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Natural Resources

Vapor Recovery

40 CFR 63 Subpart 6B & 6C

Carlton Flowers

Air Pollution Control Program

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

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40 CFR 63 Subpart 6B & 6C

2 Topics:

- Reasons for the Rule
- Regulatory Requirements

Why Vapor Recovery?

- Ozone Control Measure
- Air Toxics/HAP (hazardous air pollutants) Control Measure

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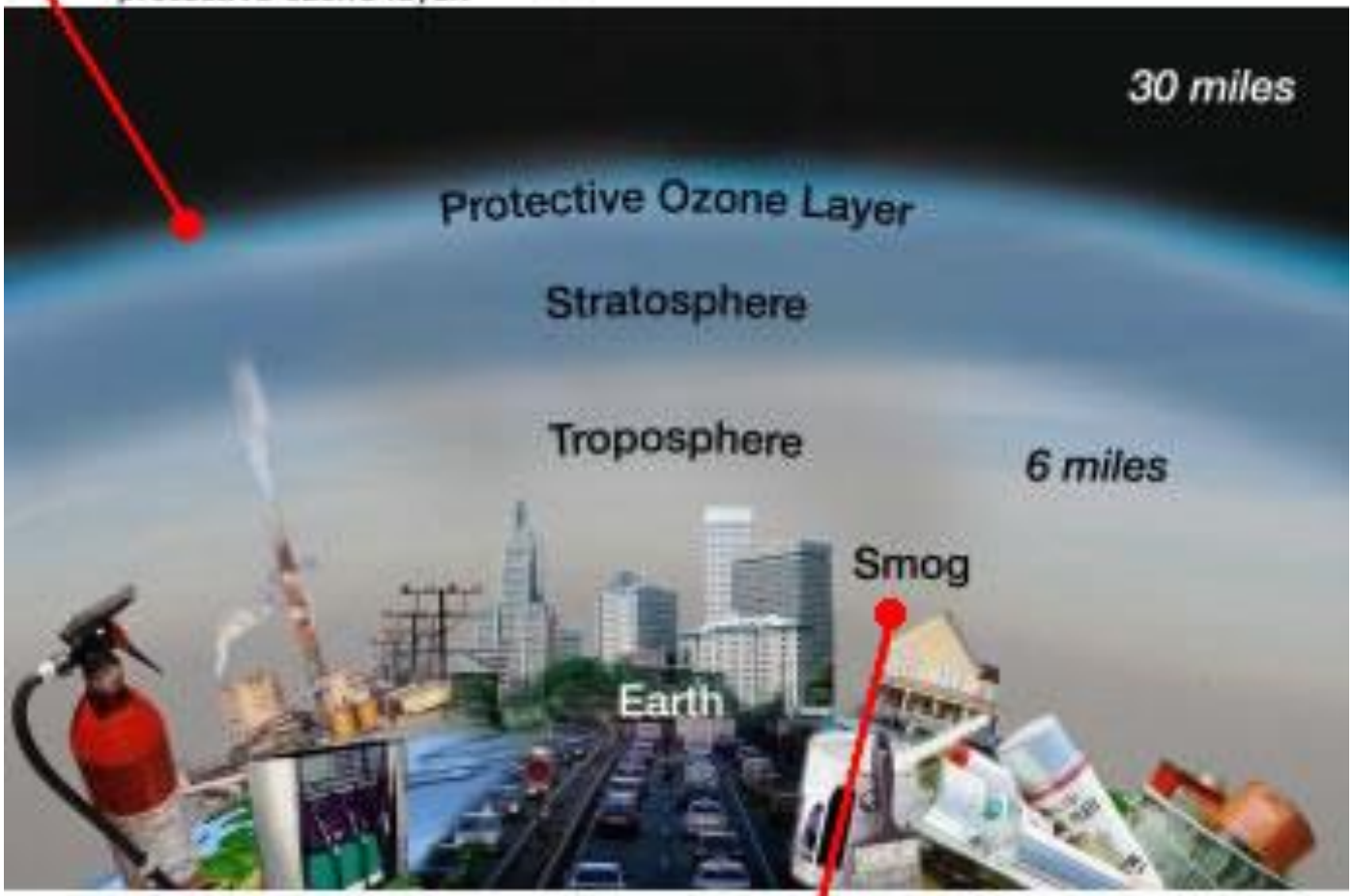
What is Ozone?

