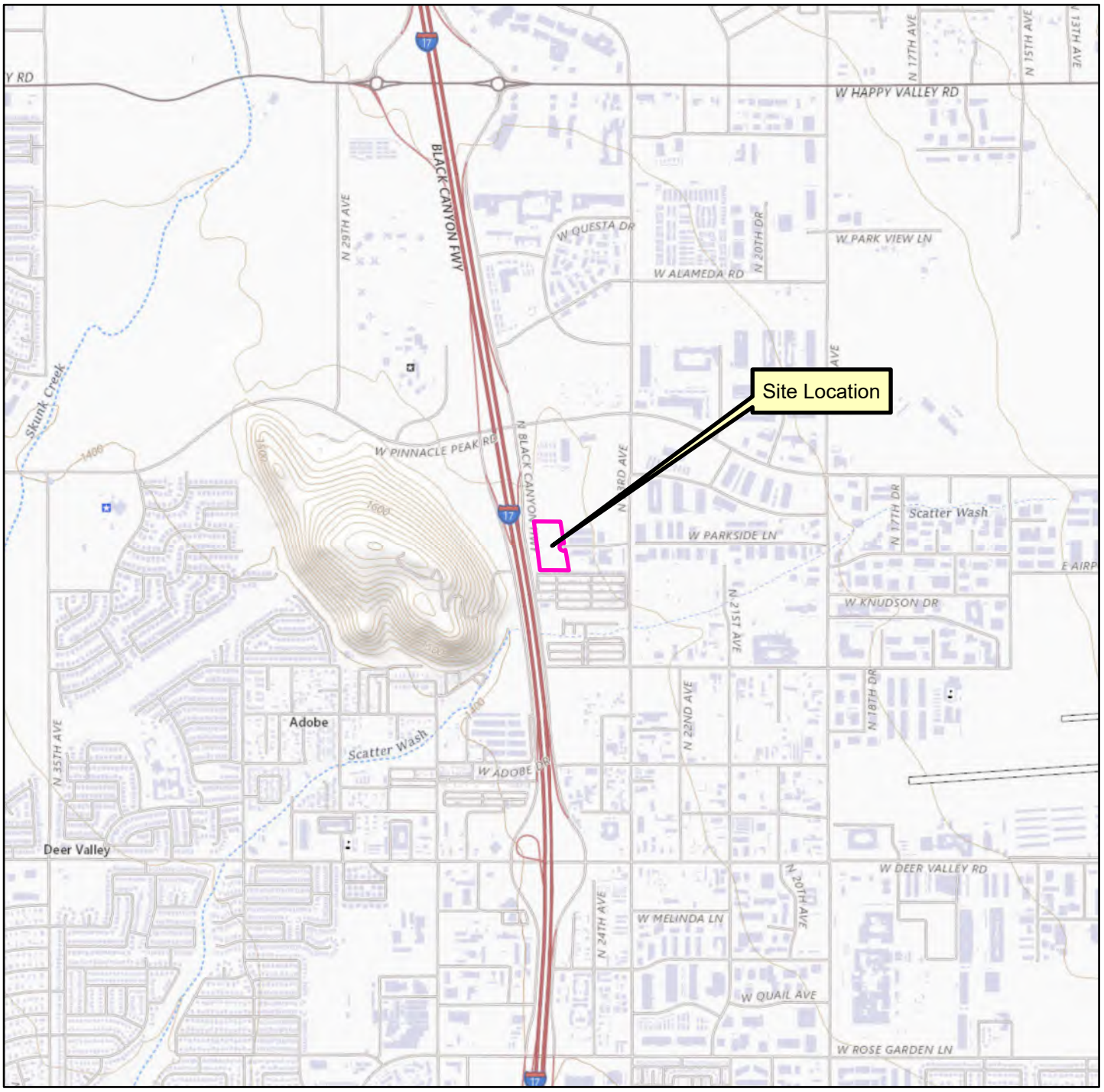
SITE PLAN

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150
PHOENIX, ARIZONA

FIGURE NO.

1



0 1,000 2,000 4,000 6,000 8,000

Feet

1:24,000

N

USGS Quadrangle Information
Quad ID: 33112-F1
Name: Union Hills, Arizona

Figure 2
Site Location
CS Clean Systems, Inc.
2453 W Parkside Lane
Suites 150
Phoenix, Arizona
HRP # CSC0011.PS
Scale 1" = 2,000'

HRP
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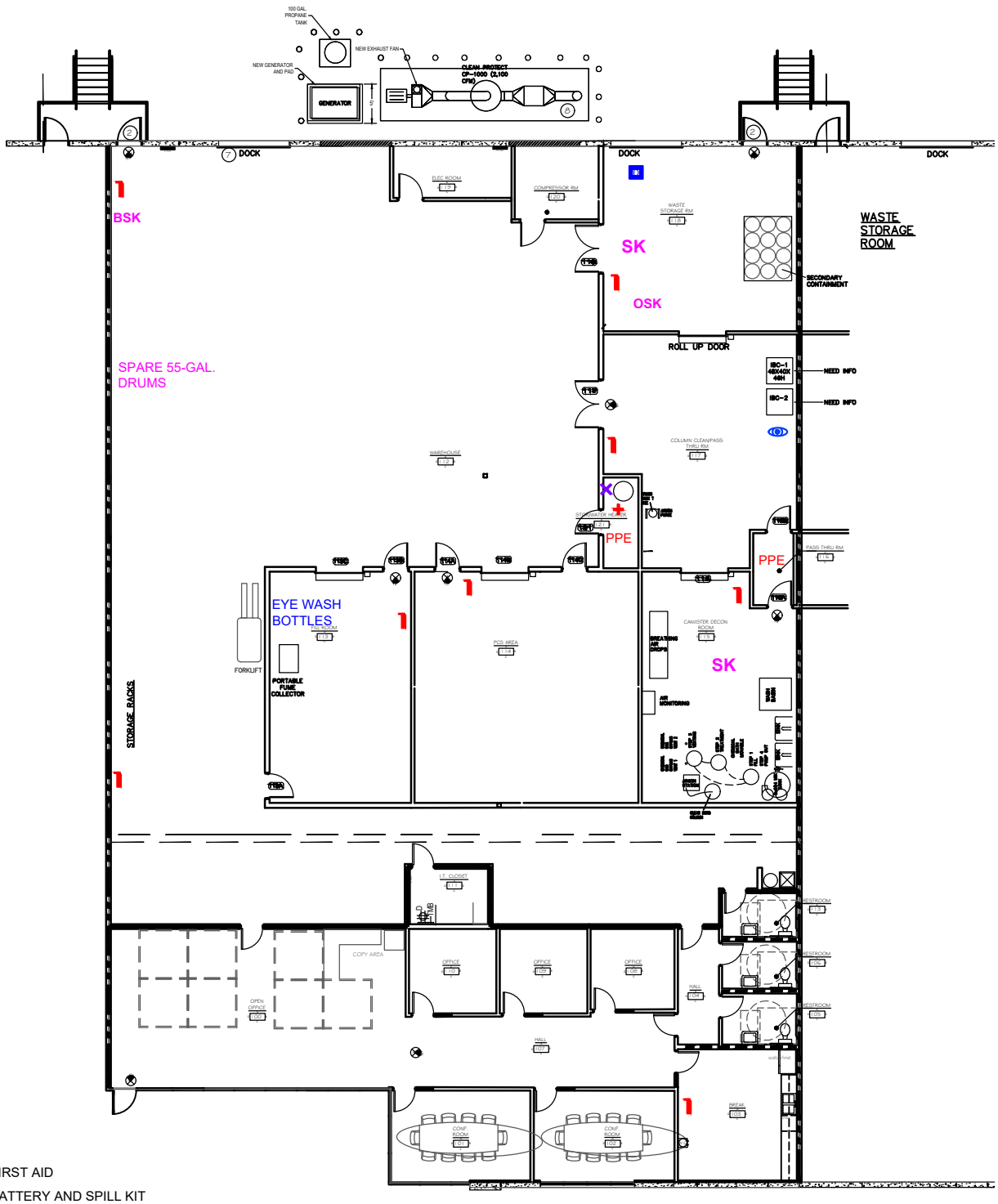
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

Path: J:\CIC\SCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\GIS\Figures\Figures.aprx



✚-FIRST AID
BSK-BATTERY AND SPILL KIT
SK -SPILL KIT, (WASTE OIL, WATER, UNIVERSAL WASTE, COOLANT, SOLVENTS)
✕-LOTO EQUIPMENT
OSK-95 GAL. OVERPACK SPILL KIT
-SPILL BLOCKER DIKE
-FIRE EXTINGUISHER
-EYEWASH

0 10' 20'

NORTH

MAP REFERENCE: SHEET IA-2, CS CLEAN SYSTEMS INC. 2453 W PARKSIDE LN, SUITES 150, PHOENIX, AZ BY A DESIGN IN VISION OF GOODYEAR, ARIZONA; PROJECT NO. 22350; DATE: 4/12/23.

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

EMERGENCY EQUIPMENT

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150, PHOENIX, AZ

SCALE: 1" = 20'

ISSUE DATE: 02/27/2025

PROJECT NUMBER: CSC0011.PS

Fig. 3

SHEET NO.

DRAWING NAME: J:\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 SITE PLAN PLOT DATE: Feb 27, 2025 - 9:49am OPERATOR: BOB

APPENDIX A
Hazardous Waste Inspections

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG WASTE STORAGE AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or secondary containment, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Containers and bulk containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Placement and storage acceptable	Drum aisle spacing: 30" (minimum), height of stack: 1 high maximum		
Containers, bulk containers, and columns closed and secured	Open lids or bungs		
Labeling of containers and storage bulk containers	Improper identification, missing labels, accumulation date missing		
Storage capacity is not exceeded	$\geq$10 55-gallon containers, $\geq$10 spent columns, >2 275-gallon totes		
Wastewater bulk container is provided with start accumulation date	Missing label, date		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Waste material holding time within maximum limit	1-year maximum handling time for spent granulate material from delivery to disposal (applies only to off-site, non-reclaimed waste storage). 90-days for onsite generated wastes.		
Secondary Containment	Secondary containment present and capable of supporting 110% of largest container		
Compatible Waste	Incompatible waste is stored so that spill will not comingle		
Wastewater generation log is available and in-use	Missing generation log, not in use		
Wastewater storage duration has not exceeded permit limitations	Limitations based on hazardous waste generator status (<90 days)		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG PREPARATION AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle Space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping and pumps in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns or waste		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG WASTE MATERIAL TRANSFER AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Tanks and bulk containers in good condition	Leaks, dents, corrosion, deterioration		
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns, only satellite storage area		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Shipping containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **DONNING AND DOFFING PASSTHROUGH AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
All fire extinguishers visible and accessible	Not properly identified, missing, not mounted securely		
All fire extinguishers fully charged	Not adequately charged		
Fire alarm system functioning properly and has been tested in the past year	Pull boxes not functioning properly, loss of water pressure or alarm signal for sprinklers		
At least 18-inch clearance provided for all sprinkler heads	Material or equipment storage issues		
Smoke alarms functioning correctly	Loss of power, blocked, damaged		
All exits marked with exit signs and illuminated	Missing signage, loss of power, damaged		
Evacuation plans posted near doors and/or common areas	Missing signage, not accurate, not sufficient size		
All doorways and hallways leading to an exit free and clear and provided illumination	Material or equipment storage issues, loss, or power, damaged		
Emergency notification equipment including telephone and/or paging system operational	Loss of power, blocked, damaged		
Emergency phone numbers posted	Missing signage, not accurate		
Emergency lights functioning correctly	Loss of power, blocked, damaged		
First aid kits visible and accessible	Not properly identified, missing, not accessible		
First aid kits stocked as required and expiration dates current	Depleted or missing inventory, expired components		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available and in good condition	Broken, dirty, missing equipment (includes air supply system, respirators, chemical resistant clothing, eye protection, gloves)		
Spill kits readily available and include adequate materials	Missing, damaged, not accessible		
Duct flow pressure gauge operating correctly	Damaged, loss of power, faulted		
Ventilation	HEPA present and functioning, Cleanprotect operating		
Liquid level switch operating correctly	Damaged, loss of power, faulted		
Gas/O_2 Detection System calibrated and operating correctly	Expired calibration, damaged, loss of power, faulted		
Emergency Generator	Checked for operation in loss of power, maintained		
Uninterruptible Power Supply (UPS)	Checked for operation in loss of power, maintained		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS **WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available	Includes air supply system, respirators, chemical resistant clothing, eye protection, gloves in stock		
Respirators in good condition	Respirator components (mouthpiece, supplied air systems, connections), broken or damaged, dirty.		
Chemical resistant clothing	Good condition, no holes, damage, or dirty/used equipment.		
Gloves	Good condition, no holes, damage, or dirty/used equipment.		
Eye protection	Good condition, no holes, damage, or dirty/used equipment.		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – SECURITY **WASTE MATERIAL TRANSFER ROOM. WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Yes/No**	**Date and Type of Repair Performed (Location if applicable)**
Facility perimeter fence in acceptable condition	Damaged, deteriorated, missing		
Warning signs posted and in acceptable condition	Missing, damaged		
Building security system operating correctly	Damaged, loss of power, notifications not provided		
All doors and key card system operational	Damaged, cannot close or lock		
Lighting on interior and exterior adequate	Damaged bulbs, loss of power		

APPENDIX B

Hazardous Materials Identification System Spreadsheet

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Argon	100%	7440-37-1	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Nitrogen	100%	7727-37-9	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Copper Sulfate Pentahydrate	99%	7758-99-8	Toxic	Solid	100 lbs	2	0	0	1
X		CLEANSORB CS3F	100%	Proprietary Copper Compound	Toxic	Solid	22,000 lbs	2	0	0	0
X		CLEANSORB CS3G	<20%	Proprietary Copper Compound	Corrosive	Solid	1,325 lbs	1	0	0	0
X		CLEANSORB CS5	MIX	1313-13-9 <100% 1317-38-0 <25%	Toxic	Solid	1,325 lbs	2	0	1	0

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Waste - MOCVD Tool Exhaust	MIX	1317-38-0 10-50% 12005-75-3 10-30% 12019-57-7 10-30%	Pyrophoric Unstable / Reactive Toxic	Solid	880 lbs	2*	0	0	0
X		Waste - Ion Implant abatement	MIX	7440-38-2 >1% 142844-00-6 20-40% 1309-48-4 20-40%	Toxic	Solid	1760 lbs	3*	0	0	0
X		Waste - Exhaust Scrubber Granular	MIX	7784-18-1 20-40% 7783-40-6 20-40%	Corrosive	Solid	1760 lbs	2*	0	0	0

Insert additional lines as needed.

* NFPA 704 for highest hazard component that is apart of waste stream.

APPENDIX C
Notifications to Local Agencies

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Mike Duran III
Fire Chief
City of Phoenix Fire Department
2409 W Cactus Road
Phoenix, AZ 85029

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Chief Duran:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with applicable federal and state regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Honor Health Deer Valley Medical Center
19829 N 27th Avenue,
Phoenix, AZ 85027

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

To Whom It May Concern:

Attached please find the contingency plan for CS Clean Systems (CS Clean) at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Urgent Care Facility in compliance with applicable state and federal regulations. Should the need to send an employee of CS Clean to Honor Health Medical Center due to a work-related injury or an overexposure to any chemicals onsite, CS Clean will submit all SDSs (Safety Data Sheets) for chemicals that the employee had encountered.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Michael Branham
Maricopa County LEPC
5630 E. McDowell Road
Phoenix, AZ 85008

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Mr. Branham:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Chief Michael Sullivan
City of Phoenix Interim Police Chief
620 W Washington Street
Phoenix, AZ 85003

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

Dear Chief Sullivan:

Attached please find the contingency plan for CS Cean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the City of Phoenix Police Department in compliance with applicable state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Laura Malone
AZ State Emergency Response Commission
City of Phoenix
1110 W Washington Street
Phoenix, Arizona 85007

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Ms. Malone:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the City of Phoenix in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Chief Michael Sullivan
City of Phoenix Interim Police Chief
620 W Washington Street
Phoenix, AZ 85003

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

Dear Chief Sullivan:

Attached please find the contingency plan for CS Cean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the City of Phoenix Police Department in compliance with applicable state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared For:

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

Issued On: March 12, 2025

Revised On: October 27, 2025

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GENERAL INFORMATION

Project/Site Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Consultant Information:
HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032
Phone: 860-674-9570
Fax: 860-674-9624
E-mail: David.Webster@hrpassociates.com
Project Number: CSC0011.PS

Client Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Report Date: October 27, 2025

Report Author:
Chelsea Thompson
Associate EH&S Consultant

Client Manager:
David Webster
Senior EH&S Project Manager

Reviewed By:
David Webster
Senior EH&S Project Manager

1.0 EXECUTIVE SUMMARY

Executive Summary

This Emergency Action and Contingency Plan has been updated for CS Clean Systems (CS Clean) in order to comply with State and Federal Hazardous Waste Regulations and Occupational Safety and Health Administration (OSHA) Emergency Response Plan regulations. The purpose of this plan is to act as a guide during an actual emergency, to minimize hazards to human health and the environment from fires, explosions, and other releases, and to familiarize local emergency response personnel with the types and locations of materials kept onsite.

Contingency Plan Submittal

A copy of this updated Contingency Plan must be submitted to the following agencies:

- Local Police Department
- Local Fire Department
- Local Hospital/Urgent Care
- Local Emergency Planning Committee (LEPC)
- State Emergency Response Commission (SERC)

Implementation of the Contingency Plan

The Contingency Plan should be implemented under any of the following situations:

- Fire/Explosion
- Spill/Release
- Flood
- Other Emergencies

Initial Notifications

The following people are responsible for implementing this plan (See **Section 3.2** for details.):

- Jacob Newman – Emergency Coordinator
    - 24-Hour Phone: (360) 852-6410
- Jason Dugay – Alternate Emergency Coordinator
    - 24-Hour Phone: (203) 648-0881
- Adam Furphy – Alternate Emergency Coordinator
    - 24-Hour Phone: (845) 337-7385

Emergency Procedures

Emergency procedures are in the sections noted below:

- Immediate Procedures (**Section 3.4.1**)
- During Emergency (**Section 3.4.2**)
- Follow-up Procedures (**Section 3.4.3**)

Control Procedures

Emergency Procedural Flow Charts for the following situations are included in the sections noted below:

- Fires/Explosions (**Section 3.5.4**)
- Spills/Releases (**Section 3.5.5**)

Emergency Equipment

The locations of emergency equipment at CS Clean can be found on **Figure 3** and are posted around the facility. **Table 3** describes the facility's emergency equipment as well as its uses and locations.

Evacuation

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. **Figures 1** and **3** show CS Clean evacuation routes and **Section 3.7** includes procedural details.

Reporting of Emergency Incidents

Immediately after an environmental emergency the event must be reported to the Commissioner of the Arizona Department of Environmental Protection (ADEQ) as well as the Regional Administrator of the U.S. Environmental Protection Agency (EPA). A written report must be filed within fifteen days of an environmental emergency, the Emergency Coordinator must report to ADEQ and EPA. Any work-related accidents that result in the death of an employee must be reported to OSHA within eight hours of the incident occurring and report any employee in-patient hospitalization, amputation, or loss of an eye within twenty-four hours.

Locations of Contingency Plan

Copies of this Contingency Plan are maintained at the facility on the internal CS Clean internet page. Access can be granted at the Administrative Assistant's office and the Environmental, Health and Safety Director's office.

Contingency Plan Revision

This Contingency Plan must be revised under any of the following conditions (but may not be limited to):

- Regulations are revised;
- Plan fails in an emergency;
- Facility changes (design, operation) which increases the potential of a fire, spill, or release;
- List of emergency coordinators changes; or
- List of emergency equipment changes.

2.0 INTRODUCTION

2.1 General Background

This combined Hazardous Waste Contingency and Emergency Response Plan has been created to help eliminate confusion for facility first responders during an emergency and to avoid duplication in the preparation and use of emergency response plans at CS Clean. The use of this single plan should also improve coordination between facility response personnel and local, state, and federal emergency response personnel.

The purpose of this plan is to comply with OSHA and EPA regulations under 29 Code of Federal Regulations (CFR) 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, respectively, as well as the Large Quantity Generator (LQG) Hazardous Waste Contingency Plan regulations under Sections R18-08-262, and Treatment, Storage, and Disposal facility (TSDF) requirements under 40 CFR 270.14(b)(7), 264.56, and Arizona Administrative Code (AAC) R-18-8-264. The goal of the combined plan is three-fold:

1. To act as a guide during actual emergency situations;
2. To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soils, or surface water; and
3. To familiarize local emergency response personnel (i.e., police, fire, and rescue departments, hospital, and governmental personnel) with the types of material handled at the facility and internal emergency response procedures.

CS Clean, located at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona, is a hazardous TSDF, generator of hazardous waste, and transfer of hazardous secondary materials (HSM) for reclaim. The primary role of the facility is to service gas abatement systems (columns), treatment, and storage of the waste contained in the columns. The North American Industry Classification System (NAICS) code for the facility is 333413 (Industrial/Commercial Fan and Blower and Air Purification Equipment Manufacturing) and the Standard Industrial Classification (SIC) code is 3564 (Air Purification Equipment). The plant consists of one main building that contains offices, waste storage, and waste repackaging areas. The facility has no onsite storage of liquid fuels for the site as the

facility runs on natural gas, aside from two to three cannisters of Propane for the Powered Industrial Trucks (PITs) onsite. Hazardous waste contained in containers and totes are stored within the main building in various designated areas. The Site Location is indicated on **Figure 1**.

CS Clean has up to eight employees onsite and usually operates one eight-hour shift Monday through Friday. On occasion there may be employees onsite during off-hours for miscellaneous/non-routine activities.

The manufacturing processes at CS Clean produce several different hazardous waste streams, treat, and store various hazardous waste streams. A list of potential waste streams and hazardous waste streams was previously reported to Phoenix Fire Department using the Hazardous Materials Identification System (HMIS). The generation rate, storage location, and handling methods for these wastes are discussed further in this section.

The following are the key elements of the Hazardous Waste Management Program as they apply to CS Clean:

- Identification and Listing Hazardous Waste
- Standards for Generators and Transporters of Hazardous Waste
- Hazardous Waste Facility Standards and Permit Requirements
- Hazardous Waste Shipping and Manifest Requirements

CS Clean operates as a TSDF station per AAC R-18-8-264. The facility receives spent Cleansorb columns of hazardous waste to treat the waste so Cleansorb columns can be utilized as part of a column regeneration process. Cleansorb vessels are designed to be reusable. A Cleansorb column is initially filled with virgin granulate, is installed in a manufacturing process exhaust scrubber at an offsite location, and will abate hazardous gases until such time that the granulate within it is spent. At that time, the end user purges the column with inert gas to remove any hazardous vapors which may remain in the column, removes the spent column for shipping, and installs a new Cleansorb column filled with virgin granulate. The spent column is then returned to CS Clean who then treats the waste and stores the waste prior to offsite disposal and decontamination of the Cleansorb column for reuse. The process is described in detail below for the treatment, storage, and disposal of spent columns.

- The receipt of spent scrubber columns containing potentially hazardous spent granulate from end product users;
- Removal of the spent granulate from the columns, which is then transferred into approved shipping containers at the CS Clean facility, followed by either:
    - Treatment and transportation of the spent granulate offsite for disposal via a third-party environmental services vendor.

      OR
    - Transferal of the spent granulate to a permitted reclamation facility for the recovery of precious metals, where possible.

- Decontamination, fine cleaning, testing, and refilling of the spent columns with virgin granulate; and,
- Shipping of the cleaned and regenerated columns to service at the end users' facilities.

Additionally, the facility is a permitted LQG, EPA I.D. #AZR000528570, with one hazardous waste Central Accumulation Area (CAA) storage. Waste is stored initially in Satellite Accumulation Areas (SAA) located throughout the waste process area. Once the SAA waste is removed the waste is transported to and stored in the CAA located to the west, within the waste storage area. The waste is stored for less than ninety days onsite prior to removal by a permitted hazardous waste transporter. The CAA is routinely inspected, and a copy of the Hazardous Waste Inspection Log is included as **Appendix A**.

Further information on the hazardous wastes and hazardous materials stored at CS Clean can be found in **Appendix B** identifies the storage location and applicable notes for each waste.

When disposing of a hazardous waste, the generator must fill out a Hazardous Waste Manifest form (with help from the hazardous waste transporter) which lists facility information, type and volume of waste being shipped offsite, transporter information, and details of the destination facility. CS Clean must retain copies of each manifest.

CS Clean utilizes hazardous materials in its production processes. Hazardous materials are stored throughout the facility. The hazardous materials are stored in containers with sizes ranging up to and including 55-gallon drums and 275-gallon totes. The hazardous constituents of the drums and totes are classified as flammable, pyrophoric, irritants, compressed gases, corrosive, or toxic materials. Other areas of hazardous material storage include a generator onsite with propane. Safety Data Sheets (SDSs) shall be maintained by the site and be made accessible for more specific information on the summarized hazards below in an emergency situation. Hazardous materials reported to the Phoenix Fire Department previously are included in the HMIS spreadsheet attached in **Appendix B**.

2.2 Amendments

This plan must be reviewed, and immediately amended, if necessary, whenever:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The generator facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Table 1 AMENDMENTS			
Section Amended	**Date**	**Description**	**Name of Amender**
Throughout	10/20/25	Updated Primary Coordinator Contact	Chelsea Thompson, Associate Consultant
Throughout	10/20/25	Update to inspections and TSDF	David Webster, Senior Project Manager

3.0 HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

3.1 Purpose

In accordance with 29 CFR 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, 40 CFR 264.56, and 40 CFR 270.14, respectively, as well as the ADEQ Hazardous Waste Contingency Plan regulations under Sections R18-08-262 and R18-08-262, this plan will be used in the event of an emergency.

The intent and purpose of this plan are:

- To act as a guide during actual emergency situations;
- To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or their constituents to the air, soils, or surface water; and
- To familiarize local emergency response personnel (e.g., police, fire, hospitals) with the types of material used and stored, and internal emergency response procedures.

The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

3.2 Initial Notifications

At CS Clean, the following personnel must be notified in the case of a sudden or non-sudden release of hazardous wastes, fire, or explosion.

The phone number at the plant to be used by persons outside the facility (e.g., police, fire, spill contractors, etc.) is (520) 263-0235.

TABLE 2 EMERGENCY CONTACTS				
Role	**Name**	**Address**	**Home/ Cell Phone**	**Facility Phone**
Emergency Coordinator	Jacob Newman	2453 West Parkside Lane, Suite 150, Phoenix, AZ	(360) 852-6410	(520) 263-0235
Alternate Emergency Coordinator	Jason Dugay	26 Commerce Drive, Danbury, CT	(203) 648-0881	(203) 797-8155
Alternate Emergency Coordinator	Adam Furphy	26 Commerce Drive, Danbury, CT	(845) 337-7385	(203) 797-8155

In case of an imminent, actual emergency at the plant, the Emergency Coordinator, or the Alternate, shall be contacted first. The Emergency Coordinator shall carry out the emergency plan agreed upon by local police, fire department, hospitals, contractors, and state and local emergency response teams.

Upon being notified, the **Emergency Coordinator** will obtain the following information:

1. Nature of Emergency (i.e., fire or spill);
2. Location of Emergency;
3. Size and Extent of Emergency;
4. Hazardous Materials Involved (if any); and
5. Injury to Personnel.

Emergency Coordinator Qualifications:

The Emergency Coordinator and the Alternates have been chosen based upon the following required qualifications:

- The Coordinator or Alternates must be onsite or on-call at all times;
- Must be familiar with the facility layout;
- Must know the locations and characteristics of the waste handled;
- Must be thoroughly familiar with contingency and emergency plans;
- Must be familiar with all operations and activities at the facility;
- Must know the locations of all records; and
- Must have the **authority** to commit facility resources in the event of an emergency.

3.3 Implementation of the Contingency Plan

The decision to implement the Contingency Plan depends upon whether an actual situation could threaten human health or the environment. This section outlines the decision making criteria that the Emergency Coordinator will use to define situations in which the Contingency Plan will be implemented. The Contingency Plan will be implemented in the following situations, or other situations upon the judgment of the Emergency Coordinator or, in his or her absence, the Alternate Emergency Coordinator.

Fire and/or Explosion

- A fire causes the release of toxic fumes.
- The fire spreads and could possibly ignite materials at other locations onsite or could cause heat induced explosions.
- The fire could possibly spread to offsite areas.
- Use of water or chemical fire suppressant could result in contaminated run-off.
- An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- An imminent danger exists that an explosion could ignite other hazards waste at the facility.
- An imminent danger exists that an explosion could result in the release of toxic materials.
- An explosion has occurred.

Spills or Material Release

- The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
- The spill could cause the release of toxic liquids or fumes.
- The spill can be contained onsite, but the potential exists for ground water contamination.
- The spill cannot be contained onsite, resulting in offsite soil contamination, air, or ground water or surface water pollution.

Floods

- Floods occur from rain, snow, storms, storm surges, or overflows of dams and water systems.
- Floods can lead to power outages, gas line emergencies, damage to the building and its contents, and create landslides.
- Flood water can become energized by electrical equipment exposed to flood waters.

Power Outage and Natural Gas Emergency

- The potential exists for power outages and natural gas emergencies, which could create an employee safety hazard or damage onsite machinery/equipment. In addition, in the event of a power outage, ventilation could be turned off, which establishes a dangerous environment due to fumes.
- Emergency Response Coordinators are responsible for evacuation and determining conditions under which hazardous conditions may exist due to power failure.

Natural Disasters and Inclement Weather

- The potential exists for natural disasters, such as hurricanes or tornadoes, as well as other types of inclement weather.

Bomb Threats, Civil Disturbances, Workplace Violence, and Suspicious Mail

- The potential exists for area bomb threats, civil disturbances, workplace violence, and/or suspicious mail.

Medical Responses

- Due to the inherent nature of the activities conducted at the facility, a potential exists for both serious medical and non-serious/non-emergency situations.

3.4 Emergency Procedures

3.4.1 Immediate

Emergency procedures are the responsibility of the Emergency Coordinator or his/her Alternate. Immediate procedures are outlined below.

1. If necessary, the Emergency Coordinator will activate internal facility alarms or communication systems to notify all facility personnel.
2. If safety permits, each operator should shut down his/her operations; most importantly turn off running processes, if safe to do so. See supervisor if unsure of procedure.
3. All personnel and visitors shall exit using predetermined routes described in this plan.
4. If their help is needed, the Emergency Coordinator will notify the appropriate State and local agencies included in the emergency procedural flow diagrams.
5. The Emergency Coordinator must identify the character, exact source, amount, and extent of any release materials and assess possible hazards to human health or the environment.
6. If the Emergency Coordinator determines that there is a threat to human health or the environment outside the facility, or if greater than the reportable quantity (RQ) of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance or a Superfund Amendments and Reauthorization Act (SARA)

Extremely Hazardous Material (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) is released, it must reported to:

- Emergency Spill Clean Up Contractor: Veolia
  - **Telephone Number: (602) 233-2955**
- ADEQ spill hotline
  - **Telephone Number: (602) 771-8786**
- LEPC for CERCLA/SARA release greater than the RQ
  - **Telephone Number: (602) 273-1411**
- National Response Center (NRC)
  - **Telephone Number: 1-800-424-8802**

The following information must be provided to ADEQ, the LEPC, and the NRC when contacted:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident (e.g., release, fire, etc.);
- Where did the incident occur;
- How did the incident occur;
- Name and quantity of material(s) involved, to the extent known;
- What actions were taken to respond and contain the incident;
- The possible hazards to human health or the environment outside the facility; and
- The extent of injuries, if any.

3.4.2 During Emergency

During an emergency, the Emergency Coordinator or his/her alternate must be aware of the following possible problems:

- If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure build up, gas generation, or ruptures in the valves, pipes, or other equipment as appropriate.
- In the affected areas of the facility, no waste that may be incompatible with the released material should be treated, stored, or disposed of until after the cleanup procedures have been completed.

It should be noted that in the event of an emergency, the Emergency Coordinator is not the incident commander. The role of the incident commander will be assumed by the "senior" member of one of the responding agencies (i.e., fire or police department).

3.4.3 Follow-Up

Immediately after an emergency, the Emergency Coordinator must ensure the following:

- All emergency equipment, listed in the Contingency Plan and used during the emergency, is cleaned, decontaminated, and is fit for reuse or replaced.
- All waste materials generated during the emergency must be properly identified, stored, and disposed of in accordance with State and Federal regulations.
- Notify the EPA Regional Administrator and the local authorities that all of the actions have been completed before resuming operations.
- Write a summary of the incident for the company's record files and forward a copy to the EPA Regional Administrator and ADEQ officials within fifteen days.

3.5 Control Procedures

Sections 3.5.3 through **3.5.6** provide detailed information for the handling of each classification of emergency. The plan includes tabbed dividers directing facility personnel to sections outlining emergency control procedures for each type of incident. Immediately following the section are procedural flow diagrams for each of the emergencies listed above.

3.5.1 Establishment of Control Zones

During an emergency incident, if the Emergency Coordinator or Alternate determines that evacuation is **NOT** necessary, for spills other than incidental spills the Emergency Coordinator must establish control zones around the affected area(s). Incidental spills do not require establishment of control zones. The purpose of setting up control zones is to minimize the potential adverse impact of the incident on employees, citizens, responders, the environment, and property.

The Emergency Coordinator will designate three major zones around the affected area. Personnel should move through access control points only.

1. **Hot Zone (Exclusion Zone)**

   This is the area of most concern. Only trained emergency responders with the use of proper personal protective equipment (PPE) and the buddy system may have access into this area. The area of the Hot Zone shall extend far enough to prevent adverse effects from hazardous materials. Only those emergency responders necessary to control the incident or to rescue others may enter into this area.

2. **Warm Zone (Contamination Reduction Zone)**

   The Warm Zone is an area of limited access. The purpose of the Warm Zone is to reduce the spread of contamination and control access to and from the Hot Zone. It also serves as a buffer zone and, at least initially, is not contaminated. Contamination in this zone should remain in the "Decontamination Corridor" that is located in this zone. Decontamination will take place in the Decontamination Corridor. PPE will be worn as required in this area. The size of the Warm Zone will be determined by the nature of the

incident and the size of decontamination operations to be conducted within. The Emergency Coordinator will make this decision.

3. **Cold Zone (Support Zone)**

   The Cold Zone is the area that borders the outer perimeter of the Warm Zone and is a clean area set up for support operations. It will be upwind from the Hot and Warm Zones and as far away from the Hot Zone as necessary for safe operations. This zone will have a secure outer boundary.

3.5.2 Fire and/or Explosion

Immediate procedures are the responsibility of the Emergency Coordinator, and not the general occupants, although general occupants may contact "911" as well. Immediate procedures are outlined below:

1. The Emergency Coordinator will activate the fire alarm and use the intercom system to notify all facility personnel to evacuate and contact "911" via telephone. List the following information for the emergency responders.
   a. Name;
   b. Address of the facility;
   c. Extent of fire;
   d. Possible chemicals involved; and
   e. Approximate quantity of chemicals involved.
2. The Emergency Coordinator will initiate full evacuation of the affected area(s) as necessary, if not already accomplished by the sounding of the fire alarm. Evacuation procedures are contained in **Section 3.7**. Upon emergency responders arriving, the Emergency Coordinator will turn over all emergency coordinator duties to unified command until the event is concluded.
3. If a spill of material occurs, then the Spill Control Procedure (**Section 3.5.3**) will be followed. **NOTE: Fire emergencies supersede spill emergencies.**
4. In the event of the active and uncontrolled release of hazardous materials reporting will occur per **Section 4.0**.
5. As necessary, the Emergency Coordinator should notify the appropriate federal, state, and local agencies, included in **Section 4.0**, for all releases to the environment based on the extent and conditions of the emergency.
6. The Emergency Coordinator and first responders must monitor for leaks, pressure build up, gas generation, or ruptures in valves, pipes, or other equipment as appropriate.

Fire-fighting will not be performed by the CS Clean personnel unless trained in the use of portable fire extinguishers for small incipient fires. Fires judged to be of greater magnitude will be referred to the local fire-fighting officials. CS Clean will use the "911" telephone emergency service which contacts the Phoenix Fire Department.

Outside calls will not be accepted unless absolutely necessary so that the phone lines remain free to handle only emergency calls.

Area or plant evacuation will be necessary in case of a major fire or explosion. All personnel have been trained in evacuation procedures and means of exit from their respective work areas.

The Emergency Coordinator will be responsible for determining if personnel who are not in the affected area will stay in their respective work area. Supervisors of unaffected areas will stay with their personnel and be ready to evacuate. Accountability Coordinators will be ready to account for the persons under their supervision.

An "all clear" signal will be given, at the discretion of the Emergency Coordinator, when the fire has been extinguished, and the safety of personnel is no longer endangered. The Emergency Coordinator will determine when the emergency has passed and the "all clear" signal can be given. All emergency equipment must be cleaned and fit for reuse prior to resuming plant operations in the affected areas.

In the event of a small controllable fire such as a small incipient fire, the following procedures should be followed by employees trained with portable fire extinguishers:

1. Notify Emergency Coordinator.
2. Obtain fire extinguisher; extinguish flames.
3. Eliminate and continue to restrict all sources of ignition so the fire will not re-ignite.
4. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow the procedures below.
5. Implement measures to control any water run-off, if contaminated, or any material that has been released.

EMERGENCY PROCEDURE-FIRE AND/OR EXPLOSION

CONTACT EMERGENCY COORDINATOR:	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) Nature of Emergency;
2) Location of Emergency;
3) Size and Extent of Emergency;
4) Hazardous Materials involved (if any); and
5) Whether any Personnel are injured.

PERSONNEL INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911	FIRE DEPARTMENT:	911
POLICE:	911	URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100	POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

THE AREA WILL BE CLEARED OF ALL PERSONNEL. THESE PERSONS ARE TO REPORT TO THE RALLY POINT FOR ACCOUNTABILITY.

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS:

- FIRE DEPARTMENT: 602-262-6297 (NON-EMERGENCY)
- MEDICAL SERVICES: 602-943-2381 (NON-EMERGENCY)
- POLICE DEPARTMENT: 602-262-6151 (NON-EMERGENCY)
- FIRE MARSHAL: 602-262-6771
- ARIZONA DEQ: 602-771-2300
- NRC: 1-800-424-8802
- VEOLIA SPILL RESPONSE: 602-233-2955

IS THERE A SPILL OR RELEASE OF ANY HAZARDOUS MATERIALS?

NO

YES

FOLLOW PROCEDURES IN THE CONTINGENCY PLAN

FIRE EXTINGUISHED BY OFFSITE RESPONSE PERSONNEL

REPORTING REQUIREMENTS MET

EVENT CONCLUDED

3.5.3 Spills

All spills/releases of hazardous materials must be reported to the Emergency Coordinator. Spills are defined as an unexpected release of any hazardous substance from a container, and a leak is defined as a release from a container via a puncture or a weak spot. It should be noted that personnel will not conduct emergency responses to spill or releases of hazardous materials that may threaten one's safety, health, or the environment without Hazardous Waste Operations and Emergency Response (HAZWOPER) training per 29 CFR 1910.120(e). Thus, any spill that is not small enough to be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area or poses an adverse exposure hazard to employees, will be considered an emergency response, and may not be handled by untrained personnel. Any incidental spill may be cleaned up by personnel, and the release does not constitute a safety, health, or environmental hazard. The Emergency Coordinator will determine the proper response in accordance with the control procedures outlined with this section.

Emergency procedures are the responsibility of the Emergency Coordinator, and not the general occupants. Procedures are outlined below:

1. If a leak develops or a spill of chemicals or oil develops, the person discovering the discharge will leave the immediate area and contact the Emergency Coordinator. The Emergency Coordinator will obtain the following information:
    - Person(s) injured and seriousness of injury;
    - Location of the spill or leak, material involved, and source;
    - The approximate amount spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving; and
    - Whether a fire is involved.
2. Next, the Emergency Coordinator or Alternate will:
    - Initiate evacuation of the hazard area, as necessary. Evacuation procedures are contained in **Section 3.7**. For small spills or leaks, isolate at least 50 feet in all directions. For large spills, initially isolate at least 100 feet in all directions and keep all personnel upwind of the release.
    - Call for emergency, fire, and medical services if a fire or medical emergency is involved by calling "911." IF A HISSING SOUND COMES FROM A VENTING DEVICE OR IF A DRUM BEGINS TO DISCOLOR, WITHDRAW FROM THE AREA IMMEDIATELY.
    - If the spill can be contained using the equipment onsite and if the containment operation will not involve employee exposure or reasonable possibility for employee exposure to safety or health hazards, then the procedure in **Step 3** (below) may be used. If not, proceed as follows.
        - Contact the commercial emergency clean-up firm and dispatch emergency personnel to the site to take appropriate action.

- Contact the proper authorities to report the spill or release. Reporting requirements are contained in **Section 4.0**. Contact local authorities first so that, if necessary, downstream water users and/or persons downwind of the vapor can be notified and, if necessary, removed.

3. If the spill is an incidental release that is small enough to be absorbed, neutralized, or otherwise controlled at the time of release, and does not pose an adverse exposure hazard to employees or the environment, then the spill will be handled by CS Clean personnel. The CS Clean trained emergency response team may respond when the spill is more significant than an incidental release, but only if it can be safely handled by properly trained personnel using proper PPE. General spill response procedures include the following:
4. Make sure all unnecessary persons are removed from the hazard area.
5. If flammable waste is involved, remove all ignition sources.
6. The Emergency Coordinator must immediately restrict access in the affected area to only essential emergency response personnel. All entry points must be secured, if possible.
7. The Emergency Coordinator must establish Control Zones if a spill is greater than an incidental spill and therefore requires the trained Emergency Response Team.
8. During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility. These measures must include, where applicable, stopping processes and operations, collecting, and containing released materials, and removing or isolating containers. The Emergency Coordinator must ensure that no hazardous material/waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.
9. For emergency personnel containing/cleaning the spill, don necessary PPE. The type of respiratory protection needed will be determined by the type, quantity, and location of material involved in the incident and will be prescribed by the Emergency Coordinator.
10. If possible, try to stop the leak.
11. Dike the spill with Standard Industrial Absorbent as required.
12. Position ABC fire extinguishers near immediate clean-up area.
13. Remove all surrounding materials that could be especially reactive with the materials in the waste. Determine the major components in the waste at the time of the spill.
14. Pump standing liquids to available empty containers/tanks compatible with material/waste. For the remainder of spilled material use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, neutralize, and clean up a spill if it has not been contained by a dike or a sump. Most spills contained within a dike or sump can be pumped back into the appropriate storage tank or drum.
15. Procedure to follow for leaking container (drum, ton-pack, etc.):
    a) Move container into or construct a containment area;

b) Roll container or stand up on end away from leak;

c) Drain contents (transfer to clean container);

d) Label container accordingly;

e) Absorb spillage of leakage with absorbent;

f) Transfer absorbent waste to drum or other container, label accordingly; and

g) Store until final disposal.

16. If waste reaches a storm sewer, try to stop flow from the source by using sand, soil, sandbags, etc. If this is done, pump this material out into a temporary holding tank as soon as possible. The Phoenix Water Services Department (602-262-6251) must be notified if the spill accesses the storm sewer.
17. If the spill accesses a sanitary sewer, the Arizona Water Company Regional Water Authority (602-240-6860) must be notified along with notifications noted in **Section 4.0**.
18. Decontaminate all PPE that will not be disposed of, as noted in the Decontamination Procedures (**Section 3.8**)
19. Place all containment and clean-up materials in drums for proper disposal. Some items, such as absorbent rags or booms, may have to be cut up.
20. Place all recovered liquid wastes in drums, label drums in accordance with all applicable hazardous waste rules and regulations, for proper disposal.
21. It should be noted that CS Clean personnel will not assist in handling significant hazardous materials spills that pose a risk to plant personnel and which the Emergency Response Coordinator determines are beyond the scope of safe handling by the CS Clean Emergency Response Team. For these more significant hazardous materials spills, the Emergency Coordinator will utilize the services of a qualified clean up contractor, Veolia.
22. All emergency equipment used in the emergency will be returned to ready status prior to resuming plant operation in the affected area.

EMERGENCY PROCEDURE
SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL

CONTACT EMERGENCY COORDINATOR	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) WHETHER ANY PERSONNEL ARE INJURED;
2) LOCATION OF EMERGENCY, MATERIAL INVOLVED;
3) SIZE AND EXTENT OF EMERGENCY; AND
4) WHETHER A FIRE IS INVOLVED.

PERSONNEL INJURED?

YES

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911
FIRE DEPARTMENT:	911
POLICE:	911
URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100
POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

NO

IN THE CASE OF A FIRE, THE EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING, AND FOLLOWS FIRE/EXPLOSION PROCEDURES IN 2.5.1 OF THE CONTINGENCY PLAN.

FIRE DEPARTMENT: 911

BE PREPARED TO GIVE NAME, ADDRESS, EXTENT OF FIRE, AND POSSIBLE CHEMICALS INVOLVED

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

CAN THE SPILL BE ABSORBED, NEUTRALIZED, OR OTHERWISE CONTROLLED AT THE TIME OF RELEASE BY EMPLOYEES IN THE IMMEDIATE RELEASE AREA OR BY MAINTENANCE PERSONNEL WITHOUT POSING A SAFETY OR HEALTH HAZARD?

YES

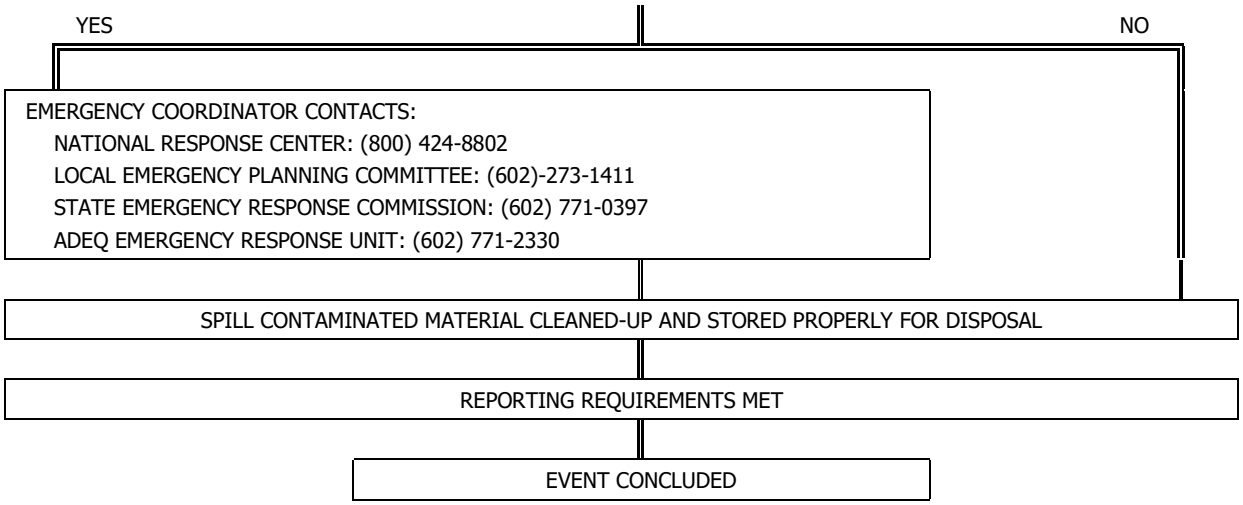
CONTAIN SPILL, CLEAN-UP SPILLED MATERIAL, STORE PROPERLY FOR DISPOSAL

NO

EMERGENCY COORDINATOR CONTACTS:
Phoenix Fire Department: 911
Veolia: (602) 233-2955

HAS SPILL REACHED OR THREATENED NAVIGABLE WATERS OR IS SPILL A CERCLA/SARA EXTREMELY HAZARDOUS MATERIAL AND GREATER THAN THE REPORTABLE QUANTITY?
(SEE http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf)

(Continued on next page)


YES
NO
EMERGENCY COORDINATOR CONTACTS:
NATIONAL RESPONSE CENTER: (800) 424-8802
LOCAL EMERGENCY PLANNING COMMITTEE: (602)-273-1411
STATE EMERGENCY RESPONSE COMMISSION: (602) 771-0397
ADEQ EMERGENCY RESPONSE UNIT: (602) 771-2330
SPILL CONTAMINATED MATERIAL CLEANED-UP AND STORED PROPERLY FOR DISPOSAL
REPORTING REQUIREMENTS MET
EVENT CONCLUDED

3.5.4 Floods

In the case of impending flood, it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home. If a flood strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to sufficiently high enough ground. Evacuation procedures are contained in **Section 3.7**.

1. Relocate to an area of high ground above rising flood waters.
2. If there is a sufficient warning attempt to sandbag areas of concern to prevent rising flood waters from entering the facility.
3. Do not attempt to drive or walk through flood waters. Waters can potentially wash away vehicles or pedestrians.
4. Remain in a protected area until instructed by the Emergency Coordinator to resume normal activity.

3.5.5 Other Emergency Procedures

Listed below are the procedures that will be followed for other potential emergencies at the discretion of the Emergency Coordinator. Due to the fact that these types of emergencies are inherently local in nature, the Emergency Coordinator at the facility will rely on the Local Emergency Management Office for assistance. This office can be contacted as follows:

Maricopa County Local Emergency Planning Committee
5630 E McDowell Road
Phoenix, AZ 85003
(602) 273-1411
IN AN EMERGENCY DIAL 911

3.5.6 Natural Disaster

In the case of impending natural disaster (i.e., hurricane, tornado, flash floods, etc.), it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home or provide a safe environment at the plant until severe weather has passed. If a natural disaster strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to an internal rally point. Evacuation procedures are contained in **Section 3.7**.

Basic Procedures to Follow During Natural Disasters Are:

1. Do not stay where exposed or in personal vehicles.
2. Do not seek shelter near windows, openings, or doorways.
3. Relocate to an area of high structural integrity.
4. Remain in a protective area until instructed by the Emergency Coordinator to resume normal activity.

3.5.7 Bomb Threat:

In the case of a bomb threat, the Emergency Coordinator will call for full facility evacuation in accordance with the procedures contained in **Section 3.7**. In addition, the fire department and police will be notified. The individual who received the bomb threat should obtain the following information for the authorities:

1. Sound of the caller's voice,
2. Area of danger,
3. Type of bomb, and
4. Date and time of call.

3.5.8 Civil Disturbance/Workplace Violence:

In the case of a civil disturbance, the police will be contacted. If necessary, the Emergency Coordinator will initiate evacuation to an internal or external rally point in accordance with procedures contained in **Section 3.7**. The Emergency Coordinator can determine if it is safer to shelter in place. Procedures to be followed by employees identifying civil disturbances or workplace violence should be as follows:

1. Evacuate.
    a. If there is an accessible escape path, attempt to evacuate the premises.
    b. Evacuate regardless of whether others agree to follow.
    c. Leave your belongings behind.
    d. Help others evacuate, if possible.
    e. Call 911 when you are safe.
    f. Prevent individuals from entering an area where the violent person may be.
    g. Keep your hands visible.
    h. Follow the instructions of any police officers.
    i. Do not attempt to move wounded people.

2. Shelter in place.
    a. If evacuation is not possible, find a place to hide where the violent person is less likely to find you. Your hiding place should be out of the violent person's view.
    b. Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door).
    c. To prevent a violent person from entering your hiding place lock the door or blockade the door with heavy furniture.
    d. Silence your cell phone.
    e. Turn off any source of noise (i.e., radio, television).
    f. Hide behind large items (i.e., cabinets, desks).
    g. Remain quiet.
3. Protect Yourself.
    a. As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the violent person by:
        i. Acting as aggressively as possible against him/her.
        ii. Throwing items and improvising weapons.
        iii. Yelling.
    b. When police arrive:
        i. Put down any items in your hands.
        ii. Keep hands visible.
        iii. Follow all instructions.
        iv. Avoid making quick movements towards officers.
        v. Do not stop to ask officers for help or direction when evacuating, just proceed in the direction from which officers are entering the premises.

At the end of the emergency event, the Emergency Coordinator should conduct a thorough investigation into the cause of the emergency incident. Ensure that necessary procedural or process modifications are made to prevent reoccurrences or potential emergencies. Critique the emergency action procedures followed and make any changes to procedures as needed where deficiencies may have occurred.

3.5.9 Power Outage

In the event of a power outage, all employees and visitors are to go to the outside rally point until further instruction. The Emergency Coordinator will then determine if it is safe for employees to go to the internal rally point where they will remain until further instruction. Evacuation procedures are contained in **Section 3.7**. The facility is equipped with an emergency lighting system. Subsequently, the Emergency Coordinator will contact the local power company, Arizona Public Service (1-800-

240-2014), to determine the next course of action (i.e. sending workers home) and ensure the facility is in safe condition when power is restored.

3.5.10 Suspicious Mail

If an employee observes a piece of mail that appears suspicious (i.e., excessive postage, excessive tape, lopsided or lumpy in appearance, marked with "personal" or "confidential", handwritten with no return address, unexpected or from an unknown party, or addressed to someone no longer employed at the facility), then they should follow the following procedure:

1. Do not handle a letter or package that you suspect is contaminated.
2. Do not shake it, bump it, or sniff it.
3. Wash your hands thoroughly with soap and water.
4. Notify local law enforcement authorities.
5. Notify the Emergency Coordinator of the situation.

3.5.11 Natural Gas Emergency

If a strong odor or gas leak is noted, then employees will be instructed **not** to:

1. Use the telephone,
2. Operate any gas or electric machinery,
3. Light a match, or
4. Turn light switches on and off.

The Emergency Coordinator will instruct all employees to evacuate the building, if necessary, to the external rally point. Once outside, the Emergency Coordinator will contact the local power company, gas company, and, if necessary, the local Fire Department and LEPC.

3.5.12 Medical Response Procedures

After discovery of a medical response situation and a determination that entry to the emergency area will not cause further harm to the injured or yourself, an employee should quickly survey the scene prior to calling the ambulance (911). The employee should indicate to the dispatcher the following information:

- Is the scene safe?
- What happened?
- How many people are injured?
- Is the victim's airway blocked?
- Is the victim breathing?
- Can you feel the victim's pulse?

CS Clean has emergency equipment such as eyewashes located throughout the facility and are indicated on **Figure 3**. This equipment is available to provide immediate emergency use in case of chemical splash. Additionally, first aid kits and automated external defibrillators (AEDs) are present throughout the facility and noted on **Figure 3**.

3.5.13 First Aid Response

1. Move victim to fresh air; call emergency response number: 911.
2. If not breathing, give artificial respiration.
3. In case of contact with material, immediately flush skin and eyes with running water for at least fifteen minutes.
4. Remove and isolate contaminated clothing and shoes.
5. Administer additional first aid as appropriate.
6. Keep victim warm and await arrival of emergency medical response unit.

CS Clean works closely with NextCare Urgent Care (602-547-2600) located at 18589 N 59th Ave, Glendale, AZ 85308 to make them aware of the hazardous materials onsite. NextCare Urgent Care can provide necessary first aid supplies needed for medical emergencies at CS Clean.

3.5.14 Serious Medical Emergencies

In case of serious medical emergency, an ambulance will be summoned by calling 911. Examples of serious medical emergencies include the following:

- Persons with burns from fire and/or chemical spills,
- Heart attacks, cardiac arrest, or strokes,
- Persons undergoing shock,
- Chemical poisoning, and
- Severe seizures.

The Honor Health Deer Valley Medical Center (623-879-6100), located at 19829 N 27th Ave, Phoenix, AZ 85027 has been selected as the receiving facility for all medical emergency situations due to its close proximity. The direct phone number for the Honor Health Deer Valley Medical Center is 623-879-6100.

3.5.15 Non-Serious Medical Emergencies

In the case of non-serious, non-emergency situations where medical attention is needed, the employee will be taken to NextCare Urgent Care (602-547-2600), for treatment. Examples of non-serious/non-emergency situations include the following:

1. Minor bleeding,
2. Fractures, dislocations, sprains, and strains,

3. Minor eye/nose injuries, and
4. Temperature extremes.

CS Clean has first aid supplies in cabinets throughout the facility shown on **Figure 3**.

3.6 Emergency Equipment/Containment Structures

Location of emergency equipment is shown on **Figure 3** and briefly described in **Table 3**. All existing equipment must be inspected routinely and maintained to ensure its quality and efficiency.

Spills and leaks from the container storage area and tank storage area will be contained by virtue of the walls, impervious base, and berm. An impervious base provides spill containment of up to ten percent of the stored wastes.

Access to emergency communications and alarm systems (either permanent or portable), are available to all personnel operating the facility. Warning signs and 24-hour surveillance of all facilities will preclude any unauthorized personnel from coming in contact with hazardous materials at the facility.

Table 3
EMERGENCY EQUIPMENT

Item	Description/Capabilities	Location
Emergency Communication		
Telephone Systems	Capable of internal and external communication.	Main Offices
Fire Alarm System	Audible warning device with remote central monitoring.	Throughout Facility (**Figure 3**)
Fire Suppression System	A system of sprinklers that release water to control and extinguish fires.	Throughout Facility (**Figure 3**)
First Aid		
Emergency Eye Wash	Provide flooding spray of potable water at an angle to flood both eyes simultaneously to flush toxic chemical splashed in eyes.	**Figure 3**
Emergency Shower	Provide shower of potable water to flush toxic chemicals splashed on body.	**Figure 3**
Emergency Eye Wash Bottles	Provide flooding spray of potable water to flood eye(s) to flush toxic chemical splashed in eyes.	**Figure 3**
First Aid Kit	A collection of supplies and equipment used for administering First Aid.	**Figure 3**
AED	A device that detects sustained ventricular tachycardia or fibrillation and terminates it by a shock or shocks delivered directly to the myocardium, thus preventing sudden cardiac death.	Throughout Facility (**Figure 3**)

Table 3 EMERGENCY EQUIPMENT		
Item	**Description/Capabilities**	**Location**
Spill Response		
55-Gallon Drums	22" diameter X 34" lined and unlined steel tight head drums.	**Figure 3**
95-Gallon Overpack Spill Kits	Material used to absorb and contain spill of liquid material.	**Figure 3**
Spill Blocker Dike	A dike that can be set up around spills to help contain runoff from spills.	**Figure 3**
5-Gallon Universal Spill Kit	A spill kit with absorbent materials to clean up spills of universal waste.	**Figure 3**
5-Gallon Oil Spill Kit	A spill kit with absorbent materials to clean up spills of oil.	**Figure 3**
5-Gallon Acid Spill Kit	A spill kit with absorbent materials to clean up spills of acid.	**Figure 3**
Battery Acid Spill Kit	A spill kit with absorbent materials to clean up spills of battery acid (ex. Baking Soda).	**Figure 3**
Universal Spill Kit Chest	A large chest with absorbent materials to clean up spills of universal waste.	**Figure 3**
Fire Extinguishers	Wall-Mounted portable fire-fighting apparatus. The following types of fire extinguisher are used: Dry Chemical, CO_2; Class ABC.	Throughout Facility (**Figure 3**)
Personal Protective Equipment		
Gloves and Aprons	Rubber gloves and aprons for protection against harmful chemicals.	Throughout Facility
Goggles/ Safety Glasses	Eye/Face Protection.	Throughout Facility
Lock-out Tag-out Equipment	Equipment that allows for proper protection from and the locking out of energized devices, to prevent energy.	**Figure 3**

3.7 Evacuation Plan

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. The facility employs an internal phone system which can be used to evacuate the facility as well as contact key plant personnel to inform them as to the nature of the emergency and recommend plan of action. Total plant evacuation is initiated only by the Emergency Coordinator or his/her Alternate.

In the event that a plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

1. The signal for plant evacuation will be activated (alarm).
2. If safety permits, each operator should shut down his/her operations. Most importantly, turn off the running processes, if safe to do so. (Do not attempt to obtain personal

belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.)

3. ALL personnel, visitors, and contractors will immediately leave the operations area and congregate at the designated Rally Point via routes designated on **Figure 1**.
4. No persons shall remain or re-enter the location unless specifically authorized by the person(s) calling for evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter.
5. All persons will be accounted for by their respective accountability coordinator. The Supervisor will designate certain doors as the safest exists for his/her employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the Supervisors as necessary, to inform them of the nature of the emergency.
6. During exit, Accountability Coordinators should try to keep his/her group together, rallying at the designated locations on **Figure 1**, located in the north parking lot. Immediately upon exit, the Accountability Coordinators will prepare a list of all employees at the exit point. All other personnel who have persons reporting to them should report immediately to the rally point for final accounting.
7. Employees should remain in the area and stand upwind. (If any chemicals are released into the air around the building exterior, employees should move to a position where the chemicals would be blowing away from them.)
8. Upon completion of the employee list, the Accountability Coordinator in charge shall hand-carry the list to the Emergency Coordinator. All other personnel will remain at the rally point.
9. Contract personnel should also be listed with the name of their company.
10. A final tally of persons will be made by the Emergency Coordinator.
11. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
12. Re-entry into the area will be made only after clearance is given by the Emergency Coordinator. At his/her direction, a signal or other notification will be given for re-entry into the plant. If re-entry is not possible, non-essential personnel may be sent home.
13. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibilities of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.
14. Emergency drills will be conducted to practice all of these procedures and will be treated with the same seriousness as an actual emergency. Emergency drills are to be conducted periodically.

3.7.1 Internal Evacuation

In the event of a natural disaster (i.e., tornado) where the Emergency Coordinator has deemed the situation unsafe to send facility personnel home, the Emergency Coordinator will signal an internal evacuation.

1. The internal evacuation signal will be accomplished by intercom notification.
2. All traffic to and from the facility will cease, and each operator shall shut down his/her operations where safety permits. Turning off running water in respective areas is of primary importance. Do not attempt to gather personal belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.
3. Water supply for operation lines should be shut off.
4. All facility personnel will precede to the center of the building in a room without windows. Under no circumstances will any facility personnel leave.
5. Each Accountability Coordinators will take a head count of the employees in their department and will report any missing persons to the Emergency Coordinator.
6. In addition, the Administrative Assistant will remove the visitors' log upon evacuation and give it to the Emergency Coordinator, who will account for any visitors.
7. Clearance to resume work assignments or go home will be given by the Emergency Coordinator.
8. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.

3.7.2 Offsite Notification/Evacuation Procedure

To notify the neighboring properties in an emergency, CS Clean will contact the Phoenix Fire Department (phone number: 911). If necessary, an evacuation of the neighboring properties will be done by the Phoenix Police Department under the direction of the Phoenix Fire Department.

3.7.3 Shut-down of Operations

In the event of an emergency, critical operations will be shut down, if safe to do so.

3.8 Decontamination and Disposal

3.8.1 Decontamination Procedures

Decontamination of personnel and equipment must be conducted to reduce or eliminate the transport of contaminants from the emergency area into other areas of the facility or out into the environment where unprotected personnel may be exposed. Decontamination methods for personnel will depend on the type of contaminants, protection level, and work assignment and operation

location. CS Clean personnel will not respond to spills or any other emergency incident which is not incidental and poses a safety or health hazard. An outside contractor will be contacted if a spill or any other emergency incident poses a safety and/or health hazard to CS Clean personnel, or the environment. If a contractor has to be called in, the contractor will be responsible for the decontamination of their own equipment.

The following decontamination procedures are to be followed for the CS Clean emergency response team.

Each incident may require different decontamination operations. The nature of the incident, the chemical, the weather, the temperature, the number of people to be decontaminated, and the number of trained personnel available are a few of the factors which dictate the method, size, and type of decontamination operation that will be required. Basic decontamination procedures are described below:

Personal Protective Equipment and Other Items

1. Cover the Decontamination Corridor with plastic and place booms or dikes to control runoff from decontamination operations.
2. Use collection containers to hold decontamination water runoff.
3. Identify the Decontamination Corridor with tape, cones, ropes, or other markers.
4. Have a segregated equipment drop at the edge of the Hot Zone for contaminated equipment. This equipment may be reused in the Hot Zone without decontaminating.
5. Have a primary decontamination wash and rinse as the first step near the Hot Zone to wash the most significant contamination off of the equipment.
6. Have a secondary wash and rinse about ten to fifteen, or more, away from the first wash to assure thorough decontamination of equipment.
7. Have a clean area either before or after the secondary wash to change self-contained breathing apparatuses (SCBAs).
8. An area near the Cold Zone and at the end of the Decontamination Corridor should be established to remove chemical suits, respiratory equipment, and other items.
9. All used equipment and supplies or contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.
10. All contaminated items must be disposed of properly.

Victims/Personnel

1. The person(s) performing the decontamination should protect themselves from the contaminant by using the proper PPE.
2. Carefully remove respirators and PPE from the victim. If protective clothing or suits cannot be removed easily, they may be cut off.

3. Washing of PPE worn by the victim may be effective if it will not cause further harm.
4. When it is not possible to thoroughly decontaminate the victim or the PPE, the victim may be placed on plastic or other material to avoid spreading the contamination.
5. Medical personnel and facilities will be advised immediately whenever a victim is being transported or cared for and has not been thoroughly decontaminated. Medical personnel must be advised of the chemical, its properties, its hazards, known antidotes, or any other pertinent information. A copy of the SDSs will be given to medical personnel.

3.8.2 Disposal Procedures

All discarded materials, waste materials, or other objects shall be handled in such a way to avoid the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left onsite. All material that has visible signs of contamination (e.g., waste chemicals, contaminated soil, etc.) will be classified as potentially contaminated material. All potentially contaminated materials (i.e., PPE, clothing, disposable equipment, etc.) will be double bagged or drummed as necessary and segregated for temporary storage onsite for eventual disposal. All decontamination liquids will be collected, drummed, and stored onsite for eventual disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as normal domestic waste. It is important to note that a hazardous waste determination (either by knowledge of the waste or by analytical testing) must be performed on all waste materials destined for disposal, and all appropriate approvals, handling, transportation, and disposal methods must observe applicable Resource Conservation and Recovery Act (RCRA) regulations. Hazardous Waste shall be transported by an EPA licensed hazardous waste transporter to an EPA licensed hazardous waste treatment, storage, or disposal facility.

3.9 Contingency Plan Review and Submittal

In accordance with 40 CFR 265.54 and 29 CFR 1910.120, under the following conditions, the Contingency Plan should be reviewed and immediately revised:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

New employees should be familiarized with all emergency response procedures.

In accordance with 40 CFR 265.53, a copy of the Contingency Plan and all revisions must be maintained at the facility and submitted to the following parties:

1. Local Police Department
   Phoenix Police Department
   620 W Washington Street
   Phoenix, AZ 85003
2. Local Fire Department
   Phoenix Fire Department
   2409 W Cactus Road
   Phoenix, AZ 85029
3. Local Hospital
   Honor Health Deer Valley Medical Center
   19829 N 27th Ave,
   Phoenix, AZ 85027
4. Local Emergency Planning Committee (LEPC)
   Maricopa County
   5630 E. McDowell Road
   Phoenix, AZ 85008
5. Arizona State Emergency Response Commission (SERC)
   SERC
   c/o Department of Environmental Quality
   1110 W Washington Street
   Phoenix, AZ 85007

CS Clean will complete the following:

Familiarize the police and fire departments with:

- The layout of the facility
- Properties and hazards associated with the wastes handled at the facility
- Places where facility personnel would normally be working
- Entrances to the facility
- Evacuation routes

The Phoenix Police Department will be requested to provide the following assistance during an emergency:

- Immediate response
- Crowd control assistance
- Security to affected area
- Evacuation of surrounding areas, if required

- Communications support, if required

The Phoenix Fire Department will be requested to provide:

- Primary emergency authority
- Immediate response
- Primary fire-fighting services

Honor Health Deer Valley Medical Center will be requested to provide:

- Transfer to hospital
- Primary medical services
- Rescue services

3.10 Location of Contingency Plan

Copies of the Contingency Plan will be kept on an internal internet page CS Clean offered to all employees, in the main office area, and at the administrative assistant's office at the front entry.

4.0 FEDERAL, STATE, AND LOCAL REPORTING REQUIREMENTS

A variety of Federal, State, and Local reporting requirements exist for the reporting of emergencies and chemical releases. Provided below is a general description of the criteria for reporting under various regulations. It is the Emergency Coordinator's responsibility to follow the reporting requirements when applicable. The Emergency Coordinator may also designate a competent person to conduct these activities.

For the readers' convenience the table below summarizes reporting contacts.

Table 4
EMERGENCY REPORTING LIST

Report Contact Name	Type	Phone Number
Emergency	**N/A**	**911**
National Response Center	Federal	800-424-8802
EPA Region 9	Federal	800-300-2193
Arizona DEQ – Spill Hotline	State	602-771-2330 or 800-234-5677
Arizona – State Emergency Response Commission	State	602-771-8786
Maricopa County Local Emergency Planning Committee	LEPC	602-273-1411
Arizona Occupations Safety and Health Administration – Phoenix Office	Federal	602-542-5795
Phoenix Fire Department	City	602-495-5555

Table 4 EMERGENCY REPORTING LIST		
Report Contact Name	**Type**	**Phone Number**
Phoenix Police Department	State	602-262-6151
Phoenix Water Services Department	Water / Sewer Authority	602-262-6251

Section 311(b)(5) of the Clean Water Act (CWA), codified as 40 CFR 110, establishes reporting requirements for the release of oils into navigable waters, including wetlands. Releases of oil to navigable waters that: (1) cause a sheen to appear on the surface; (2) violate applicable water quality standards; or (3) cause a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines must be reported to the NRC at 800-424-8802. Notification must be submitted as soon as the facility Emergency Coordinator has knowledge of any discharge.

In the event a release threatens drinking water, stormwater, or sewer system contact the Phoenix Water Services Department (602-262-6251) and ADEQ (602-771-2330 or 800-234-5677).

If a spill of material of any amount threatens to reach navigable waters, the NRC (800-424-8802) shall be contacted.

The Emergency Coordinator should be ready to report the following information:

- Your name, location, organization, and telephone number;
- Name and address of the party responsible for the incident;
- Date and time of the incident;
- Location of the incident;
- Source and cause of the release or spill;
- Types of material(s) released or spilled;
- Quantity of materials released or spilled;
- Danger or threat posed by the release or spill;
- Number and types of injuries (if any);
- Weather conditions at the incident location; and
- Any other information that may help emergency personnel respond to the incident.

Navigable waters of U.S. are defined in 40 CFR Part 110.1 to include interstate waterways or intrastate waterways including lakes, rivers, and streams which may be utilized by interstate travelers for recreational purposes. Navigable waters also include lakes, rivers, and streams from which fish or shellfish are taken. The complete definition may be found in Section 502(7) of the Federal Water Pollution Control Act. In the event of a large volume release, oil products and reportable quantities of materials could potentially enter the nearby Mill River.

After a spill or release of oil greater than 1,000 gallons or after two spills of oil greater than 42 gallons within any twelve-month period, or if the spill impacted a navigable waterway, the Emergency Coordinator will report the event(s) to the following agency within sixty days.

The Regional Administrator
U.S. Environmental Protection Agency – Region 9
U.S. EPA Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Phone: 415-947-8000

The EPA report will include:

- Name of the facility;
- Your name;
- Location of the facility;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Corrective action and countermeasures you have taken, including a description of equipment repairs and replacement;
- An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- The cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and
- Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event.

As required by EPA Federal Regulation 40 CFR 112.5(c), a copy of the EPA report will also be submitted to ADEQ at the following address:

Arizona Department of Environmental Quality
Attn: Emergency Response and Spill Prevention
1110 W. Washington St.
Phoenix, AZ 85007

4.1 Comprehensive Environmental Response, Compensation, and Liability Act Releases (Federal)

Section 104 of CERCLA (also known as "Superfund"), codified at 40 CFR 302, requires that if greater than the RQ of a CERCLA hazardous substance is released from a facility over a 24-hour period, the Emergency Coordinator, as soon as they have knowledge of the release, must notify the NRC (800-424-8802). Reportable releases include any release to the environment, either to air, land, or water,

except for certain continuous releases. It should be noted that a release contained entirely within the building constitutes a release under CERCLA, and if more than the RQ is released to air, land or water, the release is reportable.

4.2 Hazardous Materials Transportation Act (HMTA) Notification (Federal)

Under 49 CFR 171.15, if a release of hazardous materials occurs in transport (including loading or unloading) which causes injury or death, property damage over $50,000, public evacuation or major road closure lasting more than one hour, aircraft re-routing, spillage or fire of a radioactive or disease-causing material, or continuing endangerment of life at the scene of the incident exists, then the carrier must notify the Department of Transportation via the NRC at 1-800-424-8802. Each notice must include the following information:

1. Name of Reporter;
2. Name and address of carrier;
3. Phone number where reporter can be reached;
4. Date, time, and location of incident;
5. The extent of injuries, if any;
6. Type and quantity of materials involved; and
7. Type of incident and whether continuing danger of life exists at the scene.

The carrier must also submit a written report regarding the incident within thirty days, and if any unintentional release of hazardous material occurs (under conditions not necessarily listed above), a written report must be submitted.

4.3 Superfund Amendments and Re-Authorization Act Releases (Federal)

Under 40 CFR 355.40, releases of CERCLA hazardous substances of Extremely Hazardous Substances (EHSs) (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) above the RQ must be reported to the SERC at 602-771-0397 and the LEPC at 602-273-1411 by the owner or operator of the facility, and must include the following information:

- The chemical name of identity of the substance released;
- Whether the substance is an EHS;
- The quantity released;
- Time and duration of the release;
- The medium or media into which the release occurred;
- Any relevant medical information (health risks, etc.);
- Precautions to take, including evacuation; and
- The name and telephone number of the person to contact for further information.

As soon as practicable after reporting the release, the owner or operator must submit a written report of the incident and information listed above which additionally includes the following information:

- Actions taken to respond to and contain the release;
- Any acute and chronic health effects from the release; and
- Any advice regarding medical attention necessary for exposed individuals.

Several exemptions to this reporting requirement are provided under paragraph 355.40(a) (2), which should be carefully reviewed to determine if reporting is required.

4.4 State Spill and Release Requirements

Under Arizona's statutes, any oil or petroleum products, chemical or waste that is released in any manner and in any amount constitutes a "spill" and must immediately be reported to the Oil and Chemical Spills section of the ADEQ at 602-771-2330. Providing the following information:

- Name, address, and telephone number of the reporter;
- Name and address of the facility;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to public health, or the environment, outside the facility.

A follow-up written report to the same section of the ADEQ is required to be completed within fifteen days. The written report will include:

- Name, address, and telephone number of the generator;
- Date, time, and type of incident (i.e., fire, explosion);
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- An assessment of actual or potential hazards to public health or the environment; and
- Estimated quantity and disposition of recovered material from the incident.

5.0 TRAINING

5.1 Contingency Plan and Emergency Action Plan Training

To comply with both state and federal regulations, CS Clean must provide and maintain a training program that will ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. This training program consists of both in-house classroom training as well as on-the-job training.

In-house training will be conducted by a competent and qualified training instructor familiar with this Plan's requirements. On-the-job training consists of employees completing job tasks under the guidance and supervision of another fully-trained employee. No person will be allowed to work with hazardous materials unsupervised until the training requirements set forth as appropriate for the particular job title have been successfully completed. Newly hired or newly assigned employees will have the necessary job training completed within six months of their job placement. Also, employees involved in hazardous waste management will be provided training annually.

The intent of the training program is to provide the employee with the necessary knowledge and skills to perform the functions of their job title in a safe manner and to maintain compliance with state and federal regulations.

Pursuant to 40 CFR 262.17(a)(7) and 29 CFR 1910.38(e), personnel will be specifically trained in the following emergency response areas:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- Key parameters for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Response to fires or explosions;
- Response to groundwater contamination incidents;
- Shutdown operations; and
- Train employees to assist in a safe and orderly evacuation of other employees.

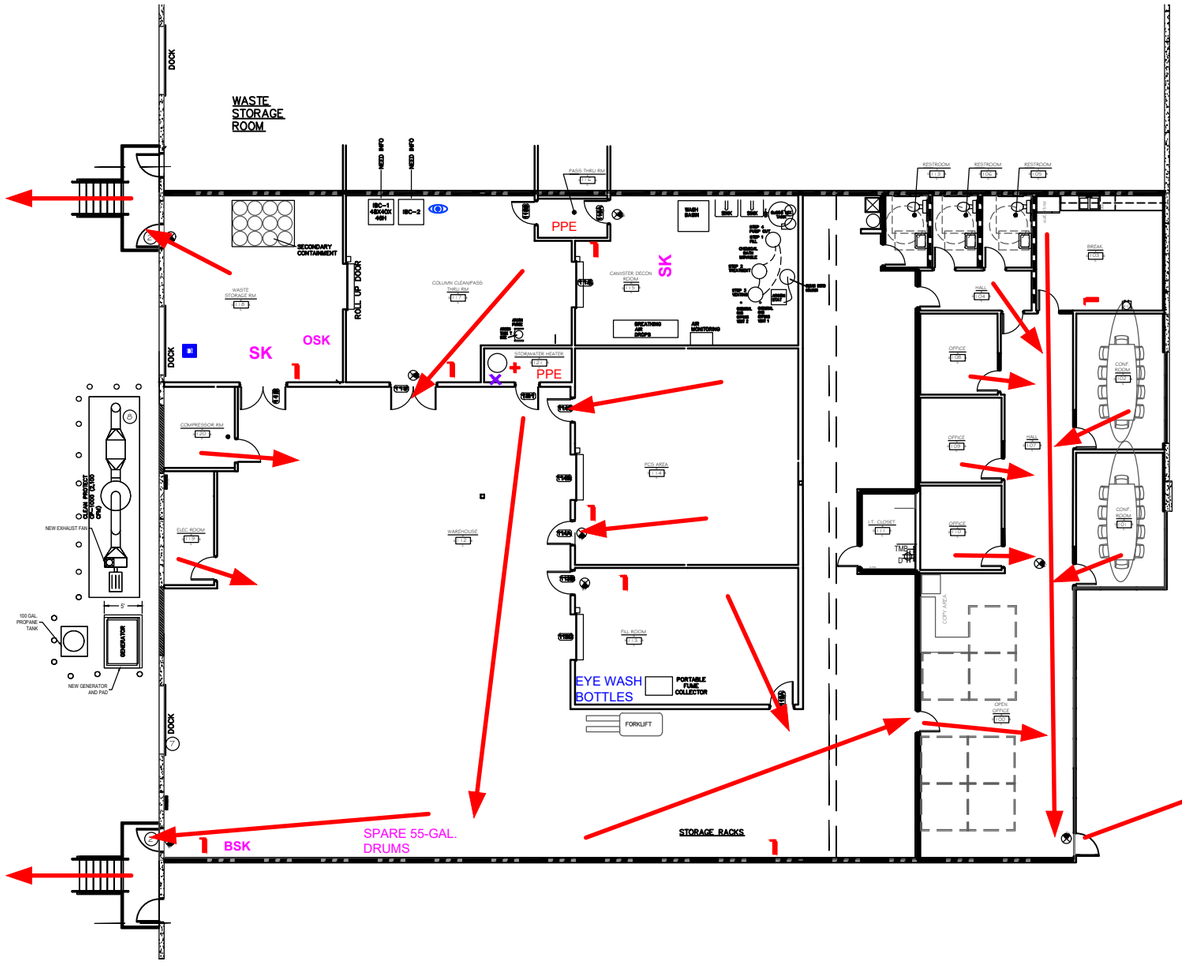
Hazardous waste management duties and responsibilities vary for each job title. Also, the training for certain jobs may overlap with the training for similar jobs. Therefore, there is variation associated with the necessary training for each job title. Training records shall be maintained for the duration of an employee's employment to satisfy OSHA emergency action plan training requirements.

5.2 Emergency Response Drills

Per the National Fire Protection Association (NFPA) 101 (2015), CS Clean will perform periodic emergency response drills (i.e., annually). The drill procedures, schedule, and log are maintained separately in company files.

FIGURES

DRAWING NAME: J:\C\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 - EMERGENCY EVACUATION PLOT DATE: May 23, 2025 - 11:40am OPERATOR: BOB



SECONDARY RALLY POINT (IN PARKING LOT)

PRIMARY RALLY POINT (ON SIDE OF PARKING LOT CIRCLE)

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

NORTH

0 10' 20'

REVISIONS

NO.	DATE

DESIGNED BY:	REVIEWED BY:	ISSUE DATE:
DSW	DSW	05/23/2025
DRAWN BY:	PROJECT NUMBER:	SHEET SIZE:
BOB	CSC0011.PS	11"x17"

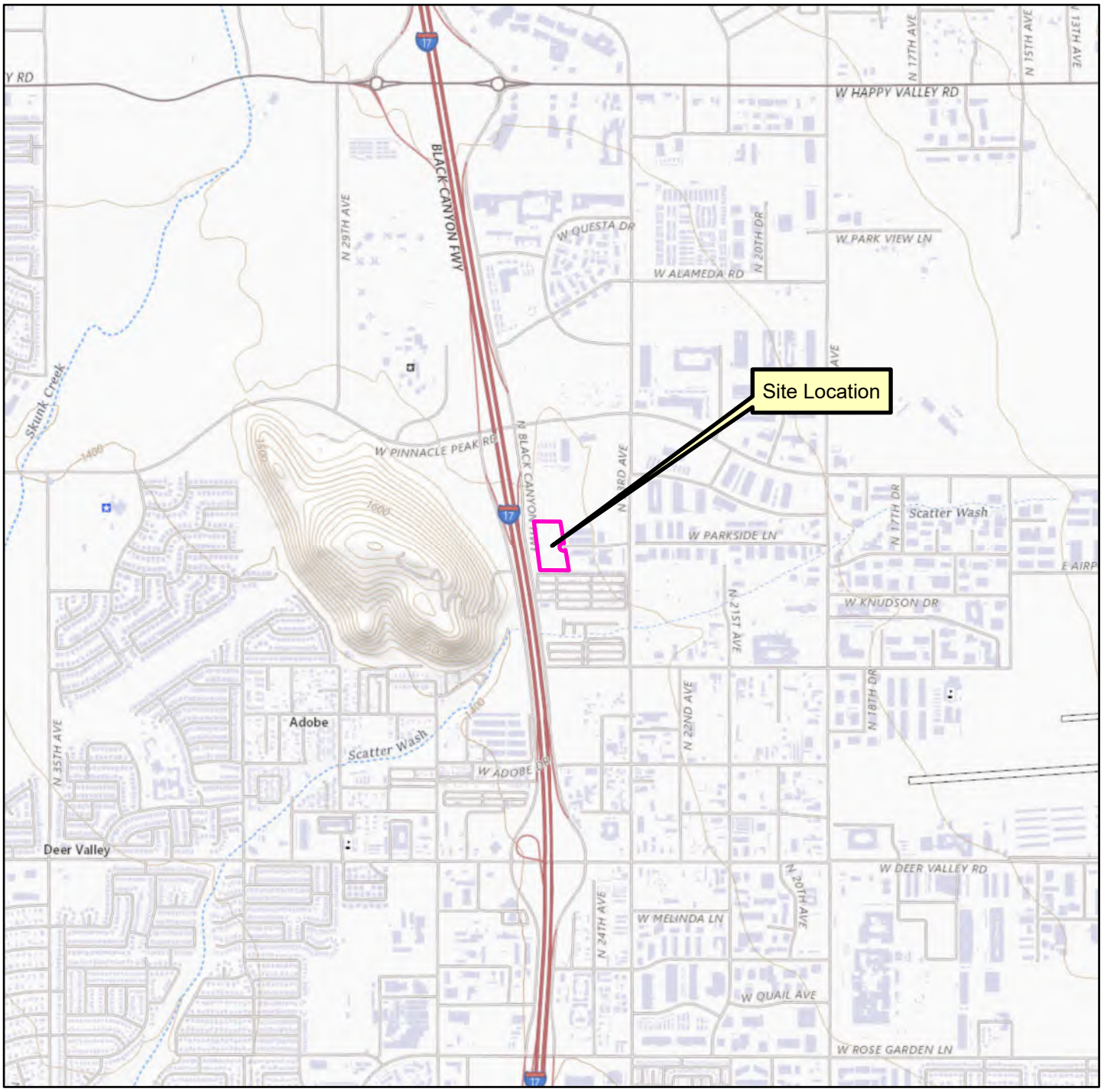
SITE PLAN

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150
PHOENIX, ARIZONA

FIGURE NO.

