METRO WATER RECOVERY®

Contractor, Vendor and Visitor Safety Manual

Construction Activities

RWHTF

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Maintained by Environmental Health and Safety (EHS) in the Human Resources Department and accessible in the Environmental, Health and Safety 6450 Team Site under the Contractors, Visitors and Vendors Library.

Welcome To

METRO WATER RECOVERY

ROBERT W. HITE TREATMENT FACILITY

Metro Water Recovery strives to conduct its operations with the highest priority in protecting the safety and health of our employees. Accident prevention is an important part of every job. It is our duty to perform our work courteously, efficiently, and with the maximum regard for safety.

This Contractor, Vendor, and Visitor Safety Awareness Manual (Safety Manual) contains general safety and conduct expectations applicable to all visitors, contractors, and/or vendors regarding Environmental, Health, and Safety (EHS) responsibilities while at Metro. These groups are expected to follow established safety measures to maintain a safe and secure workplace and operate in an environmentally sound manner.

Strong EHS programs will prevent injuries, control losses, and minimize environmental impacts. We expect contractors and vendors to join us in providing a workplace free of uncontrolled hazards to people, the environment, and our property.

All construction, service, and maintenance contractors must comply with all federal, state and local EHS regulations, as well as Metro's EHS procedures, code of ethics, and harassment policies.

The information contained in these pages is solely for informational purposes, is in summary form only, and is subject to change. It is not intended to replace or limit the requirements of government regulations or standard industry practice. It is each contractor's obligation to meet applicable government and Metro EHS requirements, whether or not they are addressed in this document.

Metro does not directly manage the safety of contractors or their personnel. Contractors are expected to manage environmental, health, and safety hazards, risks, and programs for their employees and subcontractors. This manual has been published to communicate Metro's philosophy and expectations to all contractors, vendors, and visitors.

~ Metro Safety Team

TABLE OF CONTENTS

I. SCOPE

This manual is intended for all contractors, visitors and vendors that are performing or are associated with construction-based work AND has an established contract or purchase order with Metro Water Recovery (Metro). It is expected that this manual is shared with others and the contents of this manual are discussed in pre-construction meetings.

II. RESPONSIBILITIES

All personnel responsible for managing contracts will ensure that:

- Each contractor is provided with a copy of this manual.
- Each contractor understands that all work shall be conducted in a safe and responsible manner in compliance with applicable regulations and all content in this manual.

Metro Project Manager/Sponsor (MPM)

- Communicate appropriate EHS requirements and expectations to contractors, vendors, and visitors under their control.
- Ensure that EHS is provided with a copy of the contractor's written health and safety plan for review prior to the pre-construction meeting with the contractor.
- Include EHS on email progress meetings distribution list and other communication related to employee/contractor safety concerns or injury incidents.
- Ensure EHS is represented at all pre-construction meetings held with contractors.
- Provide EHS with a tentative construction schedule for contractors and subcontractors on-site.
- Immediately inform EHS of an accident, close call or other incident.
- Report incidents or damage that involves Metro property or personnel in the online reporting system. MPMs should contact the EHS Specialist or Designee for clarification.
- Ensure contractor and vendor compliance with all the guidelines, policies, and procedures to meet EHS requirements, whether or not they are addressed in this manual.

Contractor, Vendors, and Visitors

- View the applicable Contractor, Vendor and Visitor Safety Awareness online training and complete electronic acknowledgement prior to badge issuance (on external website: https://www.metrowaterrecovery.com/business/metrosafety/).
- Follow all federal, state and local regulations, as well as the policies and procedures of Metro.
- Ensure that information and material provided by Metro Sponsors during the pre-construction meeting or contract initiation is communicated to contractor employees and subcontractors before the commencement of work.
- Provide its employees with the necessary training, appropriate medical exams, and safety equipment including personal protective equipment (PPE).
- Inform Metro Sponsor of any personal, motor vehicle or environmental accidents.
- Report any perceived emergency to the Control Room.
- Upon being notified of an emergency, stop activities and follow instructions provided in this Program.

- Follow instructions to take shelter, evacuate, and meet at designated muster points as required.
- During an emergency response situation, adhere to the instructions provided by the Metro Incident Response Coordinator (IRC), or their designee(s).
- Remain sheltered or moved away from an emergency area until directed by the IRC.
- All persons that operate Metro equipment, such as aerial lifts, cranes, and fork trucks, must be competent in its operation. Documentation of training will be provided upon request. All Metro requirements including pre-inspection must be followed.
- Comply with all applicable federal, state, and local regulations and content in this manual; any violation of applicable regulations and requirements are grounds for default of the contract, agreement and/or purchase order.

Environmental Health and Safety (EHS)

- Define personal protective equipment and safe-handling procedures for specific operational needs, upon request.
- Respond to reports of hazardous conditions/accidents to any contractor, visitor and/or vendor; assist in determining corrective measures.
- Assist Metro Sponsor to ensure safety measures are being followed by performing safety evaluations of contractor/vendor projects upon request.
- Investigate and/or designate another person to investigate any accident or damage by a contractor, visitor or vendor that involves Metro property or personnel.
- Manage the external online Metro Safety Awareness Orientation page.
- Annually perform a documented review of this Program.

III. PRE-CONSTRUCTION MEETINGS

Representatives of the contractor shall meet with EHS and project representatives prior to the start of construction for the purpose of reviewing safety requirements and discussing implementation of all health and safety provisions pertinent to the work under contract, agreement and/or purchase order.

The EHS representative will review the contractor's site-specific safety and health plan including any relevant safety data sheets (SDS) for high hazard materials that may impact typical work activities and/or Metro employees.