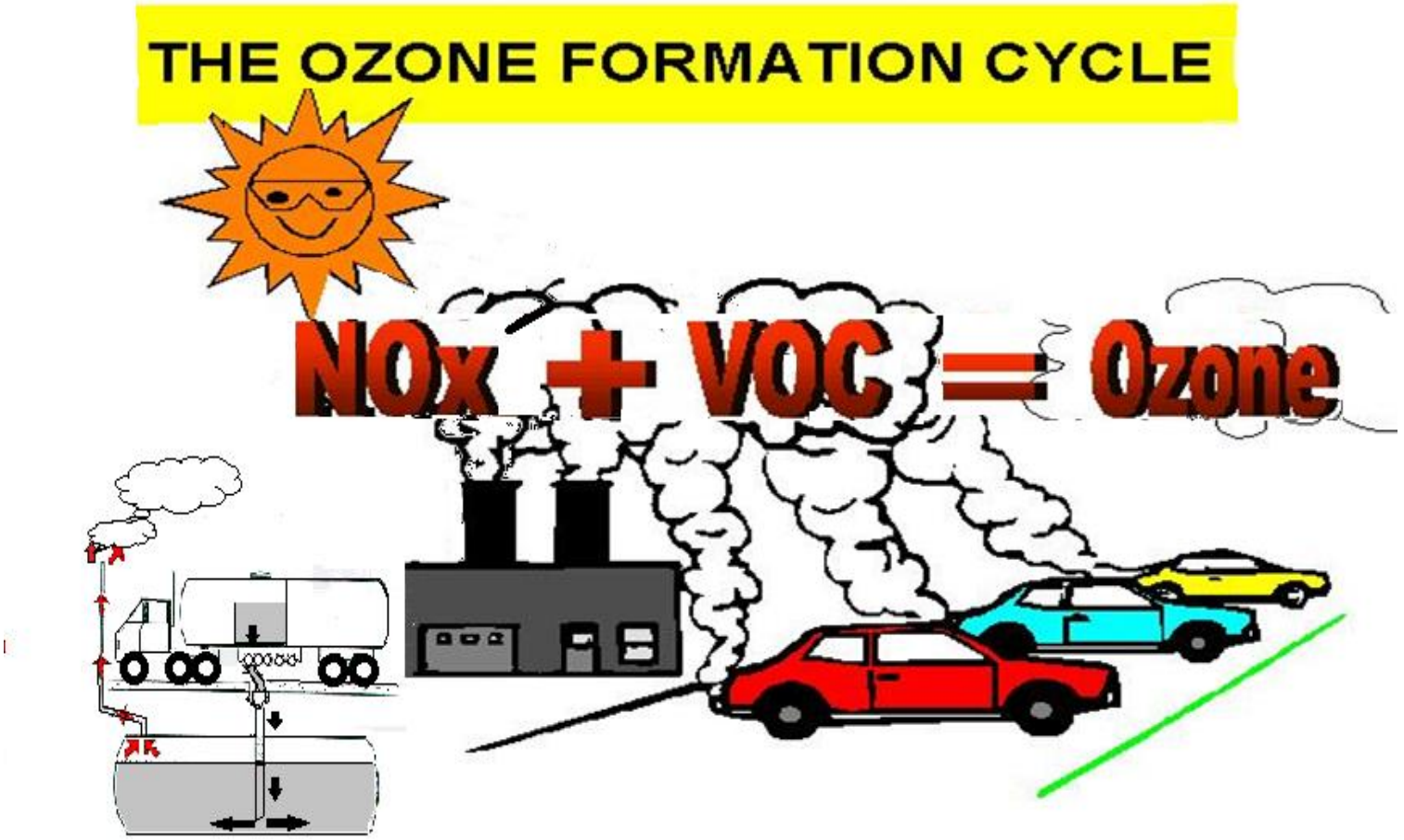
- Primary component of **smog**
- Ground level = harmful
- Stratospheric level = protective
- Formed from sunlight & 2 pollutants
- Can be high in both urban and rural areas due to transport

Too little there...Many popular consumer products like air conditioners and refrigerators involve CFCs or halons during either manufacture or use. Over time, these chemicals damage the earth's protective ozone layer.