1



0 1,000 2,000 4,000 6,000 8,000

Feet

1:24,000

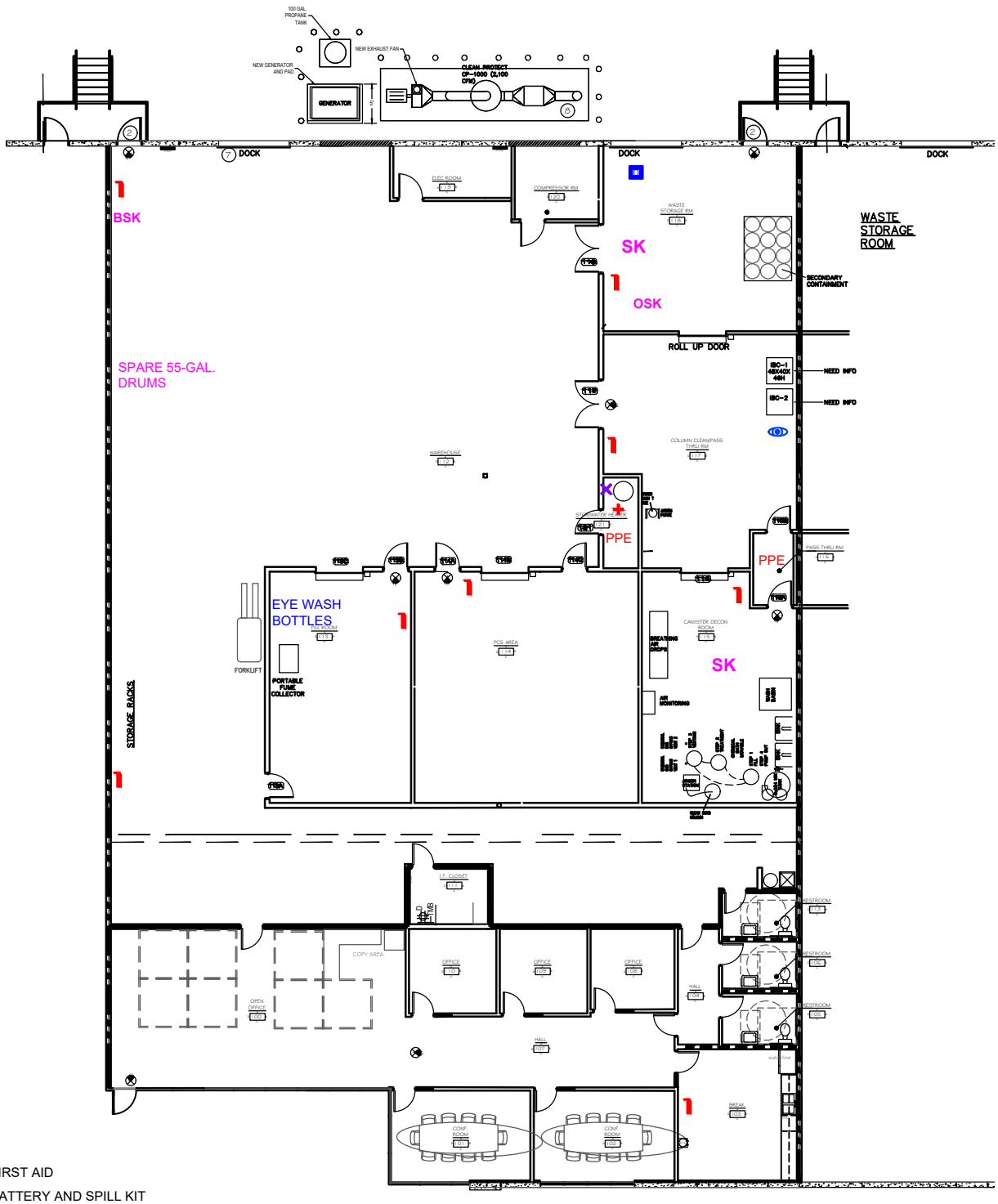
N

USGS Quadrangle Information
Quad ID: 33112-F1
Name: Union Hills, Arizona

Figure 2
Site Location
CS Clean Systems, Inc.
2453 W Parkside Lane
Suites 150
Phoenix, Arizona
HRP # CSC0011.PS
Scale 1" = 2,000'

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

Path: J:\CIC\SCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\GIS\Figures\Figures.aprx



✚-FIRST AID
BSK-BATTERY AND SPILL KIT
SK -SPILL KIT, (WASTE OIL, WATER, UNIVERSAL WASTE, COOLANT, SOLVENTS)
✕-LOTO EQUIPMENT
OSK-95 GAL. OVERPACK SPILL KIT
-SPILL BLOCKER DIKE
-FIRE EXTINGUISHER
-EYEWASH

0 10' 20'

NORTH

MAP REFERENCE: SHEET IA-2, CS CLEAN SYSTEMS INC. 2453 W PARKSIDE LN, SUITES 150, PHOENIX, AZ BY A DESIGN IN VISION OF GOODYEAR, ARIZONA; PROJECT NO. 22350; DATE: 4/12/23.

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

EMERGENCY EQUIPMENT

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150, PHOENIX, AZ

SCALE: 1" = 20'

ISSUE DATE: 02/27/2025

PROJECT NUMBER: CSC0011.PS

Fig. 3

SHEET NO.

DRAWING NAME: J:\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 SITE PLAN PLOT DATE: Feb 27, 2025 - 9:49am OPERATOR: BOB

APPENDIX A
Hazardous Waste Inspections

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG WASTE STORAGE AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or secondary containment, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Containers and bulk containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Placement and storage acceptable	Drum aisle spacing: 30" (minimum), height of stack: 1 high maximum		
Containers, bulk containers, and columns closed and secured	Open lids or bungs		
Labeling of containers and storage bulk containers	Improper identification, missing labels, accumulation date missing		
Storage capacity is not exceeded	$\geq$10 55-gallon containers, $\geq$10 spent columns, >2 275-gallon totes		
Wastewater bulk container is provided with start accumulation date	Missing label, date		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Waste material holding time within maximum limit	1-year maximum handling time for spent granulate material from delivery to disposal (applies only to off-site, non-reclaimed waste storage). 90-days for onsite generated wastes.		
Secondary Containment	Secondary containment present and capable of supporting 110% of largest container		
Compatible Waste	Incompatible waste is stored so that spill will not comingle		
Wastewater generation log is available and in-use	Missing generation log, not in use		
Wastewater storage duration has not exceeded permit limitations	Limitations based on hazardous waste generator status (<90 days)		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG PREPARATION AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle Space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping and pumps in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns or waste		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG WASTE MATERIAL TRANSFER AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Tanks and bulk containers in good condition	Leaks, dents, corrosion, deterioration		
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns, only satellite storage area		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Shipping containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **DONNING AND DOFFING PASSTHROUGH AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
All fire extinguishers visible and accessible	Not properly identified, missing, not mounted securely		
All fire extinguishers fully charged	Not adequately charged		
Fire alarm system functioning properly and has been tested in the past year	Pull boxes not functioning properly, loss of water pressure or alarm signal for sprinklers		
At least 18-inch clearance provided for all sprinkler heads	Material or equipment storage issues		
Smoke alarms functioning correctly	Loss of power, blocked, damaged		
All exits marked with exit signs and illuminated	Missing signage, loss of power, damaged		
Evacuation plans posted near doors and/or common areas	Missing signage, not accurate, not sufficient size		
All doorways and hallways leading to an exit free and clear and provided illumination	Material or equipment storage issues, loss, or power, damaged		
Emergency notification equipment including telephone and/or paging system operational	Loss of power, blocked, damaged		
Emergency phone numbers posted	Missing signage, not accurate		
Emergency lights functioning correctly	Loss of power, blocked, damaged		
First aid kits visible and accessible	Not properly identified, missing, not accessible		
First aid kits stocked as required and expiration dates current	Depleted or missing inventory, expired components		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available and in good condition	Broken, dirty, missing equipment (includes air supply system, respirators, chemical resistant clothing, eye protection, gloves)		
Spill kits readily available and include adequate materials	Missing, damaged, not accessible		
Duct flow pressure gauge operating correctly	Damaged, loss of power, faulted		
Ventilation	HEPA present and functioning, Cleanprotect operating		
Liquid level switch operating correctly	Damaged, loss of power, faulted		
Gas/O_2 Detection System calibrated and operating correctly	Expired calibration, damaged, loss of power, faulted		
Emergency Generator	Checked for operation in loss of power, maintained		
Uninterruptible Power Supply (UPS)	Checked for operation in loss of power, maintained		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS **WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available	Includes air supply system, respirators, chemical resistant clothing, eye protection, gloves in stock		
Respirators in good condition	Respirator components (mouthpiece, supplied air systems, connections), broken or damaged, dirty.		
Chemical resistant clothing	Good condition, no holes, damage, or dirty/used equipment.		
Gloves	Good condition, no holes, damage, or dirty/used equipment.		
Eye protection	Good condition, no holes, damage, or dirty/used equipment.		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – SECURITY **WASTE MATERIAL TRANSFER ROOM. WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Yes/No**	**Date and Type of Repair Performed (Location if applicable)**
Facility perimeter fence in acceptable condition	Damaged, deteriorated, missing		
Warning signs posted and in acceptable condition	Missing, damaged		
Building security system operating correctly	Damaged, loss of power, notifications not provided		
All doors and key card system operational	Damaged, cannot close or lock		
Lighting on interior and exterior adequate	Damaged bulbs, loss of power		

APPENDIX B

Hazardous Materials Identification System Spreadsheet

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Argon	100%	7440-37-1	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Nitrogen	100%	7727-37-9	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Copper Sulfate Pentahydrate	99%	7758-99-8	Toxic	Solid	100 lbs	2	0	0	1
X		CLEANSORB CS3F	100%	Proprietary Copper Compound	Toxic	Solid	22,000 lbs	2	0	0	0
X		CLEANSORB CS3G	<20%	Proprietary Copper Compound	Corrosive	Solid	1,325 lbs	1	0	0	0
X		CLEANSORB CS5	MIX	1313-13-9 <100% 1317-38-0 <25%	Toxic	Solid	1,325 lbs	2	0	1	0

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Waste - MOCVD Tool Exhaust	MIX	1317-38-0 10-50% 12005-75-3 10-30% 12019-57-7 10-30%	Pyrophoric Unstable / Reactive Toxic	Solid	880 lbs	2*	0	0	0
X		Waste - Ion Implant abatement	MIX	7440-38-2 >1% 142844-00-6 20-40% 1309-48-4 20-40%	Toxic	Solid	1760 lbs	3*	0	0	0
X		Waste - Exhaust Scrubber Granular	MIX	7784-18-1 20-40% 7783-40-6 20-40%	Corrosive	Solid	1760 lbs	2*	0	0	0

Insert additional lines as needed.

* NFPA 704 for highest hazard component that is apart of waste stream.

APPENDIX C
Notifications to Local Agencies

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Mike Duran III
Fire Chief
City of Phoenix Fire Department
2409 W Cactus Road
Phoenix, AZ 85029

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Chief Duran:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with applicable federal and state regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Honor Health Deer Valley Medical Center
19829 N 27th Avenue,
Phoenix, AZ 85027

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

To Whom It May Concern:

Attached please find the contingency plan for CS Clean Systems (CS Clean) at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Urgent Care Facility in compliance with applicable state and federal regulations. Should the need to send an employee of CS Clean to Honor Health Medical Center due to a work-related injury or an overexposure to any chemicals onsite, CS Clean will submit all SDSs (Safety Data Sheets) for chemicals that the employee had encountered.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Michael Branham
Maricopa County LEPC
5630 E. McDowell Road
Phoenix, AZ 85008

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Mr. Branham:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Chief Michael Sullivan
City of Phoenix Interim Police Chief
620 W Washington Street
Phoenix, AZ 85003

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

Dear Chief Sullivan:

Attached please find the contingency plan for CS Cean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the City of Phoenix Police Department in compliance with applicable state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Laura Malone
AZ State Emergency Response Commission
City of Phoenix
1110 W Washington Street
Phoenix, Arizona 85007

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Ms. Malone:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the City of Phoenix in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Laura Malone
AZ State Emergency Response Commission
City of Phoenix
1110 W Washington Street
Phoenix, Arizona 85007

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Ms. Malone:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the City of Phoenix in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

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Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared For:

CS Clean Systems
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

Issued On: March 12, 2025

Revised On: October 27, 2025

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GENERAL INFORMATION

Project/Site Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Consultant Information:
HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032
Phone: 860-674-9570
Fax: 860-674-9624
E-mail: David.Webster@hrpassociates.com
Project Number: CSC0011.PS

Client Information:
CS Clean Systems
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Report Date: October 27, 2025

Report Author:
Chelsea Thompson
Associate EH&S Consultant

Client Manager:
David Webster
Senior EH&S Project Manager

Reviewed By:
David Webster
Senior EH&S Project Manager

1.0 EXECUTIVE SUMMARY

Executive Summary

This Emergency Action and Contingency Plan has been updated for CS Clean Systems (CS Clean) in order to comply with State and Federal Hazardous Waste Regulations and Occupational Safety and Health Administration (OSHA) Emergency Response Plan regulations. The purpose of this plan is to act as a guide during an actual emergency, to minimize hazards to human health and the environment from fires, explosions, and other releases, and to familiarize local emergency response personnel with the types and locations of materials kept onsite.

Contingency Plan Submittal

A copy of this updated Contingency Plan must be submitted to the following agencies:

- Local Police Department
- Local Fire Department
- Local Hospital/Urgent Care
- Local Emergency Planning Committee (LEPC)
- State Emergency Response Commission (SERC)

Implementation of the Contingency Plan

The Contingency Plan should be implemented under any of the following situations:

- Fire/Explosion
- Spill/Release
- Flood
- Other Emergencies

Initial Notifications

The following people are responsible for implementing this plan (See **Section 3.2** for details.):

- Jacob Newman – Emergency Coordinator
    - 24-Hour Phone: (360) 852-6410
- Jason Dugay – Alternate Emergency Coordinator
    - 24-Hour Phone: (203) 648-0881
- Adam Furphy – Alternate Emergency Coordinator
    - 24-Hour Phone: (845) 337-7385

Emergency Procedures

Emergency procedures are in the sections noted below:

- Immediate Procedures (**Section 3.4.1**)
- During Emergency (**Section 3.4.2**)
- Follow-up Procedures (**Section 3.4.3**)

Control Procedures

Emergency Procedural Flow Charts for the following situations are included in the sections noted below:

- Fires/Explosions (**Section 3.5.4**)
- Spills/Releases (**Section 3.5.5**)

Emergency Equipment

The locations of emergency equipment at CS Clean can be found on **Figure 3** and are posted around the facility. **Table 3** describes the facility's emergency equipment as well as its uses and locations.

Evacuation

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. **Figures 1** and **3** show CS Clean evacuation routes and **Section 3.7** includes procedural details.

Reporting of Emergency Incidents

Immediately after an environmental emergency the event must be reported to the Commissioner of the Arizona Department of Environmental Protection (ADEQ) as well as the Regional Administrator of the U.S. Environmental Protection Agency (EPA). A written report must be filed within fifteen days of an environmental emergency, the Emergency Coordinator must report to ADEQ and EPA. Any work-related accidents that result in the death of an employee must be reported to OSHA within eight hours of the incident occurring and report any employee in-patient hospitalization, amputation, or loss of an eye within twenty-four hours.

Locations of Contingency Plan

Copies of this Contingency Plan are maintained at the facility on the internal CS Clean internet page. Access can be granted at the Administrative Assistant's office and the Environmental, Health and Safety Director's office.

Contingency Plan Revision

This Contingency Plan must be revised under any of the following conditions (but may not be limited to):

- Regulations are revised;
- Plan fails in an emergency;
- Facility changes (design, operation) which increases the potential of a fire, spill, or release;
- List of emergency coordinators changes; or
- List of emergency equipment changes.

2.0 INTRODUCTION

2.1 General Background

This combined Hazardous Waste Contingency and Emergency Response Plan has been created to help eliminate confusion for facility first responders during an emergency and to avoid duplication in the preparation and use of emergency response plans at CS Clean. The use of this single plan should also improve coordination between facility response personnel and local, state, and federal emergency response personnel.

The purpose of this plan is to comply with OSHA and EPA regulations under 29 Code of Federal Regulations (CFR) 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, respectively, as well as the Large Quantity Generator (LQG) Hazardous Waste Contingency Plan regulations under Sections R18-08-262, and Treatment, Storage, and Disposal facility (TSDF) requirements under 40 CFR 270.14(b)(7), 264.56, and Arizona Administrative Code (AAC) R-18-8-264. The goal of the combined plan is three-fold:

1. To act as a guide during actual emergency situations;
2. To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soils, or surface water; and
3. To familiarize local emergency response personnel (i.e., police, fire, and rescue departments, hospital, and governmental personnel) with the types of material handled at the facility and internal emergency response procedures.

CS Clean, located at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona, is a hazardous TSDF, generator of hazardous waste, and transfer of hazardous secondary materials (HSM) for reclaim. The primary role of the facility is to service gas abatement systems (columns), treatment, and storage of the waste contained in the columns. The North American Industry Classification System (NAICS) code for the facility is 333413 (Industrial/Commercial Fan and Blower and Air Purification Equipment Manufacturing) and the Standard Industrial Classification (SIC) code is 3564 (Air Purification Equipment). The plant consists of one main building that contains offices, waste storage, and waste repackaging areas. The facility has no onsite storage of liquid fuels for the site as the

facility runs on natural gas, aside from two to three cannisters of Propane for the Powered Industrial Trucks (PITs) onsite. Hazardous waste contained in containers and totes are stored within the main building in various designated areas. The Site Location is indicated on **Figure 1**.

CS Clean has up to eight employees onsite and usually operates one eight-hour shift Monday through Friday. On occasion there may be employees onsite during off-hours for miscellaneous/non-routine activities.

The manufacturing processes at CS Clean produce several different hazardous waste streams, treat, and store various hazardous waste streams. A list of potential waste streams and hazardous waste streams was previously reported to Phoenix Fire Department using the Hazardous Materials Identification System (HMIS). The generation rate, storage location, and handling methods for these wastes are discussed further in this section.

The following are the key elements of the Hazardous Waste Management Program as they apply to CS Clean:

- Identification and Listing Hazardous Waste
- Standards for Generators and Transporters of Hazardous Waste
- Hazardous Waste Facility Standards and Permit Requirements
- Hazardous Waste Shipping and Manifest Requirements

CS Clean operates as a TSDF station per AAC R-18-8-264. The facility receives spent Cleansorb columns of hazardous waste to treat the waste so Cleansorb columns can be utilized as part of a column regeneration process. Cleansorb vessels are designed to be reusable. A Cleansorb column is initially filled with virgin granulate, is installed in a manufacturing process exhaust scrubber at an offsite location, and will abate hazardous gases until such time that the granulate within it is spent. At that time, the end user purges the column with inert gas to remove any hazardous vapors which may remain in the column, removes the spent column for shipping, and installs a new Cleansorb column filled with virgin granulate. The spent column is then returned to CS Clean who then treats the waste and stores the waste prior to offsite disposal and decontamination of the Cleansorb column for reuse. The process is described in detail below for the treatment, storage, and disposal of spent columns.

- The receipt of spent scrubber columns containing potentially hazardous spent granulate from end product users;
- Removal of the spent granulate from the columns, which is then transferred into approved shipping containers at the CS Clean facility, followed by either:
    - Treatment and transportation of the spent granulate offsite for disposal via a third-party environmental services vendor.

      OR
    - Transferal of the spent granulate to a permitted reclamation facility for the recovery of precious metals, where possible.

- Decontamination, fine cleaning, testing, and refilling of the spent columns with virgin granulate; and,
- Shipping of the cleaned and regenerated columns to service at the end users' facilities.

Additionally, the facility is a permitted LQG, EPA I.D. #AZR000528570, with one hazardous waste Central Accumulation Area (CAA) storage. Waste is stored initially in Satellite Accumulation Areas (SAA) located throughout the waste process area. Once the SAA waste is removed the waste is transported to and stored in the CAA located to the west, within the waste storage area. The waste is stored for less than ninety days onsite prior to removal by a permitted hazardous waste transporter. The CAA is routinely inspected, and a copy of the Hazardous Waste Inspection Log is included as **Appendix A**.

Further information on the hazardous wastes and hazardous materials stored at CS Clean can be found in **Appendix B** identifies the storage location and applicable notes for each waste.

When disposing of a hazardous waste, the generator must fill out a Hazardous Waste Manifest form (with help from the hazardous waste transporter) which lists facility information, type and volume of waste being shipped offsite, transporter information, and details of the destination facility. CS Clean must retain copies of each manifest.

CS Clean utilizes hazardous materials in its production processes. Hazardous materials are stored throughout the facility. The hazardous materials are stored in containers with sizes ranging up to and including 55-gallon drums and 275-gallon totes. The hazardous constituents of the drums and totes are classified as flammable, pyrophoric, irritants, compressed gases, corrosive, or toxic materials. Other areas of hazardous material storage include a generator onsite with propane. Safety Data Sheets (SDSs) shall be maintained by the site and be made accessible for more specific information on the summarized hazards below in an emergency situation. Hazardous materials reported to the Phoenix Fire Department previously are included in the HMIS spreadsheet attached in **Appendix B**.

2.2 Amendments

This plan must be reviewed, and immediately amended, if necessary, whenever:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The generator facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

Table 1 AMENDMENTS			
Section Amended	**Date**	**Description**	**Name of Amender**
Throughout	10/20/25	Updated Primary Coordinator Contact	Chelsea Thompson, Associate Consultant
Throughout	10/20/25	Update to inspections and TSDF	David Webster, Senior Project Manager

3.0 HAZARDOUS WASTE CONTINGENCY AND EMERGENCY ACTION PLAN

3.1 Purpose

In accordance with 29 CFR 1910.38, 29 CFR 1910.120(l), and 40 CFR 262.260, 40 CFR 264.56, and 40 CFR 270.14, respectively, as well as the ADEQ Hazardous Waste Contingency Plan regulations under Sections R18-08-262 and R18-08-262, this plan will be used in the event of an emergency.

The intent and purpose of this plan are:

- To act as a guide during actual emergency situations;
- To minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or their constituents to the air, soils, or surface water; and
- To familiarize local emergency response personnel (e.g., police, fire, hospitals) with the types of material used and stored, and internal emergency response procedures.

The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

3.2 Initial Notifications

At CS Clean, the following personnel must be notified in the case of a sudden or non-sudden release of hazardous wastes, fire, or explosion.

The phone number at the plant to be used by persons outside the facility (e.g., police, fire, spill contractors, etc.) is (520) 263-0235.

TABLE 2 EMERGENCY CONTACTS				
Role	**Name**	**Address**	**Home/ Cell Phone**	**Facility Phone**
Emergency Coordinator	Jacob Newman	2453 West Parkside Lane, Suite 150, Phoenix, AZ	(360) 852-6410	(520) 263-0235
Alternate Emergency Coordinator	Jason Dugay	26 Commerce Drive, Danbury, CT	(203) 648-0881	(203) 797-8155
Alternate Emergency Coordinator	Adam Furphy	26 Commerce Drive, Danbury, CT	(845) 337-7385	(203) 797-8155

In case of an imminent, actual emergency at the plant, the Emergency Coordinator, or the Alternate, shall be contacted first. The Emergency Coordinator shall carry out the emergency plan agreed upon by local police, fire department, hospitals, contractors, and state and local emergency response teams.

Upon being notified, the **Emergency Coordinator** will obtain the following information:

1. Nature of Emergency (i.e., fire or spill);
2. Location of Emergency;
3. Size and Extent of Emergency;
4. Hazardous Materials Involved (if any); and
5. Injury to Personnel.

Emergency Coordinator Qualifications:

The Emergency Coordinator and the Alternates have been chosen based upon the following required qualifications:

- The Coordinator or Alternates must be onsite or on-call at all times;
- Must be familiar with the facility layout;
- Must know the locations and characteristics of the waste handled;
- Must be thoroughly familiar with contingency and emergency plans;
- Must be familiar with all operations and activities at the facility;
- Must know the locations of all records; and
- Must have the **authority** to commit facility resources in the event of an emergency.

3.3 Implementation of the Contingency Plan

The decision to implement the Contingency Plan depends upon whether an actual situation could threaten human health or the environment. This section outlines the decision making criteria that the Emergency Coordinator will use to define situations in which the Contingency Plan will be implemented. The Contingency Plan will be implemented in the following situations, or other situations upon the judgment of the Emergency Coordinator or, in his or her absence, the Alternate Emergency Coordinator.

Fire and/or Explosion

- A fire causes the release of toxic fumes.
- The fire spreads and could possibly ignite materials at other locations onsite or could cause heat induced explosions.
- The fire could possibly spread to offsite areas.
- Use of water or chemical fire suppressant could result in contaminated run-off.
- An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- An imminent danger exists that an explosion could ignite other hazards waste at the facility.
- An imminent danger exists that an explosion could result in the release of toxic materials.
- An explosion has occurred.

Spills or Material Release

- The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
- The spill could cause the release of toxic liquids or fumes.
- The spill can be contained onsite, but the potential exists for ground water contamination.
- The spill cannot be contained onsite, resulting in offsite soil contamination, air, or ground water or surface water pollution.

Floods

- Floods occur from rain, snow, storms, storm surges, or overflows of dams and water systems.
- Floods can lead to power outages, gas line emergencies, damage to the building and its contents, and create landslides.
- Flood water can become energized by electrical equipment exposed to flood waters.

Power Outage and Natural Gas Emergency

- The potential exists for power outages and natural gas emergencies, which could create an employee safety hazard or damage onsite machinery/equipment. In addition, in the event of a power outage, ventilation could be turned off, which establishes a dangerous environment due to fumes.
- Emergency Response Coordinators are responsible for evacuation and determining conditions under which hazardous conditions may exist due to power failure.

Natural Disasters and Inclement Weather

- The potential exists for natural disasters, such as hurricanes or tornadoes, as well as other types of inclement weather.

Bomb Threats, Civil Disturbances, Workplace Violence, and Suspicious Mail

- The potential exists for area bomb threats, civil disturbances, workplace violence, and/or suspicious mail.

Medical Responses

- Due to the inherent nature of the activities conducted at the facility, a potential exists for both serious medical and non-serious/non-emergency situations.

3.4 Emergency Procedures

3.4.1 Immediate

Emergency procedures are the responsibility of the Emergency Coordinator or his/her Alternate. Immediate procedures are outlined below.

1. If necessary, the Emergency Coordinator will activate internal facility alarms or communication systems to notify all facility personnel.
2. If safety permits, each operator should shut down his/her operations; most importantly turn off running processes, if safe to do so. See supervisor if unsure of procedure.
3. All personnel and visitors shall exit using predetermined routes described in this plan.
4. If their help is needed, the Emergency Coordinator will notify the appropriate State and local agencies included in the emergency procedural flow diagrams.
5. The Emergency Coordinator must identify the character, exact source, amount, and extent of any release materials and assess possible hazards to human health or the environment.
6. If the Emergency Coordinator determines that there is a threat to human health or the environment outside the facility, or if greater than the reportable quantity (RQ) of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance or a Superfund Amendments and Reauthorization Act (SARA)

Extremely Hazardous Material (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) is released, it must reported to:

- Emergency Spill Clean Up Contractor: Veolia
  - **Telephone Number: (602) 233-2955**
- ADEQ spill hotline
  - **Telephone Number: (602) 771-8786**
- LEPC for CERCLA/SARA release greater than the RQ
  - **Telephone Number: (602) 273-1411**
- National Response Center (NRC)
  - **Telephone Number: 1-800-424-8802**

The following information must be provided to ADEQ, the LEPC, and the NRC when contacted:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident (e.g., release, fire, etc.);
- Where did the incident occur;
- How did the incident occur;
- Name and quantity of material(s) involved, to the extent known;
- What actions were taken to respond and contain the incident;
- The possible hazards to human health or the environment outside the facility; and
- The extent of injuries, if any.

3.4.2 During Emergency

During an emergency, the Emergency Coordinator or his/her alternate must be aware of the following possible problems:

- If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure build up, gas generation, or ruptures in the valves, pipes, or other equipment as appropriate.
- In the affected areas of the facility, no waste that may be incompatible with the released material should be treated, stored, or disposed of until after the cleanup procedures have been completed.

It should be noted that in the event of an emergency, the Emergency Coordinator is not the incident commander. The role of the incident commander will be assumed by the "senior" member of one of the responding agencies (i.e., fire or police department).

3.4.3 Follow-Up

Immediately after an emergency, the Emergency Coordinator must ensure the following:

- All emergency equipment, listed in the Contingency Plan and used during the emergency, is cleaned, decontaminated, and is fit for reuse or replaced.
- All waste materials generated during the emergency must be properly identified, stored, and disposed of in accordance with State and Federal regulations.
- Notify the EPA Regional Administrator and the local authorities that all of the actions have been completed before resuming operations.
- Write a summary of the incident for the company's record files and forward a copy to the EPA Regional Administrator and ADEQ officials within fifteen days.

3.5 Control Procedures

Sections 3.5.3 through **3.5.6** provide detailed information for the handling of each classification of emergency. The plan includes tabbed dividers directing facility personnel to sections outlining emergency control procedures for each type of incident. Immediately following the section are procedural flow diagrams for each of the emergencies listed above.

3.5.1 Establishment of Control Zones

During an emergency incident, if the Emergency Coordinator or Alternate determines that evacuation is **NOT** necessary, for spills other than incidental spills the Emergency Coordinator must establish control zones around the affected area(s). Incidental spills do not require establishment of control zones. The purpose of setting up control zones is to minimize the potential adverse impact of the incident on employees, citizens, responders, the environment, and property.

The Emergency Coordinator will designate three major zones around the affected area. Personnel should move through access control points only.

1. **Hot Zone (Exclusion Zone)**

   This is the area of most concern. Only trained emergency responders with the use of proper personal protective equipment (PPE) and the buddy system may have access into this area. The area of the Hot Zone shall extend far enough to prevent adverse effects from hazardous materials. Only those emergency responders necessary to control the incident or to rescue others may enter into this area.

2. **Warm Zone (Contamination Reduction Zone)**

   The Warm Zone is an area of limited access. The purpose of the Warm Zone is to reduce the spread of contamination and control access to and from the Hot Zone. It also serves as a buffer zone and, at least initially, is not contaminated. Contamination in this zone should remain in the "Decontamination Corridor" that is located in this zone. Decontamination will take place in the Decontamination Corridor. PPE will be worn as required in this area. The size of the Warm Zone will be determined by the nature of the

incident and the size of decontamination operations to be conducted within. The Emergency Coordinator will make this decision.

3. **Cold Zone (Support Zone)**

   The Cold Zone is the area that borders the outer perimeter of the Warm Zone and is a clean area set up for support operations. It will be upwind from the Hot and Warm Zones and as far away from the Hot Zone as necessary for safe operations. This zone will have a secure outer boundary.

3.5.2 Fire and/or Explosion

Immediate procedures are the responsibility of the Emergency Coordinator, and not the general occupants, although general occupants may contact "911" as well. Immediate procedures are outlined below:

1. The Emergency Coordinator will activate the fire alarm and use the intercom system to notify all facility personnel to evacuate and contact "911" via telephone. List the following information for the emergency responders.
   a. Name;
   b. Address of the facility;
   c. Extent of fire;
   d. Possible chemicals involved; and
   e. Approximate quantity of chemicals involved.
2. The Emergency Coordinator will initiate full evacuation of the affected area(s) as necessary, if not already accomplished by the sounding of the fire alarm. Evacuation procedures are contained in **Section 3.7**. Upon emergency responders arriving, the Emergency Coordinator will turn over all emergency coordinator duties to unified command until the event is concluded.
3. If a spill of material occurs, then the Spill Control Procedure (**Section 3.5.3**) will be followed. **NOTE: Fire emergencies supersede spill emergencies.**
4. In the event of the active and uncontrolled release of hazardous materials reporting will occur per **Section 4.0**.
5. As necessary, the Emergency Coordinator should notify the appropriate federal, state, and local agencies, included in **Section 4.0**, for all releases to the environment based on the extent and conditions of the emergency.
6. The Emergency Coordinator and first responders must monitor for leaks, pressure build up, gas generation, or ruptures in valves, pipes, or other equipment as appropriate.

Fire-fighting will not be performed by the CS Clean personnel unless trained in the use of portable fire extinguishers for small incipient fires. Fires judged to be of greater magnitude will be referred to the local fire-fighting officials. CS Clean will use the "911" telephone emergency service which contacts the Phoenix Fire Department.

Outside calls will not be accepted unless absolutely necessary so that the phone lines remain free to handle only emergency calls.

Area or plant evacuation will be necessary in case of a major fire or explosion. All personnel have been trained in evacuation procedures and means of exit from their respective work areas.

The Emergency Coordinator will be responsible for determining if personnel who are not in the affected area will stay in their respective work area. Supervisors of unaffected areas will stay with their personnel and be ready to evacuate. Accountability Coordinators will be ready to account for the persons under their supervision.

An "all clear" signal will be given, at the discretion of the Emergency Coordinator, when the fire has been extinguished, and the safety of personnel is no longer endangered. The Emergency Coordinator will determine when the emergency has passed and the "all clear" signal can be given. All emergency equipment must be cleaned and fit for reuse prior to resuming plant operations in the affected areas.

In the event of a small controllable fire such as a small incipient fire, the following procedures should be followed by employees trained with portable fire extinguishers:

1. Notify Emergency Coordinator.
2. Obtain fire extinguisher; extinguish flames.
3. Eliminate and continue to restrict all sources of ignition so the fire will not re-ignite.
4. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow the procedures below.
5. Implement measures to control any water run-off, if contaminated, or any material that has been released.

EMERGENCY PROCEDURE-FIRE AND/OR EXPLOSION

CONTACT EMERGENCY COORDINATOR:	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) Nature of Emergency;
2) Location of Emergency;
3) Size and Extent of Emergency;
4) Hazardous Materials involved (if any); and
5) Whether any Personnel are injured.

PERSONNEL INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911	FIRE DEPARTMENT:	911
POLICE:	911	URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100	POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

THE AREA WILL BE CLEARED OF ALL PERSONNEL. THESE PERSONS ARE TO REPORT TO THE RALLY POINT FOR ACCOUNTABILITY.

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS:

- FIRE DEPARTMENT: 602-262-6297 (NON-EMERGENCY)
- MEDICAL SERVICES: 602-943-2381 (NON-EMERGENCY)
- POLICE DEPARTMENT: 602-262-6151 (NON-EMERGENCY)
- FIRE MARSHAL: 602-262-6771
- ARIZONA DEQ: 602-771-2300
- NRC: 1-800-424-8802
- VEOLIA SPILL RESPONSE: 602-233-2955

IS THERE A SPILL OR RELEASE OF ANY HAZARDOUS MATERIALS?

NO

YES

FOLLOW PROCEDURES IN THE CONTINGENCY PLAN

FIRE EXTINGUISHED BY OFFSITE RESPONSE PERSONNEL

REPORTING REQUIREMENTS MET

EVENT CONCLUDED

3.5.3 Spills

All spills/releases of hazardous materials must be reported to the Emergency Coordinator. Spills are defined as an unexpected release of any hazardous substance from a container, and a leak is defined as a release from a container via a puncture or a weak spot. It should be noted that personnel will not conduct emergency responses to spill or releases of hazardous materials that may threaten one's safety, health, or the environment without Hazardous Waste Operations and Emergency Response (HAZWOPER) training per 29 CFR 1910.120(e). Thus, any spill that is not small enough to be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area or poses an adverse exposure hazard to employees, will be considered an emergency response, and may not be handled by untrained personnel. Any incidental spill may be cleaned up by personnel, and the release does not constitute a safety, health, or environmental hazard. The Emergency Coordinator will determine the proper response in accordance with the control procedures outlined with this section.

Emergency procedures are the responsibility of the Emergency Coordinator, and not the general occupants. Procedures are outlined below:

1. If a leak develops or a spill of chemicals or oil develops, the person discovering the discharge will leave the immediate area and contact the Emergency Coordinator. The Emergency Coordinator will obtain the following information:
    - Person(s) injured and seriousness of injury;
    - Location of the spill or leak, material involved, and source;
    - The approximate amount spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving; and
    - Whether a fire is involved.
2. Next, the Emergency Coordinator or Alternate will:
    - Initiate evacuation of the hazard area, as necessary. Evacuation procedures are contained in **Section 3.7**. For small spills or leaks, isolate at least 50 feet in all directions. For large spills, initially isolate at least 100 feet in all directions and keep all personnel upwind of the release.
    - Call for emergency, fire, and medical services if a fire or medical emergency is involved by calling "911." IF A HISSING SOUND COMES FROM A VENTING DEVICE OR IF A DRUM BEGINS TO DISCOLOR, WITHDRAW FROM THE AREA IMMEDIATELY.
    - If the spill can be contained using the equipment onsite and if the containment operation will not involve employee exposure or reasonable possibility for employee exposure to safety or health hazards, then the procedure in **Step 3** (below) may be used. If not, proceed as follows.
        - Contact the commercial emergency clean-up firm and dispatch emergency personnel to the site to take appropriate action.

- Contact the proper authorities to report the spill or release. Reporting requirements are contained in **Section 4.0**. Contact local authorities first so that, if necessary, downstream water users and/or persons downwind of the vapor can be notified and, if necessary, removed.

3. If the spill is an incidental release that is small enough to be absorbed, neutralized, or otherwise controlled at the time of release, and does not pose an adverse exposure hazard to employees or the environment, then the spill will be handled by CS Clean personnel. The CS Clean trained emergency response team may respond when the spill is more significant than an incidental release, but only if it can be safely handled by properly trained personnel using proper PPE. General spill response procedures include the following:
4. Make sure all unnecessary persons are removed from the hazard area.
5. If flammable waste is involved, remove all ignition sources.
6. The Emergency Coordinator must immediately restrict access in the affected area to only essential emergency response personnel. All entry points must be secured, if possible.
7. The Emergency Coordinator must establish Control Zones if a spill is greater than an incidental spill and therefore requires the trained Emergency Response Team.
8. During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility. These measures must include, where applicable, stopping processes and operations, collecting, and containing released materials, and removing or isolating containers. The Emergency Coordinator must ensure that no hazardous material/waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.
9. For emergency personnel containing/cleaning the spill, don necessary PPE. The type of respiratory protection needed will be determined by the type, quantity, and location of material involved in the incident and will be prescribed by the Emergency Coordinator.
10. If possible, try to stop the leak.
11. Dike the spill with Standard Industrial Absorbent as required.
12. Position ABC fire extinguishers near immediate clean-up area.
13. Remove all surrounding materials that could be especially reactive with the materials in the waste. Determine the major components in the waste at the time of the spill.
14. Pump standing liquids to available empty containers/tanks compatible with material/waste. For the remainder of spilled material use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, neutralize, and clean up a spill if it has not been contained by a dike or a sump. Most spills contained within a dike or sump can be pumped back into the appropriate storage tank or drum.
15. Procedure to follow for leaking container (drum, ton-pack, etc.):
    a) Move container into or construct a containment area;

b) Roll container or stand up on end away from leak;

c) Drain contents (transfer to clean container);

d) Label container accordingly;

e) Absorb spillage of leakage with absorbent;

f) Transfer absorbent waste to drum or other container, label accordingly; and

g) Store until final disposal.

16. If waste reaches a storm sewer, try to stop flow from the source by using sand, soil, sandbags, etc. If this is done, pump this material out into a temporary holding tank as soon as possible. The Phoenix Water Services Department (602-262-6251) must be notified if the spill accesses the storm sewer.
17. If the spill accesses a sanitary sewer, the Arizona Water Company Regional Water Authority (602-240-6860) must be notified along with notifications noted in **Section 4.0**.
18. Decontaminate all PPE that will not be disposed of, as noted in the Decontamination Procedures (**Section 3.8**)
19. Place all containment and clean-up materials in drums for proper disposal. Some items, such as absorbent rags or booms, may have to be cut up.
20. Place all recovered liquid wastes in drums, label drums in accordance with all applicable hazardous waste rules and regulations, for proper disposal.
21. It should be noted that CS Clean personnel will not assist in handling significant hazardous materials spills that pose a risk to plant personnel and which the Emergency Response Coordinator determines are beyond the scope of safe handling by the CS Clean Emergency Response Team. For these more significant hazardous materials spills, the Emergency Coordinator will utilize the services of a qualified clean up contractor, Veolia.
22. All emergency equipment used in the emergency will be returned to ready status prior to resuming plant operation in the affected area.

EMERGENCY PROCEDURE
SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL

CONTACT EMERGENCY COORDINATOR	Work Phone	Cell Phone
Emergency Coordinator – Jacob Newman	(520) 263 0235	(360) 852 6410
Alternate Coordinator – Jason Dugay	(203) 648-0881	(203) 797-8155
Alternate Coordinator – Adam Furphy	(203) 797-8155	(845) 337- 7385

EMERGENCY COORDINATOR OR ALTERNATE OBTAINS THE FOLLOWING INFORMATION:

1) WHETHER ANY PERSONNEL ARE INJURED;
2) LOCATION OF EMERGENCY, MATERIAL INVOLVED;
3) SIZE AND EXTENT OF EMERGENCY; AND
4) WHETHER A FIRE IS INVOLVED.

PERSONNEL INJURED?

YES

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

AMBULANCE:	911
FIRE DEPARTMENT:	911
POLICE:	911
URGENT CARE:	602-547-2600
MEDICAL CENTER:	623-879-6100
POISON CONTROL CENTER:	1-800-222-1222

BE PREPARED TO GIVE: NAME, ADDRESS, EXTENT OF INJURIES, EXTENT OF EMERGENCY, POSSIBLE CHEMICALS INVOLVED AND QUANTITY.

NO

IN THE CASE OF A FIRE, THE EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING, AND FOLLOWS FIRE/EXPLOSION PROCEDURES IN 2.5.1 OF THE CONTINGENCY PLAN.

FIRE DEPARTMENT: 911

BE PREPARED TO GIVE NAME, ADDRESS, EXTENT OF FIRE, AND POSSIBLE CHEMICALS INVOLVED

IF NECESSARY, THE EMERGENCY COORDINATOR OR ALTERNATE WILL NOTIFY ALL PERSONNEL BY FIRE ALARM OR PA SYSTEM TO EVACUATE THE BUILDING.

CAN THE SPILL BE ABSORBED, NEUTRALIZED, OR OTHERWISE CONTROLLED AT THE TIME OF RELEASE BY EMPLOYEES IN THE IMMEDIATE RELEASE AREA OR BY MAINTENANCE PERSONNEL WITHOUT POSING A SAFETY OR HEALTH HAZARD?

YES

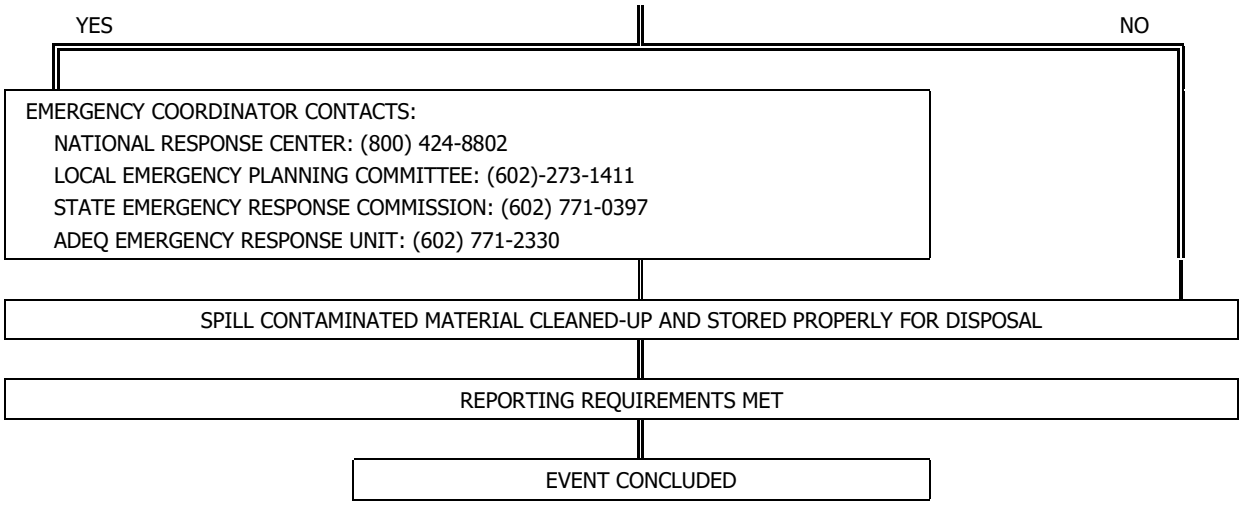
CONTAIN SPILL, CLEAN-UP SPILLED MATERIAL, STORE PROPERLY FOR DISPOSAL

NO

EMERGENCY COORDINATOR CONTACTS:
Phoenix Fire Department: 911
Veolia: (602) 233-2955

HAS SPILL REACHED OR THREATENED NAVIGABLE WATERS OR IS SPILL A CERCLA/SARA EXTREMELY HAZARDOUS MATERIAL AND GREATER THAN THE REPORTABLE QUANTITY?
(SEE http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf)

(Continued on next page)


YES
NO
EMERGENCY COORDINATOR CONTACTS:
NATIONAL RESPONSE CENTER: (800) 424-8802
LOCAL EMERGENCY PLANNING COMMITTEE: (602)-273-1411
STATE EMERGENCY RESPONSE COMMISSION: (602) 771-0397
ADEQ EMERGENCY RESPONSE UNIT: (602) 771-2330
SPILL CONTAMINATED MATERIAL CLEANED-UP AND STORED PROPERLY FOR DISPOSAL
REPORTING REQUIREMENTS MET
EVENT CONCLUDED

3.5.4 Floods

In the case of impending flood, it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home. If a flood strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to sufficiently high enough ground. Evacuation procedures are contained in **Section 3.7**.

1. Relocate to an area of high ground above rising flood waters.
2. If there is a sufficient warning attempt to sandbag areas of concern to prevent rising flood waters from entering the facility.
3. Do not attempt to drive or walk through flood waters. Waters can potentially wash away vehicles or pedestrians.
4. Remain in a protected area until instructed by the Emergency Coordinator to resume normal activity.

3.5.5 Other Emergency Procedures

Listed below are the procedures that will be followed for other potential emergencies at the discretion of the Emergency Coordinator. Due to the fact that these types of emergencies are inherently local in nature, the Emergency Coordinator at the facility will rely on the Local Emergency Management Office for assistance. This office can be contacted as follows:

Maricopa County Local Emergency Planning Committee
5630 E McDowell Road
Phoenix, AZ 85003
(602) 273-1411
IN AN EMERGENCY DIAL 911

3.5.6 Natural Disaster

In the case of impending natural disaster (i.e., hurricane, tornado, flash floods, etc.), it is assumed that adequate warning will be provided by weather forecasters in the area. In such situations, the Emergency Coordinator will close the facility and send facility personnel home or provide a safe environment at the plant until severe weather has passed. If a natural disaster strikes unexpectedly, the Emergency Coordinator will instruct personnel to evacuate to an internal rally point. Evacuation procedures are contained in **Section 3.7**.

Basic Procedures to Follow During Natural Disasters Are:

1. Do not stay where exposed or in personal vehicles.
2. Do not seek shelter near windows, openings, or doorways.
3. Relocate to an area of high structural integrity.
4. Remain in a protective area until instructed by the Emergency Coordinator to resume normal activity.

3.5.7 Bomb Threat:

In the case of a bomb threat, the Emergency Coordinator will call for full facility evacuation in accordance with the procedures contained in **Section 3.7**. In addition, the fire department and police will be notified. The individual who received the bomb threat should obtain the following information for the authorities:

1. Sound of the caller's voice,
2. Area of danger,
3. Type of bomb, and
4. Date and time of call.

3.5.8 Civil Disturbance/Workplace Violence:

In the case of a civil disturbance, the police will be contacted. If necessary, the Emergency Coordinator will initiate evacuation to an internal or external rally point in accordance with procedures contained in **Section 3.7**. The Emergency Coordinator can determine if it is safer to shelter in place. Procedures to be followed by employees identifying civil disturbances or workplace violence should be as follows:

1. Evacuate.
    a. If there is an accessible escape path, attempt to evacuate the premises.
    b. Evacuate regardless of whether others agree to follow.
    c. Leave your belongings behind.
    d. Help others evacuate, if possible.
    e. Call 911 when you are safe.
    f. Prevent individuals from entering an area where the violent person may be.
    g. Keep your hands visible.
    h. Follow the instructions of any police officers.
    i. Do not attempt to move wounded people.

2. Shelter in place.
    a. If evacuation is not possible, find a place to hide where the violent person is less likely to find you. Your hiding place should be out of the violent person's view.
    b. Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door).
    c. To prevent a violent person from entering your hiding place lock the door or blockade the door with heavy furniture.
    d. Silence your cell phone.
    e. Turn off any source of noise (i.e., radio, television).
    f. Hide behind large items (i.e., cabinets, desks).
    g. Remain quiet.
3. Protect Yourself.
    a. As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the violent person by:
        i. Acting as aggressively as possible against him/her.
        ii. Throwing items and improvising weapons.
        iii. Yelling.
    b. When police arrive:
        i. Put down any items in your hands.
        ii. Keep hands visible.
        iii. Follow all instructions.
        iv. Avoid making quick movements towards officers.
        v. Do not stop to ask officers for help or direction when evacuating, just proceed in the direction from which officers are entering the premises.

At the end of the emergency event, the Emergency Coordinator should conduct a thorough investigation into the cause of the emergency incident. Ensure that necessary procedural or process modifications are made to prevent reoccurrences or potential emergencies. Critique the emergency action procedures followed and make any changes to procedures as needed where deficiencies may have occurred.

3.5.9 Power Outage

In the event of a power outage, all employees and visitors are to go to the outside rally point until further instruction. The Emergency Coordinator will then determine if it is safe for employees to go to the internal rally point where they will remain until further instruction. Evacuation procedures are contained in **Section 3.7**. The facility is equipped with an emergency lighting system. Subsequently, the Emergency Coordinator will contact the local power company, Arizona Public Service (1-800-

240-2014), to determine the next course of action (i.e. sending workers home) and ensure the facility is in safe condition when power is restored.

3.5.10 Suspicious Mail

If an employee observes a piece of mail that appears suspicious (i.e., excessive postage, excessive tape, lopsided or lumpy in appearance, marked with "personal" or "confidential", handwritten with no return address, unexpected or from an unknown party, or addressed to someone no longer employed at the facility), then they should follow the following procedure:

1. Do not handle a letter or package that you suspect is contaminated.
2. Do not shake it, bump it, or sniff it.
3. Wash your hands thoroughly with soap and water.
4. Notify local law enforcement authorities.
5. Notify the Emergency Coordinator of the situation.

3.5.11 Natural Gas Emergency

If a strong odor or gas leak is noted, then employees will be instructed **not** to:

1. Use the telephone,
2. Operate any gas or electric machinery,
3. Light a match, or
4. Turn light switches on and off.

The Emergency Coordinator will instruct all employees to evacuate the building, if necessary, to the external rally point. Once outside, the Emergency Coordinator will contact the local power company, gas company, and, if necessary, the local Fire Department and LEPC.

3.5.12 Medical Response Procedures

After discovery of a medical response situation and a determination that entry to the emergency area will not cause further harm to the injured or yourself, an employee should quickly survey the scene prior to calling the ambulance (911). The employee should indicate to the dispatcher the following information:

- Is the scene safe?
- What happened?
- How many people are injured?
- Is the victim's airway blocked?
- Is the victim breathing?
- Can you feel the victim's pulse?

CS Clean has emergency equipment such as eyewashes located throughout the facility and are indicated on **Figure 3**. This equipment is available to provide immediate emergency use in case of chemical splash. Additionally, first aid kits and automated external defibrillators (AEDs) are present throughout the facility and noted on **Figure 3**.

3.5.13 First Aid Response

1. Move victim to fresh air; call emergency response number: 911.
2. If not breathing, give artificial respiration.
3. In case of contact with material, immediately flush skin and eyes with running water for at least fifteen minutes.
4. Remove and isolate contaminated clothing and shoes.
5. Administer additional first aid as appropriate.
6. Keep victim warm and await arrival of emergency medical response unit.

CS Clean works closely with NextCare Urgent Care (602-547-2600) located at 18589 N 59th Ave, Glendale, AZ 85308 to make them aware of the hazardous materials onsite. NextCare Urgent Care can provide necessary first aid supplies needed for medical emergencies at CS Clean.

3.5.14 Serious Medical Emergencies

In case of serious medical emergency, an ambulance will be summoned by calling 911. Examples of serious medical emergencies include the following:

- Persons with burns from fire and/or chemical spills,
- Heart attacks, cardiac arrest, or strokes,
- Persons undergoing shock,
- Chemical poisoning, and
- Severe seizures.

The Honor Health Deer Valley Medical Center (623-879-6100), located at 19829 N 27th Ave, Phoenix, AZ 85027 has been selected as the receiving facility for all medical emergency situations due to its close proximity. The direct phone number for the Honor Health Deer Valley Medical Center is 623-879-6100.

3.5.15 Non-Serious Medical Emergencies

In the case of non-serious, non-emergency situations where medical attention is needed, the employee will be taken to NextCare Urgent Care (602-547-2600), for treatment. Examples of non-serious/non-emergency situations include the following:

1. Minor bleeding,
2. Fractures, dislocations, sprains, and strains,

3. Minor eye/nose injuries, and
4. Temperature extremes.

CS Clean has first aid supplies in cabinets throughout the facility shown on **Figure 3**.

3.6 Emergency Equipment/Containment Structures

Location of emergency equipment is shown on **Figure 3** and briefly described in **Table 3**. All existing equipment must be inspected routinely and maintained to ensure its quality and efficiency.

Spills and leaks from the container storage area and tank storage area will be contained by virtue of the walls, impervious base, and berm. An impervious base provides spill containment of up to ten percent of the stored wastes.

Access to emergency communications and alarm systems (either permanent or portable), are available to all personnel operating the facility. Warning signs and 24-hour surveillance of all facilities will preclude any unauthorized personnel from coming in contact with hazardous materials at the facility.

Table 3
EMERGENCY EQUIPMENT

Item	Description/Capabilities	Location
Emergency Communication		
Telephone Systems	Capable of internal and external communication.	Main Offices
Fire Alarm System	Audible warning device with remote central monitoring.	Throughout Facility (**Figure 3**)
Fire Suppression System	A system of sprinklers that release water to control and extinguish fires.	Throughout Facility (**Figure 3**)
First Aid		
Emergency Eye Wash	Provide flooding spray of potable water at an angle to flood both eyes simultaneously to flush toxic chemical splashed in eyes.	**Figure 3**
Emergency Shower	Provide shower of potable water to flush toxic chemicals splashed on body.	**Figure 3**
Emergency Eye Wash Bottles	Provide flooding spray of potable water to flood eye(s) to flush toxic chemical splashed in eyes.	**Figure 3**
First Aid Kit	A collection of supplies and equipment used for administering First Aid.	**Figure 3**
AED	A device that detects sustained ventricular tachycardia or fibrillation and terminates it by a shock or shocks delivered directly to the myocardium, thus preventing sudden cardiac death.	Throughout Facility (**Figure 3**)

Table 3 EMERGENCY EQUIPMENT		
Item	**Description/Capabilities**	**Location**
Spill Response		
55-Gallon Drums	22" diameter X 34" lined and unlined steel tight head drums.	**Figure 3**
95-Gallon Overpack Spill Kits	Material used to absorb and contain spill of liquid material.	**Figure 3**
Spill Blocker Dike	A dike that can be set up around spills to help contain runoff from spills.	**Figure 3**
5-Gallon Universal Spill Kit	A spill kit with absorbent materials to clean up spills of universal waste.	**Figure 3**
5-Gallon Oil Spill Kit	A spill kit with absorbent materials to clean up spills of oil.	**Figure 3**
5-Gallon Acid Spill Kit	A spill kit with absorbent materials to clean up spills of acid.	**Figure 3**
Battery Acid Spill Kit	A spill kit with absorbent materials to clean up spills of battery acid (ex. Baking Soda).	**Figure 3**
Universal Spill Kit Chest	A large chest with absorbent materials to clean up spills of universal waste.	**Figure 3**
Fire Extinguishers	Wall-Mounted portable fire-fighting apparatus. The following types of fire extinguisher are used: Dry Chemical, CO_2; Class ABC.	Throughout Facility (**Figure 3**)
Personal Protective Equipment		
Gloves and Aprons	Rubber gloves and aprons for protection against harmful chemicals.	Throughout Facility
Goggles/ Safety Glasses	Eye/Face Protection.	Throughout Facility
Lock-out Tag-out Equipment	Equipment that allows for proper protection from and the locking out of energized devices, to prevent energy.	**Figure 3**

3.7 Evacuation Plan

The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation. The facility employs an internal phone system which can be used to evacuate the facility as well as contact key plant personnel to inform them as to the nature of the emergency and recommend plan of action. Total plant evacuation is initiated only by the Emergency Coordinator or his/her Alternate.

In the event that a plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

1. The signal for plant evacuation will be activated (alarm).
2. If safety permits, each operator should shut down his/her operations. Most importantly, turn off the running processes, if safe to do so. (Do not attempt to obtain personal

belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.)

3. ALL personnel, visitors, and contractors will immediately leave the operations area and congregate at the designated Rally Point via routes designated on **Figure 1**.
4. No persons shall remain or re-enter the location unless specifically authorized by the person(s) calling for evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter.
5. All persons will be accounted for by their respective accountability coordinator. The Supervisor will designate certain doors as the safest exists for his/her employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the Supervisors as necessary, to inform them of the nature of the emergency.
6. During exit, Accountability Coordinators should try to keep his/her group together, rallying at the designated locations on **Figure 1**, located in the north parking lot. Immediately upon exit, the Accountability Coordinators will prepare a list of all employees at the exit point. All other personnel who have persons reporting to them should report immediately to the rally point for final accounting.
7. Employees should remain in the area and stand upwind. (If any chemicals are released into the air around the building exterior, employees should move to a position where the chemicals would be blowing away from them.)
8. Upon completion of the employee list, the Accountability Coordinator in charge shall hand-carry the list to the Emergency Coordinator. All other personnel will remain at the rally point.
9. Contract personnel should also be listed with the name of their company.
10. A final tally of persons will be made by the Emergency Coordinator.
11. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
12. Re-entry into the area will be made only after clearance is given by the Emergency Coordinator. At his/her direction, a signal or other notification will be given for re-entry into the plant. If re-entry is not possible, non-essential personnel may be sent home.
13. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibilities of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.
14. Emergency drills will be conducted to practice all of these procedures and will be treated with the same seriousness as an actual emergency. Emergency drills are to be conducted periodically.

3.7.1 Internal Evacuation

In the event of a natural disaster (i.e., tornado) where the Emergency Coordinator has deemed the situation unsafe to send facility personnel home, the Emergency Coordinator will signal an internal evacuation.

1. The internal evacuation signal will be accomplished by intercom notification.
2. All traffic to and from the facility will cease, and each operator shall shut down his/her operations where safety permits. Turning off running water in respective areas is of primary importance. Do not attempt to gather personal belongings, unless otherwise authorized. Employees will be notified if other activities are required to be completed prior to an evacuation.
3. Water supply for operation lines should be shut off.
4. All facility personnel will precede to the center of the building in a room without windows. Under no circumstances will any facility personnel leave.
5. Each Accountability Coordinators will take a head count of the employees in their department and will report any missing persons to the Emergency Coordinator.
6. In addition, the Administrative Assistant will remove the visitors' log upon evacuation and give it to the Emergency Coordinator, who will account for any visitors.
7. Clearance to resume work assignments or go home will be given by the Emergency Coordinator.
8. In all questions of accountability, Accountability Coordinators will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are visiting. Contractors are the responsibility of those persons administering the individual contracts.

3.7.2 Offsite Notification/Evacuation Procedure

To notify the neighboring properties in an emergency, CS Clean will contact the Phoenix Fire Department (phone number: 911). If necessary, an evacuation of the neighboring properties will be done by the Phoenix Police Department under the direction of the Phoenix Fire Department.

3.7.3 Shut-down of Operations

In the event of an emergency, critical operations will be shut down, if safe to do so.

3.8 Decontamination and Disposal

3.8.1 Decontamination Procedures

Decontamination of personnel and equipment must be conducted to reduce or eliminate the transport of contaminants from the emergency area into other areas of the facility or out into the environment where unprotected personnel may be exposed. Decontamination methods for personnel will depend on the type of contaminants, protection level, and work assignment and operation

location. CS Clean personnel will not respond to spills or any other emergency incident which is not incidental and poses a safety or health hazard. An outside contractor will be contacted if a spill or any other emergency incident poses a safety and/or health hazard to CS Clean personnel, or the environment. If a contractor has to be called in, the contractor will be responsible for the decontamination of their own equipment.

The following decontamination procedures are to be followed for the CS Clean emergency response team.

Each incident may require different decontamination operations. The nature of the incident, the chemical, the weather, the temperature, the number of people to be decontaminated, and the number of trained personnel available are a few of the factors which dictate the method, size, and type of decontamination operation that will be required. Basic decontamination procedures are described below:

Personal Protective Equipment and Other Items

1. Cover the Decontamination Corridor with plastic and place booms or dikes to control runoff from decontamination operations.
2. Use collection containers to hold decontamination water runoff.
3. Identify the Decontamination Corridor with tape, cones, ropes, or other markers.
4. Have a segregated equipment drop at the edge of the Hot Zone for contaminated equipment. This equipment may be reused in the Hot Zone without decontaminating.
5. Have a primary decontamination wash and rinse as the first step near the Hot Zone to wash the most significant contamination off of the equipment.
6. Have a secondary wash and rinse about ten to fifteen, or more, away from the first wash to assure thorough decontamination of equipment.
7. Have a clean area either before or after the secondary wash to change self-contained breathing apparatuses (SCBAs).
8. An area near the Cold Zone and at the end of the Decontamination Corridor should be established to remove chemical suits, respiratory equipment, and other items.
9. All used equipment and supplies or contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.
10. All contaminated items must be disposed of properly.

Victims/Personnel

1. The person(s) performing the decontamination should protect themselves from the contaminant by using the proper PPE.
2. Carefully remove respirators and PPE from the victim. If protective clothing or suits cannot be removed easily, they may be cut off.

3. Washing of PPE worn by the victim may be effective if it will not cause further harm.
4. When it is not possible to thoroughly decontaminate the victim or the PPE, the victim may be placed on plastic or other material to avoid spreading the contamination.
5. Medical personnel and facilities will be advised immediately whenever a victim is being transported or cared for and has not been thoroughly decontaminated. Medical personnel must be advised of the chemical, its properties, its hazards, known antidotes, or any other pertinent information. A copy of the SDSs will be given to medical personnel.

3.8.2 Disposal Procedures

All discarded materials, waste materials, or other objects shall be handled in such a way to avoid the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left onsite. All material that has visible signs of contamination (e.g., waste chemicals, contaminated soil, etc.) will be classified as potentially contaminated material. All potentially contaminated materials (i.e., PPE, clothing, disposable equipment, etc.) will be double bagged or drummed as necessary and segregated for temporary storage onsite for eventual disposal. All decontamination liquids will be collected, drummed, and stored onsite for eventual disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as normal domestic waste. It is important to note that a hazardous waste determination (either by knowledge of the waste or by analytical testing) must be performed on all waste materials destined for disposal, and all appropriate approvals, handling, transportation, and disposal methods must observe applicable Resource Conservation and Recovery Act (RCRA) regulations. Hazardous Waste shall be transported by an EPA licensed hazardous waste transporter to an EPA licensed hazardous waste treatment, storage, or disposal facility.

3.9 Contingency Plan Review and Submittal

In accordance with 40 CFR 265.54 and 29 CFR 1910.120, under the following conditions, the Contingency Plan should be reviewed and immediately revised:

- Applicable regulations are revised;
- The plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

New employees should be familiarized with all emergency response procedures.

In accordance with 40 CFR 265.53, a copy of the Contingency Plan and all revisions must be maintained at the facility and submitted to the following parties:

1. Local Police Department
   Phoenix Police Department
   620 W Washington Street
   Phoenix, AZ 85003
2. Local Fire Department
   Phoenix Fire Department
   2409 W Cactus Road
   Phoenix, AZ 85029
3. Local Hospital
   Honor Health Deer Valley Medical Center
   19829 N 27th Ave,
   Phoenix, AZ 85027
4. Local Emergency Planning Committee (LEPC)
   Maricopa County
   5630 E. McDowell Road
   Phoenix, AZ 85008
5. Arizona State Emergency Response Commission (SERC)
   SERC
   c/o Department of Environmental Quality
   1110 W Washington Street
   Phoenix, AZ 85007

CS Clean will complete the following:

Familiarize the police and fire departments with:

- The layout of the facility
- Properties and hazards associated with the wastes handled at the facility
- Places where facility personnel would normally be working
- Entrances to the facility
- Evacuation routes

The Phoenix Police Department will be requested to provide the following assistance during an emergency:

- Immediate response
- Crowd control assistance
- Security to affected area
- Evacuation of surrounding areas, if required

- Communications support, if required

The Phoenix Fire Department will be requested to provide:

- Primary emergency authority
- Immediate response
- Primary fire-fighting services

Honor Health Deer Valley Medical Center will be requested to provide:

- Transfer to hospital
- Primary medical services
- Rescue services

3.10 Location of Contingency Plan

Copies of the Contingency Plan will be kept on an internal internet page CS Clean offered to all employees, in the main office area, and at the administrative assistant's office at the front entry.

4.0 FEDERAL, STATE, AND LOCAL REPORTING REQUIREMENTS

A variety of Federal, State, and Local reporting requirements exist for the reporting of emergencies and chemical releases. Provided below is a general description of the criteria for reporting under various regulations. It is the Emergency Coordinator's responsibility to follow the reporting requirements when applicable. The Emergency Coordinator may also designate a competent person to conduct these activities.

For the readers' convenience the table below summarizes reporting contacts.

Table 4
EMERGENCY REPORTING LIST

Report Contact Name	Type	Phone Number
Emergency	**N/A**	**911**
National Response Center	Federal	800-424-8802
EPA Region 9	Federal	800-300-2193
Arizona DEQ – Spill Hotline	State	602-771-2330 or 800-234-5677
Arizona – State Emergency Response Commission	State	602-771-8786
Maricopa County Local Emergency Planning Committee	LEPC	602-273-1411
Arizona Occupations Safety and Health Administration – Phoenix Office	Federal	602-542-5795
Phoenix Fire Department	City	602-495-5555

Table 4 EMERGENCY REPORTING LIST		
Report Contact Name	**Type**	**Phone Number**
Phoenix Police Department	State	602-262-6151
Phoenix Water Services Department	Water / Sewer Authority	602-262-6251

Section 311(b)(5) of the Clean Water Act (CWA), codified as 40 CFR 110, establishes reporting requirements for the release of oils into navigable waters, including wetlands. Releases of oil to navigable waters that: (1) cause a sheen to appear on the surface; (2) violate applicable water quality standards; or (3) cause a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines must be reported to the NRC at 800-424-8802. Notification must be submitted as soon as the facility Emergency Coordinator has knowledge of any discharge.

In the event a release threatens drinking water, stormwater, or sewer system contact the Phoenix Water Services Department (602-262-6251) and ADEQ (602-771-2330 or 800-234-5677).

If a spill of material of any amount threatens to reach navigable waters, the NRC (800-424-8802) shall be contacted.

The Emergency Coordinator should be ready to report the following information:

- Your name, location, organization, and telephone number;
- Name and address of the party responsible for the incident;
- Date and time of the incident;
- Location of the incident;
- Source and cause of the release or spill;
- Types of material(s) released or spilled;
- Quantity of materials released or spilled;
- Danger or threat posed by the release or spill;
- Number and types of injuries (if any);
- Weather conditions at the incident location; and
- Any other information that may help emergency personnel respond to the incident.

Navigable waters of U.S. are defined in 40 CFR Part 110.1 to include interstate waterways or intrastate waterways including lakes, rivers, and streams which may be utilized by interstate travelers for recreational purposes. Navigable waters also include lakes, rivers, and streams from which fish or shellfish are taken. The complete definition may be found in Section 502(7) of the Federal Water Pollution Control Act. In the event of a large volume release, oil products and reportable quantities of materials could potentially enter the nearby Mill River.

After a spill or release of oil greater than 1,000 gallons or after two spills of oil greater than 42 gallons within any twelve-month period, or if the spill impacted a navigable waterway, the Emergency Coordinator will report the event(s) to the following agency within sixty days.

The Regional Administrator
U.S. Environmental Protection Agency – Region 9
U.S. EPA Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Phone: 415-947-8000

The EPA report will include:

- Name of the facility;
- Your name;
- Location of the facility;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Corrective action and countermeasures you have taken, including a description of equipment repairs and replacement;
- An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- The cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and
- Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event.

As required by EPA Federal Regulation 40 CFR 112.5(c), a copy of the EPA report will also be submitted to ADEQ at the following address:

Arizona Department of Environmental Quality
Attn: Emergency Response and Spill Prevention
1110 W. Washington St.
Phoenix, AZ 85007

4.1 Comprehensive Environmental Response, Compensation, and Liability Act Releases (Federal)

Section 104 of CERCLA (also known as "Superfund"), codified at 40 CFR 302, requires that if greater than the RQ of a CERCLA hazardous substance is released from a facility over a 24-hour period, the Emergency Coordinator, as soon as they have knowledge of the release, must notify the NRC (800-424-8802). Reportable releases include any release to the environment, either to air, land, or water,

except for certain continuous releases. It should be noted that a release contained entirely within the building constitutes a release under CERCLA, and if more than the RQ is released to air, land or water, the release is reportable.

4.2 Hazardous Materials Transportation Act (HMTA) Notification (Federal)

Under 49 CFR 171.15, if a release of hazardous materials occurs in transport (including loading or unloading) which causes injury or death, property damage over $50,000, public evacuation or major road closure lasting more than one hour, aircraft re-routing, spillage or fire of a radioactive or disease-causing material, or continuing endangerment of life at the scene of the incident exists, then the carrier must notify the Department of Transportation via the NRC at 1-800-424-8802. Each notice must include the following information:

1. Name of Reporter;
2. Name and address of carrier;
3. Phone number where reporter can be reached;
4. Date, time, and location of incident;
5. The extent of injuries, if any;
6. Type and quantity of materials involved; and
7. Type of incident and whether continuing danger of life exists at the scene.

The carrier must also submit a written report regarding the incident within thirty days, and if any unintentional release of hazardous material occurs (under conditions not necessarily listed above), a written report must be submitted.

4.3 Superfund Amendments and Re-Authorization Act Releases (Federal)

Under 40 CFR 355.40, releases of CERCLA hazardous substances of Extremely Hazardous Substances (EHSs) (see http://www2.epa.gov/sites/production/files/2013-08/documents/list_of_lists.pdf) above the RQ must be reported to the SERC at 602-771-0397 and the LEPC at 602-273-1411 by the owner or operator of the facility, and must include the following information:

- The chemical name of identity of the substance released;
- Whether the substance is an EHS;
- The quantity released;
- Time and duration of the release;
- The medium or media into which the release occurred;
- Any relevant medical information (health risks, etc.);
- Precautions to take, including evacuation; and
- The name and telephone number of the person to contact for further information.

As soon as practicable after reporting the release, the owner or operator must submit a written report of the incident and information listed above which additionally includes the following information:

- Actions taken to respond to and contain the release;
- Any acute and chronic health effects from the release; and
- Any advice regarding medical attention necessary for exposed individuals.

Several exemptions to this reporting requirement are provided under paragraph 355.40(a) (2), which should be carefully reviewed to determine if reporting is required.

4.4 State Spill and Release Requirements

Under Arizona's statutes, any oil or petroleum products, chemical or waste that is released in any manner and in any amount constitutes a "spill" and must immediately be reported to the Oil and Chemical Spills section of the ADEQ at 602-771-2330. Providing the following information:

- Name, address, and telephone number of the reporter;
- Name and address of the facility;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to public health, or the environment, outside the facility.

A follow-up written report to the same section of the ADEQ is required to be completed within fifteen days. The written report will include:

- Name, address, and telephone number of the generator;
- Date, time, and type of incident (i.e., fire, explosion);
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- An assessment of actual or potential hazards to public health or the environment; and
- Estimated quantity and disposition of recovered material from the incident.

5.0 TRAINING

5.1 Contingency Plan and Emergency Action Plan Training

To comply with both state and federal regulations, CS Clean must provide and maintain a training program that will ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. This training program consists of both in-house classroom training as well as on-the-job training.

In-house training will be conducted by a competent and qualified training instructor familiar with this Plan's requirements. On-the-job training consists of employees completing job tasks under the guidance and supervision of another fully-trained employee. No person will be allowed to work with hazardous materials unsupervised until the training requirements set forth as appropriate for the particular job title have been successfully completed. Newly hired or newly assigned employees will have the necessary job training completed within six months of their job placement. Also, employees involved in hazardous waste management will be provided training annually.

The intent of the training program is to provide the employee with the necessary knowledge and skills to perform the functions of their job title in a safe manner and to maintain compliance with state and federal regulations.

Pursuant to 40 CFR 262.17(a)(7) and 29 CFR 1910.38(e), personnel will be specifically trained in the following emergency response areas:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- Key parameters for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Response to fires or explosions;
- Response to groundwater contamination incidents;
- Shutdown operations; and
- Train employees to assist in a safe and orderly evacuation of other employees.

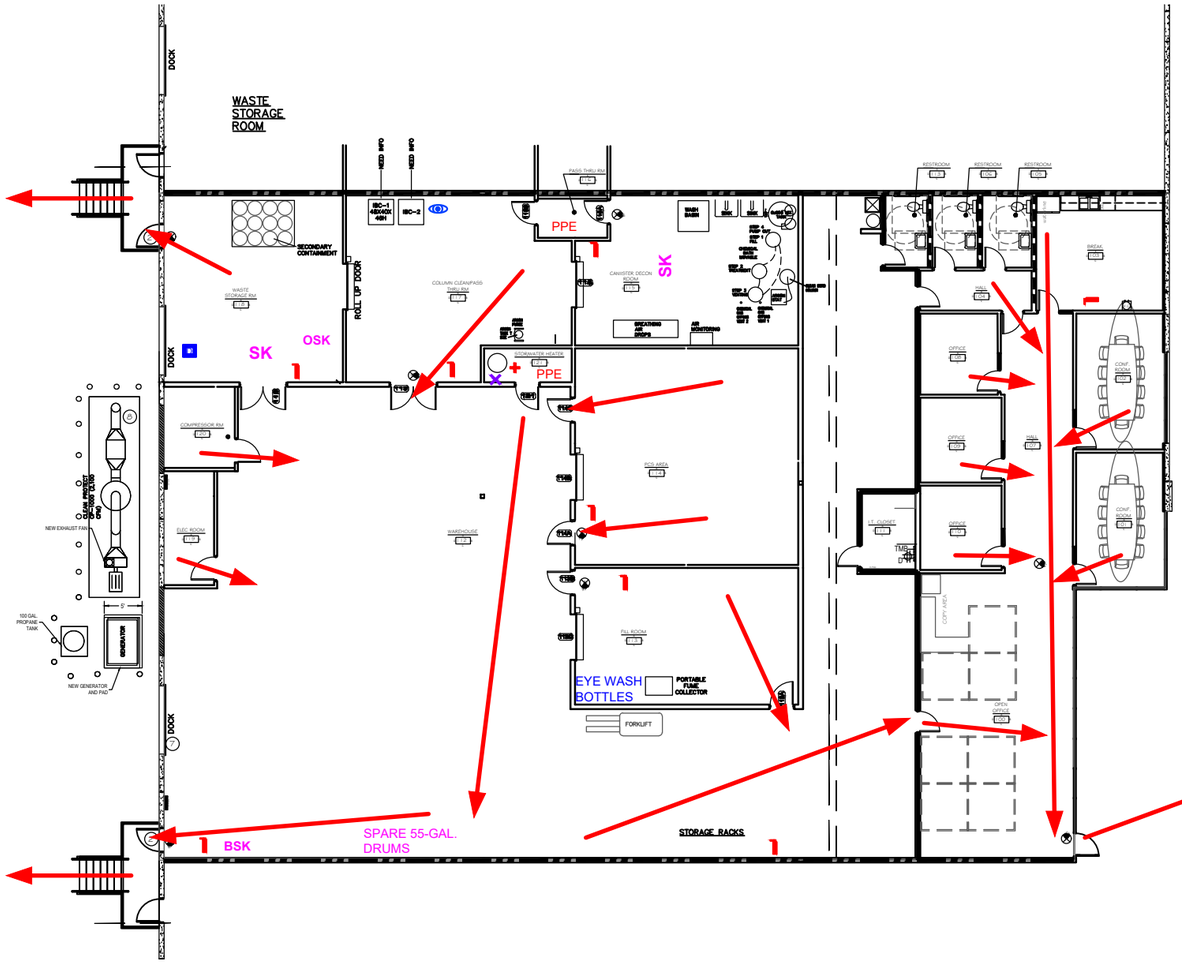
Hazardous waste management duties and responsibilities vary for each job title. Also, the training for certain jobs may overlap with the training for similar jobs. Therefore, there is variation associated with the necessary training for each job title. Training records shall be maintained for the duration of an employee's employment to satisfy OSHA emergency action plan training requirements.

5.2 Emergency Response Drills

Per the National Fire Protection Association (NFPA) 101 (2015), CS Clean will perform periodic emergency response drills (i.e., annually). The drill procedures, schedule, and log are maintained separately in company files.

FIGURES

DRAWING NAME: J:\C\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 - EMERGENCY EVACUATION PLOT DATE: May 23, 2025 - 11:40am OPERATOR: BOB



SECONDARY RALLY POINT (IN PARKING LOT)

PRIMARY RALLY POINT (ON SIDE OF PARKING LOT CIRCLE)

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

NORTH

0 10' 20'

REVISIONS

NO.	DATE

DESIGNED BY:	REVIEWED BY:	ISSUE DATE:
DSW	DSW	05/23/2025
DRAWN BY:	PROJECT NUMBER:	SHEET SIZE:
BOB	CSC0011.PS	11"x17"

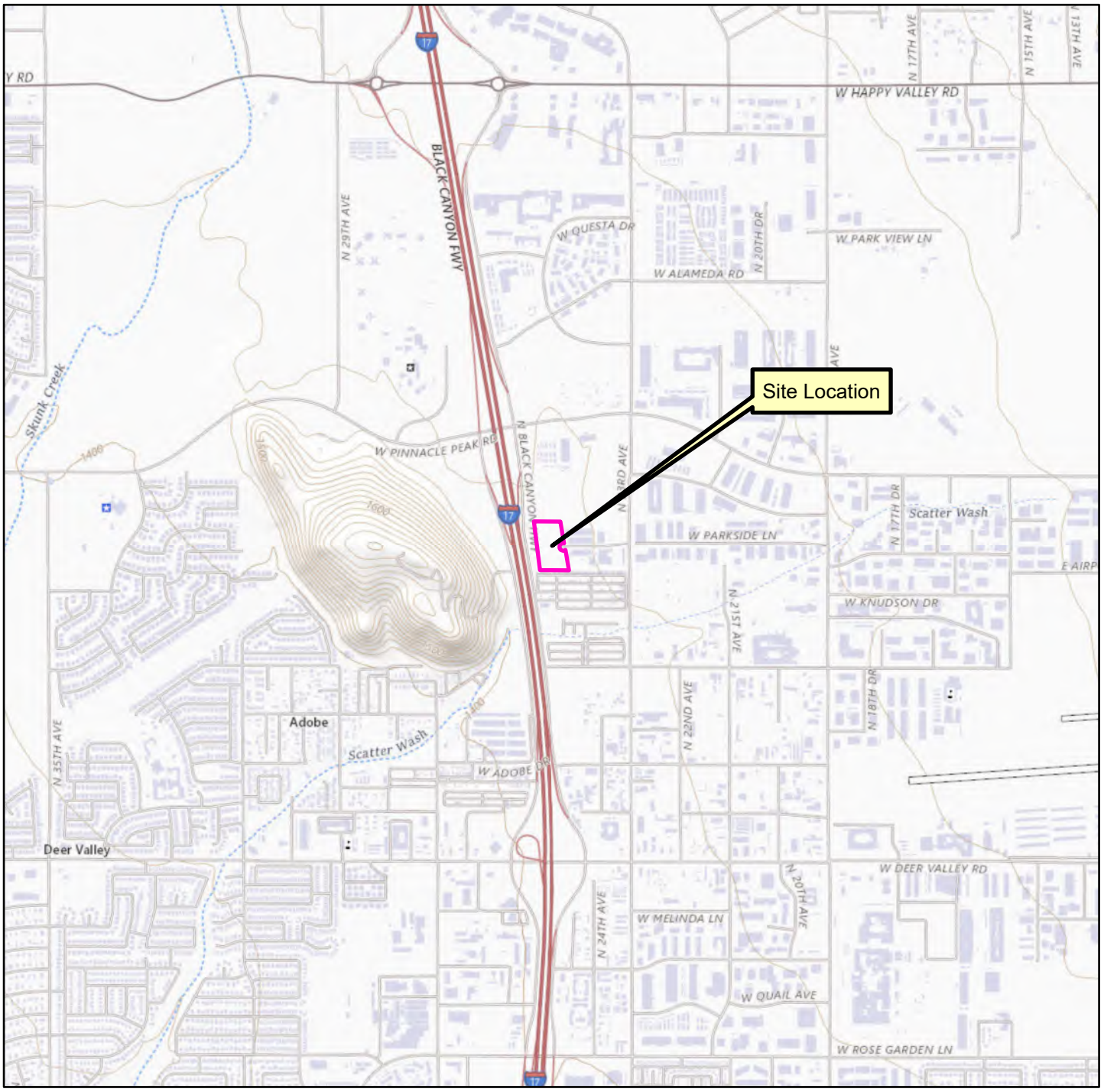
SITE PLAN

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150
PHOENIX, ARIZONA

FIGURE NO.

1



0 1,000 2,000 4,000 6,000 8,000

Feet

1:24,000

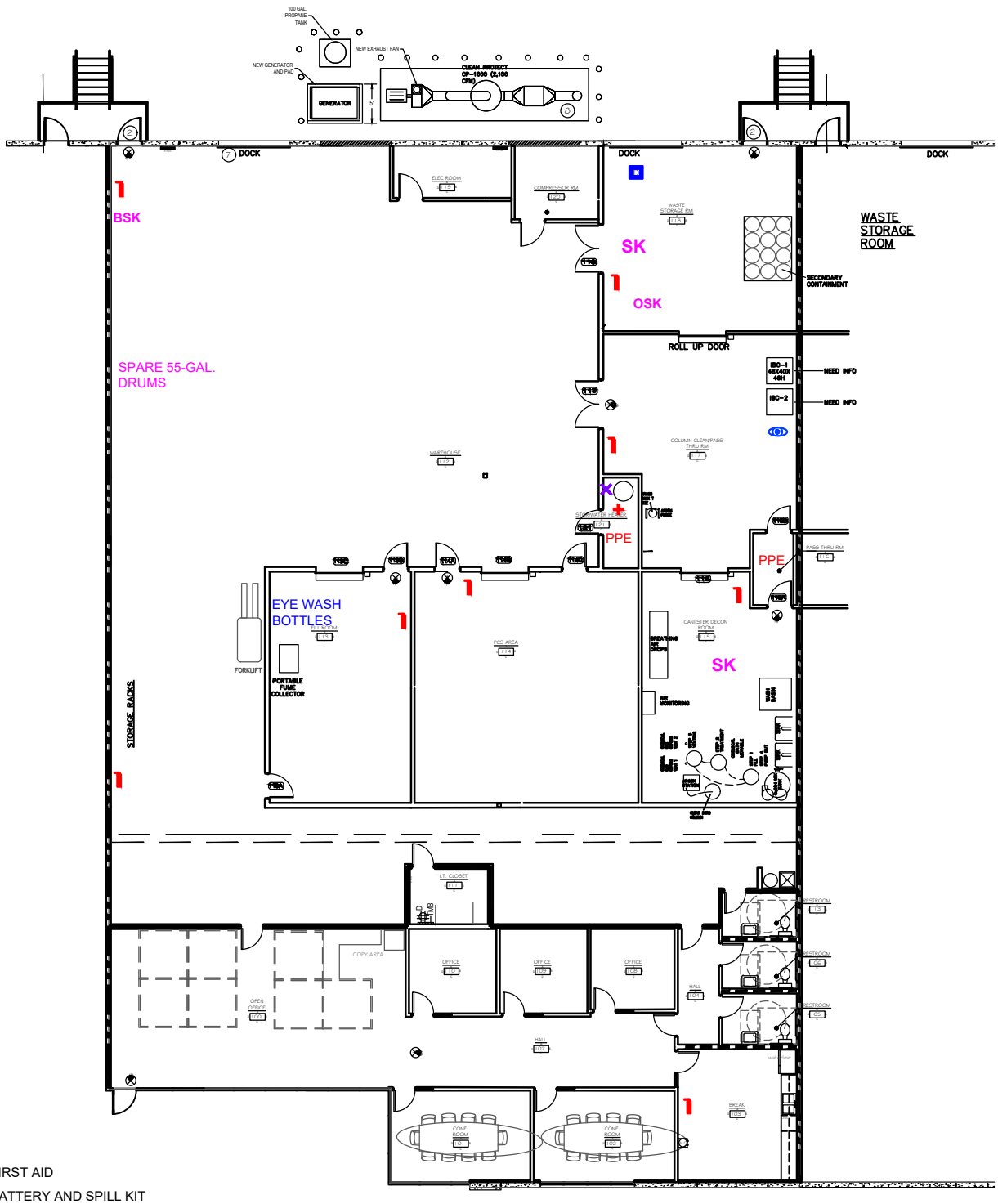
N

USGS Quadrangle Information
Quad ID: 33112-F1
Name: Union Hills, Arizona

Figure 2
Site Location
CS Clean Systems, Inc.
2453 W Parkside Lane
Suites 150
Phoenix, Arizona
HRP # CSC0011.PS
Scale 1" = 2,000'

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

Path: J:\CIC\SCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\GIS\Figures\Figures.aprx



✚-FIRST AID
BSK-BATTERY AND SPILL KIT
SK -SPILL KIT, (WASTE OIL, WATER, UNIVERSAL WASTE, COOLANT, SOLVENTS)
✕-LOTO EQUIPMENT
OSK-95 GAL. OVERPACK SPILL KIT
-SPILL BLOCKER DIKE
-FIRE EXTINGUISHER
-EYEWASH

0 10' 20'

NORTH

MAP REFERENCE: SHEET IA-2, CS CLEAN SYSTEMS INC. 2453 W PARKSIDE LN, SUITES 150, PHOENIX, AZ BY A DESIGN IN VISION OF GOODYEAR, ARIZONA; PROJECT NO. 22350; DATE: 4/12/23.

HRP
MOVE YOUR ENVIRONMENT FORWARD
197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

EMERGENCY EQUIPMENT

CS CLEAN SYSTEMS, INC.

2453 W PARKSIDE LANE, SUITES 150, PHOENIX, AZ

SCALE: 1" = 20'

ISSUE DATE: 02/27/2025

PROJECT NUMBER: CSC0011.PS

Fig. 3

SHEET NO.

