

4 September 2019

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Corporate Environmental Manager

Environmental Implemented on Construction Sites

BUILDING A WORLD OF DIFFERENCE®



BLACK & VEATCH

Fines and Penalties

- OSHA

- Other than Serious
 - \$12,000 max, per violation
- Serious
 - \$12,000 max, per violation
- Willful
 - \$120,000 max, per violation
- Repeat
 - \$120,000 max, per violation
- Failure to Abate
 - \$12,000 per day
- Criminal (willful that causes a death)
 - \$250,000 for individual and 6 months in prison
 - \$500,000 for Corporation

- EPA

- RCRA – Hazardous Waste Storage, Management, and Disposal
 - \$71,264 per day, per violation
- Clean Air Act
 - \$95,284 per day, per violation
- Clean Water Act
 - \$52,414 per day, per violation
- Safe Drinking Water Act
 - \$54,789 per day, per violation
- TSCA
 - \$38,114 per day, per violation
- EPCRA and CERCLA
 - \$54,789 per day per violation
- FIFRA Pesticide Regulations
 - \$19,057 per day, per violation



ENVIRONMENTAL STRUCTURE AND ROLES

- **Corporate Environmental**
- **Group Environmental Managers**
- **Site Environmental Managers**
- **Permitting Groups**
- **Remediation Groups**



Permitting Requirements

Permitting Requirements

- **At beginning of the project:**
 - Permits acquired either by the contractor, the Client, or third party
 - Permits must be reviewed and requirements understood
 - If not disclosed by client, ask for the supporting documentation and plans that are required by the permits
 - Discuss implications of startup/commissioning if necessary and whether modifications are needed.
- **Recommend permits are reviewed to avoid unnecessary problems later.**

Permitting Requirements

- Throughout project:
 - Understand what the permits require during construction and startup/commissioning
 - Understand the testing and reporting requirements by the contractor and the client
 - Do not assume if not stated in the permit
- Any unexpected non-compliance with any of the permits or regulations must be reported immediately and proper notifications to the client given in accordance with permit requirements.
- Any planned activity that may require operating outside allowed conditions under permit requirements, must be coordinated with the contractor and the client so proper advance notice to regulators can occur.
- At end of project:
 - For permits in contractor's name, ensure that permits are terminated or closed as appropriate



Required Documents

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REQUIRED ENVIRONMENTAL DOCUMENTS

- **Stormwater Pollution Prevention Plan (SWPPP)**
- **Spill Prevention Control and Countermeasures (SPCC)**
- **Emergency Action Plan (EAP)**
- **Environmental Operations Plan**
- **Some states have combined**

Additional:

- **Land Development Plans**
- **Stormwater, NPDES, and Air Permits, EPA ID, Waste Management Plan**
- **Local requirements (i.e. Conservation Districts, County Health, Fire Department, etc.)**



Hazard Communication – Site Specific

SITE SPECIFIC HAZARD COMMUNICATION

- **Corporate Policy and Procedures**
- **Site Specific Chemicals and Hazards**
- **Site Specific storage locations**
- **Site Specific response materials and EAP procedures**
- **Site Specific emergency responders and contacts**