Too much here...Cars, trucks, power plants and factories all emit air pollution that forms ground-level ozone, a primary component of smog.

Ozone formation process is complex .....



HAZARDOUS AIR POLLUTANTS (HAPS)

- Hexane
- Benzene
- Toluene
- Iso-Octane
- Xylenes
- Ethylbenzene
- Napthalene
- Cumene
- MTBE

MACT and GACT for HAPs

EPA develops standards for controlling air toxic emissions from source categories.

MACT: "Maximum Achievable Control Technology"

- Standards set for major sources
- Based on emissions levels

GACT: "Generally Available Control Technology"

- Standards set for smaller (area) *sources*

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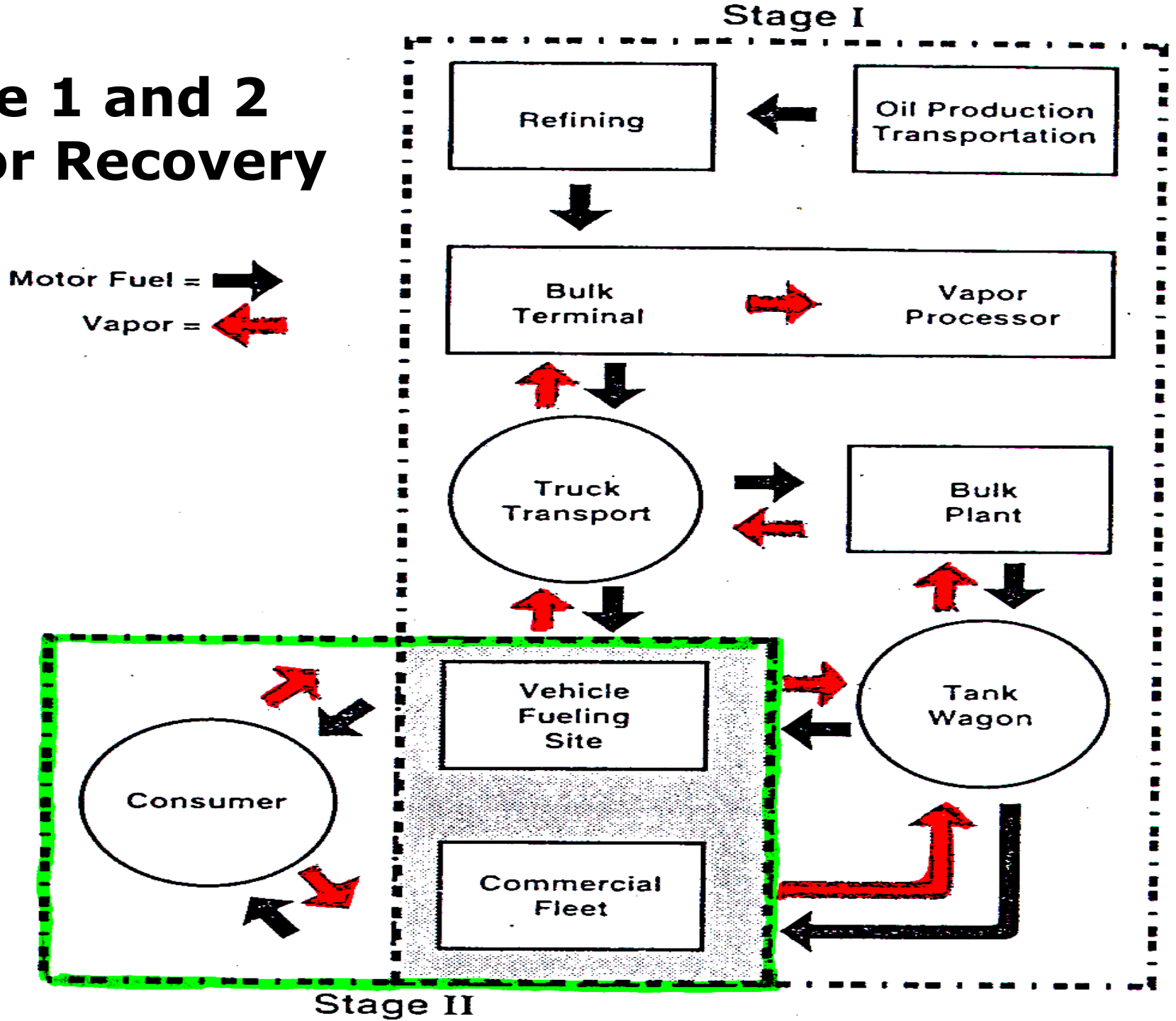
WHAT IS VAPOR RECOVERY?