DRAWING NAME: J:\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0011PS\CAD\Building Plan.dwg LAYOUT: FIGURE 1 SITE PLAN PLOT DATE: Feb 27, 2025 - 9:49am OPERATOR: BOB

APPENDIX A
Hazardous Waste Inspections

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG WASTE STORAGE AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or secondary containment, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Containers and bulk containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Placement and storage acceptable	Drum aisle spacing: 30" (minimum), height of stack: 1 high maximum		
Containers, bulk containers, and columns closed and secured	Open lids or bungs		
Labeling of containers and storage bulk containers	Improper identification, missing labels, accumulation date missing		
Storage capacity is not exceeded	$\geq$10 55-gallon containers, $\geq$10 spent columns, >2 275-gallon totes		
Wastewater bulk container is provided with start accumulation date	Missing label, date		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

DAILY INSPECTION LOG **WASTE STORAGE AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Waste material holding time within maximum limit	1-year maximum handling time for spent granulate material from delivery to disposal (applies only to off-site, non-reclaimed waste storage). 90-days for onsite generated wastes.		
Secondary Containment	Secondary containment present and capable of supporting 110% of largest container		
Compatible Waste	Incompatible waste is stored so that spill will not comingle		
Wastewater generation log is available and in-use	Missing generation log, not in use		
Wastewater storage duration has not exceeded permit limitations	Limitations based on hazardous waste generator status (<90 days)		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG PREPARATION AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle Space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping and pumps in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns or waste		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG WASTE MATERIAL TRANSFER AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material/Equipment Observations			
Tanks and bulk containers in good condition	Leaks, dents, corrosion, deterioration		
Fill and drain valves secured and in good condition	Leaks, deterioration		
Wastewater transfer piping in good condition	Leaks, dents, corrosion, deterioration		
Containers, bulk containers, and columns closed and secured (in-use)	Open lids or bungs		
Storage capacity is not exceeded	No storage of spent columns, only satellite storage area		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Shipping containers in acceptable condition	Cracks, dents, corrosion, signs of leaks or spills		
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG **DONNING AND DOFFING PASSTHROUGH AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (if applicable)**
Building Observations			
No evidence of spills/leaks	Accumulated liquid on floor or in trench, wet spots		
Floor, berms, and other surfaces are in acceptable condition	Cracks, erosion, uneven settlement		
Warning signs posted and in acceptable condition	Blocked, damaged, missing, deteriorated		
Aisle space	30 inches of aisle space maintained		
Housekeeping practices acceptable	Obstruction, aesthetics, unauthorized materials storage		
Material Storage Observations			
Storage capacity is not exceeded	No storage of spent columns or wastes		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS

WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE 150
PHOENIX, AZ

Inspection Item	Types of Problems	Problem? Yes/No	Date and Type of Repair Performed (location if applicable)
All fire extinguishers visible and accessible	Not properly identified, missing, not mounted securely		
All fire extinguishers fully charged	Not adequately charged		
Fire alarm system functioning properly and has been tested in the past year	Pull boxes not functioning properly, loss of water pressure or alarm signal for sprinklers		
At least 18-inch clearance provided for all sprinkler heads	Material or equipment storage issues		
Smoke alarms functioning correctly	Loss of power, blocked, damaged		
All exits marked with exit signs and illuminated	Missing signage, loss of power, damaged		
Evacuation plans posted near doors and/or common areas	Missing signage, not accurate, not sufficient size		
All doorways and hallways leading to an exit free and clear and provided illumination	Material or equipment storage issues, loss, or power, damaged		
Emergency notification equipment including telephone and/or paging system operational	Loss of power, blocked, damaged		
Emergency phone numbers posted	Missing signage, not accurate		
Emergency lights functioning correctly	Loss of power, blocked, damaged		
First aid kits visible and accessible	Not properly identified, missing, not accessible		
First aid kits stocked as required and expiration dates current	Depleted or missing inventory, expired components		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA CS CLEAN SOLUTIONS, INC. 2453 WEST PARKSIDE LANE, SUITE 150 PHOENIX, AZ			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available and in good condition	Broken, dirty, missing equipment (includes air supply system, respirators, chemical resistant clothing, eye protection, gloves)		
Spill kits readily available and include adequate materials	Missing, damaged, not accessible		
Duct flow pressure gauge operating correctly	Damaged, loss of power, faulted		
Ventilation	HEPA present and functioning, Cleanprotect operating		
Liquid level switch operating correctly	Damaged, loss of power, faulted		
Gas/O_2 Detection System calibrated and operating correctly	Expired calibration, damaged, loss of power, faulted		
Emergency Generator	Checked for operation in loss of power, maintained		
Uninterruptible Power Supply (UPS)	Checked for operation in loss of power, maintained		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

WEEKLY INSPECTION LOG – EMERGENCY AND SAFETY SYSTEMS **WASTE MATERIAL TRANSFER ROOM,WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Problem? Yes/No**	**Date and Type of Repair Performed (location if applicable)**
Eye wash stations and safety showers inspected and functioning properly	Low water pressure, leaking, draining		
PPE readily available	Includes air supply system, respirators, chemical resistant clothing, eye protection, gloves in stock		
Respirators in good condition	Respirator components (mouthpiece, supplied air systems, connections), broken or damaged, dirty.		
Chemical resistant clothing	Good condition, no holes, damage, or dirty/used equipment.		
Gloves	Good condition, no holes, damage, or dirty/used equipment.		
Eye protection	Good condition, no holes, damage, or dirty/used equipment.		

Name of Inspector: _____ **Date of Inspection:** _____

Time of Inspection: _____

MONTHLY INSPECTION LOG – SECURITY **WASTE MATERIAL TRANSFER ROOM. WASTE STORAGE AREA, PREPARATION AREA, AND SHIPPING AND RECEIVING AREA** **CS CLEAN SOLUTIONS, INC.** **2453 WEST PARKSIDE LANE, SUITE 150** **PHOENIX, AZ**			
Inspection Item	**Types of Problems**	**Yes/No**	**Date and Type of Repair Performed (Location if applicable)**
Facility perimeter fence in acceptable condition	Damaged, deteriorated, missing		
Warning signs posted and in acceptable condition	Missing, damaged		
Building security system operating correctly	Damaged, loss of power, notifications not provided		
All doors and key card system operational	Damaged, cannot close or lock		
Lighting on interior and exterior adequate	Damaged bulbs, loss of power		

APPENDIX B

Hazardous Materials Identification System Spreadsheet

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Argon	100%	7440-37-1	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Nitrogen	100%	7727-37-9	Compressed Gas	Gas	120 cubic ft	0	0	0	0
X		Copper Sulfate Pentahydrate	99%	7758-99-8	Toxic	Solid	100 lbs	2	0	0	1
X		CLEANSORB CS3F	100%	Proprietary Copper Compound	Toxic	Solid	22,000 lbs	2	0	0	0
X		CLEANSORB CS3G	<20%	Proprietary Copper Compound	Corrosive	Solid	1,325 lbs	1	0	0	0
X		CLEANSORB CS5	MIX	1313-13-9 <100% 1317-38-0 <25%	Toxic	Solid	1,325 lbs	2	0	1	0

HMIS - Hazardous Material Inventory Statement (Part-2)

Business Name: CS Clean Solutions, Inc. **Address:** 2453 West Parkside Lane, Suite 150 Phoenix, Arizona 85027 **Store #:** **Date:** 4/25/2023

Complete By: David Webster and Jason Dugay **Telephone:** (203) 456-6087

On-Site Generator – If Yes, enter fuel qty & type. **Fuel Qty:** ~120 gallons **Fuel Type:** Propane

On-Site Fuel Pump – If Yes, enter fuel qty & type. **Fuel Qty:** **Fuel Type:**

① Indoor Storage	Outdoor Storage	② Chemical or Trade Name	③ Conc. %	④ CAS Number	⑤ PFC Hazard Classification	⑥ Physical State	⑦ Total Amt on Property	⑧ NFPA 704 RATING			⑨ Tank(s) (Above Ground Only)
Mark with an "X"						List: (Solid, Liquid or Gas)	List: (Pounds, Gallons or Cubic ft).	H	F	R	Enter Number
X		Waste - MOCVD Tool Exhaust	MIX	1317-38-0 10-50% 12005-75-3 10-30% 12019-57-7 10-30%	Pyrophoric Unstable / Reactive Toxic	Solid	880 lbs	2*	0	0	0
X		Waste - Ion Implant abatement	MIX	7440-38-2 >1% 142844-00-6 20-40% 1309-48-4 20-40%	Toxic	Solid	1760 lbs	3*	0	0	0
X		Waste - Exhaust Scrubber Granular	MIX	7784-18-1 20-40% 7783-40-6 20-40%	Corrosive	Solid	1760 lbs	2*	0	0	0

Insert additional lines as needed.

* NFPA 704 for highest hazard component that is apart of waste stream.

APPENDIX C
Notifications to Local Agencies

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Mike Duran III
Fire Chief
City of Phoenix Fire Department
2409 W Cactus Road
Phoenix, AZ 85029

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Chief Duran:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with applicable federal and state regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Honor Health Deer Valley Medical Center
19829 N 27th Avenue,
Phoenix, AZ 85027

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

To Whom It May Concern:

Attached please find the contingency plan for CS Clean Systems (CS Clean) at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the Urgent Care Facility in compliance with applicable state and federal regulations. Should the need to send an employee of CS Clean to Honor Health Medical Center due to a work-related injury or an overexposure to any chemicals onsite, CS Clean will submit all SDSs (Safety Data Sheets) for chemicals that the employee had encountered.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Michael Branham
Maricopa County LEPC
5630 E. McDowell Road
Phoenix, AZ 85008

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Mr. Branham:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the Phoenix Fire Department and Local Emergency Planning Committee in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Chief Michael Sullivan
City of Phoenix Interim Police Chief
620 W Washington Street
Phoenix, AZ 85003

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA 85027
(HRP #CSC0011.PS)

Dear Chief Sullivan:

Attached please find the contingency plan for CS Cean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been updated and supplied to the City of Phoenix Police Department in compliance with applicable state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

MOVE YOUR ENVIRONMENT FORWARD

October 27, 2025

Laura Malone
AZ State Emergency Response Commission
City of Phoenix
1110 W Washington Street
Phoenix, Arizona 85007

RE: CONTINGENCY PLAN, CS CLEAN SYSTEMS, 2453 WEST PARKSIDE LANE, SUITE 150, PHOENIX, ARIZONA
(HRP #CSC0011.PS)

Dear Ms. Malone:

Attached please find the contingency plan for CS Clean Systems at 2453 West Parkside Lane, Suite 150, Phoenix, Arizona. This plan has been supplied to the City of Phoenix in compliance with state and federal regulations.

If you have any questions or require additional information, please feel free to contact HRP Associates, Inc. at (860) 674-9570.

Sincerely,

Chelsea Thompson
Associate Consultant

David Webster, CSP
Senior EH&S Project Manager

Attachment

ATTACHMENT 1

Hazardous Waste Contingency and Emergency Action Plan

APPENDIX F.6

Waste Acceptance Paperwork

CS CLEAN SOLUTIONS

26 Commerce Dr
Danbury, CT 06810
(203) 797-8155

SPENT CHEMISORBENT WASTE PROFILE DATA

End User:	Application:	Date:
Revision #: 0	Author:	Contact:

The purpose of this document is to provide to the end-user a characterization of the spent Chemisorbent from a CS Exhaust Purification System. This information is be required by a Hazardous Waste Management Service provider for the proper handling and disposal of the spent or expired Chemisorbent material. The waste characterization is dependent on the process gas Treated. Therefore, this waste profile is valid only for the process data submit by the end-user on the CS Process Definition Sheet.

END USER CONTACT INFORMATION			
End User Address:		End User Contact:	
End User Contact Email:		End User Phone	

ABATEMENT SYSTEM INFORMATION			
System Model Number		System Serial Number	
Absorber Column Model		Chemisorbent Volume	
Process/Process gases		Column/Canister Serial #	

GENERATED WASTE INFORMATION			
Waste Name		Process Generating Waste	
Estimated Quantity		Type/Size	

PHYSICAL PROPERTIES			
State at 70F		Layers	
% Liquid		% Solid	
Pumpable ?		% Halogens	
BTU Content		Flash Point (F)	
Highest/Lowest PH of layer		Color	

CHEMICAL COMPOSITION			
	%		%
	%		%
	%		%
	%		%
	%		%
	%		%

METAL CONTENT					
Antimony	%	Chromium (III) Cr (D007)	%	Nickel	%
Arsenic (D004)	%	Cobalt	%	Selenium (D010)	%
Barium (D005)	%	Copper	%	Silver (D011)	%
Beryllium	%	Lead (D008)	%	Thallium	%
Cadmium	%	Mercury (D009)	%	Vanadium	%
Chromium (III) Cr (D007)	%	Molybdenum	%	Zinc	%

OTHER PROPERTIES (check X)		
<20% VOC	OSHA Carcinogen	Flammable Solid
Lab Pack -Assorted	Acutely Hazardous (P Code)	Dangerous when wet
DOT Corrosive only	CA Extremely Hazardous	Spontaneously Combustible
Oxidizer	Pesticide Containing	Pyrophoric / Air Reactive
Organic Peroxide	Reactive Cyanide	Explosive / Shock Sensitive
Polymeric Resin	Reactive Sulfide	Benzene NESHAP
Ozone Depleting	Ammonia Containing	Highly Odorous
Compressed gas	Radioactive	Dioxin Containing
Medical (infectious)	Friable Asbestos	PCB Containing
Dioxin Containing	Ozone Depleting	Non-Friable Asbestos

CS CLEAN SOLUTIONS

26 Commerce Dr
Danbury, CT 06810
(203) 797-8155

Shipping Information (TO BE DETERMINED BY GENERATOR)

Shipping Name _____

Technical n.o.s. or NON-RCRA Name _____

Hazard Class _____ UN / NA _____ PG ☐I ☐II ☐III

EPA Waste Class Code(s) _____ ☐None

CA Code _____Other State Code (s) _____ Lowest RQ Constituent _____/Pounds _____

☐ "Poison" ☐ "Poison Inhalation Hazard, Zone ☐ "Dangerous When Wet" ☐Ozone Depleting Label ☐DOT-E

Primary Label _____ Subsidiary Label _____ Emergency Response Guidebook# _____

Special Handling Instructions _____

End of Document

CS CLEAN SOLUTIONS

Customer Declaration upon Return of used CLEANSORB Modules/Columns for Regeneration and Refill

Please contact your local CS representative or see www.csclean.com.

Company/ End User:		
Contact:		
Address:		
Phone:	Fax:	E-mail:

Cleansorb System Model:	**S/N System:**
Module/Canister 1 Type:	S/N Module/Canister:
Module/Canister 2 Type:	S/N Module/Canister:
In operation from:	to:
Endpoint sensor in system? Yes ❒ No ❒	Manufacturer: Type:
Endpoint sensor most recent calibration date:	

Details of processes and gases absorbed	
Type of Process:	
No pump ❒	**For Chemical Vapor Deposition Processes ONLY**
Rotary vane (oil) pump ❒	Has the absorber bed been oxidized? Yes ❒ No ❒
Dry pump ❒	Has the canister been filled with argon? Yes ❒ No ❒

What was the reason for changing the canister?		
System endpoint alarm ❒	Colour change ❒	Expiry date reached ❒
External gas detector ❒	Estimated bed capacity ❒	Abnormal conditions ❒
Is the absorber bed possibly over-saturated?	Yes ❒ No ❒	

Was the absorber canister purged prior to removal from the scrubber? Yes ❒ No ❒				
1	Purge gas:	Flowrate: [L/min]	Duration:	[min]
	Has the absorber bed been exposed to air? Yes ❒ No ❒			
2	Purge gas:	Flowrate: [L/min]	Duration:	[min]

Comments/ information/ special safety precautions necessary:

Signature: _____ Date: _____

Please fill in the form completely.

© 2013 CS CLEAN SYSTEMS AG

CS CLEAN SOLUTIONS

26 Commerce Dr
Danbury, CT 06810
(203) 797-8155

SPENT CHEMISORBENT WASTE PROFILE DATA

End User:		Application:	Ex. Semiconductor Exhaust Gas	Date:	May 15, 2017
Revision #: 0		Author:	John Doe	Contact:	john.doe@example.com

The purpose of this document is to provide to the end-user a characterization of the spent Chemisorbent from a CS Exhaust Purification System. This information is be required by a Hazardous Waste Management Service provider for the proper handling and disposal of the spent or expired Chemisorbent material. The waste characterization is dependent on the process gas Treated. Therefore, this waste profile is valid only for the process data submit by the end-user on the CS Process Definition Sheet.

END USER CONTACT INFORMATION

End User Address:	End User Contact:
End User Contact Email:	End User Phone

ABATEMENT SYSTEM INFORMATION

System Model Number	CS200PS Primeline	System Serial Number	
Absorber Column Model	CC200SA	Chemisorbent Volume	200L
Process/Process gases	AsH3, PH3, TMAl, TMIn, DET, TMGa, DMZn, CBr4	Column/Canister Serial #	

GENERATED WASTE INFORMATION

Waste Name	Exhaust Scrubber Granulate Waste	Process Generating Waste	Metal Organic Chemical Vapor Deposition
Estimated Quantity	200L	Type/Size	Scrubber Column/Canister

PHYSICAL PROPERTIES

State at 70F	Solid	Layers	4
% Liquid	0%	% Solid	100%
Pumpable ?	No	% Halogens	0.1-1 %
BTU Content	< 5,000 BTU	Flash Point (F)	> 200 F
Highest/Lowest PH of laye	7.1 - 12.4	Color	light blue, white, and black

CHEMICAL COMPOSITION

Copper Oxide	10-50	%	Indium Oxide	0-5	%
Silicon Oxide	5-20	%	Phosphorous (elemental)	0.1 - 5	%
Copper Arsenide	10-30	%	Gallium oxide, Aluminum Oxide	0-1	%
Copper Phosphate	0-5	%	Zinc oxide, magenisum bromide	0 - trace	%
Copper (elemental)	0-2	%	Magnesium oxide	5-15%	%
Copper Phosphide	10-30	%	Magnesium Chloride, Aluminum Chloride	0- trace	%

METAL CONTENT

Antimony	0%	Chromium (III) Cr (D007)	0%	Nickel	0%
Arsenic (D004)	0-1%	Cobalt	0%	Selenium (D010)	0%
Barium (D005)	0%	Copper	40-50%	Silver (D011)	0%
Beryllium	0%	Lead (D008)	0%	Thallium	0%
Cadmium	0%	Mercury (D009)	0%	Vanadium	0%
Chromium (III) Cr (D007)	0%	Molybdenum	0%	Zinc	0%

OTHER PROPERTIES (check X)

<20% VOC	X	OSHA Carcinogen		Flammable Solid	
Lab Pack -Assorted		Acutely Hazardous (P Code)		Dangerous when wet	
DOT Corrosive only		CA Extremely Hazardous		Spontaneously Combustible	
Oxidizer		Pesticide Containing		Pyrophoric / Air Reactive	X
Organic Peroxide		Reactive Cyanide		Explosive / Shock Sensitive	
Polymeric Resin		Reactive Sulfide		Benzene NESHAP	
Ozone Depleting		Ammonia Containing		Highly Odorous	
Compressed gas		Radioactive		Dioxin Containing	
Medical (infectious)		Friable Asbestos		PCB Containing	
Dioxin Containing		Ozone Depleting		Non-Friable Asbestos	

CS CLEAN SOLUTIONS

26 Commerce Dr
Danbury, CT 06810
(203) 797-8155

Shipping Information (TO BE DETERMINED BY GENERATOR)

Shipping Name _____

Technical n.o.s. or NON-RCRA Name _____

Hazard Class _____ UN / NA _____ PG ☐I ☐II ☐III

EPA Waste Class Code(s) _____ ☐None

CA Code _____ Other State Code (s) _____ Lowest RQ Constituent _____/Pounds _____

☐ "Poison" ☐ "Poison Inhalation Hazard, Zone ☐ "Dangerous When Wet" ☐Ozone Depleting Label ☐DOT-E

Primary Label _____ Subsidiary Label _____ Emergency Response Guidebook# _____

Special Handling Instructions _____

End of Document

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.					
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name — Signature — Month — Day — Year

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month — Day — Year

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month — Day — Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month — Day — Year

VOID

APPENDIX F.7
Plumbing and Mechanical Drawings

HVAC DUCTWORK ABBREVIATIONS AND SYMBOLS

OA	OUTSIDE AIR	FD	FIRE DAMPER
SA	SUPPLY AIR	FSD	FIRE/SMOKE DAMPER
RA	RETURN AIR	BDD	BACKDRAFT DAMPER
EA	EXHAUST AIR	AD	ACCESS DOOR
TA	TRANSFER AIR	WMS	WIRE MESH SCREEN
CFM	CUBIC FEET/MINUTE	FC	FLEXIBLE CONNECTION
(100)	AIR FLOW-CFM	AL	ACOUSTICAL LINING
Ø	ROUND DIAMETER	OBD	OPPOSED BLADE DAMPER
CD	CEILING DIFFUSER	RG	RETURN GRILLE
LD	LINEAR DIFFUSER	OAI	OUTSIDE AIR INTAKE

SINGLE LINE SYMBOL	DOUBLE LINE SYMBOL	
10x8	10x8	NEW DUCT - FIRST DIMENSION IS TOP SIZE (CLEAR INSIDE DIMENSION, INCHES)
		INTERNALLY LINED DUCT (ALSO REFER TO SPECIFICATIONS)
8ø	8ø	FLEXIBLE DUCT (8 INCH DIAMETER)
		DUCT UP (RETURN SHOWN)
		DUCT DOWN (RETURN SHOWN)
		MITERED ELBOW (W/ TURNING VANES)
		RADIUS ELBOW
		BRANCH TAKE-OFF (45 DEGREES)
		RADIUS TAKE-OFF

SUPPLY/INTAKE SYMBOLS		RETURN/EXHAUST SYMBOLS	
	DUCT		DUCT
	AIRFLOW DIRECTION		AIRFLOW DIRECTION
	CEILING DIFFUSER		CEILING GRILLE
	LINEAR DIFFUSER		LINEAR RETURN

OTHER SYMBOLS

	DIFFUSER THROW (NO AIRFLOW IN SHADED DIRECTION)		
	MANUAL BALANCE DAMPER		FIRE & SMOKE FIRE=FD FIRE/SMOKE=FSD SMOKE=SMD
S	SPLITTER DAMPER		
BDD	BACK DRAFT DAMPER	M	CONTROL DAMPER
V	VAV BOX	SD	DUCT SMOKE DETECTOR
	DUCT COIL	T	THERMOSTAT/SENSOR
	FLEXIBLE CONNECTION	CO2	CARBON DIOXIDE SENSOR
	RECTANGULAR TO ROUND TRANSITION	R 12	DUCT RISE (R) OR DROP (D) IN DIRECTION OF ARROW. NUMBER INDICATES INCHES OF RISE/DROP (WHEN SHOWN).
TS	TEMPERATURE SENSOR	D 12	

HVAC PIPING ABBREVIATIONS AND SYMBOLS

CHWS(R)	CHILLED WATER SUPPLY (RETURN)	HWS(R)	HEATING WATER SUPPLY (RETURN)
CWS(R)	CONDENSER WATER SUPPLY (RETURN)	CW	CITY WATER
DR	DRAIN	PD	PUMP DISCHARGE
BFP	BACKFLOW PREVENTOR		
GPM	GALLONS/MINUTE		

	BALL VALVE	M	ELECTRIC ACTUATOR
	BUTTERFLY VALVE	S	SOLENOID ACTUATOR
	PLUG VALVE		PNEUMATIC ACTUATOR
	GATE VALVE		CONCENTRIC REDUCER
	GLOBE VALVE		ECCENTRIC REDUCER
	BALANCING VALVE		FLOW LIMITING VALVE
	PRESSURE REDUCING VALVE		PUMP
	SAFETY RELIEF VALVE		PRESSURE GAUGE
	CHECK VALVE		THERMOMETER
	STRAINER W/ BLOWDOWN VALVE	A	MANUAL AIR VENT (A=AUTO VENT)
TDV	TRIPLE-DUTY VALVE	TW	THERMOWELL
	3-WAY VALVE		PIPE ANCHOR
	UNION		PIPE GUIDE
FC	FLEXIBLE CONNECTION	EJ	EXPANSION JOINT
	ELBOW DOWN		ELBOW UP
	BOTTOM CONNECTION		TOP CONNECTION
CV	CONTROL VALVE & TRIM	P 1/4	PIPE PITCHED DOWN 1 IN DIRECTION OF ARROW. NUMBER INDICATES INCHES OF PITCH PER FOOT (WHEN SHOWN).

GENERAL DRAWING ABBREVIATIONS AND SYMBOLS

W/	WITH	W/O	WITHOUT
TYP	TYIPICAL	NIC	NOT IN CONTRACT
EX	EXISTING	KW	KILOWATT
AD	ACCESS DOOR	HP	HORSEPOWER
AFF	ABOVE FINISH FLOOR	BHP	BRAKE HORSE POWER
DWG	DRAWING	VSD	VARIABLE SPEED DRIVE
DN	DOWN	ODP	OPEN DRIP PROOF
		TEFC	TOTALLY ENCLOSED FAN-COOLED

	NEW WORK
	EXISTING TO REMAIN
	TO BE DEMOLISHED
	POINT OF NEW CONNECTION TO EXISTING
	POINT OF DISCONNECTION
1	DRAWING NOTE
	REVISION SYMBOL
A	SECTION DRAWING SYMBOL
	CONTINUATION SYMBOL
OR S.F.	SQUARE FOOT

MECHANICAL DRAWING LIST

M-01	–	MECHANICAL SPECIFICATIONS, LEGEND AND NOTES
M-02	–	MECHANICAL DETAILS AND CALCULATIONS
M-03	–	MECHANICAL SCHEDULES
M-100	–	MECHANICAL FLOOR PLAN AND ROOF PLAN
M-101	–	MECHANICAL EXHAUST PLAN

MECHANICAL SPECIFICATIONS

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL CODES, LAWS, RULES, AND REGULATIONS OF ALL NATIONAL, COUNTY, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION OVER THE PREMISES. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE 2018 INTERNATIONAL MECHANICAL CODE, THE 2018 INTERNATIONAL PLUMBING CODE, THE 2018 INTERNATIONAL BUILDING CODE, THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE, AND THE 2017 NATIONAL ELECTRICAL CODE, ALL WITH LOCAL AMENDMENTS.
2. BEFORE BEGINNING WORK AND PRIOR TO PLACING ORDERS, SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS AND/OR LITERATURE IN PDF FORMAT ON ALL EQUIPMENT, AIR DEVICES, DUCTWORK, DUCT ACCESSORIES, PIPING, PIPING SPECIALTIES, AND INSULATION TO BE FURNISHED. BOOKMARK THE PDF FOR EACH SECTION.
3. GUARANTEE WORK TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AS DETERMINED BY THE ARCHITECT. IF IT IS LONGER, THE GUARANTEE PERIOD SPECIFIED BY THE ARCHITECT SHALL TAKE PRECEDENCE. ANY MATERIAL, EQUIPMENT, OR WORKMANSHIP WHICH PROVES DEFECTIVE WITHIN THE GUARANTEE PERIOD SHALL BE PROMPTLY REPAIRED OR REPLACED AT NO COST TO THE OWNER. PROVIDE NOTARIZED COPIES OF THE GUARANTEE WITH THE O&M MANUALS.
4. FURNISH FIVE HARD COPIES OF OPERATING AND MAINTENANCE MANUALS. MANUALS SHALL BE LOOSE-LEAF 8-1/2" x 11" FORMAT, BOUND IN THREE-RING BINDERS WITH IDENTIFYING TABS SEPARATING SECTIONS. O&M MANUALS SHALL ALSO BE SUBMITTED IN PDF FORMAT WITH BOOKMARKED SECTIONS AND SAVED ON A USB DRIVE. THE USB DRIVE SHALL BE SUBMITTED TO THE OWNER WITH THE HARD COPIES. EACH O&M MANUAL SHALL CONTAIN MANUFACTURER'S SPARE PARTS LIST, CARE, OPERATION, AND INSTALLATION INSTRUCTIONS. PROVIDE A SEQUENCE OF OPERATION AND A PREVENTATIVE MAINTENANCE SCHEDULE IDENTIFYING DAILY, WEEKLY, MONTHLY AND SEASONAL MAINTENANCE PROCEDURES AS REQUIRED. CONTRACTOR SHALL PROVIDE THIS SEQUENCE OF OPERATION AND SCHEDULE IF NOT GIVEN BY THE MANUFACTURER. PROVIDE A LIST OF SUGGESTED SUPPLIERS WITH NAMES, ADDRESSES, AND PHONE NUMBERS FOR EACH PRODUCT OR PRODUCT GROUP. O&M MANUALS SHALL BE SUBMITTED IN PDF FORMAT TO THE ARCHITECT FOR ENGINEER'S REVIEW BEFORE THE HARD COPIES AND USB DRIVE ARE SUBMITTED TO THE OWNER.
5. MAINTAIN A CLEAN, UNDAMAGED SET OF BLUELINE OR BLACKLINE CONTRACT DRAWINGS ON SITE. RECORD ALL CHANGES FROM CONTRACT DRAWINGS INCLUDING "FOUND" CONDITIONS, ADDENDA, OR OTHER INSTRUCTIONS ISSUED BY THE ARCHITECT AND SUBMIT TO ARCHITECT AS "RECORD DRAWINGS" AT CLOSE OF PROJECT.
6. CONDENSATE PIPING SHALL BE TYPE "M" COPPER WITH PLUGGED TEES FOR CLEANOUTS. MALE THREADS ON PLUGS SHALL BE WRAPPED WITH TEFLON TAPE PRIOR TO THREADING INTO TEES. JOINTS IN ABOVE GRADE CONDENSATE PIPING SHALL BE SOLDERED WITH LEAD FREE 95-5 SOLDER. JOINTS IN BELOW GRADE CONDENSATE PIPING SHALL BE BRAZED USING A BRAZING COMPOUND WITH A MINIMUM OF 15% SILVER. ABOVE GRADE CONDENSATE PIPING SHALL BE INSULATED WITH 3/4" ARMAFLEX.
7. ALL METAL DUCTWORK SHALL BE CONSTRUCTED OF NEW GALVANIZED STEEL ASTM A 527, G90 OF LOCK-FORMING QUALITY. ALL DUCT JOINTS SHALL BE SEALED WITH HARDCAST VG-181 DUCT SEALANT. MATERIAL USED FOR JOINING DUCTS SHALL BE UL 181 LISTED.
8. ALL CONSTANT VOLUME SUPPLY AND RETURN DUCTWORK SHALL BE CONSIDERED LOW PRESSURE DUCTWORK. LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED PER SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FOR THE 1" PRESSURE CLASS.
9. ALL EXHAUST DUCTWORK SHALL BE STAINLESS STEEL CONSTRUCTED PER SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FOR THE NEGATIVE AND/OR POSITIVE 6" PRESSURE CLASS.
10. DUCTWORK CONVEYING WATER VAPOR OR IN HUMID AREAS SHALL BE 3003-H14 ALUMINUM ALLOY OR 316 STAINLESS STEEL.
11. CAULK WATERTIGHT ALL DUCTWORK EXPOSED TO THE WEATHER WITH DAP "CMC" EXTERIOR DUCT SEALANT, HARDCAST VERSA GRIP "VG-102", OR DESIGN POLYMERICS DP 1010.
12. LOW PRESSURE SUPPLY AND RETURN DUCTWORK INSIDE THE BUILDING ENVELOPE SHALL BE LINED WITH 1-1/2" ACOUSTICAL DUCT LINER INSULATION. DUCT LINER INSULATION INSIDE THE BUILDING ENVELOPE SHALL HAVE A MINIMUM INSTALLED R-VALUE OF 6.0.
13. THE SIZES SHOWN ON PLANS FOR INTERNALLY LINED DUCTS ARE ACTUAL OUTSIDE SHEET METAL DIMENSIONS.
14. PROVIDE FLEX CONNECTIONS AT UNIT INLET AND OUTLET.
15. FLEXIBLE DUCT SHALL BE THERMAFLEX M-KC CLASS 1 DUCT WITH BI-DIRECTIONAL REINFORCED METALIZED VAPOR BARRIER WITH TRIPLE PLY STAND-UP SEAM AND R-6.0 INSULATION.
16. ALL DUCT WORK SHALL BE HUNG WITH SHEET METAL STRAP HANGERS PER LATEST SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FASTENED TO STRUCTURE ABOVE.
17. SYSTEMS SHALL BE BALANCED TO APPROXIMATE CFM'S SHOWN AND TO THE SATISFACTION OF THE OWNER. BALANCE SHALL BE PERFORMED BY AN INDEPENDENT BALANCING CONTRACTOR WHO IS A MEMBER OF AABC. ALL TAB WORK SHALL BE GUARANTEED FOR A PERIOD OF SIXTY DAYS. TAB CONTRACTOR SHALL MAKE ADJUSTMENTS DURING THIS PERIOD FOR COMFORT LEVEL ADJUSTMENT, AT DIRECTION OF OWNER. FINAL REPORT SHALL BE SUBMITTED TO THE ENGINEER AND CITY INSPECTOR.
18. PROVIDE COILED PLASTIC PIPE MARKERS FOR PIPE IDENTIFICATION OF ALL EXPOSED PIPING OR PIPING ABOVE ACCESSIBLE CEILINGS. MARKERS USED ON OUTDOOR PIPING SHALL BE APPROVED FOR OUTDOOR USE.
19. PROVIDE 2" X 3" OR LARGER LAMINATED BLACK PLASTIC NAMEPLATES WITH ONE-HALF INCH ENGRAVED WHITE NUMBERS AND LETTERS FOR EACH PIECE OF EQUIPMENT. NAMEPLATE MATERIALS MOUNTED OUTSIDE SHALL BE RESISTANT TO UV DEGRADATION.
20. PROVIDE FIRE DAMPER WITH DUCT ACCESS DOOR WHERE DUCTS PENETRATE FIRE-RESISTANCE-RATED ASSEMBLIES. PROVIDE SPECIAL INSPECTIONS FOR ALL FIRE AND SMOKE DAMPERS AS REQUIRED BY CITY OF PHOENIX. GRILLES MOUNTED ON FIRE-RESISTANCE-RATED WALLS SHALL BE PROVIDED WITH 'OUT OF PARTITION' FIRE DAMPERS EQUAL TO POTTORFF VFD-10-OP. (6)

EXISTING CONDITIONS NOTE

EVERY EFFORT HAS BEEN MADE TO PROVIDE ACCURATE INFORMATION REGARDING EXISTING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS ABOVE THE CEILING PRIOR TO BIDDING THE PROJECT. ANY CONFLICTS DISCOVERED BY MECHANICAL CONTRACTOR DURING THE PRE-BID PROCESS WHICH MAY EFFECT THE SCOPE OR COST SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO SUBMITTING A BID. THE SUBMISSION OF A BID SHALL INDICATE MECHANICAL CONTRACTOR COMPLETELY UNDERSTANDS THESE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS.

(5) ENTIRE SHEET

1 MECHANICAL SPECIFICATIONS, LEGEND, AND NOTES
SCALE N.T.S.

CM Associates Engineers
Mechanical ■ Electrical Fire Protection
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

14583 W. Windsor Ave.
Goodyear, AZ 85395
Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH STATE OF ARIZONA U.S.A. Expires 3/31/2026

CS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

(5)	TENANT COORDINATIONS 10/9/24
(6)	COORDINATION CHANGES 11/18/24

DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: M-01

Air System Sizing Summary for FC-1 / CU-1
(In Alternative: CS CLEAN)

Project: 24102 CS Clean — 10/04/2024
Prepared by: CM Associates Engineers, PLLC — 1:29 PM

Air System Information

Air System Name	FC-1 / CU-1	Number of zones	1
Equipment Class	SPLT AHU	Floor Area	111.5 sqft
Air System Type	SZCAV	Location	Phoenix Sky Harbor Intl, AZ, USA

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates
Sizing Data	Calculated	Space CFM Sizing	Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	0.6	Tons	Peak coil load occurs at	July 6:00	
Total coil load	6.8	MBH	OA DB / WB	94.6 / 67.1	F
Sensible coil load	6.7	MBH	Entering DB / WB	74.5 / 59.2	F
Coil CFM at peak load	322	CFM	Leaving DB / WB	54.8 / 51.4	F
Sum of peak zone CFM	322	CFM	Resulting RH	41	%
Sensible heat ratio	0.995		Design supply temp.	57.0	F
CFM/Ton	572.5		Zone T-stat Check	1 of 1	OK
sqft/Ton	198.0		Max zone temperature deviation	0.0	F
BTU/(hr sqft)	60.6				
Water flow @ 10.0 F rise	N/A				

Supply Fan Sizing Data

Design CFM	322	CFM	Fan motor BHP	0.22	BHP
Design CFM/sqft	2.89	CFM/sqft	Fan motor kW	0.18	kW
			Fan total static	2.50	in wg

Outdoor Ventilation Air Data

Design airflow CFM	0	CFM	CFM/person	0.00	CFM/person
CFM/sqft	0.00	CFM/sqft			

Hourly Analysis Program 6.2 — Page 1 of 1

Air System Sizing Summary for AC-10
(In Alternative: CS CLEAN)

Project: 24102 CS Clean — 10/04/2024
Prepared by: CM Associates Engineers, PLLC — 12:11 PM

Air System Information

Air System Name	AC-10	Number of zones	1
Equipment Class	PKG ROOF	Floor Area	1405.4 sqft
Air System Type	SZCAV	Location	Phoenix Sky Harbor Intl, AZ, USA

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates
Sizing Data	User-Modified	Space CFM Sizing	Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	4.4	Tons	Peak coil load occurs at	July 6:00	
Total coil load	52.6	MBH	OA DB / WB	94.6 / 67.1	F
Sensible coil load	50.8	MBH	Entering DB / WB	77.5 / 62.2	F
Coil CFM at peak load	2000	CFM	Leaving DB / WB	53.4 / 52.9	F
Sum of peak zone CFM	2000	CFM	Resulting RH	47	%
Sensible heat ratio	0.967		Design supply temp.	57.0	F
CFM/Ton	456.4		Zone T-stat Check	1 of 1	OK
sqft/Ton	320.7		Max zone temperature deviation	0.0	F
BTU/(hr sqft)	37.4				
Water flow @ 10.0 F rise	N/A				

Central Heating Coil Sizing Data

Max coil load	10.9	MBH	Load occurs at	Design Heating	
Coil CFM at Design Heating	2000	CFM	BTU/(hr sqft)	7.7	
Max coil CFM	2000	CFM	Ent. DB / Lvg DB	67.9 / 73.1	F
Water flow @ 20.0 F drop	N/A				

Supply Fan Sizing Data

Design CFM	2000	CFM	Fan motor BHP	1.37	BHP
Design CFM/sqft	1.42	CFM/sqft	Fan motor kW	1.09	kW
			Fan total static	2.50	in wg

Outdoor Ventilation Air Data

Design airflow CFM	250	CFM	CFM/person	62.50	CFM/person
CFM/sqft	0.18	CFM/sqft			

Hourly Analysis Program 6.2 — Page 1 of 2

Air System Sizing Summary for AC-11
(In Alternative: CS CLEAN)

Project: 24102 CS Clean — 10/04/2024
Prepared by: CM Associates Engineers, PLLC — 12:11 PM

Air System Information

Air System Name	AC-11	Number of zones	1
Equipment Class	PKG ROOF	Floor Area	2005.0 sqft
Air System Type	SZCAV	Location	Phoenix Sky Harbor Intl, AZ, USA

Sizing Calculation Information

Calculation Months	Jan to Dec	Zone CFM Sizing	Sum of space airflow rates
Sizing Data	User-Modified	Space CFM Sizing	Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	5.0	Tons	Peak coil load occurs at	July 14:00	
Total coil load	60.1	MBH	OA DB / WB	115.0 / 73.0	F
Sensible coil load	60.1	MBH	Entering DB / WB	90.4 / 66.2	F
Coil CFM at peak load	2000	CFM	Leaving DB / WB	61.9 / 56.3	F
Sum of peak zone CFM	2000	CFM	Resulting RH	48	%
Sensible heat ratio	1.000		Design supply temp.	57.0	F
CFM/Ton	399.1		Zone T-stat Check	1 of 1	OK
sqft/Ton	400.1		Max zone temperature deviation	0.0	F
BTU/(hr sqft)	30.0				
Water flow @ 10.0 F rise	N/A				

Central Heating Coil Sizing Data

Max coil load	25.9	MBH	Load occurs at	Design Heating	
Coil CFM at Design Heating	2000	CFM	BTU/(hr sqft)	12.9	
Max coil CFM	2000	CFM	Ent. DB / Lvg DB	58.9 / 71.3	F
Water flow @ 20.0 F drop	N/A				

Supply Fan Sizing Data

Design CFM	2000	CFM	Fan motor BHP	1.37	BHP
Design CFM/sqft	1.00	CFM/sqft	Fan motor kW	1.09	kW
			Fan total static	2.50	in wg

Outdoor Ventilation Air Data

Design airflow CFM	800	CFM	CFM/person	133.33	CFM/person
CFM/sqft	0.40	CFM/sqft			

Hourly Analysis Program 6.2 — Page 2 of 2

COMcheck Software Version COMcheckWeb
Mechanical Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	
Location:	Phoenix, Arizona
Climate Zone:	2b
Project Type:	Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
2453 W Parkside Ln Phoenix, Arizona 85203	Jason Dugay CS Clean Solutions Inc. jason.dugay@csclean-usa.com	Mik Mikulich CM Associates Engineers, PLLC info@cmmep.com

Mechanical Systems List

Quantity	System Type & Description
1	AC-10, 11 (Single Zone): Single Package Heat Pump Heating Mode: Capacity = 59 kBtu/h, Proposed Efficiency = 8.00 HSPF, Required Efficiency = 8.00 HSPF Cooling Mode: Capacity = 59 kBtu/h, Proposed Efficiency = 16.00 SEER, Required Efficiency = 15.40 SEER Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Mik Mikulich, Principal Engineer — Name - Title
Mik Mikulich — Signature
10/10/2024 — Date

Project Title:
Data filename:
Report date: 10/14/24
Page 1 of 9

Building:	CS CLEAN					
System Tag/Name:	AC-10					
Operating Condition Description:	HEATING					
Units (select from pull-down list)	IP					
Inputs for System	**Name**	**Units**	**w/o diversity System**	**Diversity**	**w/ diversity System**	**Check Figures**
Floor area served by system	As	sf	1,274		Default entry has been overridden.	
Population of area served by system	*Ps*	P	2	*D* 100%	2	Default entry has been overridden. 1.9 P/1000 sf
Design primary supply fan airflow rate	Vpsd	cfm	2,000	100%	2,000	Default entry has been overridden. 1.57 cfm/sf
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.12			Default entry has been overridden. 0.12 ave cfm/sf
OA req'd per person for system area (Weighted average)	Rps	cfm/p	7.6			Default entry has been overridden. 7.63 ave cfm/p
Percent increase in Vbz over minimum required			0%			
Does system have Outdoor Air Economizer		Select from pull-down list			No	
Outdoor air intake provided for system	OA	cfm	250			

Inputs for Potentially Critical zones			Potentially Critical Zones			
Zone Name			PASS THRU RM	COLUMN CLEAN/PASS THRU RM	*WASTE STORAGE RM*	Totals/averages
Zone Tag		*Zone title turns purple italic for critical zone(s)*	116	117	118	
Occupancy Category			Corridors	Shipping/receiving	Occupiable storage rooms for liquids or gels	
		Select from pull-down list:				
Floor Area of zone	*Az*	sf	47	646	581	1,274 total sf
Design population of zone	*Pz*	P (default value listed; may be overridden)	0	1.292	1.162	2.454 total P
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm	50	1,150	800	2,000 total cfm
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		Select from pull-down list or leave blank if N/A:				
Frac. of local recirc. air that is representative of system RA	*Er*					1.00 average
Inputs for Operating Condition Analyzed						
Percent of total design airflow rate at conditioned analyzed	Ds	% May need to manually edit Ds	100%	100%	100%	100% 100% average
Air distribution type at conditioned analyzed		Select from pull-down list:		CSCRH	CSCRH	CSCRH
Zone air distribution effectiveness at conditioned analyzed	*Ez*			0.80	0.80	0.80 0.80 average
Primary air fraction of supply air at conditioned analyzed	*Ep*					1.00 average
Results						
System Ventilation Efficiency	*Ev*		1.00			
Outdoor air intake required for system	*Vot*	cfm	169			
Outdoor air per unit floor area	*Vot*/As	cfm/sf	0.13			
Outdoor air per person served by system (including diversity)	*Vot*/Ps	cfm/p	68.8			
Outdoor air as a % of design primary supply air	Ypd	%	8%			

Building:	CS CLEAN					
System Tag/Name:	AC-11					
Operating Condition Description:	HEATING					
Units (select from pull-down list)	IP					
Inputs for System	**Name**	**Units**	**w/o diversity System**	**Diversity**	**w/ diversity System**	**Check Figures**
Floor area served by system	As	sf	1,923		Default entry has been overridden.	
Population of area served by system	*Ps*	P	3	*D* 100%	3	Default entry has been overridden. 1.4 P/1000 sf
Design primary supply fan airflow rate	Vpsd	cfm	2,000	100%	2,000	Default entry has been overridden. 1.04 cfm/sf
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.10			Default entry has been overridden. 0.10 ave cfm/sf
OA req'd per person for system area (Weighted average)	Rps	cfm/p	8.0			Default entry has been overridden. 8.00 ave cfm/p
Percent increase in Vbz over minimum required			0%			
Does system have Outdoor Air Economizer		Select from pull-down list			No	
Outdoor air intake provided for system	OA	cfm	800			

Inputs for Potentially Critical zones			Potentially Critical Zones			
Zone Name			FILL RM	*PCS AREA*	CANISTER DECON RM	Totals/averages
Zone Tag		*Zone title turns purple italic for critical zone(s)*	113	114	115	
Occupancy Category			Corridors	Shipping/receiving	Occupiable storage rooms for liquids or gels	
		Select from pull-down list:				
Floor Area of zone	*Az*	sf	534	834	555	1,923 total sf
Design population of zone	*Pz*	P (default value listed; may be overridden)	0	1.668	1.11	2.778 total P
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm	400	800	800	2,000 total cfm
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		Select from pull-down list or leave blank if N/A:				
Frac. of local recirc. air that is representative of system RA	*Er*					1.00 average
Inputs for Operating Condition Analyzed						
Percent of total design airflow rate at conditioned analyzed	Ds	% May need to manually edit Ds	100%	100%	100%	100% 100% average
Air distribution type at conditioned analyzed		Select from pull-down list:		CSCRH	CSCRH	CSCRH
Zone air distribution effectiveness at conditioned analyzed	*Ez*			0.80	0.80	0.80 0.80 average
Primary air fraction of supply air at conditioned analyzed	*Ep*					1.00 average
Results						
System Ventilation Efficiency	*Ev*		0.93			
Outdoor air intake required for system	*Vot*	cfm	238			
Outdoor air per unit floor area	*Vot*/As	cfm/sf	0.12			
Outdoor air per person served by system (including diversity)	*Vot*/Ps	cfm/p	85.7			
Outdoor air as a % of design primary supply air	Ypd	%	12%			

1 MECHANICAL DETAILS AND CALCULATIONS
SCALE N.T.S.

ENTIRE SHEET

14583 W. Windsor Ave.
Goodyear, AZ 85395
Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH ARIZONA U.S.A. Expires 3/31/2026

CS CLEAN
2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

5	TENANT COORDINATIONS 10/9/24

DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: M-02

CM ASSOCIATES ENGINEERS
MECHANICAL ● ELECTRICAL FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

HVAC - PACKAGED - HEAT PUMP

RTU #	Area Served	Manuf.	Model	Cooling Output	Unit Type	Max Outside Air (CFM)	Volts Phase	MCA	MOCP	WT (Lbs.)
AC-10, AC-11	Process Area	Daikin	DRH060	5 Ton	Heat Pump	AC-10: 200 AC-11: 800	208/3/60	30.7	45	650

NOTE: ALL HVAC UNITS TO HAVE SMOKE DETECTORS THAT WILL AUTOMATICALLY SHUT DOWN UNITS.

HVAC - DUCTLESS SPLIT-SYSTEM COOLING ONLY

FC/CU #	Area Served	Manuf.	Model (indoor / outdoor)	Cooling Output	Unit Type	CFM	Volts Phase	MCA	MOCP	WT (Indoor / Outdoor)
FC-1 / CU-1	ELEC RM	Trane / Mitsubishi	TPKA0A0121LA10A / TRUYA0121KA70NA	1 Ton	Cooling Only	385	208/1/60	11	28	30 / 100

NOTE: UNIT COMPLETE WITH LOW AMBIENT CONTROL, MICROPROCESSOR CONTROLLER, WIRED REMOTE CONTROLLER, AND 115V LITTLE GIANT CONDENSATE PUMP.

HVAC - EXHAUST FAN

EF #	Area Served	Manuf.	Model	Unit Type	CFM	ESP	Volts Phase	Motor	FLA	WT
EF-1	CANISTER RM'S	NY BLOWER	2610	PRESSURE BLOWER BELT-DRIVE	2300	6"	208/3/60	5 HP	-	125
EF-2	COMPRESSOR RM	COOK	GC-642	CEILING -MOUNTED DIRECT-DRIVE	400	0.5"	115/1/60	135 W	1.9	40

NOTE:
1. EF-1 COMPLETE WITH INVERTER-DUTY, PREMIUM EFFICIENCY, TEFC MOTOR, SPRING VIBRATION ISOLATORS. ENTIRE EXHAUST FAN SHALL BE WEATHERPROOF.
2. EF-2 COMPLETE WITH FAN SPEED CONTROLLER, GRAVITY BACK-DRAFT DAMPER, HANGING VIBRATION ISOLATORS, AND NEMA 1 DISCONNECT.

EXISTING PACKAGED HEAT PUMP SCHEDULE

RTU #	Area Served	Cooling Output	Unit Type	Max Outside Air (CFM)
AC-1 TO AC-4, AC-7, AC-8	Industrial Area Interior	5 Ton	Heat Pump	200
AC-5 TO AC-6	Industrial Area Interior	3 Ton	Heat Pump	150
AC-9	Industrial Area Interior	4 Ton	Heat Pump	75

AIR DEVICE SCHEDULE

TAG	MANUFACTURER	MODEL	REMARKS
CD	PRICE	SMD	36 T-BAR FRAME AND ROUND NECK
RG	PRICE	80	
EG	PRICE	80	PROVIDE FILTER FRAME WHERE INDICATED
EGA	PRICE	530	
TG	PRICE	STG	

ENTIRE SHEET

1 MECHANICAL SPECIFICATIONS
SCALE N.T.S.

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH DATE SIGNED 1/31/2023 ARIZONA U.S.A. Expires 3/31/2026

CS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

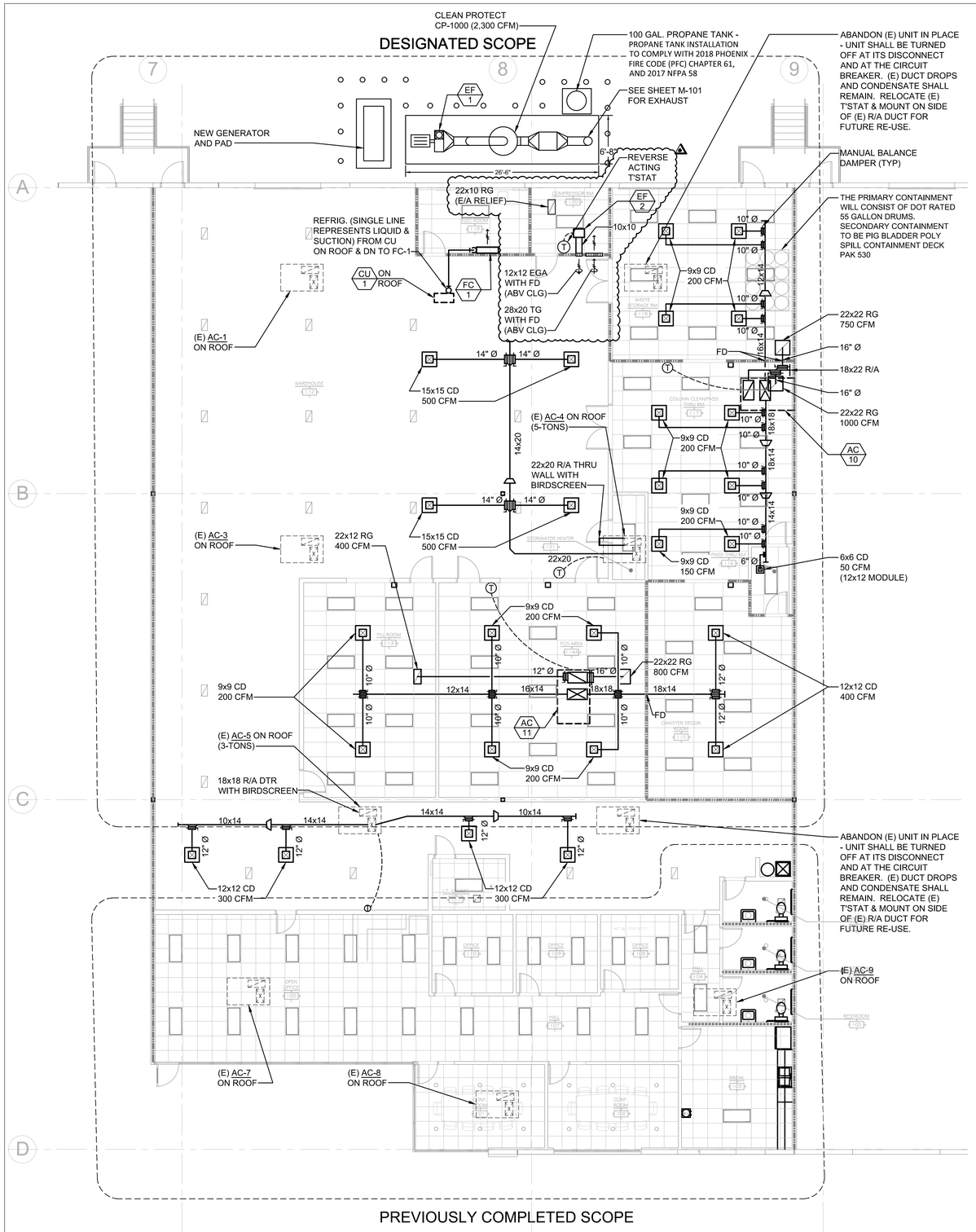
REVISIONS:

5	TENANT COORDINATIONS 10/9/24
6	COORDINATION CHANGES 11/18/24

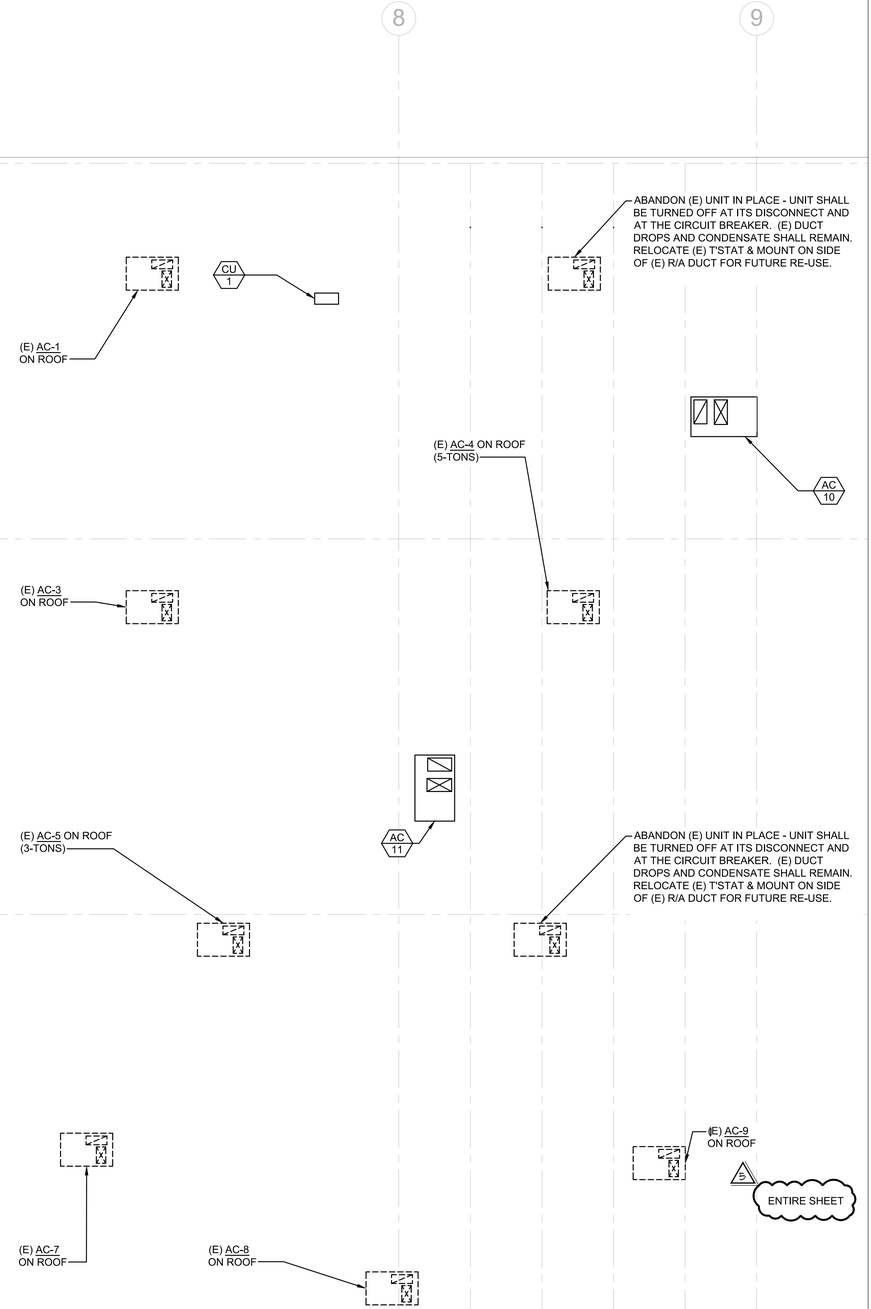
DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: M-03

CM ASSOCIATES ENGINEERS
MECHANICAL ■ ELECTRICAL FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102



1 MECHANICAL PLAN - FIRST FLOOR
SCALE 1/8"=1'-0"



2 MECHANICAL PLAN - ROOF
SCALE 1/8"=1'-0"

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH ARIZONA U.S.A. Expires 3/31/2026

CS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

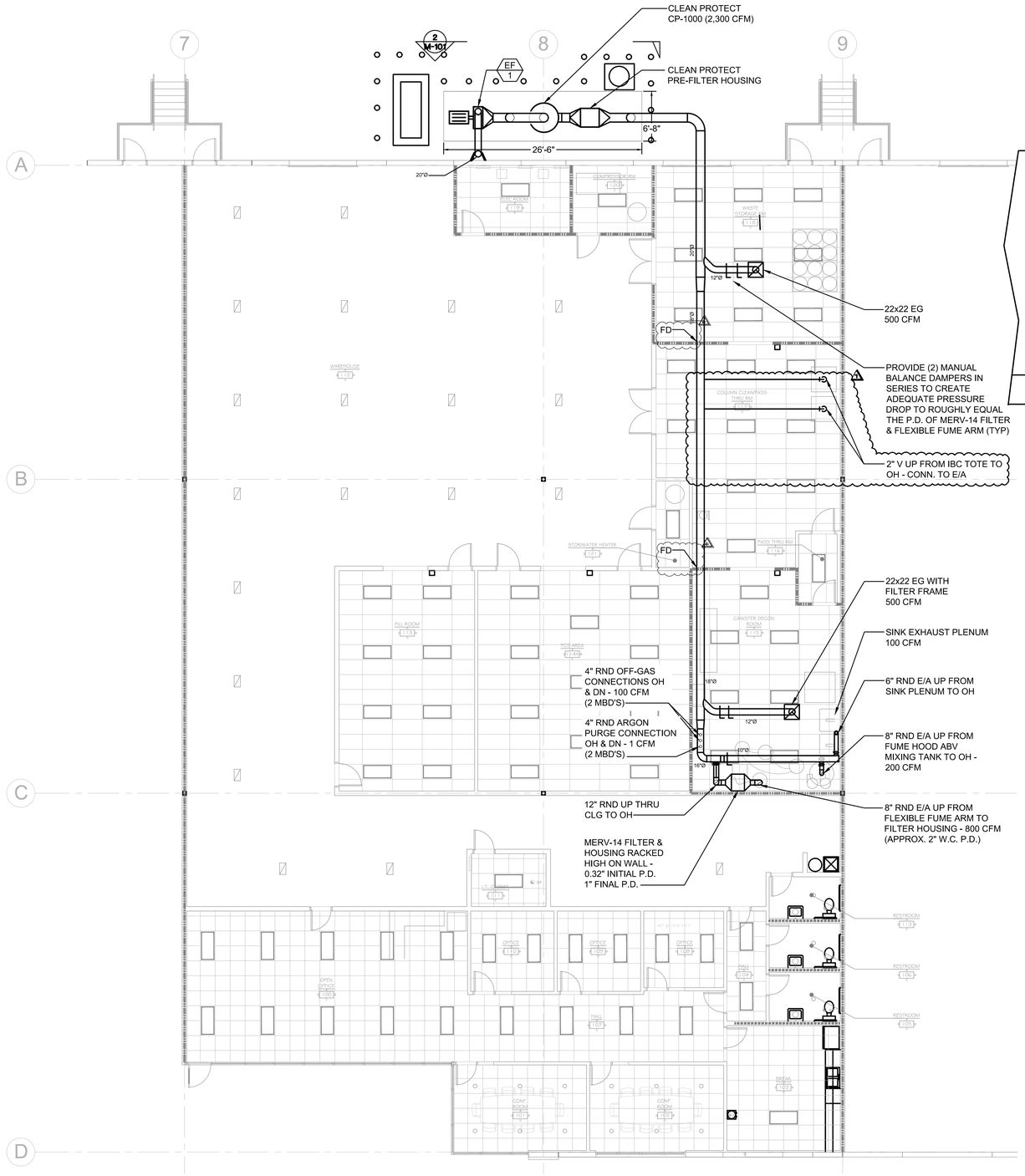
REVISIONS:

4	NOTE PROPANE TANK
5	CONTAINMENT NOTE
5	TENANT COORDINATIONS 10/9/24
6	COORDINATION CHANGES 11/18/24

DATE: 1/31/23
ISSUED FOR: PERMIT

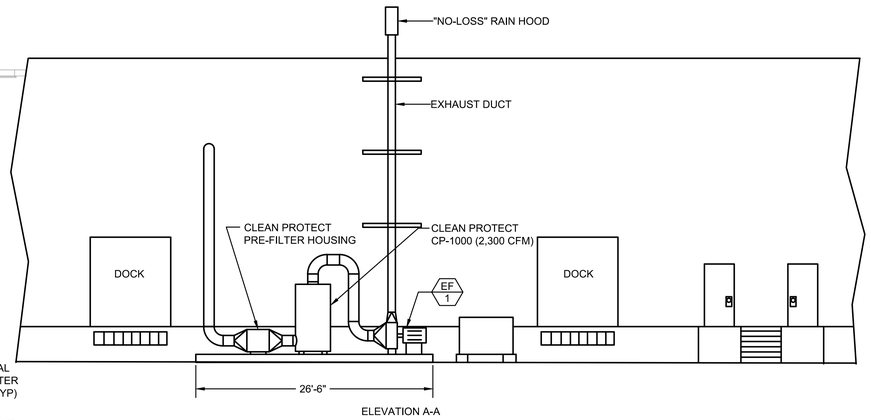
SHEET: M-100

CM Associates Engineers
Mechanical ● Electrical Fire Protection
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102



1 LOCAL EXHAUST - FIRST FLOOR

SCALE 1/8"=1'-0"



ELEVATION A-A

2 SECTION A-A

SCALE 1/8"=1'-0"

ENTIRE SHEET

CM ASSOCIATES ENGINEERS
MECHANICAL ■ ELECTRICAL
FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

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Fax 623-535-5546

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42007
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M. MIKULICH
ARIZONA U.S.A.
Expires 3/31/2026

CS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

5	TENANT COORDINATIONS 10/9/24
4	COORDINATION CHANGES 11/18/24
3	OWNER CHANGES 12/11/24

DATE: 1/31/23
ISSUED FOR: PERMIT

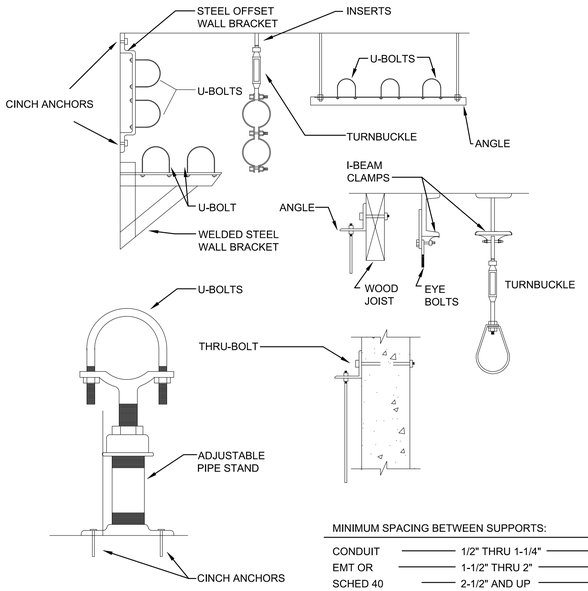
SHEET: M-101

SYMBOL LIST

PLAN SYMBOL	DESCRIPTION
SAN	SANITARY SEWER PIPING
W	WATER MAIN
	VENT PIPING
G	GAS PIPING
	(SOV) 1/4 TURN BALL VALVE
	OS&Y GATE VALVE
	CHECK VALVE
	DOUBLE CHECK VALVE
	GAS COCK
	BALANCING VALVE
	PRESSURE REDUCING VALVE
	UNION
	BACKFLOW PREVENTER
	CLEANOUT DECK PLATE
	CLEANOUT WALL PLATE
	WATER HAMMER ARRESTER
	TRAP PRIMER
BIB	FROST PROOF WALL HYDRANT/HOSE BIBB
	PIPE SLEEVE
	IN-LINE PUMP
	QUICK DISCONNECT AIR COUPLING
	FLOOR DRAIN
	SOLENOID VALVE
#	KEY NOTE DESIGNATION
	CONNECT NEW W/EXISTING

NOTE:
SYMBOL LIST SHOWN ABOVE IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

PIPING	LINE TYPE
COLD WATER	
HOT WATER	
SANITARY	
GAS	
EXISTING COLD WATER	
EXISTING HOT WATER	
EXISTING SANITARY	
EXISTING GAS	

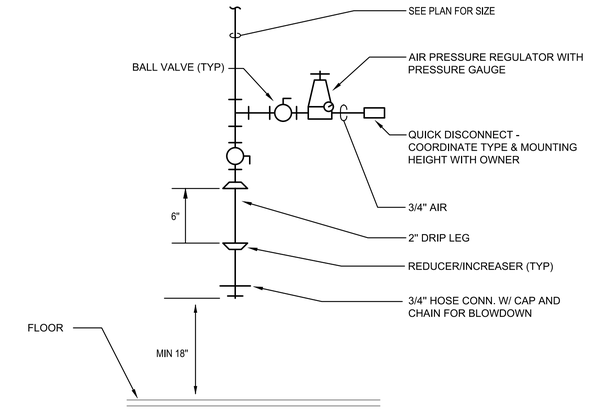


MINIMUM SPACING BETWEEN SUPPORTS:

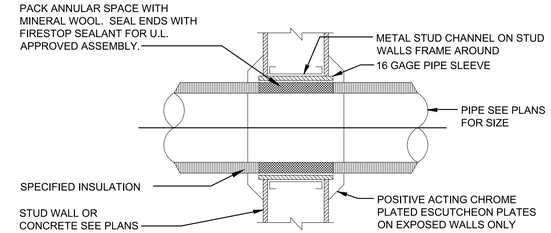
CONDUIT	1/2" THRU 1-1/4"	3'
EMT OR	1-1/2" THRU 2"	8'
SCHED 40	2-1/2" AND UP	10'

+ 2' FROM EACH TURN

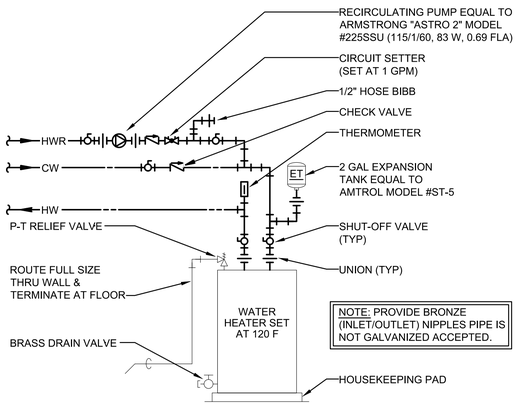
TYPICAL PIPE SUPPORT DETAIL
SCALE: N.T.S.



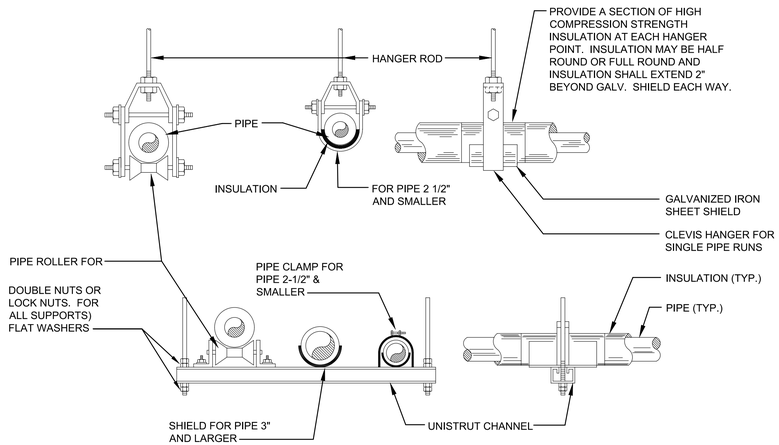
COMPRESSED AIR DROP DETAIL
SCALE: N.T.S.



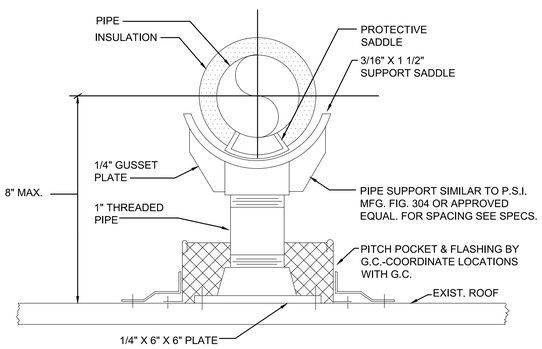
PIPE VENT THROUGH WALL DETAIL
SCALE: N.T.S.



ELECTRIC WATER HEATER PIPING DETAIL
SCALE: N.T.S.



GAS/WATER PIPING HANGER AND SUPPORT DETAIL
SCALE: N.T.S.



ROOF MOUNTED PIPE SUPPORT DETAIL
SCALE: N.T.S.

ENTIRE SHEET

1 PLUMBING - DETAILS
SCALE N.T.S.

CM ASSOCIATES ENGINEERS
MECHANICAL ● ELECTRICAL FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical)
CERTIFICATE NO.
42007
CLEMENT
M. MIKULICH
STATE OF ARIZONA U.S.A.
Expires 3/31/2026

CS CLEANERS
2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

4	REVIEW COMMENTS 8/30/23
5	TENANT COORDINATIONS 10/9/24

DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: P-01

EXISTING CONDITIONS NOTE

- EVERY EFFORT HAS BEEN MADE TO PROVIDE ACCURATE INFORMATION REGARDING EXISTING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS ABOVE THE CEILING PRIOR TO BIDDING THE PROJECT. ANY CONFLICTS DISCOVERED BY PLUMBING CONTRACTOR DURING THE PRE-BID PROCESS WHICH MAY EFFECT THE SCOPE OR COST SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO SUBMITTING A BID. THE SUBMISSION OF A BID SHALL INDICATE PLUMBING CONTRACTOR COMPLETELY UNDERSTANDS THESE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS.
- THE NEW SYSTEMS INDICATED ON THE DRAWINGS SHALL BE FULLY FURNISHED AND INSTALLED. ANY ITEMS INCIDENTAL TO THE COMPLETION OF THESE CONTRACT DOCUMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- PLUMBING CONTRACTOR SHALL COORDINATE ALL PATCHING AND REPAIRING WORK WITH THE GENERAL CONTRACTOR AND ARCHITECT.
- BEFORE BEGINNING WORK, PLUMBING CONTRACTOR SHALL VERIFY THAT THE WASTE PIPING BEING INSTALLED UNDER THIS SCOPE CAN CONNECT TO THE EXISTING WASTE PIPE INVERT. CONTRACTOR SHALL CONTACT THE ARCHITECT AND ENGINEER IMMEDIATELY IF THE EXISTING WASTE PIPE INVERT CANNOT BE MET.
- EXISTING "AS-BUILT" DOCUMENTS ARE NOT AVAILABLE AND SOME UNDERGROUND WASTE LINE LOCATIONS SHOWN ARE BASED ON ASSUMPTIONS ONLY. AS A SUGGESTION, OWNER SHOULD ARRANGE FOR THE CONTRACTOR TO IDENTIFY ALL EXISTING UNDER GROUND WASTE LINES TO VERIFY EXACT INVERTS, LOCATIONS AND ROUTINGS PRIOR TO BEGINNING INSTALLATION.

PLUMBING GENERAL NOTES

- COORDINATE ALL OVERHEAD PIPING WITH HVAC DUCTWORK AND WORK OF OTHER TRADES.
- OFFSET ALL NEW AND/OR EXISTING V.T.R.'S TO TERMINATE A MIN. OF 3'-0" FROM ALL VERTICAL SURFACES AND A MIN. OF 10'-0" FROM, OR AT LEAST 3'-0" ABOVE ALL OUTSIDE AIR INTAKES.
- PLUMBER TO VERIFY EXACT SIZE AND LOCATION OF ALL EXIST. PIPING AND TO VERIFY INVERTS TO ASSURE PROPER SLOPE MAY BE OBTAINED BEFORE BEGINNING WORK.
- RUN ALL WASTE LINES AT 2% SLOPE UNLESS NOTED OTHERWISE.
- ALL SLAB PENETRATIONS SHALL BE SEALED USING 3M FIRE BARRIER WATER TIGHT SEALANT 1003SL SELF-LEVELING FIRE STOP FOR FLOOR APPLICATIONS OR EQUIV. INSTALLED BY TRAINED AND CERTIFIED PERSONNEL.
- SAWCUT EXISTING CONCRETE SLAB AS REQUIRED FOR INSTALLATION AND CONNECTION OF U.G. PIPING TO EXISTING U.G. PIPING. BACKFILL AND PATCH CONCRETE SLAB TO MATCH EXISTING.
- CONTRACTOR TO FIELD VERIFY EXISTING ROUGH-IN DIMENSIONS, WHERE EXISTING FIXTURES ARE TO BE REPLACED, PROVIDE NEW ROUGH-INS AS REQUIRED.
- COORDINATE WITH AND REFER TO ARCHITECTURAL DOCUMENTS FOR ALL DEMOLITION WORK TO BE DONE. REMOVE ALL DOMESTIC WATER LINES NOT BEING RE-USED AND CAP AT ACTIVE MAIN. NO DEAD ENDS ARE ALLOWED.

PLUMBING SPECIFICATIONS

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL CODES, LAWS, RULES, AND REGULATIONS OF ALL NATIONAL, COUNTY, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION OVER THE PREMISES. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE 2018 INTERNATIONAL PLUMBING CODE, THE 2018 INTERNATIONAL BUILDING CODE, THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE, AND THE 2017 NATIONAL ELECTRICAL CODE, ALL WITH LOCAL AMENDMENTS
2. BEFORE BEGINNING WORK AND PRIOR TO PLACING ORDERS, SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS AND/OR LITERATURE IN PDF FORMAT ON ALL EQUIPMENT, FIXTURES, PIPING, PIPING SPECIALTIES, AND INSULATION TO BE FURNISHED. BOOKMARK THE PDF FOR EACH SECTION.
3. GUARANTEE WORK TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AS DETERMINED BY THE ARCHITECT. IF IT IS LONGER, THE GUARANTEE PERIOD SPECIFIED BY THE ARCHITECT SHALL TAKE PRECEDENCE. ANY MATERIAL, EQUIPMENT, OR WORKMANSHIP WHICH PROVES DEFECTIVE WITHIN THE GUARANTEE PERIOD SHALL BE PROMPTLY REPAIRED OR REPLACED AT NO COST TO THE OWNER. PROVIDE NOTARIZED COPIES OF THE GUARANTEE WITH THE O&M MANUALS.
4. FURNISH FIVE HARD COPIES OF OPERATING AND MAINTENANCE MANUALS. MANUALS SHALL BE LOOSE-LEAF 8-1/2" x 11" FORMAT, BOUND IN THREE-RING BINDERS WITH IDENTIFYING TABS SEPARATING SECTIONS. O&M MANUALS SHALL ALSO BE SUBMITTED IN PDF FORMAT WITH BOOKMARKED SECTIONS AND SAVED ON A USB DRIVE. THE USB DRIVE SHALL BE SUBMITTED TO THE OWNER WITH THE HARD COPIES. EACH O&M MANUAL SHALL CONTAIN MANUFACTURER'S SPARE PARTS LIST, CARE, OPERATION, AND INSTALLATION INSTRUCTIONS. PROVIDE A PREVENTATIVE MAINTENANCE SCHEDULE IDENTIFYING DAILY, WEEKLY, MONTHLY AND SEASONAL MAINTENANCE PROCEDURES AS REQUIRED. CONTRACTOR SHALL PROVIDE THIS SCHEDULE IF NOT GIVEN BY THE MANUFACTURER. PROVIDE A LIST OF SUGGESTED SUPPLIERS WITH NAMES, ADDRESSES, AND PHONE NUMBERS FOR EACH PRODUCT OR PRODUCT GROUP. O&M MANUALS SHALL BE SUBMITTED IN PDF FORMAT TO THE ARCHITECT FOR ENGINEER'S REVIEW BEFORE THE HARD COPIES AND USB DRIVE ARE SUBMITTED TO THE OWNER.
5. MAINTAIN A CLEAN, UNDAMAGED SET OF BLUELINE OR BLACKLINE CONTRACT DRAWINGS ON SITE. RECORD ALL CHANGES FROM CONTRACT DRAWINGS INCLUDING "FOUND" CONDITIONS, ADDENDA, OR OTHER INSTRUCTIONS ISSUED BY THE ARCHITECT AND SUBMIT TO ARCHITECT AS "RECORD DRAWINGS" AT CLOSE OF PROJECT.
6. THE BUILDING'S VENT AND SANITARY WASTE PIPING TO A POINT FIVE FEET OUTSIDE THE BUILDING SHALL BE SOLID CORE SCHEDULE 40 PVC DWV OR SOLID CORE ABS DWV PLASTIC PIPE. JOINTS IN PLASTIC PIPE SHALL BE MADE WITH SOLVENT AND CEMENT PER MANUFACTURER'S RECOMMENDATIONS.
7. ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE L SEAMLESS HARD DRAWN COPPER TUBING WITH CAST BRASS OR WROUGHT COPPER FITTINGS. UNDERGROUND DOMESTIC WATER PIPING SHALL BE TYPE K COPPER, SOFT ANNEALED, WITHOUT JOINTS WHEN POSSIBLE. JOINTS IN COPPER WATER PIPING 2" AND SMALLER ABOVE GRADE SHALL BE SOLDERED WITH ENGELHARD "SILVABRITE 100", 100% LEAD FREE OR OTHER NON-LEAD SOLDER, MINIMUM 4,000 PSI TENSILE STRENGTH USING NOKORODE SOLDER PASTE APPLIED WITH A BRUSH TO BOTH THE PIPE AND THE INSIDE OF THE FITTING SOCKET. NO ACID CORE SOLDER NOR FLUX CONTAINING ACID SHALL BE USED. PIPE SHALL BE CUT SQUARE AND REAMED. THE PARTS OF THE PIPE AND FITTINGS TO BE SOLDERED SHALL BE THOROUGHLY CLEANED WITH SAND CLOTH BEFORE APPLYING FLUX. JOINTS IN COPPER PIPING 2-1/2" AND LARGER AND ALL SIZES BELOW GRADE SHALL BE BRAZED USING A BRAZING COMPOUND WITH A MINIMUM OF 15% SILVER.
8. ALL BREATHING AIR PIPING SHALL BE ASTM B-819 TYPE L HARD DRAWN SEAMLESS MEDICAL GAS COPPER TUBING, IDENTIFIED BY THE MARKINGS "BREATHING AIR" IN BLUE. FITTINGS SHALL BE WROUGHT COPPER, BRASS OR BRONZE DESIGNED EXPRESSLY FOR BRAZED CONNECTION, COMPLIANT WITH ANSI B16.22. PIPE (TUBE), FITTINGS, VALVES, AND OTHER COMPONENTS SHALL BE SPECIALLY CLEANED FOR OXYGEN SERVICE IN A FACILITY EQUIPPED TO CLEAN, RINSE, AND PURGE THE MATERIAL IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 99 SECTION 5.1.10.1.1 AND RECEIVED ON JOB SITE CLEANED AND CAPPED. ON SITE CLEANING OF THE INTERIOR SURFACES OF TUBES, VALVES, FITTINGS, AND OTHER COMPONENTS IS NOT ALLOWED. BRAZING ALLOY SHALL BE BCUP-5 BRAZING ALLOY OR EQUIVALENT ALLOY WITH AT LEAST 1000 DEGREE F MELTING POINT.
7. COMPRESSED AIR PIPING SHALL BE TYPE L SEAMLESS HARD DRAWN COPPER TUBING WITH CAST BRASS OR WROUGHT COPPER FITTINGS. JOINTS IN COMPRESSED AIR PIPING 2" AND SMALLER ABOVE GRADE SHALL BE SOLDERED WITH ENGELHARD "SILVABRITE 100", 100% LEAD FREE OR OTHER NON-LEAD SOLDER, MINIMUM 4,000 PSI TENSILE STRENGTH USING NOKORODE SOLDER PASTE APPLIED WITH A BRUSH TO BOTH THE PIPE AND THE INSIDE OF THE FITTING SOCKET. NO ACID CORE SOLDER NOR FLUX CONTAINING ACID SHALL BE USED. PIPE SHALL BE CUT SQUARE AND REAMED. THE PARTS OF THE PIPE AND FITTINGS TO BE SOLDERED SHALL BE THOROUGHLY CLEANED WITH SAND CLOTH BEFORE APPLYING FLUX.
8. ISOLATION VALVES (SOV'S) SHALL BE 1/4 TURN BALL VALVES.
9. ABOVE GROUND DOMESTIC HOT WATER PIPING UP TO 1-1/4" SHALL BE INSULATED WITH 1" FIBERGLASS INSULATION. ABOVE GROUND DOMESTIC HOT WATER PIPING 1-1/2" AND GREATER SHALL BE INSULATED WITH 1-1/2" FIBER GLASS INSULATION.
10. FIBERGLASS PIPE INSULATION SHALL HAVE A MAXIMUM 0.24 BTU-IN/(HR-SQFT-^F) THERMAL CONDUCTIVITY 'K' VALUE AT 100^F MEAN RATING TEMPERATURE.
11. PROVIDE COILED PLASTIC PIPE MARKERS FOR PIPE IDENTIFICATION OF ALL EXPOSED PIPING OR PIPING ABOVE ACCESSIBLE CEILINGS. MARKERS USED ON OUTDOOR PIPING SHALL BE APPROVED FOR OUTDOOR USE.
12. ALL WASTE, VENT, AND WATER PIPING SHALL BE TESTED PER INTERNATIONAL PLUMBING CODE (IPC) BEFORE BEING CONCEALED IN ANY WAY. ALL JOINTS SHALL BE MADE DRIPTIGHT BEFORE BEING CONCEALED. DOMESTIC WATER PIPING SHALL BE TESTED AT 1-1/2 TIMES WORKING PRESSURE OR 100 PSIG, WHICHEVER IS GREATER, FOR AT LEAST 15 MINUTES. TEST ON BUILDING DRAIN AND VENT PIPING SHALL BE MADE WITH HYDROSTATIC PRESSURE TO MINIMUM 10'-0" HEAD FOR AT LEAST 15 MINUTES. FINAL TEST OF THE COMPLETE DRAIN AND VENT SYSTEM PER SECTION 312.4 OF THE IPC SHALL BE PERFORMED AT FINAL ACCEPTANCE.
13. WHERE PIPES PASS THROUGH FLOORS (EXCEPT SLAB ON GRADE) OR INTERIOR MASONRY OR CONCRETE WALLS, PIPE SLEEVES SHALL BE INSTALLED. PIPE SLEEVES SHALL BE SCHEDULE 40 STEEL PIPE FOR ALL PIPES PASSING THROUGH FIRE RATED FLOORS OR WALLS. SLEEVES FOR NON-RATED WALLS SHALL BE PVC SCHEDULE 40 PIPE OR 18 GAUGE SHEET METAL. SLEEVES FOR UNCOVERED PIPE SHALL BE TWO PIPE SIZES LARGER THAN THE MAIN. SLEEVES FOR INSULATED MAINS SHALL BE OF SUFFICIENT SIZE TO PASS THE COVERING WITH A MINIMUM 1/4" CLEARANCE. SLEEVES THROUGH CONCRETE WALLS OR FLOORS SHALL BE INSTALLED WITH MINIMUM 1" CLEARANCE TO BE PACKED & SEALED. SLEEVES THROUGH FLOORS SHALL EXTEND A MINIMUM OF TWO INCHES ABOVE THE FINISHED FLOOR. SLEEVES THROUGH WALLS SHALL BE ONE CONTINUOUS PIECE AND SHALL EXTEND FROM FINISHED SURFACE TO FINISHED SURFACE. THE OUTER SURFACE OF THE SLEEVE SHALL BE FIXED TO THE PARTITION IT PENETRATES WITH POUR ROCK, MORTAR, OR ETC. SLEEVE SHALL NOT BE USED TO SUPPORT PIPES AS IT WILL TRANSMIT VIBRATION AND SOUND TO STRUCTURE. COPPER PIPE PASSING THROUGH A STEEL SLEEVE SHALL BE PROTECTED WITH POLYETHYLENE TAPE OR OTHER APPROVED DIELECTRIC MATERIALS.
14. FOR PIPE PENETRATING FIRE-RESISTANCE-RATED ASSEMBLIES, THE INTERNAL SURFACE OF THE SLEEVE SHALL BE SEALED WITH A UL 2079 APPROVED FIRESTOPPING MATERIAL. SEALANT SHALL BE TESTED PER ASTM E 1399. EQUIVALENT TO BIO FIRESHIELD BIOSTOP 500 PLUS.
15. PERFORM STERILIZATION OF THE DOMESTIC WATER SYSTEMS WITH 50 PPM CHLORINE AT EACH VALVED OUTLET HELD FOR TWENTY-FOUR HOURS WITH TESTS EVERY EIGHT HOURS OR 200 PPM AND ALLOWED TO STAND FOR 3 HOURS. THEN FLUSH ALL OUTLETS TO 0.2 PPM. FURNISH ALL EQUIPMENT AND CHEMICALS REQUIRED. PROVIDE APPROPRIATE TAGS ON ALL OUTLETS DURING TESTING TO PREVENT ACCIDENTAL CONSUMPTION OR DRAINING OF THE SYSTEM. CERTIFY IN WRITING, BY THE TESTING COMPANY, THAT THE WATER LINES HAVE BEEN STERILIZED AND THAT APPROVAL OF THE INSTALLATION WAS OBTAINED FROM THE AUTHORITIES HAVING JURISDICTION OVER THE WORK. GIVE ORIGINAL TO OWNER AND INCLUDE ONE COPY WITH EACH O&M MANUAL.