CHEMICAL MONITORING/IH REQUIREMENTS

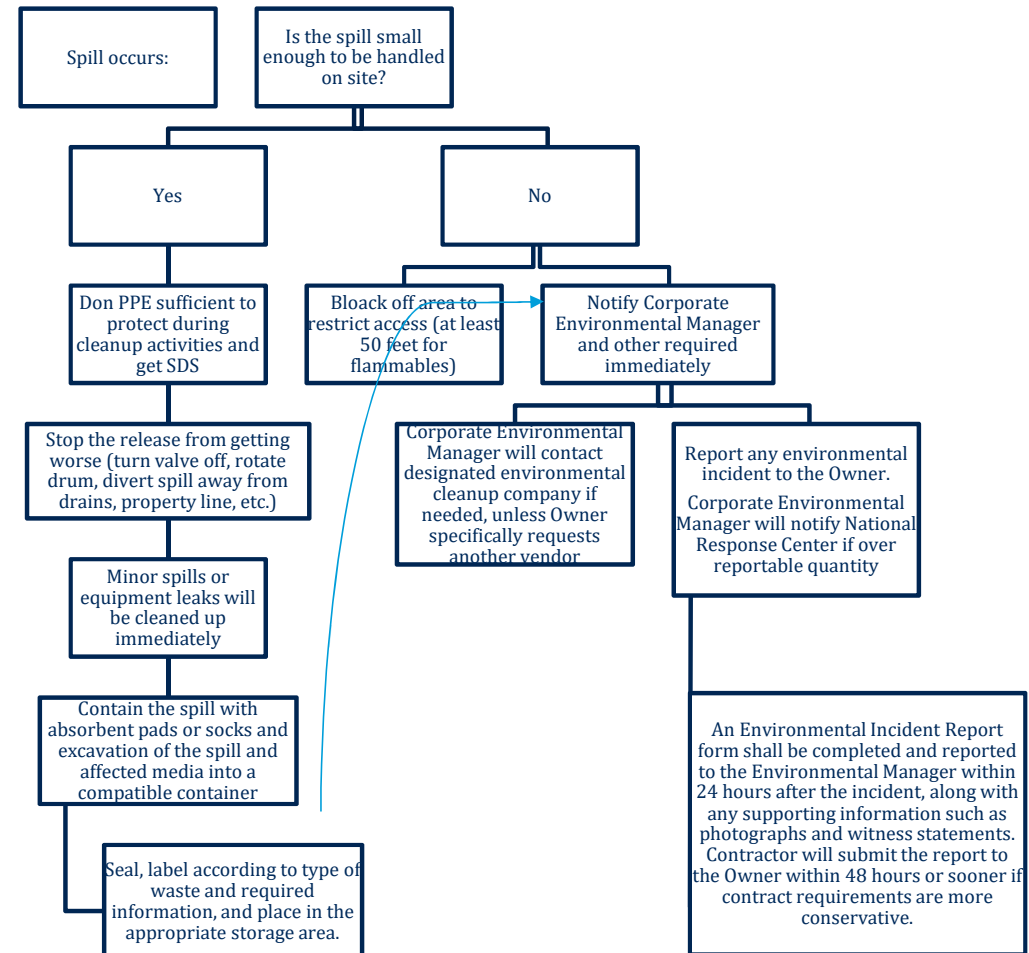
- All chemicals – SDS on site and available
- New chemicals
 - Must inform all personnel that may be working with or around the chemicals of the hazards and requirements for those chemicals.
 - Ensure you have a SDS prior to it being accepted on site
 - Do not accept chemicals without knowing it is required and when.
Commonly once it is accepted, it cannot be sent back
 - Ensure monitoring equipment that can detect the new chemical at levels preventing overexposure of employees in the event of a release is on hand.



Reporting and Advance Notifications

REPORTING AND ADVANCE NOTIFICATIONS

- You must have a reporting procedure in place if an unexpected event occurs.
- If an exception to permit conditions can be foreseen, advance notification must be given to the client and the regulating authorities.





Environmental Concerns and Wastes

Handling of Contaminated Materials – Client's

- Any waste managed on site, must be managed under their EPA ID and Name.

Contractor SHOULD NEVER TAKE OWNERSHIP OF WASTE unless specifically contracted to do so.

- Understand the contractual relationship of handling waste.
 - Will contractor give the waste to the client and they manage? (Preferred)
 - Will contractor manage the waste and send out under their name?
 - Will contractor manage the waste and send out under our name?
- Contaminated soil
 - Client should do cleanup/remediation unless managed by contractor remediation groups and mutually agreed upon.

Hazardous Waste – Generator Status

- Active Facilities –

- Does Client already have an EPA ID Number?
 - Generator Status? (VSQG, SQG, LQG)
- Will activities affect that status?
- Cannot get another EPA ID Number if one already exists.
- Will they manage the waste or the contractor?
- Client must sign Manifests.

EPA ID Numbers are assigned to an address. Not an entity.

- New Facilities –

- Has an EPA ID Number been applied for?
 - For what Generator Status?
 - Will activities during Construction be the same Generator Status?
- If not, request that they do so. If they refuse:
 - Attempt to stay under VSQG Status.
 - Temporary EPA IDs
 - Need to manage within criteria time constraints.
 - Close out EPA ID Number at end of project.