IV. NON-COMPLIANCE WITH EHS REQUIREMENTS

If any health and safety hazards could pose an imminent danger to people or property, an immediate order to stop work will be issued. Should this occur, EHS will bring the matter to the immediate attention of Metro Sponsor(s), General Contractor and if necessary, Procurement Manager. Willful unsafe actions, continued violations of health and safety requirements, or other hazards that pose an imminent threat to people or property may result in termination of the contract, agreement and/or purchase order.

It is strongly advised that all contractors and vendors review and adhere to all safety and health requirements as stated in the associated contract.

V. ACCIDENT REPORTING

Metro Project Manager (MPM) or Metro Representative must be notified when any assigned contractor, visitor or vendor sustains any personal injury, motor vehicle accident, close call or other incident and includes one or more of the following:

- 911 is called.
- Results in the job/activity to be shut down.
- It occurred in an area controlled by Metro personnel.
- Was in part caused by the actions of Metro personnel.
- Metro property is damaged.

MPM/Representative will immediately inform EHS of the accident, close call or incident. MPMs will report any accident or damage that involves Metro property or personnel in the online reporting system. EHS will investigate these incidents. Security may investigate vehicle accidents. The contractor, visitor, or vendor will submit a copy of their accident investigation form to the MPM/Representative. The EHS and Security contacts include:

EHS Manager	Brian O'Malley	(303) 286-3456
EHS Senior Specialist	Sunny Bradford	(303) 286-3056
Metro Security Manager	Ken Burton	(303) 286-3311
Metro Security Specialist	Chris Dole	(303) 286-3309

VI. AERIAL LIFTS

When working an articulating or telescoping aerial lift, all personnel shall wear a hard hat and personal fall arrest system that includes a full body harness with a lanyard attached to the manufacturer's-specified platform anchorage or attachment point. The lanyard must be of an appropriate length (e.g., 3 feet) to restrain or keep the occupant within the basket, bucket, or platform.

In scissor lifts and aerial lifts that telescope vertically only, a fall arrest system is not required by Metro, unless specified by the manufacturer.

VII. CHEMICAL USE

Safety Data Sheets (SDS)

Contractors are expected to inform and provide Metro with a chemical inventory and SDS's for the materials that will be introduced into the work area during the course of their construction project. All containers of chemicals must be properly labeled with the contents, signal word and hazard pictogram.

In the event a contractor uses any chemical with odors or particles likely to cause irritation to Metro employees, the SDS will be provided to the DPM and EHS for review PRIOR to the activity.

As noted above, there are hazardous chemicals and materials on the plant that can cause serious injury if not properly handled. SDS information is available on the 6450 Intranet Site or

at the Right-to-Know station next to the control room. There is a separate Right-to-Know station at NTP and the METROGRO Farm.

Chemical Handling and Storage

Be aware of the potential dangers associated with hazardous chemicals. Refer to the Safety Data Sheet (SDS) information for proper procedures in handling, storage, and usage of chemicals on the job. The major bulk chemicals on site include:

- Peracetic Acid
- Sodium hypochlorite
- Sodium bisulfite
- Aqueous ammonia
- Acetic acid
- Ferric chloride
- Polymers
- Fuels (gasoline, diesel)
- Lubricating oils
- Lab Solvents

Respiratory Protection and Medical Clearance

The contractor must ensure that its employees have appropriate medical clearance when required either by governmental regulations or by our company's requirements. Certification of medical clearance for contractor personnel is required to be presented as requested by Metro Sponsor or EHS.

VIII. CONFINED SPACE ENTRY

Confined spaces are dangerous areas that could cause injury or death. OSHA defines a confined space as having the following characteristics:

- an area that is large enough and so configured that an employee’s body can enter and perform assigned work;
- has limited or restricted means for entry or exit; and
- is not designed for continuous occupancy.

A permit-required confined space is defined as a confined space that:

- Contains or has a potential to contain a hazardous atmosphere;
- Contains a material that potentially could engulf an entrant;
- Has an internal configuration that could trap or asphyxiate an entrant through inwardly converging walls or a floor that slopes downward and tapers to a smaller cross-section; or
- Contains any serious safety or health hazard.

Contractors must comply with all OSHA Confined Space Entry Standards as a minimum guideline, including air monitoring. Metro reserves the right to refuse entry into any confined space when a contractor does not adhere to OSHA standards or Metro's Confined Space Program.

IMPORTANT: Due to the nature of the work and potential hazards at Metro facilities, nearly all confined spaces are considered permit required. Exceptions to the permit requirement include

the aeration basins, clarifiers, excavations, and HVAC equipment as long as the known, associated hazards are controlled (i.e. LOTO).

A well-defined rescue plan must be in place for all permit-required entries. The plan may not rely on emergency services for rescue entry. The program's defined rescue plan may be requested to be reviewed by EHS at any time.

IX. DRINKING WATER

Facilities at the Robert W. Hite Treatment Plant are plumbed with three types of water.

Potable Water or "PW"

This is drinking-quality water suitable for human consumption. It is dispensed from drinking fountains, lunchroom/kitchen sinks, and restroom sink taps. Potable water plumbing can be identified by the letters "PW" on a white band across a dark blue pipe.

Service Water or "SW"

This is used primarily for the cooling down of equipment installed throughout the plant. Service water is ***not*** suitable for human consumption. Service water plumbing can be identified by the letters "SW" on a red band across a light blue pipe.

Plant Water or "PWC"

This is used for landscape irrigation, fire hydrants, washing floors at various locations on the plant site, and in certain wastewater treatment processes. Plant water is ***not*** suitable for human consumption. Formerly, this water was chlorinated. Currently, it is treated with paracetic acid. Plant water plumbing can be identified by the letters "PWC" on a yellow band across a light blue pipe.

NOTE: A red-tagged drinking-water source means the water is ***not*** fit for human consumption. Report any accidental ingestion of SW or PWC to the Metro Sponsor.