5 ENTIRE SHEET

1 PLUMBING - SPECIFICATIONS
SCALE N.T.S.

CM ASSOCIATES ENGINEERS
MECHANICAL ● ELECTRICAL FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH STATE OF ARIZONA U.S.A.
Expires 3/31/2026

CS CLEANERS

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

5	TENANT COORDINATIONS 10/9/24

DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: P-02

MECHANICAL EQUIPMENT					(in)										
Purchase by CS or GC	Equipment	Location	Function	Notes	L	W	H	Placement	Power	phase	volts	amps	mocp	Gas	Spare?
COLUMN CLEAN AREA															
CS	Column Rinse Basin	Cleaning Room	Rinse Column after Emptying	TBD custom build	42.0	42.0	24.0	ground level							
CS purchased and onsite	Sink	Cleaning Room	Secondary Rinse	drain 1.5" IPS. Hot/cold required	86.0	42.0	36.0	above ground level							
CS	IBC (MOCVD)	Cleaning Room	MOCVD Waste Water	haul away.				ground level							
CS	IBC (All Other)	Cleaning Room	Waste Water	haul away				ground level							
CS	LV9		HOV (Hand operated valve)						1.5 hp	1	115				yes
CS	LV8		HOV						1.5 hp	1	115				yes
CS	LV10		HOV												
GC	CV5		CV (check valve)												
CS	P1		Diaphram pump	Transfer Waste water from chemical mixing tank and Rinse containment to IBC, Air operated	19.0	26.0		ground level	20-120 psi						
GC	PV1		Hand operated supply valve												
GC	R2		Regulator for air supply P1												
GC	LV1		HOV for sink												
GC	LV2		HOV for sink												
GC	CV1		Check valve wash basin												
GC	CV2		Check valve sink												
GC	CV4		Check valve copper sulfate tank												
GC	LV4		Hand operated copper sulfate drain valve												
GC	PV4		Hand operated copper sulfate mixer valve												
GC	LV7		Water supply copper sulfate tank												
GC	R1		Regulator air supply for P2 and P3												
GC	PV2		HOV pneumatic supply P2												
GC	PV3		HOV pneumatic supply P3												
GC	P2		Air operated diaphram pump	Copper sulfate transfer pump to funnel											
GC	P3		Air operated diaphram pump	Copper sulfate transfer pump from funnel											
GC	LV5		HOV												
GC	LV6		HOV												
CS	Camfil filter housing		Inline Partical filter with CP1000 exhaust	See Danbury for model info											
Built and onsite	**PURGE PANEL to be built by CS employees.**														
CS	N2 Isolation Valve	material xf	On/Off N2 supply	hand operated ball valve				wall mount							
CS	AR Isolation Valve	material xf	On/Off Air Supply	hand operated ball valve				wall mount							
CS	N2 Pressure Regulator	material xf	Regulate N2 pressure to safe value	regulator				wall mount							
CS	AR Presure Regulator	material xf	Regulate Air pressure to safe value	regulator				wall mount							
CS	N2 Rotameter	material xf	Control N2 flow	hand adjustable flowmeter				wall mount							
CS	AR Rotameter	material xf	Control Air Flow	hand adjustable flowmeter				wall mount							
	To be installed by Mechanical technician with process piping TBD.														
CS	pressure relief valve	material xf	relieve overpressure for Ar/N2 purge pane	pressure relief											
			CS to buy GC to install	CS to buy GC to install											
CS	chemical mixing tank	Cleaning Room	mix CuSO4 solution	Polycorbonate Tank Identical to Danbury				ground level						Air for mixing & ventilation	

LIFE SAFETY					(in)										
ITEM	Equipment	Location	Function	Notes	L	W	H	Placement	Power						
CS built and onsite	Hazardous and Oxygen detector Panels	Column clean/Waste storage/PCS area	detect hazerdous gas	4 sampling points: acids/hydrides/Halogen and O2 : Locate maximum 30 ft from sampling point	6.5	13.0	7.2	wall mount	24 VDC Each						
CS	O2 Sensor	Column clean/Waste storage/PCS area	monitor 02 levels	SEE Above integrated into Gas detection box for sampling. sampling unitsPureair TX-1100DRA	5.5	10.5	3.3	wall mount	24 VDC						
GC	Eye Wash + shower	Cleaning clean passthrough and one in PCS area Room B	flush hazerdous substance	Needs H20				ground level	no		h20 supply				
GC	Generator	Outside area	power life safety and CuSO4 pump in the event of a power outage	KOHLER 48-50KW Propane Generator					propane						
CS	UPS power supply	IT closet	Utilized for air compressor for supplied Breathing Air	Other Item may be added if needed											

UTILITIES					(in)										
ITEM	Equipment	Location	Function	Notes	L	W	H	Placement	Value						
			CS to buy GC to install	CS to buy GC to install											
CS	Breathing Air	material xf and cleaning	SCBA Air supply	Hoses on Ceiling Track Separate drop					90 psi						
CS	Nitrogen cylinder	clean area next to pumps	Column Purging	Location Column Clean passthrough room: Procedure to verify enough N2 before commencing purging					90 psi						spare
CS	Argon Cylinder	clean area next to pumps	Column Purging	Location Column Clean passthrough room: Procedure to verify enough N2 before commencing purging					90 psi						spare
CS	120 VAC	Cleaning room, Columns pass through, Storage room	General Utility					wall mount	120 VAC						

ANCILLARY EQUIPMENT					(in)										
ITEM	Equipment	Location	Function	Notes	L	W	H	Placement	Value						
CS purchased and onsite	Drum Lifter	cleaning room	mobile					ground level							
CS	Dust evacuation arm	material XF	Direct ventilation to gas/dust source	ventilate dust from canister granulate pouring driect connet to CP1000 exhaust				CS to buy GC to install							
CS in CT will ship	Stainless steel containment pallet	cleaning room	catch drip leaks at column disconnect of wet purge	Built by Barzetti in Danbury											
CS	Fire Extinguishers	material XF	Fire Response												
CS	Breathing airline reels	cleaning room	Breathning air supply lines	Qty x 3 totals $ see from Grainger											

PCS Area															
ITEM	Equipment	Location	Function	Notes	L	W	H	Placement	Power	phase	volts	amps	mocp	Gas	Spare?
Inactive			CS to buy GC to install	CS to buy GC to install											
CS	Scissor lift tables x	oom C and B							120Vac						
CS	Water blast booth	Room C	Parts wash with NOX off gassir	Needs H2O											
CS	CP 200 x 2	Room C	Parts wash exhaust	Exhaust of NOX off gassing											
CS	Wash basin	Room D	Part wash	Nitric Acid Dip solution TBD											
CS	Parts washing tabl	Room D	Part wash	H2O needed Hot and Cold											
CS	Oven	Room D	Parts drying						230 Vac						

1 EQUIPMENT LIST

SCALE N.T.S.

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH ARIZONA U.S.A. Expires 3/31/2026

CS CLEAN

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SUITE 150 ±11,318 USF

REVISIONS:

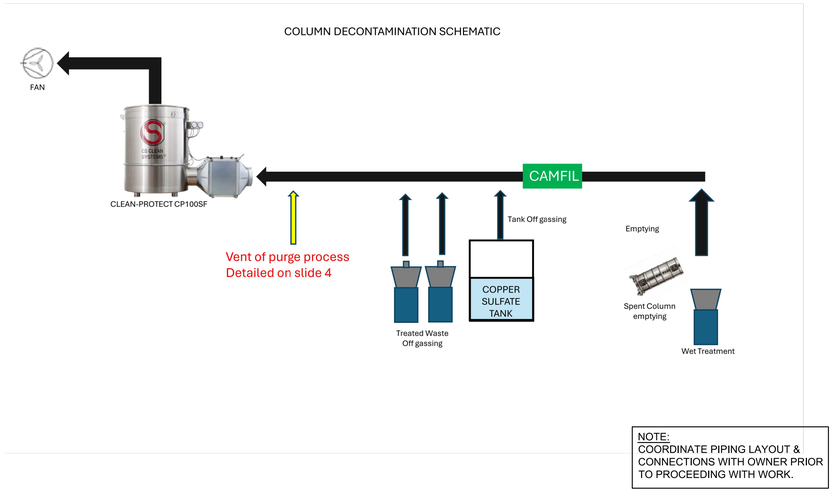
5	TENANT COORDINATIONS 10/9/24

DATE: 1/31/23 ISSUED FOR: PERMIT

SHEET: P-03

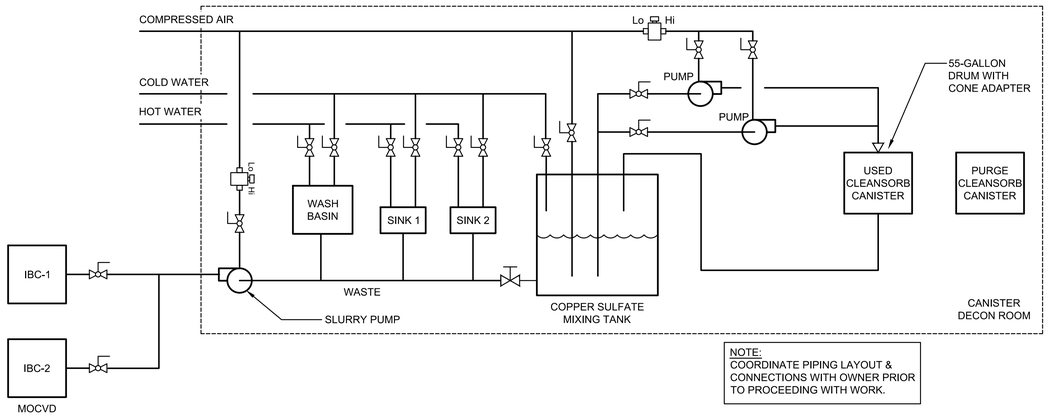
ENTIRE SHEET

CM ASSOCIATES ENGINEERS
MECHANICAL ■ ELECTRICAL FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA. 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102



USED CLEANSORB CANISTER DECONTAMINATION PROCESS SCHEMATIC

SCALE: N.T.S.



WET TREATMENT PROCESS SCHEMATIC

SCALE: N.T.S.

1 PROCESS SCHEMATIC

SCALE N.T.S.

LEGEND

- MANUAL VALVE
- CHECK VALVE
- RELIEF VALVE
- ADJUSTABLE PRESSURE REGULATOR
- FLOW METER
- 1/4 TURN BALL VALVE

CS CLEAN SOLUTIONS PROCESS NARRATIVE

THE FOLLOWING IS A NARRATIVE DESCRIBING THE CS CLEAN SOLUTIONS PROCESS.

THE CS CLEAN FACILITY IN PHOENIX AZ IS A HAZARDOUS WASTE 10-DAY TRANSFER FACILITY THAT SERVES AS AN INTERMEDIATE POINT IN THE MANAGEMENT OF HAZARDOUS WASTE. CS IS ALSO IN POSSESSION OF AN AIR PERMIT TO ENABLE PURGING OF CUSTOMER PRODUCTS BEFORE OR AS PART OF WASTE MANAGEMENT.

THE TERM "10-DAY" REFERS TO THE MAXIMUM AMOUNT OF TIME HAZARDOUS WASTE CAN BE STORED AT SUCH A FACILITY BEFORE IT MUST BE TRANSFERRED TO ANOTHER DESIGNATED FACILITY OR TREATMENT/DISPOSAL SITE. HERE'S A BREAKDOWN OF THE KEY COMPONENTS OF THIS DEFINITION:

HAZARDOUS WASTE: HAZARDOUS WASTE IS WASTE MATERIAL THAT POSES A SUBSTANTIAL THREAT TO HUMAN HEALTH AND THE ENVIRONMENT DUE TO ITS TOXIC, FLAMMABLE, CORROSIVE, OR REACTIVE PROPERTIES. THIS CATEGORY OF WASTE IS REGULATED BY ENVIRONMENTAL AGENCIES TO ENSURE SAFE HANDLING, TRANSPORTATION, TREATMENT, AND DISPOSAL.

TRANSFER FACILITY: A TRANSFER FACILITY IS A LOCATION WHERE HAZARDOUS WASTE IS TEMPORARILY STORED AND CONSOLIDATED BEFORE BEING TRANSPORTED TO ITS FINAL TREATMENT, RECYCLING, OR DISPOSAL DESTINATION. THESE FACILITIES HELP STREAMLINE THE WASTE MANAGEMENT PROCESS, REDUCE THE NUMBER OF INDIVIDUAL WASTE SHIPMENTS, AND IMPROVE EFFICIENCY.

10-DAY LIMIT: THE "10-DAY" REFERENCE SIGNIFIES THAT HAZARDOUS WASTE CAN ONLY BE STORED AT THIS TYPE OF FACILITY FOR A MAXIMUM OF 10 DAYS BEFORE IT MUST BE TRANSFERRED TO ANOTHER FACILITY OR SITE THAT IS AUTHORIZED TO MANAGE HAZARDOUS WASTE. THIS TIME LIMIT IS CRUCIAL TO PREVENT LONG-TERM STORAGE AT TRANSFER FACILITIES AND ENSURE THAT THE WASTE CONTINUES ITS JOURNEY TOWARD PROPER TREATMENT AND DISPOSAL.

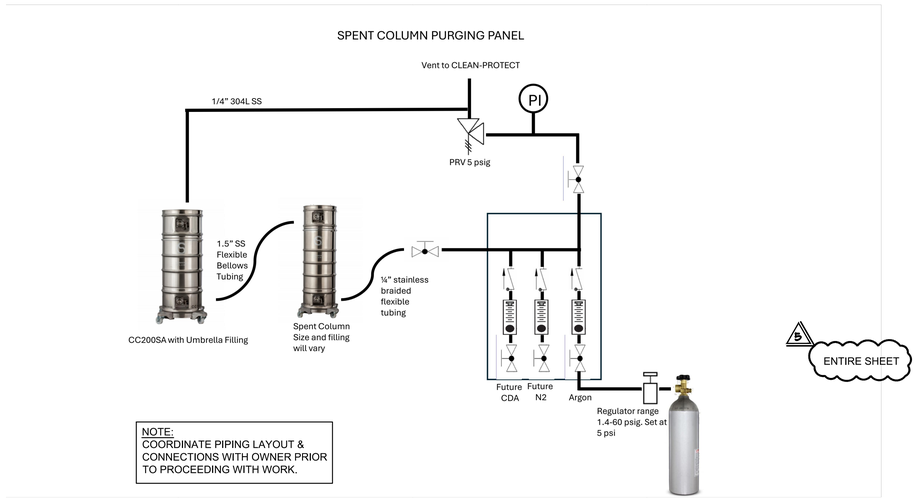
IN ESSENCE, A HAZARDOUS WASTE 10-DAY TRANSFER FACILITY ACTS AS A TEMPORARY HUB IN THE HAZARDOUS WASTE MANAGEMENT SYSTEM, ALLOWING FOR EFFICIENT AND SAFE CONSOLIDATION AND TRANSFER OF HAZARDOUS WASTE MATERIALS WHILE ADHERING TO STRICT TIME CONSTRAINTS TO PREVENT PROLONGED STORAGE AND MINIMIZE ENVIRONMENTAL RISKS. IT PLAYS A VITAL ROLE IN THE BROADER FRAMEWORK OF HAZARDOUS WASTE MANAGEMENT AND REGULATORY COMPLIANCE.

THE PRIMARY PURPOSE OF AN AIR PERMIT IS TO ENSURE THAT AIR EMISSIONS FROM THE PERMITTED SOURCE DO NOT EXCEED ESTABLISHED AIR QUALITY STANDARDS, AND THEY COMPLY WITH ENVIRONMENTAL REGULATIONS TO PROTECT PUBLIC HEALTH AND THE ENVIRONMENT. KEY ELEMENTS OF AN AIR PERMIT INCLUDE: EMISSION LIMITS: AN AIR PERMIT SPECIFIES THE MAXIMUM ALLOWABLE QUANTITIES AND TYPES OF POLLUTANTS THAT CAN BE RELEASED INTO THE ATMOSPHERE FROM THE PERMITTED SOURCE. THESE LIMITS ARE SET TO PROTECT AIR QUALITY AND PUBLIC HEALTH. OPERATING CONDITIONS: AIR PERMITS OFTEN INCLUDE SPECIFIC OPERATING CONDITIONS, SUCH AS EMISSION CONTROL TECHNOLOGIES AND MONITORING REQUIREMENTS, THAT THE PERMIT HOLDER MUST ADHERE TO IN ORDER TO REMAIN IN COMPLIANCE WITH THE PERMIT.

COMPLIANCE MONITORING: PERMITS TYPICALLY REQUIRE REGULAR MONITORING AND REPORTING OF EMISSIONS DATA TO ENSURE THAT THE FACILITY IS OPERATING WITHIN THE ESTABLISHED LIMITS. REGULATORY AGENCIES MAY CONDUCT INSPECTIONS TO VERIFY COMPLIANCE.
RECORDKEEPING: THE PERMIT HOLDER IS USUALLY REQUIRED TO MAINTAIN DETAILED RECORDS OF EMISSIONS, MAINTENANCE ACTIVITIES, AND OTHER RELEVANT DATA TO DEMONSTRATE COMPLIANCE.

PERMIT DURATION: AIR PERMITS CAN BE ISSUED FOR DIFFERENT DURATIONS, RANGING FROM A FEW YEARS TO DECADES, DEPENDING ON THE NATURE OF THE FACILITY OR OPERATION AND REGULATORY REQUIREMENTS. RENEWAL OR MODIFICATION OF PERMITS MAY BE NECESSARY AS CIRCUMSTANCES CHANGE.
REGULATORY AUTHORITY: AIR PERMITS ARE ISSUED AND ENFORCED BY REGULATORY AGENCIES RESPONSIBLE FOR AIR QUALITY, SUCH AS STATE ENVIRONMENTAL AGENCIES OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) IN THE UNITED STATES.

AIR PERMITS ARE ESSENTIAL TOOLS FOR ENVIRONMENTAL PROTECTION AND ARE USED TO CONTROL AND MINIMIZE THE IMPACT OF INDUSTRIAL AND COMMERCIAL ACTIVITIES ON AIR QUALITY. THESE PERMITS HELP ENSURE THAT EMISSIONS OF POLLUTANTS, INCLUDING GREENHOUSE GASES, PARTICULATE MATTER, VOLATILE ORGANIC COMPOUNDS, AND HAZARDOUS AIR POLLUTANTS, DO NOT EXCEED ESTABLISHED LIMITS AND DO NOT HARM HUMAN HEALTH OR THE ENVIRONMENT. VIOLATING THE CONDITIONS OF AN AIR PERMIT CAN LEAD TO REGULATORY ENFORCEMENT ACTIONS, FINES, OR OTHER PENALTIES.



N2, ARGON, AND COMPRESSED AIR PURGE SCHEMATIC

SCALE: N.T.S.

5 ENTIRE SHEET

CM ASSOCIATES ENGINEERS
MECHANICAL ■ ELECTRICAL
FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA. 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH ARIZONA U.S.A. Expires 3/31/2026

CS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

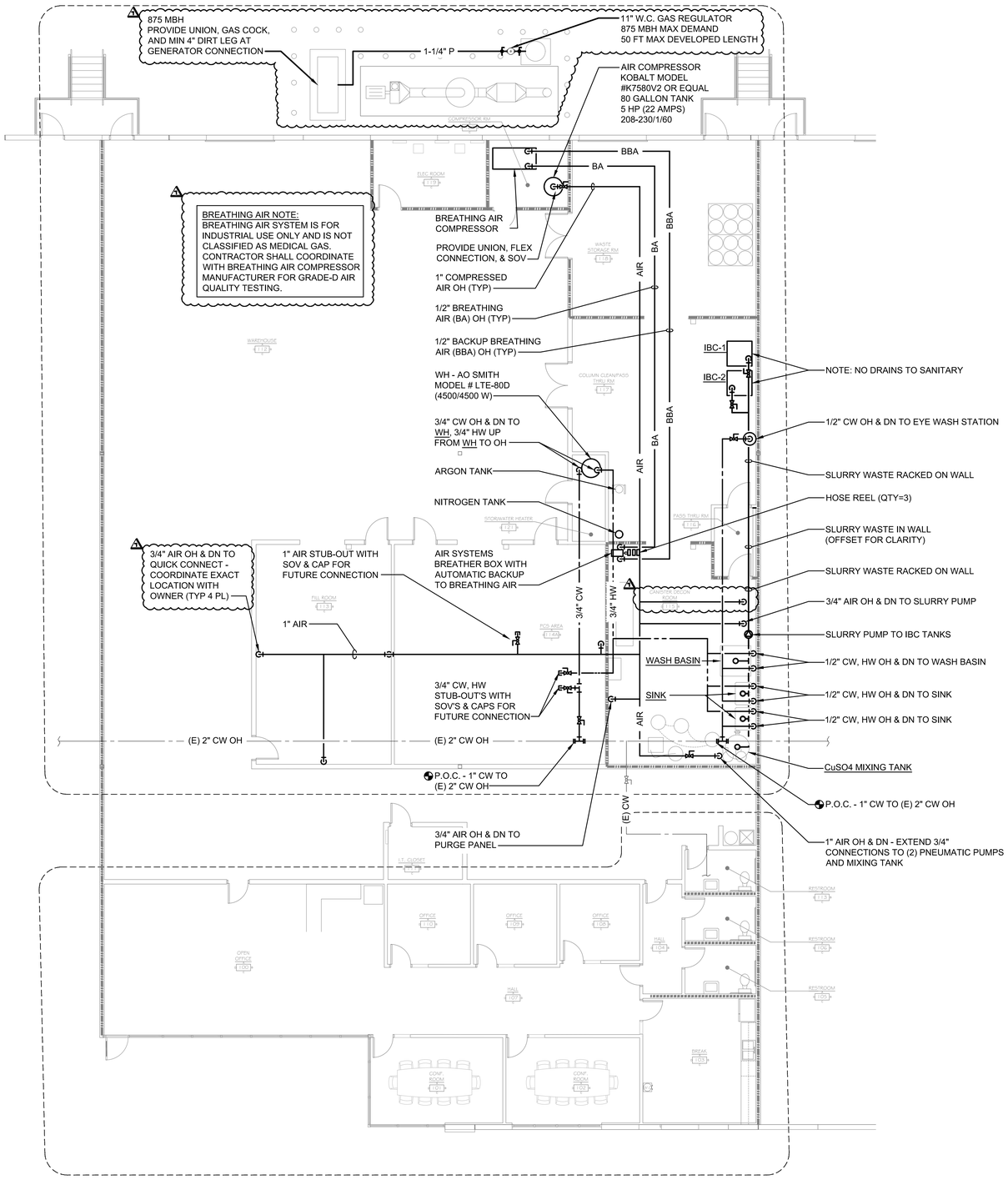
REVISIONS:

3	REMOVED CU SULFATE PROCESS
4	ADDED NARRATIVE
5	TENANT COORDINATIONS 10/9/24

DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: P-100

DESIGNATED SCOPE



PREVIOUSLY COMPLETED SCOPE

1 PLUMBING PLAN - FIRST FLOOR

SCALE 1/8"=1'-0"

ENTIRE SHEET

CM Associates Engineers
MECHANICAL ■ ELECTRICAL
FIRE PROTECTION
706 E. BELL RD. SUITE 215
PHOENIX, ARIZONA, 85022
INFO@CMMEP.COM
(602) 899-2512
WWW.CMMEP.COM
PROJECT No. 24102

14583 W. Windsor Ave.
Goodyear, AZ 85395

Phone 623-535-5526
Fax 623-535-5546

Project Manager: MW
Drawn by: MW
Checked by: CM
Project Number: 22350

Registered Professional Engineer (Mechanical) CERTIFICATE NO. 42007 CLEMENT M. MIKULICH DATE REGISTERED 12/31/2004 ARIZONA U.S.A.
Expires 3/31/2026

CS CLEANERS CLEAN

2453 W PARKSIDE LN PHOENIX, AZ 85203

SUITE 150 ±11,318 USF

REVISIONS:

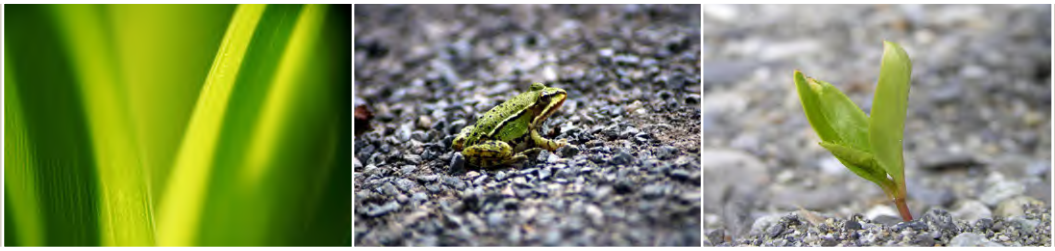
6	REMOVED 4" SANITARY LINE
5	ADDED PVC LINE
4	MOVED EYEWASH STATION
3	CHANGES PER CITY COMMENT
2	TENANT COORDINATIONS 10/9/24
1	TENANT COORDINATIONS 10/9/24

DATE: 1/31/23
ISSUED FOR: PERMIT

SHEET: P-101

APPENDIX F.8

Equipment (Clean-Protect CS 1000 and Generator) Specifications



CS CLEAN SYSTEMS®

Product Information and Specifications

CLEAN-PROTECT® Emergency Gas Release Absorber
Models: CP500SF, CS1000SF

Controlled product information. Intended use: technical reference for quotations and similar customer projects. Not intended for general distribution or for advertising purposes.

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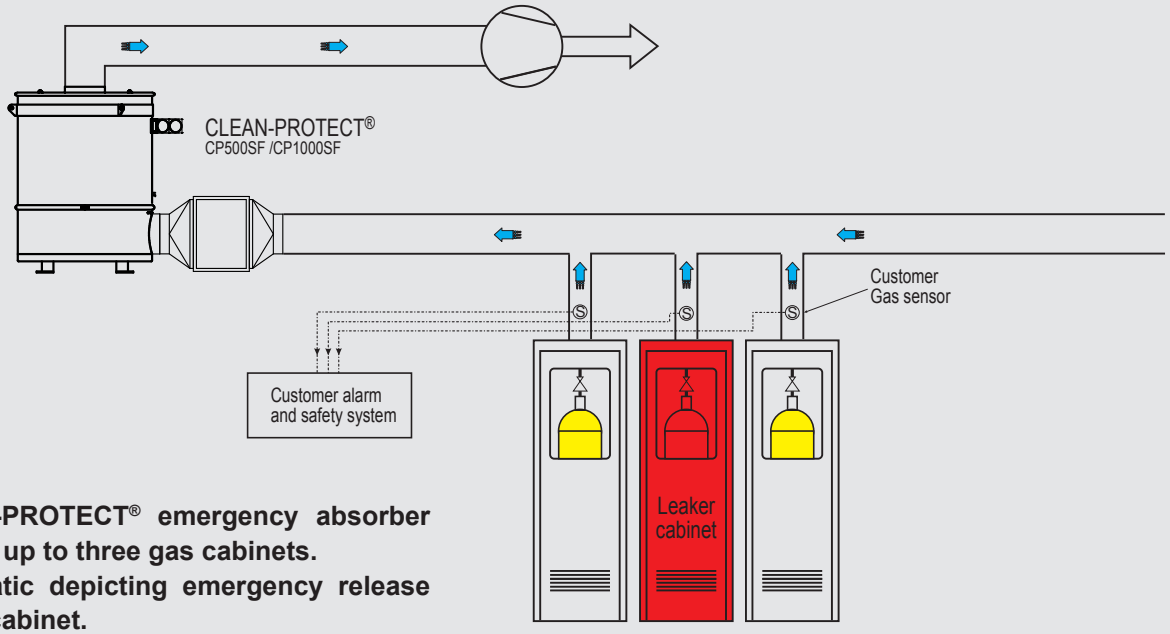
Rev. 201530518



CLEAN-PROTECT® emergency absorber hooked up to three gas cabinets. Schematic depicting emergency release in one cabinet.

Safeguard against accidental release of hazardous gases

Hazardous process gases are commonly used in the chemical, pharmaceutical, and semiconductor industries, among others. Most usually, the gases are supplied to the process from cylinders which are housed in an air-extracted cabinet. Larger supply vessels are often stored in concrete bunkers connected to a forced ventilation duct.

Hazardous release from gas cylinders poses a very serious threat to the workforce and factory neighborhood.

The CLEAN-PROTECT® product line was specially developed to absorb toxic, corrosive, or pyrophoric gases during an emergency gas release incident.

At the heart of the CLEAN-PROTECT® system is the dry chemisorbent material, CLEANSORB®. Installed in-line, the system is constantly on stand-by. Escaping gases undergo an irreversible chemical reaction (oxidation or neutralization) within the CLEAN-PROTECT® system, where they are safely converted into non-volatile, solid by-products. Provided the system has not absorbed gas, the chemisorbent bed has a stable lifetime of up to five years between change-outs.

CP systems can also be used for selected non-emergency applications involving high airflows.

CLEAN-PROTECT® Emergency Gas Release Absorber

- High air extract flowrates, protection of multiple gas cabinets
- Scrubbing capacity for full gas cylinder
- Low pressure drop
- Permanently online, practically no maintenance
- Fully passive – no electrical connections
- Typical 5 years service life between absorber refills
- Applicable to a wide range of hazardous gases, including:
- **AsH_3, BF_3, Br_2, Cl_2, ClF_3, $COCl_2$, F_2, HCl, HF, HBr, H_2S, H_2Se, HCN, NH_3, N_2H_4, PH_3, SO_2**

Worldwide Service and Support

- CS CLEAN SYSTEMS customers can avail of a worldwide sales and service network.
- Given the important safety function assigned to the CLEAN-PROTECT® system, commissioning, maintenance and refilling is only permitted by authorized CS CLEAN SYSTEMS service partners.

All content subject to modification without further notice.

Important!

The configuration of a CLEAN-PROTECT® emergency absorber system requires careful consideration by the manufacturer of the exhaust gases to be treated and the associated installation.

Before requesting a system recommendation or quotation, please ask your authorized CS CLEAN SYSTEMS sales and service partner to provide you with a Process Definition form so that we can recommend a model and configuration which is optimized for your process.

Available Models	Column Size
CLEAN-PROTECT® CP500SF	Approx. 500 liter
CLEAN-PROTECT® CP1000SF	Approx. 1,000 liter

Basic System Components and Configuration

System Description	Cylindrical absorber column, constructed from 316L stainless steel. Filled with CLEANSORB® granulate to safely remove hazardous gases by irreversible chemical reaction at ambient temperature. The scrubber medium is free of combustible materials such as activated carbon or organic binders. To be installed in the air extract ducting downstream of one or several gas cabinets, allowing permanent airflow through the absorber bed. Specially designed to handle high airflows with minimal pressure drop. Housing containing dust filter at inlet of CP system, fitted with lid for quick change-out of filter bag. 2 individual differential pressure gauges mounted on cylindrical body to monitor pressure drop across inlet dust filter and main absorber bed. Anchoring sockets on support legs for seismic protection.
Documentation	Operating manual in English language with customer-specific specifications and system check-out protocol.

All content subject to modification without further notice.

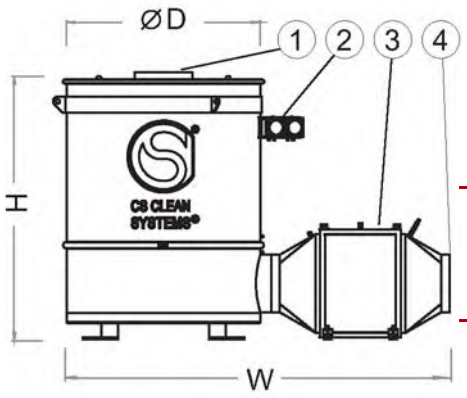
Optional Accessories

Dust filter horizontal, galvanized:	Galvanized filter housing incl. filter element, diameter 355 mm, butt end connector for horizontal installation, foldaway clamp to connect filter outlet to CP inlet.
Dust filter horizontal, stainless steel:	Stainless steel filter housing incl. filter element, diameter 355 mm, butt end connector for horizontal installation, foldaway clamp to connect filter outlet to CP inlet.
Dust filter vertical, stainless steel:	Stainless steel filter housing incl. filter element, Ø 355, butt end connector for vertical installation, incl. frame for filter housing, 90°elbow Ø 355, 2 fold-away clamp to connect filter element.

Photo showing CLEAN-PROTECT® with inlet dust filter for vertical connection. Though specifications for this and other non-standard configurations are not provided in this document, we will be pleased to advise you regarding your individual installation requirements.

System Specifications

Series	CLEAN-PROTECT
Models	CP500SF, CP1000SF



1 Connection for gas outlet

ϕ 355 mm (14 in), butt end;
flow for CP500SF: < 1800 m^3/h (1060 $foot^3$/minute)
flow for CP1000SF: < 3600 m^3/h (2120 $foot^3$/minute)

2 Differential pressure displays

0...500 Pa (display for pressure drop over pre-filter)
0...2 kPa (display for pressure drop over pre-filter + absorber)

3 Pre-filter (particle filter)

material of housing: stainless steel (different material on request);
dimensions: 1100mm x 670mm x 670mm (43.3in x 26.4in x 26.4in)
filter type: bag filter, GU-4-5 EU4)

4 Connection for gas inlet

ϕ 355 mm (14 in), butt end;
flow for CP500SF: < 1800 m^3/h (1060 $foot^3$/minute)
flow for CP1000SF: < 3600 m^3/h (2120 $foot^3$/minute)

Model	H	W	D
CP500SF	1660 mm (65.35 in)	2370 mm (93.30 in)	1200 mm (47.24 in)
CP1000SF	2450 mm (96.45 in)	2370 mm (93.30 in)	1200 mm (47.24 in)

Weight with heaviest filling	1000 kg (2205 lb) for CP500SF 1600 kg (3527 lb) for CP1000SF
Pressure build up at max. flow	6...11 mbar (0.09...0.16 psi) for CP500SF 7...12 mbar (0.10...0.17 psi) for CP1000SF
Lifetime of absorber filling	5 years, if no contact with toxic gas after contact with toxic gas, the filling is to be exchanged to get ready for use again

All content subject to modification without further notice.

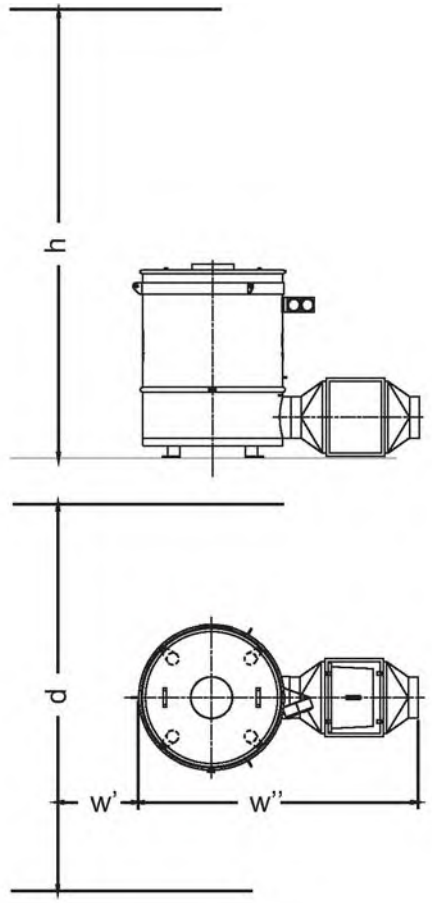
On-site Conditions for System Operation

Temperature range	5...35°C (41...95°F); for special setups and applications a range of up to -28...+60°C (-18...+140°F) is possible
Humidity	80 % relative humidity (non-condensing!)
Installation site	indoors, illumination > 270 lux, mechanical ventilation or outdoors (protected from unauthorized access)
Altitude	max. 2000 m (6600 ft) above sea level
Floor space	absolutely level; according to DIN 18202

📖 Contact the manufacturer CS CLEAN SYSTEMS AG for further details on outdoor installation.

Space requirement for installation and refill

The CLEAN-PROTECT safety absorber is to be refilled on site. Space is needed for a pallet jack or forklift truck as well as a platform ladder.



Model	h	w‘	w‘‘	d
CP500SF	3550 mm (140 in)	600 mm (24 in)	2400 mm (95 in)	3300 mm (130 in)
CP1000SF	4250 mm (168 in)	600 mm (24 in)	2400 mm (95 in)	3300 mm (130 in)

All content subject to modification without further notice.

CS CLEAN SYSTEMS®

CS CLEAN SYSTEMS AG
Fraunhoferstrasse 4
85737 Ismaning, Germany
Phone: +49 (89) 96 24 00-0
Fax: +49 (89) 96 24 00-122
E-mail:
General: welcome@csclean.com
Distribution: sales@csclean.com
URL: www.cscleansystems.com

Southport
Engineering Associates
11 Bailey Avenue
Ridgefield, CT 06877
Phone (203) 431-6844 Fax (203) 431-6877

LETTER OF TRANSMITTAL

DATE: 10/03/24	JOB NO.: 417-002
ATTENTION: Kathie Amen	
RE: CS Clean Room Renovations	

To: A Design InVision LLC
14583 West Windsor Avenue
Goodyear, Arizona 85395
623-535-5526

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via **Courier** the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ 11X17's ☐ Submittals ☐ Other

COPIES	DATE	NO.	DESCRIPTION
1	-	1	SEA Reviewed Kohler AZ Submittal

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☒ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For permits and Owner review ☐ Reviewed and filed ☐ Other
☐ FOR BIDS DUE ON ☐ For review and comment ☐ PRINTS RETURNED AFTER LOAN TO US

Remarks: For reference, individual data sheets are not commented. Refer to attached Submittal Comments document for information and requirements.

Copy to:

Signed: Shelley Glinka
ext. 120

Southport
Engineering Associates

SUBMITTAL COMMENTS

DATE: October 3, 2024

TO: Kathi Amen, A Design In Vision LLC

FROM: Shelley Glinka, Senior Designer

PROJECT: **CS Clean Renovation**

RE: **CS CLEAN 2453 W PARKSIDE LN Kohler AZ Submittal**

ACTION:

- ☐ **ACCEPTABLE**
- ☒ **ACCEPTABLE AS NOTED**
- ☐ **REJECTED, REVISE AND RESUBMIT**
- ☐ **REVIEWED AND FILED**

General:

The information shown in this submittal has been reviewed for design only. The notes indicated are to help ensure conformance with the design requirements. Acceptance of the submittal does not relieve the contractor from responsibility for full compliance with the contract documents for construction or quantities.

SOUTHPORT ENGINEERING ASSOCIATES P.C. 11 BAILEY AVE, RIDGEFIELD CT 06877	ACTION
BY: Shelley Glinka DATE: 10/3/2024	A–ACCEPTABLE ☐
THE INFORMATION SHOWN ON THIS SHOP DRAWING HAS BEEN REVIEWED FOR DESIGN ONLY. NOTES INDICATED ARE TO HELP ASSURE CONFORMANCE TO DESIGN REQUIREMENTS. ACCEPTANCE OF THIS DRAWING DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR FOR CONSTRUCTION AND QUANTITIES.	AAN–ACCEPTABLE AS NOTED RESUBMIT FOR RECORD ONLY ☒
	RR–REJECTED REVISE & RESUBMIT ☐
	R–REVIEWED AND FILED ☐

General Comment:

1. Provide submittal for automatic transfer switch.

Specific Comments:

Reference: Generator System – Approved as Noted

2. Generator should be commercial grade.
3. The unit should be 208Y/120V,3-phase.
4. The unit should be provided with the remote emergency stop device.
5. The unit should be provided with a 120-volt, 1-phase block heater.

KOHLER.

Model: 48RCLC

Multi-Fuel
LPG/Natural Gas

ISO 9001 KOHLER. NATIONALLY REGISTERED

The Kohler® Advantage

- **High Quality Power**
  Kohler home generators provide advanced voltage and frequency regulation along with ultra-low levels of harmonic distortion for excellent generator power quality to protect your valuable electronics.
- **Fast Response**
  Kohler's Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth permanent magnet (PM)-excited alternator.
- **Quiet Operation**
  Kohler home generators provide quiet, neighborhood-friendly performance.
- **Premium 5-year/2000 hr Limited Warranty Included**
  Kohler is known for extraordinary reliability and performance. Kohler's premium limited warranty covers parts, labor, and travel for the full warranty period.
- **Aluminum Enclosure**
  Attractive aluminum enclosure allows installation as close as 18 inches from your home or small business. Optional 291 kph (181 mph) wind-load-rated enclosure door kit is available for field installation.

Standard Features

- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The generator set accepts rated load in one step.
- A premium 5-year/2000-hour limited warranty covers all systems and components.
- Quick-ship (QS) models with selected features are available. See your Kohler dealer for details.
- GFCI service outlet installed on the junction box.
- RDC2 Controller
  - One digital controller manages both the generator set and transfer switch functions (with optional Model RXT ATS).
  - Designed for today's most sophisticated electronics.
  - Electronic speed control responds quickly to changing demand.
  - Digital voltage regulation protects your valuable electronics from harmonic distortion and unstable power quality.
  - OnCue® Plus Generator Management System for remote monitoring is included with the generator.
- Engine Features
  - Powerful and reliable Kohler 6.2L liquid-cooled engine
  - Electronic engine management system.
  - Simple field conversion between natural gas and LP vapor fuels while maintaining emission certification. (Optional dual fuel automatic changeover kit is available.)
- Innovative Cooling System
  - Electronically controlled fan speeds minimize generator set sound signature.
- Approved for stationary standby applications in locations served by a reliable utility source.
- Certifications
  - The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA) to conform to the New Source Performance Standard (NSPS) for stationary spark-ignited emissions.
  - cUL/UL listing, CSA certification standard are available.
  - Accepted by the Massachusetts Board of Registration of Plumbers and Gas Fitters.
  - Meets NFPA 37 requirements for 18 in. offset for installation.

Generator Set Ratings

				Standby Ratings Natural Gas		Standby Ratings LPG		Line Circuit Breaker	
Alternator	Voltage	Ph	Hz	kW/kVA	Amps	kW/kVA	Amps	Amps	Poles
4P7BX	120/240*	1	60	44/44	184	44/44	184	—	—
	120/208	3	60	48/60	167	50/62	174	175	3
	127/220*	3	60	48/60	158	50/62	165	—	—
	120/240	3	60	48/60	145	50/62	151	150	3
	277/480	3	60	48/60	73	50/62	76	80	3
4Q7BX	120/240	1	60	48/48	200	48/48	200	200	2

* Voltage configuration not available from the factory. Field-adjustable by an authorized service technician.

† 50 Hz options are available. Contact your Customer Service representative.

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. Obtain technical information bulletin TIB-101 for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Availability is subject to change without notice. Contact your local Kohler generator dealer for availability.

Alternator Specifications

Specifications		Alternator
Manufacturer		Kohler
Type		4-Pole, Rotating Field
Exciter type		Brushless, Rare-Earth Permanent Magnet
Leads: quantity, type		
4Q7BX		4, 120/240
4P7BX		12, Reconnectable
Voltage regulator		Solid State, Volts/Hz
Insulation:		NEMA MG1
Material		Class H
Temperature rise		130°C, Standby
Bearing: quantity, type		1, Sealed
Coupling		Flexible Disc
Amortisseur windings		Full
Voltage regulation, no-load to full-load		±1.0% RMS
Unbalanced load capability		100% of Rated Standby Current
One-step load acceptance		100% of Rating
Peak motor starting kVA:		(35% dip for voltages below)
480 V, 400 V	4P7BX (12 lead)	180 (60 Hz)
240 V	4Q7BX (4 lead)	113 (60 Hz)

- The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
- Brushless, rotating-field alternator.
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Total harmonic distortion (THD) from no load to full load with a linear load is less than 4%.

Application Data

Engine

Engine Specifications	60 Hz
Manufacturer	Kohler
Engine: model, type	KG6208 6.2L Natural Aspiration
Cylinder arrangement	V-8
Rated rpm	1800
Displacement, L (cu. in.)	6.2 (378)
Bore and stroke, mm (in.)	101.6 x 95.25 (4.00 x 3.75)
Compression ratio	10.5:1
Max. power at rated rpm, kW (HP)	77.0 (103)
Cylinder head material	Cast Aluminum
Piston type and material	High Silicon Aluminum
Crankshaft material	Cast Iron
Valve (exhaust) material	Forged Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±1.0%
Frequency	Fixed
Air cleaner type	Dry

Engine Electrical

Engine Electrical System	
Ignition system	Electronic
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	130
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Qty., rating for -18°C (0°F)	One, 630
Battery voltage (DC)	12
Battery group size	24

Exhaust

Exhaust System	60 Hz
Exhaust manifold type	Dry
Exhaust flow at rated kW, m^3/min. (cfm)	16.4 (580)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	649 (1200)
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)
Exhaust outlet size at engine hookup, mm (in.)	76 (3.0) OD

Fuel

Fuel System	
Fuel type	LP Gas or Natural Gas
Fuel supply line inlet	1 in. NPT
Natural gas fuel supply pressure, kPa (in. H_2O)	1.2-2.7 (5-11)
LPG vapor withdrawal fuel supply pressure, kPa (in. H_2O)	1.2-2.7 (5-11)

Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	92 min.	—
Ethane, % by volume	4.5 max.	—
Propane, % by volume	1.0 max.	87 min.
Propene, % by volume	0.1 max.	5.0 max.
C_4 and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m^3 (Btu/ft^3), min.	33.2 (890)	84.2 (2260)

* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	5.7 (6.0)
Oil pan capacity with filter, L (qt.)	7.1 (7.5)
Oil filter: quantity, type	1, Cartridge

Application Data

Cooling

Radiator System	60 Hz
Ambient temperature, °C (°F)	45 (113)
Radiator system capacity, including engine, L (gal.)	21.3 (5.6)
Engine jacket water flow, Lpm (gpm)	131 (34.6)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	48 (2730)
Water pump type	Centrifugal
Fan diameter, mm (in.)	qty. 3 @ 356 (14)
Fan power requirements (powered by engine battery charging alternator)	12VDC, 18 amps each

Operation Requirements*

Air Requirements	60 Hz
Radiator-cooled cooling air, m^3/min. (scfm)†	62.2 (2200)
Air over engine, m^3/min. (cfm)	31.1 (1100)
Combustion air, m3/min. (cfm)	5.5 (195)

† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption‡

Natural Gas, m^3/hr. (cfh) at % load	60 Hz
100%	24.8 (875)
75%	20.3 (717)
50%	14.5 (512)
25%	8.7 (307)

	60 Hz	
LP Gas, at % load	m^3/hr. (cfh)	Gal/hr.
100%	8.9 (315)	8.7
75%	6.3 (222)	6.1
50%	4.7 (165)	4.5
25%	3.0 (106)	2.9

‡ Nominal Fuel Rating: Natural gas, 37 MJ/m^3 (1000 Btu/ft^3)
LP Vapor, 93 MJ/m^3 (2500 Btu/ft^3)

LP vapor conversion factors:
8.58 $ft.^3$ = 1 lb.
0.535 m^3 = 1 kg.
36.39 $ft.^3$ = 1 gal.

* 50 Hz Operation Requirements are available upon request.

Sound Enclosure Features

- Sound-attenuating enclosure uses acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- Internally mounted critical silencer.
- Skid-mounted, aluminum construction with two removable access panels.
- Scratch- and corrosion-resistant Kohler® cashmere powder-baked finish.

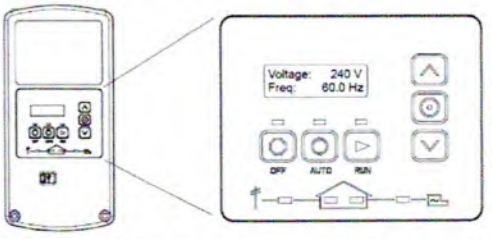
Sound Data

Model 48RCLC sound levels are 61 dB(A) during engine exercise and 61 dB(A) during normal operation.*

All sound levels are measured at a distance of 23 ft. (7 m) from the generator set.

* Lowest of 8 points measured around the generator. Sound levels at other points around generator may vary depending on installation parameters.

RDC2 Controller



The RDC2 controller provides integrated control for the generator set, Kohler® Model RXT transfer switch, programmable interface module (PIM), and load shed kit.

The RDC2 controller's 2-line LCD screen displays status messages and system settings that are clear and easy to read, even in direct sunlight or low light.

RDC2 Controller Features

- Membrane keypad:
  - OFF, AUTO, and RUN pushbuttons
  - Select and arrow buttons for access to system configuration and adjustment menus
- LED indicators for OFF, AUTO, and RUN modes
- LED indicators for utility power and generator set source availability and ATS position (Model RXT transfer switch required)
- LCD screen:
  - Two lines x 16 characters per line
  - Backlit display with adjustable contrast for excellent visibility in all lighting conditions
- Scrolling system status display
  - Generator set status
  - Voltage and frequency
  - Engine temperature
  - Oil pressure
  - Battery voltage
  - Engine runtime hours
- Date and time displays
- Smart engine cooldown senses engine temperature
- Digital isochronous governor to maintain steady-state speed at all loads
- Digital voltage regulation: ±1.0% RMS no-load to full-load
- Automatic start with programmed cranking cycle
- Programmable exerciser can be set to start automatically on any future day and time, and to run every week or every two weeks
- Exercise modes
  - Unloaded exercise with complete system diagnostics
  - Unloaded full-speed exercise
  - Loaded full-speed exercise (Model RXT ATS required)
- Front-access mini USB connector for SiteTech™ connection
- Integral Ethernet connector for Kohler® OnCue® Plus
- Built-in 2.5 amp battery charger
- Remote two-wire start/stop capability for optional connection of a Model RDT transfer switch

See additional controller features on the next page.

KOHLER.

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Additional RDC2 Controller Features

- Diagnostic messages
  - Displays diagnostic messages for the engine, generator, Model RXT transfer switch, programmable interface module (PIM), and load shed kit
  - Over 70 diagnostic messages can be displayed
- Maintenance reminders
- System settings
  - System voltage, frequency, and phase
  - Voltage adjustment
  - Measurement system, English or metric
- ATS status (Model RXT ATS required)
  - Source availability
  - ATS position (normal/utility or emergency/generator)
  - Source voltage and frequency
- ATS control (Model RXT ATS required)
  - Source voltage and frequency settings
  - Engine start time delay
  - Transfer time delays
  - Fixed pickup and dropout settings
  - Voltage calibration
- Programmable Interface Module (PIM) status displays
  - Input status (active/inactive)
  - Output status (active/inactive)
- Load control menus
  - Load status
  - Test function

Generator Set Standard Features

- Aluminum sound enclosure with enclosed silencer
- Battery rack and cables
- Coolant in generator
- cUL/UL 2200 listed, CSA certified
- Electronic, isochronous governor
- Engine-generator set is designed and manufactured in facilities certified to ISO:9001.
- Flexible fuel line
- Gas fuel system (includes fuel mixer, electronic secondary gas regulator, two gas solenoid valves, and flexible fuel line between the engine and the skid-mounted fuel system components)
- GFCI service outlet (120/240 V) for customer connections
- Integral vibration isolation
- Line circuit breaker
- NEC prime mover shutdown switch
- Oil drain extension
- OnCue® Plus for remote monitoring
- Operation and installation literature
- RDC2 controller with built-in battery charger
- Standard 5-year/2000-hour premium warranty

Available Options

Electrical System

- ❑ Battery
- ❑ Battery Heater
- ❑ OnCue® Plus Wireless Radio Kit

Fuel System

- ❑ Dual Fuel Automatic Changeover Kit with Reset Box

Available Options (continued)

Enclosure Option

- ❑ 291 kph (181 mph) Wind Load Rated Enclosure

Starting Aids §

- ❑ Block Heater, 1500 W, 120 V*
- ❑ Block Heater, 1500 W, 240 V

* Single phase QS available with factory installed block heater

§ Recommended for ambient temperatures below 0°C (32°F)

Controller Accessories

- ❑ Lockable Enclosure or Remote Mount Emergency Stop (lockout/tagout)
- ❑ Programmable Interface Module (PIM) (provides 2 digital inputs and 6 relay outputs)

Automatic Transfer Switches and Accessories

- ❑ Model RXT Automatic Transfer Switch with Combined Interface/Load Management Board
- ❑ Model RDT Automatic Transfer Switch
- ❑ Load Shed Kit for RDT or RXT
- ❑ Power Relay Modules (use up to 4 relay modules for each load management device)
- ❑ Other Kohler® ATS

Miscellaneous

- ❑ Maintenance Kit (includes air filter, oil, oil filter, and spark plugs)

Literature

- ❑ General Maintenance Literature Kit
- ❑ Overhaul Literature Kit
- ❑ Production Literature Kit

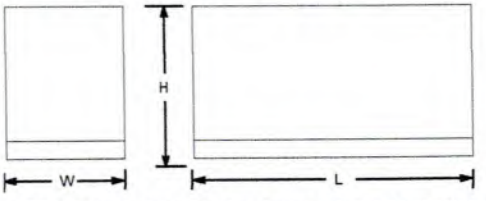
Warranty

- ❑ Extended 7-Year/2000 Hour Premium Limited Warranty
- ❑ Extended 10-Year/2000 Hour Premium Limited Warranty

Dimensions and Weights

Overall Size, L x W x H, mm (in.):	2280 x 836 x 1182 (89.8 x 32.9 x 46.5)
Shipping Weight, wet, kg (lb.):	767 (1690)

Weight includes generator set with engine fluids and 4Q7BX alternator, sound enclosure, and silencer.



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local dealer for more detailed information.

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APPENDIX F.9
SOPs

CS CLEAN SOLUTIONS	Title:	**Appendix D.1.2.1**– Secondary Purging Procedure
	Review / Revision Date:	June 13, 2025
	Reviewed by:	A.Furphy & D.Webster

I.3.1 SPENT CLEANSORB COLUMN SECONDAR AIR, NITROGEN OR ARGON PURGING PROCEDURE (REQUIRED FOR ALL COLUMNS)

1. Prior to handling, verify the spent column is intact and the contents are adequately contained. In preparation for decontamination, verify the column's contents by reviewing its documentation and completed End User Declaration. This will ensure knowledge of contents and use of appropriate handling and decontamination procedures.

2. Don base level personal protective equipment (PPE), including safety shoes, chemical resistant gloves, and safety glasses, at a minimum. Additional PPE should be utilized as necessary based on identified hazards.

3. Using a hand truck, move the spent column from the waste storage area to the waste material transfer room.

4. Once in place in the waste material transfer room, attach the grounding strap to the column.

5. Turn on the dedicated waste material transfer room exhaust system to ensure an air exchange rate of ten (10) air changes per hour within the room. Visually verify that the ventilation is working properly via the exhaust duct pressure gauge in the room.

6. Ensure that the electrochemical gas and oxygen monitoring system is functioning and that no alarm notifications are active on the control panel of the sensor monitoring system.

7. Don additional PPE, to include: chemical resistant suit and boot covers and supplied air full face or hood respiratory protection.

8. Connect the inlet port of the spent column to the air, nitrogen or argon purging supply line connection. Connect the outlet port of the spent column to the clean column connection for the Cleansorb column that has been designated to receive the pass-through purge gas. Ensure that both the inlet and outlet coupling connectors are properly seated and securely fastened to the spent column's ports, and that the inlet coupling connection is properly seated on the clean column.

9. Operate both the inlet and outlet port manual valves of the clean column to the open position. Then, operate both port manual valves of the spent column to the open position.

10. Initiate the flow of nitrogen or argon by turning the compressed air, nitrogen or argon tank valve to the open position, and adjust the nitrogen or argon regulator to a rate of 40 liters/minute. Purge the spent column with nitrogen or argon for at least 30 minutes for all spent columns. After at least 30 minutes, stop the flow of nitrogen or argon by turning the compressed nitrogen or argon tank valve to the closed position.

11. Close the inlet and outlet port valves on both the spent column and pass-through column, and disconnect the couplings from the inlet and outlet ports of the spent column. Verify that both port valves on the spent column are securely closed prior to moving the column for continued processing in the waste material transfer room.

12. Change Control Log

What	Who	When
Replaced : “used canister” with “spent column”	A.Furphy	11/30/2023
Replaced “nitrogen” with “nitrogen or argon” In all areas	A.Furphy	11/30/2023
Replaced “canister” with “column” in all areas	A.Furphy	11/30/2023
Updated Review / Revision Date From May 23, 2017 to November 30, 2023		
Update processes to reflect nomenclature changes for site conditions of “Shipping and Receiving Area”, “waste material storage room”, “preparation area”, and “waste storage area”.	D Webster	5/14/2025
Included Air into the Purging procedure & Updated title to purging procedure (Removed Nitrogen)	A.Furphy	06/13/2025

CS CLEAN SOLUTIONS	Title:	**Appendix D.1.2.2** – Copper Sulfate Treatment Procedure
	Review / Revision Date:	July 28, 2025
	Reviewed by:	D.Webster

I.3.2 COPPER SULFATE TREATMENT PROCEDURE (CVD, ION IMPLANTATION, COBALT, AND SILICON EPI COLUMNS ONLY)

1. Don required PPE, ie: chemical resistant gloves, 3M mask with P100 cartridges and safety goggles. Prepare a 10% by volume copper sulfate solution in 100 gallons of water in the open-top copper sulfate mixing tank and mix until adequately blended using supplied air to agitate.

2. Move the spent column into the waste material transfer room.

3. Ensure that all of the procedures described in the **Secondary Air, Nitrogen or argon Purging Procedure (Appendix D.1.2.1)** have been completed prior to initiating this procedure. The spent column MUST have been properly purged with nitrogen or argon before completing this procedure.

4. Turn on the dedicated waste material transfer room exhaust system to ensure an air exchange rate of ten (10) air changes per hour within the room. Visually verify that the ventilation is working properly via the exhaust duct pressure gauge in the room.

5. Ensure that the electrochemical gas and oxygen monitoring system is functioning and that no alarm notifications are active on the control panel of the sensor monitoring system.

6. Prep one 55-gallon steel drum with plastic bag and then add one 55 gallon can drum liner on top of the 1st inserted bag and move into place for acceptance of funnel and copper sulfate mixture.

7. Add a special CS funnel to the freshly prepped drum for dumping of material from spent column by using a buddy and lifting the funnel into place and clamping it down with supplied steel clamp.

8. Don nitrile gloves and connect drip free connects to the funnel and proceed to add Copper Sulfate mixture using the quick drip free connects and turning on the Fluimac supply pump and begin pumping the mixture of copper sulfate to approximately 2/3rds full of accepting drum then stop the pump and disconnect.

9. Set incoming spent column into Morse drum lifter.

10. Attach CS made CC column dumping funnel to top of full spent column coming in for reclamation processing.

11. Don appropriate PPE, to include safety shoes, chemical resistant suit, gloves, and boot covers, and supplied air full face or hood respiratory protection. Lift and begin dumping of spent column using drum lifter, transferring the material from the spent 200L column to prepared 55-gallon drum.

12. Once the spent granulate is transferred from the 200L column to the 55-gallon steel drum, you can move the full 55-gallon drum with spent material to the off-gassing station where it will sit for 24 hours and checked periodically for heat buildup.

13. After 24 hours, the column and drum can be hooked back up to the quick connectors for proper pump down of copper sulfate material back to the holding tank.

14. Once the pump down is completed, the material in the 55-gallon steel drum should be sealed using tape and drum lid can be placed on top and sealed using supplied lid and ring.

15. To empty spent copper sulfate waste water, open the manual valve on the inlet side of the waste transfer pump, and then the manual valve on the inlet side of the designated waste IBC. Ensure that the manual valve on the inlet side of the decontamination process water IBC is in the closed position to prevent cross-contamination.

16. Turn on the waste transfer pump and allow all spent copper sulfate solution to be evacuated from the mixing tank.

17. Turn off the waste transfer pump and securely close the waste transfer pump and waste IBC inlet manual valves.

Change Control Log		
What	Who	When
Replaced : “used canister” with “spent column”	A.Furphy	11/30/2023
Replaced “nitrogen” with “nitrogen or argon” In all areas	A.Furphy	11/30/2023
Replaced “canister” with “column” in all areas	A.Furphy	11/30/2023
Updated Review / Revision Date From May 23, 2017 to November 30, 2023		
Update processes to reflect nomenclature changes for site conditions of “Shipping and Receiveing Area”, “waste material storage room”, “preparation area”, and “waste storage area”. Added Air tp Purge reference	D Webster	5/14/2025

I.3.3 SPENT COLUMN EMPTYING PROCEDURES

1. Ensure that the **Secondary Nitrogen or argon Purging Procedure (Appendix D.1.2.1)** and, if applicable, **Copper Sulfate Treatment Procedure (Appendix D.1.2.2)** have been completed prior to initiating this procedure.

2. Turn on the dedicated waste material transfer room exhaust system to ensure an air exchange rate of ten (10) air changes per hour within the room. Visually verify that the ventilation is working properly via the exhaust duct pressure gauge in the room.

3. Ensure that the electrochemical gas and O_2 monitoring system is functioning and that no alarm notifications are active on the control panel of the sensor monitoring system.

4. Don appropriate level of PPE to include safety shoes, chemical resistant suit, gloves, and boot covers, and supplied air full face or hood respiratory protection at a minimum. Under no circumstances are any emptying procedures permitted with less than this specified PPE.

5. Move a clean 55-gallon waste collection container into place within the waste material transfer room and attach the grounding strap. Line the container with a plastic bag.

6. Power on the dust collection vacuum that will be used to reduce airborne particulate during the material transfer procedure, and retrieve the vacuum hose arm. This hose should be placed immediately adjacent to and facing the material transfer operation for the duration of the activity. The vacuum should remain powered on and in the area until the 55-gallon waste container has been tightly sealed.

7. On the spent column, detach the inlet valve and associated coupling adapter.

8. Leave the column outlet valve open and detach the outlet coupling adapter.

9. Open the clamping ring on the spent column. Then, remove the clamping ring from the unit.

10. Lift and remove the adapter module from the column to expose the perforated plate.

11. Lift and remove perforated plate from the column.

12. Remove the top layer (approximately 2-3 in.) of spent granulate from the top of the column with a plastic scooping device. Carefully place the granulate in the empty 55-gallon waste container.

13. Remove the guide ring from around the top of the column.

14. Place the column funnel on the top of the column and secure the funnel with the clamping ring removed in Step 8.

15. To prepare the column for tipping, securely mount the column to the mechanical assisting lift device. Verify that the column is secured to the lift device prior to proceeding to the next step.

16. Carefully lift the column. Slowly tip the column and completely empty the remaining spent granulate into the 55-gallon waste container.

17. Once the spent granulate is transferred into the waste container, return the column to an upright position, lower the column to the ground, and unsecure the column from the lift device.

18. Open the clamping ring on the spent column and remove the funnel.

19. If the spent column is equipped with a lower perforated plate, remove the perforated plate from within the column and carefully remove any remaining granulate material from the drum.

20. Cover the spent granulate in the 55-gallon waste container with a thin layer of virgin granulate of the same type as the spent material.

21. Tie the plastic bag liner closed tightly and securely seal the 55-gallon waste container.

CS CLEAN SOLUTIONS	Title:	**Appendix D.1.2.3** –Emptying Procedure
	Review / Revision Date:	May 14, 2025
	Reviewed by:	

Change Control Log		
What	Who	When
Replaced : “used canister” with “spent column”	A.Furphy	11/30/2023
Replaced “nitrogen” with “nitrogen or argon” In all areas	A.Furphy	11/30/2023
Replaced “canister” with “column” in all areas	A.Furphy	11/30/2023
Updated Review / Revision Date From May 23, 2017 to November 30, 2023		
Update processes to reflect nomenclature changes for site conditions of “Shipping and Receiving Area”, “waste material storage room”, “preparation area”, and “waste storage area”.	D Webster	5/14/2025

I.3.2 SPENT ION IMPLANT COLUMN OXIDATION PROCEDURE

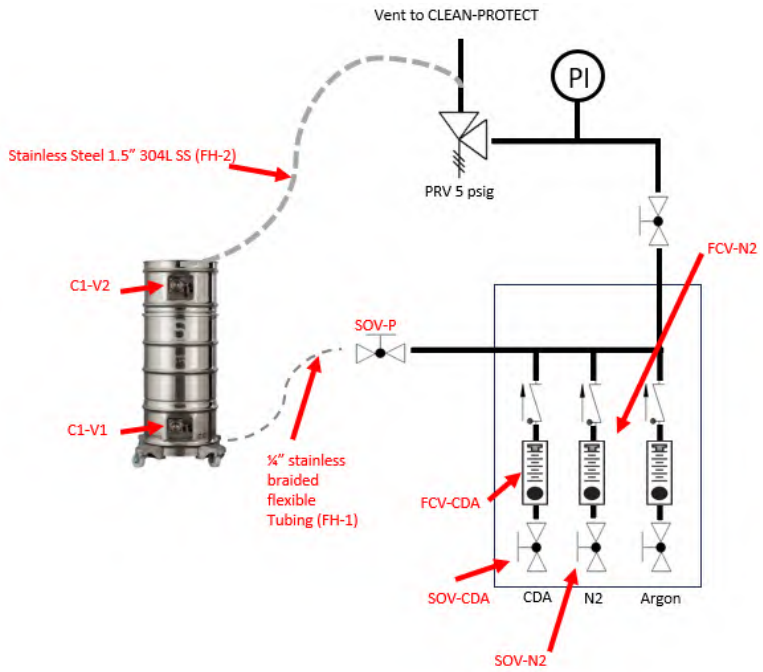
1. Move the spent column into the waste material transfer room.

2. Ensure that all of the procedures described in the **Secondary Nitrogen or argon Purging Procedure (Appendix D.1.2.1)** have been completed prior to initiating this procedure. The spent column MUST have been properly purged with nitrogen or argon before completing this procedure.

3. Turn on the dedicated waste material transfer room exhaust system to ensure an air exchange rate of ten (10) air changes per hour within the room. Visually verify that the ventilation is working properly via the exhaust duct pressure gauge in the room.

4. Ensure that the electrochemical gas and oxygen monitoring system is functioning and that no alarm notifications are active on the control panel of the sensor monitoring system.

5. Don PPE as required for Ion Implant columns (Tyvek, safety shoes, supplied air mask)



6. Using an anemometer, measure the air flow rate of the outlet purge 1.5" stainless steel KF 40 hose (FH-2) to facility exhaust. Ensure a flowrate of at least 5 m/s.

7. Connect 1.5” stainless steel KF40 facility exhaust hose (FH-2) to the outlet of the spent column.

8. Connect ¼” flexible stainless steel braided hose (FH-1) to the inlet of the spent column.

9. Open the outlet valve (C1-V2) on the spent column.

10. Open the inlet valve (C1-V1) of the spent column.

11. Open purge shut off valve (SOV-P)

12. Open N2 supply valve (SOV-N2) on gas purge panel and set flow to 25 slm using flow control valve (FCV-N2).

13. Open CDA supply valve (SOV-CDA) on gas purge panel and set flow to 5 slm using flow control valve (FCV-CDA)

14. Leave it at 25 slm N2 and 5 slm CDA for 30 mins.

15. After 30 mins, using CDA flow control valve (FCV-CDA), increase CDA flow to 25 slm while leaving N2 flow at 25 slm.

16. Leave flow at 25 slm CDA and 25 slm N2 for 30 mins.

17. After 30 mins, stop flow of both N2 and CDA by closing SOV-CDA and SOV-N2.

18. Close purge shut off valve (SOV-P)

19. While leaving both valves on the spent column open, disconnect the ¼” stainless steel braided hose (FH-1) from the column inlet and allow room air into the column.

20. Using an anemometer, measure the room air flow going into the column. Flow should be at least 5 m/s.

21. Over the next few hours, monitor the temperature of the column using a touch-free IR thermocouple.

22. The temperature of the column will rise. Allow reaction to continue until the skin temperature of the column has dropped to 30C or below.

23. Reconnect 1.5” flexible SS braided hose (FH-1) to the spent column inlet.

24. Open purge shut off valve (SOV-P).

25. Open SOV-N2 and adjust FCV-N2 to Flow N2 at 25 slm until the column outer temperature is the same as the room temperature.

26. Stop flow of N2 by closing SOV-N2.

27. Close purge shut off valve SOV-P.

28. Close valve at the column inlet (C1-V1).

29. Close valve at the column outlet (C1-V2).

30. disconnect the hoses at the inlet (FH-1) and outlet (FH-2) of the spent column.

31. Maintain the column in the waste material storage area for decontamination process.

Update processes to reflect nomenclature changes for site conditions of “Shipping and Receiveing Area”, “waste material storage room”, “preparation area”, and “waste storage area”.	D Webster	5/14/2025

CS CLEAN SYSTEMS	Title:	SOP – Compressed Gas
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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1.0 PURPOSE

In accordance with the requirements of the Occupational Safety and Health Administration (OSHA) Regulation 29 CFR 1910.101 and the Compressed Gas Association (CGA) Pamphlets C-6-1968 and C-8-1962, CS Clean Systems (CS Clean) has developed storage and handling requirements concerning compressed gases. The purpose of this standard operating procedure is to outline the general safety requirements and responsibilities for the safe handling, use, and storage of compressed gases.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

EH&S or Designee – will review and update the program as necessary and will provide assistance to departments during review and implementation of this SOP.

Production Manager – is responsible for ensuring all newly received compressed gas cylinders are in accordance with the standard set forth in 29 CFR 1910.101 and the CGA. Will also be responsible for - ensuring employees comply with the requirements of this SOP including requiring employees to visually inspect compressed gas cylinders as outlined in Section 6.0 below.

Employees - each employee shall comply with this policy.

3.0 DEFINITIONS

Absolute Pressure - zero referenced against a perfect vacuum, so it is equal to gauge pressure plus atmospheric pressure.

Atmospheric Pressure - the force per an area exerted against a surface by the weight of air above that surface at any given point in the earth's atmosphere.

Compressed gas - the term compressed gas is defined as follows:

- Any mixture or material having, in the container, an absolute pressure exceeding 40 pounds per square inch (PSIA) or 25 pounds per square inch gauge (25 PSIG), at a temperature of 70 degrees Fahrenheit (°F).
- The contents of the container will have an absolute pressure exceeding 104 PSIA (or 89 PSIG) at 130°F.

- Any flammable material having a vapor pressure exceeding 40 PSIA (25 PSIG) at 100°F as determined by the American Society for Testing Materials (ASTM) D-323, Test for Vapor Pressure of Petroleum Products (Reid Method), latest edition.

Cylinder - a compressed gas cylinder is a pressure vessel designed for the storage and transportation of a compressed gas at pressures higher than 40 PSIA (25 PSIG), with a tubular shape and 2 circular cross section. This does not include a portable tank, a multi-unit car tank, a cargo tank, or tank car (49 CFR 171.8).

Gauge Pressure - is zero referenced against ambient air pressure, so it is equal to absolute pressure minus atmospheric pressure.

Flammable gas - flammable gases may be ignited when mixed with air in certain concentrations (i.e. acetylene, methane, hydrogen).

Material Safety Data Sheet (MSDS) - is provided by the manufacturer of a given material. It contains specific information about the health and physical hazards of the material;
equipment required when handling the material; describes the material's physical characteristics; and, the procedures that should be followed in the case of an emergency.

Pressure Relief Device - prevents the rupture of a charged compressed gas cylinder under abnormal conditions (e.g., over-filling, over pressurization, engulfed in a fire, etc). It can be activated by either pressure or temperature and will relieve all or partial pressure sufficiently to prevent the rupture of the cylinder. Such a device must be subjected to a fire test as required by 49 CFR 173.34(d). Pressure relief devices are prohibited on cylinders charged with a poisonous gas (Poison A) or liquid and fluorine.

4.0 PROCEDURE

4.1 Storage Requirements

Proper storage is critical for the safe usage of compressed and liquefied gases. Cylinder storage areas should be prominently posted with hazard information regarding the gases stored. The NFPA 704 diamond with a cylinder indicated in the "specific hazard" (white) section of the diamond and the corresponding flammability, health and reactivity hazard sections also marked is an accepted method of signage. Other storage requirements are outlined below:

All gas cylinders:

- Shall not be stored in exits or egress routes.
- Shall be stored within a well-ventilated area.

- Shall not be stored in damp areas, near salt or corrosive chemicals, fumes, heat or where exposed to the weather.
- Shall be stored in an upright position.
- Shall be secured with a chain or appropriate belt above the midpoint, but below the shoulder. Laboratory cylinders less than 18" tall may be secured by approved stands or wall brackets.
- Shall be capped when not in use or attached to a system (if the cylinder will accept a cap).
- Shall be kept at least 20 ft. away from all flammable, combustible or incompatible substances. Storage areas that have a noncombustible wall at least 5 ft. in height and with a fire resistance rating of at least 30 minutes may be used to segregate gases of different hazard classes in close proximity to each other.
    - Shall be stored so that cylinders are used in the order in which they are received.
    - Shall be stored so that gases with the same hazard class are stored in the same area. Inert gases are compatible with all other gases and may be stored together.
    - Shall not be stored longer than one year without use.
    - Shall be stored so that full cylinders remain separate from empty cylinders.

4.2 Handling Requirements

The following requirements shall apply to the handling of gas cylinders:

- Compressed gases shall be handled only by properly trained persons. Training must include the contents of this guideline as well as any specific information relevant to the gas being used.
- PPE must be worn as required by completed PPE Hazard Assessments when moving or otherwise utilizing cylinders. See CS Clean Personal Protective Equipment (PPE) SOP for additional information.
- Cylinders should not be dragged or physically carried. Transport cylinders with a hand truck designed for the transport of cylinders. Cylinder caps shall be secured during transport.
- Prevent damage to cylinders. Locate cylinders where they will be protected from physical damage by striking or falling objects, corrosion or damage from public tampering.
- No person other than the gas supplier shall attempt to mix gases in a cylinder.
- Cylinders shall not be subjected to artificially created low temperatures without approval from the supplier.
- Containers shall not be used for any other purpose than holding the contents as received.
- Damaged or leaking cylinders must be reported to the Production Manager immediately for proper disposal.
- Cylinders shall not be picked up by the cap.
- Ropes, chains and slings shall not be used to suspend cylinders, unless cylinder was designed for such.

- Magnets shall not be used for lifting cylinders.
- Where appropriate lifting attachments have not been provided on the cylinder/container, suitable cradles or platforms to hold the containers shall be used for lifting.
- The user shall not paint cylinders.
- Leaking, defective, fire-burned and corroded containers shall not be shipped without the approval of the supplier.

4.3 Use Requirements

Listed below are general best practice guidelines to follow when using gas cylinders and compressed gases.

General Requirements

- Ensure that regulator pressure control valve is relieved (i.e., closed) before attaching to tanks.
- Close valves on gas cylinders when a system is not in use.
- Remove all pressure from regulators not currently used (by opening equipment valves downstream **after** the regulators are closed).
- Shut-off valves must not be installed between pressure relief devices and the equipment they are to protect.
- Use pressure relief valves in downstream lines to prevent high pressure buildup in the event that a regulator valve does not seat properly, and a tank valve is left on.
- Relief valves should be vented to prevent potential buildup of explosive or toxic gases.
- Never allow flames or concentrated heat sources to come in contact with a gas cylinder.
- Never allow a gas cylinder to become part of an electrical circuit.
- Never partially open a tank valve to remove dust or debris from the cylinder inlet.
- Never use cylinder gas as compressed air.
- Pressurize regulators slowly and ensure that valve outlets and regulators are pointed away from all personnel when cylinder valves are opened.
- Cylinders which require a wrench to open the main valve shall have the wrench left in place on the cylinder valve while it is open. Use adequately sized wrenches (12” long) to minimize ergonomic stress when turning tight tank valves. Never apply excessive force when trying to open valves. Cylinders with “stuck” valves should be returned to suppliers to have valves repaired.
- Do not attempt to open a corroded valve; it may be impossible to reseal.
- Valves should only be opened to the point where gas can flow into the system at the necessary pressure. This will allow for quicker shutoff in the event of a failure or emergency.

- Use a cylinder cap hook to loosen tight cylinder caps. Never apply excessive force or pry off caps. Return to supplier to remove "stuck" caps.
- Keep piping, regulators and other apparatus gas tight to prevent gas leakage.
- Confirm gas tightness by using compatible leak test solutions (e.g., soap and water) or leak test instruments.
- Release pressure from systems before connections are tightened or loosened and before any repairs.
- Do **not** use Teflon™ tape on CGA fittings (straight thread) where the seal is made by metal-to-metal contact. Use of Teflon™ tape causes the threads to spread and weaken, increasing the likelihood of leaks.
- Never use adapters or exchange fittings between tanks and regulators.
- Fluorescent light can be used to check for grease or oil in regulators and valves.

4.4 Labeling

The following labeling requirements shall apply to all gas cylinders:

- Know the contents of each cylinder you are using.
- Mixed gases shall be clearly labeled with the contents of the cylinder.
- Empty cylinders shall be labeled with the word "empty".
- Use only the vendor label for positive identification of contents of the cylinder. Vendor labeling shall be compliant with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) under OSHA Hazard Communication Standards, 29 CFR 1200. Labels shall include the following elements:
  - Product identifier;
  - Signal word;
  - Hazard statement(s);
  - Pictogram(s);
  - Precautionary statement(s); and,
  - Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

Excellent sources of information for the warning and hazard information that should be contained on cylinders are gas company catalogs and websites and the Compressed Gas Association (CGA) Pamphlet C-7: "Precautionary Labeling and Marking of Compressed Gas Cylinders".

5.0 TRAINING

The Production Manager shall ensure that all employees utilizing compressed gas cylinders receive training, upon hire and annually thereafter that covers the proper use and visual inspection of gas cylinders. Training records will be kept and maintained by the Production Manager.

6.0 INSPECTONS / AUDITS

CS Clean shall determine if compressed gas cylinders are in a safe condition to the extent that this can be determined by visual inspection.

Visual and other inspections shall be conducted as prescribed in the Hazardous Materials Regulations of the Department of Transportation (49 CFR parts 171-179 and 14 CFR part 103). Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with CGA Pamphlets C-6-1968 and C-8-1962, which is incorporated by reference as specified in Sec. 1910.6.

EH&S(or Designee) shall review this procedure on an annual basis to ensure that it is current and consistent with Federal Regulations. The Compressed Gas Cylinder Self Audit (Attachment A) may be used to assist in determining compliance.

7.0 ATTACHMENTS

A. Compressed Gas Cylinder Self Audit

ATTACHMENT A

COMPRESSED GAS CYLINDER SELF AUDIT

COMPRESSED GAS CYLINDER SELF AUDIT

CS CLEAN SOLUTIONS, INC.
2453 WEST PARKSIDE LANE, SUITE #150
PHOENIX, ARIZONA

INSPECTION DATE_____
NAME (printed)_____
SIGNATURE_____

1. Are periodic inspections of compressed gas storage and usage areas performed and deficiencies corrected? _____

2. Are work areas maintained in clean and orderly condition? _____
_____

3. Are Safety Data Sheets available for all compressed gases used? _____
_____

4. Are cylinders stored in upright positions and immobilized by chains or other means to prevent them from being knocked over?

5. Are cylinders stored away from highly flammable substances such as oil, gasoline, or waste?

6. Are cylinders stored away from electrical connections, gas flames or other sources of ignition, and substances such as flammable solvents and combustible waste material?

7. Are flammable gases separated from oxidizing gases in storage areas?

8. Are oxygen and fuel gas cylinders separated by a minimum of 20 feet when in storage?

9. Are storage rooms for cylinders dry, cool and well ventilated?

10. Are cylinders stored away from incompatibles, excessive heat, continuous dampness, salt or other corrosive chemicals, and any areas that may subject them to damage?

11. Is the storage area permanently posted with the names of the gases stored in the cylinders?

12. Do all compressed gas cylinders have their contents and precautionary labeling clearly marked on their exteriors? There are specific hazards of certain compressed gases:
    - **a.** Toxic gases (e.g. Carbon monoxide, hydrogen cyanide, nitric oxide, phosgene)
    - **b.** Corrosive gases (e.g. ammonia, chlorine, nitrogen dioxide, nitric oxide, sulfur dioxide, etc.)
    - **c.** Flammable gases (e.g. acetylene, ammonia, ethylene, etc.)
    - **d.** Explosive (e.g. Hydrogen, etc.)
    - **e.** Oxidizers (e.g. Fluorine, oxygen, etc.)
    - **f.** Simple asphyxiates (e.g. Carbon dioxide, helium, nitrogen, sulfur hexafluoride)

13. Are all compressed gas cylinder valve covers in place when cylinders are not in use?

14. Are all compressed gas cylinders stored so they do not interfere with exit paths?

15. Are all compressed gas cylinders subjected to periodic hydrostatic testing and interior inspection?

16. Do all compressed gas cylinders have safety pressure relief valves?

17. Are cylinders always maintained at temperatures below 125ºF?

18. Are safety relief devices in the valve or on the cylinder free from any indication of tampering?

19. Is repair or alteration to the cylinder, valve, or safety relief devices prohibited?

20. Is painting cylinders without authorization by the owner prohibited?

21. Are charged or full cylinders labeled and stored away from empty cylinders?

22. Is the bottom of the cylinder protected from the ground to prevent rusting?

23. Are all compressed gas cylinders regularly inspected for corrosion, pitting, cuts, gouges, digs, bulges, neck defects and general distortion?

24. Are cylinder valves closed at all times, except when the valve is in use?

25. Are compressed gas cylinders always moved, even short distances, by a suitable hand truck?

26. Is using wrenches or other tools for opening and closing valves prohibited?

27. Are suitable pressure regulating devices in use whenever the gas is emitted to systems with pressure rated limitations lower than the cylinder pressure?

28. Are all compressed gas cylinder connections such as pressure regulators, manifolds, hoses, gauges, and relief valves checked for integrity and tightness? Are compressed gas cylinders visually inspected?

29. Are all compressed gas cylinders regularly subjected to leak detection using an approved leak detecting liquid?

30. Is approved leak detection liquid used to detect flammable gas leaks?

31. Are procedures established for when a compressed gas cylinder leak cannot be remedied by simply tightening the valve? The procedures should include the following:
    a. Attach tag to the cylinder stating it is unserviceable.
    b. Remove cylinder to a well ventilated out of doors location.
    c. If the gas is flammable or toxic, place an appropriate sign at the cylinder warning of these hazards.
    d. Notify the gas supplier and follow his/her instructions as to the return of the cylinder.

32. Are employees prohibited from using compressed gases (air) to clean clothing or work surfaces?

33. Are compressed gases only handled by experienced and properly trained people?

34. Is fire extinguishing equipment readily available when combustible materials could be exposed to welding or cutting operations using compressed cylinder gases?

CS CLEAN SYSTEMS	Title:	SOP - Confined Spaces
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP - Confined Spaces
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1.0 PURPOSE

As of the date of the latest review of this SOP, CS Clean Systems. (CS Clean) does not allow employees to enter permit required confined spaces. In the event this policy changes, the following plan will be reviewed, updated and all elements implemented. Only Confined Space trained contractors will enter permit required confined spaces and shall follow the following procedures when entering permit required confined spaces onsite.

The Occupational Safety and Health Administration (OSHA) has established a permit required confined space standard 29 CFR 1910.146. This standard applies to the practices and procedures to protect employees in general industry from the hazards of entry into permit-required confined spaces.

The purpose of this program is to provide specific procedures/safe work practices for employees required to enter confined spaces.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager – shall be responsible for ensuring the SOP is implemented throughout the facility. This includes the proper identification and marking of any confined spaces.

EH&S (or Designee) – will review and update the SOP as necessary, will provide assistance to departments during review and implementation of this SOP, and will provide verification of employee training.

Employees - each employee shall comply with this policy. Employees are prohibited from entering any space meeting the definition of permit required confined space, unless the following conditions are met:

- The employees are trained under this SOP for the duties they are to perform.
- The space is rendered safe for entry by:
  - Issuance and compliance with the conditions of a permit;
  - The space is reclassified as a non-permit space; or
  - Alternate Entry Procedures are performed.

3.0 DEFINITIONS

Acceptable Entry Conditions: The conditions that must exist in a permit space to allow entry and ensure that employees involved with a permit required confined space entry can safely enter into and work within the space.
Asphyxiation: A class of dangerous gases that displace oxygen and cause unconsciousness or death by suffocation.

Attendant: An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs the duties assigned in the employer's permit-required confined space program.

Authorized Entrant: An employee who is authorized by the employer to enter a permit required confined space.

Confined Space: Any space that meets all of the following conditions:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit
- Is not designed for continuous human occupancy.

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

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

Entrapment: The trapping of an employee or worker by inwardly converging walls or by a floor that slopes downward and tapers to smaller cross sections.

Entry: The action by which a person passes through an opening into a permit space. Entry 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): A written document that is approved by the employer to allow and control entry into a permit space and that certifies the requirements of paragraph (f) of 29 CFR 1910.146.

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 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: 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), or injury, from one or more of the following causes:

- Flammable gas
- Airborne combustible
- An atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- An atmosphere where the permissible exposure limit for a certain chemical has been exceeded and could result in exposure.
- Any other atmospheric condition that is immediately dangerous to life.

Hot Work Permit: The employer's written authorization to perform operations (for example: welding, cutting and heating) capable of providing a source of ignition. See SOP for Hot Work for further information.

Immediately Dangerous to Life or Health (IDLH): 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.

Isolation: 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, lockout/tagout of all source of energy, removing sections of lines, pipes, or dust.

Non-Permit Confined Space: 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: An atmosphere containing less than 19.5 percent of oxygen.

Oxygen Enriched: An atmosphere containing more than 23.5 percent oxygen.

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

- Contain or has the potential to contain hazardous atmospheres, (e.g. chemical storage tanks).
- Contain a material that has the potential for engulfing an entrant.
- 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 smaller cross- section.
- Contains any other recognized serious safety or health hazard.

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

Prohibited Condition: Any condition in the permit that is not allowed during the period when entry is authorized.

Purge: Complete air exchange in a confined space prior to entry, which is designed to remove contaminated air and replace it with fresh air.

Retrieval System: The equipment (including a retrieval line, chest or full body harness, wristlets, if appropriate, and lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Testing: The process by which the hazards that may confront an entrant of a permit confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

4.0 GENERAL REQUIREMENTS AND PROCEDURES

4.1 Entry Procedures

When entry into a confined space is necessary, either the Entry Supervisor or designee may initiate entry procedures, including the completion of a confined space entry permit. Entry into a confined space shall follow the standard entry procedure below.