Types of Environmental Concerns and Wastes

- Stormwater
- Wastewater
- Process Water
- Sewage
- Air
- Waste Materials
 - Hazardous
 - Non-Hazardous
 - Recyclable
 - Used Oil
 - Universal
 - Solid
- Odor
- Hazardous Materials
 - Corrosive
 - Flammable
 - Fuel Storage
 - Paints
 - Cylinders
 - Health Hazards
 - Marine Pollutants
- Oil Storage
- Industrial Hygiene
 - Silica
 - Asbestos
 - Lead
 - Beryllium
- Contaminated Soil/Water



Waste Streams DO NOT MIX – LOGIC VS. REGULATIONS

- **Hazardous Waste:**
 - **Do not mix materials from different processes**
 - **Oil and antifreeze should not be combined**
 - **Liquid and solids should not be mixed**
 - **Do not combine materials to make larger containers unless they are the exact same material with no contamination**
 - **Cost implications**
 - **Safety**
 - **Regulatory requirements - treatment**

Disposal

- Using a designated waste disposal company limits the liability and risk associated with using multiple firms.
- All profiles should be reviewed and signed by Corporate Environmental or designated professional to ensure they are accurate.
- Only DOT/Hazmat trained personnel can sign Manifests or DOT BOLs

DOT/RCRA/HAZMAT -This applies *EVEN IF ACTING AS AGENT FOR THE OWNER.*

- Anyone signing a hazardous manifest **MUST** have DOT training and RCRA Training.
 - **If you use an outside company to train your professionals, you must have a document that designates them to certify employees on your behalf. After completion of training, a copy of the training certificate and contractor certification letter must be maintained available in the event of an inspection by DOT or USEPA.**
- All managing hazardous waste must have the RCRA Training even if they are not signing documentation.
- All employees must complete site Hazard Communication training
- Daily STAs should include chemical hazards, PPE, and precautions necessary for the tasks .

INVENTORY

- Facilities with chemicals in quantities that equal or exceed the following thresholds must complete Tier II reports by March 1st of each year and submit to the State Emergency Response Commission (SERC), Local Emergency Planning Committee (LEPC), and Local Fire Department:
- Contractor will need to submit chemical inventory quantities and information as requested to the client as required under these regulations for their reporting purposes.
- An inventory of all Hazardous Materials on site must be maintained at all times.

Types of Environmental Concerns and Wastes

- Contractors should follow industry accepted colors to identify hazardous materials on site:

| | |
|--------------------------|---|
| Yellow | Flammable Liquids |
| Red | Paints, Inks, and other combustible liquids |
| Blue | Corrosives and hazardous liquids |
| Green | Pesticides and insecticides |
| Silver or Neutral colors | Laboratories |
| White | Waste |



Flammables

- Flammable storage cabinet should have the following:
 - Flammable signage;
 - Safety contact information posted on the outside of the cabinet;
 - Must be grounded/bonded; and
 - Inventory of all hazardous materials included in site inventory lists.



Flammables

- Do not store gas cans outside or transport in the back of a vehicle unless transporting directly to/from equipment for use.
- Chemicals stored in containers larger than 25 gallons must be placed in secondary containment and protected from the elements.
- Storage tanks of any two flammable or combustible liquid storage tanks must be placed at least 3 feet apart.
- LPG containers must be 20 feet from flammable liquids (unless a fire wall is in between).

Universal – Fluorescent Bulbs

- Recommend bulbs being purchased should be Non-PCB/Non-Mercury containing (Green)
- If bulbs are removed and are Non-PCB/Non-Mercury containing - solid waste.
- Universal Waste Storage Boxes will be based on the size of your bulbs, double walled and properly labeled with Universal Waste labeling and shipping information.
 - Upon putting the first bulb in the box, the date should be written on the accumulation start date.
 - Once full or within one year from start of accumulation, shipped for proper disposal.

Universal – Batteries

- Recycle:
 - Used nickel-cadmium (Ni-Cd) batteries, used small sealed lead-acid (SSLA) batteries, and certain other regulated batteries that are used on site.
- Alkaline batteries used in small appliances such as flashlights and equipment:
 - Manufactured after 1992 - dispose in the municipal trash in ones or twos.
 - Manufactured prior to 1992 - contain mercury and other toxic materials requiring handling under either the Universal Waste Rule or as a hazardous waste, depending on state requirements.
- Unsealed lead acid batteries (used in vehicles, emergency generators and other equipment) - Manage as a RCRA hazardous waste or recycle. *Unsealed lead acid batteries do not have to be bundled as hazardous waste provided they are recycled properly through an approved recycler.*

Universal – Toner

- Toner should be returned to the supplier or Office Supply Store for recycling.