X. ELECTRICAL SAFETY

Only contractors meeting NFPA 70E requirements for qualification, licensing, and training will install, repair, modify, or remove electrical service, wiring, or equipment.

Electrical work should be performed on de-energized circuits. If this is not possible, activities must be discussed with Metro Sponsor and/or EHS prior to performing any live work. Additionally, adherence to Metro's Lockout/Tagout procedure in this manual is mandatory.

All electrical cords shall be used in continuous lengths, without being daisy-chained together, properly grounded, and free from damage.

When using temporary feeder cables from one an existing power source, the following electrical requirements shall be followed:

- Minimize the amount of insulation stripped from a multi-conductor cable to provide more protection.
- Utilize a temporary conduit for temporary cables.
- Prevent access panels or doors from closing.
- Restrict access by installation of barriers or caution tape.

Portable Electrical Equipment Use in Hazardous Locations

When regulations (OSHA 29 CFR 1910.307) and industry standards (NFPA 70) refer to equipment, they refer to fixed and installed equipment within a hazardous location. There are strict requirements for intrinsically safe or explosive proof devices that must be installed in these locations. They do not specify information related to portable equipment outside of some requirements for grounding and lighting.

In Class 1, Division 1 designated areas, intrinsically safe equipment is required. This includes portable tool use. Cell phones are not typically considered intrinsically safe and should not be taken into these areas.

In Class 1, Division 2 designated areas, intrinsically safe portable equipment is recommended.

Portable tools that are not rated as intrinsically safe may be used in these areas only when audible and visual alarms are not sounding, and employees are present when in use.

Devices with replaceable batteries should not be changed within these areas. Batteries should not be charged within these areas.

In the event of an alarm, any equipment that is not intrinsically safe will be removed, unplugged or switched off before exiting the area. Alarms sound at 10% of the Lower Explosive Limit (LEL) and indicate a change in air quality that could present an explosion hazard. At this level, the Control Room is notified of the alarm through the Metro control system.

XI. EMERGENCY RESPONSE

Metro Process Control Room and Calling 911

When reporting an emergency, contact the Process Control Room 24-hour emergency numbers listed below. When requested by the contractor, the Process Control operators will contact the appropriate local fire, police or medical emergency agency. Security and/or Operations personnel will assist the responding agency with access to Metro property, and direct emergency personnel to the identified emergency location.

Process Control Room	**303-286-3274 or 303-286-3275**

Emergency Communication

Metro utilizes Rave Alert to send mass text, email, and recorded voice messages during emergencies. All Metro staff are enrolled in the system. Contractors performing work at the Hite facility can also be enrolled to receive these emergency messages. This may be a supervisor or other key staff member rather than entire crews. To enroll in this system, reach out to your Metro contact or a member of Metro EHS (contacts provided in Section V.).

Emergency Muster/Shelter Locations

Specific locations are designated for Metro employees, contractors, vendors, and visitors. When reasonably possible, contractors and vendors working on the plant will be notified if a drill will affect them; otherwise, when an emergency alarm sounds, Metro employees, contractors,

visitors and vendors are expected to respond to the assigned assembly points (also known as muster points) as directed by the emergency announcement. There are three types of assembly points:

1. Fire alarm muster point
2. Tornado shelter
3. HazMat shelter

Fire muster points, tornado, and HazMat shelter locations are listed in Appendices A and B. They are also posted on all safety bulletin boards and in strategic locations throughout the plant.

Facility Evacuation Response

A full or partial evacuation is considered a secondary emergency response. The primary response to the higher severity atmospheric emergencies will be to move personnel into the HazMat shelters.

If the escalation of an emergency necessitates the evacuation of all plant personnel, Metro's Incident Response Commander (IRC) will initiate an evacuation notification process that directs personnel to an off-site muster location. It is recognized that a high level of congestion would occur from a simultaneous immediate facility-wide evacuation. The movement of personnel would commence in stages based on the nature of the emergency.

For an off-site evacuation, the main gates for egress are the North and South gates. The majority if not all motor traffic is expected to leave through these points. There are additional gates available for egress, if necessary. Use of these gates will be directed by the IRC.

Following an evacuation announcement, employees will:

- Evacuate using the designated exit.
- If employees or contractors have visitors on site, it is the employee's and/or contractor's responsibility to guide the visitor to the appropriate egress point.
- If it is not possible to evacuate safely, personnel should remain in the HazMat shelters.

Fire Evacuation Muster Points

The muster locations below will generally be at far end of designated parking lot, not obstructing arriving emergency response vehicles.

Building	Muster Location
Administration	South parking lot
Technical Services Building (TSB)	West parking lot
Operations Services and Control Building (OSCB)	West parking lot
Facilities Maintenance	West parking lot
M&E and Purchasing	North parking lot
Transmission	West parking lot (South side)
RR&R Services (StratComm)	East parking lot of RR&R service building

Building	Muster Location
Recovery, Biosolids and Fleet Services (RBFS)	West parking lot

If you discover a fire, alert others by activating the fire alarm system, leave the area, and contact the emergency numbers listed for the Process Control Room. Do not call 911.

The fire alarm system includes both an audible fire alarm and strobe lights. If you hear a fire alarm, leave the area, keeping to the right side of walkways. Do not use elevators. Assemble outside the building at the designated muster location for the area. Do not re-enter until an all-clear notification is given by the Fire Department or Metro's Incident Response Coordinator.

HazMat and Tornado Shelter Locations

HazMat and tornado shelters are maintained in process areas and personnel buildings throughout the plant. The shelters are identified on the entrance door of the sheltering room within each building. HazMat shelters may further be identified with signage on the outside of the applicable buildings.