A. Prior to Entry

The entire confined space entry permit shall be completed before a standard entry. Entry shall be allowed only when all requirements of the permit are met, reviewed. and signed by an Entry Supervisor. The following conditions must be met prior to standard entry:

- Authorized personnel shall be trained to establish proficiency in the duties that will be performed within the confined space.

- The internal atmosphere within the confined space shall be tested with a calibrated, direct-reading instrument.
- Personnel shall be provided with necessary PPE as determined by the Entry Supervisor.
- Atmospheric monitoring shall take place prior to an during the entry. If a hazardous atmosphere is detected prior to entry:
    - Vent the space via forced air ventilation for at least thirty minutes and re-check the space via atmospheric monitoring prior to entry.
    - Maintain ventilation during entry procedures.

  If a hazardous atmosphere is detected during entry:
    - Personnel within the confined space shall be evacuated by the Attendant(s) or Entry Supervisor until the space can be evaluated to determine how the hazardous atmosphere developed; and
    - Controls shall be put in place to protect employees before reentry.

B. Opening a Confined Space

Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed. When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent anyone from falling through the opening. This barrier or cover shall protect each employee working in the space from foreign objects entering the space. If it is in a traffic area, adequate barriers shall be erected.

C. Reclassifying and Downgrading Permit Required Confined Spaces

Contractors shall make all necessary attempts to reclassify and downgrade any permit required confined space prior to entry, if feasible to do so. This will include procedures to eliminate hazards of permit required confined spaces via controls. Permit Required confined space hazards include:

- Contain or has the potential to contain hazardous atmospheres, (e.g. chemical storage tanks).
- Contain a material that has the potential for engulfing an entrant.
- 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 smaller cross- section.
- Contains any other recognized serious safety or health hazard.

Some examples of ways to mitigate hazards include, but are not limited to, blanking, bleeding, ventilation, and lockout tagout.

D. Isolation and Lockout/Tagout Safeguards

All energy sources that are potentially hazardous to confined space entrants shall be secured, relieved, disconnected, and/or restrained before personnel are permitted to enter the confined space. Equipment systems or processes shall be locked out and/or tagged out as required by the CS Clean Lockout/Tagout SOP prior to permitting entry into the confined space. In confined spaces where complete isolation is not possible, the confined space designee shall evaluate the situation and make provisions for as rigorous isolation as practical. Special precautions shall be taken when entering double-walled, jacketed, or internally insulated confined spaces that may discharge hazardous material through the vessel's internal wall.

Where there is a need to test, position, or activate equipment by temporarily removing the lock, or tag, or both, a procedure shall be developed and implemented to control hazards to the occupants. Any removal of locks, tags, or other protective measures shall be done in accordance with the CS Clean Lockout/Tagout SOP.

E. Ingress/Egress Safeguards

Means for safe entry and exit shall be provided for confined spaces. Each entry and exit points shall be evaluated by confined space designee to determine the most effective methods and equipment that will enable employees to safely enter and exit the confined space.

Appropriate retrieval equipment or methods shall be used whenever a person enters a confined space. Use of retrieval equipment may be waived by the confined space designee if use of the equipment increases the overall risks of entry or does not contribute to the rescue. A mechanical device shall be available to retrieve personnel from vertical confined spaces greater than five (5) feet in depth.

F. Warning Signs and Symbols

All confined spaces that could be inadvertently entered shall have signs identifying them as confined spaces. Signs shall be maintained in a legible condition. The signs shall contain a warning that a permit is required before entry. Accesses to all confined spaces shall be prominently marked.

G. Emergency Response Plan

A written emergency action plan shall be kept onsite where the confined space work is being conducted. All affected personnel shall be trained on the Emergency Action Plan SOP.

H. Contractors

When contractors or other non-employees are required to enter permit spaces to perform work, the following procedures shall be followed:

1. Inform the contractor that the workplace contains permit required confined spaces and that they must follow a permit space entry program per OSHA standard 29 CFR 1910.146, including an authorized permit for entry.
2. Inform the contractor of the elements, including the hazards identified and the experience with the space that makes it a permit required confined space.
3. Inform the contractor of the precautions or procedures implemented for protection of employees in or near permit spaces.
4. Debrief the contractor at the conclusion of the entry regarding the permit space program followed and regarding any hazards confronted or created in the space(s) during entry operations.

4.2 Atmospheric Testing

Atmospheric test data is required prior to entry and during entry into a confined space. Atmospheric testing is required for two distinct purposes:

1. Evaluation of the hazards of the permit space; and
2. Verification that acceptable conditions exist for entry into that space. If a person must go into the space to obtain the needed data, then standard Confined Space Entry Procedures shall be followed. Before entry into a confined space, testing for hazardous atmospheres shall be conducted. The internal atmosphere shall be tested with a calibrated, direct-reading instrument for oxygen, flammable gases and vapors, and potential toxic air contaminants, in that order.
3. Monitoring shall continue while the entry into the confined space is conducted, continuing until the entry is completed.

Testing equipment used in specialty areas shall be listed or approved for use in such areas by the confined space designee. All testing equipment shall be approved by a nationally recognized laboratory, such as Underwriters Laboratories or Factory Mutual Systems.

A. Verification Testing

A confined space that may contain a hazardous atmosphere shall be tested for residues of all identified or suspected contaminants. The evaluation testing should be conducted with specified equipment to determine that residual concentrations at the time or testing and entry are within acceptable limits. Results of testing shall be recorded by the person performing the tests on the permit. The atmosphere shall be periodically retested to verify that atmospheric conditions remain within acceptable entry parameters.

B. Acceptable Limits

The atmosphere of the confined spaces shall be considered to be within acceptable limits when the following conditions are maintained:

1. Oxygen Content
    a. The oxygen level must be between 19.5% to 23.5%. Any increase or decrease in the level of oxygen levels must be reported to the entry supervisor and entry delayed until the cause for such increase or decrease is determined.
2. Flammable Gases, Mists or Vapors
    a. This must be below 10% of the lower flammable limit (LFL) for any gas, mist or vapor detected. Airborne combustible dust must be below the listed lower flammable/explosive level.
3. Toxic Gases, fumes, Dusts, and Mists
    a. Must be below the Permissible Exposure Level (PEL) as listed in OSHA 29 CFR 1910.1000, Subpart Z, Toxic and Hazardous Substances (Table Z-1 Limits for Air Contaminants. -1910.100 Table Z-1). Acceptable reading for carbon monoxide must be below 10 PPM.

4.3 Entry Permit

The Confined Space Entry Permit is the most essential tool for assuring safety during entry in confined spaces with known hazards, or with unknown or potentially hazardous atmospheres. The entry permit process guides the supervisor and workers through a systematic evaluation of the space to be entered. The permit should be used to establish appropriate conditions. Before each entry into a confined space, an entry permit will be completed by the confined space designee. The confined space designee will then communicate the contents of the permit to all employees involved in the operation and post the permit conspicuously near the work location. A standard entry permit shall be used for all entries (**Attachment C**). Permits issued under this SOP shall be limited in duration to no longer than eight hours.

A. Key Elements of Entry Permits

A standard entry permit shall contain the following items:

1. Space to be entered.
2. Purpose of entry.
3. Date and authorized duration of the entry permit.
4. Name of authorized entrants within the permit space.
5. Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems).
6. Name(s) of personnel serving as Attendant(s) for the permit duration.
7. Name of individual serving as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who originally authorized the entry.

8. Hazards of the permit space to be entered.
9. Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces).
10. Acceptable entry conditions.
11. Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed.
12. Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call).
13. Communication procedures used by authorized entrants and Attendant(s) to maintain contact during the entry.
14. Equipment to be provided for compliance with this Confined Space Program (i.e., PPE, testing, communications, alarm systems, and rescue).
15. Other information necessary for the circumstances of the confined space that will help ensure employee safety.
16. Additional permits, such as for hot work, that have been issued to authorize work on the permit space.

5.0 TRAINING

CS Clean does not have employees at this time that are required to enter confined spaces. As such, this will be updated and employees shall receive the below trainings if confined space entry is deemed necessary prior to entry. All confined space contractors personnel shall have received the following confined space training.

5.1 Initial Training

Initial training will be required:

- Before the employee is first assigned duties within a confined space;
- Before there is a change in assigned duties;
- When there is a change in permit space operations that presents a hazard for which an employee has not been trained; and
- When CS Clean has reason to believe that there are deviations from the confined space entry procedures required in this SOP, or that there are inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required in this SOP, and shall introduce new or revised procedures, as necessary, for compliance with this program.

A. General Training

All employees who will enter confined spaces shall be trained in entry procedures. Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue shall be adequately trained in their functional duties prior to any confined space entry. Training shall include:

1. Explanation of the general hazards associated with confined spaces.
2. Discussion of specific confined space hazards associated with the facility, location, or operation.
3. Reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces.
4. Explanation of permits and other procedural requirements for conducting a confined space entry.
5. A clear understanding of what conditions would prohibit entry.
6. Procedures for responding to emergencies.
7. Duties and responsibilities of the confined space entry team.
8. Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers, and method(s) for alerting the Attendant(s).

B. Specific Training

Training for atmospheric monitoring personnel shall include proper use of monitoring instruments, including instruction on the following:

1. Proper use of the equipment;
2. Calibration of equipment;
3. Sampling strategies and techniques; and
4. Exposure limits (PELs, TLVs, LELs, UELs, etc.).

Training for Attendants shall include the following:

1. Procedures for summoning rescue or other emergency services; and
2. Proper utilization of equipment used for communicating with entry and emergency/rescue personnel.

C. Training Certifications

A certification training record containing each trained employee's name, the signatures or initials of the trainers, and the dates of training shall be provided for each confined space trained employee or contractor. The certification shall be available for inspection by employees and their authorized representatives.

A list to track authorized personnel employed by CS Clean is provided in Attachment A. Currently CS Clean does not have any confined space authorized personnel.

5.2 Employee Retraining

The employee shall receive annual refresher training in order to maintain competence in entry procedures. Retaining may also be conducted in the event inadequacies of the employee's knowledge or use of this SOP is identified.

6.0 INSPECTIONS AND AUDITS

The Production Manager shall ensure a survey of the worksite is conducted to identify confined spaces. This survey can be partially completed from initial and continuing site characterizations, as well as other available data (i.e., blueprints and job safety analyses). The purpose of the survey is to develop an inventory of those locations and/or equipment at CS Clean that meet the definition of a confined space (**Attachment A**). This information shall be communicated to personnel, and appropriate confined space procedures shall be followed prior to entry. The potential for the following situations shall be evaluated by confined space designee:

- flammable or explosive potential;
- oxygen deficiency; and
- Presence of toxic and corrosive material.

7.0 ATTACHMENTS

Attachment A - Hazard Inventory and Assessment of Confined Spaces
Attachment B - List of Authorized Personnel
Attachment C - Confined Space Entry Permits

Attachment A

Hazard Inventory and Assessment of Confined Spaces

HAZARD INVENTORY AND ASSESSMENT OF CONFINED SPACES

DEPARTMENT: _____ LOCATION: _____

PERFORMED BY: _____ DATE: _____

Name of Confined Space	Location	Hazardous Atmosphere?	Engulfment Hazard?	Entrapment Hazard?	Hazardous Energies?	Other Hazards (specify)	Atmospheric Testing (CO, O2, H_2S, Toxic, Combustible)

Attachment B

List of Authorized Personnel

List of Authorized Personnel

Name	Department	Trained Confined Space Duty (Entrant, Attendant, or Supervisor)

Attachment C

Confined Space Entry Permit

Confined Space Number	Location Description	Date of Entry
Purpose of Entry		Time of Entry
Location	Supervisor	Permit Duration

Person Entering Confined Space

Last name	First Name	Time/In	Time/Out	Time/In	Time/Out	Time/In	Time/Out

Supervisor (Pre-Entry) Checklist

❑ Yes ❑ No ❑ N/A Lockout / Tagout / De-Energized
❑ Yes ❑ No ❑ N/A Line(s) Broken – Capped – Blanked
❑ Yes ❑ No ❑ N/A Ventilation Established
❑ Yes ❑ No ❑ N/A Area Secured (Post, Cone & Barricade)
❑ Yes ❑ No ❑ N/A Appropriate Protective Clothing
❑ Yes ❑ No ❑ N/A Emergency Procedures Established
❑ Yes ❑ No ❑ N/A Passive Air Monitor Available & Worn

❑ Yes ❑ No ❑ N/A Standby Personnel Available
❑ Yes ❑ No ❑ N/A Full Body Harness with D-Ring
❑ Yes ❑ No ❑ N/A Emergency Rescue Equipment (A-Frame)
❑ Yes ❑ No ❑ N/A Air Testing Conducted and Recorded
❑ Yes ❑ No ❑ N/A Protective Clothing from Chemicals Usage
❑ Yes ❑ No ❑ N/A Re-test Atmosphere every 2 hours
❑ Yes ❑ No ❑ N/A Other Hazards_____

Communication Procedures
(e.g. Radio, Speaking Normal)

Atmospheric Testing Records

Testing Criteria	Permissible Entry Level	Time	Time	Time	Time	Time	Time
Percent of Oxygen	19.5% to 23.5%						
Lower Explosive Limit	< 10%						
Carbon Monoxide	< 25 ppm						
Hydrogen Sulfide	<10 ppm						
Other							

Atmospheric Tester(s) Name	Signature	Instrument Model / Type	Calibration Date	Serial Number

Authorized Attendant Name	Signature	Authorized Attendant Name	Signature

Supervisor(s) Name (Print)	Signature	Date	Time

Emergencies and Rescue: 911	**HR Supervisor:**
Fire Department:	**Service Center:**

THIS PERMIT MUST BE POSTED AT THE JOB SITE

RETURN ONE COPY TO SUPERVISOR AND KEEP ONE COPY AT DEPARTMENT

CS CLEAN SYSTEMS	Title:	SOP – Contractor Safety Program
	Review / Revision Date:	August 23, 2022
	Reviewed by:	

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A. Contractor Safety Checklist
B. Job Hazard Analysis

CS CLEAN SYSTEMS	Title:	SOP – Contractor Safety Program
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1.0 PURPOSE

In accordance with the requirements of OSHA Regulations (e.g., 29 CFR 1910), CS Clean Systems (CS Clean) has developed and implemented a Contractor Safety Program SOP for all contractor operations conducted throughout the facility. CS Clean's Contractor Safety Program is designed to ensure that Contractor jobs are performed safely which prevents injury to their own personnel, as well as, affected CS Clean employees and owners. All Contractors must understand the safety rules and procedures of the site. This program applies to both CS Clean owners and to any contractors who may be performing any type of work operations.

2.0 REFERENCES

29 CFR 1910 Subpart D	Walking-Working Surfaces
29 CFR 1910 Subpart E	Exit Routes and Emergency Planning
29 CFR 1910 Subpart F	Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms
29 CFR 1910 Subpart G	Occupational Health and Environmental Control
29 CFR 1910 Subpart H	Hazardous Materials
29 CFR 1910 Subpart I	Personal Protective Equipment
29 CFR 1910 Subpart J	General Environmental Controls
29 CFR 1910 Subpart K	Medical and First Aid
29 CFR 1910 Subpart L	Fire Protection
29 CFR 1910 Subpart M	Compressed Gas and Compressed Air Equipment
29 CFR 1910 Subpart N	Materials Handling and Storage
29 CFR 1910 Subpart O	Machinery and Machine Guarding
29 CFR 1910 Subpart P	Hand and Portable Powered Tools and Other Hand-Held Equipment
29 CFR 1910 Subpart Q	Welding, Cutting and Brazing

3.0 APPLICABILITY

These requirements apply to:

- Any non- CS Clean employee who has been authorized by a CS Clean operation to work on-site at the facility or under the direct supervision of CS Clean employees;
- Contractors not working on CS Clean premises, if they are providing installation, maintenance or service work on behalf of CS Clean;
- Contractors providing installation, maintenance or service work on contractor-owned equipment, including bulk tank operations;

- Sub-contractors authorized under CS Clean contractors. It is the responsibility of the general contractor and CS Clean to ensure that sub-contractors are aware of and comply with these requirements.

No site work by contractors should be conducted work unless the requirements of this program is fully implemented. Any construction work will be halted until this program is fully implemented.

4.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support - will review and revise this SOP when necessary and provide advisory assistance and information concerning contractor safety.

Production Manager - has the overall responsibility to ensure compliance with this SOP. They will coordinate work activities with contractors, provide information and training, evaluate the use of administrative, engineering, work practice controls and personal protective equipment to eliminate or minimize the hazards, ensure contractors are trained on the contractor safety program, inform new contractors about the required process, and provide guidelines to guests and visitors, if not otherwise specified by contractual arrangement, under this program.

Employees – will complete any required training, be aware of the hazards and associated controls for the hazards associated with contractor work, inform management if a process change would increase the risk of the hazard or decrease the risk of the hazard, and follow standard operating procedures that are related to this program.

EH&S (or Designee) – will assist the manager/supervisor with identifying and procuring the appropriate equipment, provide training, as needed, for owners and/or contractors as outlined in this document, assess contractors' compliance with this program and OSHA requirements, and review and, if necessary, revise this document as required.

Contractors - are responsible for following all OSHA regulations and requirements under CS Clean's contractor safety program, identifying all hazards and implementing necessary controls prior to commencing work, providing all required guidelines to their owners, as contractually required, and performing all required trainings under this program and for the hazards associated with contracted work.

5.0 CONTRACTOR ASSESSMENTS

5.1 Selection of Contractors

CS Clean shall assess the EH&S performance of contractors as part of the contractor selection process. An EH&S Contractor Safety Checklist is attached to assure contractors meet regulatory compliance obligations.

For high-risk contractor work, CS Clean shall conduct:

1. A review of the past safety performance (metrics as well as regulatory issues).
2. A review of the contractor's EH&S operating procedures.
3. A review of the contractor's training records for work that requires a specific license or permit (e.g. asbestos abatement, electrical work).
4. A review of the contractor's training records if the work includes any of the following: lockout/tagout, fall protection, respirator use, powered industrial trucks, cranes, confined space entry, excavation, PPE or scaffolding and rigging.

Contractors performing work, as defined in Section 3.0, must show proof of training by a qualified person in the safety risks inherent to the contractor's operation.

The contractor assessment must ensure that the contractor has a system in place to understand/assess the risks and hazards of the work and has identified the means to address the risks. When project engineering changes are made or when new hazards are identified in a process, operation or project, the risk assessment must be updated to address the new hazards and their relative risk. Further information on the risk assessment process is detailed in section 5.2.

CS Clean shall assess the EH&S performance of contractors on an ongoing basis. This can occur through periodic field inspections and review of EH&S records and performance metrics (e.g. Total Recordable and Lost Workday Incident Rates). The Production Manager, EH&S, or designee will review data related to the following:

- A review of the past year's safety performance (metrics as well as regulatory issues).
- A review of any changes to the contractor's EH&S operating procedures.
- A review of the contractor's training records for work that requires a specific license or permit (e.g., asbestos abatement, electrical work, PPE, LOTO, etc.).
- A review of the contractor's training records if the work includes any of the following: lockout/tagout, fall protection, respirator use, powered industrial trucks, cranes, confined space entry, excavation, PPE or scaffolding and rigging.

5.2 Job Hazard Analysis

In general, the facility uses a Job Hazard Analysis (JHA) process as the preferred method for hazard analysis of routine tasks conducted at the worksite. The JHA includes a PPE Assessment process. The JHA process occurs as follows:

1. A work task or process is reviewed by the Production Manager, EH&S, or designee and corresponding contractor.
2. Hazards are accessed and controls are either put in place or reviewed.

3. The JHA is documented, and work instructions are crafted to follow the hazards identified.
4. Owners and contractors affected by the JHA are required to be trained on hazards associated with the work.
5. JHAs are then reviewed periodically.

The JHA process described above will be applied to all contractor activities. Work tasks and processes with the largest hazards, amounts of incidents, number of near misses, or perceived risk will result in the concentration of resources and additional hazard assessments for that task or process. A JHA template is included in the attachments for reference.

6.0 PROCESS AND PROCEDURES

6.1 OSHA's General Duty Clause and General Safety

Hazardous conditions or practices not covered in an OSHA Standard may be covered under Section 5 (a)(1) of the Occupations Safety and Health Act of 1970 which states: "Each employer shall furnish to each employee of his employees' employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to employees." The Contractor shall be responsible to ensure that all contracts are performed to all applicable OSHA Standards and the above clause in the strictest sense. All hazards will be controlled, so that employees of the contractor and owners are not unreasonably exposed to a hazard.

The following general safety rules must be followed by contracted workers:

- Never by-pass guards, interlocks and machine safeguards;
- Always report unsafe conditions to your Supervisor and the Production Manager;
- Obey all warning postings, signs and labels on drums, tanks and work areas; and Follow JHAs and training instructions at all times.

6.2 Emergency Plans and Fire Prevention

The Contract Worker must be familiar with the Emergency Action Plan employed at CS Clean. The Facilities Manager or Supervisor will assure the contractor is shown the location of and explained the function and use the contractor for the following:

- Phone and how to contact CS Clean's emergency coordinator or alternate in an emergency;
- First Aid procedures;
- Eye wash and shower stations; and

- Fire extinguishers (if trained in the use of fire extinguishers).

Note: Depending upon the job being contracted, the Contractor may be responsible for supplying their own fire extinguishers, eye wash and shower stations.

The Production Manager or designee will show the location of the nearest exit and explain all emergency evacuation routes, meeting places and procedures.

The Contractor must inform CS Clean's emergency coordinator or alternate in the event of an emergency (fire, spill, medical, etc.).

6.3 Reporting Accidents / Injuries

CS Clean requires Contractors to report all accidents to the Production Manager or EH&S. If possible, accidents must be reported immediately, but in all instances CS Clean requires that they be reported prior to the end of the work shift in which the incident occurred, so that the incident investigation process can be implemented. The following are types of accidents that must be reported:

- Medical events;
- Spills;
- Fire;
- Near misses;
- Damage to machinery; and
- Damage to facility.

Contractors are not to attempt to treat any worker's injury unless training in first aid and bloodborne pathogens has been completed and current. Depending upon the contract, the contractor may need to provide first aid supplies and training to affected workers. However, the incident is still to be reported.

6.4 Hazardous Materials

The management of all hazardous materials onsite will occur per the Hazard Communication Program. If hazardous materials are brought onto the site by the contractor, the materials will be reviewed and approved by the Production Manager or EH&S. The contractor will provide Safety Data Sheets (SDSs) for all hazardous materials brought onto the site.

Training must be provided to a contractor's employees and owner prior to routine exposure to any chemical or physical agent that presents a hazard. The Contractor is responsible for training their workers on any chemical that the contractor provides and is required to submit the SDS prior to the

material being brought to the site.

The Production Manager is responsible for providing the information to the contractor on CS Clean's known chemicals in the area so that the contractor may properly train their employees in the safe handling, emergency first aid procedures, and all other requirements set forth in 29 CFR 1910.1200.

Contractor workers have the right to refuse work if the information and training required under the law have not been provided.

Contractor workers may view SDS materials whenever the employee needs information about a particular chemical. Employees may receive copies of SDS by submitting the request in writing or verbally to the Production Manager, EH&S, or designee.

The Contractor is responsible to train their workers to be familiar with warning labels from vendors, OSHAs Hazard Communication Standard, National Fire Protection Association (NFPA) Diamond, Hazardous Material Identification System (HMIS), and the DOT Hazard Identification System.

Workers are to understand and be familiar with all precautions for working with hazardous materials before starting any job requiring their use.

No hazardous substances may be brought on to the site without proper identification, labeling and SDS.

Before starting non-routine tasks, the Contractor's Supervisor and CS Clean's Production Manager ,EH&S, or designee shall notify the workers of the nature of the chemical expected to be present, potential hazards when used, and appropriate protective measures and Personal Protective Equipment (PPE) to be used.

6.5 Personal Protective Equipment (PPE)

The Contractor shall perform a JHA per section 5.2 prior to the start of work at the facility. The Production Manager will provide the Contractor with information concerning hazards associated with the plant.

The Contractor will train each of their workers according to the hazard assessment associated with each task. The worker may only use PPE after training is completed. Therefore, if the task requires PPE, the employee must not be involved in this task until the training is completed and medical surveillance (if needed) is completed. A copy of a record certifying that the contractor has completed the training must be presented to CS Clean upon request.

The contractor will also have established regulatory programs, meeting all regulatory requirements for employees requiring specific PPE (e.g., hearing protection, respirators, etc.). CS Clean may request to review records of such program requirements, upon request.

In addition to the above requirements, the following Personal Protective Equipment must be worn and shall be provided by the contractor.

- Approved safety glasses with side shield protection;
- Approved safety shoes;
- Hearing protection must be worn in posted areas;
- Approved respirators (dependent on operation and chemicals included and in the regulated respiratory protection areas)
- No loose clothing or ties shall be worn around machinery. No jewelry, rings, bracelets, watch chain, key chains, etc. shall be worn around equipment; and
- Hard hats must be worn on all construction sites where overhead hazards exist.

6.6 Lockout Tagout (LOTO)

CS Clean has established a LOTO program for all hazardous energy. The Production Manager will share all LOTO procedures and the LOTO program with the contractors' affected employees, so that they are familiar with CS Clean's LOTO procedures prior to the commencement of work activities onsite. The following requirements are established:

- Authorized personnel and affected contract workers shall be trained by the contractor in proper LOTO procedures prior to working at CS Clean.
- The Contractor must follow all procedures set forth in 29 CFR 1910.147 and adhere to CS Clean LOTO procedures.
- Contractors are responsible for sharing any LOTO procedures they have and their associated program with CS Clean, so that CS Clean can provide and train owners who are affected and authorized personnel.

6.7 Confined Space

CS Clean employees do not enter confined spaces. As such, all work will be outsourced to contractors to conduct all confined space entries and ensuing entry requirements, as part of the contract process, following the Confined Spaces procedure.

- All contractor workers must be able to identify a confined space. Confined spaces include restrictions to entry and the dangers associated with entry. CS Clean has identified all known confined spaces in the plant but, depending upon the contract, new confined spaces may exist. The training responsibility and all protective equipment as well as rescue measures are the responsibility of the contractor. The Production Manager shall ensure

that the contractor has completed training requirements based upon submitted documentation, and has proper equipment and rescue means before initiating the contract.

- The contractor shall have an established confined space program and provide trained individuals in confined space entry, monitoring, rescue, and supervision.
- The Contractor may not enter a confined space unless a confined space supervisor reviews the entry permit, air monitoring, LOTO procedures, rescue procedures, communication and all other hazards associated with confined space entries forms. The confined space supervisor must certify on the permit that these procedures have been reviewed.
- The Contractor must submit a copy of the permit to CS Clean when entry is finished or when the permit has expired.

6.8 Material Handling

Many workplace injuries occur when safe lifting and safe materials handling procedures are not followed. Material handling activities will be included in the JHA as part of section 5.2. The following are key elements for the Contractor employee to understand:

- Utilize mechanical means of handling materials over machines whenever possible;
- Inspect motorized vehicles and mechanical equipment before use;
- Ensure loads are stable and secure;
- Ensure there is safe clearance for equipment through aisles;
- Trucks and trailers must be secured from movement during loading and unloading operations by chocking the wheels; and
- When lifting, bend your knee and not your back. Lift with your leg muscles and hug the object that you are lifting close to your body.

6.9 Hot Work

CS Clean has established hot work procedures for welding, cutting, burning, heating, grinding, or similar spark, slag, or intense heat producing activities at the site. Hot work conducted by the contractor will adhere to all requirements in the CS Clean Hot Work SOP and meet the following requirements:

- All contractors must establish and maintain effective hot work programs for the use of welding, cutting, and brazing. Each contractor must provide copies of their hot work procedures to the Production Manager prior to beginning work at the site. They must include verification that all employees have been trained and that they understand the training; and
- Hot work procedures and permits must comply with OSHA Standards 29 CFR 1910.252

Welding, Cutting and Brazing and 1926 Subpart J.

- Contractors shall be trained on hot work procedures and the use of fire extinguishers when conducting hot work activities.
- The contractor will complete a hot work permit as provided by CS Clean prior to the start of all hot work activities. The permit will be posted and returned to the Facilities Manager/Supervisor or EH&S upon closeout of the permit or the work shift.

6.10 Fall Protection

All elevated work at the site will occur per elevated work requirements in the CS Clean Walking-Working Surfaces SOP. Additionally, the contractor will comply with the following requirements:

- Protection shall be provided to protect employees from falls in work locations above 4 feet in general industry and 6 feet in a construction setting (10 feet on scaffolds);
- Safety nets must be provided when workplaces are more than 25 feet above the surface where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or safety belts are impractical.
- A competent person, provided by the contractor, must inspect ladders, scaffolding, and elevated work platforms prior to use.
- Contractor employees will be trained on elevated work and fall protection prior to conducting elevated work activities.

6.11 Compressed Gases

Handling of hazardous compressed gases will meet the requirements of hazardous in section 6.4 and materials handling in 6.8. Additionally, all compressed gas brought onto site will meet requirements established by OSHA incorporating the Compressed Gas Association (CGA) Pamphlet P-1-196 by reference. The contractor shall also assure:

- Valve protection caps shall be in place when compressed gas cylinders are transported, moved or stored.
- Cylinder valves shall be closed when work is finished and when cylinders are empty or moved.
- Compressed gas cylinders shall be secured in an upright position at all times, except for short periods of time, if necessary, when cylinders are being hoisted or carried.
- Cylinders shall be kept at safe distance or shielded from welding or cutting operation per section 6.9.
- Cylinders shall be placed where they cannot become part of an electric circuit.
- Oxygen and fuel gas regulators shall be in proper working order while in use.

- Contractor employees should be trained in the use and hazards of compressed gases.

6.12 General Electric

CS Clean has an Electrical General Requirements SOP that the contractor shall comply. Additionally, the contractor shall comply with the following requirements:

- All electrical work shall be in compliance with the National Electric Code, unless otherwise provided by OSHA regulations;
- Extension cords used with portable electric tools shall be 3-wire type, shall be protected from damage and shall not be fastened with staples, hung from nails or suspended from wires. Worn or frayed cables shall not be used;
- Except where bulbs are deeply recessed in the reflector, bulbs on temporary lights shall be equipped with guards. Temporary lights shall not be suspended by their electric cords unless designed for suspension;
- Receptacles for attachment plugs shall be approved, concealed contact type. Where different voltages, frequencies, or types of current are supplied, receptacles shall be of such designs that the attachment plugs are not interchangeable;
- Each disconnecting means of motors and appliances and each service feeder or branch circuit at the point where it originates shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident;
- Cable passing through work areas shall be covered or elevated to protect it from damage to avoid creating a hazard to employees;
- Boxes for disconnecting means shall be securely and rigidly fastened to the surface upon which they are mounted and fitted with covers; and
- No worker shall permit an employee to work in such proximity to any part of an electric power circuit that he may contact the same in the course of his work unless the employee is protected against electrical shock by de-energizing the circuit and grounding it or by guarding it by effective insulation or other means. In work areas where the exact location of underground electric power lines is unknown, workmen using jack hammers, bars or other hand tools which may contact an energized line shall be provided with insulated protective gloves.
- Only qualified electricians will perform electrical work. Contractors will have LOTO, electrical safety and arc flash training for employees conducting electrical work.
- LOTO will occur per section 6.6 for electrical equipment.

6.13 Housekeeping

The contractor shall maintain orderly work areas and keep areas neat and well maintained so that

hazards do not occur. In general, the contractor will assure:

- Form and scrap lumber with protruding nails and all other debris shall be kept clear from all work areas;
- Combustible scrap and debris shall be removed at regular intervals, at a minimum daily;
- The Contractor shall provide containers for collection and separation of all refuse. The Contractor shall provide covers on containers used for flammable or harmful substances;
- Wastes will receive a waste determination and pending the contract be handled by the contractor;
- All materials stored in tiers shall be secured to prevent sliding, falling or collapse; and
- Aisles, egresses, and passageways shall be kept clear in good repair.

6.14 Excavating and Trenching

CS Clean will contract all excavating and trenching activities. The Production Manager will ensure the following requirements are met:

- Before beginning any excavation, the local utilities services shall be contacted to determine if there are underground utilities installations in the area. They shall be located and supported during the excavation operations. Also, the contractor will review available site utility maps.
- The walls and faces of trenches 4 feet or more deep and all excavations in which employees are exposed to danger from moving ground or cave-in shall be guarded by a shoring system, sloping of the ground or some other equivalent means approved by engineers and competent persons.
- In excavations which workers may be required to enter, excavated or other material shall be effectively stored and retained at least 2 feet or more from the edge of the excavation.
- Inspections of excavations shall be made by the contractor's competent person prior to initial entry, prior to entry each day, and periodically to ensure safe entry and work. If evidence of possible cave-in or slides are apparent, all work in the excavation shall cease until the necessary precautions have been taken to safeguard the employees (Contractor's responsibility).
- Trenches 4 feet deep shall have an adequate means of exit, such as ladders or steps, located so as to require no more than 15 feet lateral travel.
- The contractor will provide training to all employees exposed to trenching and excavating hazards.

6.15 Air Tools

Please note, pneumatic use of air tools is strictly prohibited in the regulated respiratory protection areas. Please see the Respiratory protection SOP for further detail on the location. Additionally, the contractor shall abide by the following requirements:

- Pneumatic power tools shall be secure to the hose or whip in a positive manner to prevent accidental disconnection;
- Safety clips or retainers shall be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled; and
- All hoses exceeding ½-inch inside diameter shall have a safety device at the source or branch line to reduce pressure in case of hose failure.
- Activities using air to clean off personnel and equipment will be limited in use to only allotted activities and use no more than 30 psi.
- LOTO of pneumatic tools will follow section 6.6.

6.16 Cranes and Derricks

CS Clean has various materials handling equipment maintained onsite. When using such equipment and/or additional cranes and derricks provided by the contractor will ensure that:

- All manufacturers' specifications and limitations are met;
- Rated load capacities recommended operating speeds and special hazard warnings, or instructions shall be conspicuously posted on all equipment. Instructions or warnings shall be visible from the operator's station;
- Equipment shall be inspected by the Contractor's competent person before each use and all deficiencies corrected before further use;
- Accessible areas within the swing radius of the rear of the rotating super structures shall be properly barricaded to prevent employees from being struck or crushed by the crane; and
- Except where electrical distribution and transmission lines have been de-energized and visibly grounded at the point of work, or where insulating barriers not part of an attachment to the equipment or machinery has been erected to prevent physical contact with the lines, no part of a crane or its load shall be operated within 10 feet of such lines.
- Users of such equipment will be trained in the safe use and handling of the equipment.

6.17 Powered Industrial Vehicles

CS Clean has established requirements for powered industrial vehicles (PIVs) under the Materials

Handling SOP that the contractor shall comply with. Additionally, the contractor shall ensure:

- PIVs are inspected by a competent person prior to each shifts use.
- Training is provided to users of PIVs prior to use.
- PIVs are maintained in working order per manufacturer's instructions and are not altered in any unapproved way.

7.0 TRAINING

7.1 Orientation and Pre-Job Training

Prior to allowing a contractor to perform work, the Production Manager, EH&S, or designee must train representative(s) of the contractor in the appropriate safety information, policies and procedures for the site and more specifically policies and procedures in the area of contracted work to be included in the training. The Production Manager will maintain safety orientation training records of contractor representative(s). In turn, the Production Manager, EH&S, or designee must inform the contractor that they should maintain similar training records for the training of all employees required trainings per the work tasks identified in the contractor safety program. The Contractor employee(s) training may be periodically requested to be inspected to assure compliance by CS Clean. It is the responsibility of the contractor's representative(s) to provide training and enforce CS Clean's safety guidelines and procedures with each of their employee(s) that will be performing work on CS Clean 's premises.

The Production Manager shall coordinate a periodic inspection of the Contractor Safety Program SOP to ensure that CS Clean employees and applicable facility locations are in compliance with the requirements of the OSHA Standards. At a minimum, this review shall be done on an annual basis. The Production Manager, EH&S, or designee will review this SOP on an annual basis and update, as necessary.

8.0 CONTRACTOR CHECKLIST

To facilitate and document compliance with this program the Production Manager, EH&S, or designee must review and complete a Contractor Checklist with the contractor's representative(s). Since each item of the checklist requires detailed discussion and instruction, the checklist should be completed in a face-to-face meeting at or near the job site, if possible. A copy of the completed checklist must be supplied to the contractor and maintained by the Production Manager. The Production Manager, EH&S, or designee should also review this checklist and assure all required elements are implemented prior to the start of work.

9.0 PROGRAM REVIEW

Whenever, there is a change in regulation, process, or contractor safety, this program will be reviewed and updated accordingly.

10.0 ATTACHMENTS

A. Contractor Safety Checklist
B. Job Hazard Analysis

ATTACHMENT A

Contractor Safety Checklist

CS CLEAN SYSTEMS	Title:	SOP – Contractor Safety Program
	Review / Revision Date:	August 23, 2022
	Reviewed by:	

Contractor Safety Checklist

Contractor:_____ Contact Person: _____

Address: _____ Phone Number: _____

Contractor Site Supervisor: _____ Mobile Phone/Pager Number: _____

Brief description of work to be performed: _____

_____

_____

Anticipated Start and Completion Dates: _____

CS Clean Systems Contact: _____ Alternate: _____

Production Manager (or their designee) must review each item with the contractor prior to the start of the work. This review should take place in a face-to-face meeting at or near the job site.

Reviewed ☐
Item Not Applicable ☐
(N/A) ☐

1. **Pre-Qualification**: Is the contractor qualified to perform the job task at hand and have all required trainings associated with below work?

Yes/No
☐ / ☐

2. **Insurance**: Has an adequate Certificate of Insurance been obtained?

Yes/No
☐ / ☐

3. **Licenses**: Is the contractor licensed to perform the work? Copies available? Yes/No
☐ / ☐

4. **Permits**: Are any permits necessary for this work? Have the appropriate permits been obtained? Copies available? Yes/No
☐ / ☐

5. **Special Hazards**: Does this work pose a potential for fire, explosion, or release of hazardous material? If so, are procedures in place to prevent or mitigate these hazards? Is intrinsically safe equipment required for use? Yes/No ☐ / ☐

6. **Chemical Hazard Communication**: Has CS Clean supplied contractor with SDS or other information regarding hazardous substances in the area? Has the contractor supplied CS Clean with SDS for substances it will be bringing on-site and/or using? Has appropriate hazard information been reviewed? Will all containers be labeled? Yes/No ☐ / ☐

7. **Personal Protective Equipment**: What PPE is required? Eyewear ☐ Footwear ☐ Hearing ☐ Respiratory ☐ Clothing ☐
Other:_____
Is selected PPE appropriate? Employees trained in its use and fit-tested, if required? Yes/No ☐ / ☐

8. **Lock-out/Tag-out**: Have CS Clean Lock-out/Tag-out procedures been explained and agreed upon? Yes/No ☐ / ☐

9. **Hot Work**: Will the contractor be welding, brazing, burning, or cutting? If so, a Hot Work Permit must be issued by CS Clean. If combustibles are in the area, a fire watch must be supplied. No welding and/or burning are permitted on any facility roof.
Yes/No ☐ / ☐

10. **Trenching/Excavating**: Is excavation or earthwork required? If so, has the local underground utility mark out expeditor been called (i.e., Call Before You Dig) **AND** have mark outs been completed? Will shoring and barricading be required? Yes/No ☐ / ☐

11. **Confined Spaces**: Will certified contractor employees be working in an enclosed space, tank, or other restricted area? If so, a permit must be issued by CS Clean.
Yes/No ☐ / ☐

12. **Fall Protection**: Will the contractor be working at heights above 6 feet? Will the contractor be using scaffolding or powered man lifts to perform this work? Does the contractor have and use the appropriate safety harnesses? Yes/No ☐ / ☐

13. **Forklifts/Powered Man lifts**: Will the contractor be using forklifts or powered man lifts? Are forklift operators trained and licensed? What licensing criteria were used? Is powered man lift operators trained in safe operation? Yes/No ☐ / ☐

14. **Environmental:** Is there a potential for a release of **any** substance to the air, water, or ground? Will any hazardous materials be used? If so, contact CS Clean's Engineering Manager for review and instructions. Yes/No ☐ / ☐

15. **Emergencies:** Has the contractor been instructed on **who** and **how** to notify **in event of any and all fires/explosions, spills/releases, or medical emergencies**? Have evacuation procedures been explained, including alarms, exits, evacuation routes, meeting area, head counts, etc? Yes/No ☐ / ☐

16. **Housekeeping**: Have CS Clean's housekeeping procedures been explained and agreed upon? Yes/No ☐ / ☐

17. **Smoking:** Has CS Clean's smoking policy been explained and agreed upon? Yes/No ☐ / ☐

18. **Security**: Has contractor been instructed in sign-in/sign-out and identification procedures? Has authorized parking been explained? Has security been notified of other than normal working hours? Has it been explained that contractors are restricted to authorized work areas – all other areas are off-limits? Yes/No ☐ / ☐

19. **Logistics**: Are materials/equipment to be brought onto the job site? Which gate or door? Who will provide the appropriate safe rigging? Storage? Yes/No ☐ / ☐

20. **Other Job Specific Concerns:** Is special ventilation required for fumes, etc? Is the job site required to be evacuated or secured in any way? What services will the contractor require from CS Clean? Electrical? Air? Water? Other? Will the contractor supply all equipment necessary to safely complete the job? Yes/No ☐ / ☐

21. **Site Orientation**: If necessary, has contractor been shown location of appropriate work site facilities such as restrooms, cafeteria, phones, exits, etc? Yes/No ☐ / ☐

22. **Contractor Safety Pamphlet:** Has contractor been given a copy of CS Clean's Contractor Safety pamphlet and has it been reviewed? Yes/No ☐ / ☐

23. **CS Clean Contacts**: Has contractor been given the name(s), phone number(s), and means to contact a responsible CS Clean employee in the event of a question or problem? Yes/No ☐ / ☐

24. **Contractor Responsibilities:** Is the contractor aware that: 1) It is responsible for ensuring and documenting that its employees are trained in appropriate job tasks, hazard information, procedures, and policies, including those reviewed above; 2) It must ensure that all accidents/incidents and hazards are reported to the designated CS Clean contact immediately; and 3) Violation of CS Clean rules and policies and/or the use of unsafe work practices will result in dismissal/termination of contract? Yes/No ☐ / ☐

Date Reviewed: _____

Name of CS Clean Reviewer: _____

Signature: _____

Name of Contractor Representative: _____

Signature: _____

ATTACHMENT B

Job Hazard Analysis

PROCESS SAFETY RULES

JHA Gold Risk Analysis

Job Being Analyzed:		**Department/Operation:**	
Specific job/activity:		**Date:** **Rev.**	**Job Analysis By:**
Steps Sequence of Basic Job Steps	**Hazards** Potential Job Hazards and Accidents	**Control Measures** Engineering and Administrative Controls	

CS CLEAN SYSTEMS	Title:	SOP : Electrical General Requirements
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP: Electrical General Requirements
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1.0 PURPOSE

Safety-related work practices shall be employed by CS Clean to prevent electric shock or other injuries resulting from either direct or indirect electrical contact, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards. The content of this Electrical SOP is as required in OSHA Subpart S (Electrical) 29 CFR l910.331 through 29 CFR l910.335.

This SOP covers the servicing and maintenance of machines and equipment which have not been placed in an electrically safe working condition and the installation/removal of main disconnect switches on bus ducts. Conductors and parts of electric equipment that have been de-energized, but have not been locked out or tagged shall be treated as energized parts. Any machine or equipment which has not been shutdown per our lockout tagout program and procedures will ***not*** be considered to be electrically safe.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager – will review and update the SOP as necessary, will provide assistance to departments during review and implementation of this SOP and will provide verification of employee training.

Employees - each employee shall comply with this policy.

3.0 DEFINITIONS

Bus Duct Switches: Installation and removal of Bus Duct Switches on energized busses.

Deenergized parts: Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Energized parts: If the exposed live parts are not deenergized (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be

suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts.

Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Optical Fiber Cable - Installations of optical fiber cable where such installations are made along with electric conductors.

Other Wiring: Installations of other outside conductors on the premises.

Premises Wiring: Installations of electric conductors and equipment within or on buildings or other structures, and on other premises such as yards, parking, and other lots, and industrial substations.

Tagout: The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Qualified Persons: Those permitted to work on or near exposed energized parts.

Wiring for Connections to Supply: Installations of conductors that connect to the supply of electricity.

4.0 PROCEDURES / REQUIREMENTS

4.1 General Information

The provisions of this SOP cover electrical safety-related work practices for both qualified persons (those who have training in avoiding the electrical hazards of working on or near exposed-energized parts) and unqualified persons (those with little or no such training) working on, near, or with the following installations:

Qualified Persons (i.e., those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with the following:

1 . The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment; and
2. The skills and techniques necessary to determine the nominal voltage of exposed live parts.

4.2 Selection and Use of Work Practices

Safety-related work practices shall be used to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

- De-energized Parts - Live parts to which an employee may be exposed shall be de-energized before the employee works on or near them, unless the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volt to ground need not be de-energized if there will not be increased exposure to electrical burns or to explosion due to electric arcs.
- Energized Parts - If the exposed live parts are not de-energized, (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. When working on energized parts, the appropriate PPE shall be used in accordance with SOP for Personal Protective Equipment (PPE) Assessment and Training.

NOTE: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing of electric circuits that can only be performed with the circuit energized (troubleshooting) and work on circuits that form an integral part of a continuous industrial process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

4.3 Lockout and Tagout

While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized the circuits energizing the parts shall be locked out or tagged or both in accordance with SOP for Lockout/Tagout Program and Procedures, while also including the requirements of this paragraph in the following order.

1. Procedures shall be in place before equipment may be de-energized.

2. Circuits and equipment to be worked on shall be disconnected from all electrical energy sources.

3. Stored electrical energy, which poses a hazard to workers, shall be released.

4. Stored non-electrical energy in devices that could re-energize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

5. A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed, except as provided below.

6. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

7. If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

8. A tag used without a lock as permitted above, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

9. A lock may be placed without a tag only under the following conditions:
   a. Only one circuit or piece of equipment is de-energized.
   b. The lockout period does not extend beyond the work shift.
   c. Employees exposed to the hazards associated with re-energizing the circuit or equipment are familiar with this procedure.

10. Before any circuits or equipment can be considered and worked as de-energized:
    a. A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
    b. A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are de-energized.

11. Before circuits and equipment are re-energized, even temporarily, the following requirements shall be met, in the order given:
    a. A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.
    b. Employees exposed to the hazards associated with re-energizing the circuit or equipment shall be warned to stay clear of circuits and equipment.

c. Each lock and tag shall be removed by the employee who applied it or under his or her direct supervision. However, if the employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that the employer ensures that the employee who applied the lock or tag is not available at the workplace and is aware that the lock or tag has been removed before he or she resumes work at that workplace.
d. There shall be a visual determination that all employees are clear of the circuits and equipment.

4.4 Working On or Near Energized Equipment

This section applies to work performed on exposed live parts (involving either direct contact or contact by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.

Only qualified persons may work on electric circuit parts or equipment that have not been de-energized. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

1. Illumination - Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely. Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas which may contain energized parts.

2. Conductive Materials and Equipment - Conductive materials and equipment that are in contact with any *part of an* employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts or pipes) in areas with live parts, the hazard must be minimized by the use of insulation, guarding, or material handling techniques.

   NOTE: Non-conductive fish tapes must be used when pulling wire through conduit that contains energized conductors or when entering an enclosure with exposed live parts.

3. Portable Ladders - Portable ladders shall be at the non-conductive type (wood or fiberglass) if they are used where the employee or the ladder could contact exposed energized parts. See the Ladder Safety SOP for additional information.

4. Conductive Apparel - Conductive articles of jewelry and clothing (such as bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread,

or metal headgear) may not be worn if they might contact exposed energized parts, unless they are rendered non-conductive by covering, wrapping, or other insulating means.

5. Housekeeping Duties - Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

6. Interlocks - Only a qualified person following the requirements of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system shall be returned to its operable condition when this work is completed.

7. Confined or Enclosed Work Spaces - When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

8. Overhead Lines - Employees shall not work on, or near (within 12 feet) overhead lines. This 12 foot barrier includes any conductive object in that space. OSHA provides specific instructions regarding work on overhead lines. Refer to Subpart S - Electrical 1910.333(c) (3) for more detail.

4.5 Bus Duct Switches

l. For the purposes of installing or removing main disconnect switch on energized bus ducts, only designated persons are allowed to plug or unplug bus switches.

2. Employees installing or removing switches on energized bus ducts shall use the following PPE and have completed a PPE Assessment prior to doing so. Required PPE is noted as:
   a. Rubber gloves with leather protectors.
   b. Full face shield.
   c. Welding jacket.

3. Switch installation procedures.
   a. Remove fuses and place switch in off position.

b. Install switch per manufacturer's instructions (PPE required).
c. Lock and tag switch in off position.
d. Connect load - verify safety of load circuit by checking resistance between phases and between phases to ground.
e. Install fuses.
f. Manually actuate switch to on position from floor using hot stick - DO NOT actuate switch from scissors lift or ladder.

4. Switch removal procedures.
   a. Manually actuate switch to off position from floor using hot stick - DO NOT actuate switch from scissors lift or ladder.
   b. Lock and tag switch.
   c. Verify that there is no Voltage present on the switch.
   d. Remove fuses.
   e. Disconnect load - remove associated wiring and conduit.
   f. Remove switch from bus duct (PPE required).

4.6 Use of Equipment

Portable Electric Equipment - This section applies to the use of cord and plug connected equipment, including flexible cord sets (extension cords).

1. Extension Cord Use
   a. Employees using extension cords (drop cords) to power tools and/or equipment for the performance of *construction, maintenance, repair or demolition* shall use GFCI protection. This pertains to any part of the plant, both inside and outside.
   b. All extension cords must be grounding type, made with UL listed parts, and be in good physical condition.
   c. Extension cords may not be lengthened, or "repaired" with tape.
   d. Power outlet strips are for equipment needing surge protection (e.g., computers).
   e. Extension cords shall not be run through holes in walls, ceilings or floors.
   f. Extension cords may not be plugged into power strips. Power strips may not be connected to each other (i.e., "piggy-backed").
   g. An extension cord should not be run across high traffic areas or used in applications where potential damage to the cord might occur.
   h. The use of an extension cord must not create a trip hazard.
   i. Extension cords shall not be attached to building surfaces or used in lieu of fixed wiring of a structure.
   j. Extension cords shall not be run through doorways or windows, or concealed behind walls, ceilings or floors.

2. Handling - Portable equipment shall be handled in a manner, which will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment. Flexible cords may not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.

3. Visual Inspection - Portable cord-and-plug connected equipment and flexible cord sets (extension cords) shall be visually inspected before use on any shift for external defects and for evidence of possible internal damage.
   a. Cord and plug-connected equipment and extension cords which remain connected once they are put in place and are not exposed to damage need not be visually inspected until they are relocated.
   b. Defective or damaged items shall be removed from service until repaired.

4. Grounding type equipment - A flexible cord used with grounding-type equipment shall contain an equipment-grounding conductor.
   a. Attachment plugs and receptacles may not be connected or altered in a manner which would prevent proper continuity of the equipment grounding conductor at the point where plugs are attached to receptacles. Additionally, these devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current-carrying conductors.
   b. Adapters (i.e., "cheaters") that interrupt the continuity of the equipment grounding connection may not be used.

5. Conductive Work Locations - Portable electric equipment and flexible cords used in highly conductive work locations (such as those inundated with water or other conductive liquids), or in job locations where employees are likely to contact water or conductive liquids, shall be approved for those locations.

6. Load Capacity – Portable power outlet strips load capacity will not exceed 80% of the intended load capacity the device is listed for.

7. Connecting Attachment Plugs - Employees' hands may not be wet when plugging and unplugging flexible cords and cord and plug-connected equipment, if energized equipment is involved.
   a. Energized plug and receptacle connections may be handled only with insulating protective equipment if the condition of the connection could provide a conducting path to the employee's hand.
   b. Locking-type connectors shall be properly secured after connection.

4.7 Electric Power and Lighting Circuits

1. Routine Opening and Closing of Circuits - Load rated switches, circuit breakers, or other devices specifically designed as disconnecting means shall be used for the opening, reversing, or dosing of circuits under load conditions. Cable connector's not of the load-break type, fuses, terminal lugs, and cable splice connections may not be used for such purposes, except in an emergency.

2. Re-closing Circuits After Protective Device Operation - After a circuit is deenergized by a circuit protective device, the circuit may not be manually re-energized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual re-closing of circuit breakers or re-energizing circuits through replaced fuses is prohibited.

   N0TE: Circuit breakers or fuses can only be energized after an overload condition has been determined. If a fault condition exists, the circuit must be tested and determined safe before the circuit can be energized. Circuit breakers can be reset, however repetitive reclosing is prohibited. The problem should be traced to the root cause if a circuit breaker trips twice in succession.

4.8 Overcurrent Protection Modification

Overcurrent protection of circuits and conductors may not be modified, even on a temporary basis, beyond that allowed in the installation safety requirements for overcurrent protection.

4.9 Test Instruments and Equipment

1. Use - Only qualified persons may perform testing work on electric circuits or equipment.

2. Visual Inspection - Test instruments and equipment and all associated test leads, cables, power cords, probes, and connectors shall be visually inspected for external defects and damage before the equipment is used. If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item shall be removed from service, and no employee may use it until necessary repairs and tests to render the equipment safe have been made.

3. Rating of Equipment - Test instruments and equipment and their accessories shall be rated for the circuits and equipment to which they will be connected and shall be designed for the environment in which they will be used.

4.10 Occasional Use of Flammable or Ignitable Materials

Where flammable materials or vapors may be present, electric equipment capable of igniting them shall not be used, unless measures are taken to prevent hazardous conditions from developing. All equipment used in flammable hazardous classified locations shall be intrinsically safe, as rated by UL.

4.11 Safeguard for Personnel Protection

1. Personal Protection Equipment - Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed.
   a. Protective equipment shall be maintained in a safe, reliable condition and shall be periodically inspected or tested, as required by 29 CFR 1910.137.
   b. If the insulating capability of protective equipment may be subject to damage during use, the insulating material shall be protected. (For example, an outer covering of leather is sometimes used for the protection of rubber insulating material.)
   c. Employees shall wear non-conductive head protection wherever there is a danger of head injury from electric shock or bums due to contact with exposed energized parts.
   d. Employees shall wear protective equipment for the eyes or face wherever there is danger of injury to the eyes or face from electric arcs or flashes or from flying objects resulting from electrical explosion.

When working near exposed energized conductors or circuit parts, each employee shall use insulated tools or handling equipment if the tools or handling equipment might make contact with such conductors or parts. If the insulating capability of insulated tools or handling equipment is subject to damage, the insulating material shall be protected.

- Fuse handling equipment, insulated for the circuit voltage, shall be used to remove or install fuses when the fuse terminals are energized.
- Ropes and handlines used near exposed energized parts shall be nonconductive.
- Protective shields, protective barriers, or insulating materials shall be used to protect each employee from shock, burns, or other electrically-related injuries while that employee is working near exposed energized parts which might be accidentally contacted or where dangerous electric heating or arcing might occur. When normally enclosed live parts are exposed for maintenance or repair, they shall be guarded to protect unqualified persons from contact with live parts.

NOTE: Cabinet doors and electrical enclosures should be kept closed. If, however, this is not possible due to the conditions which follow, additional precautions must be taken to minimize the extent of the hazard.

4.12 Unattended Work

This section covers situations where:

- Energized equipment is exposed and must be left unattended.
- The scope of the energized equipment is so large that the person working cannot monitor it.
- The equipment cannot otherwise be guarded against accidental intrusion by a passerby.

Alerting Techniques - The following alerting techniques shall be used to warn and protect employees from hazards which could cause injury due to electric shock, burns, or failure of electric equipment parts:

a. Safety signs, safety symbols, or accident prevention tags shall be used where necessary to worn employees about electrical hazards, which may endanger them, as required.
b. Barricades shall be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas exposing employees to uninsulated energized conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.
c. Attendants. If signs and barricades do not provide sufficient warning and protection from electrical hazards, an attendant shall be stationed to warn and protect employees.

5.0 TRAINING

The training requirements contained in this document apply to employees who face a risk of shock that is not reduced to a safe level by the installation as required by the National Electrical Code and 29 CFR l910 Subpart S, Electrical. Listed below are employees who may face such a risk and shall be trained:

- Electrical and electronic engineers;
- Electrical and electronic technicians;
- Electricians;
- Mechanics and repairers; and
- Welders.

1. Other employees who also may reasonably be expected to face comparable risk of injury due to electric shock or other electrical hazards must also be trained.

2. Employees who are covered by the scope this policy, but who are not qualified persons shall also be trained in and familiar with any electrically related safety practices not specifically addressed, but which are necessary for their safety.

3. The training required shall be of the classroom or on-the-job type (preferably both). The degree of training provided shall be determined by the risk to the employee.

Training records will be maintained by the Production Manager.

6.0 INSPECTIONS / AUDITS

The Production Manager (or Designee) shall coordinate a periodic inspection of the Electrical General Requirements SOP to ensure that CS Clean employees and subcontractors are complying with the requirements of the OSHA Standards. At a minimum, this review shall be done on an annual basis.

7.0 ATTACHMENTS

Attachment A - Self-Audit Checklist

ATTACHMENT A

SELF-AUDIT CHECKLIST

Electrical Safety-Related Work Practices (1910.331-335)
Self-Audit Checklist

Building _____ Room _____ Supervisor _____ Date _____

Audit Performed by _____

	Y	N	NA	COMMENTS
A. Electrical Safety-Related Work Practices Program				
1. Model written program available				
2. Training complete and documented				
3. Lockout/Tagout program includes electrical safety-related work practices				
B. Selection and Use of Work Practices				
1. Minimum safe work distances established when work involves energized parts				
2. Illumination provided in all spaces containing exposed electrical conductors				
3. Measures taken to avoid inadvertent contact with energized parts in enclosed or confined spaces				
4. Measures taken to avoid inadvertent contact of conductive materials or equipment with energized parts during handling				
5. Portable ladders have nonconductive siderails				
6. Conductive apparel not worn unless rendered nonconductive				
7. Measures taken to avoid inadvertent contact with energized parts during housekeeping duties				
8. Electrical safety interlocks defeated only by a qualified person following specific procedures				
C. Use of Equipment				
1. Procedures for handling portable equipment implemented				
2. Procedures for working with extension cords implemented				
3. Only qualified persons allowed to perform test work				
4. Measures taken to prevent hazards from the occasional use of flammable materials near electrical equipment				
D. Safeguards for Personnel Protection				
1. Personal Protective Equipment appropriate for the electrical hazard provided and used				
2. Insulated tools and handling equipment used for work performed near exposed energized circuits				
3. Protective shields, barriers, or insulating materials used near exposed electrical circuits or where dangerous electric heating or arcing may occur				
4. Appropriate alerting techniques used to warn and protect workers				

CS CLEAN SYSTEMS	Title:	SOP – Hand Held Equipment and Powered Tools
	Review / Revision Date:	October 27, 2022
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP – Hand Held Equipment and Powered Tools
	Review / Revision Date:	October 27, 2022
	Reviewed by:	

1.0 Purpose

Under 29 CFR 1910 Subpart P, the Occupational Safety and Health Administration (OSHA) has established regulations defining the use of hand and portable powered tools and equipment. The purpose of this standard operating procedure is to outline the general safety requirements and responsibilities for the safe handling and use of these tools and equipment.

2.0 Responsibility

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager – will review and update the program as necessary, will provide assistance to departments during review and implementation of this SOP and ensure all affected personnel are trained in the proper usage of all handheld equipment and portable power tools applicable to their position.

EH&S or Designee - is responsible for ensuring all inspections are completed in the timeframe set forth within this plan and that tools are used for their intended purpose.

Employees - each employee shall comply with this policy including only using tools and equipment that is in safe condition per the inspection requirements in Section 6.0 below.

3.0 Definitions

Abrasive Mounted wheels - Mounted wheels, usually 2-inch diameter or smaller, and of various shapes, may be either organic or inorganic bonded abrasive wheels. They are secured to plain or threaded steel mandrels.

Hammer-operated piston tool - low-velocity type - A tool which, by means of a heavy mass hammer supplemented by a load, moves a piston designed to be captive to drive a stud, pin, or fastener into a work surface, always starting the fastener at rest and in contact with the work surface. It shall be so designed that when used with any load that accurately chambers in it and that is commercially available at the time the tool is submitted for approval, it will not cause such stud, pin, or fastener to have a mean velocity in excess of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

High-velocity tool - A tool or machine which, when used with a load, propels or discharges a stud, pin, or fastener, at velocities in excess of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel, for the purpose of impinging it upon, affixing it to, or penetrating another object or material.

Jack - A jack is an appliance for lifting and lowering or moving horizontally a load by application of a pushing force. Jacks may be of the following types: Lever and ratchet, screw and hydraulic.

Low-velocity piston tool - A tool that utilizes a piston designed to be captive to drive a stud, pin, or fastener into a work surface. It shall be so designed that when used with any load that accurately chambers in it and that is commercially available at the time the tool is submitted for approval, it will not cause such stud, pin, or fastener to have a mean velocity in excess of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

Pneumatic Tools – Tools that are powered by air, such as air wrenches, air grinders, spray guns, and air fasteners.

Portable grinding - A grinding operation where the grinding machine is designed to be hand held and may be easily moved from one location to another.

Protective shield or guard - A device or guard attached to the muzzle end of the tool, which is designed to confine flying particles.

4.0 Procedures and Requirements

4.1 General Requirements (All Tooling)

Each employer shall be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees.

1. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 PSI and then only with effective chip guarding and personal protection equipment.

2. Defective tools shall be removed from service and tagged “out of service”.

3. When not in use, tools shall be placed where they will not create a hazard.

4. Flexible cords with damaged insulation or defective parts shall not be used.

5. Portable electric powered tools shall meet the electrical grounding requirements of OSHA 1910 Subpart S per the Electrical General Requirements SOP.

6. Handles of all tools shall be smooth, without sharp edges or splinters, and shall be firmly attached to the tool. Wooden handles of tools shall be of firm straight grained stock.

7. Heads of shock tools (such as hammers, sledges, and cold chisels) shall be dressed or ground as they begin to mushroom or crack. When such tools show a tendency to chip, they shall be immediately removed from service.

8. The cutting edges of tools shall be maintained in a uniformly sharp condition to eliminate the additional hazard resulting from the erratic resistance of the dulled edges.

9. Heavy leather holsters, guards, or equivalent protection shall be used for sharp-edged or sharp pointed tools carried on the worker's person.

10. Workers who use sharp-edged cutting tools shall use appropriate protective equipment such as gloves, aprons, and leg guards to protect against accidental cuts.

11. Hand tools provided for use in explosive or flammable atmospheres shall be of intrinsically safe and rated (e.g., UL Listed) for the environment in which they are used.

4.2 Portable Powered Tools

1. **Portable circular saws**: All portable, power-driven circular saws having a blade diameter greater than 2 inches shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to covering position.

2. **Switches and controls:** All hand-held powered circular saws having a blade diameter greater than 2 inches, electric, hydraulic or pneumatic chain saws, and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch or control that will shut off the power when the pressure is released. All hand-held gasoline powered chain saws shall be equipped with a constant pressure throttle control that will shut off the power to the saw chain when the pressure is released.

3. **Portable Belt Sanding Machines:** Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accident contact.

4.3 Pneumatic Powered Tools and Hose

1. A tool retainer shall be installed on each piece of utilization equipment which, without such a retainer, may eject the tool.

2. Hose and hose connections used for conducting compressed air to utilization equipment shall be designed for the pressure and service to which they are subjected.

3. A shut-off valve shall be installed at the manifold or permanent pipe outlet of the compressed air supply.

4. Workers shall not couple or uncouple hose without first shutting off the compressed air supply except when using couplers which are equipped with check valves which automatically shut off the compressed air supply.

5. Workers shall remain in the clear when turning on air supply at a valve.

6. Driving pistons in pneumatic tools shall be constructed so that they cannot fly out of the tool.

7. Pneumatic fastener-driving tools and other power-driven fastener tools shall be equipped with a safety device to prevent ejection of nails or staples when the tool is not in firm contact with the work.

8. Power-driven fastener-driving tools may be used without the safety device only when using staples with a diameter of .0475 inch (18 gauge A.W.G.) or less and the tool operator and all workers within 15 feet are wearing suitable eye protection.

9. Oxygen or combustible gases shall not be used to drive pneumatic tools.

10. The exhaust from pneumatic power tools shall be deflected away from the operator.

4.4 Abrasive Wheels and Grinders

1. Abrasive wheels shall be used only on machines provided with safety guards as follows:

- A safety guard shall cover the spindle end, nut and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the

wheel, and the strength of the fastenings shall exceed the strength of the guard.

- Safety guards on all operations where the work provides a suitable measure of protection to the operator may be so constructed that the spindle end, nut and outer flange are exposed. Where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

- The spindle end, nut, and outer flange may be exposed on portable machines designed for, and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels, and tuck pointing wheels.

- Cup wheels shall be guarded using revolving cup guards which mount behind the wheel and turn with it. They shall be made of steel or other material with adequate strength and shall enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform with all regulations. It is necessary to maintain clearance between the wheel side and the guard. The clearance shall not exceed one-sixteenth inch.

- Vertical portable grinders (right angle grinders) shall be guarded so that a maximum exposure angle of 180° is allowed, and the guard shall be so located so as to be between the operator and the wheel during use. Adjustment of guard shall be such that pieces of an accidentally broken wheel will be deflected away from the operator.

- Other portable grinders shall be guarded so the maximum angular exposure of the grinding wheel shall not exceed 180° and the top half of the wheel shall be enclosed at all times.

2. Mounting and inspection of abrasive wheels shall be conducted as follows:

- Immediately before mounting, all wheels shall be closely inspected and sounded by the user to make sure they have not been damaged in transit, storage, or otherwise. The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel.

- A controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) is essential to avoid excessive pressure from mounting and spindle expansion. To accomplish this, the machine spindle

shall be made to nominal (standard) size plus zero minus .002 inch, and the wheel hole shall be made suitably oversize to assure safety clearance under the conditions of operating heat and pressure.

- All contact surfaces of wheels, blotters, and flanges shall be flat and free of foreign matter.

- When a bushing is used in the wheel hole it shall not exceed the width of the wheel and shall not contact the flanges.

4.5 Internal Combustion Engine Driven Tools

1. Internal combustion engine-driven tools shall be equipped with a positive on and off ignition switch that will remain in either position.

2. Internal combustion engine-driven tools shall be equipped with effective means to control power except those which are designed to operate at constant speed. Throttle controls shall return the engine to idling speed when released.

3. Internal combustion engine-driven tools shall be equipped with a self-rewinding starting device, or be designed to furnish equivalent safety.

4. Exhaust ports on internal combustion engine-driven tools shall be equipped with mufflers and shall be constructed and maintained to deflect exhaust fumes away from the operator when the tool is being used in its normal operating position.

5. Internal combustion engine-driven tools shall be stopped while being fueled.

6. Sling-carried tools which are powered by attached portable internal combustion engines shall be capable of quick removal.

7. The fuel system of sling-carried tools shall be inspected before each use, and any defect shall be repaired immediately.

4.6 Explosive Actuated Fastening Tools

1. Only employees who have been training in the operation of the particular tool in use shall be allowed to operate a explosive actuated tools.

2. The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.

3. Operators and assistants using tools shall be safeguarded by means of eye protection. Head and face protection shall be used, as required by working conditions and in accordance with SOP for Personal Protective Equipment.

4. The tool shall be designed so that it cannot be fired unless it is equipped with a standard protective shield or guard or a special shield, guard, fixture, or jib.

5. The firing mechanism shall be designed so that the tool cannot fire during loading or preparation to fire or if the tool is dropped while loaded.

4.7 Other Portable Tools and Equipment

1. **Jacks:** The use of jacks at CS Clean requires the following:

   - The operator shall make sure that the jack used has a rating sufficient to lift and sustained the load. The rated load shall be legibly and permanently marked in a prominent location on the jack by casting, stamping, or other suitable means.

   - In the absence of a firm foundation, the base of the jack shall be blocked. If there is a possibility of slippage of the cap, a block shall be placed in between the cap and the load.

   - The operator shall watch the stop indicator, which shall be kept clean, in order to determine the limit of travel. The indicated limit shall not be overrun.

   - After the load has been raised, it shall be cribbed, blocked, or otherwise secured at once.

   - Hydraulic jacks exposed to freezing temperatures shall be supplied with an adequate antifreeze liquid.

   - All jacks shall be properly lubricated at regular intervals.
   - Each jack shall be thoroughly inspected at times which depend upon the service conditions.

- Repair or replacements parts shall be examined for possible defects.
- Jacks which are out of order shall be tagged accordingly, and shall not be used until repairs are made.

2. **Abrasive blast cleaning nozzles:** The used abrasive blast cleaning nozzles at CS Clean requires the following:
   - The blast cleaning nozzles shall be equipped with an operating valve which much be held open manually.
   - A support shall be provided on which the nozzle may be mounted when it is not in use.

4.8 Specific Operating Requirements:

1. Before using a tool, the operator shall inspect it to determine to their satisfaction that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions.
2. When a tool develops a defect during use, the operator shall immediately cease to use it, until it is properly repaired.
3. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any workers.
4. No tools shall be loaded unless being prepared for immediate use, nor shall an unattended tool be left loaded.
5. In case of a misfire, the operator shall hold the tool in the operating position for at least 30 seconds. The operator shall then try to operate the tool a second time. He/she then shall wait another 30 seconds, holding the tool in the operating position; then he shall proceed to remove the explosive load in strict accordance with the manufacturer's instructions.
6. A tool shall never be left unattended in a place where it would be available to unauthorized persons.
7. Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.

8. Driving into materials easily penetrated shall be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying-missile hazard on the other side.

9. Fasteners shall not be driven directly into materials such as brick or concrete closer than 3 inches from the unsupported edge or corner, or into steel surfaces closer than 1/2-inch from the unsupported edge or corner, unless a special guard, fixture, or jig is used. (Exception: Low-velocity tools may drive no closer than 2 inches from an edge in concrete or 1/4-inch in steel.) When fastening other materials, such as a 2- by 4-inch wood section to a concrete surface, it is permissible to drive a fastener of no greater than 7/32-inch shank diameter not closer than 2 inches from the unsupported edge or corner of the work surface.

10. Fasteners shall not be driven through existing holes unless a positive guide is used to secure accurate alignment.

11. No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.

12. Tools shall not be used in an explosive or flammable atmosphere.

13. All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

14. Any tool found not in properly working order shall be immediately removed from service. The tool shall be inspected at regular intervals and shall be repaired in accordance with the manufacturer's specifications.

4.9 Inspection, Maintenance, and Tool Handling

1. **High velocity tools:** Shall have the following characteristics with regards to inspection, maintenance, and tool handling:

   - The muzzle end of the tool shall have a protective shield or guard at least 3-1/2 inches in diameter, mounted perpendicular to and concentric with the barrel, and designed to confine any flying fragments or particles that might otherwise create a hazard at the time of firing.

   - Where a standard shield or guard cannot be used, or where it does not cover all apparent avenues through which flying particles might escape, a special shield, guard, fixture, or jig designed and built by the manufacturer of the

tool being used, which provides this degree of protection, shall be used as a substitute.

- The tool shall be so designed that it cannot be fired unless it is equipped with a standard protective shield or guard, or a special shied, guard, fixture, or jig.\
- The firing mechanism shall be so designed that the tool cannot fire during loading or preparation to fire, or if the tool should be dropped while loaded. Firing of the tool shall be dependent upon at least two separate and distinct operations of the operator, with the final firing movement being separate from the operation of bringing the tool into the firing position.
- The tool shall be so designed as not to be operable other than against a work surface, and unless the operator is holding the tool against the work surface with a force at least 5 pounds greater than the total weight of the tool.
- The tool shall be so designed that it will not operate when equipped with the standard guard indexed to the center position if any bearing surface of the guard is tilted more than 8° from contact with the work surface.
- The tool shall be so designed that positive means of varying the power are available or can be made available to the operator as part of the tool, or as an auxiliary, in order to make it possible for the operator to select a power level adequate to perform the desired work without excessive force.
- The tool shall be so designed that all breeching parts will be reasonably visible to allow a check for any foreign matter that may be present.

2. **Low velocity tools:** Shall have the following characteristics with regards to inspection, maintenance, and tool handling:

- The muzzle end of the tool shall be designed so that suitable protective shields, guards, jigs, or fixtures, designed and built by the manufacturer of the tool being used, can be mounted perpendicular to the barrel. A standard spall shield shall be supplied with each tool.
- The tool shall be designed so that it shall not in ordinary usage propel or discharge a stud, pin, or fastener while loading or during preparation to fire, or if the tool should be dropped while loaded. Firing of the tool shall be dependent upon at least two separate and distinct operations of the operator,

with the final firing movement being separate from the operation of bringing the tool into the firing position.

- The tool shall be so designed as not to be operable other than against a work surface, and unless the operator is holding the tool against the work surface with a force at least 5 pounds greater than the total weight of the tool.

- The tool shall be so designed that positive means of varying the power are available or can be made available to the operator as part of the tool, or as an auxiliary, in order to make it possible for the operator to select a power level adequate to perform the desired work without excessive force.

- The tool shall be so designed that all breeching parts will be reasonably visible to allow a check for any foreign matter that may be present.

3. **Hammer-operated piston tools:** Shall have the following characteristics with regards to inspection, maintenance, and tool handling:

   - The muzzle end of the tool shall be so designed that suitable protective shields, guards, jigs, or fixtures, designed and built by the manufacturer of the tool being used, can be mounted perpendicular to the barrel. A standard spall shield shall be supplied with each tool.

   - The tool shall be so designed that it shall not in ordinary usage propel or discharge a stud, pin, or fastener while loading, or during preparation to fire, or if the tool should be dropped while loaded.

   - Firing of the tool shall be dependent upon at least two separate and distinct operations of the operator, with the final firing movement being separate from the operation of bringing the tool into the firing position.

   - The tool shall be so designed that positive means of varying the power are available or can be made available to the operator as part of the tool, or as an auxiliary, in order to make it possible for the operator to select a power level adequate to perform the desired work without excessive force.

   - The tool shall be so designed that all breeching parts will be reasonably visible to allow a check for any foreign matter that may be present.

5.0 Training

CS Clean will train all appropriate employees on the proper procedures to operate required hand held equipment and portable power tools before performing tasks in which these items are used. Retraining will be completed if job performance deems it necessary.

All training records are maintained by the Human Resources Manager (or Designee).

6.0 Inspections/Audits

All power tools shall be visually inspected before each use (or on a per shift basis) and kept in good repair at all times. Additional specific tool inspection shall be followed as listed in Section 4.0 above.

7.0 Attachments

There are no attachments associated with this SOP.

HAZARD COMMUNICATION PROGRAM

CS *Clean*
Phoenix Facility

Prepared For:

CS Clean Phoenix Facility
2453 West Parkside Lane
Suite 150
Phoenix, Arizona 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

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1.0 ADMINISTRATION

1.1 Scope

This document covers any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

1.2 Purpose

The purpose of this program is to help ensure that CS Clean employees are protected from exposure or injury from chemicals or other potentially hazardous materials, as well as to protect their "right to know" about all hazards associated with the chemicals that they are using.

1.3 Application

A hazardous chemical, according to the OSHA Hazard Communication Standard, is "any chemical which is classified as a physical hazard or health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified."

This Hazard Communication Program covers all CS Clean employees who work directly with chemicals or materials which present a potential health or physical hazard, and all employees who work in an area where such materials are stored or handled.

It is important that hazard communication efforts are coordinated with any outside contractor or supplier that is commissioned to perform work in or around the facility. This is necessary to ensure that contractors are familiar with the hazards and safety procedures governing work with or near hazardous materials, as well as to control exposure to CS Clean employees from hazardous materials that the contractor may be using.

2.0 REFERENCES

2.1 Applicable Codes and Standards

- OSHA standard 1910.1200, *Hazard communication.*
- NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response.*
- ANSI/ASME A13.1, *Standard for the Identification of Pipes.*
- OSHA standard 1910.120, *Hazardous waste operations and emergency response.*

3.0 DEFINITIONS

Terms used in this program are intended to align with those defined in OSHA standard Part 1910.1200, *Hazard communication*. Section 3.1 defines some of the commonly referenced terms.

3.1 Definitions Applicable to this Document

Article. A manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

Chemical. Any substance or mixture of substances.

Chemical Name. The scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstract Service (CAS) rules of nomenclature, or a name that will clearly identify the chemical for the purpose of conducting a hazard classification.

Classification. To identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

Exposure or Exposed. Means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption).

Product Identifier. The name or number used for a hazardous chemical on a label or in the Safety Data Sheet (SDS). It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

Use. Means to package, handle, react, emit, extract, generate as a byproduct, or transfer.

4.0 RESPONSIBILITIES

4.1 Program Administrator

The Program Administrator include the Production Manager. The Program Administrator have overall responsibility for administering the Hazard Communication Program. Certain tasks can be delegated to other individuals or outside consultants. Specific responsibilities include, but are not limited to:

(1) Maintain a master chemical inventory list which identifies materials by department and location;

(2) Maintain a current safety data sheet (SDS) for every OSHA "hazardous" chemical in use;

(3) Maintain SDS on file are complete and comply with OSHA requirements;

(4) Archive SDS for discontinued chemicals;

(5) Coordinate required hazard assessment activity including personal protective equipment assessments, qualitative exposure assessments, and quantitative exposure assessments;

(6) Use and update employee training programs, including lesson plans, content, audiovisuals, and other teaching aids as needed;

(7) Ensure employees have received appropriate training in order to understand labels, warnings, and SDS, as well as the health and physical hazards and symptoms of over-exposure associated with the chemicals/materials that they are using; and the measures they can take to protect themselves from these hazards, including work practices, emergency procedures, and personal protective equipment to be used;

(8) Ensure that all employees follow the required safety procedures including the use of prescribed personal protective equipment (PPE) via conducting periodic compliance audits of all work areas covered by this program;

(9) Coordinate hazard communication activities with outside contractors and/or contract labor;

(10) Develop and manage a container labeling strategy;

(11) Follow Spill Prevention Control and Countermeasure Plan (SPCC) plan emergency procedures for spills or releases, other than small "incidental" spills;

(12) Ensure that first aid and other emergency equipment, such as emergency eyewashes are maintained in good working order;

(13) Ensure that employees understand the established emergency procedures utilizing a sign-off document at training;

(14) Address employee concerns and/or requests for information;

(15) Maintain all documentation required by this program; and

(16) Review and update this program as changes occur to include new or modified tasks and procedures.

4.2 Employees

Every employee that handles or works in an area where hazardous materials are used must:

(1) Follow the requirements of this program without exception;

(2) Attend and actively participate in all required training programs;

(3) Follow all established safety policies and procedures involving hazardous chemicals or materials, including the use of required PPE;

(4) Immediately bring to management's attention any hazards, concerns, or identified problems involving chemicals or hazardous materials; and

(5) Report to management whenever they have suggestions or recommendations on how to improve the quality and effectiveness of this program.

4.3 Contractors

Contractors are responsible for complying fully with the requirements of the OSHA Hazard Communication Standard. Any chemicals brought to CS Clean by contractors must first be approved, and safety data sheets shall be submitted to the Program Administrator prior to being brought onto CS Clean property.

5.0 HAZARD COMMUNICATION PROGRAM ELEMENTS

5.1 Chemical Inventory

In accordance with OSHA standard 1910.1200(e)(1)(i), CS Clean maintains an accurate list of all hazardous chemicals present in the workplace. The Program Administrator will work with department supervisors and their designees to ensure the CS Clean chemical inventory is accurate and up-to-date. A copy of the most current chemical inventory will be kept in the EMIS2 program CS Clean maintains.

Hazardous chemicals can take many physical forms, including liquids, gases, vapors, fumes or mists, which may present an exposure in their primary state, or which can be released as the result of processing or secondary operations. This includes materials stored in bulk, in portable containers, and/or in process piping, whether they are used on a daily or infrequent basis. The hazardous nature of the chemical and potential for exposure are the factors which determine what must be placed on this list.

. Electronic copies of the chemical inventory will be kept on shared server for access by any employee with computer access via CS Clean's EMIS2 program. CS Clean employees have continual access to the inventory during working hours and are instructed in accessing and searching the chemical inventory during their initial hazard communication training and during refresher training.

The same chemical or material may be known by more than one name. The name used on the chemical inventory is the name used on the SDS, container labels, signs and/or placards.

5.2 Safety Data Sheets

A SDS must be provided by the chemical manufacturer, importer, or distributor at the time of the first shipment of any hazardous chemical or hazardous material as defined by OSHA. These SDS will be maintained on file for every chemical or hazardous material stored or used by CS Clean employees. It is the responsibility of the chemical manufacturer, importer, or distributor to send an updated SDS any time there has been an appreciable change in the composition and/or known hazards of the material.

SDS will be readily accessible to all employees and are available upon request to designated representatives of CS Clean employees, the OSHA Assistant Secretary, and the OSHA Director in accordance with the requirements of 29 CFR 1910.1200(e).

Safety data sheets are available in the SDS binders maintained onsite. Electronic copies of SDS will also be kept on a shared server for access by any employee with computer access via CS Clean's EMIS2 program.

Chemicals or other hazardous materials should not be accepted for delivery and should never be used without the proper SDS, either provided with the shipment or with an approved current copy already maintained on file.

SDS for discontinued chemicals or materials are removed from the active binder and archived. SDS for discontinued chemicals are retained indefinitely with the EH&S records.

5.3 Labeling

The Program Administrator or their designee are responsible for maintaining a labeling strategy.

Each container of hazardous chemical in the workplace shall be labeled, tagged or marked with either:

(1) Labels on shipped containers including:
   a. Product identifier;
   b. Signal word;
   c. Hazard statement(s);
   d. Pictogram(s); and
   e. Precautionary statement(s); or

(2) Product identifier and words, pictures, symbols, or a combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

For chemicals transferred from their original container to be used on-site, CS Clean uses GHS compliant labeling.

Bulk storage containers will be labeled in accordance with NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*.

Piping containing hazardous material will be labeled in accordance with ANSI/ASME A13.1, *Standard for the Identification of Pipes*.

Because the same chemical or material may be known by more than one name, the name used on the label must be the one that is the same as listed on the chemical inventory list and on the SDS. The product name and common name as indicated in the EMIS2 SDS Manager are acceptable names for container labels.

All necessary information required for labeling should be on the SDS. Labeling information must match that found on the SDS. The Program Administrator must consult the SDS if there are any questions concerning the necessary information for the label. If this information is missing from the SDS, the Program Administrator should immediately contact the manufacturer or supplier. CS Clean's EMIS2 system will be utilized to generate compliant secondary labels.

5.4 CS *Clean* Products

Currently no products produced, repackaged, distributed or sold by CS Clean meet the OSHA definition of a hazardous material. As a result, CS Clean does not author SDSs. If there is a change in process, material, or product requiring CS Clean to author a SDS, the Program Administrator, or his designee, will be responsible for ensuring that an accurate SDS is maintained for all CS Clean products for which a SDS is required.

5.5 Chemical Review Process

For chemicals already in use at CS Clean, the Program Administrator will verify that the chemical is included in the appropriate chemical inventory and that there is a current and accurate SDS on file for the material during the periodic reviews of the chemical inventory specified in Section 5.1.

If a chemical is new to CS Clean or the appropriate information is not found in the chemical inventory, the Program Administrator will ensure (through their own research or through use of a third party vendor) that the chemical is the least hazardous option and it will be managed in a safe and environmentally compliant way. Program Administrator may choose to utilize the Chemical Approval Form in **Appendix B** to complete their new chemical review.

It is important that not only the chemical be evaluated, but how it will be used (spray, dipping, mixing, brushing), whether or not it will be heated or pressurized, expected application/use rates, and what chemicals will be used with/near the material. Goals of this program are to:

(1) Prevent the introduction of chemicals that are unnecessarily hazardous to employees and/or the environment;

(2) Reduce the number of chemicals to the lowest practical extent;

(3) Substitute less hazardous and more "environmentally-friendly" chemicals whenever possible;

(4) Prevent excessive inventory and waste;

(5) Identify and prevent chemical incompatibilities, at point of use and in storage;

(6) Arrange for proper storage and handling;

(7) Evaluate material for any special regulatory compliance issues;

(8) Ensure that all necessary emergency plans and procedures are adequate before a material/chemical is put into service; and

(9) To ensure that all necessary stakeholders are aware of the chemical, its intended use, and all associated safety and environmental hazards.

Engineering controls, such as automation of process, improved local exhaust ventilation, and substitution of less toxic materials, will continue to be pursued in conjunction with the Hazard Communication efforts, so as to provide the safest possible work environment for all employees.

5.6 Non-Routine Work Instructions

OSHA mandates non-routine work instructions for non-routine work completed by the site (e.g., maintenance and cleaning activities of vessels). Prior to the start of work activities the site shall perform a job hazard analysis for the work and assure a PPE hazard assessment has been completed CS Clean will then implement necessary controls identified under the job hazard analysis and assure the necessary PPE is available and utilized per the PPE SOP.

5.7 Contractors

Contractors with employees working at CS Clean will be informed of the hazardous chemicals to which their employees may be exposed while performing work and be provided access instructions for the SDS of such materials. The contractor is responsible for ensuring their employees take appropriate protective measures and are aware of any specific safety precautions or hazards, as determined by the SDS provided. CS Clean management also will confer with the contractor's management as appropriate to discuss any hazards particular either to the work the contractor will be performing or the work area in which the work will be performed. The Program Administrator will describe the labeling system used at CS Clean as necessary.

CS Clean requires all contractors who intend to bring a hazardous chemical to a CS Clean facility to provide the Program Administrator with an up-to-date SDS for each hazardous chemical prior to its arrival on site. The contractor will further be required to explain (orally or in writing) any precautionary measures necessary to protect employees during normal operation conditions or in foreseeable emergencies. If the contractor uses a hazardous chemical labeling system different from CS Clean, a contractor representative must explain the company's labeling system to the Program Administrator. No hazardous chemicals will be allowed on site unless the labeling meets all requirements stated in the OSHA Hazard Communication Standard. CS Clean will train, or require the contractor to train, any CS Clean employee who may be exposed to hazardous chemicals used by the contractor as provided in the employee training section.

Compliance with the information requirements of this section will be documented using the Contractor Hazard Communication Notification Form in **Appendix A**. Each contractor will be required to submit the signed form to one of the Program Administrator. The signed form instructs the contractor how to access SDS, the written Hazard Communication Program, an explanation of the labeling system used, and any operation/equipment-specific safety procedures that may apply.