A system that collects gasoline vapors at all points of transfer from the bulk terminal to the consumer and prevents their escaping to the atmosphere

System is divided into 2 distinct parts:

- **Stage I** – Bulk terminal to GDF
- **Stage II** – GDF to consumer

Stage 1 and 2 Vapor Recovery



Subparts 6B & 6C

GACT standards affecting gasoline distribution or dispensing facilities

6B

- Bulk gasoline terminals & plants
- Pipeline breakout & pumping stations

6C

- Gasoline dispensing facilities (GDF)

What does 6B Require?

What does 6B Require?

- **Bulk Gasoline Plants throughput**
  > 20,000 gallons per day
  - Storage tanks > 250 gallons, load using submerged fill (drop tubes)
  - Cargo Tank Loading Racks must also use drop tubes

What does 6B Require?

Bulk Terminals and Pipeline Facilities

- *Storage Tanks* **≥ 20,000** gallons
  - use specified floating roofs and seals or closed vent system
  - ***and*** control device to reduce emissions by 95%
  - cover the tank with a fixed roof
  - ***and*** close all openings when not in use

What does 6B Require?

Bulk Terminals and Pipeline Facilities

- *Storage Tanks* **< 20,000** gallons
  - cover the tank with a fixed roof
  - ***and*** close all openings when not in use

Other Requirements

- All Facilities
  - ✓ Monthly leak checks by smelling, listening to, and looking at equipment
- Cargo Tanks
  - ✓ Vapor tightness test (Method 27) required before loading at bulk terminals
- Loading rack control devices at bulk terminals
  - ✓ Tested and continuously monitored
- Closed vent systems/storage tank control devices
  - ✓ Test to show they meet emission limit

Other Requirements

- Storage tank roofs & seals at bulk terminals & pipeline breakout stations
  - ✓ Perform annual inspections
- Storage tank & loading rack control devices
  - ✓ Continuous monitoring for proper operation & compliance

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6B Submittal Requirements

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6B Submittal Requirements

Bulk Plants

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6B Submittal Requirements

Bulk Plants

KC & STL Non-Attainment Areas

- Initial notification not required

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6B Submittal Requirements

Bulk Plants

All Other Parts Of State

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6B Submittal Requirements

Bulk Plants

All Other Parts Of State

Has compliant drop tubes:

- Submit notification of compliance

Does not have compliant Drop tubes:

- Submit initial notification
- Submit notification of compliance when drop tubes installed

6B Submittal Requirements

Bulk Terminals

- ✓ If **not** meeting requirements, submit notification of performance test form before doing first test
- ✓ Semi annual compliance reports and excess emissions reports if applicable

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What does 6C Require?