- Upon hearing the initial alarm warble of Metro emergency alarm system, stop activities and listen to the information that is given over the announcement system. If in a noisy area and the beacons are activated, move to a different area to listen to the emergency announcement. Emergency announcements are repeated to allow for multiple chances to hear the message.
- Follow instructions to take shelter and/or meet at designated assembly points as required.
- During an emergency response situation, adhere to the instructions provided by the Incident Response Coordinator through the Control Room, Department Head, EHS or Security Manager, or their designees.
- Remain sheltered, or moved away from an emergency area, until directed by the Incident Response Coordinator through the Process Control operator, Department Head, EHS or Security Manager, or their designees.
- Report your location and condition to associated supervisor and/or Metro Sponsor, as required.

HazMat Shelter Locations

HazMat shelters are maintained in process areas and personnel buildings at the RWHTF plant. Each shelter includes speakers and a phone or Gai-Tronics handset to talk to the Control System Operator. The HazMat shelters are identified on the outside of the applicable buildings and at the internal HazMat room within.

Building	HazMat Shelter
207 – Administration	Board room
220 – Facilities Maintenance	Men's locker room
260 – OCSB	Control room & women's locker room
267 – RBFS	Men's locker room
268 – RR&R Service	Women's locker room
270 – Technical Services Building	HR training room
274 – Transmission	Hallway between office area & shops
280 – Warehouse and Maintenance Shop	Men's locker room
910 – Cogeneration	Control room
421 – North Primary Electrical Facility	Electrical building
415 – North Primary Pump Station No. 3	Electrical room
581 – North Secondary Control Building No. 1	Electrical room
583 – North Secondary Control Building No. 2	Electrical room
585 – North Secondary Control Building No. 3	Electrical room
587 – North Secondary Control Building No. 4	Electrical room
525 – North Secondary East Blower Building	Control room
312 – South Headworks Electrical Facility	Electrical room
512 - South Secondary Aeration Control Rm	Control Room
528 – Southwest RAS Electrical Facility	Electrical room
728 – PWC Electrical Facility	Electrical room
840 – BDSF	Control Room
202 – South Guard Shack (Security)	Control room

Tornado Shelter Locations

Building	Tornado Shelter Areas
207 - Administration	North and South end 1st floor restrooms, Wellness Room, and ES Conference Room "B"
270 - Technical Services Building (TSB)	1st floor restrooms 1st floor laboratory locker room Lab supervisor offices BOD room TSS room Balance room
260 – Operations Services and Control Building (OSCB)	Men/Women's locker rooms Safety equipment room Control system storage room 1st floor conference room Control room
220 - Facilities Maintenance	West side offices without windows Women's locker rooms
280 - Warehouse Maintenance Shops	Central North/South hallway Men/Women's locker rooms off the hallway
274 - Transmission	Hallway between office and shops
268 - RR&R Services (StratComm)	Printer room DC file room
267 - RBFS Shops	Men/Women's locker rooms
581-587 - North Secondary Galleries	North secondary galleries—lower level East blower building—basement
Disinfection	Hallway between PWC pump station and chemical storage area
Sludge Process	Tunnel between the sludge process building and holding tanks
Holding Tanks	Tunnel between the sludge process building and holding tanks
DAF	DAF basement
South Primary	Primary sludge pumps building—lower floor
South Secondary	Scum pump stations—lower level South complex compressor building—lower floor Pipe galleries
North Primary 1, 2 and 3	Primary sludge pumps building—lower floor
Gravity Thickener Complex	Control room basement
Off-Facility Sites	**Tornado Shelter Areas**
Thornton North Washington Lift Station	Pump floor
Governor's Ranch Lift Station	Compressor room
METROGRO Farm	Low depression areas
RR&R Private Application Sites	Low depression areas

Emergency Equipment

Life Aid Station Equipment

The following equipment is available for voluntary use and is in the Administration Building, the Technical Services Building (TSB), Facilities Maintenance, Operations Services Building (OSCB), M&E/Warehouse Building, Transmission Building, RBFS, RR&R Service Shop (StratComm), in designated areas

- Automated External Defibrillators (AED) – Zoll units in green case.
- Emergency oxygen unit – A portable cylinder is available in the control room.
- Trauma Kit – First aid items primarily to help control bleeding. Soft case inside the AED wall mounted cabinets

First Aid Kits are primarily located in occupied buildings and wall mounted in restrooms or break areas with the availability of potable water.

Metro does not have dedicated emergency response personnel.

Emergency Eyewash and Showers

Plumbed eyewash stations are in areas with the potential for exposure to corrosives or other chemicals that are strongly irritating. These plumbed eyewash stations send an alarm signal to the control room when activated and thus, are for EMERGENCY USE only. An eye wash alarm is verified through the evaluation of a dispatched plant operator. Additionally, temporary/portable eyewash and/or shower systems are strategically placed around the plant.

XII. ENVIRONMENTAL INCIDENT REPORTING

Metro strives to be proactive in protecting the environment. Immediate notification is required for any unauthorized discharge, accidental spill, or release to the environment, as defined below:

- All releases (including potable water) to the environment, including dry land, dry gulch, park area, field, lawn, street, parking lot, storm sewer, river, creek, lake, pond, construction trench, sump, etc.
- Unpermitted air emissions.

Reporting Spills and other Releases

Contractors, Visitors, and Vendors shall minimize the risk of spills or releases to the environment using appropriate protective procedures (i.e., secondary containment, double containment, drip pans, employee training, overflow protection, and other measures) involving the use, storage, or handling of petroleum products or hazardous materials on Metro property.

In the event of a release, contact the Control Room and/or Metro Sponsor (do NOT leave a message):. The Contractor must take immediate steps to isolate or otherwise contain the release if it is safe to do so. Spill kits are available in areas that routinely store and handle chemicals.