6.0 TRAINING AND DOCUMENTATION

6.1 Employee Training

EH&S or designee is responsible for ensuring that new employees have received the required hazard communication training before they begin working with a hazardous chemical or material.

EH&S or designee may conduct the training or may delegate that task to a qualified CS Clean employee or an approved, qualified training provider.

There are two parts of the training:

(1) The first part covers employees' rights under the standard, how to obtain a SDS, how to read and understand the information and terminology on a SDS, the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), the facility's labeling program, and who to contact for assistance when needed. This part of the training is delivered in a classroom setting and can be supplemented with handouts, audiovisuals, or other training materials at the discretion of the Administrators.

(2) The second part of the training covers specific hazards and safe work practices associated with some of the chemicals the employee will be using. The training should include the category of hazards (e.g., carcinogens, sensitizers, acutely toxic agents) an employee may encounter. This training must include all physical and health hazards, methods of control including the use of specific personal protective equipment (PPE), emergency procedures, and signs and symptoms of potential over-exposure.

The training should include an opportunity for employees to ask questions to ensure that they understand the information presented to them.

The Program Administrator or their designee will re-train existing employees whenever:

(1) They have been reassigned to a new area with different chemicals, processes, or hazards;

(2) There has been an appreciable change in the chemical(s) used, including new chemicals or significant changes in concentration/formulation; or

(3) There is new information on the hazards, exposure limits, and/or control strategies associated with an existing chemical.

Retraining can be conducted in a classroom setting or through toolbox talks led by the EH&S or designee, dependent on the quantity and scope of the new information and the target audience.

Refresher training will highlight the major components of, and any changes to, the CS Clean Hazard Communication Program, and to offer the opportunity for employees to ask questions on the program and/or chemicals they routinely work with.

All training will be fully documented including the date of training, name of the employee(s), the name of the instructor(s), and information covered.

6.2 Program Documentation

All activity required by the OSHA Hazard Communication Standard will be fully documented in this written program or in files/locations as referenced. Proper retention of these documents will be the responsibility of the Program Administrator or their designee, although recordkeeping activities may be delegated to specific individuals or departments.

The following documentation is readily available in the event of an OSHA inspection or request for information:

(1) Name, title and contact information of the Program Administrator;

(2) Copy of the written Hazard Communication Program;

(3) Chemical inventory list;

(4) Safety Data Sheet Binders;

(5) Employee training program and training logs;

(6) Labeling program/strategy and supporting documentation; and

(7) A copy of the facility's emergency procedures as provided in the site specific Emergency Action Plan.

7.0 INCIDENTS AND EMERGENCIES

7.1 Incident Investigations

All accidents, injuries, and near-misses, particularly those involving a hazardous chemical or material must immediately reported to the Program Administrator. The Program Administrator will initiate an incident investigation as needed to determine the underlying root cause so that effective remedial actions may be taken. The Program Administrator, or their designee, will make all required changes/modifications to the program and/or conduct additional training, as necessary, to address identified deficiencies as part of the corrective action process.

7.2 Emergencies and Spill Clean-Up

All chemical spills, gas leaks, and all other releases of material which are not part of normal operations at CS Clean shall be immediately reported to the Program Administrator.

Employees, fully trained under this Hazard Communication Program and in the specific materials in question, may engage in the cleanup of only minor, incidental spills. These spills must not present a true emergency, such as creating high levels of exposure to a toxic substance, creating a life threatening situation or presenting health hazards to the employee, posing a fire or explosion hazard (exceeds or has potential to exceed 25% of the lower explosive limit), creates or has the potential to create an immediately dangerous to life or health (IDLH) environment, results in the potential of an oxygen deficient atmosphere, requires specialized expertise to control, involves mixing or potential mixing of incompatible chemicals, threatens the environment, or presents any other exposure which would be considered serious or emergent.

An employee may be authorized to clean up minor spills that do not meet the definition of an emergency, provided that:

(1) The employee has been fully trained in hazard communication and the exact substance/material which is involved;

(2) Proper personal protective and cleanup equipment is provided;

(3) Employees are properly trained in the use of PPE and cleanup procedures;

(4) Actions follow those prescribed in the SDS; and

(5) Materials are disposed of properly in accordance with applicable environmental regulations.

Emergency spills beyond incidental spills will be handled by outside resources in accordance with the CS Clean. CS Clean's Phoenix Emergency Action Plan addresses spill response activities further and shall be referenced for all spills at the Phoenix facility.

8.0 HAZARDOUS MATERIALS FOR TRANSPORT

Prior to offering any hazardous material for transport, including hand carry off the property, CS Clean must ensure that it meets all requirements of OSHA, the U.S. Department of Transportation, and all other corporate, state, federal, and international regulations. In order to ensure CS Clean's continued compliance, a trained hazardous materials (HazMat) specialist must review and approve all HazMat shipments and hand carries. Hazardous materials for shipment may include hazardous waste, laboratory samples, adhesives, paints, solvents, flammable and/or corrosive liquids, compressed gas, batteries, and equipment containing batteries, etc.

A current copy of the SDS is required along with a contact name and telephone extension. Under no circumstances can chemicals be transported off the property without first getting the approval of a HazMat specialist. Under no circumstances can chemicals be mailed.

APPENDIX A

Contractor Hazard Communication Notification

Contractor Hazard Communication Notification

As required by our operations, CS Clean uses and stores hazardous materials on our premises. As a result, there is potential for employees and contractors working at CS Clean to be exposed to the hazards of such materials. To help ensure the safety of our employees, contractors, visitors, and the environment, CS Clean has written and implemented a Hazard Communication Program compliant with the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).

All hazardous materials at CS Clean are labeled with the name of the material (product identifier) and words, pictures, symbols, or a combination thereof, which provide general information regarding the hazards of the material. If more specific information is necessary, the Safety Data Sheet (SDS) shall be consulted. It is the contractor's responsibility to ensure that their employees are aware of the hazardous materials at CS Clean, their potential for exposure, and the appropriate protective measures to be taken when working with or near hazardous materials. To ensure the appropriate information is available to contractors, a copy of the Hazard Communication Program, SDS, and an explanation of CS Clean's labeling system can be requested from the Program Administrator.

CS Clean requires all contractors who intend to bring a hazardous chemical to a CS Clean facility to provide the Program Administrator with an up-to-date SDS for each hazardous chemical prior to its arrival on site. The contractor will further be required to explain (orally or in writing) any precautionary measures necessary to protect employees during normal operation conditions or in foreseeable emergencies. If the contractor uses a hazardous chemical labeling system different from CS Clean, a contractor representative must explain the company's labeling system to the Program Administrator. No hazardous chemicals will be allowed on site unless the labeling meets all requirements stated in the OSHA Hazard Communication Standard. CS Clean will train, or require the contractor to train, any CS Clean employee who may be exposed to hazardous chemicals used by the contractor as provided in the employee training section.

The below specified Contractor is responsible for the safe handling and use of all chemicals brought on CS Clean premises, as well as ensuring that up-to-date SDS are available on site for all chemicals brought on CS Clean premises. All chemical use and storage must comply with all federal, state and local regulations. CS Clean reserves the right to prohibit or limit the use of any chemical. Every effort shall be made to use the safest product with the lowest degree of toxicity and flammability. Contractors bringing corrosive liquids on CS Clean premises shall be required to bring portable eyewashes, and if required, safety showers, unless the contractor has made arrangements in advance with CS Clean. All chemical containers must be clearly labeled with the material identity and appropriate health and physical hazard warnings. Incompatible materials must be properly segregated. Under no circumstances may any materials or waste contaminated with hazardous materials be poured down the storm drain or sanitary sewer or onto the ground, pavement or roadway.

The Contractor shall be responsible for notifying their personnel of all the requirements related to potential hazards including hazards from hazardous materials that may be encountered while performing the work under this contract. This completed form must be signed prior to execution of any contract with an outside Contractor, and submitted to the Program Administrator.

Contracting Company Name: _____

Contractor Representative (print)	(sign)	Date
CS Clean Representative (print)	(sign)	Date

APPENDIX B
Chemical Approval Form

CS CLEAN SYSTEMS

CHEMICAL APPROVAL FORM

TO BE FILLED OUT BY CS Clean			
Date:	SDS Sheet Attached: ☐ Yes ☐ No If no, explain		
Requester:		Phone #:	Facility:
CHEMICAL INFORMATION			
Product Trade Name:			
Chemical Name:			
Manufacturer:			
Supplier (if different):			
ID This Product: ☐ Sample Only ☐ Permanent – New Item ☐ Other:			
SITE SPECIFIC INFORMATION			
Intended Use of Chemical:			
Indented Date of Receipt:		Order Quantity:	
Projected Max. Inventory:		Projected Usage Rate:	
Is there an existing chemical on site used for the same purpose? ☐ Yes ☐ No			
Will the new product replace the existing chemical? ☐ Yes ☐ No			
List alternate chemicals considered:			

TO BE FILLED OUT BY THIRD PARTY REVIEWER
Type of secondary container for this chemical:
Proposed container disposal method:
Proposed storage location:
Proposed disposal method of "spent" chemical:
Special procedures planned for this chemical:
Personal protective equipment required for this chemical:
Recommended Alternative(s), if necessary:

ROUTE	NAME	APPROVAL SIGNATURE	DATE	APPROVED?
Requester				☐ Yes ☐ No
Third Party Approver				☐ Yes ☐ No
Department Supervisor				☐ Yes ☐ No
Purchasing				☐ Yes ☐ No
Notes:				

Distribution of approved form and SDS: To Requester/Facility/Department Supervisor/Purchasing Department

HAZARD COMMUNICATION PROGRAM

CS Clean ■ ■ Phoenix, AZ

CS CLEAN SYSTEMS	Title:	SOP - Hot Work
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP - Hot Work
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

1.0 PURPOSE

In accordance with the requirements of OSHA Regulation 29 CFR 1910.252(a), CS Clean Systems (CS Clean) has developed and implemented a Hot Work Permit SOP for all hot work operations conducted in non-designated hot work areas (i.e., outside of a designated welding area in maintenance shop) throughout the facility. This program applies to CS Clean employees and contractors who may be performing any type of hot work operations.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with the Hot Work Permit program.

Production Manager – shall be responsible for ensuring the policy is implemented throughout the facility. Will aid departments in identifying areas that are suitable for safe hot work operations, review and revise the hot work SOP when necessary, provide advisory assistance and information concerning the use of hazardous materials, hot work precautionary procedures, or physical hazard assessments.

EH&S or Designee - shall issue permits; notify employees or contractors of the requirement for hot work permits; advise contractors about flammable materials or hazardous conditions; notify individuals that perform hot work of the requirements for hot work permits; coordinate outages or isolation of fire alarm systems to prevent false alarms when necessary; provide the Production Manager with the information necessary to update the hot work policy; Provide suitable training in the safe operation of cutting, welding, and other equipment associate with hot work for individuals performing such work and their supervisors. Copies of completed hot work permits shall be maintained by the Production Manager for a period of one (1) year.

Employees – shall meet or exceed CS Clean Hot Work Program. Employee(s) shall make sure that a hot work permit is filled out correctly and is posted at the location of hot work operations will complete any required training, be aware of the hazards and associated controls for the hazards associated with contractor work, inform management if a process change would increase the risk of the hazard or decrease the risk of the hazard, and follow standard operating procedures that are related to this program.

Contractors – shall meet or exceed CS Clean Hot Work Program. Contractor(s) shall make sure that a hot work permit is filled out correctly and is posted at the location of hot work operations. Contractors are required to provide and use their own Hot Work Permit that shall meet or exceed CS Clean Hot Work Permit. Ensure that safety controls are implemented and are in good working condition. This means engineering controls such as local exhaust ventilation (LEV), general ventilation, and that employees are wearing the correct personal protective equipment (PPE). Contractor(s) shall have their own fire watch person.

3.0 DEFINITIONS

Combustible - A material capable of sustaining burning when ignited.

Brazing and Soldering – Soldering and brazing uses molten metal to join two pieces of metal. The metal added during both processes has a melting point lower than that of the work piece, so only the added metal is melted, not the work piece. Brazing produces a stronger joint than does soldering, and often is used to join metals other than steel, such as brass. Brazing can also be used to apply coatings to parts to reduce wear and protect against corrosion.

Combustible Materials – Solid materials that are capable of burning and igniting.

Confined Space – A space that has all the following characteristics:

- It is large enough and so configured that a person can bodily enter; and
- It has limited or restricted means for entry or exit; and
- It is not designed for continuous occupancy.
- Confined spaces can be classified into two categories:
- Low-hazard non-permit required confined space; and
- High-hazard permit-required confined space.
    - Low-hazard confined spaces are those confined spaces that do not contain or have the potential to contain any atmospheric or other hazards capable of causing death or serious physical harm. A low-hazard confined space may become a high-hazard confined space if there are hazardous materials brought into the space or if hazardous activities (such as welding, brazing, or cutting) are conducted in the space.
    - Permit-required confined spaces are those spaces that contain high hazards and are based on their inherent hazard potential. For a high-hazard permit-required confined space, an entry permit is used to ensure proper hazard evaluation, safe entry, safe work and safe exit. See SOP for Confined Spaces for additional information.

Cutting – Any process, including grinding, which produces sparks capable of igniting combustible or flammable materials and transmits heat to the work material from a hot gas.

Flammable Compressed Gas - Flammable compressed gases have dangers besides high pressure. These gases can easily catch fire and burn rapidly. These include acetylene, hydrogen, natural gas and propane.

Flammable Materials – Solid or liquid materials that are capable of igniting at a low temperature and continuing to burn.

Grinding – See the definition for Cutting.

Hot Work – Operations such as welding, cutting, burning, heating, grinding, or similar spark, slag, or intense heat producing activities that are capable of igniting combustible materials or flammable atmospheres or providing a source of ignition for a fire. Also defined as cutting and welding operations for construction/demolition activities that involve the use of portable gas or arc welding equipment, open flame or spark-producing apparatus.

Nonflammable Compressed Gas - These types of gases do not catch fire easily or burn quickly, but will eventually burn and possess other dangers. The cylinder label and Safety Data Sheet (SDS) will describe the toxic properties and physical hazards posed by specific nonflammable compressed gases. These include: ammonia, argon, carbon dioxide, nitrogen, oxygen, chlorine, and nitrous oxide. Symptoms of exposure include dizziness, unconsciousness, or suffocation under certain circumstances. They can also be harmful if inhaled, and can cause irritation to the eyes, nose, throat, and lungs. See SOP for Compressed Gases Storage and Handling for additional information.

Shielding – Non-combustible welding drapes, used in hot work areas. Visible signs should be displayed on shielding while hot work is being performed.

Smoldering – A slow combustion of material without visible light and generally evidenced by smoke and an increase in temperature.

Soldering - Soldering uses metals with a melting point below 800 degrees Fahrenheit. Soldering is commonly used to join electrical, electronic, and other small metal parts.

Thawing Pipe – Devices for thawing the frozen fluid in pipes or pipes having the means for preventing the fluid from freezing or the pipe from bursting when the fluid freezes.

Torch Operations – A plasma torch is used as an advanced tool for welding and cutting operations. Intense ultraviolet radiation, high noise levels, and gases are generated during this process.

Welding – Welding is the most common way of permanently joining metal parts. In this process, heat is applied to metal pieces, melting and fusing them to form a permanent bond. The following lists the most commonly practiced forms of welding:

Oxygen-Fuel Gas Welding – The act of joining metal by generating extremely high heat during combustion.

Resistance Welding – The act of joining or cutting metals by generating heat through resistance created by the flow of an electric current.

Arc Welding – The act of joining or cutting metals by generating heat from an electric arc that extends between the welding electrode and the electrode placed on the equipment being welded.

Gas Tungsten Arc (TIG) Welding - is often used with stainless steel or aluminum. TIG uses welding rods, where the welder holds the welding rod in one hand and an electric torch in the other hand. The torch is used to simultaneously melt the rod and the workpiece.

Gas Metal Arc (MIG) Welding - uses a spool of continuously fed wire, which allows the welder to join longer stretches of metal without stopping to replace the rod. The welder holds the wire feeder which functions like the alligator clip in arc welding. Instead of using gas flux surrounding the rod, TIG and MIG protect the initial weld from the environment by blowing inert gas onto the weld.

Hot Work Permit - A written permit that provides authorization for hot work activities in a work area other than a designated maintenance/construction fabrication area. Hot work permits shall specify the work to be performed and the necessary fire control precautions, and shall also be authorized by the individual in charge of the work, after a tour of the work area is completed.

Fire Watch - An individual that is assigned to monitor a work area in which hot work such as welding, cutting, burning, heavy grinding, etc., is performed in an area other than a designated maintenance/construction fabrication area. Fire watches are trained in the use of portable fire extinguishers and specific facility fire control procedures.

Flammable - A liquid having a flashpoint below 100 degrees Fahrenheit.

4.0 PROCEDURE

- Employees and contractors must complete a hot work permit before performing hot work. Precautions that are to be taken shall be in the form of a written permit (**Attachment A**). Before cutting or welding is permitted, the area shall be inspected and a written permit shall be used to authorize welding and cutting operations.
- Where practicable all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impractical, combustibles shall be protected with flameproof covers, shielded with metal, guards, curtains, or wet down the material to help prevent ignition of material.
- Ducts, conveyor systems, and augers that might carry sparks to distant combustibles shall be protected or shut down.

- Where cutting or welding is done near walls, partitions, ceilings, or openings in the floor (grating, manholes, etc.), fire-resistant shields or guards shall be provided to prevent ignition.
- If welding is to be done on a metal wall, partition, ceiling, or solid decking/flooring, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation of heat. Where combustibles cannot be relocated on the opposite side of the work, a fire watch person shall be on the opposite side of the work.
- Welding shall not be attempted on a metal partition, wall, and ceiling or decking/flooring constructed of combustible sandwich panels.
- Cutting or welding on pipes or other metal in contact with combustible walls, partitions, floors, ceilings, or roofs shall not be undertaken if the work is close enough to cause ignition by combustion.
- Cutting or welding shall not be permitted in the following situations:
  - In areas not authorized by management.
  - In sprinkler buildings while such protection is impaired.
  - In the presence of potentially explosive atmospheres (e.g. flammables).
  - In areas near the storage of large quantities of exposed, readily ignitable materials.
  - In areas where there is dust accumulation of greater than 1/16 inch within 35 feet of the area where welding/hot work will be conducted.
  - All dust accumulation shall be cleaned up before welding or hot work is permitted.

4.1 Fire Prevention and Protection

4.1.1 Preparation of Work Area

Combustible/Flammable Materials

If object to be welded or cut cannot be moved to a designated hot work area, all moveable fire hazards must be relocated at least 35 feet horizontally from hot work. Where relocation of combustible materials is impracticable, combustibles shall be protected with flame-proof covers. If fire hazards cannot be removed, then guards shall be used to confine heat, sparks, and slag and to protect the immoveable fire hazards. If the above requirements cannot be met, then welding, cutting or other hot work must be performed with a fire watch.

Openings/Floors/Sprinkler Detection

Openings or cracks in walls, floors, ducts, or shafts within the hot work area shall be tightly covered to prevent the passage of sparks to adjacent combustible areas. Floors shall be swept clean of all combustible materials such as paper clippings, wood shavings, or textile fibers for a radius of 35 feet. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings or roofs shall not be undertaken if the work is close enough to cause ignition by conduction. Automatic sprinkler protection shall **not be** shut off while hot work is performed.

4.1.2 Fire Watch

A fire watch is required where combustible materials cannot be moved 35 feet from the hot work area and cannot be covered with a fire-resistant covering, or where hot work is performed in a building or area without automatic sprinkler protection. The fire watch is responsible for ensuring that no sparks or hot embers land on combustible materials, and that fire protection equipment, such as fire extinguishers, is in the immediate work area and ready for use if needed. The minimum required fire protection is a properly rated fire extinguisher. The fire watch is also responsible for extinguishing spot fires, communicating an alarm, and performing inspections of the work area after the hot work is completed. Personnel must conduct a post operation area inspection to make sure the area or room is clear of any hazards due to the hot work process. The final inspection of the work area shall take place no longer than 30 minutes past completion of the work.

4.2 Protection of Personnel

4.2.1 Protective Clothing

Employees or contractors must wear appropriate protective clothing for any welding operation. PPE will vary with size, nature, and location of the work to be performed. Personnel should always select clothing materials that will provide maximum protection from sparks, hot metal, and arc flash. Personnel performing cutting and welding shall avoid synthetic fibers that may melt and adhere to the skin, when in contact with flames/sparks. Leather aprons and gloves provide the best protection for hot work. Cotton will burn and turn to ash rather than reacting like most synthetic fibers; therefore, it is also an appropriate option for clothing.

4.2.2 Eye Protection

Employees and contractors shall use helmets or hand shields during all arc welding or arc cutting operations. Additional helpers or attendants shall wear proper eye protection. Helmets and hand shields protect the face, neck, and ears from direct radiant energy from the arc. Helmets should have filter plates and cover plates designed for easy removal.

Goggles or other suitable eye protection shall be used during all gas welding or oxygen cutting operations. Spectacles without side shields, with suitable filter lenses, are permitted for use during gas welding operations on light work, for torch brazing, or for inspection.

All operators and attendants of resistance welding or resistance brazing equipment shall use transparent face shields or goggles, depending on the hazards, to protect their faces or eyes, as required. Goggles shall be ventilated to prevent fogging of the lenses as much as practicable.

4.2.3 Respiratory Protection

Employees and contractors shall be required to wear respiratory protection when welding or cutting materials with zinc, lead, beryllium, cadmium, stainless steel, and other coatings. Respiratory protection may be required for welding and cutting of other metals depending upon the potential worker exposure. Factors affecting worker exposure include length of work, amount of work, work area size and ceiling height, work area ventilation, etc.

For additional information on Personal Protective Equipment, see SOP for Personal Protective Equipment (PPE) Assessment and Training.

4.3 Ventilation

Local exhaust mechanical ventilation shall be required when cutting or welding of materials with zinc, lead, beryllium, cadmium, stainless steel and other coatings. Adequate ventilation is required when performing welding and cutting operations in confined spaces. Mechanical ventilation is required if the work area has a volume of less than 10,000 cubic feet per welder or a ceiling height less than 16 feet. Personnel must ensure that mechanical ventilation is at 2,000 cubic feet of air per minute per welder when welding or cutting on metals other than above described or there is less than 10,000 cubic feet of space per welder or when the ceiling height is less than 16 feet or in confined spaces or where structural barriers (such as partitions or balconies) significantly obstruct cross ventilation.

Employees and contractors will not conduct operations in atmospheres which are immediately dangerous to life or health (IDLH).

Employees and contractors must ensure that each local exhaust hoods or booths provide airflow of 100 linear feet per minute.

Ventilation Requirements (Specific Elements)

METAL COMPOUND	CONFINED SPACE REQUIREMENTS	INDOORS REQUIREMENTS	OUTDOORS REQUIREMENTS
Fluorine Compound	Air replacement or airline respirator or self-contained breathing apparatus needed	Air sample tests to determine if exhaust hood, booth, airline respirator is requires	Same as Indoor
Lead and Zinc (Galvanized Metals)	Air replacement or airline respirator or self-contained breathing apparatus	Exhaust hood or booth	Combination particulate and vapor-and-gas removing type respirator if tests indicate need

Beryllium	Exhaust hood or booth and airline respirator if air sample tests indicate need	Exhaust hood or booth and airline respirator if air sample tests indicate need	Exhaust hood or booth and airline respirator if air sample tests indicate need
Cadmium and Mercury	Exhaust hood or booth and airline respirator if air sample tests indicate need	Exhaust hood or booth and airline respirator if air sample tests indicate need	Combination particulate and vapor-and-gas removing type respirator if tests indicate need

4.4 Oxygen-Fuel Gas Welding and Cutting

4.4.1 General Requirements

Mixtures of fuel gases and air or oxygen may be explosive and shall be guarded against. No device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption—except at the burner or in a standard torch—shall be allowed. Under no condition shall acetylene be generated, piped or utilized at a pressure in excess of 15 psig (pounds per square inch gauge) or 30 psia (pounds per square inch absolute).

4.4.2 Storage of Cylinders

Cylinders shall be stored in accordance with the SOP for Compressed Gas Management.

4.4.3 Operating Procedures

- Cylinders, cylinder valves, couplings, regulators, hose and apparatus shall be kept free from oily or greasy substances.
- Oxygen cylinders or apparatus shall not be handled with oily hands or gloves.
- A jet of oxygen must never be permitted to strike any oily surface, greasy clothes or enter a fuel oil or other storage tank.
- Cylinders shall be kept far enough away from welding or cutting operations that sparks or flame will not reach them or be protected with fire-resistant shields.
- Acetylene cylinder valves shall never be opened more than one and one-half turns of the spindle, and preferably no more than three-fourths of a turn (this permits adequate flow of acetylene and allows ready closing of the valve in an emergency).
- If the valve outlet of a cylinder becomes clogged with ice, thaw with warm **(not boiling)** water.
- Prior to attaching the regulator, stand to one side of the cylinder and open the valve slightly for an instant and then close it. This “cracking” of the cylinder valve will clean the valve of dust or dirt which may have accumulated during storage.

- Before a regulator is removed from a cylinder valve, the valve shall be closed and the gas released from the regulator.
- Hoses showing leaks, burns, worn places or other defects rendering it unfit for use shall be repaired or replaced.
- Hoses shall not be taped up to cover leaks. Defective hoses and/or apparatuses will be removed from service and tagged “Do Not Use”.
- When inspecting hoses, employees shall look for charred sections close to the torch. These may have been caused by flash-back.
- Cylinders are kept far enough away from welding or cutting operations so that sparks, hot slag, or flames will not reach the cylinder. If this is not possible, a fire resistant shield is provided.
- Cylinders are not placed in an area where they might come into contact with or become part of the electrical circuit.
- Cylinders are not to be used as a ground for an arc welder.
- Electrodes are not to be taped against cylinders.
- Cylinders without fixed hand wheels have keys, handles, or nonadjustable wrenches on valve stems while the cylinders are in service. Multiple cylinder applications require one key or handle for each manifold.
- Cylinders are never used as rollers or supports, whether full or empty.
- No person, other than the gas supplier, attempts to mix gases in a cylinder. No one, except the owner of the cylinder or person(s) authorized by the owner, refills the cylinder.
- No one tampers with or removes cylinder or valve safety devices.
- Drain valves are opened frequently and completely to drain excess fluid.
- Open cylinder valves slowly. Acetylene cylinder valves are not opened more than one and one-half turns and are not used at more than 15 pounds pressure.
- Never use fuel-gas from cylinders through torches or other devices equipped with shutoff valves without using a regulator on the cylinder valve or manifold to reduce the pressure.

4.5 Arc Welding

4.5.1 Voltage

The following limits shall not be exceeded:

- Alternating current (AC) machines:
  - Manual arc welding and cutting – 80 volts.
  - Automatic (machine or mechanized) arc welding and cutting – 100 volts.
- The use of AC welding under wet conditions or warm surroundings where perspiration is a factor, will be prohibited.
- Direct current (DC) machines:
  - Manual arc welding and cutting – 100 volts.
  - Automatic (machine or mechanized) arc welding and cutting – 100 volts.

5.0 TRAINING

All employees affected by the requirements of this procedure shall be trained initially upon hire, and, as a minimum, annually thereafter. Re-training may also be completed if job performance deems it necessary.

Annual fire extinguisher training shall be provided for employees performing fire watches as part of their duties. Fires beyond the incipient stage will not be attempted to be fought by CS Clean employees.

6.0 INSPECTONS / AUDITS

The Production Manager shall coordinate a periodic inspection of the Hot Work SOP to ensure that CS Clean employees and contractors are complying with the requirements of the OSHA Standards. At a minimum, this review shall be done on an annual basis.

7.0 ATTACHMENTS

A. Hot Work Permit Example

Attachment A: Hot Work Permit

Hot Work Permit (Side 1 of 2)

Make sure an appropriate fire extinguisher is readily available. Consider cold work methods first!

Date: _____ / _____ / _____	Hot work by: ☐ Employee ☐ Contractor
Building / Location:	Name (print) of person doing hot work: Name (print) of fire watch:
Work to be done: Time started: _____ Time completed: _____ **THIS PERMIT IS GOOD FOR ONE DAY ONLY** Expiration (good for only one eight hour shift): _____	I verify that the above location has been examined, the precautions marked on the checklist below have been taken, and permission is granted for this work. Name (print) of permit-authorizing individual (PAI) _____ Signature: _____

☐ Available sprinklers, hose streams, and extinguishers are in service and operable.

☐ Hot work equipment is in good working condition in accordance with manufacturer's specifications.

☐ Special permission obtained to conduct hot work on metal vessels or piping lined with rubber or plastic.

☐ Employees in the hot work area wearing appropriate PPE.

Requirements within 35 feet of hot work

☐ Yes ☐ N/A Flammable liquid, dust, lint, and oily deposits removed.

☐ Yes ☐ N/A Tested area for explosive atmosphere. Explosive atmosphere must be eliminated prior to work.

☐ Yes ☐ N/A Floors swept clean and trash removed.

☐ Yes ☐ N/A Combustible floors wet down or covered with fire-resistive/noncombustible materials.

☐ Yes ☐ N/A Personnel protected from electrical shock when floors are wet.

☐ Yes ☐ N/A Other combustible storage material removed or covered with listed or approved materials (welding pads, blankets, or curtains; fire-resistive tarpaulins), metal shields, or noncombustible materials.

☐ Yes ☐ N/A All wall, floor, and duct openings covered or protected.

☐ Yes ☐ N/A Safe passage for pedestrians around hot work area.

Requirements for hot work on walls, ceilings, or roofs

☐ Yes ☐ N/A Construction is noncombustible and without combustible coverings or insulation.

☐ Yes ☐ N/A Combustible material on other side of walls, wailings, or roofs is moved away.

Requirements for hot work on enclosed equipment

☐ Yes ☐ N/A Enclosed equipment is cleaned of all combustibles.

☐ Yes ☐ N/A Containers are purged of flammable liquid/vapor. LEL reading: _____

☐ Yes ☐ N/A Pressurized vessels, piping, and equipment removed from service, isolated, and vented.

Requirements for hot work fire watch and fire monitoring

☐ Yes ☐ N/A Fire watch is provided during and for a minimum of 30 min. after hot work, including any break activity.

☐ Yes ☐ N/A Fire watch is provided with suitable extinguishers and, where practical, a charged small hose.

☐ Yes ☐ N/A Fire watch is trained in use of equipment and in sounding alarm.

☐ Yes ☐ N/A Fire watch can be required in adjoining areas, above and below.

☐ Yes ☐ N/A Per PAI/fire watch, monitoring of hot work area has been extended beyond the 30 min.

This Hot Work Permit is required for any operation involving open flame or producing heat and/or sparks.
This work includes, but is not limited to welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

In case of emergency, call the contacts listed below.

Contact	Number

Completion Checklist

Objectives	Name of Employee	Start Time	Finish Time
Hot Work			
Post-Work Fire Watch			
Fire Monitor			
Final Check			

Additional Requirements and Notes:

End of Hot Work Permit (Side 2 of 2)

CS CLEAN SYSTEMS	Title:	SOP – Industrial Air Contaminants
	Review / Revision Date:	August 25, 2022
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP – Industrial Air Contaminants
	Review / Revision Date:	August 25, 2022
	Reviewed by:	

1.0 PURPOSE

Under 29 CFR 1910.1000, the Occupational Safety and Health Administration (OSHA) has established regulations concerning industrial air contaminants. The purpose of this standard operating procedure (SOP) is to limit the exposure to any substance listed in Tables Z-1, Z-2, Z-3, or a specific promulgated air contaminant standard listed 29 CFR 1910.1001-1053 throughout CS Clean Systems (CS Clean), Phoenix, Arizona facility. CS Clean will not expose any employee or conduct work operations in any atmosphere which contains an air contaminant at or above immediately dangerous to life or health (IDLH) levels. These Tables are provided by OSHA and are located in the attachments at the end of this SOP and at the following internet locations:

Table Z-1: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9992
Table Z-2: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9993
Table Z-3: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9994
29 CFR 1910.1001- 1053: https://www.osha.gov/laws-regs/regulations/standardnumber/1910

To ensure compliance under 29 CRF 1910.1000, a determination is required by OSHA to establish actual/potential employee exposure levels to substances listed in Tables Z-1, Z-2, Z-3, or other promulgated standards. This determination can be provided through the following options:

- **Scheduled Monitoring Option:** Initial monitoring event to determine the 8-hour time weighted average (TWA) exposure concentrations; and/or

- **Performance Oriented Option:** Determination of the 8-hour TWA exposure concentrations on the basis of any combination of air monitoring data, historical monitoring data, or sufficient objective data.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

EH&S or Designee – will review and update the program as necessary, will provide assistance to departments during review and implementation of this SOP.

Department Supervisors - are responsible for ensuring employees comply with the requirements of this SOP.

Employees - each employee shall comply with this policy.

3.0 DEFINITIONS

Action Level - Level of toxicant which requires medical surveillance.

Ceiling Values "C" - Exposure limits measured instantaneously or as 15-minute time weighted average (TWA).

Exposure - The state of being exposed to contact with something.

Immediately Dangerous to Life or Health (IDLH) - Means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere

Short Term Exposure Limit (STEL) – A 15-minute peak exposure concentration that the employer shall assure that no employee is exposed to an airborne concentration of the air contaminant in mention above.

Time Weighted Average (TWA) - The average exposure to a contaminant or condition to which workers may be exposed without adverse effect over a period such as in an 8-hour day or 40-hour week.

4.0 GENERAL REQUIREMENTS AND PROCEDURES

An employee's exposure to any substance listed in Tables Z-1, Z-2, or Z-3, or a promulgated standard of this section shall be limited in accordance with the requirements of the following paragraphs of this section. Potential air contaminants will be assessed, pending a review of the Safety Data Sheets (SDSs), to determine the potentially harmful constituents of chemicals at the CS Clean facility. If potential contaminants are identified, occupational exposure limits from OSHA and the American Conference of Governmental Industrial Hygienists (ACGIH) will be determined and initial air contaminant monitoring shall occur by a competent industrial hygienist using appropriate sampling media, as specified by an approved OSHA or NIOSH sampling methodology and be analyzed by a AIHA approved laboratory. Please note that the reference levels from ACGIH are not regulatory, but often provide a more advanced, up-to-date, reference limit for acceptable workplace exposures in comparison to OSHA permissible exposure limits. As a best management practice CS Clean shall ensure exposures are below ACGIH limits.

4.1 An employee's exposure to any substance listed in Table Z-1 shall not exceed the exposure limits specified as follows:

- An employee's exposure to any substance in Table Z-1, the exposure limit of which is preceded by a "C", shall at no time exceed the exposure limit given for that substance. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time during the working day.

- An employee's exposure to any substance in Table Z-1, the exposure limit of which is not preceded by a "C", shall not exceed the 8-hour Time Weighted Average given for that substance any 8-hour work shift of a 40-hour work week.

4.2 An employee's exposure to any substance listed in Table Z-2 shall not exceed the exposure limits specified as follows:

- An employee's exposure to any substance listed in Table Z-2, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in Table Z-2.
- An employee's exposure to a substance listed in Table Z-2 shall not exceed at any time during an 8-hour shift the acceptable ceiling concentration limit given for the substance in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under "acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift".

4.3 An employee's exposure to any substance listed in Table Z-3, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in the table. The computation formula which shall apply to employee exposure to more than one substance for which 8-hour time weighted averages are listed in subpart Z of 29 CFR Part 1910 in order to determine whether an employee is exposed over the regulatory limit is:

1. The cumulative exposure for an 8-hour work shift shall be computed as follows:

   $E = (C_a T_a + C_b T_b + \ldots C_n T_n) \div 8$

   Where:
   E is the equivalent exposure for the working shift.
   C is the concentration during any period of time (T) where the concentration remains constant.
   T is the duration in hours of the exposure at the concentration (C).

   The value of E shall not exceed the 8-hour time weighted average specified in Subpart Z or 29 CFR Part 1910 for the substance involved.

2. In case of a mixture of air contaminants CS Clean shall compute the equivalent exposure as follows:

   $E_m = (C_1 \div L_1 + C_2 \div L_2) + \ldots (C_n \div L_n)$

   Where:
   E_m is the equivalent exposure for the mixture.

C is the concentration of a particular contaminant.
L is the exposure limit for that substance specified in Subpart Z of 29 CFR Part 1910.

The value of E_m shall not exceed unity (1).

4.4 An employee's exposure to any substance with a promulgated standard under 29 CFR 1910.1001-1053 shall not exceed the exposure limits specified as follows:

- An employee's exposure to any substance, with a "C", shall at no time exceed the exposure limit given for that substance. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time during the working day.
- An exposure to any substance, with a "STEL", shall at no time exceed the exposure limit given for that substance. The STEL shall be assessed as a 15-minute time weighted average exposure where exposures are likely to be at their peak. A 15-minute STEL shall not be exceeded at any time during the working day.
- An employee's exposure to any substance, the exposure limit of which is not a "C" or "STEL", shall not exceed the 8-hour Time Weighted Average given for that substance any 8-hour work shift of a 40-hour work week.

4.5 To achieve compliance with the standards listed above, administrative or engineering controls will be determined and implemented, whenever feasible. When such controls are not feasible to achieve full compliance, personal protective equipment or other work practice measures will be used to keep the exposure of employees to air contaminants within the specified limits. Any equipment and/or technical measures used for this purpose will be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with 29 CFR 1910.134, see the SOP Respiratory Protection Program for additional information.

4.6 CS Clean will make exposure determinations based on potential exposures for all potential air contaminants, pending a review of the SDSs of chemicals at the CS Clean facility. If a potential exposure occurs in the workplace, then initial air contaminant monitoring shall occur by a competent industrial hygienist using appropriate sampling media, as specified by an approved OSHA or NIOSH sampling methodology and be analyzed by a AIHA approved laboratory. Samples will be taken adhering to all sampling methodology requirements and shipped with a chain-of-custody to a AIHA approved laboratory for analysis under all specified shipping conditions.

4.7 Personal exposure records will be kept in employee(s) medical records for the employee's length of employment plus thirty (30) years. Employees exposed to airborne concentrations of a listed airborne contaminant in 29 CFR 1910.1001-1053 may be required to enter a medical monitoring program, if exposed more than thirty (30) days a year and if required by the air

contaminant standard in question. CS Clean will notify their employee(s) within fifteen (15) working days of receiving sampling results of the employee(s) exposure.

4.8 All monitoring reports, exposure notifications, employee exposures, and medical surveillance records will be maintained by the Global EH&S Compliance and Survey Officer.

5.0 TRAINING

Training is required if special precautions, personal protective equipment, and/or work instructions must be taken to protect an employee from an air contaminant hazard or as required by specific OSHA Standards under 29 CFR 1910.1001-1053. At this time, no trainings are currently required for potential air contaminants. Table 1 lists potential air contaminants at CS Clean. If personal exposure sampling determines an exposure above an occupational exposure limit set by OSHA or special precautions and/or work instructions must be taken, then this section will be updated at that time to reflect the necessary training for the air contaminant in question.

The Global EH&S Compliance and Survey Officer will maintain all training documents.

6.0 INSPECTIONS AND AUDITS

The Global EH&S Compliance and Survey Officer shall coordinate a periodic inspection of the Industrial Air Contaminants SOP to ensure that the SOP is up to date and that all employees are properly informed. At a minimum, this review shall be done on an annual basis.

CS CLEAN SYSTEMS Spartanburg, SC	Title:	SOP-3: Injury and Illness Incident Reporting (OSHA 300 and 301 Log)
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP: Injury and Illness Incident Reporting (OSHA 300 and 301 Log)
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

1.0 PURPOSE

In accordance with the requirements of OSHA Regulation 29 CFR 1904, this SOP provides procedures on the reporting of any work-related injury by CS Clean Systems (CS Clean) employees engaged in company business and to provide guidance for injury and incident investigation and resolution. This SOP applies to both CS Clean employees and to any subcontractors who may be working under the direct supervision of CS Clean. Additional information can also be found in SOP for the emergency action plan.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Human Resources Manager (or Designee) – is responsible for the following:

- Reviewing and update this SOP as necessary;
- Providing assistance to departments implementation of this SOP;
- Ensuring that incident investigations are completed per the SOP and documented;
- Managing all aspects of any workers compensation claims per state regulations; and
- Recording any required information on the site's OSHA 300 log.

Production Manager - are responsible for ensuring employees comply with the requirements of this SOP and to lead incident investigations.

Employees - each employee shall comply with this policy, including reporting all incidents and accidents

3.0 DEFINITIONS

There are no definitions applicable to the Injury and Illness Reporting SOP.

4.0 PROCEDURE

Types of Incidents

Near Miss

A "near miss" is something that happens that did not result in an injury, environmental spill or release, or property damage, but under slightly different conditions, could have been more serious. Examples include:

- an exposed electrical conductor or electrical box without a cover;
- a man-hole cover not replaced over a non-barricaded man-hole; and
- a water spill on a tile floor not cleaned up or reported.

CS CLEAN SYSTEMS	Title:	SOP: Injury and Illness Incident Reporting (OSHA 300 and 301 Log)
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

All near misses shall be reported so they can be investigated and corrective actions taken. Near misses will be tracked for trending evaluation.

Injury or Illness

Employees must report ANY work-related injury or illness to their supervisor. Examples include:

- cuts or lacerations due to sharp edges or tools
- chemical or thermal burns to skin
- discomfort due to repetitive motion

Environmental Incident

Employees must report any environmental incident to their supervisor. Examples include:

- any release of refrigerants, asphyxiants or toxic gases
- any spill of chemical down a drain
- all liquid discharges to roofs or ground-level surfaces

The Production Manager will provide guidance on cleanup and disposal procedures and determine whether or not the incident must be reported to regulatory agencies.

Reporting an Incident

All incidents shall be immediately reported to the Department Supervisor, or if the Department Supervisor is unavailable, the Production Manger should be contacted.

After appropriate medical care and/or environmental cleanup occur, the Department Supervisor, in conjunction with the injured party and witnesses, will complete the "Incident Documentation" form located in Attachment A.

Incident Investigation

Within seven (7) days of a reported incident, a formal investigation shall be completed by the Department Supervisor and relevant team members (injured party, witnesses, subject matter experts, human resources, etc.). The purpose of the investigation is to:

- Determine the facts of what actually occurred.
- Understand the chain of events leading up to the situation well enough to uncover any unsafe acts or unsafe conditions and to determine root cause.
- Determine whether there were any other contributing factors which made the situation worse.
- Determine specific corrective action items to minimize the chance of a recurrence.
- Determine recommendations to be communicated to other departments.
- Appoint a follow-up person to check on the status of the action items.

CS CLEAN SYSTEMS	Title:	SOP: Injury and Illness Incident Reporting (OSHA 300 and 301 Log)
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

OSHA 300 and 301 Log (OSHA Form 300 and OSHA Form 301)

An injury or illness is an OSHA Recordable if treatment goes beyond first aid. OSHA defines a first aid as the following:

- Using a non-prescription medication at nonprescription strength (for medications available in both prescription and non-prescription form, a recommendation by a physician or other licensed health care professional to use a non-prescription medication at prescription strength is considered medical treatment for recordkeeping purposes);
- Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment);
- Cleaning, flushing or soaking wounds on the surface of the skin;
- Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™ (other wound closing devices such as sutures, staples, etc., are considered medical treatment);
- Using hot or cold therapy;
- Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes);
- Using temporary immobilization devices while transporting an accident victim (***e.g.***, splints, slings, neck collars, back boards, etc.).
- Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister;
- Using eye patches;
- Removing foreign bodies from the eye using only irrigation or a cotton swab;
- Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means;
- Using finger guards;
- Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes); or
- Drinking fluids for relief of heat stress.

See the emergency action plan SOP for further information on medical and first aid incidents..

Examples of an OSHA Recordable injury include, but are not limited to, the following:

- diagnosis of an occupational illness
- sutures
- rigid splints

- chipped or fractured bone
- prescription medications or over-the-counter medications given at prescription dosages
- foreign materials embedded in eye
- positive X-ray
- physical therapy
- hospital admission
- work restrictions
- lost workdays

Once a work related injury is deemed to be an OSHA Recordable, it must be recorded within seven (7) calendar days on the site's OSHA 300 Log. An OSHA 301 form must also be completed for each injury/illness on the OSHA 300 Log. See Attachments B and D for the OSHA forms and detailed instructions.

An equivalent form may be used in lieu of the OSHA provided forms (located in Attachments B – D). An equivalent form is one that has the same information, is as readable and understandable, and is completed using the same instructions as the OSHA form it replaces. Examples include insurance forms instead of the OSHA 301 Incident Report.

The completed forms must be kept on file for a minimum of five (5) years.

Annual OSHA 300 Log Summary (OSHA Form 300A)

Per OSHA regulations, the OSHA 300 Log Summary will be completed by the Human Resources Manager. Once completed, it will be signed by the Vice President of Business Development & Operations Support and posted in a conspicuous place from February 1 to April 30 of the following year. See Attachment C for the form and detailed instructions.

The completed forms must be kept on file for a minimum of five (5) years.

5.0 TRAINING

All employees shall be trained on the requirements of this procedure upon hire. Re-training may also be completed if job performance deems it necessary.

The Human Resources Manager will maintain all training records.

6.0 INSPECTONS / AUDITS

The Production Manager shall coordinate a periodic review of this SOP to ensure that CS Clean employees are complying with the requirements. During this review the OSHA 300 and 301 logs

will be reviewed to ensure accuracy. This review shall be done on an annual basis in January to ensure the OSHA 300 Log Summary is posted per OSHA requirements.

7.0 ATTACHMENTS

Attachment A – Incident Investigation Form
Attachment B – OSHA Form 300
Attachment C – OSHA Form 300A
Attachment D – OSHA Form 301

ATTACHMENT A

INCIDENT INVESTIGATION FORM

Incident Documentation
(Near Miss)

Associate Information							
Full Name:		Shift		Date:		Time:	

Incident Information	
Describe the incident location, sequence and occurrence. Be specific. What were the corrective actions taken to eliminate incident?	

Estimate risk for potential future injury or accident,
Circle One:

1 2 3 4 5
Low High

Other _____

_____

Explain Details:
Possible loss of hearing as well as injury from falling objects when the crane is in operation

_____

_____

_____

_____

Equipment Guard _____

Tripping/Falling _____

Fire Hazard _____

Electrical Hazard _____

Chemical Hazard _____

Health Hazard _____

Obstruction _____

Mobile Equipment _____

Other _____

_____

PLEASE FEEL FREE TO ATTACH PICTURES, DRAWINGS, DIAGRAMS TO ADD CLARITY

Associates Signature:	Date:	
Supervisors Signature:	Date:	

Incident Report

Associate Information					
Full Name:		Shift		Time associate began work:	AM / PM
Date of Hire:				Length of Present Job:	
Sent to:				Where did incident occur:	
Date of Injury or Illness:				Date Associate Reported:	
Time of Incident:		AM / PM		Check if time cannot be determined:	☐
Associate's routine occupation:				Occupation at the time of incident:	
Required Task:	Yes / No			Dates of Previous Injuries:	
Working Overtime:	Yes / No			Injury Type:	
Body Part Affected:				Cause of Injury	
Equipment Damage:				Product Damage:	
Immediate Cause of Loss:					
JSA checked for root cause					

First Responder Involved:_____ No_____

Incident Information	
Describe the incident sequence and occurrence. Be specific.	
What acts, conditions, and immediate causes contributed directly to the incident?	
What personal and job factors contributed to the incident?	
Describe the personal protective equipment the associate was wearing.	

What object or substance directly harmed the associate?	

Risk Assessment:	Probability of Event reoccurring?	Likely	Possible	Unlikely
	Severity Potential?	Major	Serious	Minor
	Exposure Frequency?	Frequent	Occasional	Rare
Investigated by:		List Witnesses		

Corrective Actions	Owner	Date

Associate's Signature		
	Date:	

Completed By			
Print Name and Title:			
Signature:		Date:	

Safety Group Use Only			
Company Name	Company Number	Account Number	
		Date called in:	
		Claim Number:	

****

Was this incident OSHA Recordable? **YES** ☐ **NO** ☐ **(Column J, K or L on OSHA 300 log)**
Was this a D.A.R.T. Incident? **YES** ☐ **NO** ☐ **(Column K or L on OSHA 300 log)**
Was this a Lost Workday Incident? **YES** ☐ **NO** ☐ **(Column L on OSHA 300 log)**

If "Yes" to any of the above, forward a copy of this report to Corporate Incident Group email distribution list: Corporate Incident

****

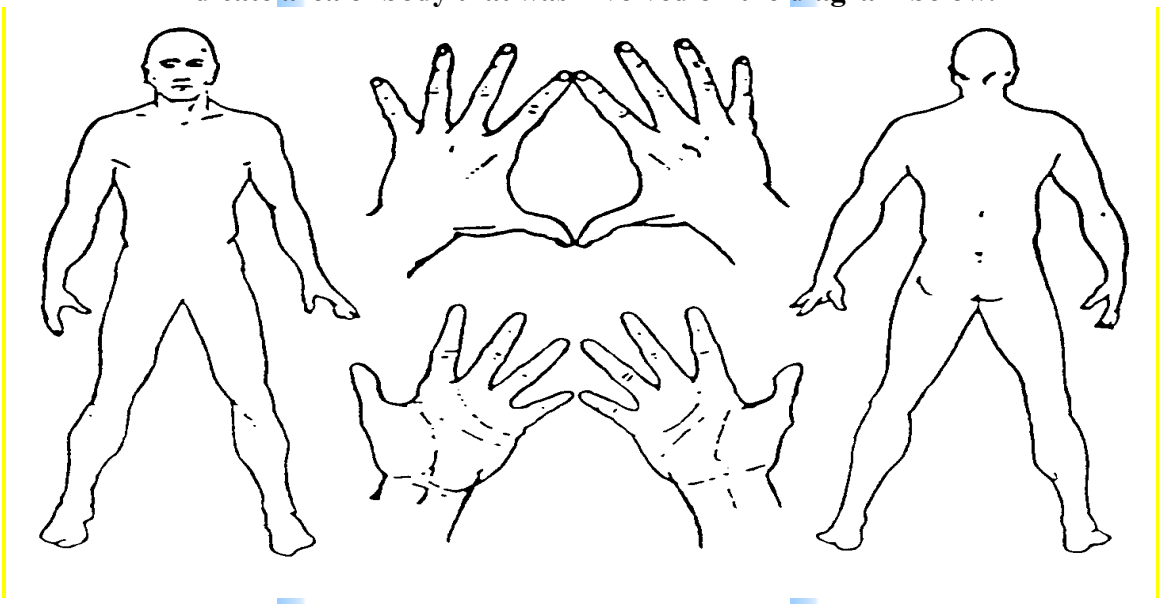
Incident Documentation

(No outside medical treatment required)

Associate Information						
Full Name:		Shift		Date:	Time:	AM / PM

Incident Information	
Describe the incident location, sequence and occurrence. Be specific. What were the corrective actions taken to eliminate incident?	

Indicate area of body that was involved on the diagram below.



Associates Signature:	Date:	
Supervisors Signature:	Date:	

ATTACHMENT B

OSHA FORM 300

ATTACHMENT C

OSHA FORM 300A

ATTACHMENT D

OSHA FORM 301

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year _____

U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name _____

City _____ State _____

Identify the person				Describe the case		Classify the case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
					Page totals	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
(1)	(2)	(3)	(4)	(5)	(6)

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year _____

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	0
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of…	(M)		
(1) Injury	0	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name _____

Street _____

City _____ State _____ Zip _____

Industry description (e.g., Manufacture of motor truck trailers)

_____

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

____ ____ ____ ____

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

____ ____ ____ ____ ____ ____

Employment information

Annual average number of employees _____

Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

_____ Company executive

_____ Title

_____ Phone

_____ Date

OSHA's Form 301
Injuries and Illnesses Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by _____

Title _____

Phone _____ Date _____

Information about the employee

1) Full Name _____

2) Street _____

City _____ State _____ Zip _____

3) Date of birth _____

4) Date hired _____

5) ☐ Male
☐ Female

Information about the physician or other health care professional

6) Name of physician or other health care professional

_____

_____

7) If treatment was given away from the worksite, where was it given?

Facility _____

Street _____

City _____ State _____ Zip _____

8) Was employee treated in an emergency room?
☐ Yes
☐ No

9) Was employee hospitalized overnight as an in-patient?
☐ Yes
☐ No

Information about the case

10) Case number from the Log _____ *(Transfer the case number from the Log after you record the case.)*

11) Date of injury or illness _____

12) Time employee began work _____ AM/PM

13) Time of event _____ AM/PM ☐ Check if time cannot be determined

***Please do not include any personally identifiable information (PII) pertaining to worker(s) involved in the incident (e.g., no names, phone numbers, or SSNs) in the following fields.**

*14) **What was the employee doing just before the incident occurred?** Describe the activity, as well as the tools, equipment or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

*15) **What happened?** Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

*16) **What was the injury or illness?** Tell us the part of the body that was affected and how it was affected. Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."

*17) **What object or substance directly harmed the employee?** Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank.

18) **If the employee died, when did death occur?** Date of death

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about this estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

CS CLEAN SYSTEMS	Title:	SOP –Portable Wood/Metal and Fixed Ladders
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP –Portable Wood/Metal and Fixed Ladders
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

1.0 Purpose

The Occupational Safety and Health Administration (OSHA) has established the walking-working surfaces standard under 29 CFR 1910 Subpart D. Specifically, under 29 CFR 1910.25 and 29 CFR 1910.26 OSHA regulates the use of portable wood ladders and portable metal ladders, respectively while also setting forth under 29 CFR 1910.27 regulations for the use of fixed ladders. These regulations contain general fundamental requirements essential for selecting and properly using adequate ladder safety for the work environment that CS Clean Systems, Inc. (CS Clean) will abide by.

The purpose of this standard operating procedure is to standardize and define proper procedures for using and maintaining fixed and portable ladders, and inspection and training requirements.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager – will review and update the program as necessary, will provide assistance to departments during review and implementation of this SOP.

EH&S (or Designee) - are responsible for ensuring employees comply with the requirements of this SOP.

Employees - Each employee shall comply with this policy.

- Employees shall inspect each ladder before each use (see Attachment A for Pre-Use Inspection Log) and report to the Production Manager any damaged ladders.
- Authorized employees will be responsible for correctly selecting, utilizing and storing portable ladders.
- Tagging damaged portable ladders “Dangerous, DO NOT USE” and taking them out of service.
- Storing damaged ladders away from usable ladders.
- Ensuring that a duty rating sticker, which displays the ladder’s maximum weight capacity, is located on the side of every ladder in their department.

3.0 DEFINITIONS

Extension ladder - An extension ladder is a non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

Fixed ladder - A fixed ladder is a ladder permanently attached to a structure, building, or equipment.

Stepladder - A stepladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails

4.0 PROCEDURES

Safe use of portable ladders is the responsibility of the operator. Listed below is a set of general procedures to be followed and precautions to ensure personal safety and the safety of others.

4.1 General Equipment Requirements

- The maximum length for single straight ladders is 30 feet and the maximum length for extension ladders is 60 feet.
- Straight/extension ladders shall be equipped with safety feet.
- The maximum length for stepladders shall be 20 feet. Stepladders must have legs fully extended and locked in the open position before use. Do not use a stepladder as a straight ladder. Stepladders are not designed or approved for leaning against the wall, equipment, etc.
- Ladders must be of sufficient length so that work can be performed safely while standing on or below the second rung from the top. Standing on the top rung is not permitted.
- The top of the ladder shall not be used as a seat.
- Fixed ladders must be designed and constructed to accept a minimum concentrated live load of 200 pounds.
- Cages are not a means of fall protection if erected after November 19, 2018. Fixed ladders greater than 20 feet shall be erected with a personal fall arrest system or ladder safety system. Existing fixed ladders, greater than 20 feet, shall have a personal fall arrest system or ladder safety system installed on them in addition to the cage.
- All custom built ladders shall be design based on the requirements set forth by OSHA Standards 1910.25, 1910.26, and 1910.27.

4.2 Use Requirements

- Do not use portable ladders unless you are properly trained, physically fit, and authorized to perform work.
- Evaluate work area for electrical hazards. Do not use ladders with conductive side rails in vicinity of electrical hazards. Fiberglass ladders will be used for all work near electrical equipment.
- Ladders shall not be used in a horizontal position such as for platforms, runways, or scaffolds.

- Ladders shall not be placed in front of a door unless the door is locked, roped off, or otherwise guarded with a sign on the door.
- Employees must face the ladder while ascending, descending, or standing on the ladder.
- Employees must have their hands free of material while climbing ladders. Hand lines and/or tool pouches will be used to raise or lower material.
- Employees must always keep three parts of the body in contact with the ladder when climbing.
- A ladder shall not be used to support more than one individual at a time, unless it is specifically designed to accommodate more than one person.
- When using a straight or extension ladder to climb onto a roof or platform, the top of the ladder shall extend at least three 3 feet above the roof or platform and must be tied off securely. Never climb over the top of the ladder.
- If the ladder has hooks, both hooks shall be secured over an edge before using.
- All straight ladders shall be placed as to prevent slipping or secured at the top of the ladder before starting the job. A second person shall hold the bottom of the ladder while the top is being secured.
- Straight ladders shall be placed so that the distance from the base of the ladder is approximately 1/4 of the length of the ladder. *Example:* A 16-foot ladder should be placed so the bottom is 4 feet away from the wall.
- Ladders shall be returned to their assigned place of storage when the work is finished. They shall also be stored in a manner that provides ease of access and inspection. Ladders in storage shall be chained or otherwise secured against the wall.
- The bracing on back legs and the tops of stepladders shall not be used as steps unless specifically designed for that purpose.
- Any other use not outlined in this document is strictly forbidden - such as, but not limited to: Ladders shall not be placed on top of boxes, barrels, or other unstable bases and shall not be spliced together as braces or skids.

4.3 Maintenance

Proper care and maintenance of portable ladders will extend its lifespan. Provided below are some general guidelines which are to be followed.

- Ladders and its rungs and steps should be cleaned regularly.
- Ladders moving parts should be lubricated regularly.
- Never paint a wood ladder, however, a clear protective coat can be applied.
- Extension ladders should be stored hanging horizontally and supported every six feet.
- Do not use a ladder as a storage shelf.
- Keep dirt, grease, grime, carbonaceous, and other foreign matter off non-conductive ladders, as these substances can conduct electricity.
- Follow all manufacturer’s recommendations.

5.0 TRAINING

The Production Manager will ensure that all employees utilizing portable ladders receive annual ladder training. The training is designed to enable each employee to recognize hazards related to ladders and to use proper procedures to minimize these hazards. Training records will be maintained by the Production Manager .

6.0 INSPECTION AND AUDITS

6.1 Inspections

CS Clean shall utilize three (3) inspections to ensure the safety of workers utilizing portable ladders. Designated employees shall keep the ladder inventory log of these inspections within their area and update the log as necessary.

A. Pre-use Inspections

Employees using ladders will be responsible for performing an inspection prior to use and reporting any defective ladders to their Supervisor, the Production Manager, EH&S, or designee. Defective ladders must be taken out of service and tagged “Do Not Use” immediately. They shall be stored away from usable ladders and only returned to service once they have been repaired. If unable to be repaired, the defective ladder must be destroyed.

Prior to the use of any portable ladder each authorized employees will ensure:

- The joints between steps and side rails are tight;
- Hardware and fitting are secured tight;
- metal bearings of locks, wheels, pulleys, etc. are lubricated;
- Ladder and rungs are free from oil and grease;
- All wooden parts are free from defects, sharp edges;
- No bends, cracks, or splits on side rails, rungs, or steps;
- Rope and pulley are functioning properly;
- Rope is not frayed;
- For step ladders, spreader braces are secure and working;
- safety feet and other auxiliary equipment is in good condition; and
- Duty label sticker is located on side of ladder and readable.

If a ladder has fallen then prior to re-use, the pre-use inspection must be performed.

A pre-use inspection log is included as Attachment A. **NOTE**: The inspection is required; however the documentation is not.

B. Monthly Inventory Inspections for Portable Ladders

Designated employees will conduct a monthly inventory inspection of ladders in their area. A master ladder inventory log will list all the ladders utilized and indicate which ladders can be used in each department and if are damaged. A monthly inspection of all portable ladders will be conducted by the Production Manager, EH&S, or designee. The ladders shall be inspected for:

- For broken or missing steps/rungs, cleats and rails;
- To ensure steps and rungs are free from grease and oil;
- To ensure ladders are free of sharp edges, burrs, etc.;
- For stability (shaking/swaying); and
- To ensure that rubber pads on feet are in good condition.

C. Annual Inventory Inspections for Fixed Ladders

An annual inspection of fixed ladders is conducted by the Production Manager, EH&S, or Designee. They shall be inspected for:

- For broken or missing steps/rungs, cleats and rails;
- To ensure steps and rungs are free from grease and oil;
- To ensure ladders are free of sharp edges, burrs, etc.; and
- For stability (shaking/swaying).

6.2 SOP Audit

The Production Manager shall review this procedure on an annual basis to ensure that it is current and consistent with Federal Regulations.

7.0 ATTACHMENTS

ATTACHMENT A – Pre-Use Portable Inspection Log
ATTACHMENT B – Monthly Portable Ladder Inspection Log
ATTACHMENT C – Annual Fixed Ladder Inspection Log

ATTACHMENT A

Pre-Use Portable Inspection Log

PRE-USE PORTABLE LADDER LOG (Each Use)

CS Clean Systems
2453 WEST PARKSIDE LANE, SUITE #150
Phoenix Arizona

Date: _____
Inspection Name (print) _____
Signature _____

Type of Ladder	Hardware and Fitting Secured & Tight	Bearings Lubricated	Rungs Free from Oil and Grease	Wooden Parts free from Defect, Sharp Edges	Rails, Rungs, and Steps Secure	Rope & Pulley Functional	Rope in Good Condition	Brace Secure and Working	Feet and Aux. Items in Good Condition	Label in Place

ATTACHMENT B

Monthly Portable Ladder Inspection Log

MONTHLY PORTABLE LADDER INSPECTION LOG

CS Clean Systems **Date:** _____

2453 WEST PARKSIDE LANE, SUITE #150 **Inspection Name (print)** _____

Phoenix, Arizona **Signature** _____

Type of Ladder	Location: Dept. / Area	Steps/Rungs Secure (Yes or No)	Steps/Rungs Free from Grease (Yes or No)	No Sharp Edges, Burrs, Etc. (Yes or No)	Stable (Yes or No)	Rubber Feet in Good Condition (Yes or No)

For any "No's" above, please list corrective actions taken and date completed:

_____

_____

_____

_____

_____

ATTACHMENT C

Annual Fixed Ladder Inspection Log

ANNUAL FIXED LADDER INSPECTION LOG

CS Clean Systems **Date:** _____

2453 WEST PARKSIDE LANE, SUITE #150 **Inspection Name (print)** _____

Phoenix, Arizona **Signature** _____

Type of Ladder	Location: Dept. / Area	Steps/Rungs Secure (Yes or No)	Steps/Rungs Free from Grease (Yes or No)	No Sharp Edges, Burrs, Etc. (Yes or No)	Stable, with fall protection if >20 feet (Yes or No)

For any "No's" above, please list corrective actions taken and date completed:

_____

_____

_____

_____

_____

_____

_____

_____

_____

MOVE YOUR ENVIRONMENT FORWARD

LOCKOUT/TAGOUT PROGRAM

CS Clean Systems, Inc.
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared For:

CS Clean Systems, Inc.
2453 West Parkside Lane, Suite 150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP #: CSC0011.PS

Revision A: October 27, 2022
Revision B: June 2, 2025

CS CLEAN SYSTEMS

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Appendices

Appendix A Machine and Equipment Specific LOTO Procedures

1.0 PURPOSE AND SCOPE

The purpose of this plan is to establish minimum requirements for isolating and locking out hazardous energy whenever maintenance or servicing is done on machines or equipment. This program shall be utilized by all CS Clean Systems, Inc. (CS Clean) personnel and their contractors when the hazard of energized equipment exists. This plan is meant to prevent injuries to personnel and damage to equipment from the unexpected energization, start-up, or release of stored energy from machines, equipment or processes during servicing or maintenance. The plan was created to assure compliance with Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.147 and 29 CFR 1910.333 regulations governing hazardous energy in general industry.

The scope of this plan shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine, equipment, or release of stored energy could cause injury. The scope of this plan refers to all CS Clean employees and contractors. Work related to the servicing, installation, repair, adjustment, lubrications, inspection, or any other form of work on potentially hazardous energized equipment or machinery shall apply to the scope of this program.

2.0 DEFINITIONS

Terms used in this program are intended to align with those defined in OSHA standard Part 1910.147, *Control of Hazardous Energy* and 1910.333, *Selection of Work Practices*. **Section 2.0** defines some of the commonly referenced terms.

Affected Employee: An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee: A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Capable of Being Locked Out: An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

De-energized Parts: Live parts to which an employee may be exposed shall be de-energized before the employee works on or near them, unless the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than fifty volts to ground need not be de-

energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Energized: Connected to an energy source or containing residual or stored energy.

Energy Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

Energy source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot Tap: A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels, and/or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device: A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal Production Operations: The utilization of a machine or equipment to perform its intended production function.

Qualified: means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

***Servicing and/or Maintenance*:** Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting Up: Any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout: The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device: A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

3.0 PROGRAM ADMINISTRATOR

The program will be administered by the Production Manager. The program administrator will be responsible for maintaining the program and necessary equipment, regular inspection of Lockout Tagouts (LOTOs), maintain pertinent records to LOTOs, providing appropriate training for affected and authorized employees, and annually updating the program.

4.0 AUTHORIZED EMPLOYEES

Employees will be authorized by CS Clean program administrators. Examples of potential authorized employees would include employees with the following job titles:

- Maintenance/Facilities;
- Any employee performing maintenance and/or servicing activities on equipment or machinery; or
- Contractors providing maintenance and/or servicing activities on equipment or machinery.

5.0 PROCEDURES

The following procedure is meant to protect employees from hazardous energy and ensure compliance with 29 CFR 1910.147 and 29 CFR 1910.333. A specific statement of the intended use of the procedure, specific procedural steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy, specific procedural steps for the placement, removal, and transfer of lockout devices or tagout devices and the responsibility for them, and specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures is attached in **Appendix A.**

5.1 Procedures for the Control of Hazardous Energy

Specific control procedures for the control of hazardous energy should be referenced in **Appendix A**.

5.1.1 General Requirements of Lockout Tagout Devices

If the energy isolation device is not capable of being locked out, CS Clean personnel will utilize a tagout system along with another properly demonstrated safety system (examples include isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device).

If the energy isolation device is capable of being locked out, CS Clean personnel will utilize the LOTO system.

The tagout device will be applied at the point of location of the lockout device.

Additional safety measures as part of this program will be utilized whenever necessary to assure worker protection. Some of these additional measures may include the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle.

Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware necessary for the LOTO will be provided by CS Clean for the effective LOTO of all machinery or equipment.

Designated LOTO devices will be identifiable and be solely used for approved LOTO activities.

LOTO devices shall be capable of withstanding all environmental conditions, the tag will not deteriorate from weather conditions, and tags will not be deteriorated from acids or alkaline exposures.

Color, shape, size, print, and format will be standardized within the facilities.

Lockout devices will be substantial enough to withstand removal without the use of excessive force.

Tagout devices will be the non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than fifty pounds.

Tagout devices will identify the employee applying the LOTO device.

A hazard statement will be indicated on the Tagout device for the hazard present (examples may include DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE).

5.1.2 Application of Control Steps

Authorized employees, before the beginning of machine or equipment shutdown, will be informed of the magnitude of energy and the hazards of the energy associated with the LOTO work.

The machinery or equipment will be shut down in an orderly fashion per the manufacturer's instructions.

All remaining energized equipment or machinery will be physically located and have an appropriate lockout device installed per the specific requirements to that machine or equipment as outlined in **Appendix A** with an appropriate tag affixed by the authorized employee.

The lockout devices will hold the equipment in a "safe" or "off" position. The appropriately filled out tags will then be affixed at the same location as the lockout device. If the tag cannot be placed on the lockout device the tagout should be placed as close as safely possible to the lockout devices.

Following the application of the device, all hazardous energy will be appropriately released rendering the equipment or machine safe.

The authorized employee will verify the LOTO has been properly installed. The authorized employee will then verify no re-accumulation of energy has occurred, and continue to do so throughout the work process, if necessary.

The work area will then be inspected, and all non-essential items will be removed.

Work then may commence. Once completed the area shall be inspected for non-essential items before the removal of the LOTO device by the authorized employee.

5.1.3 Employee Related Requirements

Affected employees will be notified before and after LOTO devices have been installed and removed. Affected employees will not attempt to start, energize, or release any energy of any machine or equipment under LOTO procedures.

The Authorized employee performing the work on the potentially hazardous energy will place and remove their LOTO device. If the authorized employee who placed a LOTO device on a machinery or equipment has left the site and is not available to remove the LOTO device, a qualified CS Clean facility supervisor or manager will remove the LOTO device, if necessary, but only after completing the following procedures:

- Prior to the removal of the device program administrator or designee will:
    - Verify that the employee is no longer at the facility.
    - The program administrator or designee will review the LOTO device and equipment inspecting the operation to ensure all personnel and equipment are safe and ready for operation.
    - Visually determine all employees are clear of the potentially hazardous energy located in the LOTO workspace before removing the LOTO device, following steps for startup and the removal of a LOTO device outlined in **Section 5.1.2**.
    - CS Clean will also assure that the authorized employee knows the LOTO device was removed before resuming work at the facility. CS Clean will document this communication.

- Once completed, the program administrator or designee may remove the LOTO device and return the equipment to normal operation. Once completed the program administrator or designee will:
    - Make all reasonable efforts to contact the employee to inform his/her LOTO device has been removed (e.g., phone calls, emails, etc.).
    - Ensure that the employee has knowledge that the LOTO device was removed before they resume work at the facility.
    - Perform documentation as to why the lock was left on the equipment, list safety precautions taken prior to placing the equipment back into service, and indicate procedural steps followed.

5.1.4 Temporary Removal of Lockout Tagout Equipment

The following procedure will be followed for the temporary removal of all LOTO devices for the purposes of testing or positioning:

- The machine will be cleared of all tools and equipment.
- All employees will be sufficiently clear of the machine in a safe place.
- Remove the lockout device.
- Tags should be placed where locks were placed indicating a test is currently being performed and the device is still "locked out" from normal use.
- Energize all systems.
- To re-apply the LOTO device, follow steps listed in **Section 5.1.2** for the application of controls of the LOTO device.

5.1.5 Group Lockout Tagout

A primary authorized employee (manager or supervisor) will be responsible for a set number of employees working on a group LOTO device (an example would be an operations lock or group lunchbox). The primary authorized employee will maintain the ability to ascertain the status of all employees in the LOTO operation. This procedure remains true if multiple departments are involved.

Each authorized employee will affix their own personal LOTO device to the group LOTO device (operations lock, group lunchbox, or other suitable mechanism) when he or she begins work and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained. The steps listed in **Section 5.1.2** for applying a LOTO device should still be followed.

5.1.6 Shift and Personnel Changes

Employees performing a shift change should utilize their own personal LOTO device and follow the procedures listed in **Section 5.1.2**. In doing so, maintaining a lock on the device at all times. If a lock cannot be maintained on potentially hazardous energy at all times during a shift change,

procedures listed in **Section 5.1.4** should be followed for the temporary removal of the LOTO device.

5.2 Isolation of Hazardous Energy Procedures

5.2.1 De-energization Procedures

The specific procedure to safely de-energize all equipment at CS Clean requires following **Section 5.1** for the procedures to control all hazardous energy, "Energy sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other sources in machines and equipment can be hazardous to workers. During the servicing and maintenance of machines and equipment, the unexpected startup or release of stored energy can result in serious injury or death to workers. Always utilize **Appendix A** to determine the specific LOTO requirements for each type of equipment or machine.

Summary of Hazardous Energy	
Mechanical Energy	Energy created by a machine's moving parts, wheels, springs elevated parts.
Hydraulic Energy	Energy of pressurized, moving liquids
Pneumatic Energy	Energy stored within pressurized air
Thermal Energy	Heat energy: Steam, flame, explosion
Chemical Energy	Energy created by chemical reaction
Radiation Energy	Energy created by ionizing, low frequency electromagnetic, optical, or radio-frequency electromagnetic radiation
Stored Energy / Electrical Energy	Energy stored in batteries and capacitators
Gravitational Energy	Energy related to the mass of an object and its distance from the earth (or ground)
Other Sources of Hazardous Energy Not Otherwise Identified	Any energy, in any form that may result in a hazard to an employee

Per the requirements of 29 CFR 1910.333, additional requirements exist for electrical energy. Circuits and equipment will be disconnected from all electrical sources. As such, outlined below are additional applicable requirements specifically governing the LOTO and release of stored electrical energy.

Circuit control devices, such as push buttons, may not be used as a sole means of de-energizing equipment. Stored electric energy will be released. Capacitors will be discharged, and high capacitance elements will be short-circuited and grounded, if they store potentially hazardous electrical energy.

De-energization will consist of the removal of hazardous energy from machinery or equipment before lockout is applied. De-energization compromises of the actions needed to render the equipment, machine, or system in a state of zero energy or a state of known energy, retained through deliberated storage or entrapment. Once de-energization is complete, lockout can be applied.

Interlocks will not replace appropriate LOTO devices.

Stored electrical and non-electrical energy in devices that could reenergize will be blocked or relieved so that no machine/device could become accidentally energized.

LOTO devices will be applied for all potential hazardous energy sources as specified in **Section 5.1.2**. Additionally, LOTO devices will meet the requirements set forth in **Section 5.1.1**.

All electrical circuits are to be verified as de-energized before they are considered to be de-energized by a qualified person to verify the equipment cannot be started.

Test equipment will be used to verify all equipment is de-energized by a qualified person. If the circuit is over 600 volts, then the equipment used to test the circuit should immediately be tested via a post calibration to assure the reading was proper.

All other machine specific LOTO procedures continue to apply.

5.2.2 Re-energizing Equipment Procedures

An authorized employee will conduct physical and visual inspections, as necessary, to verify that all tools, electrical connections, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

Each LOTO device will be removed by the employee who applied it. However, if this employee is absent from the workplace, then the LOTO device may be removed by a qualified person designated to perform this task according to the conditions listed in **Section 5.1.3**.

The employee(s) exposed to the hazards must be warned to stay clear and position themselves in a safe position while the equipment or machinery is re-energized.

6.0 ANNUAL REVIEW

CS Clean will conduct a review at least annually of the LOTO program and its procedures. The review will be conducted by the program administrator at CS Clean.

Any deviations or inadequacies identified in the review will be corrected in a timely manner. Additionally, an update may occur if a process is found to be insufficient and require corrective action.

Revision Number	Date	Description of Change or Update	Change Made By

6.1 Authorized Employee Audit

The review will also include an audit, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected. Included in this audit will be a review of the authorized employee conducting a LOTO per the requirements established under this program.

A certification of the review will be made; including the date of the review, the employees reviewed, the inspector(s), and the machinery reviewed in the inspection. The certification will be kept for CS Clean records.

7.0 TRAINING

7.1 Authorized Employee Training

All authorized employees will receive the following training before their initial job assignments and will be refreshed annually. The training will include:

- Recognition of applicable hazardous energy sources.
- The type and magnitude of the energy available in the workplace.
- The methods and means necessary for energy isolation and control as identified in this program.

7.2 Affected Employees Training

Every affected employee will receive training and be refreshed annually on the purpose and use of energy control procedures.

7.3 Other Employees

All other employees whose work operations are or may be in an area where energy control procedures may be utilized will receive instructions and information about the prohibition relating to attempts to restart or reenergize machines or equipment that are under a LOTO device.

7.4 Tagout Training

Affected and Authorized employees must receive training regarding tags in the following subjects:

- Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that are provided by a lock.
- When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.
- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

7.5 Re-training Requirements

Affected and Authorized employees will be re-trained and reestablish proficiency if any of the following conditions exist:

- A change in job assignment.
- A change in machines.
- A change in equipment or processes that present a new hazard.
- A change energy control procedures.
- CS Clean believes there are deficiencies or inadequacies in the employee's knowledge.

CS Clean will keep certificates certifying the trained affected and authorized employees. These records will be updated at least annually.

7.6 Enforcement

Retraining will occur as necessary for identified deficiencies or inadequacies. Serious violations of the outlined procedures in this program (e.g., cutting or another employee's lock or attempting to start a machine under LOTO) can result in disciplinary action up to and including termination of the offending employee.

8.0 CONTRACTORS

CS Clean and contracted employer(s) will share and inform each other of their LOTO procedures. CS Clean will ensure all employees understand and are abiding by the restrictions and prohibitions set forth by the contractors' LOTO procedures.

CS Clean contractors will be responsible for their own LOTO program and employees. All contractors will be expected to abide by the requirements set forth by OSHA 1910.147, 1910.333, and work in a manner that does not conflict with CS Clean employees following this program.

Authorized contractor personnel must:

- Be made to have CS Clean LOTO Program made available to them.
- Be given a copy of the LOTO procedure for the equipment being repaired, found in **Appendix A**.

APPENDIX A

Machine and Equipment Specific LOTO Procedures

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Air Systems Air Receiver Tank	
Revised:	5/23/2025		

1 Lockout Points

Note: Ensure pneumatic lines have been bled prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

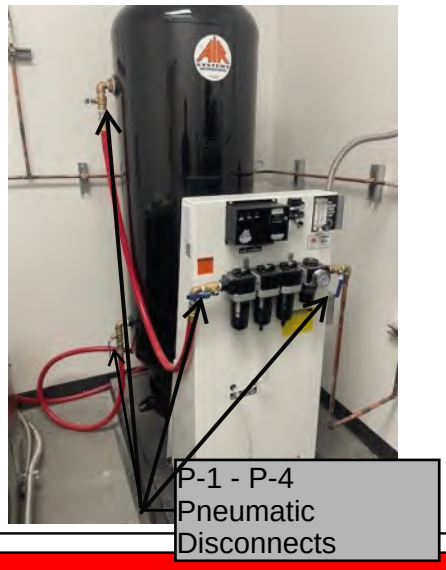
Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Pneumatic P-1 to P-4 Pneumatic Disconnects	The P-1 to P-4 Ball Valves are located on the side of the machine. Turn Valves to the off position and lock out. Use a Ball valve lockout devices.	P-1 to P-4 Pneumatic Disconnects 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: AO Smith Series 250 Water Heater	
Revised:	5/23/2025		

2 Lockout Points

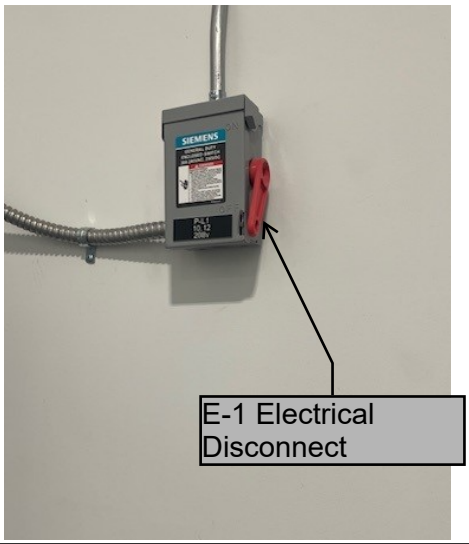
Note: Ensure water lines have all been bled prior to servicing. Ensure heat has properly dissipated prior to servicing.

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located on the wall to the side of the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect 

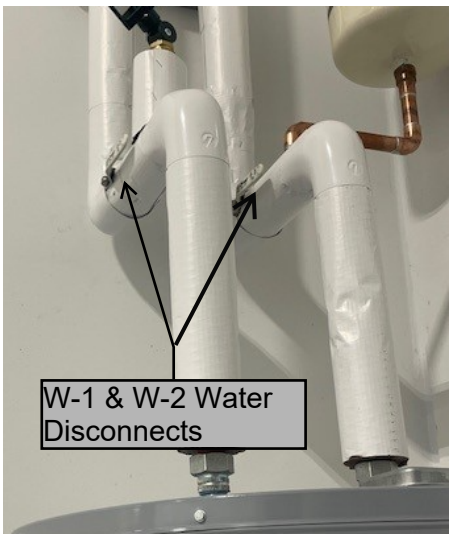
Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: AO Smith Series 250 Water Heater	
Revised:	5/23/2025		

2 **Lockout Points**

Note: Ensure water lines have all been bled prior to servicing.

Lockout Steps

Step #	Action	Info
2 Water W-1 & W-2 Water Disconnects	The W-1 and W-2 Ball Valves are located above the tank. Turn Valves to the off position and lock out. Use Ball valve lockout devices.	W-1 and W-2 Water Disconnects 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: AO Smith Signature 100 Water Heater	
Revised:	5/23/2025		

3 **Lockout Points**

Note: Ensure water lines have all been bled prior to servicing. Ensure heat has properly dissipated prior to servicing.

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located on the wall to the side of the machine. Turn Disconnect to the off position and lock out. Use a Circuit Breaker Lockout device.	E-1 Electrical Disconnect

Lockout/Tagout Posted Procedure

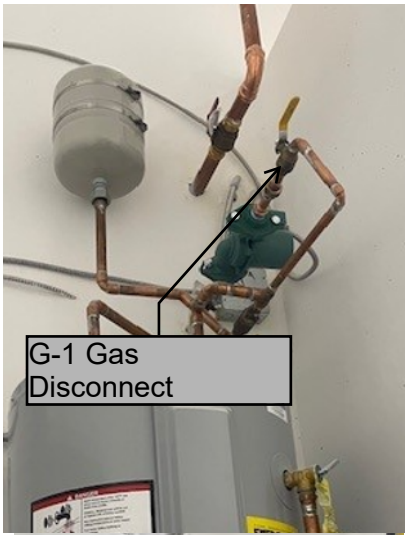
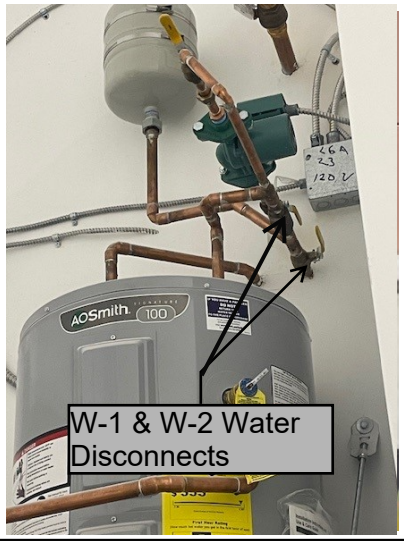
BRADY WORKSTATION

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: AO Smith Signature 100 Water Heater	
Revised:	5/23/2025		

3 **Lockout Points**

Note: Ensure water lines have all been bled prior to servicing. Ensure heat has properly dissipated prior to servicing.

Lockout Steps

Step #	Action	Info
2 Gas G-1 Gas Disconnect	The G-1 Ball Valve is located above the machine. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	G-1 Gas Disconnect 
3 Water W-1 & W-2 Water Disconnects	The W-1 and W-2 Ball Valves are located above the tank. Turn Valves to the off position and lock out. Use Ball valve lockout devices.	W-1 and W-2 Water Disconnects 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: AO Smith Signature 100 Water Heater	
Revised:	5/23/2025		

3	Lockout Points

Note: Ensure water lines have all been bled prior to servicing. Ensure heat has properly dissipated prior to servicing.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Argon	
Revised:	5/23/2025		

1 Lockout Points

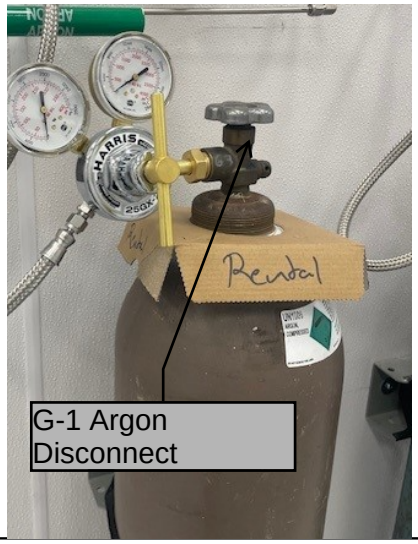
Note:

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Gas G-1 Argon Valve	The G-1 Gate Valve is located on the Top side of the machine. Turn Valve to the off position and lock out. Use a Gate valve lockout device.	G-1 Argon Valve 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Chemical Waste Totes	
Revised:	5/23/2025		

2 **Lockout Points**

Note: Ensure chemical & pneumatic lines have been bled prior to servicing. Procedure is written for both waste totes in the area.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

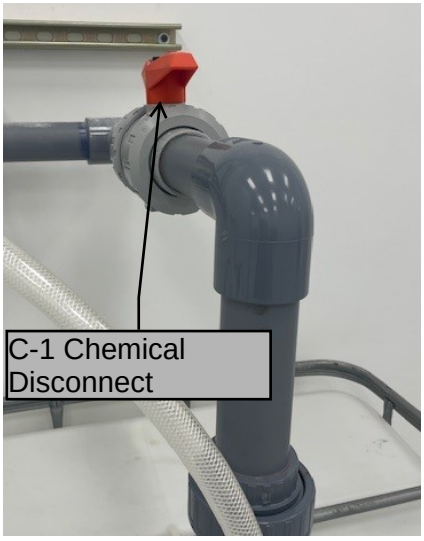
Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Chemical C-1 Chemical Disconnect	The C-1 Gate Valve is located on the side of the machine. Turn Valve to the off position and lock out. Use a Gate valve lockout device.	C-1 Chemical Disconnect 

Lockout/Tagout Posted Procedure

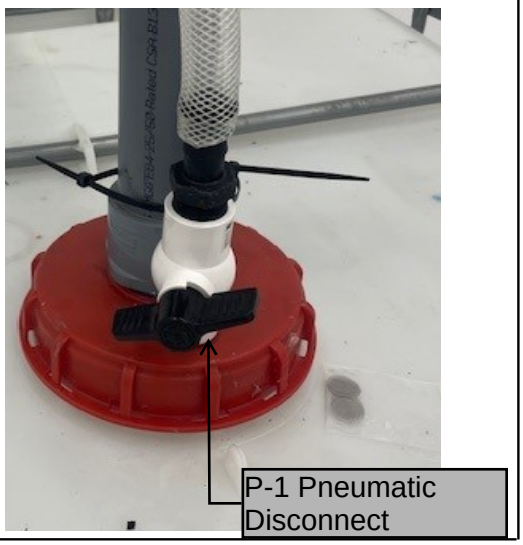
BRADY WORKSTATION

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Chemical Waste Totes	
Revised:	5/23/2025		

2 **Lockout Points**

Note: Ensure chemical & pneumatic lines have been bled prior to servicing. Procedure is written for both waste totes in the area.

