Gasoline Tanker Rollover

When the Hazmat Team is dispatched to an incident involving a gasoline tanker rollover, which is not on fire, it will be necessary to off-load the gasoline before up righting the tank. Trying to upright a full gasoline tanker may cause the tank to break open with catastrophic consequences. In some cases the valving on the tank can be used to remove the product, but in most cases drilling into the tank is necessary.

a. Useful Contacts:

DEHQ-HIRT (A Phone)	(619) 778-3591
DEHQ-HIRT (B Phone)	(619) 778-3937
Chevron Bulk Terminal	(619) 232-3334
Chevron/Texaco Corporate	(925) 842-1000
BP San Diego Terminal	(619) 738-7401
CHEMTREC	(800) 262-8200
Kinder Morgan SD Pipeline	(619) 283-6511

b. Action Plan Considerations:

*Begin Site Safety / Incident Action Plan.

Initial Size-Up

Is the tanker leaking? Y/N?

Is the tanker (Cab vs Fuel) on fire? **Y/N, if Yes See Page 9-10**

Are there Rescues, Injuries, or Exposures? Y/N

Is the Tanker(s) full, empty, partially full, _____.

Type of fuel being carried. _____.

Zones, Immediate Evacuations_____, Shelter in Place_____.

IMMEDIATE SAFETY

- Ensure all personnel in exclusion (hot) zone are dressed in full turnouts and using SCBAs.
- Secure any potential ignition sources, power to any utility vaults, street lights and traffic control that may have been impacted by the rollover or fuel.

- Beware tanker may be unstable in current orientation, stabilize as needed.

Resource Requests

- *Consider initiating callback of HIRT staff. Offloading operations usually require a minimum of 10 (preferably 14) staff on scene to fill all of the assignments. (Hazmat 1, Eng 45, and DEHQ)

- Foam- adequate quantity and type for fuel type? Class B, AFFF, Alcohol Resistant are best for vapor suppression

- Request Rescue 28 or 43 for Large Foam Requirements.

- Request Rescue 4 for assistance with Stabilization/Cribbing

- MSA Safesite Wireless Air Monitoring Equipment (SDFD or DEHQ)

- Request IC on scene to contact owner of tanker, and request they respond to scene.

- Cleanup Contractor- Must be under contract of the Responsible Party. The contractor must have adequate manpower, equipment (tanker trucks/ Drums/roll off bins), and quick response time. Truck with vapor recovery will minimize flammable/toxic vapor release.

- Insure Adequate Vactor Trucks are responding Avg capacity 2500-5000 gal. Two or more may be needed for released fuel/runoff, and product off load. Request extra vacuum hose (100 feet or more) and fittings are sent with the trucks.

- Large tow wreckers to be used for stabilization during offload and removal of the tanker.

- Local Public Works for sand and Storm drain Maps (CalTRANS for sand on Freeways)

***Monitor the area for flammability:**

Assigned to: _____.

- ☐ Continuous perimeter monitoring
- ☐ Exclusion (hot) zone monitoring – around rolled over tanker – during offloading operations
- ☐ Receiving truck monitoring – verify plume expansion around vapor exhaust vents
- ☐ Depending on wind conditions, and fuel type request DEHQ or SDFD bring the MSA wireless chemical detector units for deployment at the scene,
- ☐ Fuel Runoff- Monitor all locations storm drains, outfalls, creeks, utility vaults, where fuel may have runoff/entered.

***Foaming operations:**

Assigned to: _____.

Unless necessary Do Not Foam the Top of the Tank this creates a high slip hazard

- ☐ Staffed foam lines in place.
- ☐ Consider calling in Rescue 28/43 for large foam requirement (AFFF, Class B, AFFF, Alcohol Resistant)
- ☐ Prior to entry, if flammable atmosphere, foam should be applied

    1) To standing pools of flammable liquid

    2) To areas of potential electrical shorts (Cab, Blinking lights, Battery?)

    3) To areas saturated with fuel (open ground)

***Release Mitigation, Off site Consequences:**

Assigned to: _____.

- ☐ Dam and Dike released fuel on streets and in storm drains, foam standing pools of released fuel.
- ☐ Send Survey teams down range to chase the release and assess for safety hazards, note additional areas impacted by spilled fuel may need to be evacuated

***Notifications**

Assigned to: _____.

Notifications are the responsibility of the responsible Party, assist as needed, and make notifications if they are unable/unwilling. Based on the fuel released the areas impacted by the release consider Notifications to;

- ☐ NRC
- ☐ Cal-OES
- ☐ Cal-Fish and Wildlife, and and/or US Fish & Wildlife
- ☐ Coast Guard, if the release will impact a navigable water way.
- ☐ Local Storm water Authority
- ☐ RWQCG
- ☐ All Impacted Property Owners
- ☐ APCD
- ☐ Additional Notifications may be required, see Spill Notification Guidance

Drilling and Offload Operations-

Secure/Survey Tanker:

Assigned to: _____.

- ☐ Disconnect Batteries/power supplies if safe to do so BE AWARE OF VAPORS
- ☐ Shutoff/Close Emergency Shutoff Valve Control
- ☐ Check for leaks on tanker, plug and patch all leaks
- ☐ Apply Dome Lid Clamps if necessary, it is better to put them on than not.
- ☐ Obtain Shipping Papers from cab, if safe to do so, compare contents with Hazmat Group Sup and IC.
- ☐ Check Spec Plate for "AL"
- ☐ Survey tanker with Thermal Image Camera TIC, to help verify quantity in tanks.