6C Requirements

Monthly throughput < 10,000 gal

- ✓ Minimize spills
- ✓ Cover gasoline containers & storage tank fill pipes with gasketed seal
- ✓ Minimize gasoline sent to open collection systems

6C Requirements

Monthly throughput ≥ 10,000 gal

- ✓ Same requirements as previous, ***and***
- ✓ Load all storage tanks ≥ 250 gallon capacity using drop tubes

6C Requirements

Monthly throughput ≥ 100,000 gal

- ✓ Same requirements as previous, ***and***

6C Requirements

Monthly throughput ≥ 100,000 gal

Operate vapor balance system

- ✓ Meet specified enforceable state, local or tribal rule or permit ***–or-***

- ✓ Operates during storage tank loadings
- ✓ Includes specific equipment & work practices
- ✓ Is tested periodically
- ✓ Meets 95% control

Enforcement

- DNR has not taken Delegation
- EPA primary "Enforcer"
- All paperwork goes to EPA with copy to DNR

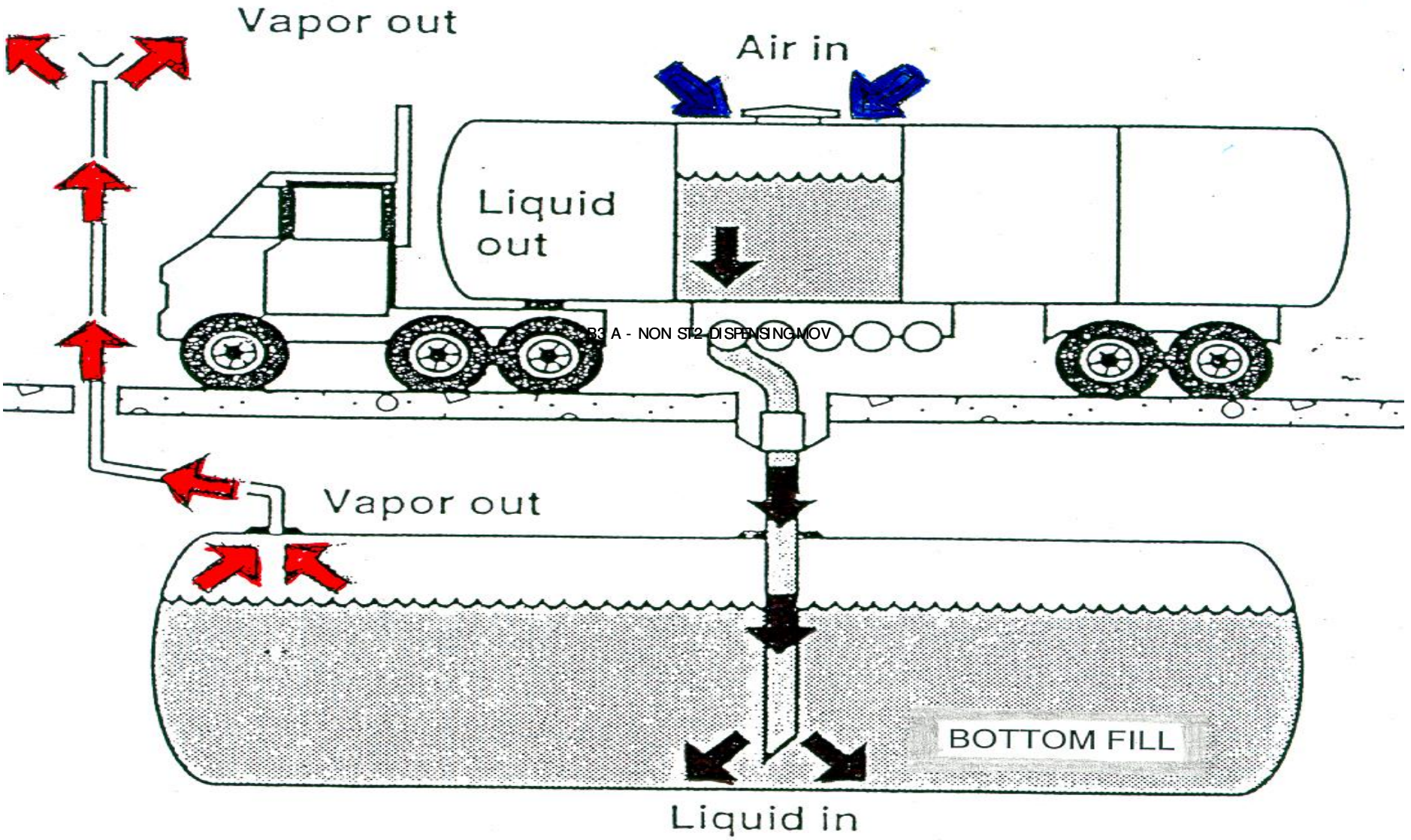
Stage I Vapor Recovery

- Vapor recovery systems
  - Two point
    - Separate risers for filling and vapor recovery