Lockout Steps

Step #	Action	Info
2 Pneumatic P-1 Pneumatic Disconnect	The P-1 Gate Valve is located on the side of the machine. Turn Valve to the off position and lock out. Use a Gate valve lockout device.	P-1 Pneumatic Disconnect 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Copper Sulfate Treatment	
Revised:	5/23/2025		

4 **Lockout Points**

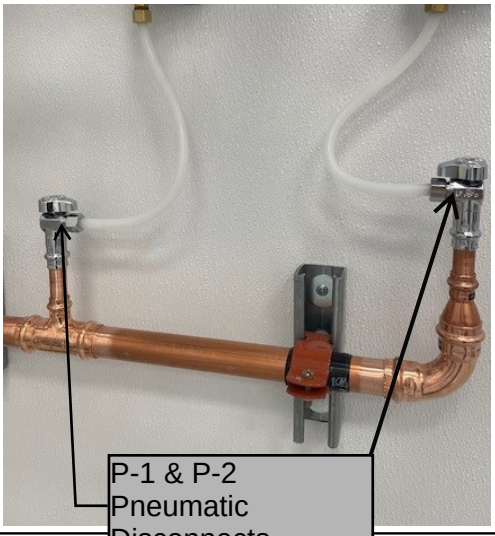
Note: Ensure pneumatic, water, and chemical lines have all been bled prior to servicing.

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Pneumatic P-1 & P-2 Pneumatic Disconnects	The P-1 and P-2 Ball Valves are located on the sides of the machine. Turn Valves to the off position and lock out. Use Ball valve lockout devices.	P-1 and P-2 Pneumatic Disconnects 

Lockout/Tagout Posted Procedure

BRADY WORKSTATION

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Copper Sulfate Treatment	
Revised:	5/23/2025		

4 **Lockout Points**

Note: Ensure pneumatic, water, and chemical lines have all been bled prior to servicing.

Lockout Steps

Step #	Action	Info
2 Chemical C-1 Chemical Disconnect	The C-1 Ball Valve is located on the Bottom side of the machine. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	C-1 Chemical Disconnect
3 Water W-1 Water Disconnect	The W-1 Ball Valve is located on the side of the tank. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	W-1 Water Disconnect

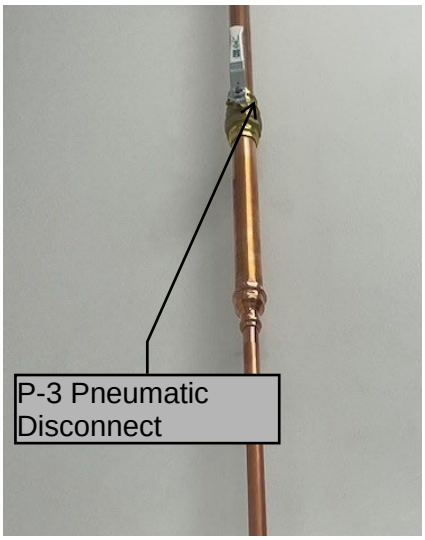
Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Copper Sulfate Treatment	
Revised:	5/23/2025		

4 **Lockout Points**

Note: Ensure pneumatic, water, and chemical lines have all been bled prior to servicing.

Lockout Steps

Step #	Action	Info
4 Pneumatic P-3 Pneumatic Disconnect	The P-3 Ball Valve is located on the pipe above the tank. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	P-3 Pneumatic Disconnect 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Cornell Garage Door 1 (Warehouse)	
Revised:	5/23/2025		

1 Lockout Points

Note: Potential energy hazard: ensure overhead doors are lowered to the lowest possible position prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located above the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Cornell Garage Door 2 (Warehouse)	
Revised:	5/23/2025		

1 Lockout Points

Note: Potential energy hazard: ensure overhead doors are lowered to the lowest possible position prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

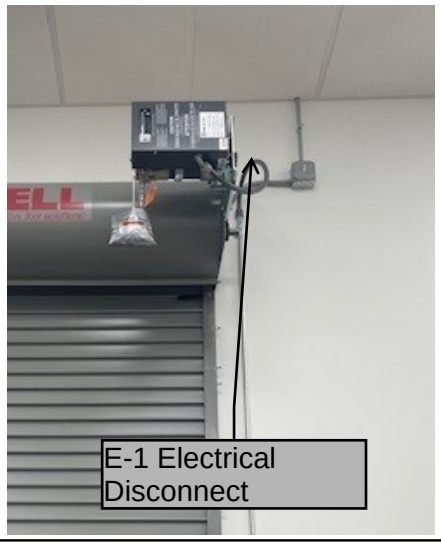
Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located above the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Cornell Garage Door 3 (Specialty Waste Area)	
Revised:	5/23/2025		

1 Lockout Points

Note: Potential energy hazard: ensure overhead doors are lowered to the lowest possible position prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located above the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Cornell Garage Door 4 (Specialty Waste Area)	
Revised:	5/23/2025		

1 **Lockout Points**

Note: Potential energy hazard: ensure overhead doors are lowered to the lowest possible position prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located above the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: CP Fan Blower Unit	
Revised:	5/23/2025		

1 Lockout Points

Note: Kinetic energy hazard: ensure fan blades have stopped prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

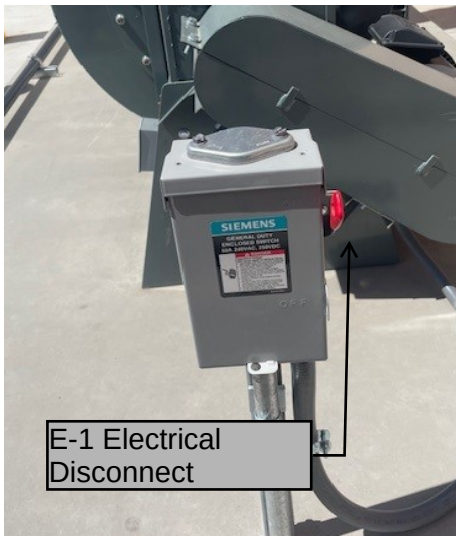
Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located on the side of the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: FS Curtis Air Compressor	
Revised:	5/23/2025		

2 **Lockout Points**

Note:

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located on the side of the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: FS Curtis Air Compressor	
Revised:	5/23/2025		

2 **Lockout Points**

Note:

Lockout Steps

Step #	Action	Info
2 Pneumatic P-1 Pneumatic Disconnect	The P-1 Ball Valve is located on the side of the machine. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	P-1 Pneumatic Disconnect

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

BRADY WORKSTATION

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Hydraulic Docks	
Revised:	5/23/2025		

1 Lockout Points

Note: Ensure hydraulic lines have been bled prior to servicing.

Purpose: This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Scope: This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

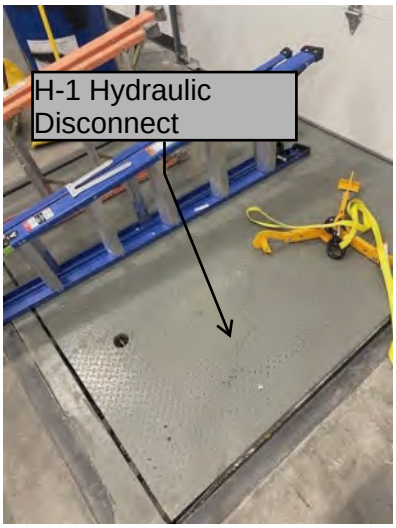
Authorization: This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>

Enforcement: Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Hydraulic H-1 Hydraulic Disconnect	The H-1 hydraulic reservoir under the gray pad. Bleed hydraulics from system prior to servicing. Ensure hydraulic bleed is collected in a drum / containment system.	H-1 Hydraulic Disconnect 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Kaeser SM 15 T Air Compressor	
Revised:	5/23/2025		

2 **Lockout Points**

Note:

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Electrical E-1 Electrical Disconnect	The E-1 Disconnect is located on the side of the machine. Turn Disconnect to the off position and lock out. Use a Lock and hasp device.	E-1 Electrical Disconnect

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Kaeser SM 15 T Air Compressor	
Revised:	5/23/2025		

2 **Lockout Points**

Note:

Lockout Steps

Step #	Action	Info
2 Pneumatic P-1 Pneumatic Disconnect	The P-1 Ball Valve is located on the side of the machine. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	P-1 Pneumatic Disconnect

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Kohler Generator 1	
Revised:	5/23/2025		

1 Lockout Points

Note:

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Gas G-1 Gas Valve	The G-1 Ball Valve is located on the Top side of the machine. Turn Valve to the off position and lock out. Use a Ball valve lockout device.	G-1 Gas Valve

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Nitrogen	
Revised:	5/23/2025		

1 Lockout Points

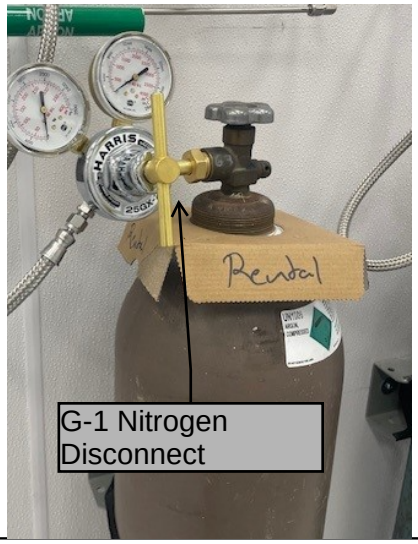
Note:

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Gas G-1 Nitrogen Valve	The G-1 Gate Valve is located on the Top side of the machine. Turn Valve to the off position and lock out. Use a Gate valve lockout device.	G-1 Nitrogen Valve 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

Lockout/Tagout Posted Procedure

ID#:		Facility: CS Clean	Location: Phoenix, Arizona Facility
Created:	5/23/2025	Description: Propane	
Revised:	5/23/2025		

1 Lockout Points

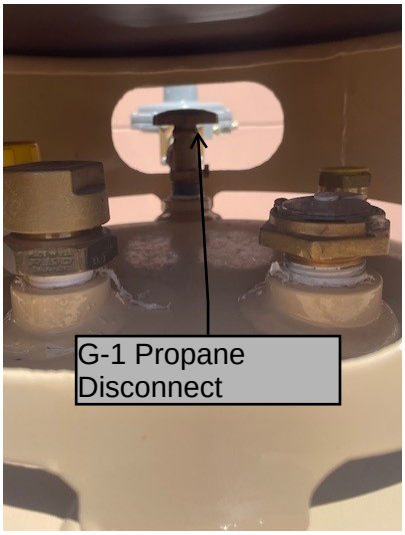
Note:

Purpose:	This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.
Scope:	This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.
Authorization:	This procedure shall only be used by employees that have been trained as "Authorized" employees. Employees with the following job roles are authorized to use this procedure: <list job roles>
Enforcement:	Failure to properly follow lockout-tagout procedure may result in corrective action.

Lockout Application Process

1. Notify affected personnel. 2. Properly shut down machine. 3. Isolate all energy sources. 4. Apply lockout devices, locks, & tags. 5. Verify total de-energization of all sources.

Lockout Steps

Step #	Action	Info
1 Gas G-1 Propane Valve	The G-1 Gate Valve is located on the Top side of the machine. Turn Valve to the off position and lock out. Use a Gate valve lockout device.	G-1 Propane Valve 

Verification of Energy Isolation

Verify that all energy sources are isolated and at a Zero Energy State by attempting to start machine with normal operating controls.

Lockout Removal Process

1. Ensure all tools and items have been removed. 2. Confirm that all employees are safely located. 3. Verify that controls are in neutral. 4. Remove lockout devices and reenergize machine. 5. Notify affected employees that servicing is completed.

CS CLEAN SYSTEMS	Title:	SOP - Materials Handling (Power Industrial Trucks and Aerial Lifts)
	Review / Revision Date:	September 25, 2022
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP Materials Handling (Power Industrial Trucks and Aerial Lifts)
	Review / Revision Date:	September 25, 2022
	Reviewed by:	

1.0 PURPOSE

The purpose of this standard operating procedure is to set forth rules and policies governing industrial truck operations, inspections, training, and recordkeeping at CS Clean Systems. (CS Clean).

The Occupational Safety and Health Administration (OSHA) has established an industrial truck standard under 29 CFR 1910.178 and regulates aerial lifts under the vehicle-mounted elevating and rotating work platforms standard of 29 CFR 1910.67. These regulations contain general fundamental requirements essential to inspecting and maintaining industrial trucks and aerial lifts in a manner that will protect the operators and other employees from hazards.

CS Clean shall maintain its powered industrial trucks in accordance with the OSHA regulations.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support - has the overall responsibility to ensure compliance with this SOP.

Production Manager – shall be responsible for ensuring that all powered industrial truck operators are trained on an annual basis with appropriate training records retained for a minimum of three (3) years, and the review and updating of this procedure, as necessary.

EH&S (or Designee) - shall be responsible for ensuring that employees follow the requirements outlined in this SOP**.** shall be responsible for ensuring all powered industrial trucks are repaired when daily inspections note deficiencies, and that periodic maintenance is completed per Section 4.0 below.

Power Industrial Truck Operator - is responsible for verifying that his/her powered industrial truck is maintained in proper working condition and following requirements outlined in this SOP. Any operator willfully operating the PIT in an unsafe manner may be subject to disciplinary action.

3.0 DEFINITIONS

Powered Industrial Truck (PIT) - is a mobile, power-propelled driver-on-board vehicle used to carry, push, lift, stack, or tier materials, or to assist persons in working on elevated objects. For CS Clean purposes, this includes fuel or battery powered fork trucks, scissors lifts, bucket lifts, walk-behind powered pallet jacks, and yard equipment where the driver sits or stands on-board the powered industrial vehicle. Specifically excluded are vehicles requiring state registration and a state issued driver's license to operate.

4.0 PROCEDURES / REQUIREMENTS

4.1 Request for PIT Operator Clearance

- The employee's direct supervisor must initiate a request for PIT operator clearance to the EH&S department.
- EH&S will contact the employee to arrange for medical clearance.
  - If cleared, EH&S will schedule training; and
  - If not cleared, EH&S will notify the employee's direct supervisor and that the employee is not able to operate a PIT.

4.2 Rescinding PIT Operator Clearance

- Authorized PIT Operator Clearance may be rescinded for any of the following reasons:
  - Employee's direct supervisor notifies EH&S that the employee no longer is required to use a PIT in their work;
  - EH&S notifies the employee's direct supervisor that the employee has not passed the required PIT training or has not demonstrated adequate proficiency in operating a PIT; or
  - Due to job performance, EH&S and the employee's direct supervisor deems the employee unfit to operate a PIT.

4.3 PIT and Aerial Lift Procedures

Prior to using new PITs or aerial lifting equipment, the operator shall review the operator's manual and understand the lifting equipment's use, safety devices, limitations. Additionally, the operator shall be trained as identified below in section 5.0.

In general, the operator shall understand the following procedures as they relate to the use of mechanical lifting devices, prior to the initial operation of the lift:

1. Safe operation and critical components;
2. Hazardous conditions which jeopardize safety;
3. All control features of the lifting device and attachments;
4. All placard warnings;
5. All safety devices on the lifting device;
6. Where to locate the user manual;
7. Who is permitted to operate or ride on the lift; and
8. Load capacity ratings.

Adequate fall protection shall be used on all aerial lifting devices. Fall protection use shall occur per the SOPs of Guarded Walls and Floor Openings, as well as the SOP for Walking Working

Surfaces. Personal fall arrest systems shall be attached to an approved location on aerial lifts via a designated anchor point in the event adequate guardrails of the lift do not protect the employee from a fall of 4 feet or greater.

All PITs and aerial lifts shall be approved for the environment and atmosphere in which they are utilized in.

4.4 Periodic Maintenance

- Each PIT will be serviced by a vendor specializing in PIT service and maintenance at a minimum of once every annually unless more frequent use necessitates a shorter period.
- Servicing records shall be maintained by EH&S or designee.

5.0 TRAINING

5.1 PIT Training

PIT operators must be trained prior to operating a PIT without supervision and retrained, at least, every three (3) years. Training includes formal instruction, demonstrations of operations, and an evaluation of the trainee's operation of the PIT. Successful completion of all aspects of the training results in certification.

Refresher training is also required if the operator has been observed operating the PIT in an unsafe manner, has been involved in an accident or near-miss, if workplace conditions change, or if a different PIT is to be driven.

Training must be performed by a competent person in PIT safety training.

An employee may be trained in the operation of the PIT by a certified PIT operator who attends all times during the trainee's operation of the PIT. The certified PIT operator is fully responsible for safety issues during this training.

The following should be included as a minimum part of the operator's training:

- Similarities to and differences from the automobile;
- Controls and instrumentation – what they do and how they work;
- Plant operation and basic maintenance;
- Steering and maneuvering;
- Visibility;
- Fork and/or attachment adaptation, operation, and limitations of their utilization;
- Vehicle capacity;
- Vehicle inspection and maintenance;

- Vehicle stability;
- Refueling or charging/recharging batteries;
- Operating limitations;
- Any other operating instruction, warning or precaution listed in the operator's manual for the type of vehicle, which the employee is being trained to operate;
- The operating environment;
- Floor surfaces and/or ground conditions where the vehicle will be operated;
- Composition of loads and load stability;
- Load manipulation, stacking and unstacking;
- Pedestrian traffic;
- Narrow aisle and restricted space operation;
- Operating in hazardous classified locations;
- Operating trucks on ramps and other sloped surfaces that would affect the stability of the vehicle;
- Other unique or potentially hazardous environmental conditions, which exist or may exist in the workplace; and
- Operating the vehicle in closed environments and other areas where insufficient ventilation could cause a buildup of carbon monoxide or diesel exhaust.

5.2 Aerial Lift Training

Training shall also occur on the safe use of aerial lifts. Training shall occur initially and be refreshed whenever a change occurs, a new type of aerial lift is used, inadequacies are found, or as deemed necessary by the EH&S department. Training shall occur on:

- Safe operation and critical components;
- Hazardous conditions which jeopardize safety;
- All control features of the lifting device and attachments;
- All placard warnings;
- All safety devices on the lifting device;
- Where to locate the user manual;
- Who is permitted to operate or ride on the lift; and
- Load capacity ratings

Training records will be maintained by the EH&S or designee.

6.0 INSPECTIONS / AUDITS

6.1 PIT Inspections

PIT's should be examined before being placed in service and should not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. These examinations

should be performed **prior to every work shift.** It is the operator's responsibility to ensure that the truck they will be using has been inspected prior to that shift.

The results of the inspection will be documented in the Powered Industrial Truck Inspection Log (**Attachment A**).

If a problem with a PIT is discovered, the PIT should be tagged "out of service" and it must be fixed before the truck is put back into service. CS Clean employees are to never drive a unit that needs repair. Document any corrective actions or repairs on the inspection log. The inspector's signature should also be included on each log.

Inspection Logs should be retained for a period of one (1) year and will be maintained by EH&S or designee. Documentation of any repairs performed on the PITs should be noted on the inspection sheet. Other documents pertaining to the inspection (i.e., service records) may be maintained in the Maintenance Manager's Office.

6.2 Aerial Lift Inspections

Aerial lifts must a have a pre-operation inspection conducted **prior to each day's (or shift's)** use of the lift. Documentation of the pre-operation inspections shall be performed by completing the Pre-Operation Inspection Form (**Attachment B**). Aerial lifts that are not in proper operating condition shall be immediately removed from service and reported to the Maintenance Manager.

If a problem with aerial lift is discovered, it must be fixed before the truck is put back into service. CS Clean employees are to never drive a unit that needs repair. Document any corrective actions or repairs on the inspection log. The inspector's signature should also be included on each log.

Inspection Logs should be retained for a period of one (1) year and will be maintained by the Global EH&S Compliance and Survey Officer. Documentation of any repairs performed on the powered industrial trucks should be noted on the inspection sheet. Other documents pertaining to the inspection (i.e., service records) may be maintained in the Maintenance Manager's Office.

6.3 Materials Handling (Powered Industrial Trucks and Aerial Lifts) SOP

EH&S or designee shall coordinate a periodic inspection of the Materials Handling (Powered Industrial Trucks and Aerial Lifts) SOP to ensure the SOP is up to date and that appropriate employees are properly trained. At a minimum, this review shall be done on an annual basis.

7.0 ATTACHMENTS

A – Powered Industrial Truck Inspection Log

B – Arial Lift inspection checklist

ATTACHMENT A

POWERED INDUSTRIAL TRUCK INSPECTION LOG

POWERED INDUSTRIAL TRUCK INSPECTION LOG (Each Shift)

CS Clean
CS Clean Systems.
Phoenix, AZ

INSPECTION DATE_____

OPERATOR NAME (printed)_____
SIGNATURE_____

TRUCK IDENTIFICATION:_____

Inspection Item	Adequate	Inadequate	Corrective Action Taken
1. Fuel Level			
2. Oil Level and Pressure			
3. Water Level and Fan Belt			
4. Brakes (Service & Parking)			
5. Lights (Head, Tail & Warning)			
6. Horn			
7. Hour Meter and Gauges			
8. Steering			
9. Tires			
10. Hydraulic Controls			
11. Battery Connections			
12. Backup Alarms			
13. Safety Devices (Seat, Guard Rails, & Mirrors)			
14. Shift Linkage and Gears			
15. Hoses			
16. Fire Extinguisher			
17. Mast Operation			
18. Fuel Cylinder Secure			
19. Leaks?			
20. Other:			

Remarks:

Attachment B

Arial Lift checklist

Operator's Aerial Lift Checklist

AERIAL LIFT INSPECTION LOG (Each Shift)

CS Clean
CS Clean Systems
Phoenix, AZ

INSPECTION DATE_____

OPERATOR NAME (printed)_____
SIGNATURE_____

LIFT IDENTIFICATION: _____

Inspection Item	Adequate	Inadequate	Corrective Action Taken
Minimum safe distance from overhead electrical lines and other conductors (< 50 KV – 10 feet; 50 – 199 KV- 15 feet; 200 – 349 KV- 20 feet; 350 – 499 KV- 25 feet; 500 –749 KV – 35 feet; 750 – 1000 KV – 45 feet)			
Floor and ground conditions are appropriate			
Overhead obstructions are outside of the working range of the lift.			
Lift is protected from pedestrian and vehicular traffic			
Weather conditions			
Atmospheric conditions			
Machine load ratings and intended use are compatible with the specific machine to be used.			
Batteries (DC Operated Models) (proper electrolyte level; cable connections should be tight; there should be no visual evidence of corrosion or other deterioration/damage; and the batteries should be of the size and weight specified by the manufacturer)			
Power cord (AC Operated Models) (The power cord for AC models should be securely attached and have no visible signs of damage (e.g., cut, or cracked insulation, missing prongs, etc.))			
Fluid levels			
Frame			
Hydraulic and pneumatic systems			

Platform raising system			
Tires, wheels, casters			
Guardrail			
Fall arrest anchoring point			
Platform			
Outriggers			
Controls			
Instructional and warning labels/decals			
Operator's manual			
Function tests			
Other:			
Remarks:			

 Operator's manual
(stowed in the designated weather-resistant compartment on the lift)

 Function tests
(all function tests recommended by manufacturer conducted with acceptable results)

 Additional items for specific models (as recommended by manufacturer)

CS CLEAN SYSTEMS	Title:	SOP - Personal Protective Equipment Program
	Review / Revision Date:	September 26, 2022
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP - Personal Protective Equipment Program
	Review / Revision Date:	October 14, 2022
	Reviewed by:	

1.0 Purpose

Under 29 CFR 1910 Subpart I, the Occupational Safety and Health Administration (OSHA) has established regulatory requirements to minimize injury resulting from various occupational hazards. Protective equipment, including personal protective equipment (PPE) for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

This SOP documents steps to minimize injury resulting from various occupational hazards present by protecting workers through the use of PPE when the hazards cannot be eliminated through other means (i.e. engineering or administrative controls). The protective equipment is provided wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or wherever mechanical irritants are encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

2.0 Responsibility

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with the PPE program.

Production Manager – shall be responsible for ensuring the policy is implemented throughout the facility. Will aid departments in identifying areas that require PPE assessments, review and revise the PPE SOP when necessary, provide advisory assistance and information concerning the use of hazardous materials, provide PPE in the workplace, and assure PPE is used appropriately.

EH&S (or Designee) – will review and update the program as necessary, will provide assistance to departments during review and implementation of the PPE SOP, and provide verification of employee training. **Will also be** responsible for ensuring employees wear the assigned PPE and that they comply with cleaning responsibilities. They are also responsible for reviewing the PPE assessment with new employees and instructing them on how to obtain the correct PPE, how to properly don and doff the equipment and how to properly store this equipment.

Employees - each employee shall comply with this policy.

3.0 Definitions

There are no relevant definitions under the Personal Protective Equipment Program.

4.0 General PPE Program Procedures

4.1 PPE Hazard Assessment

Basic steps of the PPE hazard analysis component of the PPE program include the following:

- Identification and review of available records including job descriptions, incident reports, and injury/first aid logs. This data will be utilized to establish job rankings and potential PPE requirements.
- Walk through survey of workplace areas where hazards exist or may exist to identify sources of hazards to employees. Primary observations should include the following hazards with PPE currently in use:
  - Sources of motion (i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects). Processes of movement of tools and machine elements that result in collision such as electrical shock that deals with electrical conductors, rolling objects, piercing soles, chemicals, impact, dust, and welding;
  - Sources of high temperatures that could result in burns, eye injury, or ignition of protective equipment;
  - Types of chemical exposures;
  - Sources of harmful dust;
  - Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, lasers, etc;
  - Sources of falling objects or potential for dropping objects;
  - Sources of sharp objects that might pierce the feet or cut the hands: Employees must wear appropriate hand protection when their hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperatures;
  - Sources of rolling or pinching objects that could crush the feet: Employees must wear protective footwear when working in areas whether is a danger of foot injuries due to falling and rolling objects or objects piercing the sole, and where such employee's feet are exposed to electrical hazards;
  - Certain electrical hazards; and
  - Hazards not otherwise classified.
- Following the walk through survey, the designated representative organizes the data and information for use in the assessment of hazards to analyze the hazards and enable proper selection of protective equipment.

- Each of the basic hazards will be reviewed and a determination made as to the frequency, type, level of risk, and seriousness of potential injury from each of the hazards found. EH&S (or designee) documents the hazard assessment via a written certification that identifies the area evaluated.
- Two (2) versions – short and long - of a PPE Hazard Assessment form are located in Section 7.0.

4.2 PPE Selection Guidelines

Once any hazards have been identified and evaluated through the hazard assessment, the general procedure for selecting protective equipment is to:

- Become familiar with the potential hazards and the type of protective equipment (PPE) that are available, and what they can do.
- Compare types of equipment to the hazards associated with the environment.
- Select the PPE that ensures a level of protection greater than the minimum required to protect employees from the hazards.
- Fit the user with proper, comfortable, well fitting protection and instruct employees on care and use of the PPE. *It is very important that the users are aware of all warning labels for, and limitations of, their PPE.*

4.3 Specific PPE Information

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned, and maintained by employees, at regular intervals, as part of their normal job duties so that the PPE provides the appropriate protection. Department Supervisors and CS Clean Employees are responsible for ensuring compliance with cleaning responsibilities. If a piece of PPE is in need of repair or replacement it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor. It is against safety rules to use PPE that is in disrepair or not able to perform its intended function.

- **Eye and Face Protection:**
  - All employees and visitors are required to wear safety glasses with side shields while in the plant;
  - Face shields must be worn in addition to safety glasses when grinding, sanding or chipping or handling chemicals;
  - Safety goggles or equivalent PPE must be worn in dusty environments or in areas where chemical splash hazards are present; and

- Only welders or welder's helpers are allowed to wear tinted safety glasses. If an employee has a medical necessity to wear tinted glasses, they must have a doctor's order to do so.

- **Foot Protection – Safety Shoes:**
  - Proper foot protection must be worn at all times within the facility. No heels, open heels, or open toe shoes are allowed. If required, metatarsals must be part of the shoe and not an attachment to the shoe. Visitors and contractors must wear the same foot protection as CS Clean employees while in production areas. At a minimum, visitors and contractors inside the facility shall have shoes that cover the entire foot and must remain within the designated aisle ways; and
  - Employees from temporary work agencies and contractors are required to wear appropriate safety shoes. Those employees who work in *non-safety shoe designated* areas (i.e. office) of the facility, vendors, and visitors will be allowed to walk through the designated work areas without safety shoes as long as they remain in outlined aisles or walkways. Safety shoes will be required at all times in other areas of the facility (i.e. production employees are required to wear them).
  - All employees who work in safety shoe designated work areas and/or job assignments are responsible for obtaining and wearing safety shoes to comply with this policy. Failure to comply will result in disciplinary action. EH&S (or designee) is responsible for informing new employees who are assigned to the safety shoe designated work areas of the safety shoe policy and the procedures for obtaining them. The new employee is responsible for reporting to his/her first day of work wearing approved safety shoes.

- **Hand Protection:**
  - It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear gloves to help prevent hand injuries, including cuts, burns, chemical exposure.
  - Types of protective gloves include, but are not limited to, leather, cut resistant, heat resistant, vinyl, rubber/nitrile, and chemical resistant.
  - Appropriate hand protection will be selected by task, based on an evaluation of the performance characteristics of the hand protection relative to the work to be performed, the conditions present, the duration of use and the hazards and potential hazards identified as part of the PPE Hazard Assessment.
  - Contractors are required to wear protective gloves if assigned to work in the designated work areas.
  - All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.

- All employees required to wear protective gloves must routinely inspect and properly care for their assigned gloves (if the gloves are not disposable).

- **Head Protection:**
  - Safety helmets (i.e. bump caps, hard hats) for the protection of employee heads from impact, penetration, electric shock and burns must meet the requirements and specifications per ANSI Standard Z 89.1 are provided.
- Head protection will be selected by task, based on the work to be performed, the conditions present, the duration of use and the hazards and potential hazards identified as part of the PPE Hazard Assessment.

- **Electric Protective Devices:**
  - Rubber protective equipment for protecting workers from live electrical current greater than 50 volts conforms to the requirement of SOP - Electrical General Requirements.
- Electrical protetive devices and PPE will be selected by task, based on the work to be performed, the conditions present, the duration of use and the hazards and potential hazards identified as part of the PPE Hazard Assessment.

- **Respiratory Protection:**
  - Feasible engineering controls are the primary measures used to control employee exposure to harmful dusts, fogs, fumes, mists, gasses, smokes, sprays, or vapors. Such engineering controls include, but are not limited to, enclosures and confinement, general and local ventilation and substitution of less toxic materials.
  - When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators are provided when necessary to protect employee health.
  - Please see the Respiratory Protection Program SOP for further information and requirements.
  - Respiratory protection will be selected by task, based on the work to be performed, the conditions present, the duration of use and the hazards and potential hazards identified as part of the PPE Hazard Assessment.

- **Hearing Protection:**
  - This SOP's goal is to reduce overall noise exposure levels for all employees through administrative and engineering controls, where feasible.
  - Protective hearing equipment is required when in house engineering controls cannot reduce noise exposure levels below the 85 DBA Time Weighted

Average (TWA) when measured on the "A" scale. An updated noise survey will be completed if plant changes deem it necessary.

- Personnel hearing protectors shall fall into one of three categories, ear plugs, canal caps or ear muffs. All shall meet the following requirements:
  - Have documented Noise Reduction Rating (NRR);
  - Provide adequate protection for area used;
  - Reasonably comfortable;
  - Easily cleanable; and
  - Kept clean and in good condition.
- Currently, a hearing conservation program is not required for the facility. A hearing conservation program will be implemented if via PPE Hazard Assessments and monitoring it is determined employees are exposed to above 85 DBA Time Weighted Average (TWA) when measured on the "A" scale.

4.4 Obtaining PPE

Each Hazard Assessment has PPE assigned to its associated hazard. All required PPE well be kept in stock by CS Clean and made available to employees (with the exception of safety shoes).

Before starting a new task or new job, the responsible EH&S or designee must perform a PPE assessment and review any new hazards with the employee(s), instructing the employee(s) on how to obtain the correct PPE, how to properly don and doff the equipment and how to properly store this equipment.

5.0 Training

All employees affected by the requirements of this procedure shall be trained initially upon hire, and. . Specific components of the training programs will include:

- When PPE is necessary;
- What PPE is necessary;
- How to obtain assigned PPE; and
- How to wear and care for assigned PPE.

Each affected employee shall demonstrate an understanding of the training, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

Re-training of employees shall occur as specified below:

- Changes in the workplace render previous training obsolete;
- Changes in the types of PPE to be used render previous training obsolete;
- Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the

employee has not retained the requisite understanding or skill.

6.0 Inspections/Audits

EH&S or designee shall coordinate a periodic inspection of the Personal Protective Equipment Program to ensure that CS Clean employees are covered under requirements of Under 29 CFR 1910 Subpart I.

The PPE Hazard Assessments will also be reviewed/updated to ensure accuracy.

At a minimum, these reviews shall be done on an annual basis or unless a facility change deems it necessary.

7.0 Attachments

A Example PPE Hazard Assessment Log (long version)
B Example PPE Hazard Assessment Log (short version)
C Completed PPE Hazard Assessment Records

ATTACHMENT A

EXAMPLE HAZARD ASSESSMENT LOG (Long Version)

PERSONAL PROTECTIVE EQUIPMENT HAZARD ASSESSMENT FORM

CS Clean Solutions

Job Title: _____ Department: _____

Task Description: _____

Task duration: _____ Frequency: _____

Employees in this position are required to wear the identified PPE.

Are personnel exposed to hazards from:	**EYE AND FACE PROTECTION**			
	NO	YES	Specific Hazard	PPE Required/Provided
IMPACT (flying objects, chips, particles, etc.)				
HEAT (sparks, molten metals, high temps.)				
CHEMICAL (splash and irritating mists)				
DUST (general dusty conditions)				
OPTICAL RADIATION (welding, cutting, lasers)				
OTHER:				

Are personnel exposed to hazards from:	**HEAD PROTECTION**			
	NO	YES	Specific Hazard	PPE Required/Provided
IMPACT (stationary overhead objects)				
IMPACT (falling objects)				
ELECTRICAL (live electrical conductors)				
OTHER:				

Are personnel exposed to hazards from:	**FOOT PROTECTION**			
	NO	YES	Specific Hazard	PPE Required/Provided
IMPACT (falling/rolling objects)				
IMPACT (Piercing objects)				
ELECTRICAL (live electrical conductors)				
CHEMICAL (chemical hazards)				
SLIP HAZARD (slippery or wet surfaces)				
OTHER:				

Are personnel exposed to hazards from:	**HAND AND BODY PROTECTION**			
	NO	YES	Specific Hazard	PPE Required/Provided
CHEMICAL (skin absorption)				
CHEMICAL (irritation, sensitization)				
CUTS/LACERATIONS				
IMPACT (abrasions)				
HEAT/COLD (Harmful temperature extremes)				
VIBRATION				
OTHER:				

Are personnel exposed to hazards from:	**ELECTRICAL HAZARDS**			
	NO	YES	Specific Hazard	PPE Required/Provided
Electrical shock				
Arc flash				
Voltage:			Amperage:	Incident Energy:
Limited Approach:			Restricted Approach:	Arc Flash Boundary:

Are personnel exposed to hazards from:	**OTHER PHYSICAL STRESSORS**			
	NO	YES	Specific Hazard	Exposure Assessment Result/Date PPE Required/Provided
Noise TWA > 85 dBA				
Impact Noise > 140 dBA				
Ionizing radiation				
Non-ionizing radiation				

Potential Airborne Chemicals:	**CHEMICAL EXPOSURE**		
	Exposure Limit(s)	Exposure Assessment Result/Date	Respiratory Protection Required
Rubber solvent			
n-hexane			
Cyclohexane			
n-heptane			

Additional comments:

CERTIFICATION STATEMENT:
I certify that the above assessment was performed to the best of my knowledge and ability, based on the hazards present on _____.

Approved by: _____ _____
Name and Title Signature
Date

EMPLOYEE TRAINING AND CERTIFICATION
PROPER USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

Instructor Name _____ Date _____

TRAINING OBJECTIVES:

Company/employee responsibilities
Work area hazards
How PPE will protect
When PPE should be worn
What PPE should be worn
How to don, doff, assure proper fit, adjust, wear properly
Limitations of the PPE
Proper care, maintenance, cleaning (sanitation)
Reporting and replacement of worn damaged PPE
Useful life
Proper disposal of PPE

The following employees have received training on specific PPE and have demonstrated an understanding of the PPE.

ATTENDANCE LIST

Name	Department	Signature

ATTACHMENT B

EXAMPLE HAZARD ASSESSMENT LOG (Short Version)

Personal Protective Equipment (PPE) Hazard Assessment Short Form

Location/ Jobs	**Potential Hazards**	**Body Parts**	**Required PPE**
Indicate Department, Job Title, Equipment, Location or other identification of the task for which PPE is required:	1 Sharp/ Abrasive Objects 2 Flying Particles 3 Falling Objects 4 Acidic/ Caustic Chemicals 5 Toxic Chemicals 6 Chemical Absorption 7 Temperature Extremes 8 Sparks/ Hot Particles 9 Light Radiation 10 Chemical Gases/ Vapors 11 Wet/ Slippery Surfaces 12 Electrical Hazards 13 Biohazards 14 Noise 15 Vehicular Traffic 16 Fall from Heights 17 Other (describe)	1 Head 2 Face 3 Eye(s) 4 Ear(s) 5 Respiratory System 6 Trunk 7 Arm(s) 8 Hand(s) 9 Finger(s) 10 Leg(s) 11 Foot/ Feet 12 Toe(s) 13 Other (describe)	A Hard Hat/ Bump Cap B Safety Glasses C Chemical Splash Goggles D Face Shield E Welding Helmet F Ear Plugs G Ear Muffs H Personal Fall Protection (list) I Gloves (list type) J Shoes/ Boots (list type) K Respirator (list type) L High Vis Vest/Clothing M Gauntlets (list type) N Apron (list type) O Coat/ Coverall P Other (list type)
	***Potential Hazards**	***Body Part(s)**	***PPE Required**
Example: Disinfection	*Caustic chemicals*	*Hands*	*Heavy duty latex glove*

Insert description or corresponding #.

CERTIFICATION

This hazard assessment has been performed to determine the type of PPE required for each affected employee. The assessment included a walk-through survey, specific job analysis, review of accident statistics, review of safety equipment selection guidelines, and selection of appropriate required PPE.

Assessment Certified by (Supervisor) _____ Date _____

Certification of Employee Training on the Proper Use of Personal Protective Equipment

Instructor: _____

Date: _____

Training Topics Covered**:**
Company/ employee responsibilities
Work area hazards
How PPE will protect
When PPE should be worn
What PPE should be worn
How to don, doff, assure proper fit, adjust, and wear properly
Limitations of the PPE
Proper care, maintenance, cleaning (sanitation)
Reporting and replacement of worn damaged PPE
Useful life, and
Proper disposal of PPE

The following employees have received training on their assigned PPE and have demonstrated an understanding of that PPE:

Department	**Printed Name**	**Signature**

ATTACHMENT C

COMPLETED HAZARD ASSESSMENTS

CS CLEAN SYSTEMS	Title:	SOP – Portable Fire Extinguishers
	Review / Revision Date:	August 25, 2022
	Reviewed by:	

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A. Master List of Portable Fire Extinguishers

CS CLEAN SYSTEMS	Title:	SOP – Portable Fire Extinguishers
	Review / Revision Date:	August 25, 2022
	Reviewed by:	

1.0 PURPOSE

In accordance with the requirements of the Occupational Safety and Health Administration (OSHA) Regulation 29 CFR 1910.157, CS Clean Systems (CS Clean) has developed and implemented a Portable Fire Extinguishers SOP. This regulation applies to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of authorized employees. CS Clean shall place and maintain their portable fire extinguisher in accordance with the OSHA regulations.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager – will review and update the SOP as necessary, will provide assistance to departments during review and implementation of this SOP, and will provide verification of employee training. Is responsible for determining the types of fire extinguishers that may be required and their locations.

EH&S or Designee – is responsible for maintaining a master list of the location of all portable fire extinguishers, ensuring the inspection, maintenance and testing of all portable fire extinguishers are completed as required, including record retention and assuring that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging.

Employees - each employee shall comply with this policy and will complete any required training.

3.0 DEFINITIONS

Portable Fire Extinguisher - A portable apparatus containing chemicals that can be discharged in a rapid stream to extinguish a small fire.

4.0 PROCEDURES

- Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.
- CS Clean shall distribute portable fire extinguishers for use on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.
- CS Clean shall distribute portable fire extinguishers for use on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.
- CS Clean shall distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

- CS Clean shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.
- The Production Manager, EH&S, or designee will record the monthly and annual maintenance date and retains those records for one year after the last entry or the life of the shell, whichever is less.
- The Production Manager, EH&S, or designee shall maintain and provide upon request the OSHA evidence that the required hydrostatic testing, described in Section 6.0, has been performed. This evidence shall be in the form of a certification record, which includes the date of the test, the signature of the person who performed the test and the serial number (or other identifier) of the fire extinguisher that was tested. Such records shall be kept until the extinguisher is hydrostatically retested at the time interval on Table L-1 or until the extinguisher is taken out of service, whichever comes first.
- Records of the initial and annual fire extinguisher training for any employee required to use fire extinguishers (see Section 5.0) will be maintained by the Production Manager . These records will be maintained on-site for one year after completion of training.

5.0 TRAINING

CS Clean shall provide an educational program to familiarize employees required to use fire extinguishers as part of their job requirements and under the Emergency Action Plan SOP with the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting. This will be accomplished by having a qualified individual provide hands on training for fire extinguishers on a periodic basis.

All CS Clean employees will either receive fire extinguisher training upon initial employment and at least annually thereafter or be instructed to not attempt to fight incipient fires and evacuate. Fires beyond the incipient stage will not be attempted to be fought by CS Clean employees.

6.0 INSPECTIONS / AUDITS

- The Production Manager is responsible for determining the types of fire extinguishers that may be required and their locations. The Production Manager, EH&S, or designee shall maintain a master list of the location of all units.
- On a monthly basis, portable fire extinguishers will be visually inspected for the following:
  - Fire extinguishers are identifiable as to the type and are readily accessible to employees without subjecting the employees to possible injury;
  - Fire extinguishers do not appear damaged or tampered with;

- Fire extinguishers are fully charged and in an operable condition; and
- Fire extinguishers are kept in their designated places at all times except during use.

Those units which require maintenance will be reported to the Production Manager. Inspection will be documented in the via an inspection tag on each fire extinguisher..

- On a yearly basis, all portable fire extinguishers shall be thoroughly inspected for proper condition. This annual inspection shall be conducted by a qualified vendor specializing in fire protection.
- When indicated by an inspection, all extinguishers shall be thoroughly examined and/or recharged or repaired by a qualified vendor. These inspections shall be recorded on tags on the extinguishers.
- A hydrostatic test shall be performed on extinguishers at intervals listed under OSHA 1910.157, Table L-1 (as shown below) and performed by trained persons with suitable testing equipment and facilities. The test will be recorded on a metal tag or decal on the extinguisher indicating date of test, test pressure and name of person conducting test.

TABLE L-1	
Type of Extinguishers	**Test Interval (years)**
Soda acid (soldered brass shells) (until 1/1/82)	([1])
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until 1/1/82)	([1])
Foam (stainless steel shell)	5
Aqueous Film Forming foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halo 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12
[1] Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982. (Not permitted)	

- The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the following conditions:
- When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;
- When the cylinder or shell threads are damaged;
- When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;
- When the extinguisher has been burned in a fire; or
- When a calcium chloride extinguishing agent has been used in a stainless-steel shell.

- Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.
- The Production Manager shall assure that stored pressure dry chemical extinguishers that require a 12-year hydrostatic test are emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.
- Spare extinguishers shall be provided whenever extinguishers are removed for repair or recharging.
- The Maintenance Manager shall assure that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging.

7.0 ATTACHMENTS

A. Master List of Portable Fire Extinguishers

ATTACHMENT A

Master List of Portable Fire Extinguishers

PORTABLE FIRE EXTINGUISHER LIST 2453 WEST PARKSIDE LANE, SUITE #150 PHOENIX, ARIZONA				
Unit No.	**Type**	**Charge (lbs.)**	**Department**	**Area**

CS CLEAN SYSTEMS	Title:	SOP - Safety Color Code for Marking Physical Hazards
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP - Safety Color Code for Marking Physical Hazards
	Review / Revision Date:	August 11, 2022
	Reviewed by:	

1.0 PURPOSE

The Occupational Safety and Health Administration (OSHA) has established safety color coding requirements to mark physical hazards under standard 29 CFR 1910.144. The purpose of this standard is to standardize markings for physical hazards located within the facility of CS Clean Systems (CS Clean).

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager - will review and revise this SOP when necessary, and provide advisory assistance and information concerning color coding and marking. The Production Manager will also coordinate training as outlined in Section 5.0 below.

EH&S (or Designee) - shall coordinate a periodic inspection of the Safety Color Code for Marking Physical Hazards throughout the facility to ensure that CS Clean employees and applicable facility locations are in compliance with the requirements of the OSHA Standards.is responsible for ensuring items (old and new) in the facility are marked according to this SOP.

Employees - each employee shall comply with this policy, including reporting all incidents and accidents

3.0 DEFINITIONS

There are no definitions applicable to the Safety Color Code for Marking Physical Hazards SOP.

4.0 PROCEDURE

OSHA requires the color coding scheme as follows:

1. Red - Red shall be the basic color for the identification of:

    a. Fire protection equipment and apparatus, except motorized apparatus, as used on roads.

    b. Danger - Safety cans or other portable containers of flammable liquids having a flashpoint at or below 80°F, table containers of flammable liquids (open cup tester), excluding shipping containers, shall be painted red. Additional a clearly visible identification, either in the form of a yellow band around the can or the name of the contents, shall be conspicuously stenciled or painted on the can in yellow. Red lights

shall be provided at barricades and at temporary obstructions, as specified in ANSI Safety Code for Building Construction, A10.2-1944. Danger signs shall be painted red.

c. Stop - Emergency stop bars on hazardous machines such as rubber mills, wire blocks, flat work ironers, etc., shall be red. Stop buttons or electrical switches used for emergency stopping of machinery shall be red.

2. Yellow - Yellow shall be the basic color for designating caution and for marking physical hazards such as:

a. Striking against, stumbling, falling, tripping, and "caught in between"

3. Other colors – Other colors that may be utilized (but are not specifically required by this OSHA regulation) are as follows:

1. **Green -** in combination with white, such as the green cross on a white background, designates the location of first aid and safety equipment.

2. **Black and White** - and combinations of the two in strips or checks are used for housekeeping and traffic markings.

3. **Orange** – standard color to highlight hazardous parts of machines or electrical equipment, such as exposed edges of cutting devices, the inside of removed guards, and the doors and covers of switch boxes. Also, orange is used for biological and similar types of hazards.

4. **Reddish-Purple (magenta)** - identifies radiation hazards, such as radioactive materials in rooms and containers.

5.0 TRAINING

CS Clean shall train and inform employees of requirements set forth in the SOP which are applicable to them and the duties they will be required to perform via a general on boarding training.

6.0 INSPECTIONS/AUDITS

The Production Manager, EH&S, or designee shall coordinate a periodic inspection of the Safety Color Code for Marking Physical Hazards SOP to ensure that CS Clean employees and applicable facility locations are in compliance with the requirements of the OSHA Standards. At a minimum, this review shall be done on an annual basis.

7.0 ATTACHMENTS

None

CS CLEAN SYSTEMS	Title:	SOP - Walking and Working Surfaces
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

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CS CLEAN SYSTEMS	Title:	SOP - Walking and Working Surfaces
	Review / Revision Date:	November 3, 2025
	Reviewed by:	

1.0 PURPOSE

This standard operating procedure (SOP) establishes proper guidelines, requirements, and responsibilities for employees working on walking/working surfaces, elevated work platforms, scaffolding, and ladders (portable and fixed).

This program applies to all employees and contractors working CS Clean Systems, Inc. (CS Clean) that are exposed to unprotected floor openings, open tanks, wells, pits, trenches, shafts or similar excavations, unprotected and/or unguarding openings in walls, open sided floors, platforms, walkways, and runways. This program also applies to work performed from beams, columns, fixed industrial ladders, or other structural members, erection of scaffolds, work platforms, planking, or other temporary structures.

2.0 RESPONSIBILITIES

Vice President of Business Development & Operations Support – has the overall responsibility to ensure compliance with this SOP.

Production Manager – shall be responsible for ensuring the SOP is implemented throughout the facility. This includes the proper identification and marking of any confined spaces.

EH&S (or Designee) – will review and update the SOP as necessary, will provide assistance to departments during review and implementation of this SOP, and will provide verification of employee training.

Employees - each employee shall comply with this policy. Employees are prohibited from entering any space meeting the definition of permit required confined space, unless the following conditions are met:

- The employees are trained under this SOP for the duties they are to perform.
- The space is rendered safe for entry by:
  - Issuance and compliance with the conditions of a permit;
  - The space is reclassified as a non-permit space; or
  - Alternate Entry Procedures are performed.

3.0 DEFINITIONS

Handrail: A single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

Nose, Nosing: That portion of a tread projecting beyond the face of the riser immediately below.

Open Riser: The air space between the treads of stairways without upright members (risers).

Platform: A working space for persons, elevated above the surrounding floor or ground; such as a balcony or platform for the operation of machinery and equipment.

Railing: A vertical barrier erected along exposed sides of stairways and platforms to prevent falls of persons. The top member of railing usually serves as a handrail.

Restraint System: A line from an anchorage, or between anchorages, to which a person is secured in such a way as to prevent the employee from walking or falling off an elevated work surface. Note: A restraint line is not necessarily designed to withstand forces resulting from a fall.

Rise: The vertical distance from the top of a tread to the top of the next higher tread.

Runway: A passageway for persons elevated above the surrounding floor or ground level, such as a footwalk along shafting or a walkway between buildings.

Standard Railing: A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons.

Standard Strength and Construction: Any construction of railings, covers, or other guards that meets the requirements of 1910.23.

Stair Railing: A vertical barrier erected along exposed sides of a stairway to prevent falls of persons.

Toeboard: A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials.

Wall Hole: An opening less than 30 inches but more than 1 inch high of unrestricted width, in any wall or partition; such as a ventilation hole or drainage scupper.

Wall Opening: An opening at least 30 inches high and 18 inches wide in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

Floor Hole: An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening, or slot opening.

Floor Opening: An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard through which persons may fall; such as a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded.

4.0 PROCEDURES / REQUIREMENTS

4.1 Housekeeping

- Work areas, passageways (access and egress routes), stairs, storerooms, service rooms, and areas around buildings shall be kept clean, orderly and in a sanitary condition.
    - Storage areas shall be kept free from the accumulation of materials that impede access/egress or constitute hazards from fire, explosion, or pests.
- Floors shall be kept as clean and dry as practicable.
    - Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places shall be provided.
- All work areas shall be kept as free from protruding nails, splinters, holes, or loose boards as practicable.
- Illumination
    - Work areas must be well lit while work is in progress. Illumination intensities must meet the minimum intensities required. (**Attachment B**)
    - Access and egress routes must be adequately lit at all times.

4.2 Floor Loading

- Except slab-on-grade floors and including mezzanines where material may be stored, CS Clean locations shall have floor load capacities rated, approved by a building official and marked on plates and securely fixed in conspicuous place for each applicable area.
- CS Clean shall not, either intentionally or through lack of care, cause any floor, mezzanine, balcony, or work platform to be overloaded.
- CS Clean shall not traverse or work on construction site floors that are not structurally complete (all framing and sheath materials required for their intended design strength).

4.3 Aisles and Passageways

- Where mechanical handling equipment is used, sufficient safe clearance shall be allowed for aisles, at loading docks, through doorways, and wherever turns or passage must be made.
- Aisles and passageways shall be kept clear and in good repair, with no obstructions that could create a hazard.

- Aisles and passageways shall be defined appropriately with paint, striping, marking pillars, flags, traffic cones, or barrels.

4.4 Stairs and Stairways

- Stairways or ladders shall be provided wherever there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway, embankment, or personnel hoist is available.
- Additional stairs or ladders shall be provided whenever a single point of access between levels has become blocked or otherwise impassable.
- Where doors or gates open directly onto a stairway, CS Clean will provide a platform. The swing of the door must not reduce the width of the stairway to less than 20 inches (50.8).
- Stairway Construction
    - Flights of stairs having four or more risers must be equipped with standard stair railings or standard handrails. The width of the stair must be clear of all obstructions, except handrails.
    - On stairways less than 44 inches (1.12m) wide, with both sides enclosed, at least one handrail, preferably on the right-side descending, shall be provided.
    - On stairways less than 44 inches (1.12m) wide, with one side open, at least 1 stair railing on the open side shall be provided.
    - On stairways more than 44 inches (1.12m) wide, but less than 88 inches (2.24m) wide, one handrail on each enclosed side and one stair railing on each open side shall be provided.
    - On stairways 88 inches (2.24) or wider, one handrail on each enclosed side, one stair railing on each open side, and one intermediate stair railing located in the middle of the stairway shall be provided.
    - Winding stairs must have a handrail that is offset to prevent walking on portions of the tread that are less than 6 inches (15.24 cm) wide.
    - Stair rail construction
        - Stair rails must meet the following criteria:
            - Stair railings must be constructed similar to standard railings, but the vertical height shall be no more than 34 inches (86 cm) nor less than 30 inches (76.2 cm) from the upper surface of the top rail to the point where the surface of the stair meets the riser below.
            - For wood railings, the posts must be made from 2-inch (5.08 cm) by 4-inch (10.2 cm) stock and spaced no more than 6 feet (1.8 m) apart.
            - If the top rail is made of two right angle pieces of 1-inch (2.54 cm) by 4-inch (10.2 cm) stock, posts may be spaced on 8-foot (2.4 m) centers, with a 2-inch (5.08 cm) by 4-inch (10.2 cm) intermediate rail.
            - For pipe railings, the posts and top and intermediate rails must have a diameter greater than 1 ½ inch (3.8 cm) and be spaced no more than 8 feet (2.4 m) on center.

- For structural steel railings, the posts and top and intermediate rails must be 2-inch (5.08 cm) by 2-inich (5.08 cm) by 3/8-inch (0.95 cm) angles or other metal shapes of equivalent bending strength with posts spaced not more than 8 feet (2.4 m) on center.

- Fixed Stairs
  - Fixed stairs shall be provided:
    - Where operations require regular travel from one level to another.
    - For access to operating platforms at equipment which requires attention routinely during operations.
    - For access to elevations which must be occupied daily or at each shift for gauging, inspection, or regular maintenance.
    - For work that may expose associates to acids, caustics, gases or other harmful substances or work tasks that require carrying tools or equipment by hand.
  - Spiral stairways are not permitted except for limited use and secondary access where a conventional stairway is not practical.
  - Winding stairways may be installed on tanks and similar round structures, where the diameter of the structure is not less than five (5) feet (1.5 m).
  - Fixed stairways must be designed and constructed to carry a load of 5 times the normal live load anticipated but never less than a concentrated load of 1,000 pounds (453.6 kg).
  - Fixed stairways must have a minimum width of 22 inches (0.56 m). The stair treads must be slip-resistant and the nosing must be of nonslip finish.
  - Welded bar grating treads without nosing are acceptable when the leading edge is noticeable by personnel descending the stairway and that the tread is serrated or nonslip.
  - Stairway platforms must be no less than the width of a stairway and a minimum of 30 inches (0.76 m) in length measured in the direction of travel.
  - Standard railings shall be provided on the open sides of all exposed stairways and stair platforms. Provide handrails on at least one side of closed stairways preferably on the right side descending.
  - Vertical clearance above any stair tread to an overhead obstruction must be at least 7 feet (2.1 m) measured from the leading edge of the tread.
  - Fixed stairs shall be installed at angles to the horizontal of between 30 and 50 degrees. Any uniform combination of rise/tread dimensions that result in a stairway at an angle to the horizontal within the permissible range may be used. The rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs and shall not exceed ¼ inches (0.64 cm) in variation. The following table provides examples of rise/tread dimensions that produce a stairway within the permissible range; however, the combinations are not limited to those listed below.

Permissible Range Rise/Tread Dimensions for Fixed Stairs		
Angle to Horizontal	**Rise in inches (cm)**	**Tread run in inches (cm)**
30° 35’	6 ½ (16.9)	11 (27.9)
32° 08’	6 ¾ (17.1)	10 ¾ (27.3)
33° 41’	7 (17.8)	10 ½ (26.7)
35° 16’	7 14 (18.4)	10 ¼ (26.0)
36° 52’	7 ½ (19.1)	10 (25.4)
38° 29’	7 ¾ (19.7)	9 ¾ (24.8)
40° 08’	8 (20.3)	9 ½ (24.1)
41° 44’	8 ¼ (21.0)	9 ¼ (23.5)
43° 22’	8 ½ (21.6)	9 (22.9)
45° 00’	8 ¾ (22.2)	8 ¾ (22.2)
46° 38’	9 (22.9)	8 ½ (21.6)
48° 16’	9 ¼ (23.5)	8 ¼ (21.0)
49° 54’	9 ½ (24.1)	8 (20.3)

4.5 Floor and Wall Openings

- Hatchways and Chutes
  - Hatchways and chutes must be guarded by one of the following items:
    - A hinged floor opening cover of standard strength and construction equipped with standard railings or permanently attached to leave only one side exposed. When not in use, the cover shall be closed, or the hatchway/chute guarded.
    - A removable railing with a toeboard on not more than 2 sides of the opening and fixed standard railings with toeboards on all other exposed sides. Removable railings must be in place when opening is not in use.
  - Where work requires the feeding of material into an opening, fall protection or a restraint system shall be provided. (See Loading and Unloading at an Elevated Platform below.)
- Open-sided Floors and Platforms
  - All open-sided floors or platforms 4 feet (1.2 M) or more above an adjacent floor of ground level must be guarded by a standard railing on all open sides except where there is entrance to a ramp, stairway, or fixed ladder.
  - Open-sided floors, walkways, platforms or runways above dangerous equipment, water or hazardous chemicals must be guarded with a standard railing and toeboard.
  - A toeboard must be provided whenever a person can pass beneath the open sides or there is moving machinery or equipment form which materials could fall.
- Loading and Unloading at an Elevated Platform
  - If it is necessary for employees to be near an unguarded platform edge higher than 4 feet, in order to facilitate transfer of materials to or from that platform:
    - The designated representative shall approve the operation

    - Fall protection or a restraint system that prevents the employee from crossing the unguarded edge shall be used.
- Skylight Openings
    - Skylight floor openings and holes shall be guarded with a standard skylight screen or a fixed standard railing on all exposed sides.
    - Skylight screens must be capable of withstanding a load of at least 200 pounds (90.7 kg) applied perpendicularly at any one area on the screen.
    - The screen must be constructed so that under ordinary loads or impacts it will not deflect downward sufficiently to break any glass below it.
    - If the screen is constructed of grillwork, openings not more than 4 inches (10.16 cm) long or slat work with opening snot more than 2 inches (5.08 cm) wide with length unrestricted are permitted.
- Pits and Trapdoors
    - Pit and trap door floor openings shall be guarded with floor opening covers.
    - When the cover is not in place, the pit or trapdoor shall be guarded on all exposed sides by removable railings or by an employee acting as a lookout.
- Manholes
    - Manhole openings shall be guarded with a manhole cover.
    - Manhole covers and their supports, when located in plant roadways, must comply with local highway requirements, or be designed to carry a truck rear-axle load of at least 20,000 pounds (9,100 kg).
    - When the manhole cover is not in place, protect the opening on all exposed sides by removable railings or by an employee acting as a lookout.
- Floor Holes and Openings
    - Floor holes into which a person could accidentally walk shall be guarded with:
        - A standard railing with toeboard on all exposed sides,
        - A cover protected by a removable railing, or
        - When the cover is not in place, the pit or trapdoor must be protected on all exposed sides by removable railings or by an employee acting as a lookout.
    - Floor holes into which a person could not accidentally walk (access obstructed by fixed machinery, equipment, or walls) shall be protected by a cover that leaves no openings greater than 1 inch (46 cm) wide. Each condition must be reviewed prior to beginning work.
- Runways
    - Runways shall be guarded by a standard railing on all open sides 4 feet (1.2 m) or more above floor or ground level.
    - Runways used for special purposes, such as oiling, shafting, or filling tank cars, may omit the railing on one side as required for performing work, provided that the runway is at least 18 inches (46 cm) wide. Each condition must be reviewed before beginning work.
    - Toeboards shall be provided wherever tools, machine parts or materials are used and may fall onto personnel below.

- Trench and Conduit Covers
    - Temporary floor openings must have either standard railings or be constantly attend by an employee. The opening must have a cover constructed of any material that meets strength requirements. Covers that project more than 1 inch above the floor level must have edges that are chamfered to an angle with the horizontal angle not over 30 degrees. Handles, hinges, bolts, or other parts must be flush with the floor or cover surface.
- Wall Openings
    - Wall openings from which there is a drop of more than 4 feet (1.2 m) shall be guarded by one of the following:
        - An extension platform onto which materials can be hoisted for handling. This platform must have side rails or equivalent guards.
        - A railing, roller, picket fence, half door, or equivalent barrier with a grab handle on each side of the opening with the center of the handle located approximately 4 feet (1.2m) above floor level. The handle must withstand a load of at least 200 pounds (90.7 kg) applied in any direction (except upward) at any point on the top rail or corresponding member.
        - Wall opening grab handles must not be less than 12 inches (30.4cm) in length and must be mounted to provide 3 inches (7.62 cm) of clearance from the side frame of the wall opening.
        - If there is an exposure to falling material, a toeboard shall be provided.
- Window Openings
    - Window openings at a stairway landing, floor, platform, or balcony from which there is a drop or more than 4 feet (1.2 m) and where the bottom of the opening is less than 3 feet (0.9 m) above the platform or landing, must be guarded by standard slats, a grill, or a railing.
- Dockboards
    - Dockboards shall be secured to prevent shifting position prior to use.
    - Measures, such as wheel chocks or sand shoes, shall be used to prevent the transport vehicle (e.g. a truck, trailer) on which a dockboard is placed, from moving while employees are on the dockboard.
    - Dockboards shall be designed, constructed, and maintained to prevent transfer vehicles from running off the dockboard edge.
    - Employees working on dockboards will be protected from falls greater than 4 feet (1.2 m).

5.0 TRAINING

All employees must be trained in the hazards associated with walking working surfaces, ladder safety, fall protection, dockboards, and guarded holes. Training must ensure the employee's understanding of the hazards associated with walking working surfaces.

Training shall be conducted prior to initial job assignment or be conducted before the introduction of new equipment or material that may present new walking working surfaces hazards. This training will be completed as necessary to ensure proficiency.

The Production Manager retain all training documentation.

6.0 INSPECTIONS / AUDITS

The Production Manager shall coordinate a periodic inspection of this SOP to ensure that CS Clean employees and subcontractors are complying with the requirements of the OSHA Standards. At a minimum, this review shall be done on an annual basis.

7.0 ATTACHMENTS

Attachment A – Walking Working Surfaces Self Inspection
Attachment B – Minimum Illumination Intensities
Attachment C - Pre-Use Portable Inspection Log
Attachment D -Monthly Portable Ladder Inspection Log
Attachment E – Annual Fixed Ladder Inspection Log

ATTACHMENT A

WALKING - WORKING SURFACES SELF INSPECTION

WALKING - WORKING SURFACES SELF INSPECTION

General Work Environment

	Is a documented, functioning housekeeping program in place?
	Are all worksites clean, sanitary, and orderly?
	Are work surfaces kept dry or is appropriate means taken to ensure that the surfaces are slip-resistant?
	Are all spilled hazardous materials or liquid cleaned up immediately and according to proper procedures?

Walkways

	Are aisles and passageways kept clear?
	Are aisles and walkways marked appropriately?
	Are wet surfaces covered with non-slip materials?
	Are holes in the floor, sidewalk or other walking surface repaired properly, covered or otherwise made safe?
	Is there safe clearance for walking in aisles where motorized or mechanical handling equipment is operating?
	Are materials or equipment stored in such a way that sharp projections will not interfere with the walkway?
	Are spilled materials cleaned up immediately?
	Are changes in direction or elevation readily identifiable?
	Are aisles or walkways that pass near moving or operating machinery, welding operations or similar operations arranged so employees will not be subjected to potential hazards?
	Is adequate headroom provided for the entire length of any aisle or walkway?
	Are bridges provided over conveyors and similar hazards?

Floor and Wall Openings

	Are floor openings guarded by a cover, a guardrail, or equivalent on all sides (except at the entrance to stairways or ladders)?
	Are toeboards installed around the edges of permanent floor openings (where persons may pass below the opening)?
	Are skylight screens of such construction and mounting that they will withstand a load of at least 200 pounds (440 kg)?
	Are grates or similar type covers over floor openings such as floor drains of such design that foot traffic or rolling equipment will not be affected by the grate spacing?
	Are unused portions of service pits and pits not in use either covered or protected by guardrails or equivalent?
	Are manhole covers, trench covers and similar covers, plus their supports designed to carry a truck rear axle load of at least 20,000 pounds (9,100 kg) when located in roadways and subject to vehicle traffic?

Stairs and Stairways

	Are standard stair rails or handrails on all stairways having four or more risers?
	Are all stairways at least 22 inches (56 cm) wide?
	Do stairs have landing platforms not less than 30 inches (0.76 m) in the direction of travel and extend 22 inches (56 cm) in width at every 12 feet (3.6 m) or less of vertical rise?
	Do stairs angle no more than 50 and no less than 30 degrees?
	Are step risers on stairs uniform from top to bottom?
	Are steps on stairs and stairways designed or provided with a surface that renders them slip resistant?

	Are stairway handrails located between 30 (0.76 m) and 34 inches (0.86 m) above the leading edge of stair treads?
	Do stairway handrails have at least 3 inches (7.6 cm) of clearance between the handrails and the wall or surface they are mounted on?
	Where doors or gates open directly on a stairway, is there a platform provided so the swing of the door does not reduce the width of the platform to less than 21 inches (0.53 m)?
	Where stairs or stairways exit directly into any area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees from stepping into the path of traffic?
	Do stairway landings have a dimension measured in the direction of travel, at least equal to the width of the stairway?

Elevated Surfaces

	Are signs posted, when appropriate, showing the elevated surface load capacity?
	Are surfaces elevated more than 30 inches (0.76 m) above the floor or ground provided with standard guardrails?
	Are all elevated surfaces (beneath which people or machinery could be exposed to falling objects) provided with standard 4-inch (10.16 m) toe boards?
	Is a permanent means of access and egress provided to elevated storage and work surfaces?
	Is required headroom provided where necessary?
	Is material on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading?
	Are dock boards or bridge plates used when transferring material between docks and trucks or rail cars?

ATTACHMENT B

MINIMUM ILLUMINATION INTENSISITES

MINIMUM ILLUMINATION INTENSISITES

FOOT CANDLES	AREA OR OPERATION
5	General construction area lighting
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas
5	Indoor: warehouses, corridors, hallways and exit ways.
5	Tunnels, shafts and general underground work areas: (exception: minimum of 10-foot candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Cap lights approved by the Mine Safety and Health Administration are acceptable for use in the tunnel heading).
10	General construction plant and shops, such as batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, mess halls, indoor toilets, and workrooms.
30	First aid stations, infirmaries, and offices

MOVE YOUR ENVIRONMENT FORWARD

RESPIRATORY PROTECTION PROGRAM

CS CLEAN SOLUTIONS, INC.
2453 West Parkside Lane, Suite #150
Phoenix, Arizona

Prepared For:

CS Clean Solutions
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Prepared By:

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

HRP# CSC0011.PS

Issued On: November 3, 2025

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GENERAL INFORMATION

Project/Site Information:
CS Clean Solutions
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Consultant Information:
HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032
Phone: 860-674-9570
Fax: 860-674-9624
E-mail: David.Webster@hrpassociates.com
Project Number: CSC0011.PS

Client Information:
CS Clean Solutions
2453 West Parkside Lane, Suite #150
Phoenix, AZ 85027

Report Date: November 3, 2025

Report Author:
Melissa Gualtieri
EH&S Project Consultant

Client Manager:
David Webster, CSP
EH&S Project Manager

1.0 ADMINISTRATION

1.1 Scope

This document covers the procedures and requirements for the use of respiratory protection at CS Clean Solutions (CS Clean).

1.2 Purpose

The purpose of this program is to help ensure that CS Clean employees are protected from exposure to respiratory hazards and that CS Clean fully complies with all applicable state and federal laws and regulations.

1.3 Application

CS Clean has determined all employees working in the Virgin Granulate Handling Area and workers emptying hazardous waste material in the Column Clean Room must use respiratory protection. Workers required to don respirators while working in Virgin Granulate Handling and Column Clean Room must comply with this program and the OSHA respiratory protection standard of 29 CFR 1910.134. This program was designed to comply with all aspects of the respiratory protection standard of 29 CFR 1910.134. Voluntary use of respirators may occur in other areas of the facility as described below.

In addition, some employees may express a desire to wear respirators during certain operations that do not require respiratory protection. As a general policy, CS Clean will review each of these requests on a case-by-case basis. If the use of respiratory protection in a specific case will not jeopardize the health or safety of the employee(s), CS Clean will provide respirators for voluntary use. As outlined in the Scope and Application section of this program, voluntary respirator use is subject to certain requirements of this program.

Table 1 in **Appendix A** represents the operations that have been identified in which respirators are used.

In the event an employee voluntarily wears a respirator when a respirator is not technically required by regulation, he/she will be subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this program. Employees who voluntarily wear filtering facepieces (disposable dust masks) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program, but must first receive the formal approval of the Program Administrator and must be trained to the requirements of **Appendix C**.

2.0 REFERENCES

2.1 Applicable Codes and Standards

- OSHA standard 1910.120, *Hazardous waste operations and emergency response.*

- OSHA standard 1910.134, *Respiratory Protection.*
- OSHA standard 1910.146, *Confined space entry*
- OSHA standard 1910.1200, *Hazard communication.*

3.0 DEFINITIONS

Terms used in this program are intended to align with those defined in OSHA standard Part 1910.134, *Respiratory Protection*. Section 3.1 defines some of the commonly referenced terms.

3.1 Definitions Applicable to this Document

Air-Purifying Respirator. A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Assigned Protection Factor (APF). The workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program.

Employee Exposure. Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-Service-Life Indicator (ESLI). A system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Filter or Air Purifying Element. A component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering Facepiece (Dust Mask). A negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

High Efficiency Particulate Air (HEPA) Filter. A filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Immediately Dangerous to Life or Health (IDLH). An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Maximum Use Concentration (MUC). The maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible

exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine a MUC on the basis of relevant available information and informed professional judgment.

Physician or Other Licensed Health Care Professional (PLHCP). An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) of the OSHA Respiratory Protection Standard.

Powered Air-Purifying Respirator (PAPR). An air-purifying respirator that uses a blower to force ambient air through air-purifying elements to the inlet covering.

Qualitative Fit Test (QLFT). A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit Test (QNFT). An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Self-Contained Breathing Apparatus (SCBA). An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service Life. The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supplied-Air Respirator (SAR) or **Airline Respirator.** An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-Fitting Facepiece. A respiratory inlet covering that forms a complete seal with the face.

User Seal Check. An action conducted by the respirator user to determine if the respirator is properly seated to the face.

4.0 RESPONSIBILITIES

4.1 Program Administrator

The Program Administrator, Jason Dugay, has the overall responsibility for administering the Respiratory Protection Program. Certain tasks can be delegated to other individuals or outside consultants. Specific responsibilities include, but are not limited to:

1. Identify work areas, processes or tasks that require workers to wear respirators, and evaluating hazards;
2. Identify options to eliminate the need for respiratory protection, i.e. engineering controls and/or product substitution;
3. Select respiratory protection options;

4. Enforce the proper use of respiratory protection when necessary;
5. Ensure that applicable employees have received appropriate training, fit testing, and annual medical evaluation before assignment of tasks requiring respirator use;
6. Ensure the availability of appropriate respirators and accessories;
7. Arrange for and/or conduct training;
8. Ensure that respirators are properly cleaned, maintained, and stored according to the respiratory protection program;
9. Conduct and/or arrange for respirator fit testing;
10. Administer the medical surveillance program;
11. Maintain records required by the program; and
12. Review and update this program whenever necessary to include new or modified tasks and procedures.

4.2 Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

1. Follow the requirements of this program without exception;
2. Attend and actively participate in all required training programs;
3. Care for and maintain their respirators as instructed, and store them in a clean sanitary location;
4. Inform their supervisor if they are having any problems with the respirator, or if conditions have appreciably changed that may affect respirator performance, i.e. weight loss or weight gain; and
5. Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns involving respiratory training.

4.3 Contractors

Contractors are responsible for complying fully with the requirements of the OSHA Respiratory Protection Standard.

5.0 RESPIRATORY PROTECTION PROGRAM ELEMENTS

5.1 Selection Procedures

The Program Administrator will select respirators to be used based on the hazards to which workers are exposed and in accordance with applicable OSHA standards. The Program Administrator will conduct or coordinate a detailed hazard evaluation for each operation, process, or work area where

airborne contaminants may be present. This includes routine operations and conditions, as well as the potential exposure during emergency situations involving hazardous materials. The results of this evaluation will be contained in a list within the written program. This process will include the following:

1. Areas with potential respiratory hazards will be identified through review of chemical inventory list and then consulting the appropriate Safety Data Sheets (SDSs). This inventory list and SDSs are already a part of the facility's Hazard Communication Program.
2. Workstations and processes will be reviewed to determine potential respiratory exposure to hazardous materials. This includes use at the point of operation, handling and transportation throughout the facility, and cleaning and maintenance operations. This review should be conducted by an actual physical survey of the operation during normal work activity, through review of all available process records and job specifications, as well as through interviews with employees and department supervisors.
3. Personal exposure monitoring will be used to accurately assess potential employee exposure where practical. In addition to personal breathing zone samples, grab samples or direct-reading instruments may be needed to determine whether or not the Short-Term Exposure Limit (STEL) or ceiling value has been exceeded for a specific material.

Air sampling must be conducted by qualified individuals using properly calibrated direct reading instruments or air sampling equipment such as constant-flow air sampling pumps. Sampling and analysis will follow OSHA approved methods specific for the contaminants of concern. Accredited laboratories will be used when analysis of sampling media is required.

This exposure data is critical not only to determine if respiratory protection is required, but also to properly select the type/model respirator that is needed (required protection factor and type of filter/cartridge(s) and to calculate the required "End of Service Life" (cartridge change-out schedule if end-of life indicators are not part of the respirator).

This exposure monitoring will be fully documented in an acceptable IH report. For those areas where respirators are deemed necessary, exposure data, along with the recommended respirator, must be documented for each department and operation in **Appendix A**.

Respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use. The technical information for all respirators can be found in **Appendix F**.

5.2 Periodic Review

The Program Administrator must review and revise, as necessary, the hazard assessment any time there is an appreciable change in the workplace or process, including, but not limited to the following:

1. Modifications to ventilation/exhaust systems;

2. Addition or relocation of processes or equipment;
3. Significant increase in the volume of work and/or material used;
4. Report of any respiratory or other medical problems;
5. Addition of new chemicals or materials into the process;
6. Significant changes in operations or work procedures;
7. Visual evidence of airborne dust or accumulation on surfaces;
8. Changes to exposure guidelines, i.e. new or revised PEL(s)/TLV(s); or
9. When new technology or engineering controls become available.

The potential hazard will be evaluated, and the results of that assessment will be communicated to the employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

5.3 Respirators for IDLH Atmospheres

CS Clean employees do not enter IDLH atmospheres. If an emergency occurs properly trained emergency response personnel entering atmospheres that are possibly containing IDLH conditions shall don supplied air respirators. Where CS Clean cannot identify or reasonably estimate the employee exposure, the CS Clean will consider the atmosphere to be IDLH.

5.4 Respirators for Non-IDLH Atmospheres

The respirators selected shall be adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations. The respirator selected shall be appropriate for the biological and chemical state and physical form of the contaminant.

5.5 Voluntary Respirator Use

The company may provide filtering facepiece type respirators to employees for voluntary use. The Program Administrator will provide all employees who voluntarily choose to wear these respirators with a copy of Appendix D of 29 CFR 1910.134 - Respiratory Protection Standard. (**Appendix C** of this program details the requirements for voluntary use of respirators by employees). Employees choosing to wear an air purifying respirator must comply with all procedures for medical evaluation, respirator use, and cleaning, maintenance, and storage.

The Program Administrator will authorize voluntary use of respiratory protective equipment upon the request of workers on a case-by-case basis, depending on specific workplace conditions and/or the results of medical evaluations.

5.6 Medical Evaluations

Employees who are either required to wear respirators, or who choose to wear an Air Purifying Respirator (APR) or Supplied Air Respirator (SAR) voluntarily, must pass a medical exam before being allowed to wear a respirator on the job. Employees are not permitted to wear respirators, not even for training purposes (with the exception of filtering facepiece respirators); until a Physician or Other Licensed Health Care Professional (PLHCP) has determined that they are medically cleared.

A designated PLHCP will provide the medical evaluations. Medical evaluation procedures are as follows:

1. The medical evaluation will be conducted using the questionnaire provided in **Appendix B** of the OSHA Respiratory Protection Standard. The Program Administrator will provide a copy of this questionnaire, located in **Appendix B**, to all employees requiring medical evaluations.
2. Employees will be permitted to fill out the questionnaire on company time.
3. The completed questionnaire will remain confidential and be forwarded to the designated PLHCP for evaluation.
4. Follow-up medical exams will be granted to employees as required by Standard 29 CFR 1910.134, located in **Appendix H**, and/or as deemed necessary by the PLHCP.
5. All employees will be granted the opportunity to speak with the PLHCP regarding their medical evaluation, if they so request.
6. The Program Administrator has provided the PLHCP with a copy of this program, a copy of the Respiratory Protection standard, the list of hazardous substances by work area, and for each employee requiring evaluation:
    a. His or her work area or job title;
    b. Proposed respirator type and weight;
    c. Length of time required to wear a respirator;
    d. Expected physical workload (light, moderate, or heavy);
    e. Potential temperature and humidity extremes; and
    f. Any additional protective clothing required.
7. If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employer shall provide a PAPR if the PLHCP medical evaluation finds that the employee can use such a respirator; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.

8. The PLHCP will send to the Program Administrator a report of his or her recommendation of the employee's ability to wear a respirator.
    a. The PLHCP's report shall contain only the following information:
        i. Any limitations on respirator use related to the medical condition of the employee or related to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
        ii. The need, if any, for follow-up medical evaluations.
        iii. A statement that the PLHCP has provided the employee with a copy of the PLHCP's recommendation.

After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:

1. Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing,
2. The PLHCP or supervisor informs the Program Administrator that the employee needs to be reevaluated,
3. Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation,
4. A change occurs in workplace conditions that may result in an increased physiological burden on the employee,
5. As required by other OSHA standards.

A list of CS Clean employees currently included in medical surveillance is provided in **Appendix G** of this program. All examinations and questionnaires are to remain confidential between the employee and the PLHCP.

5.7 Fit Testing

Fit testing is required for employees working in areas that require the use of respirators for their respiratory protection. Employees voluntarily wearing respirators may also be fit tested upon request.

Employees who are required to wear respirators will be fit tested:

1. Prior to being allowed to wear any respirator with a tight fitting facepiece;
2. Annually; and
3. When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Fit testing of PAPRs is to be conducted in the negative pressure mode.

The Program Administrator will conduct or coordinate fit tests following the OSHA approved Saccharin Solution Aerosol QLFT Protocol or other approved OSHA method. The Qualitative Fit Test (QLFT) Form can be found in **Appendix Ia**, and OSHA's Appendix A Fit Testing Procedure can be found in **Appendix Ib** of this document.

Quantitative fit testing will be performed for all employees utilizing respirators with an APF greater than 50.

5.8 General Respirator Use Considerations

Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.

All employees shall conduct user seal checks each time that they don their respirator. Employees shall use either the positive or negative pressure check (depending on which test works best for them) specified in Appendix B-1 of the OSHA Respiratory Protection Standard.

All employees shall be permitted to leave the work area to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding their ability to work, change filters or cartridges, replace parts, or to inspect the respirator if it stops functioning as intended. Employees should notify their supervisor before leaving the area.

Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.

5.9 Grade D Air

CS Clean must meet the Grade D compressed breathing air requirements when using supplied air respirators set by Federal OSHA as described in ANSI/CGA-7.1-1989. Compressors supplying breathing air to respirators must be equipped with suitable in-line air-purifying sorbent beds and filters maintained per manufacturer's instructions and receive maintenance per the manufacturer's instructions.

Any compressed breathing air must meet at least the requirements for Grade D breathing air described Specification for Air" (CGA G-7.1-1989). This specification requires that:

1. Oxygen content in compressed breathing air must be 19.5 to 23.5 percent of the total volume of air.
2. Condensed hydrocarbon content in compressed breathing air must be 5 milligrams (mg) per each cubic meter (m3) of air or less.
3. Carbon monoxide content in compressed breathing air must be 10 parts per million (ppm) or less.

4. Carbon dioxide content in compressed breathing air must be 1,000 ppm or less.
5. There must be a lack of any noticeable odor from the compressed breathing air.

The Grade D breathing air will be certified.

5.10 Respirator Emergencies

APR Respirator Malfunction

For any malfunction of an APR (e.g., such as contaminant breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended, and go to a designated safe area to maintain, repair, or replace the respirator. The supervisor must ensure that the employee receives the needed parts to repair the respirator or is provided with a new respirator.

6.0 MAINTENANCE AND CARE OF RESPIRATORS

6.1 Cleaning

Respirators are to be cleaned and disinfected regularly. Respirators must be issued for the exclusive use of a single employee. The only exception involves SCBAs or SARs for emergency (rescue) use. In this case only the face piece needs to be furnished for each (fully trained) employee authorized to use this equipment.

Respirators shall be cleaned as often as necessary, but at least once a day if used continuously. Atmosphere supplying and emergency use respirators are to be cleaned, inspected, and disinfected after each use. Respirator cleaning procedures are in **Appendix D** (Appendix B-2 to §1910.134).

The following procedure is to be used when cleaning and disinfecting respirators:

1. Disassemble respirator, removing any filters, canisters, or cartridges,
2. Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents,
3. Rinse completely in clean warm water,
4. Wipe the respirator with disinfectant wipes to kill germs,
5. Air dry in a clean area,
6. Reassemble the respirator and replace any defective parts,
7. Place in a clean, dry plastic bag or other airtight container.

Note: Always read and fully understand manufacturer's instructions.

Respirator Types used onsite include the Scott N2000, 3M N95, and 3M 6900. Manufacturer's instructions for the listed respirators can be viewed in **Appendix F**.

6.2 Maintenance

Respirators are to be properly maintained at all times to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and to identify potential defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced, or any repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be performed only by the manufacturer. No repairs will be attempted that could void the manufacturer's warranty.

The following checklist will be used when inspecting respirators:

1. Facepiece:
    a. Cracks, tears, or holes
    b. Facemask distortion
    c. Cracked or loose lenses/face shield
2. Head straps:
    a. Breaks or tears
    b. Broken buckles
3. Valves:
    a. Residue or dirt
    b. Cracks or tears in valve material
4. Filters/Cartridges:
    a. Approval designation
    b. Gaskets
    c. Cracks or dents in housing
    d. Proper cartridge for hazard
5. Air Supply Systems:
    a. Breathing air quality/grade
    b. Condition of supply hoses
    c. Hose connections
    d. Settings on regulators and valves

Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respirator facepiece to prevent any eye or skin irritation, to replace the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the facepiece or if they detect any other damage to the respirator or its components.

6.3 Cartridge/Filter Identification and Replacement

All filters and cartridges shall be labeled and color-coded with the NIOSH approval label and the label shall not be removed or made indistinguishable. Cartridge colors and their corresponding type of protection can be found in **Appendix E**.

An important part of the Respiratory Protection Program includes identifying the useful life of canisters and filters used on APRs. Each filter and canister shall be equipped with an end-of service-life indicator (ESLI) certified by NIOSH for the contaminant; or

If there is no ESLI appropriate for conditions, a change schedule will be followed for canisters and cartridges that is based on objective information or data that will ensure canisters and cartridges are changed before the end of their service life. Usage logs, including required change-outs and maintenance checks, shall be maintained for every respirator in use. Supervisors will be required to review and "sign-off" on this paperwork as required by the Program Administrator.

Cartridges and filters shall be changed:

1. Prior to expiration date;
2. When requested by employee;
3. When contaminate odor is detected;
4. When restriction to air flow has occurred as evidenced by increased effort by user to breathe normally; and
5. When discoloring of the filter media is evident.

6.4 Storage

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations.

6.5 Defective Respirators

Respirators that have malfunctioned or have defective parts shall be taken out of service immediately, and clearly tagged "OUT-OF-SERVICE". The reason why the respirator has been retired must be clearly indicated on the tag. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor immediately.

7.0 TRAINING AND DOCUMENTATION

7.1 Employee Training

The Program Administrator will provide and/or coordinate training to respirator users and their supervisors on the contents of the facility's Respiratory Protection Program, their responsibilities under the program, and the requirements of the OSHA Respiratory Protection Standard. Workers

will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees who must wear respirators.

The training course will cover the following topics:

1. The Respiratory Protection Program;
2. The OSHA Respiratory Protection standard;
3. Respiratory hazards encountered at the facility and their health effects;
4. Proper selection and use of respirators;
5. Limitations of respirators;
6. Respirator donning, user seal (fit) checks and doffing;
7. Fit testing procedures;
8. Emergency use procedures;
9. Maintenance and storage; and
10. Medical signs and symptoms limiting the effective use of respirators.

Employees will be retrained annually or as needed (e.g., if they change departments or need to use a different respirator). Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises and a written test. Respirator training will be documented by the Program Administrator. This documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

7.2 Program Evaluation

The Program Administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.

Problems identified will be noted in an inspection log and addressed by the Program Administrator. The report will list plans to correct deficiencies in the respirator program and provisions for re-inspections after corrective actions have been taken.

7.3 Documentation and Recordkeeping

A written copy of this program along with the OSHA standard should be kept in the Program Administrator's office. It must be made available to all employees who wish to review it.