Report any of the above incidents immediately and provide the following information, to the greatest extent possible

- Who (what entity, Contractor, etc.) was responsible for the spill, if known; do not speculate.
- The date/time the release was discovered or made known to Metro.
- The location of the release.
- The estimated volume released - or the rate at which material is being spilled if the spill is ongoing - if known.
- A copy of the Safety Data Sheet (SDS) for the material released.
- If ongoing, an estimate of when it will be terminated.
- The type of environment into which the release was or is being discharged.
- The cause of the release, if known; again, do not speculate.
- The remediation or mitigation measures are being taken to contain or clean up the spill.

All releases on Metro property will be evaluated by Metro's Regulatory Affairs Division. Any state or federal release notification will be made by Metro.

Waste Management

All chemicals and hazardous materials brought onto Metro property or associated with a Metro project must be managed and disposed of in compliance with applicable laws and regulations. Contractors must be in compliance with applicable local, state, and federal requirements for generators of hazardous waste, if applicable.

No more than 55 gallons of hazardous waste or one quart of acutely hazardous waste may be onsite, as defined in 40 CFR 261 without written approval from Metro's Regulatory Affairs Division. Contact the Metro Sponsor for notification.

Contractors are responsible for obtaining an Environmental Protection Agency (EPA) Identification Number if generation amounts are greater than the qualifications for a very small quantity generator (VSQG) and managing hazardous waste generated in accordance with applicable local, state, and federal regulations. Contractors may be subject to periodic inspections by Metro's Regulatory Affairs Division to ensure proper management, storage, and documentation practices are being followed.

All potential liability for improper management of waste will be the Contractor’s responsibility. (45 FR 72024, 72026; October 30, 1980)

Air Pollution Management

If there is any potential for any emissions from work the Contractor is completing for Metro, all state and federal air requirements must be met. Examples of potential regulated activities include use of generators, painting/coating, degreasing, solvent usage, asbestos-containing material, and land development.

Solvents or other noxious emissions shall be evaluated as part of the project. Any cleaning solvents used in quantities larger than 55 gallons should be approved by Metro’s Regulatory Affairs. Recordkeeping of the type of solvents used and quantity must be made available to Metro’s Environmental Department by request.

XIII. EXCAVATION

All excavation work must be planned giving consideration to soil conditions, interference with traffic or nearby activities, piling or disposal of spoils, delivery and storage of material and equipment, probable weather conditions, and the possible need for shoring and cribbing. Prior to excavation, permissions and permits are to be obtained and underground utility locations are to be determined and identified to workers and to Metro's Sponsor.

All excavations must be properly barricaded, with concentration on areas of foot and vehicle traffic. Barricades will include a continuous indicator of the open excavation, like orange fencing or caution tape. If excavations are open in low light conditions including nighttime, they must be well illuminated so a passersby can identify the excavation. All open excavations/holes not barricaded must meet the following requirements:

- The cover must be able to support twice the expected load to travel over the hole
- Secured to prevent displacement
- Marked with the word "HOLE"

All excavations greater than 4 feet in depth must provide the following:

- Daily inspections of excavations must be made by a competent person.
- Walls are properly sloped, benched or braced to prevent cave-ins. Soil type must be determined. All excavations must be designed for Class B or C soils on all Metro property.
- Active air monitoring was conducted before employees enter the excavation.
- Spoil piles are maintained at least two feet from the edge of the excavation.
- Safe means of egress must be provided so as to require no more than 25 feet of lateral travel by employees working in excavation.

Contractors are expected to follow OSHA's 1926 Subpart P – Excavations' regulations.

XIV. FIRE PREVENTION

Fire Extinguishers

ABC type fire extinguishers are located throughout all areas of the plant and may be identified with overhead red signage if the extinguisher is not visible from all areas it services. Fire extinguishers are for use by any trained personnel to extinguish incipient stage fires. The Adams County Fire Rescue (for the Administration Building) and the Southwest Adams County Fire Metro (for the Process side of the RWHTF) will manage all fires beyond the incipient stages.

Contractors are required to have distinctly marked fire extinguishers rated as ABC at least 5 pounds or greater. They must be suitably placed as follows:

- One for every 3,000 square feet of building area or major fraction thereof. Travel distance from any point of protected area to nearest extinguisher shall not exceed 100 feet.
- One or more on each floor of buildings with at least one located adjacent to each stairway.
- At least one located outside but not more than 10 feet from the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.

- At least one located not less than 25 feet, or more than 75 feet from any outside flammable or combustible liquid storage area.
- At least one within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas is being used.
- At least one within immediate access of any hot work performed and in accordance with the hot work permit.

Fuel Storage and Transfer Safety Cans

All fuel cans must guard against possible fire and explosion, be able to resist damage and wear in normal usage, and be properly marked identifying their contents. All safety cans must meet the following requirements:

- Be leak tight.
- Automatically vent vapor between 3 and 5 psig (0.2 and 0.35 bar) internal pressure to prevent rupture (or explosion in event of fire).
- Prevent flame from reaching the flammable liquid contents through the spout.
- Automatically close after filling or pouring.

Smoking

There is a no smoking policy in effect at all our facilities, inside and out. Any open flames near sources of ignition shall not be permitted including areas where flammable or explosive materials are stored or are present. All such areas shall be conspicuously posted:

NO SMOKING OR OPEN FLAMES

Cleaning and degreasing

Gasoline and liquids with a flash point below 100 degrees Fahrenheit shall not be used for cleaning and degreasing. All rags used for cleaning and degreasing shall be disposed in a self-closing, flammable resistant can or container. When cans are full, rags must be properly disposed of in a timely manner.

Windsocks (Flags)

Windsocks are located throughout the facility and can be used as a visual aid for checking wind direction in the event of a HazMat release/response.