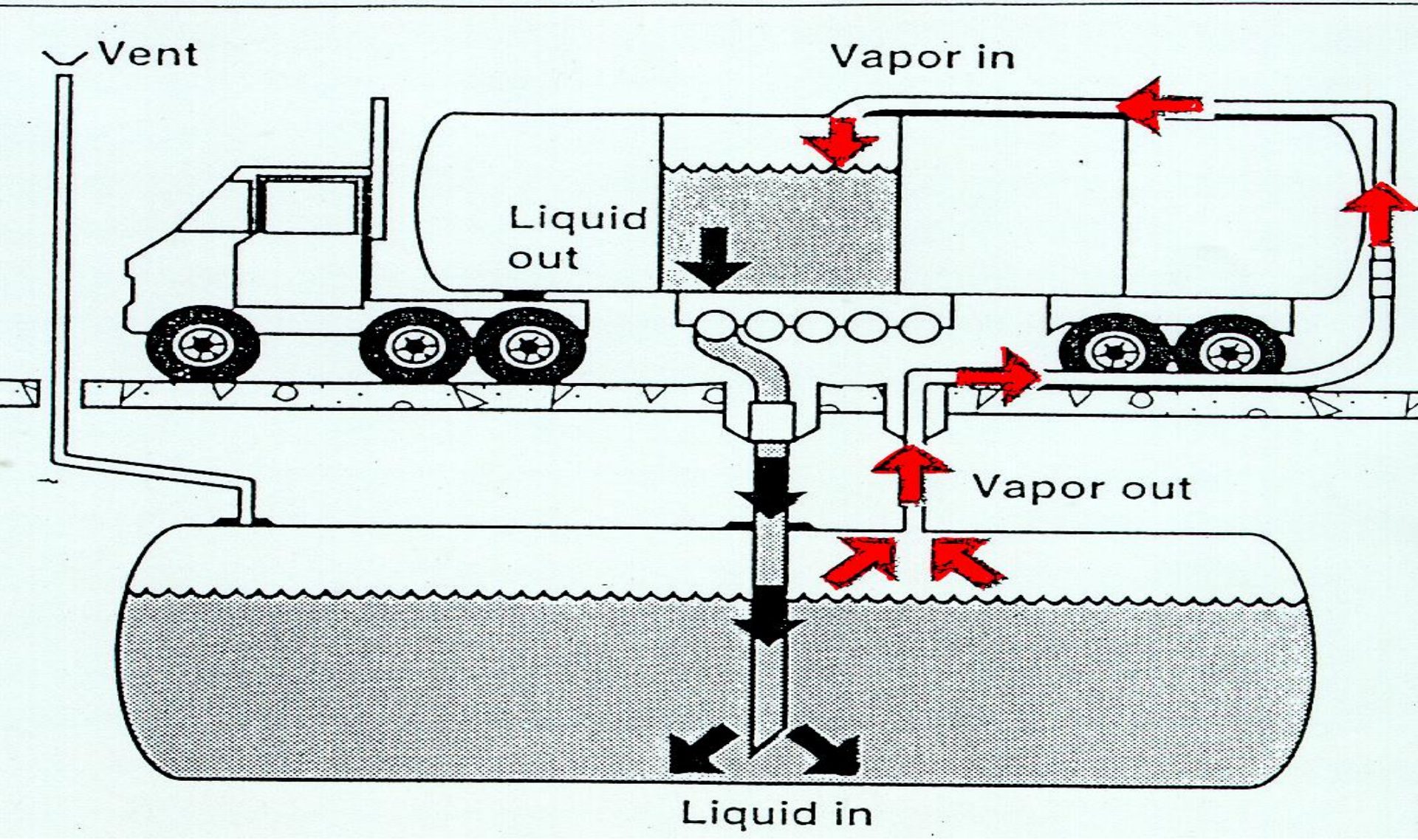
Stage I Vapor Recovery

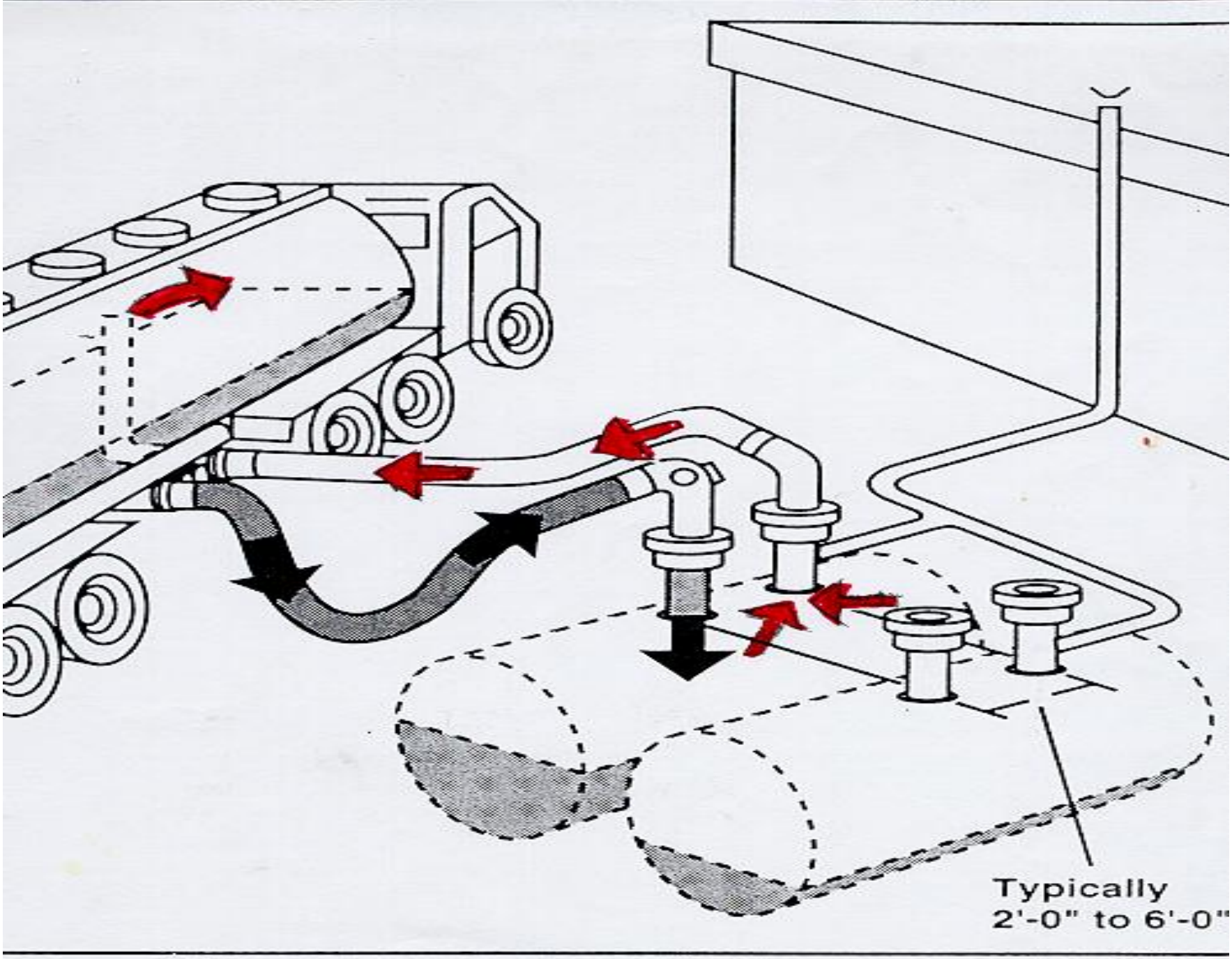
- Vapor recovery systems
  - One point
    - Co-axial tube-within-a-tube
    - Separate vapor recovery line for each tank being filled