Copies of training and fit test records will also be maintained. These records will be updated as new employees are trained and as existing employees receive refresher training

The Program Administrator will retain copies of the medical correspondence for the employees covered under the respiratory program. The completed medical questionnaire and the physician's

documented findings are confidential and will remain at the physician's office. The company will only retain the physician's written recommendation regarding each employee's ability to wear a respirator. These records will be retained and available in accordance with 29 CFR 1910.1020. The medical record for each employee shall be preserved and maintained for at least the duration of employment plus (30) years.

APPENDIX A

Exposure Concentrations and Respirator Selection

Exposure Concentrations and Respirator Selection

Detailed assessments, including Industrial Hygiene air monitoring as necessary, conducted at this facility, and under the direction of the Program Manager, have shown that contaminant exposures exceed the OSHA permissible exposure Limit (PEL), short-term exposure limit (STEL), or ceiling limits in the following areas. Adequate protection from these hazards can be obtained through the use of National Institute for Occupational Safety and Health (NIOSH) approved respirators as indicated:

Table 1 represents the operations that have been identified in which respirators are used:

Table 1: Facility Respirator Information

Type of Respirator	Work Area	Conditions of Use	Medical Evaluations
3M N95	Virgin Granulate Handling Area	Below 10 times the PEL	Yes
3M Scott AV-2000	Column Clean Room	Supplied Air Equipped	Yes

Table 2: Summary of Air Sampling (None Conducted, Requires IH sampling to be conducted)

YEAR			
Contaminants	**Work Area**	**Above OSHA PEL**	**Respirator**

APPENDIX B

OSHA Respirator Evaluation Questionnaire

OSHA INFOSHEET

Respirator Medical Evaluation Questionnaire

Respirators must be used in workplaces in which employees are exposed to hazardous airborne contaminants. When respiratory protection is required employers must have a respirator protection program as specified in OSHA's Respiratory Protection standard (29 CFR 1910.134). Before wearing a respirator, workers must first be medically evaluated using the mandatory medical questionnaire or an equivalent method. To facilitate these medical evaluations, this INFOSHEET includes the mandatory medical questionnaire to be used for these evaluations.

Medical Evaluation and Questionnaire Requirements

The requirements of the medical evaluation and for using the questionnaire are provided below:

- The employer must identify a physician or other licensed health care professional (PLHCP) to perform all medical evaluations using the medical questionnaire in Appendix C of the Respiratory Protection standard or a medical examination that obtains the same information. (See Paragraph (e)(2)(i).)
- The medical evaluation must obtain the information requested in Sections 1 and 2, Part A of Appendix C. The questions in Part B of Appendix C may be added at the discretion of the health care professional. (See Paragraph (e)(2)(ii).)
- The employer must ensure that a follow-up medical examination is provided for any employee who gives a positive response to any question among questions 1 through 8 in Part A Section 2, of Appendix C, or whose initial medical examination demonstrates the need for a follow-up medical examination. The employer must provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP. (See Paragraph (e)(3)(i).)
- The medical questionnaire and examinations must be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee and in a manner that ensures that he or she understands its content. The employer must not review the employee's responses, and the questionnaire must be provided directly to the PLHCP. (See Paragraph (e)(4)(i).)

Excerpt from Appendix C of 29 CFR 1910.134: OSHA Respirator Medical Evaluation Questionnaire

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Once filled out, this form must be given to the PLHCP. This form should **not** be submitted to OSHA.

Part A Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date:
2. Your name:
3. Your age (to nearest year):
4. Sex (circle one): Male/Female
5. Your height: ft. in.
6. Your weight: lbs.
7. Your job title:
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code):
9. The best time to phone you at this number:
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):

    a. ___ N, R, or P disposable respirator (filter-mask, non-cartridge type only).

    b. ___ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No If "yes," what type(s):

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

	YES	NO
1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month?	☐	☐
2. Have you *ever had* any of the following conditions?	☐	☐
a. Seizures	☐	☐
b. Diabetes (sugar disease)	☐	☐
c. Allergic reactions that interfere with your breathing	☐	☐
d. Claustrophobia (fear of closed-in places)	☐	☐
e. Trouble smelling odors	☐	☐
3. Have you *ever had* any of the following pulmonary or lung problems?	☐	☐
a. Asbestosis	☐	☐
b. Asthma	☐	☐

	YES	NO
c. Chronic bronchitis	☐	☐
d. Emphysema	☐	☐
e. Pneumonia	☐	☐
f. Tuberculosis	☐	☐
g. Silicosis	☐	☐
h. Pneumothorax (collapsed lung)	☐	☐
i. Lung cancer	☐	☐
j. Broken ribs	☐	☐
k. Any chest injuries or surgeries	☐	☐
l. Any other lung problem that you've been told about	☐	☐
4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?	☐	☐
a. Shortness of breath	☐	☐
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline	☐	☐
c. Shortness of breath when walking with other people at an ordinary pace on level ground	☐	☐
d. Have to stop for breath when walking at your own pace on level ground	☐	☐
e. Shortness of breath when washing or dressing yourself	☐	☐
f. Shortness of breath that interferes with your job	☐	☐
g. Coughing that produces phlegm (thick sputum)	☐	☐
h. Coughing that wakes you early in the morning	☐	☐
i. Coughing that occurs mostly when you are lying down	☐	☐
j. Coughing up blood in the last month	☐	☐
k. Wheezing	☐	☐
l. Wheezing that interferes with your job	☐	☐
m. Chest pain when you breathe deeply	☐	☐
n. Any other symptoms that you think may be related to lung problems	☐	☐
5. Have you *ever had* any of the following cardiovascular or heart problems?		
a. Heart attack	☐	☐
b. Stroke	☐	☐
c. Angina	☐	☐
d. Heart failure	☐	☐

	YES	NO
e. Swelling in your legs or feet (not caused by walking)	☐	☐
f. Heart arrhythmia (heart beating irregularly)	☐	☐
g. High blood pressure	☐	☐
h. Any other heart problem that you've been told about	☐	☐
6. Have you *ever had* any of the following cardiovascular or heart symptoms?	☐	☐
a. Frequent pain or tightness in your chest	☐	☐
b. Pain or tightness in your chest during physical activity	☐	☐
c. Pain or tightness in your chest that interferes with your job	☐	☐
d. In the past two years, have you noticed your heart skipping or missing a beat	☐	☐
e. Heartburn or indigestion that is not related to eating	☐	☐
f. Any other symptoms that you think may be related to heart or circulation problems	☐	☐
7. Do you *currently* take medication for any of the following problems?	☐	☐
a. Breathing or lung problems	☐	☐
b. Heart trouble	☐	☐
c. Blood pressure	☐	☐
d. Seizures	☐	☐
8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9.) ☐	☐	☐
a. Eye irritation	☐	☐
b. Skin allergies or rashes	☐	☐
c. Anxiety	☐	☐
d. General weakness or fatigue	☐	☐
e. Any other problem that interferes with your use of a respirator	☐	☐
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?	☐	☐

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever* lost vision in either eye (temporarily or permanently)?	☐	☐
11. Do you *currently* have any of the following vision problems?	☐	☐
a. Wear contact lenses	☐	☐
b. Wear glasses	☐	☐
c. Color blind	☐	☐
d. Any other eye or vision problem	☐	☐

	YES	NO
12. Have you *ever had* an injury to your ears, including a broken eardrum?	☐	☐
13. Do you *currently* have any of the following hearing problems?	☐	☐
a. Difficulty hearing	☐	☐
b. Wear a hearing aid	☐	☐
c. Any other hearing or ear problem	☐	☐
14. Have you *ever had* a back injury?	☐	☐
15. Do you *currently* have any of the following musculoskeletal problems?	☐	☐
a. Weakness in any of your arms, hands, legs, or feet	☐	☐
b. Back pain	☐	☐
c. Difficulty fully moving your arms and legs	☐	☐
d. Pain and stiffness when you lean forward or backward at the waist	☐	☐
e. Difficulty fully moving your head up or down	☐	☐
f. Difficulty fully moving your head side to side	☐	☐
g. Difficulty bending at your knees	☐	☐
h. Difficulty squatting to the ground	☐	☐
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs.	☐	☐
j. Any other muscle or skeletal problem that interferes with using a respirator	☐	☐

This infosheet does not include the questions in Part B because they are not mandatory; rather, they may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

OSHA Educational Materials

OSHA has an extensive publications program. For a listing of free items, visit OSHA's web site at www.osha.gov/publications or contact the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, N.W., N-3101, Washington, DC 20210. Telephone (202) 693-1888 or fax to (202) 693-2498.

Contacting OSHA

To report an emergency, file a complaint or seek OSHA advice, assistance or products, call (800) 321-OSHA (6742) or contact your nearest OSHA regional, area, or State Plan office; TTY: 1-877-889-5627.

This InfoSheet is not a standard or regulation, and it creates no new legal obligations. It contains recommendations as well as descriptions of mandatory safety and health standards. The recommendations are advisory in nature, informational in content, and are intended to assist employers in providing a safe and healthful workplace. The *Occupational Safety and Health Act* requires employers to comply with safety and health standards and regulations promulgated by OSHA or by a state with an OSHA-approved state plan. In addition, the Act's General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

U.S. Department of Labor

OSHA®
Occupational Safety and Health Administration

DTSEM OSHA 3789-05 2015

APPENDIX C

Information for Employees Using Respirators When Not Required Under Standard

Voluntary Respirator Use Management Form

The following information has been excerpted from U.S. Department of Labor, Occupational Safety & Health Administration Respiratory Protection Standard

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Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators [including filtering facepiece respirators or "dust masks" to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Verification of Review – Voluntary Respirator Use Requirements

I have conducted/completed the above-noted review of voluntary respirator use requirements:
Respirator Mfr/Model/Sizes:_____

Voluntary Respirator User Name/ Signature Date

Program Administrator/ Signature Date

APPENDIX D

Respirator Cleaning Procedures

Appendix B-2 to § 1910.134: Respirator Cleaning Procedures (Mandatory)

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B- 2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

I. Procedures for Cleaning Respirators

A. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.

B. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

C. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.

D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,

2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,

3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

E. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

F. Components should be hand-dried with a clean lint-free cloth or air-dried.

G. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.

H. Test the respirator to ensure that all components work properly.

APPENDIX E

Respirator Cartridge ID Chart

Respirator Cartridge Identification Chart

Color	Type of Protection
Black	Organic Vapor Cartridge
White	Acid Gas Cartridge
Yellow	Organic Vapor and Acid Gas Cartridge
Green	Ammonia and Methylamine Cartridge
Olive Green	Organic Vapor and Formaldehyde Cartridge
Purple(Magenta)	Dust, Fumes, Mists, Asbestos, Radio-nuclides and Highly Toxic Particulates (HEPA) Filter
Black/Purple	Organic Vapor and HEPA Combination
White/Purple	Acid Gas and HEPA Combination
Yellow/Purple	Organic Vapor/Acid Gas and HEPA Combination
Green/Purple	Ammonia/Methylmine and HEPA Combination
Olive Green/Purple	Organic Vapor/Formaldehyde and HEPA Combination
Pre-Filters	Dusts, Fumes & Mists or Pesticides or Paints
Pale Brown Or Tan	Organic Vapors, Chlorine, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Fluoride, Sulfur Dioxide, Formaldehyde, Hydrogen Sulfide (Escape Only) Ammonia, And Methyl Amine

APPENDIX F

Respirator Technical Information

3M Science. Applied to Life.™

Technical Specification Sheet

3M™ Particulate Respirator 8210, N95

Key Features
- NIOSH approved N95 rating
- Adjustable nose clip
- Nose foam
- Ultrasonically welded headbands

Material Composition
- Straps – Thermoplastic Elastomer
- Nose Clip – Aluminum
- Nose foam - Polyurethane
- Filter – Polypropylene
- Shell – Polyester
- Coverweb - Polyester
- This respirator contains no components made from natural rubber latex
- Approximate weight of product: 0.35 oz.

Country of Origin
Made in the USA with globally sourced materials

Use For
- Use for solid particulates and liquid mists in concentrations not exceeding 10X PEL/OEL
- Always follow *User Instructions* and use in manners as indicated

Do Not Use For
- DO NOT use for gases and vapors, oil aerosols, asbestos, arsenic, cadmium, lead, 4,4-methylene dianiline (MDA), or abrasive blasting
- DO NOT use for particulate concentrations exceeding 10X PEL/OEL
- DO NOT use in any manner not indicated in the *User Instructions*

Approvals and Standards
- NIOSH approved N95 particulate respirator
- Meets NIOSH 42 CFR 84 N95 requirements for a minimum 95% filtration efficiency against solid and liquid aerosols that do not contain oil.
- NIOSH approval number: TC-84A-0007
- Assigned Protection Factor (APF 10) per US OSHA and Canada CSA

Ordering Information					
Description	UPC	ID #	Respirators/ Box	Boxes/Case	Each/Case
Particulate Respirator 8210	50051138464573	70-0706-1439-4	20	8	160

Time Use Limitation
Replace the respirator when it becomes dirty, damaged, or difficult to breathe through.

Shelf Life and Storage

- 5 years from the date of manufacture
- Use By date on box in MM/YYYY format
- Store respirators in the original packaging, away from contaminated areas, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals
- Store in temperatures between -4°F (-20°C) and +86°F (+30°C) and not exceeding 80% RH

WARNING! ⚠

This respirator helps reduce exposures to certain airborne contaminants. Before use, the wearer must read and understand the *User Instructions* provided as a part of the product packaging. Follow all local regulations. In the U.S., a written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134, including training, fit testing and medical evaluation. In Canada, CSA standard Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate**. Misuse may result in sickness or death.** For correct use, consult supervisor and the *User Instructions* or call 3M PSD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.

Acceptable Fit Test Protocols

Fit Test Protocol*		Acceptable with this product?
Qualitative Protocols	Saccharin	☒
	BitrexTM	☒
	Irritant Smoke	☐
	Isoamyl Acetate	☐
Quantitative Protocols		☒

*Refer to OSHA 1910.134

Personal Safety Division
3M Center, Building 0235-2W-70
St. Paul, MN 55144-1000
3M.com/workersafety

3M PSD products are occupational use only.

For More Information
Technical Assistance 1-800-243-4630
Hours of Operation: M-Th 8am - 6pm, Fri 8am - 4:30 pm CST
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AV-SERIES FACEPIECE

NIOSH APPROVAL MATRIX – POLYESTER HEAD HARNESS VERSIONS

Additional Approvals	SAR and SCBA Respirator Matrix	AV-2000 *(grey nosecup)*	AV-3000 *(grey nosecup)*	AV-3000 with SureSeal *(grey nosecup)*
	Air-Pak 50i SCBA	Yes	Yes	Yes
	Air-Pak 75i SCBA	Yes	Yes	Yes
	ACSi SCBA	Yes	Yes	Yes
	ISCBA SCBA	Yes	Yes	Yes
	Swat-Pak SCBA	Yes	Yes	No
	E-Z Airline Respirator	Yes	Yes	Yes
	Ska-Pak Respirator	Yes	Yes	Yes
	Ska-Pak Plus Respirator	Yes	Yes	Yes
	Ska-Pak AT Respirator	Yes	Yes	Yes
NFPA[1], CBRN[2]	Air-Pak Fifty SCBA (1997)	N/A[3]	N/A[3]	N/A[3]
NFPA[1], CBRN[2]	Air-Pak Fifty SCBA (2002)	N/A[3]	N/A[3]	N/A[3]
NFPA[1], CBRN[2]	Air-Pak NxG2 SCBA (2002)	N/A[3]	N/A[3]	N/A[3]
NFPA[1], CBRN[2]	Air-Pak 75 SCBA (2007)	N/A[3]	N/A[3]	N/A[3]
NFPA[1], CBRN[2]	Air-Pak NxG7 SCBA (2007)	N/A[3]	N/A[3]	N/A[3]
Additional Approvals	**APR Respirator Matrix**	**AV-2000 *(grey nosecup)***	**AV-3000 *(grey nosecup)***	**AV-3000 with SureSeal *(grey nosecup)***
	742 Cartridge	Yes	Yes	Yes
	40 mm Cartridge	Yes	Yes	Yes
	C420 Plus PAPR, NIOSH	Yes	Yes	Yes
	Proflow 2 PAPR	Yes	Yes	Yes
CBRN[2]	CBRN APR	N/A[3]	N/A[3]	N/A[3]
CBRN[2]	C420 Plus PAPR, CBRN	N/A[3]	N/A[3]	N/A[3]

[1] NFPA-approved configurations.
[2] CBRN-approved configurations.
[3] "N/A" indicates not applicable. Polyester Head Harness does not meet NFPA or CBRN requirements (See Kevlar® Matrix).

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Kevlar is a registered trademark of E.I. Du Pont de Nemours and Company.

Monroe Corporate Center • P.O. Box 569 • Monroe, NC 28111
Telephone: 800.247.7257 • Facsimile: 704.291.8330
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SCOTT SAFETY

APPENDIX G

List of Employees Included in Medical Surveillance Program

List of Employees Included in the Medical Surveillance Program		
Employee Names	**Title**	**Job Description**

APPENDIX H

OSHA Respiratory Protection Standard

UNITED STATES
DEPARTMENT OF LABOR

Occupational Safety and Health Administration

English | Spanish

MENU

Regulations (Standards - 29 CFR) - Table of Contents

• Part Number:	1910
• Part Title:	Occupational Safety and Health Standards
• Subpart:	I
• Subpart Title:	Personal Protective Equipment
• Standard Number:	1910.134
• Title:	Respiratory Protection.
• Appendix:	A , B-1 , B-2 , C , D
• GPO Source:	e-CFR

This section applies to General Industry (part 1910), Shipyards (part 1915), Marine Terminals (part 1917), Longshoring (part 1918), and Construction (part 1926).

1910.134(a)

Permissible practice.

1910.134(a)(1)

In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to this section.

1910.134(a)(2)

A respirator shall be provided to each employee when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined in paragraph (c) of this section. The program shall cover each employee required by this section to use a respirator.

1910.134(b)

Definitions. The following definitions are important terms used in the respiratory protection standard in this section.

Air-purifying respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Assigned protection factor (APF) means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.

Atmosphere-supplying respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Demand respirator means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Emergency situation means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

Employee exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape-only respirator means a respirator intended to be used only for emergency exit.

Filter or air purifying element means a component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering facepiece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Fit factor means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

Helmet means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Hood means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Interior structural firefighting means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

Loose-fitting facepiece means a respiratory inlet covering that is designed to form a partial seal with the face.

Maximum use concentration (MUC) means the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.

Negative pressure respirator (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere means an atmosphere with an oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) of this section.

Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Qualitative fit test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically

measuring the amount of leakage into the respirator.

Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

Self-contained breathing apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service life means the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

This section means this respiratory protection standard.

Tight-fitting facepiece means a respiratory inlet covering that forms a complete seal with the face.

User seal check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

1910.134(c)

Respiratory protection program. This paragraph requires the employer to develop and implement a written respiratory protection program with required worksite-specific procedures and elements for required respirator use. The program must be administered by a suitably trained program administrator. In addition, certain program elements may be required for voluntary use to prevent potential hazards associated with the use of the respirator. The Small Entity Compliance Guide contains criteria for the selection of a program administrator and a sample program that meets the requirements of this paragraph. Copies of the Small Entity Compliance Guide will be available on or about April 8, 1998 from the Occupational Safety and Health Administration's Office of Publications, Room N 3101, 200 Constitution Avenue, NW, Washington, DC, 20210 (202-219-4667).

1910.134(c)(1)

In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, the employer shall establish and implement a written respiratory protection program with worksite-specific procedures. The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use. The employer shall include in the program the following provisions of this section, as applicable:

1910.134(c)(1)(i)

Procedures for selecting respirators for use in the workplace;

1910.134(c)(1)(ii)

Medical evaluations of employees required to use respirators;

1910.134(c)(1)(iii)

Fit testing procedures for tight-fitting respirators;

1910.134(c)(1)(iv)

Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations;

1910.134(c)(1)(v)

Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;

1910.134(c)(1)(vi)

Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;

1910.134(c)(1)(vii)

Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;

1910.134(c)(1)(viii)

Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance; and

1910.134(c)(1)(ix)

Procedures for regularly evaluating the effectiveness of the program.

1910.134(c)(2)

Where respirator use is not required:

1910.134(c)(2)(i)

An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained in Appendix D to this section ("Information for Employees Using Respirators When Not Required Under the Standard"); and

1910.134(c)(2)(ii)

In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).

1910.134(c)(3)

The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

1910.134(c)(4)

The employer shall provide respirators, training, and medical evaluations at no cost to the employee.

1910.134(d)

Selection of respirators. This paragraph requires the employer to evaluate respiratory hazard(s) in the workplace, identify relevant workplace and user factors, and base respirator selection on these factors. The paragraph also specifies appropriately protective respirators for use in IDLH atmospheres, and limits the selection and use of air-purifying respirators.

1910.134(d)(1)

General requirements.

1910.134(d)(1)(i)

The employer shall select and provide an appropriate respirator based on the respiratory hazard(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.

1910.134(d)(1)(ii)

The employer shall select a NIOSH-certified respirator. The respirator shall be used in compliance with the conditions of its certification.

1910.134(d)(1)(iii)

The employer shall identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employer cannot identify or reasonably estimate the employee exposure, the employer shall consider the atmosphere to be IDLH.

1910.134(d)(1)(iv)

The employer shall select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

1910.134(d)(2)

Respirators for IDLH atmospheres.

1910.134(d)(2)(i)

The employer shall provide the following respirators for employee use in IDLH atmospheres:

1910.134(d)(2)(i)(A)

A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes, or

1910.134(d)(2)(i)(B)

A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

1910.134(d)(2)(ii)

Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

1910.134(d)(2)(iii)

All oxygen-deficient atmospheres shall be considered IDLH. Exception: If the employer demonstrates that, under all foreseeable conditions, the oxygen concentration can be maintained within the ranges specified in Table II of this section (i.e., for the altitudes set out in the table), then any atmosphere-supplying respirator may be used.

1910.134(d)(3)

Respirators for atmospheres that are not IDLH.

1910.134(d)(3)(i)

The employer shall provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.

1910.134(d)(3)(i)(A)

Assigned Protection Factors (APFs) Employers must use the assigned protection factors listed in Table 1 to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used.

Table 1. -- Assigned Protection Factors[5]

Type of respirator[1], [2]	Quarter mask	Half mask	Full facepiece	Helmet/ hood	Loose-fitting facepiece
1. Air-Purifying Respirator	5	[3]10	50	.....	.....
2. Powered Air-Purifying Respirator (PAPR)	.....	50	1,000	[4]25/1,000	25
3. Supplied-Air Respirator (SAR) or Airline Respirator					
• Demand mode	.....	10	50	.....	.....
• Continuous flow mode	.....	50	1,000	[4]25/1,000	25
• Pressure-demand or other positive-pressure mode	.....	50	1,000	.....	.....
4. Self-Contained Breathing Apparatus (SCBA)					
• Demand mode	.....	10	50	50	.....
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	.....	.....	10,000	10,000	.....

Notes:

[1]Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

[2]The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing,

maintenance, and use requirements.
[3]This APF category includes filtering facepieces, and half masks with elastomeric facepieces.
[4]The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.
[5]These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

1910.134(d)(3)(i)(B)

Maximum Use Concentration (MUC)

1910.134(d)(3)(i)(B)(1)

The employer must select a respirator for employee use that maintains the employee's exposure to the hazardous substance, when measured outside the respirator, at or below the MUC.

1910.134(d)(3)(i)(B)(2)

Employers must not apply MUCs to conditions that are immediately dangerous to life or health (IDLH); instead, they must use respirators listed for IDLH conditions in paragraph (d)(2) of this standard.

1910.134(d)(3)(i)(B)(3)

When the calculated MUC exceeds the IDLH level for a hazardous substance, or the performance limits of the cartridge or canister, then employers must set the maximum MUC at that lower limit.

1910.134(d)(3)(ii)

The respirator selected shall be appropriate for the chemical state and physical form of the contaminant.

1910.134(d)(3)(iii)

For protection against gases and vapors, the employer shall provide:

1910.134(d)(3)(iii)(A)

An atmosphere-supplying respirator, or

1910.134(d)(3)(iii)(B)

An air-purifying respirator, provided that:

1910.134(d)(3)(iii)(B)(1)

The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or

1910.134(d)(3)(iii)(B)(2)

If there is no ESLI appropriate for conditions in the employer's workplace, the employer implements a change schedule for canisters and cartridges that is based on objective information or data that will ensure

that canisters and cartridges are changed before the end of their service life. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

1910.134(d)(3)(iv)

For protection against particulates, the employer shall provide:

1910.134(d)(3)(iv)(A)

An atmosphere-supplying respirator; or

1910.134(d)(3)(iv)(B)

An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH under 42 CFR part 84; or

1910.134(d)(3)(iv)(C)

For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

TABLE I. -- ASSIGNED PROTECTION FACTORS
[RESERVED]

TABLE II

Altitude (ft.)	Oxygen deficient Atmospheres (% 0_2) for which the employer atmosphere-may rely on supplying respirators
Less than 3,001	16.0-19.5
3,001-4,000	16.4-19.5
4,001-5,000	17.1-19.5
5,001-6,000	17.8-19.5
6,001-7,000	18.5-19.5
7,001-8,000[1]	19.3-19.5.

[1]Above 8,000 feet the exception does not apply. Oxygen-enriched breathing air must be supplied above 14,000 feet.

1910.134(e)

Medical evaluation. Using a respirator may place a physiological burden on employees that varies with

the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator.

1910.134(e)(1)

General. The employer shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. The employer may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

1910.134(e)(2)

Medical evaluation procedures.

1910.134(e)(2)(i)

The employer shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.

1910.134(e)(2)(ii)

The medical evaluation shall obtain the information requested by the questionnaire in Sections 1 and 2, Part A of Appendix C of this section.

1910.134(e)(3)

Follow-up medical examination.

1910.134(e)(3)(i)

The employer shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination.

1910.134(e)(3)(ii)

The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

1910.134(e)(4)

Administration of the medical questionnaire and examinations.

1910.134(e)(4)(i)

The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content.

1910.134(e)(4)(ii)

The employer shall provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

1910.134(e)(5)

Supplemental information for the PLHCP.

1910.134(e)(5)(i)

The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:

1910.134(e)(5)(i)(A)

(A) The type and weight of the respirator to be used by the employee;

1910.134(e)(5)(i)(B)

The duration and frequency of respirator use (including use for rescue and escape);

1910.134(e)(5)(i)(C)

The expected physical work effort;

1910.134(e)(5)(i)(D)

Additional protective clothing and equipment to be worn; and

1910.134(e)(5)(i)(E)

Temperature and humidity extremes that may be encountered.

1910.134(e)(5)(ii)

Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information and the PLHCP remain the same.

1910.134(e)(5)(iii)

The employer shall provide the PLHCP with a copy of the written respiratory protection program and a copy of this section.

Note to Paragraph (e)(5)(iii): When the employer replaces a PLHCP, the employer must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. However, OSHA does not expect employers to have employees medically reevaluated solely because a new PLHCP has been selected.

1910.134(e)(6)

Medical determination. In determining the employee's ability to use a respirator, the employer shall:

1910.134(e)(6)(i)

Obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP. The recommendation shall provide only the following information:

1910.134(e)(6)(i)(A)

Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;

1910.134(e)(6)(i)(B)

The need, if any, for follow-up medical evaluations; and

1910.134(e)(6)(i)(C)

A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

1910.134(e)(6)(ii)

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employer shall provide a PAPR if the PLHCP's medical evaluation finds that the employee can use such a respirator; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.

1910.134(e)(7)

Additional medical evaluations. At a minimum, the employer shall provide additional medical evaluations that comply with the requirements of this section if:

1910.134(e)(7)(i)

An employee reports medical signs or symptoms that are related to ability to use a respirator;

1910.134(e)(7)(ii)

A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated;

1910.134(e)(7)(iii)

Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or

1910.134(e)(7)(iv)

A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

1910.134(f)

Fit testing. This paragraph requires that, before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. This paragraph specifies the kinds of fit tests allowed, the procedures for conducting them, and how the results of the fit tests must be used.

1910.134(f)(1)

The employer shall ensure that employees using a tight-fitting facepiece respirator pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) as stated in this paragraph.

1910.134(f)(2)

The employer shall ensure that an employee using a tight-fitting facepiece respirator is fit tested prior to initial use of the respirator, whenever a different respirator facepiece (size, style, model or make) is used, and at least annually thereafter.

1910.134(f)(3)

The employer shall conduct an additional fit test whenever the employee reports, or the employer, PLHCP, supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

1910.134(f)(4)

If after passing a QLFT or QNFT, the employee subsequently notifies the employer, program administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator facepiece and to be retested.

1910.134(f)(5)

The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are contained in Appendix A of this section.

1910.134(f)(6)

QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.

1910.134(f)(7)

If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half facepieces, or equal to or greater than 500 for tight-fitting full facepieces, the QNFT has been passed with that respirator.

1910.134(f)(8)

Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

1910.134(f)(8)(i)

Qualitative fit testing of these respirators shall be accomplished by temporarily converting the respirator user's actual facepiece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator facepiece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator facepiece.

1910.134(f)(8)(ii)

Quantitative fit testing of these respirators shall be accomplished by modifying the facepiece to allow sampling inside the facepiece in the breathing zone of the user, midway between the nose and mouth. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate facepiece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the

facepiece.

1910.134(f)(8)(iii)

Any modifications to the respirator facepiece for fit testing shall be completely removed, and the facepiece restored to NIOSH-approved configuration, before that facepiece can be used in the workplace.

1910.134(g)

Use of respirators. This paragraph requires employers to establish and implement procedures for the proper use of respirators. These requirements include prohibiting conditions that may result in facepiece seal leakage, preventing employees from removing respirators in hazardous environments, taking actions to ensure continued effective respirator operation throughout the work shift, and establishing procedures for the use of respirators in IDLH atmospheres or in interior structural firefighting situations.

1910.134(g)(1)

Facepiece seal protection.

1910.134(g)(1)(i)

The employer shall not permit respirators with tight-fitting facepieces to be worn by employees who have:

1910.134(g)(1)(i)(A)

Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or

1910.134(g)(1)(i)(B)

Any condition that interferes with the face-to-facepiece seal or valve function.

1910.134(g)(1)(ii)

If an employee wears corrective glasses or goggles or other personal protective equipment, the employer shall ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

1910.134(g)(1)(iii)

For all tight-fitting respirators, the employer shall ensure that employees perform a user seal check each time they put on the respirator using the procedures in Appendix B-1 or procedures recommended by the respirator manufacturer that the employer demonstrates are as effective as those in Appendix B-1 of this section.

1910.134(g)(2)

Continuing respirator effectiveness.

1910.134(g)(2)(i)

Appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the employer shall reevaluate the continued effectiveness of the respirator.

1910.134(g)(2)(ii)

The employer shall ensure that employees leave the respirator use area:

1910.134(g)(2)(ii)(A)

To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or

1910.134(g)(2)(ii)(B)

If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or

1910.134(g)(2)(ii)(C)

To replace the respirator or the filter, cartridge, or canister elements.

1910.134(g)(2)(iii)

If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, the employer must replace or repair the respirator before allowing the employee to return to the work area.

1910.134(g)(3)

Procedures for IDLH atmospheres. For all IDLH atmospheres, the employer shall ensure that:

1910.134(g)(3)(i)

One employee or, when needed, more than one employee is located outside the IDLH atmosphere;

1910.134(g)(3)(ii)

Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;

1910.134(g)(3)(iii)

The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;

1910.134(g)(3)(iv)

The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;

1910.134(g)(3)(v)

The employer or designee authorized to do so by the employer, once notified, provides necessary assistance appropriate to the situation;

1910.134(g)(3)(vi)

Employee(s) located outside the IDLH atmospheres are equipped with:

1910.134(g)(3)(vi)(A)

Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure

supplied-air respirator with auxiliary SCBA; and either

1910.134(g)(3)(vi)(B)

Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or

1910.134(g)(3)(vi)(C)

Equivalent means for rescue where retrieval equipment is not required under paragraph (g)(3)(vi)(B).

1910.134(g)(4)

Procedures for interior structural firefighting. In addition to the requirements set forth under paragraph (g)(3), in interior structural fires, the employer shall ensure that:

1910.134(g)(4)(i)

At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times;

1910.134(g)(4)(ii)

At least two employees are located outside the IDLH atmosphere; and

1910.134(g)(4)(iii)

All employees engaged in interior structural firefighting use SCBAs.

Note 1 to paragraph (g): One of the two individuals located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.

Note 2 to paragraph (g): Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

1910.134(h)

Maintenance and care of respirators. This paragraph requires the employer to provide for the cleaning and disinfecting, storage, inspection, and repair of respirators used by employees.

1910.134(h)(1)

Cleaning and disinfecting. The employer shall provide each respirator user with a respirator that is clean, sanitary, and in good working order. The employer shall ensure that respirators are cleaned and disinfected using the procedures in Appendix B-2 of this section, or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness. The respirators shall be cleaned and disinfected at the following intervals:

1910.134(h)(1)(i)

Respirators issued for the exclusive use of an employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition;

1910.134(h)(1)(ii)

Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals;

1910.134(h)(1)(iii)

Respirators maintained for emergency use shall be cleaned and disinfected after each use; and

1910.134(h)(1)(iv)

Respirators used in fit testing and training shall be cleaned and disinfected after each use.

1910.134(h)(2)

Storage. The employer shall ensure that respirators are stored as follows:

1910.134(h)(2)(i)

All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the facepiece and exhalation valve.

1910.134(h)(2)(ii)

In addition to the requirements of paragraph (h)(2)(i) of this section, emergency respirators shall be:

1910.134(h)(2)(ii)(A)

Kept accessible to the work area;

1910.134(h)(2)(ii)(B)

Stored in compartments or in covers that are clearly marked as containing emergency respirators; and

1910.134(h)(2)(ii)(C)

Stored in accordance with any applicable manufacturer instructions.

1910.134(h)(3)

Inspection.

1910.134(h)(3)(i)

The employer shall ensure that respirators are inspected as follows:

1910.134(h)(3)(i)(A)

All respirators used in routine situations shall be inspected before each use and during cleaning;

1910.134(h)(3)(i)(B)

All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use; and

1910.134(h)(3)(i)(C)

Emergency escape-only respirators shall be inspected before being carried into the workplace for use.

1910.134(h)(3)(ii)

The employer shall ensure that respirator inspections include the following:

1910.134(h)(3)(ii)(A)

A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and

1910.134(h)(3)(ii)(B)

A check of elastomeric parts for pliability and signs of deterioration.

1910.134(h)(3)(iii)

In addition to the requirements of paragraphs (h)(3)(i) and (ii) of this section, self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The employer shall determine that the regulator and warning devices function properly.

1910.134(h)(3)(iv)

For respirators maintained for emergency use, the employer shall:

1910.134(h)(3)(iv)(A)

Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator; and

1910.134(h)(3)(iv)(B)

Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information shall be maintained until replaced following a subsequent certification.

1910.134(h)(4)

Repairs. The employer shall ensure that respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:

1910.134(h)(4)(i)

Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator;

1910.134(h)(4)(ii)

Repairs shall be made according to the manufacturer's recommendations and specifications for the type

and extent of repairs to be performed; and

1910.134(h)(4)(iii)

Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

1910.134(i)

Breathing air quality and use. This paragraph requires the employer to provide employees using atmosphere-supplying respirators (supplied-air and SCBA) with breathing gases of high purity.

1910.134(i)(1)

The employer shall ensure that compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration accords with the following specifications:

1910.134(i)(1)(i)

Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and

1910.134(i)(1)(ii)

Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

1910.134(i)(1)(ii)(A)

Oxygen content (v/v) of 19.5-23.5%;

1910.134(i)(1)(ii)(B)

Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;

1910.134(i)(1)(ii)(C)

Carbon monoxide (CO) content of 10 ppm or less;

1910.134(i)(1)(ii)(D)

Carbon dioxide content of 1,000 ppm or less; and

1910.134(i)(1)(ii)(E)

Lack of noticeable odor.

1910.134(i)(2)

The employer shall ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.

1910.134(i)(3)

The employer shall ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

1910.134(i)(4)

The employer shall ensure that cylinders used to supply breathing air to respirators meet the following requirements:

1910.134(i)(4)(i)

Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 180);

1910.134(i)(4)(ii)

Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air; and

1910.134(i)(4)(iii)

The moisture content in the cylinder does not exceed a dew point of -50 deg.F (-45.6 deg.C) at 1 atmosphere pressure.

1910.134(i)(5)

The employer shall ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:

1910.134(i)(5)(i)

Prevent entry of contaminated air into the air-supply system;

1910.134(i)(5)(ii)

Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 deg.C) below the ambient temperature;

1910.134(i)(5)(iii)

Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions.

1910.134(i)(5)(iv)

Have a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor.

1910.134(i)(6)

For compressors that are not oil-lubricated, the employer shall ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.

1910.134(i)(7)

For oil-lubricated compressors, the employer shall use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

1910.134(i)(8)

The employer shall ensure that breathing air couplings are incompatible with outlets for nonrespirable worksite air or other gas systems. No asphyxiating substance shall be introduced into breathing air lines.

1910.134(i)(9)

The employer shall use only the respirator manufacturer's NIOSH-approved breathing-gas containers,marked and maintained in accordance with the Quality Assurance provisions of the NIOSH approval for the SCBA as issued in accordance with the NIOSH respirator-certification standard at 42 CFR part 84.

1910.134(j)

Identification of filters, cartridges, and canisters. The employer shall ensure that all filters, cartridges and canisters used in the workplace are labeled and color coded with the NIOSH approval label and that the label is not removed and remains legible.

1910.134(k)

Training and information. This paragraph requires the employer to provide effective training to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually, and more often if necessary. This paragraph also requires the employer to provide the basic information on respirators in Appendix D of this section to employees who wear respirators when not required by this section or by the employer to do so.

1910.134(k)(1)

The employer shall ensure that each employee can demonstrate knowledge of at least the following:

1910.134(k)(1)(i)

Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;

1910.134(k)(1)(ii)

What the limitations and capabilities of the respirator are;

1910.134(k)(1)(iii)

How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;

1910.134(k)(1)(iv)

How to inspect, put on and remove, use, and check the seals of the respirator;

1910.134(k)(1)(v)

What the procedures are for maintenance and storage of the respirator;

1910.134(k)(1)(vi)

How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and

1910.134(k)(1)(vii)

The general requirements of this section.

1910.134(k)(2)

The training shall be conducted in a manner that is understandable to the employee.

1910.134(k)(3)

The employer shall provide the training prior to requiring the employee to use a respirator in the workplace.

1910.134(k)(4)

An employer who is able to demonstrate that a new employee has received training within the last 12 months that addresses the elements specified in paragraph (k)(1)(i) through (vii) is not required to repeat such training provided that, as required by paragraph (k)(1), the employee can demonstrate knowledge of those element(s). Previous training not repeated initially by the employer must be provided no later than 12 months from the date of the previous training.

1910.134(k)(5)

Retraining shall be administered annually, and when the following situations occur:

1910.134(k)(5)(i)

Changes in the workplace or the type of respirator render previous training obsolete;

1910.134(k)(5)(ii)

Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or

1910.134(k)(5)(iii)

Any other situation arises in which retraining appears necessary to ensure safe respirator use.

1910.134(k)(6)

The basic advisory information on respirators, as presented in Appendix D of this section, shall be provided by the employer in any written or oral format, to employees who wear respirators when such use is not required by this section or by the employer.

1910.134(l)

Program evaluation. This section requires the employer to conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using the respirators properly.

1910.134(l)(1)

The employer shall conduct evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

1910.134(l)(2)

The employer shall regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected. Factors to be assessed include, but are not limited to:

1910.134(l)(2)(i)

Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);

1910.134(l)(2)(ii)

Appropriate respirator selection for the hazards to which the employee is exposed;

1910.134(l)(2)(iii)

Proper respirator use under the workplace conditions the employee encounters; and

1910.134(l)(2)(iv)

Proper respirator maintenance.

1910.134(m)

Recordkeeping. This section requires the employer to establish and retain written information regarding medical evaluations, fit testing, and the respirator program. This information will facilitate employee involvement in the respirator program, assist the employer in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

1910.134(m)(1)

Medical evaluation. Records of medical evaluations required by this section must be retained and made available in accordance with 29 CFR 1910.1020.

1910.134(m)(2)

Fit testing.

1910.134(m)(2)(i)

The employer shall establish a record of the qualitative and quantitative fit tests administered to an employee including:

1910.134(m)(2)(i)(A)

The name or identification of the employee tested;

1910.134(m)(2)(i)(B)

Type of fit test performed;

1910.134(m)(2)(i)(C)

Specific make, model, style, and size of respirator tested;

1910.134(m)(2)(i)(D)

Date of test; and

1910.134(m)(2)(i)(E)

The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.

1910.134(m)(2)(ii)

Fit test records shall be retained for respirator users until the next fit test is administered.

1910.134(m)(3)

A written copy of the current respirator program shall be retained by the employer.

1910.134(m)(4)

Written materials required to be retained under this paragraph shall be made available upon request to affected employees and to the Assistant Secretary or designee for examination and copying.

1910.134(n)

Effective date. Paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section become effective November 22, 2006.

1910.134(o)

Appendices. Compliance with Appendix A, Appendix B-1, Appendix B-2, Appendix C, and Appendix D to this section are mandatory.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998; 71 FR 16672, April 3, 2006; 71 FR 50187, August 24, 2006; 73 FR 75584, Dec. 12, 2008; 76 FR 33606, June 8, 2011]

Next Standard (1910.134 App A)

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UNITED STATES
DEPARTMENT OF LABOR

Occupational Safety and Health Administration
200 Constitution Ave NW
Washington, DC 20210
800-321-6742 (OSHA)
TTY
www.OSHA.gov

FEDERAL GOVERNMENT

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- Accessibility Statement

APPENDIX Ia

Fit Testing Procedure Form

Qualitative Fit Test (QLFT) Form

Employee Name	Date of Birth (Year)	Height	Weight
Work Unit	Supervisor Name		

A respirator fit test must be completed by an individual trained in respiratory fit testing procedures. **This fit test is required annually.**

Does employee wear glasses? _____ Yes _____ No
Does Employee have facial hair, dentures or other attributes that will prevent a positive face fit? _____ Yes _____ No

Respirator Type (Make Model and Certification Number)			
Testing media			
Compatible with eye glasses	____Yes____No	____Yes____No	____Yes ____No
Positive pressure fit check	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Negative pressure fit check	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Head Stationary Normal Breathing (60 seconds)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Head Stationary Deep Breathing (60 seconds)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Head Turning Side To Side (60 seconds)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Head Moving Up and Down (60 seconds)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Talking (recite Rainbow Passage or count backwards)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Bending Over (60 seconds)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Head Stationary Normal Breathing (60 seconds)	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail
Respirator fit test result	___Pass ___Fail	___Pass ___Fail	___Pass ___Fail

Based on information provided on this form, I certify that the employee named on this form can wear the respiratory protective equipment listed above.

Signature of Person Administering Test _____ Date _____

APPENDIX Ib

OSHA Appendix A to §1910.134: Fit Testing Procedures

- Part Number:
  1910
- Part Number Title:
  Occupational Safety and Health Standards
- Subpart:
  1910 Subpart I
- Subpart Title:
  Personal Protective Equipment
- Standard Number:
  1910.134 App A ;
- Title:
  Fit Testing Procedures (Mandatory).
- GPO Source:
  e-CFR

Appendix A to § 1910.134: Fit Testing Procedures (Mandatory)

Part I. OSHA-Accepted Fit Test Protocols

A. Fit Testing Procedures -- General Requirements

The employer shall conduct fit testing using the following procedures. The requirements in this appendix apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.

3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

4. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.

5. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) Position of the mask on the nose

(b) Room for eye protection

(c) Room to talk

(d) Position of mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) Chin properly placed;

(b) Adequate strap tension, not overly tightened;

(c) Fit across nose bridge;

(d) Respirator of proper size to span distance from nose to chin;

(e) Tendency of respirator to slip;

(f) Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in Appendix B-1 of this section or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Appendix B-1. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or

his duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

14. Test Exercises.

(a) Employers must perform the following test exercises for all fit testing methods prescribed in this appendix, except for the CNP quantitative fit testing protocol and the CNP REDON quantitative fit testing protocol. For these two protocols, employers must ensure that the test subjects (***i.e.***, employees) perform the exercise procedure specified in Part I.C.4(b) of this appendix for the CNP quantitative fit testing protocol, or the exercise procedure described in Part I.C.5(b) of this appendix for the CNP REDON quantitative fit-testing protocol. For the remaining fit testing methods, employers must ensure that employees perform the test exercises in the appropriate test environment in the following manner:

(1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

(2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

(3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

(6) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)

(7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

(8) Normal breathing. Same as exercise (1).

(b) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

B. Qualitative Fit Test (QLFT) Protocols

1. General

(a) The employer shall ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and ensure that test equipment is in proper working order.

(b) The employer shall ensure that QLFT equipment is kept clean and well maintained so as to operate within the parameters for which it was designed.

2. Isoamyl Acetate Protocol

Note: This protocol is not appropriate to use for the fit testing of particulate respirators. If used to fit test particulate respirators, the respirator must be equipped with an organic vapor filter.

(a) Odor Threshold Screening

Odor threshold screening, performed without wearing a respirator, is intended to determine if the individual tested can detect the odor of isoamyl acetate at low levels.

(1) Three 1 liter glass jars with metal lids are required.

(2) Odor-free water (e.g., distilled or spring water) at approximately 25 deg. C (77 deg. F) shall be used for the solutions.

(3) The isoamyl acetate (IAA) (also known at isopentyl acetate) stock solution is prepared by adding 1 ml of pure IAA to 800 ml of odor-free water in a 1 liter jar, closing the lid and shaking for 30 seconds. A new solution shall be prepared at least weekly.

(4) The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well-ventilated to prevent the odor of IAA from becoming evident in the general room air where testing takes place.

(5) The odor test solution is prepared in a second jar by placing 0.4 ml of the stock solution into 500 ml of odor-free water using a clean dropper or pipette. The solution shall be shaken for 30 seconds and allowed to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution shall be used for only one day.

(6) A test blank shall be prepared in a third jar by adding 500 cc of odor-free water.

(7) The odor test and test blank jar lids shall be labeled (e.g., 1 and 2) for jar identification. Labels shall be placed on the lids so that they can be peeled off periodically and switched to maintain the integrity of the test.

(8) The following instruction shall be typed on a card and placed on the table in front of the two test jars (i.e., 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

(9) The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

(10) If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test shall not be performed.

(11) If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

(b) Isoamyl Acetate Fit Test

(1) The fit test chamber shall be a clear 55-gallon drum liner suspended inverted over a 2-foot diameter frame so that the top of the chamber is about 6 inches above the test subject's head. If no drum liner is available, a similar chamber shall be constructed using plastic sheeting. The inside top center of the chamber shall have a small hook attached.

(2) Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors.

(3) After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well-ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

(4) A copy of the test exercises and any prepared text from which the subject is to read shall be taped to the inside of the test chamber.

(5) Upon entering the test chamber, the test subject shall be given a 6-inch by 5-inch piece of paper towel, or other porous, absorbent, single-ply material, folded in half and wetted with 0.75 ml of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber. An IAA test swab or ampule may be substituted for the IAA wetted paper towel provided it has been demonstrated that the alternative IAA source will generate an IAA test atmosphere with a concentration equivalent to that generated by the paper towel method.

(6) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the test exercises; or to demonstrate some of the exercises.

(7) If at any time during the test, the subject detects the banana-like odor of IAA, the test is failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

(8) If the test is failed, the subject shall return to the selection room and remove the respirator. The test subject shall repeat the odor sensitivity test, select and put on another respirator, return to the test area and again begin the fit test procedure described in (b) (1) through (7) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait at least 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

(9) If the subject passes the test, the efficiency of the test procedure shall be demonstrated by having the subject break the respirator face seal and take a breath before exiting the chamber.

(10) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test, so that there is no significant IAA concentration buildup in the chamber during subsequent tests. The used towels shall be kept in a self-sealing plastic bag to keep the test area from being contaminated.

3. Saccharin Solution Aerosol Protocol

The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste threshold screening. The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a sweet taste.

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. The nozzle is directed away from the nose and mouth of the person. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The threshold check solution is prepared by dissolving 0.83 gram of sodium saccharin USP in 100 ml of warm water. It can be prepared by putting 1 ml of the fit test solution (see (b)(5) below) in 100 ml of distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.

(7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted. If the test subject reports tasting the sweet taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the saccharin is not tasted after 30 squeezes (step 10), the test subject is unable to taste saccharin and may not perform the saccharin fit test.

Note to paragraph 3. (a): If the test subject eats or drinks something sweet before the screening test, he/she may be unable to taste the weak saccharin solution.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Saccharin solution aerosol fit test procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure described in 3. (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected in section I. A. of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 ml of warm water.

(6) As before, the test subject shall breathe through the slightly open mouth with tongue extended, and report if he/she tastes the sweet taste of saccharin.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.

(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the test subject does not report tasting the saccharin, the test is passed.

(11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

(12) Since the nebulizer has a tendency to clog during use, the test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

4. Bitrex™ (Denatonium Benzoate) Solution Aerosol Qualitative Fit Test Protocol

The Bitrex™ (Denatonium benzoate) solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bitrex is routinely used as a taste aversion agent in household liquids which children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste Threshold Screening.

The Bitrex taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of Bitrex.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the respirator and allow free movement of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a \3/4\ inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the Threshold Check Solution into the enclosure. This Nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The Threshold Check Solution is prepared by adding 13.5 milligrams of Bitrex to 100 ml of 5% salt (NaCl) solution in distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely, and is then released and allowed to fully expand.

(7) An initial ten squeezes are repeated rapidly and then the test subject is asked whether the Bitrex can be tasted. If the test subject reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the Bitrex is not tasted after 30 squeezes (step 10), the test subject is unable to taste Bitrex and may not perform the Bitrex fit test.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken to dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Bitrex Solution Aerosol Fit Test Procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure as that described in 4. (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected according to section I. A. of this appendix. The respirator shall be properly adjusted and equipped with any type particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 337.5 mg of Bitrex to 200 ml of a 5% salt (NaCl) solution in warm water.

(6) As before, the test subject shall breathe through his or her slightly open mouth with tongue extended, and be instructed to report if he/she tastes the bitter taste of Bitrex.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.

(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of Bitrex is detected. If the test subject does not report tasting the Bitrex, the test is passed.

(11) If the taste of Bitrex is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

5. Irritant Smoke (Stannic Chloride) Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

(1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).

(2) Only stannic chloride smoke tubes shall be used for this protocol.

(3) No form of test enclosure or hood for the test subject shall be used.

(4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

(5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

(1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.

(2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.

(3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

(1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).

(2) The test subject shall be instructed to keep his/her eyes closed.

(3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the faceseal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.

(4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

(5) The exercises identified in section I.A. 14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

(6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.

(7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

(8) If a response is produced during this second sensitivity check, then the fit test is passed.

C. Quantitative Fit Test (QNFT) Protocols

The following quantitative fit testing procedures have been demonstrated to be acceptable: Quantitative fit testing using a

non-hazardous test aerosol (such as corn oil, polyethylene glycol 400 [PEG 400], di-2-ethyl hexyl sebacate [DEHS], or sodium chloride) generated in a test chamber, and employing instrumentation to quantify the fit of the respirator; Quantitative fit testing using ambient aerosol as the test agent and appropriate instrumentation (condensation nuclei counter) to quantify the respirator fit; Quantitative fit testing using controlled negative pressure and appropriate instrumentation to measure the volumetric leak rate of a facepiece to quantify the respirator fit.

1. General

(a) The employer shall ensure that persons administering QNFT are able to calibrate equipment and perform tests properly, recognize invalid tests, calculate fit factors properly and ensure that test equipment is in proper working order.

(b) The employer shall ensure that QNFT equipment is kept clean, and is maintained and calibrated according to the manufacturer's instructions so as to operate at the parameters for which it was designed.

2. Generated Aerosol Quantitative Fit Testing Protocol

(a) Apparatus.

(1) Instrumentation. Aerosol generation, dilution, and measurement systems using particulates (corn oil, polyethylene glycol 400 [PEG 400], di-2-ethyl hexyl sebacate [DEHS] or sodium chloride) as test aerosols shall be used for quantitative fit testing.

(2) Test chamber. The test chamber shall be large enough to permit all test subjects to perform freely all required exercises without disturbing the test agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the test agent is effectively isolated from the ambient air, yet uniform in concentration throughout the chamber.

(3) When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high efficiency particulate air (HEPA) or P100 series filter supplied by the same manufacturer.

(4) The sampling instrument shall be selected so that a computer record or strip chart record may be made of the test showing the rise and fall of the test agent concentration with each inspiration and expiration at fit factors of at least 2,000. Integrators or computers that integrate the amount of test agent penetration leakage into the respirator for each exercise may be used provided a record of the readings is made.

(5) The combination of substitute air-purifying elements, test agent and test agent concentration shall be such that the test subject is not exposed in excess of an established exposure limit for the test agent at any time during the testing process, based upon the length of the exposure and the exposure limit duration.

(6) The sampling port on the test specimen respirator shall be placed and constructed so that no leakage occurs around the port (e.g., where the respirator is probed), a free air flow is allowed into the sampling line at all times, and there is no interference with the fit or performance of the respirator. The in-mask sampling device (probe) shall be designed and used so that the air sample is drawn from the breathing zone of the test subject, midway between the nose and mouth and with the probe extending into the facepiece cavity at least 1/4 inch.

(7) The test setup shall permit the person administering the test to observe the test subject inside the chamber during the test.

(8) The equipment generating the test atmosphere shall maintain the concentration of test agent constant to within a 10 percent variation for the duration of the test.

(9) The time lag (interval between an event and the recording of the event on the strip chart or computer or integrator) shall be kept to a minimum. There shall be a clear association between the occurrence of an event and its being recorded.

(10) The sampling line tubing for the test chamber atmosphere and for the respirator sampling port shall be of equal diameter and of the same material. The length of the two lines shall be equal.

(11) The exhaust flow from the test chamber shall pass through an appropriate filter (i.e., high efficiency particulate filter) before release.

(12) When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.

(13) The limitations of instrument detection shall be taken into account when determining the fit factor.

(14) Test respirators shall be maintained in proper working order and be inspected regularly for deficiencies such as cracks or missing valves and gaskets.

(b) Procedural Requirements.

(1) When performing the initial user seal check using a positive or negative pressure check, the sampling line shall be crimped closed in order to avoid air pressure leakage during either of these pressure checks.

(2) The use of an abbreviated screening QLFT test is optional. Such a test may be utilized in order to quickly identify poor fitting respirators that passed the positive and/or negative pressure test and reduce the amount of QNFT time. The use of the CNC QNFT instrument in the count mode is another optional method to obtain a quick estimate of fit and eliminate poor fitting respirators before going on to perform a full QNFT.

(3) A reasonably stable test agent concentration shall be measured in the test chamber prior to testing. For canopy or shower curtain types of test units, the determination of the test agent's stability may be established after the test subject has entered the test environment.

(4) Immediately after the subject enters the test chamber, the test agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half mask or 1 percent for a full facepiece respirator.

(5) A stable test agent concentration shall be obtained prior to the actual start of testing.

(6) Respirator restraining straps shall not be over-tightened for testing. The straps shall be adjusted by the wearer without assistance from other persons to give a reasonably comfortable fit typical of normal use. The respirator shall not be adjusted once the fit test exercises begin.

(7) The test shall be terminated whenever any single peak penetration exceeds 5 percent for half masks and 1 percent for full facepiece respirators. The test subject shall be refitted and retested.

(8) Calculation of fit factors.

(i) The fit factor shall be determined for the quantitative fit test by taking the ratio of the average chamber concentration to the concentration measured inside the respirator for each test exercise except the grimace exercise.

(ii) The average test chamber concentration shall be calculated as the arithmetic average of the concentration measured before and after each test (i.e., 7 exercises) or the arithmetic average of the concentration measured before and after each exercise or the true average measured continuously during the respirator sample.

(iii) The concentration of the challenge agent inside the respirator shall be determined by one of the following methods:

(A) Average peak penetration method means the method of determining test agent penetration into the respirator utilizing a strip chart recorder, integrator, or computer. The agent penetration is determined by an average of the peak heights on the graph or by computer integration, for each exercise except the grimace exercise. Integrators or computers that calculate the actual test agent penetration into the respirator for each exercise will also be considered to meet the requirements of the average peak penetration method.

(B) Maximum peak penetration method means the method of determining test agent penetration in the respirator as determined by strip chart recordings of the test. The highest peak penetration for a given exercise is taken to be representative of average penetration into the respirator for that exercise.

(C) Integration by calculation of the area under the individual peak for each exercise except the grimace exercise. This includes computerized integration.

(D) The calculation of the overall fit factor using individual exercise fit factors involves first converting the exercise fit factors to penetration values, determining the average, and then converting that result back to a fit factor. This procedure is described in the following equation:

$$\text{Overall Fit Factor} = \frac{\text{Number of exercises}}{1/ff_1 + 1/ff_2 + 1/ff_3 + 1/ff_4 + 1/ff_5 + 1/ff_6 + 1/ff_7 + 1/ff_8}$$

Where ff_1, ff_2, ff_3, etc. are the fit factors for exercises 1, 2, 3, etc.

(9) The test subject shall not be permitted to wear a half mask or quarter facepiece respirator unless a minimum fit factor of 100 is obtained, or a full facepiece respirator unless a minimum fit factor of 500 is obtained.

(10) Filters used for quantitative fit testing shall be replaced whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media.

3. Ambient aerosol condensation nuclei counter (CNC) quantitative fit testing protocol.

The ambient aerosol condensation nuclei counter (CNC) quantitative fit testing (Portacount ^{TM}) protocol quantitatively fit tests respirators with the use of a probe. The probed respirator is only used for quantitative fit tests. A probed respirator has a special sampling device, installed on the respirator, that allows the probe to sample the air from inside the mask. A probed respirator is required for each make, style, model, and size that the employer uses and can be obtained from the respirator manufacturer or distributor. The CNC instrument manufacturer, TSI Inc., also provides probe attachments (TSI sampling adapters) that permit fit testing in an employee's own respirator. A minimum fit factor pass level of at least 100 is necessary for a half-mask respirator and a minimum fit factor pass level of at least 500 is required for a full facepiece negative pressure respirator. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Portacount Fit Test Requirements.

(1) Check the respirator to make sure the sampling probe and line are properly attached to the facepiece and that the respirator is fitted with a particulate filter capable of preventing significant penetration by the ambient particles used for the fit test (e.g., NIOSH 42 CFR 84 series 100, series 99, or series 95 particulate filter) per manufacturer's instruction.

(2) Instruct the person to be tested to don the respirator for five minutes before the fit test starts. This purges the ambient particles trapped inside the respirator and permits the wearer to make certain the respirator is

comfortable. This individual shall already have been trained on how to wear the respirator properly.

(3) Check the following conditions for the adequacy of the respirator fit: Chin properly placed; Adequate strap tension, not overly tightened; Fit across nose bridge; Respirator of proper size to span distance from nose to chin; Tendency of the respirator to slip; Self-observation in a mirror to evaluate fit and respirator position.

(4) Have the person wearing the respirator do a user seal check. If leakage is detected, determine the cause. If leakage is from a poorly fitting facepiece, try another size of the same model respirator, or another model of respirator.

(5) Follow the manufacturer's instructions for operating the Portacount and proceed with the test.

(6) The test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(7) After the test exercises, the test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried.

(b) Portacount Test Instrument.

(1) The Portacount will automatically stop and calculate the overall fit factor for the entire set of exercises. The overall fit factor is what counts. The Pass or Fail message will indicate whether or not the test was successful. If the test was a Pass, the fit test is over.

(2) Since the pass or fail criterion of the Portacount is user programmable, the test operator shall ensure that the pass or fail criterion meet the requirements for minimum respirator performance in this Appendix.

(3) A record of the test needs to be kept on file, assuming the fit test was successful. The record must contain the test subject's name; overall fit factor; make, model, style, and size of respirator used; and date tested.

4. Controlled negative pressure (CNP) quantitative fit testing protocol.

The CNP protocol provides an alternative to aerosol fit test methods. The CNP fit test method technology is based on exhausting air from a temporarily sealed respirator facepiece to generate and then maintain a constant negative pressure inside the facepiece. The rate of air exhaust is controlled so that a constant negative pressure is maintained in the respirator during the fit test. The level of pressure is selected to replicate the mean inspiratory pressure that causes leakage into the respirator under normal use conditions. With pressure held constant, air flow out of the respirator is equal to air flow into the respirator. Therefore, measurement of the exhaust stream that is required to hold the pressure in the temporarily sealed respirator constant yields a direct measure of leakage air flow into the respirator. The CNP fit test method measures leak rates through the facepiece as a method for determining the facepiece fit for negative pressure respirators. The CNP instrument manufacturer Occupational Health Dynamics of Birmingham, Alabama also provides attachments (sampling manifolds) that replace the filter cartridges to permit fit testing in an employee's own respirator. To perform the test, the test subject closes his or her mouth and holds his/her breath, after which an air pump removes air from the respirator facepiece at a pre-selected constant pressure. The facepiece fit is expressed as the leak rate through the facepiece, expressed as milliliters per minute. The quality and validity of the CNP fit tests are determined by the degree to which the in-mask pressure tracks the test pressure during the system measurement time of approximately five seconds. Instantaneous feedback in the form of a real-time pressure trace of the in-mask pressure is provided and used to determine test validity and quality. A minimum fit factor pass level of 100 is necessary for a half-mask respirator and a minimum fit factor of at least 500 is required for a full facepiece respirator. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) CNP Fit Test Requirements.

(1) The instrument shall have a non-adjustable test pressure of 15.0 mm water pressure.

(2) The CNP system defaults selected for test pressure shall be set at -- 15 mm of water (-0.58 inches of water) and the modeled inspiratory flow rate shall be 53.8 liters per minute for performing fit tests.

(Note: CNP systems have built-in capability to conduct fit testing that is specific to unique work rate, mask, and gender situations that might apply in a specific workplace. Use of system default values, which were selected to represent respirator wear with medium cartridge resistance at a low-moderate work rate, will allow inter-test comparison of the respirator fit.)

(3) The individual who conducts the CNP fit testing shall be thoroughly trained to perform the test.

(4) The respirator filter or cartridge needs to be replaced with the CNP test manifold. The inhalation valve downstream from the manifold either needs to be temporarily removed or propped open.

(5) The employer must train the test subject to hold his or her breath for at least 10 seconds.

(6) The test subject must don the test respirator without any assistance from the test administrator who is conducting the CNP fit test. The respirator must not be adjusted once the fit-test exercises begin. Any adjustment voids the test, and the test subject must repeat the fit test.

(7) The QNFT protocol shall be followed according to section I. C. 1. of this appendix with an exception for the CNP test exercises.

(b) CNP Test Exercises.

(1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally for 1 minute. After the normal breathing exercise, the subject needs to hold head straight ahead and hold his or her breath for 10 seconds during the test measurement.

(2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply for 1 minute, being careful not to hyperventilate. After the deep breathing exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during test measurement.

(3) Turning head side to side. Standing in place, the subject shall slowly turn his or her head from side to side between the extreme positions on each side for 1 minute. The head shall be held at each extreme momentarily so the subject can inhale at each side. After the turning head side to side exercise, the subject needs to hold head full left and hold his or her breath for 10 seconds during test measurement. Next, the subject needs to hold head full right and hold his or her breath for 10 seconds during test measurement.

(4) Moving head up and down. Standing in place, the subject shall slowly move his or her head up and down for 1 minute. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling). After the moving head up and down exercise, the subject shall hold his or her head full up and hold his or her breath for 10 seconds during test measurement. Next, the subject shall hold his or her head full down and hold his or her breath for 10 seconds during test measurement.

(5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song for 1 minute. After the talking exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement.

(6) Grimace. The test subject shall grimace by smiling or frowning for 15 seconds.

(7) Bending Over. The test subject shall bend at the waist as if he or she were to touch his or her toes for 1 minute. Jogging in place shall be substituted for this exercise in those test environments such as shroud-type

QNFT units that prohibit bending at the waist. After the bending over exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement.

(8) Normal Breathing. The test subject shall remove and re-don the respirator within a one-minute period. Then, in a normal standing position, without talking, the subject shall breathe normally for 1 minute. After the normal breathing exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement. After the test exercises, the test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of a respirator shall be tried.

(c) CNP Test Instrument.

(1) The test instrument must have an effective audio-warning device, or a visual-warning device in the form of a screen tracing, that indicates when the test subject fails to hold his or her breath during the test. The test must be terminated and restarted from the beginning when the test subject fails to hold his or her breath during the test. The test subject then may be refitted and retested.

(2) A record of the test shall be kept on file, assuming the fit test was successful. The record must contain the test subject's name; overall fit factor; make, model, style and size of respirator used; and date tested.

5. Controlled negative pressure (CNP) REDON quantitative fit testing protocol.

(a) When administering this protocol to test subjects, employers must comply with the requirements specified in paragraphs (a) and (c) of Part I.C.4 of this appendix ("Controlled negative pressure (CNP) quantitative fit testing protocol"), as well as use the test exercises described below in paragraph (b) of this protocol instead of the test exercises specified in paragraph (b) of Part I.C.4 of this appendix.

(b) Employers must ensure that each test subject being fit tested using this protocol follows the exercise and measurement procedures, including the order of administration, described below in Table A-1 of this appendix.

Table A-1. -- CNP REDON Quantitative Fit Testing Protocol

Exercises[1]	Exercise procedure	Measurement procedure
Facing Forward	Stand and breathe normally, without talking, for 30 seconds.	Face forward, while holding breath for 10 seconds.
Bending Over	Bend at the waist, as if going to touch his or her toes, for 30 seconds.	Face parallel to the floor, while holding breath for 10 seconds
Head Shaking	For about three seconds, shake head back and forth vigorously several times while shouting.	Face forward, while holding breath for 10 seconds.
REDON 1	Remove the respirator mask, loosen all facepiece straps, and then redon the respirator mask.	Face forward, while holding breath for 10 seconds.
REDON 2	Remove the respirator mask, loosen all facepiece straps, and then redon the respirator mask again.	Face forward, while holding breath for 10 seconds.

[1] Exercises are listed in the order in which they are to be administered.

(c) After completing the test exercises, the test administrator must question each test subject regarding the comfort of the respirator. When a test subject states that the respirator is unacceptable, the employer must ensure that the test administrator repeats the protocol using another respirator model.

(d) Employers must determine the overall fit factor for each test subject by calculating the harmonic mean of the fit testing exercises as follows:

$$\text{Overall Fit Factor} = \frac{N}{[1/FF_1 + 1/FF_2 + \ldots\ 1/FF_N]}$$

Where:
N = The number of exercises;
FF1 = The fit factor for the first exercise;
FF2 = The fit factor for the second exercise; and
FFN = The fit factor for the nth exercise.

Part II. New Fit Test Protocols

A. Any person may submit to OSHA an application for approval of a new fit test protocol. If the application meets the following criteria, OSHA will initiate a rulemaking proceeding under section 6(b)(7) of the OSH Act to determine whether to list the new protocol as an approved protocol in this Appendix A.

B. The application must include a detailed description of the proposed new fit test protocol. This application must be supported by either:

1. A test report prepared by an independent government research laboratory (e.g., Lawrence Livermore National Laboratory, Los Alamos National Laboratory, the National Institute for Standards and Technology) stating that the laboratory has tested the protocol and had found it to be accurate and reliable; or

2. An article that has been published in a peer-reviewed industrial hygiene journal describing the protocol and explaining how test data support the protocol's accuracy and reliability.

C. If OSHA determines that additional information is required before the Agency commences a rulemaking proceeding under this section, OSHA will so notify the applicant and afford the applicant the opportunity to submit the supplemental information. Initiation of a rulemaking proceeding will be deferred until OSHA has received and evaluated the supplemental information.

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DEPARTMENT OF LABOR

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APPENDIX F.10
Chemical Compatibility

Spent Column Waste Stream Type	Chemical Composition	Chemical Form	RGN Chemical Group Present	EPA Reactive Group Number Classification	EPA Reactive Group Name	Notes and Applicability
Ion Implantation	Copper Oxide	Salt/granulate	Copper	24	Metals and Metal Compounds, Toxic	
	Copper Phosphide					
	Copeper Arsenide					
	Aluminum Flouride	Salt/granulate	Aluminum	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Aluminum Oxide					
	Aluminum Hydroxide					
	Magnesium Hydroxide	Salt/granulate	Magnesium	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Magnesium Flouride					
	Magnesium Flouride	Salt/granulate	Magnesium Flouride	15	Fluorides, inorganic	
	Aluminum Flouride	Salt/granulate	Aluminum Flouride	15	Fluorides, inorganic	
				107	Water Reactive	1-20 % in mixture, waste material is in mixture which is not considered water reactive.
	Arsenic	Salt/granulate	Arsenic	24	Metals and Metal Compounds, Toxic	
Nitride	Ammonium Iron Sulfate	Salt/granulate	N/A			
	Iron Sulfate	Salt/granulate	N/A			
	Iron Hydroxide	Salt/granulate	N/A			
Chemical Etching	Magnesium Chloride	Salt/granulate	Magnesium	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Magnesium Bromide					
	Magnesium Flouride					
	Magnesium Oxide					
	Aluminum Chloride	Salt/granulate	Aluminum	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Aluminum Bromide					
	Aluminum Flouride					
	Aluminum Oxide					
	Aluminum Chloride	Salt/granulate	Aluminum Chloride	107	Water Reactive	20-40 % in mixture, waste material is in mixture which is not considered water reactive.
	Aluminum Flouride	Salt/granulate	Aluminum Fluoride	15	Fluorides, inorganic	
				107	Water Reactive	1-5 % in mixture, waste material is in mixture which is not considered water reactive.
	Magnesium Flouride	Salt/granulate	Magnesium Flouride	15	Fluorides, inorganic	
	Aluminum Bromide	Salt/granulate	Aluminum Bromide	107	Water Reactive	1-5 % in mixture, waste material is in mixture which is not considered water reactive.
	Silicon Oxide	Salt/granulate	N/A			
CVD	Copper Oxide	Salt/granulate	Copper	24	Metals and Metal Compounds, Toxic	
	Magnesium Flouride	Salt/granulate	Magnesium	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Magnesium Oxide					
	Aluminum Flouride	Salt/granulate	Aluminum	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Aluminum Oxide					
	Magnesium Flouride	Salt/granulate	Magnesium Flouride	15	Fluorides, inorganic	
	Aluminum Flouride	Salt/granulate	Aluminum Flouride	15	Fluorides, inorganic	
				107	Water Reactive	1-20 % in mixture, waste material is in mixture which is not considered water reactive.
	Manganese Oxide	Salt/granulate	Manganese	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
				24	Metals and Metal Compounds, Toxic	
	Sodium Ion	Salt/granulate	Sodium	105	Reducing Agents, Strong	
				107	Water Reactive	1-10 % in mixture, waste material is in mixture which is not considered water reactive or reducing agent.
	Ammonium Iron Sulfate	Salt/granulate	N/A			
	Iron Hydroxide	Salt/granulate	N/A			
	Iron Oxide	Salt/granulate	N/A			
Silicon Epi (Epitaxy)	Copper Oxide	Salt/granulate	Copper	24	Metals and Metal Compounds, Toxic	
	Copper Arsenide					
	Copper Phosphide					
	Magnesium Chloride	Salt/granulate	Magnesium	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Magnesium Hydroxide					
	Aluminum Chloride	Salt/granulate	Aluminum	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Aluminum Oxide	Salt/granulate				
	Aluminum Chloride	Salt/granulate	Aluminum Chloride	107	Water Reactive	20-40 % in mixture, waste material is in mixture which is not considered water reactive.
	Arsenic	Salt/granulate	Arsenic	24	Metals and Metal Compounds, Toxic	
	Silicon Oxide	Salt/granulate	N/A			
Cobalt	Coalt	Salt/granulate	Cobalt	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Aluminum Hydroxide	Salt/granulate	Aluminum	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Aluminum Oxide					
	Magnesium Hydroxide	Salt/granulate	Magnesium	22	Metals Other Elemental & Alloys as Powders, Vapors, or Sponges	
	Copper Oxide	Salt/granulate	Copper	24	Metals and Metal Compounds, Toxic	
	Tetraammine Copper					
	Copper Hydroxide					
	Silicon Dioxide	Salt/granulate	N/A			

Name of Waste Evaluation: Ion Implant and Nitride	
Ion Implant \ **Nitride**	N/A
15	
22	
24	

Key:
N/A: None Applicable

Name of Waste Evaluation: Ion Implant and Chemical Ethching		
Ion Implant \ Chemical Ethching	15	22
15		
22		
24		

Key:

Name of Waste Evaluation: Ion Implant and CVD			
Ion Implant \ CVD	15	22	24
15			
22			
25			

Key:
H= Heat Generation
F= Fire
G= Innocuous and non-flammable Gas Generation

Name of Waste Evaluation: Ion Implant and Silicon Epi		
Ion Implant \ Silicon Epi	22	24
15		
22		
24		
Key:		

Name of Waste Evaluation: Ion Implant and Cobalt		
Ion Implant \ Cobalt	22	24
15		
22		
24		

Key:

Name of Waste Evaluation: Nitride and Chemical Etching		
Nitride \ **Chemical Ethching**	15	22
N/A		

Key:
N/A: None Applicable

Name of Waste Evaluation: Nitride and CVD			
Nitride \ **CVD**	15	22	24
N/A			

Key:
N/A None Applicable

Name of Waste Evaluation: Nitride and Silicon Epi		
Nitride \ **Silicon Epi**	22	24
N/A		

Key:
N/A: None Applicable

Name of Waste Evaluation: Nitride and Cobalt		
Nitride \ **Cobalt**	22	24
N/A		

Key:
N/A: None Applicable

Name of Waste Evaluation: Chemical Etching and CVD			
Chemical Ethching \ CVD	15	22	24
15			
22			

Key:
Blank: no restrictions

Name of Waste Evaluation: Chemical Etching and Silicon Epi		
Chemical Ethching \ Silicon Epi	22	24
15		
22		

Key:
Blank: no restrictions

Name of Waste Evaluation: Chemical Etching and Cobalt		
Chemical Ethching \ Cobalt	22	24
15		
22		

Key:
Blank: no restrictions

Name of Waste Evaluation: CVD and Silicon Epi		
CVD \ Silicon Epi	22	24
15		
22		
24		

Key:
Blank: no restrictions

Name of Waste Evaluation: CVD and Cobalt		
CVD \ Cobalt	22	24
15		
22		
24		

Key:
Blank: no restrictions

Name of Waste Evaluation: Silicon Epi and Cobalt		
Silicon Epi \ Cobalt	22	24
22		
24		

Key:
Blank: no restrictions

REACTIVITY GROUP NO.	REACTIVITY GROUP NAME	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Acids, Mineral, Non-oxidizing													
2	Acids, Mineral, Oxidizing													
3	Acids, Organic		G, H											
4	Alcohols and Glycols	H	H, F	H, P										
5	Aldehydes	H, P	H, F	H, P										
6	Amides	H	H, GT											
7	Amines, Aliphatic and Aromatic	H	H, GT	H		H								
8	Azo Compounds, Diazo Compounds and Hydrazines	H, G	H, GT	H, G	H, G	H								
9	Carbamates	H, G	H, GT						G, H					
10	Caustics	H	H	H		H				H, G				
11	Cyanides	GT, GF	GT, GF	GT, GF					G					
12	Dithiocarbamates	H, GF, F	H, GF, F	H, GF, GT		GF, GT		U	H, G					
13	Esters	H	H, F						H, G		H			
14	Ethers	H	H, F											
15	Fluorides, Inorganic	GT	GT	GT										
16	Hydrocarbons, Aromatic		H, F											
17	Halogenated Organics	H, GT	H, F, GT					H, GT	H, G		H, GF	H		
18	Isocyanates	H, G	H, F, GT	H, G	H, P			H, P	H, G		H, P, G	H, G	U	
19	Ketones	H	H, F						H, G		H	H		
20	Mercaptans and Other Organic Sulfides	GT, GF	H, F, GT						H, G					
21	Metals, Alkali and Alkaline Earth, Elemental	GF, H, F	GF, H, F	GF, H, F	GF, H, F	GF, H, F	GF, H	GF, H	GF, H	GF, H	GF, H	GF, H	GF, GT, H	GF, H
22	Metals, Other Elemental & Alloys as Powders, Vapors, or Sponges	GF, H, F	GF, H, F	GF					H, F, GT	U	GF, H			
23	Metals, Other Elemental & Alloys as Sheets, Rods, Drops, Moldings, etc.	GF, H, F	GF, H, F						H, F, G					
24	Metals and Metal Compounds, Toxic	S	S	S			S	S			S			
25	Nitrides	GF, HF	H, F, E	H, GF	GF, H, E	GF, H			U	H, G	U	GF, H	GF, H	GF, H
26	Nitriles	H, GT, GF	H, F, GT	H							U			
27	Nitro Compounds, Organic		H, F, GT			H					H, E			
28	Hydrocarbons, Aliphatic, Unsaturated	H	H, F			H								
29	Hydrocarbons, Aliphatic, Saturated		H, F											
30	Peroxides and Hydroperoxides, Organic	H, G	H, E		H, F	H, G		H, GT	H, F, E	H, F, GT		H, E, GT	H, F, GT	
31	Phenols and Cresols	H	H, F						H, G					
32	Organophosphates, Phosphothioates, Phosphodithioates	H, GT	H, GT						U		H, E			
33	Sulfides, Inorganic	GT, GF	HF, GT	GT		H			E					
34	Epoxides	H, P	H, P	H, P	H, P	U		H, P	H, P		H, P	H, P	U	
101	Combustible and Flammable Materials, Miscellaneous	H, G	H, F, GT											
102	Explosives	H, E	H, E	H, E					H, E		H, E			H, E
103	Polymerizable Compounds	P, H	P, H	P, H					P, H		P, H	P, H	U	
104	Oxidizing Agents, Strong	H, GT		H, GT	H, F	H, F	H, F, GT	H, F, GT	H, E	H, F, GT		H, E, GT	H, F, GT	H, F
105	Reducing Agents, Strong	H, GF	H, F, GT	H, GF	H, GF, F	GF, H, F	GF, H	H, GF	H, G				H, GT	H, F
106	Water and Mixtures Containing Water	H	H						G					
107	Water Reactive Substances	← EXTREMELY REACTIVE!												
		1	2	3	4	5	6	7	8	9	10	11	12	13

Figure 6. Hazardous waste compatibility chart.

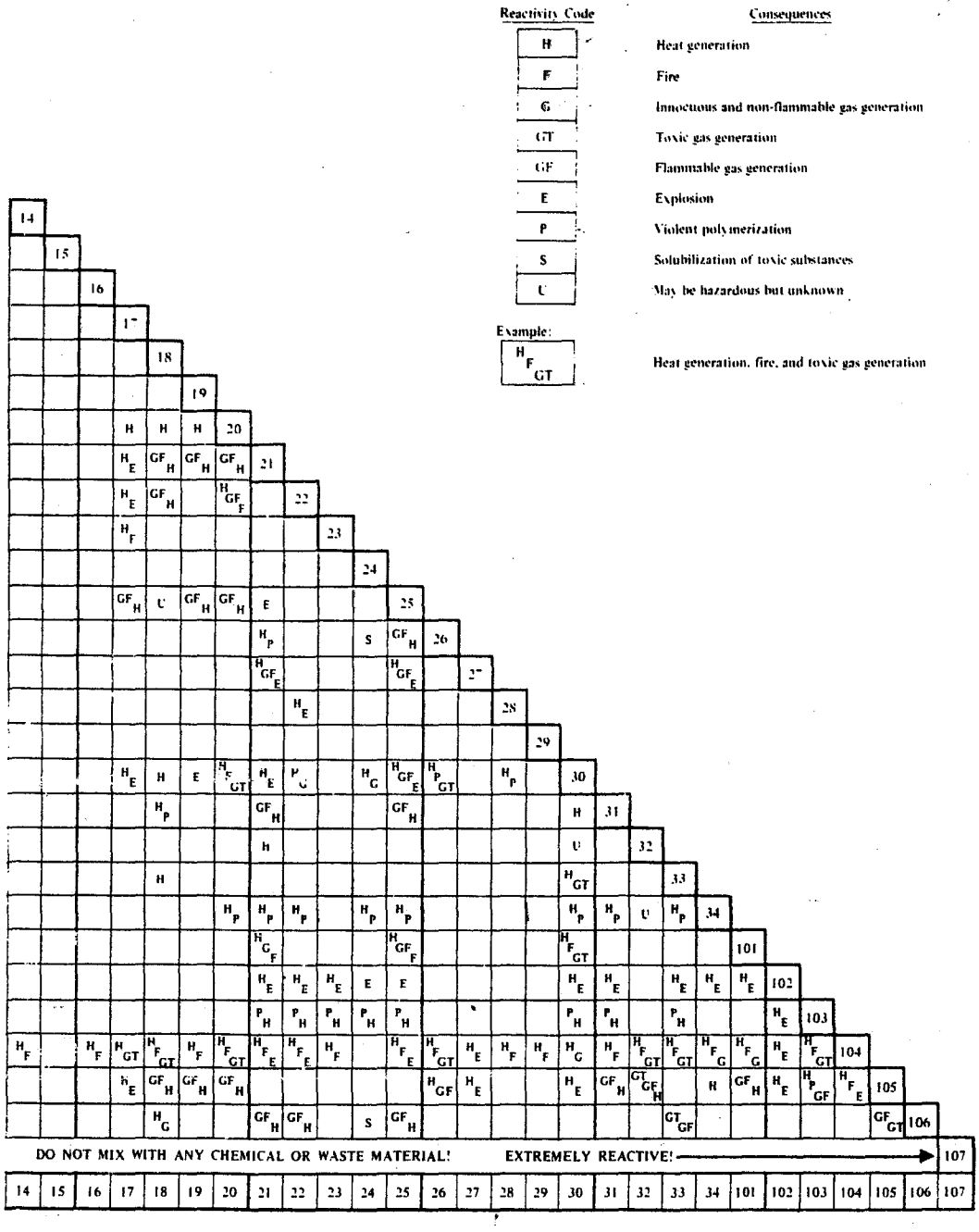
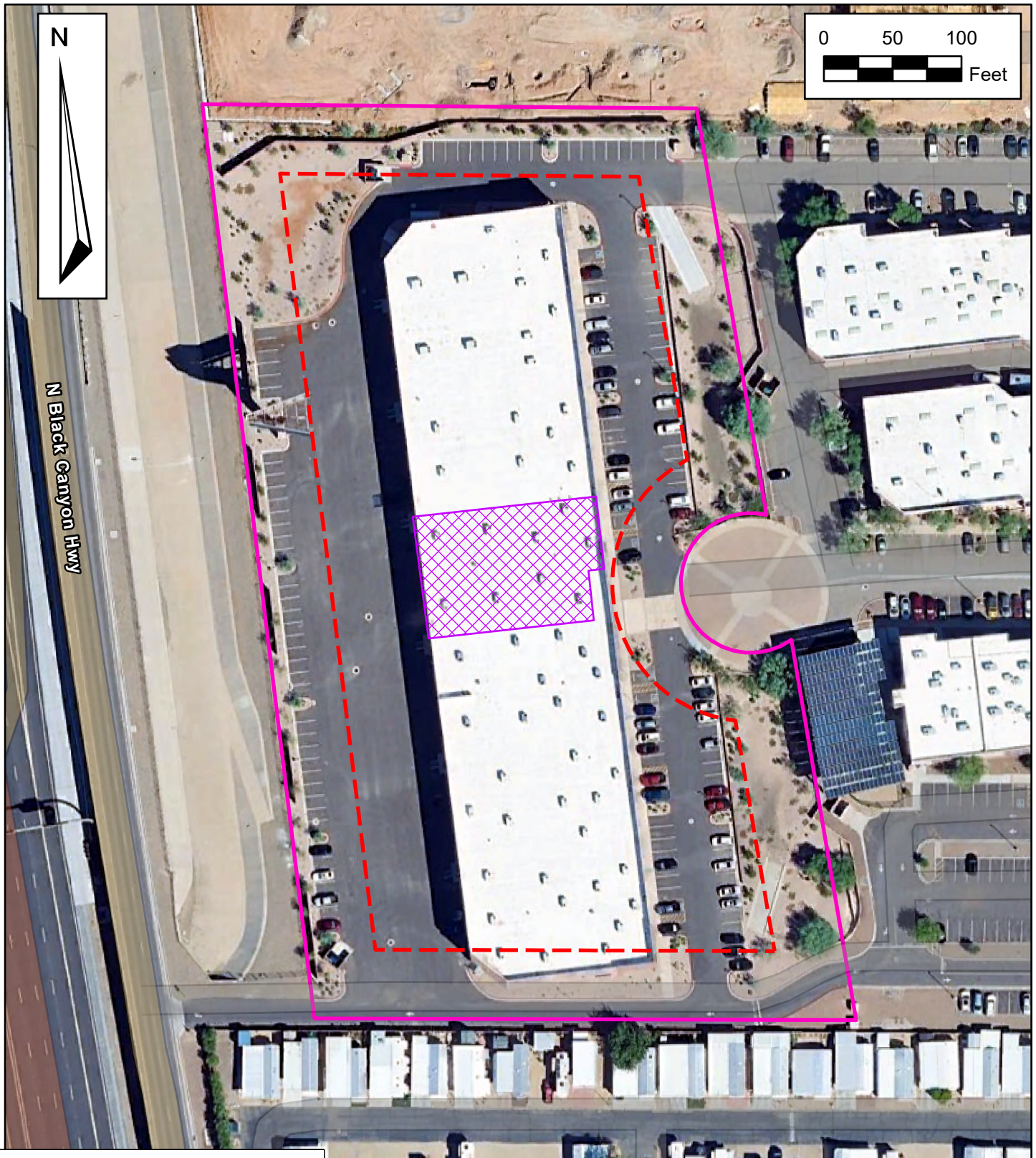


Figure 6. Hazardous waste compatibility chart (continued).

APPENDIX F.11

Figure for Property Line Distance



Property Boundary Map
CS Clean Systems, Inc.
2453 W Parkside Lane
Suites 150
Phoenix, Arizona
HRP # CSC0016.PC
Scale 1" = 100'

Legend

- Approximate Property Line
- 50 foot Property Setback Line
- Approximate building area occupied by CS Clean

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contributors, and t

Path: J:\C\CSCLE - CS CLEAN SYSTEMS, INC\PHOENIX, ARIZONA\CSC0016RC - TSDF Permit\GIS\Figures.aprx