A rectangular label template for universal waste. The top half has a purple background with the word "UNIVERSAL" in white, slanted text on the left and the word "WASTE" in large, white, bold, sans-serif capital letters on the right. The bottom half has a white background with a purple border. It contains five lines of text with horizontal lines for input: "SHIPPER", "ADDRESS", "CITY, STATE, ZIP", "CONTENTS", and "ACCUMULATION START DATE". At the very bottom, the words "UNIVERSAL WASTE" are printed in large, purple, bold, sans-serif capital letters.

UNIVERSAL

WASTE

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

ACCUMULATION START DATE _____

UNIVERSAL WASTE

Universal – Storage and Labeling

Storage

- Universal Batteries and Bulbs should be boxed and/or on containment away from active areas in a designated closet or storage area .

Labeling

- All universal waste should have a universal waste label affixed. All the information must be filled out on the label. Universal Waste shall be shipped or taken off site for proper disposal in less than one year from the Accumulation Start Date. The Accumulation Start Date should be the date the first item is placed in the container.

**NON-
HAZARDOUS
WASTE**

OPTIONAL INFORMATION

SHIPPER

ADDRESS

CITY, STATE, ZIP

CONTENTS

Non-Hazardous Waste

- Must be separated from Hazardous Waste.
- Includes but is not limited to:
 - Contaminated Soil that does not carry any hazardous characteristics (testing done or generator knowledge)
 - Oily Rags
 - Oily Debris
 - Non-hazardous Paint
 - Concrete Washout
 - Other materials not allowed in the general solid waste
 - Unrecyclable Used Oil that is not contaminated by PCBs or other chemicals.
 - Non-hazardous paints

USED OIL

GENERATOR INFORMATION

COMPANY _____

ADDRESS _____

CITY, STATE, ZIP _____

SOURCE _____

CONTACT _____

Non-Hazardous Waste

- Used Oil includes oil that is not contaminated by PCBs or other chemicals.
- Used Oil is recyclable and should be managed as indicated in the Recyclable section below.
- Do NOT label Used Oil as “Waste Oil”.
- Used Oil must be labeled as “USED OIL” with this label or similar

Solid Waste and Recycling

- This includes general paper trash, plastic containers from oil after they have been completely emptied and drained, and non-contaminated/non-hazardous materials.
- Recyclable
 - Aerosol cans after punctured – *Dispose in metal recycling rolloff*
 - *Aerosol cans (NOT PROPANE CYLINDERS or other Hazardous) should be punctured to drain any residual propellant or paint using an aerosol puncturing system attached to a drum with charcoal filter. Empty cans can still contain propellant and must be punctured prior to recycling. A faceshield should be worn during puncturing. DO NOT DISPOSE BY WM BOX OR OTHER RESIDENTIAL MEANS*
 - Used Oil – if generating enough and arranged with waste disposal company
 - Metal
 - Pallets
 - Plastic
 - Other

Hazardous Waste – Listed Wastes

- The F-list (non-specific source wastes). This list identifies wastes from common manufacturing and industrial processes - known as wastes from non-specific sources. [40 CFR §261.31](#) .
- The K-list (source-specific wastes). This list includes certain wastes from specific industries. [40 CFR §261.32](#) .
- The P-list and the U-list (discarded commercial chemical products). These lists include specific commercial chemical products in an unused form. Some pesticides and some pharmaceutical products become hazardous waste when discarded. [40 CFR §261.33](#) .

Typical Hazardous Wastes on Construction Sites

- Concrete curing compounds
- Asphalt products
- Paints
- Pesticides or herbicides
- Plumbers glue
- Solvents
- Lubricants
- Unpunctured aerosol cans (even empty)
- Lead containing materials/paints
- Asbestos containing materials, etc.
- Etc.

So how do we manage these wastes on site when multiple contractors and companies are working on the same site?

Hazardous Waste – How are Satellite Areas used on construction sites?



Hazardous Waste – What is a Satellite Area?



Hazardous Waste – Using Satellite and Accumulation Areas

- *Initially entered into Satellite Area unless filling an entire container.*
- *Once full (one container up to 55 gallons) or 1 year old, must be moved to Accumulation Area (within 3 days) and entered on Inventory Sheet to await pickup for disposal.*
- *Timeline for removal from Accumulation area depends on generator status*
 - *VSQG/SQG – 180 Days*
 - *LQG – 90 Days*

Hazardous Waste – No Satellite Areas

HAZARDOUS WASTE

FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR
PUBLIC SAFETY AUTHORITY OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION:

NAME: _____

ADDRESS: _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. _____ EPA WASTE NO. _____