XV. HAZARDOUS AREAS

Hazard Tape – Danger and Caution

Never remove any hazard tape unless authorized to do so. Do not tamper with any installed taping.

Yellow Caution Tape must be placed around or otherwise prevents access to an area that has some type of low degree safety and health concerns. Personnel may enter these barricaded areas, provided they observe the hazards present, stay clear of potential hazards and stay clear of employees working on the job. Entering the area is permitted but should be careful.

Red Danger Tape must be placed around or otherwise prevents access to any area that has an immediate or high potential safety and health concern. All untrained and/or unauthorized

people are prohibited from entering these designated work areas until allowed access by the authorized employee or their designee. All Red Danger Tape must be tagged with the authorized employee's contact information. Entrance to the area is not permitted without proper permission and training. Remove Red Tape when no longer required. Broken, torn or cut tape shall be removed or replaced.

Digester/Holding Tank/Cogeneration Building

In the Digester/Holding Tank/Cogeneration areas, methane gas is present. Methane gas is a highly combustible gas that is colorless, odorless, and lighter than air. Any open flames in this area could pose a hazard for explosion or fire. Open flames (i.e., welding, torches, etc.) are strictly prohibited without prior authorization from Metro Sponsor and Process Control. All hot work must be confirmed with Metro Sponsor on the day of hot work and before beginning work. A hot work permit including fire watch must be in place.

Disinfection Building

Sodium hypochlorite solution, commonly known as bleach, is typically used as a disinfectant agent in the wastewater disinfection process. Sodium hypochlorite is a strong oxidizer and is mildly corrosive to the skin, eyes, and respiratory tract. Sodium hypochlorite solutions may react violently with strong acids, producing chlorine gas, and may react with metals to produce flammable hydrogen gas.

Disinfection/ Disinfection Pilot Areas

Peragreen WW is a peracetic acid (PAA) mixture of 15% peracetic acid, 23% hydrogen peroxide, water, and acetic acid and is supplied and operated by EnviroTech. PAA is in this organic peroxide is a colorless liquid with a characteristic acrid odor reminiscent of acetic acid and is corrosive. The PAA pilot storage tanks and dosing areas are limited to a small footprint in the north and south plants.

Clarifiers/Aeration Basins

These open tanks may contain rotating equipment (clarifiers), air diffusers to supply air to the microbial action (aeration basins) and hold partially treated wastewater with limited clarity. Thus, a fall into these open tanks could present a range of mechanical and biological hazards, in addition to the very limited means for escape. For these reasons, an employee should never extend beyond the protection of guardrails unless another form of fall protection such as a fall-arrest, fall-restricting, or fall-positioning system is used.

Ferric Chloride

Ferric Chloride, also known as Iron(III) chloride is a light brown aqueous solution with a faint hydrochloric acid odor. It is corrosive to human tissue and metals. It is used in the solids' treatment area in the center part of the plant as a flocculant and to reduce the potential for hydrogen sulfide odors.

XVI. HOT WORK

There are several locations on the plant site where the presence of flammable/ combustible liquid, solid, or gaseous materials create hazardous conditions. Contractors performing procedures involving an open flame or generating an arc or heat in sufficient quantity as to provide an ignition source for such materials potential present in an area shall complete a hot

work permit. A fire watch is required for all hot work. Additional considerations listed in the Hazardous Areas section of this manual.

Contractors should be familiar with the location of fire alarm activation devices (pull stations), portable fire extinguishers, and exit route(s) from the work area. In the case where pull stations or plant fire extinguishers are not immediately accessible, an adequate fire extinguisher must be placed in the immediate work area. Contractors shall not obstruct access to exits, exit routes or fire equipment or prop open stairwell doors. Flammable and combustible liquids are easily ignited and thus shall meet all the labeling, use, storage and disposal requirements as outlined in the SDS.

Hot Work is any activity having the potential to cause ignition of a flammable, combustible, or explosive material that is either present in the work area or located within hazardous proximity to the work area. Hot work includes, but is not limited to, the following:

- open flames;
- metal cutting with oxygen/acetylene torch;
- grinding operations where sufficient heat is generated to ignite flammable or combustible materials;
- soldering;
- brazing;
- heat-applied coatings;
- welding (electrical arc or oxygen/acetylene);
- operations that may create static electricity (e.g., sandblasting);
- operations involving energized equipment where electrical arcing may occur, including AC and DC powered tools, equipment and electrical devices that are not intrinsically safe, non-incendiary or explosion proof;
- Operation of a vehicle or equipment in a confined area where the presence of flammable gases or vapors exists or may be present.

Contractors must comply with OSHA standards for welding, cutting, and brazing as a minimum guideline, including establishing fire watches. All hot work in process areas must be approved by Metro Sponsor PRIOR to work activities. Contractors should not contact the Process Control Room to request or notify of hot work activities. Hot Work permits are required to be completed before work activities commence. Hot Work shall not be conducted during times when sprinkler systems have been impaired, as applicable.

XVII. HOUSEKEEPING AND STORAGE

All scrap and debris that may pose a hazard to others, including nails, flammable and combustible materials, waste, chemical/oil-soaked rags, etc., must be properly removed and/or disposed at regular intervals. Contractors must ensure that work activities, machinery and supplies do not block or limit emergency (free and unobstructed) egress.

All cords must be placed and/or secured in a manner to prevent trip and fall hazards, especially across and/or along paths of egress. If work activities create a hazard for employees, the area must be barricaded to prevent entry. If barricades impede vehicle or foot traffic, the Metro Sponsor and/or EHS must be notified to review the activity and any detour signage to be installed.

All staged equipment must be stored in a manner that does not constitute a hazard or provides excessive harborage to pests.