Stabilize Rolled Over Tanker:

Assigned to: _____.

- ☐ Cribbing in place, use Wheel Chalks for temporary cribbing if necessary.
- ☐ Request Rescue 4 for assistance with Stabilization/Cribbing.
- ☐ Is there tension on the Tank Trailer Tow Bar, secure if necessary. When the tow bar of the trailer becomes twisted it is very difficult to disconnect because it is under tension. It should not be disconnected until after the empty tank is up righted or when safe to do so.
- ☐ Tow Trucks (possibly) to act as stability points to prevent shifting.
- ☐ Secure multiple directions from movement during drilling operations

Bonding & Grounding:

Assigned to: .

- Set grounding rod into ground (driven at least 2 feet into the ground), or locate suitable water line, etc. Use water to wet the ground around the grounding rod to improve conductivity.
- Attach grounding cord to rolled over vehicle – first,
- Then attach grounding cord to grounding point.
- Attach grounding cord to receiving vehicle – first,
- Then attach grounding cord to grounding point.
- Attach Bonding Cable to rolled over vehicle – first
- Then attach Bonding Cable to receiving truck.
- Attach Bonding Cable to Stinger, then attach to either grounded truck.

Drilling Operations- Assigned to: _____ .

- Ladder on both sides of tanker.
- Rubber mat on top of tanker
- Verify Number of Compartments
- Mark and Identify Baffles, and bulkheads
- Mark/Identify Drill Locations typically in line with dome covers.
- Are their side holes in the baffles to allow the fuel to drain when on its side? Check the rear of the tanker "Dots" at 9 o'clock, 12 o'clock and 3 o'clock are in indicator. If not the space between each baffle may need to be drilled.
- Ensure drill, air tanks, hole plugs, flashlight and other equipment is fully functional.
- Two person drilling teams, with a two-person backup team in place.
- One person drills and the other uses the squirt bottle to lubricate and cool the hole-saw.
- After each hole is drilled, plug the hole before drilling the next
    - If diameter of hole is the same as stinger then drill a minimum of two holes for offloading tankers (vacuum break)
- Continuously inspect Plugged & Patched Leaks

Offloading Operations:

Assigned to: _____.

- When possible use stinger attached to vacuum truck hose for off-loading product.
- Lash stinger and hose to overturned vehicle prior to opening vacuum on receiving truck
- Clear all none essential personnel from immediate area before offloading if possible.
- Vapor Exhaust- Scrub with an activated carbon filter, locate the exhaust at least 50' downwind away from ignition sources both up and down wind. Monitor vapor exhaust.
- Re-apply cap after removing product.
- Verify fuel is offloaded from all tank, compartments, and space between baffles

Up righting rolled over tanker:

Assigned to: _____.

- After all obtainable product has been off loaded secure plugs in drilled holes
- Confirm area is free of explosive gases by monitoring with CGI.
- Reapply foam to area – as needed.
- Consider foaming the Cab of the truck when and if the power cannot be shut off safely.
- Release area to tow truck operators to start the up righting operations
- Continue monitoring area with CGI

Gasoline Tankers Impacted by Fire

Vehicle Cab or Tire Fire- No Gasoline Product on Fire:

If the Gasoline tanker is involved in an accident where fire/flame impingement on the tank and no fuel is leaking from the tanker. Immediate action should be taken to put out the fire and cool the portions of the tanker from flame impingement.

- Be Advised tank failure will occur first in the head space above the fuel level.
- Advise First responders to take immediate action to put the fire out and cool the exterior of the tank with water streams.
- Have sand placed and ready to protect storm drains if necessary.
- When the fire is out conduct an Damage Assessment:
- Inspect the tank to insure there are not leaks, pay close attention the “Wet Lines”
- Check the status of the emergency shutoff valve Open? or Closed?
- Is the tanker is fit to transport? If not, offload the contents.
- Inspect the exterior of the tanker with a TIC to determine the temperature of the product and the temperature of the skin of the tank.
- Tanker should be allowed to cool to ambient temperature before any offload or transport operations.

Fire- Fuel Released & Burning-

With fires involving large quantities of hydrocarbon products, depending on the location, it may be more advantageous to take a defensive action and let the fire burn. A contained burning fuel fire with in a tank is preferable to an uncontained burning fuel fire. However, an aggressive attack in an attempt to extinguish or control the fire may occur while rescue efforts are underway and then switch to a defensive strategy.

- Evacuate/Shelter In Place and Monitor downwind as necessary
- Not advised to use water/foam to put out the burning tanker, as water enters the top of the burning tank it will settle to the bottom causing more burning fuel to be released.
- If a 2 tanker truck is involved and only 1 is burning: Advise First responders to take immediate action to cool the exterior of the tank that is not burning. Caution should be used so overspray/backsplash does not enter the tank that is on fire.
- If safe dam/dike burning fuel and runoff.
- Contained burning pools of fuel may be smothered with foam, use caution to not overwhelm the containment.
- Use of firefighting water should be done such that runoff does not push burning fuel further away from the incident.

Tech Ref/Other Considerations:

- Gasoline may contain alcohol. Alcohol is soluble in water and requires AR-AFFF

- Gasoline and ethanol fuels require vapor recovery operations for offloading, Diesel lines do not have vapor recovery.

- If tanker is only partially overturned, gravity flow may be an option for removing fuel from tank. Rate of flow on a tanker is approximately 600 gpm.

- Have responsible party bring sand for uprighting if all the fuel cannot be removed prior to uprighting.