ACCUMULATION START DATE _____ MANIFEST TRACKING NO. _____

[_____]

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

- If you are not using Satellite Areas, wastes are stored directly in the Hazardous Waste Accumulation Area. In that case, you can use the label to the left. The date that you first deposit waste into the container must be entered on the Accumulation Start Date. The waste must be shipped off site within 90/180 (depending on generator status) days.
- **All Hazardous Waste Labels must have the statement “HAZARDOUS WASTE FEDERAL LAW PROHIBIT IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE, PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY” and accumulation start date.**

Satellite Area Must Be Posted with:



Accumulations Area Must Be Posted with:



Both areas must be posted with signage for the appropriate hazard:

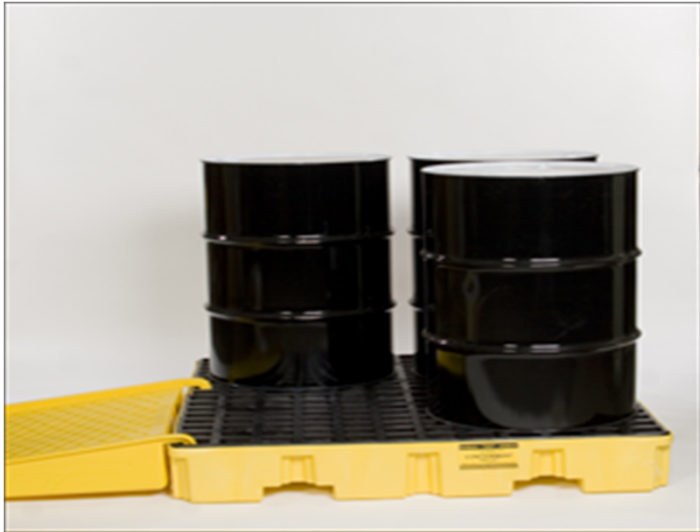


Hazardous Waste – Signage and Storage

- Hazardous Waste Areas must be covered and protected from damage. The hazardous waste must have spill containment capable of containing 110% of the largest container.
- Drums and closure must be RCRA Compliant.

Hazardous Waste Areas

- An Inventory Log must be posted in the Hazardous Waste Accumulation Area with:
 - Date
 - Description of Waste
 - # Pounds of Material.
- If you are filling containers in the Hazardous Waste Accumulation Area, indicate on the log the volume each month, to ensure proof of generation status.
 - If status changes, a new Notification 8700-12 must be submitted.
 - At the end of a project or after waste generation ceases or decreases, a new 8700-12 form should be submitted closing it out.



Hazardous Waste Areas

- All hazardous containers must have containment of at least 110% volume of the largest container.
- Containment for drums/containers can be constructed or you can use a containment pallet.
- If using a Conex or enclosed room, it must have ventilation with explosion proof fan, temperature control, and explosion proof lighting.
- Flammables must be grounded and bonded.
- All waste areas must be locked at all times when not in use to prevent unauthorized access.

Hazardous Waste Areas

- **Contact information for those responsible for hazardous waste on site must be posted at all Satellite Areas and Hazardous Accumulation Area with mobile emergency numbers.**
- **IN CASE OF EMERGENCY OR ISSUE FROM THIS AREA, PLEASE CALL:**
 - **Environmental Manager**
 - **Site Safety Manager**
 - **Project Manager**
 - **Fire Chief**
 - **Client Contacts**
 - **Etc.**

Hazardous Waste Areas

- Must be stored at least 4" off the ground.
- Liquids should be stored on containment pallets.
- A three foot aisle should be between all pallets for access
- 12 foot access in front of the storage areas should be clear for emergency vehicle access.
- Labels should be turned outward, visible and in good condition.
- Materials should be separated by type on different containment pallets, or in separate locations. (i.e. Corrosives, Flammables, Acids, etc.)
- Non-hazardous waste should be separated from hazardous waste and stored in separate locations with appropriate signage.
- Used Oil should be separated from new oil.



Required Inspections

Required Environmental Inspections

- At least weekly **documented**:
 - Environmental Inspection
 - Stormwater Inspection
- Daily (undocumented or documented):
 - Environmental Inspection
 - Stormwater Inspection (Rain Events require documented)
- SWPPP or SPCC Requirements may require additional inspections
- Document deficient items
- Document corrective actions – **AND COMPLETED**
 - Documented deficiencies without corrected actions just document non-compliance



Any Questions???

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4 September 2019

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