Laydown and other storage areas within personnel or process areas, must be properly identified that it is an active construction area, and that proper PPE is required. When feasible, fencing should be placed around all storage and laydown areas. EHS may provide additional guidance.

XVIII. LADDERS

A means of access is required anytime an individual needs to access a surface that is 19 inches higher or lower than the surface they are standing or working on. For non-permanent access points (especially with construction) this is typically achieved with temporary stairs or a ladder. When ladders are used, the following guidelines must be followed on-site:

- Ladders are to be inspected on a regular basis.
- Ladders that are deemed unsafe must be tagged out and removed from service immediately.
- Ladders shall be maintained so that they remain free of all slipping hazards, such as
- grease and oils.
- An extension ladder slope shall always be placed at a 4:1 ratio.
- The top of a ladder must always extend 3 feet higher than the roof or work platform it is
- resting upon unless it is equipped with a secure grab rail.
- While on a ladder, workers must face the ladder and maintain at least three-points of
- contact with the ladder while ascending or descending.
- The areas around the top and bottom of the ladder must remain clear of debris and other objects.
- Ladders placed for work activities lasting and extended period need to be secured, ideally at both the top and bottom.

XIX. LOCKOUT/TAGOUT

Metro's Lockout/Tagout Program includes procedures for group lockout, availability of lockout devices, use of equipment specific lockout procedures, and attendance at authorized level training.

Metro employees are responsible for shutdown and isolation of equipment or processes adhering to Metro's Control of Hazardous Energy program. If more than one padlock is required on a piece of equipment, an Authorized Metro employee will perform the necessary lockout/tagout procedure. Once the procedure has been completed and verified, the employee will place the key associated with the locks in the group lockout box and then place with his/her own lockout device on the box. Metro employees and contractors performing service, repair or construction activities on the affected process will place their personal locks (contractor supplied) on the group lockout box.

Contractors are responsible for protecting their personnel by ensuring that their (contractor supplied) locks and tags are in place for any routine maintenance, projects, inspections, repairs, testing, and/or any task in which the control of hazardous energy is necessary. In the event the contractor does not have a lockset, LOTO cannot be performed by the contractor. The associated work cannot commence until LOTO is completed.

At no time shall any authorized person use another lock or key not assigned to him/her.
Contractors must adhere to Metro Lockout/Tagout program as well as OSHA's 1910.147 - Control of hazardous energy (lockout/tagout) regulation.

XX. OVERHEAD WORK

Cranes

The responsibility for compliance with the standard in its entirety falls upon the individual crane contractor in so much as it is dictated by the standard.

The path of each load must be planned to prevent swinging loads from passing over workers. It is the responsibility of the subcontractor to utilize the necessary precautions (barricades, horns, spotters) to keep workers out of the swing path. At no time are workers permitted to stand beneath suspended or swinging loads.
Crane operators cannot be engaged in activities that distract their attention while operating the equipment (i.e., cell phones – unless used for signaling purposes, iPods etc.).

Crane operations must ensure the following responsibilities are met.

- Licensed Crane Operator
- Competent Person
- Qualified Person
- Qualified Rigger
- Qualified Signal Person

A Critical Lift Checklist must be completed by the subcontractor and submitted to Metro Sponsor and EHS when any of the following conditions exist:

- The load exceeds 75 % of the crane's load chart;
- Whenever the load and/or travel radius is expected to travel over any portion of an occupied building (In this case, all occupants must be vacated.)
- The load exceeds 100 tons;
- If the lift involves multiple cranes;
- The crane is being used to lift personnel;

All individuals shall be removed from the path of travel of suspended loads.

XXI. PERSONAL HYGIENE

What is wastewater?

Commonly known as sewage, wastewater is the water that goes down the drain from sinks, bathtubs, floor drains, toilets, and various piping located in homes, businesses and industries throughout the Denver Metro Area. Wastewater is used water that includes pollutants such as human waste, food scraps, oil, soap and chemicals that are conveyed via a sewage pipe from homes, commercial buildings or industrial facilities. Wastewater travels for miles through an array of various sized pipes known as the wastewater or sewer collection system.

Nature has a process of treating pollutants in the water, but the amount generated by the Denver Metro area would overwhelm the natural treatment process. The wastewater treatment

process is an accelerated form of the natural treatment process that can clean millions of gallons of water a day.

Are there any health hazards from working around wastewater?

The composition of untreated wastewater is highly variable and therefore constantly changing. Surprisingly, it consists of only about 0.1 percent solids and 99.9 percent liquids. A common characteristic of untreated wastewater is its high concentration of microorganisms. Because of the daily exposure and contact with biological materials, wastewater personnel may have a higher incidence of potential exposure to pathogens than the public.

How can I protect myself?

For most wastewater workers the risk of developing an occupational illness is significantly reduced when standard safety and personal hygiene precautions are followed. This includes:

- When splashing or wet surfaces may be encountered, wear waterproof gloves and boots.
- Wash hands with soap and water after contacting wastewater or even working around wastewater. Ingestion is a general major route of a potential wastewater employee infection. The common habit of touching any part of the face area will contribute to the possibility of direct exposure.
- Promptly treat cuts and abrasions using appropriate first aid measures.
- Wear surgical-type masks and goggles or face shields for prolonged exposure to wastewater aerosols.
- Change soiled uniforms or protective clothing as soon as the task is completed.
- Clean contaminated tools and reusable personal protective equipment after use.
- Do not eat or drink in areas of exposure.

Proper personal hygiene and use of personal protective equipment are critical because infections from contact and exposure to microorganisms may occur without symptoms and antibodies to bacteria and viruses may develop without illness symptoms being readily apparent.

Special Immunizations

The National Institute for Occupational Safety and Health (NIOSH) has made no official recommendations regarding vaccinations for workers who contact sewage. NIOSH does point out that sewage workers, like all adults, should be current on their tetanus-diphtheria immunization.

XXII. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Contractors are responsible for providing appropriate PPE for their employees. Minimum requirements must be adhered to at all times include:

- Wearing eye protection when the work assignment exposes individuals to potential eye hazards. As a rule, basic safety glasses are required in all areas except office areas, lunchrooms, restrooms, designated walkways between administrative office buildings, and to and from designated private vehicle parking areas.
- Each contractor is responsible for determining the type of eye protection needed for a particular task (i.e., face shield, chemical goggles, etc.). Safety glasses must be worn under any face shield. Safety glasses, at a minimum, are required at ALL TIMES while in construction and process areas.
- Proper hard hats are required in construction areas, at all times.

- Hearing protection is required in posted areas. These areas include the blower buildings, digester mall, and the process building. Hearing protection is required when using loud equipment and tools.
- Closed-toed shoes must be worn in all process areas. Steel toed shoes with anti-slip tread are recommended due to potential wet environmental conditions and cart/forklift traffic.
- High visibility vests must be worn in construction areas and around traffic areas.

XXIII. SCAFFOLDING

Contractors are responsible for following the requirements of OSHA's Scaffolding Standard(s) when working on/with scaffolding.

- Contractors shall utilize qualified persons to design scaffolding and erect/move/dismantle scaffolding under the supervision of a competent person.
- Contractors are responsible for providing adequate anchorage, foundation, bracing, pinning, support, access, working surface, fall protection and training for employees working on suspended scaffolding.
- Contractors are required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.
- Scaffolding shall be inspected daily and tagged accordingly.

XXIV. TRAFFIC SAFETY AND CONSTUCTION VEHICLES

Contractors, vendors, and visitors shall comply with the requirements of all federal, state, and local laws, rules, and regulations pertaining to safe vehicle operation and shall only use the vehicle for the purposes for which it was designed.

- No person shall be allowed to ride on the top, running boards, fenders, hood or in the back of any vehicle, unless it is specifically designed for such a purpose.
- No person shall be allowed to ride in the bed of a flatbed, dump, or pickup truck.
- Any contractor walking next to, in front of or behind any construction equipment/tool on any named street must be escorted by a vehicle. This vehicle must be in front.
- When provided in the vehicle, seat belts must be worn on Metro property by all drivers and passengers when operating motor vehicles, *including* OHVs and carts.
- Always yield to pedestrians and bicycles while driving on Metro property.
- Be cautious when driving in low light and dark conditions, scanning for pedestrians and Metro cart traffic.

Wide, Heavy and Swinging Loads

- Trucks or other vehicles shall not be overloaded with passengers or materials. This can be based on the towing capacity, load rating, or capacity listing.
- All loads shall be adequately secured. (Holding on to the load by hand is not adequate.)
- Any projections outside the transporting vehicle that create a risk to other equipment, vehicles or people shall be flagged with a red flag.
- An escort vehicle/person must stay *in front* of a vehicle that is transporting any wide, heavy, swinging and/or awkward loads on any named roads and in high pedestrian areas on the plant site. This includes loads carried by construction-type vehicles

(forklifts, front-end loaders, trucks, etc.). The escort vehicle/person must identify any hazard that could be struck by the load and mitigate it.

- When any lane of traffic is blocked by construction equipment or vehicle(s) for an extended period or when the construction equipment obstructs the view of other drivers, active traffic control must be in place at all times. This may include using flaggers, especially on busy roads. In this requirement, contractors should be cognizant of any equipment attachments that may extend into the lane of traffic.

Earth Moving Equipment

- Operators must wear seat belts, if they exist or are intended to be part of the equipment.
- All bidirectional machines must be equipped with a working distinguishable horn or alarm.
- All machines must follow all traffic rules on Metro Property, observing stop signs and speed limits.
- It is encouraged that operators of earth moving equipment work in a purposeful manner, aware of all activities around them including Metro carts and OHVs.

Speed Limits

- Observe all posted speed limits, traffic signs, and barricades.
- The speed limit on Main Street is 25 MPH. All other areas are 15 MPH.
- Speed limits apply to all motorized vehicles. Speeds are checked by radar and will be strictly enforced.
- Any speeding violation will be reported to the contractor superintendent/ project manager as well as Metro Sponsor.
- Repeat offenders will not be allowed to drive on the property. This means that if they drive to the plant site, they will have to find parking offsite and either carpool or walk to the jobsite.

Parking

To maintain safe emergency egress and limit the risk associated with vehicle traffic on all roads, contractor vehicles shall not park in any lane of traffic on any named road. Vehicles may not block any emergency egress into or out of any occupied building or area. It is acceptable to park temporarily on roads for the sole purpose of loading and unloading tools and equipment from the vehicle to a work area. In rare cases, exceptions can be made through Metro Sponsor.

Personal or non-Metro vehicles are not permitted to park on any named street for longer than 15 minutes. When parking in the street, these vehicles must turn on hazard lights and/or strobe lights and park in a well-lit and clearly visible location by traffic from both ways.

All vehicles must be parked in designated areas as defined by signage, surface markings or as determined by Metro Sponsor.

All personal vehicles must be parked near contractor trailers, laydown areas or another predetermined location per Metro Sponsor. These vehicles may NOT be parked near any process areas or buildings. Any unmarked (without company logo) vehicle will be deemed a personal vehicle unless the equipment/tools in the vehicle is necessary for the work being conducted, such as a welder or generator.

Only contractor company-owned vehicles (signed with company logo) including contractor OHVs may be parked in/next to process areas/buildings. A contractor may elect to shuttle workers from personal parking areas to worksites so long the shuttle vehicle also adheres to these parking requirements.