UNCONTROLLED GASOLINE DELIVERY WITH DROP FILL TUBE

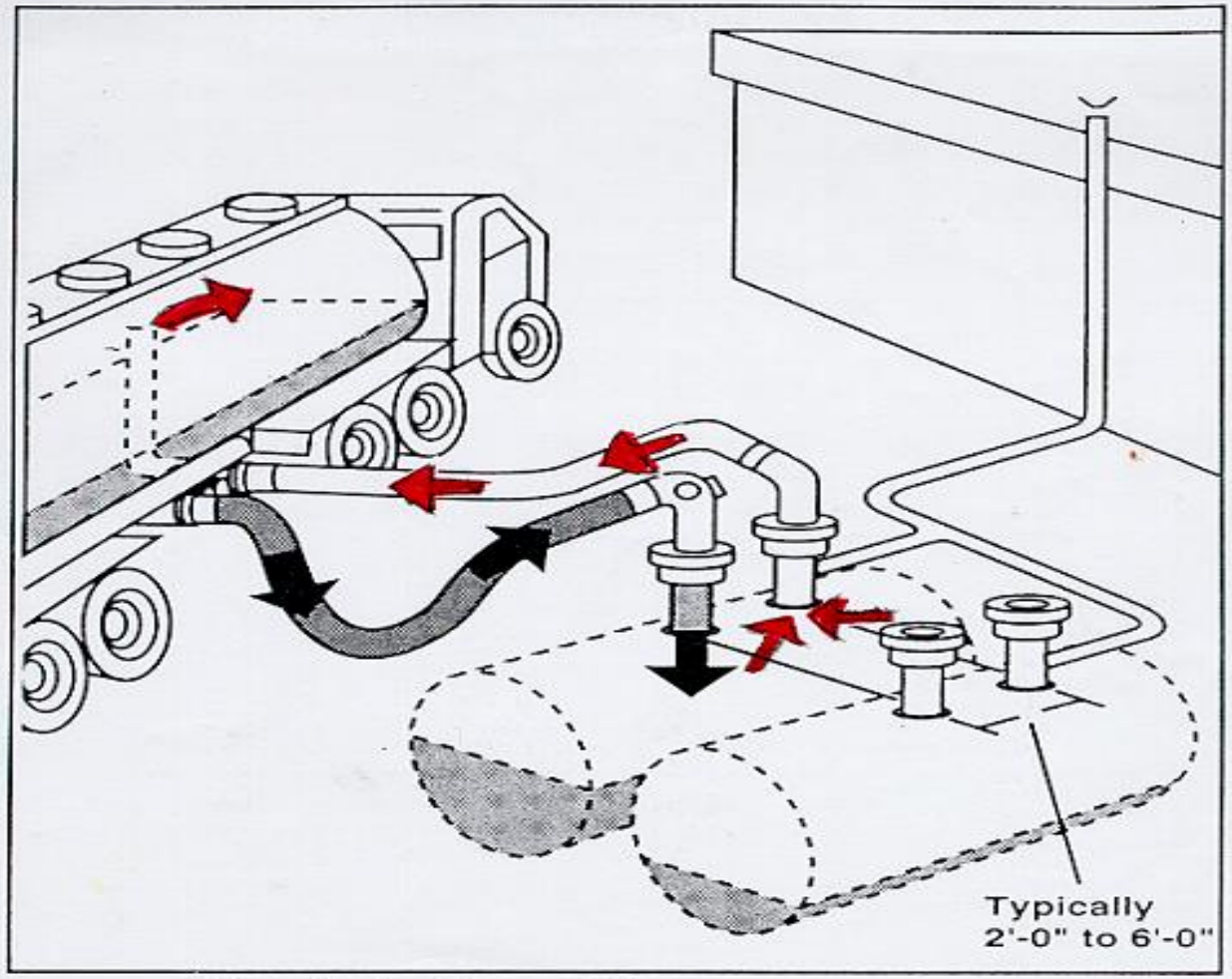


CONTROLLED GASOLINE DELIVERY
FULL STAGE I VAPOR SYSTEM





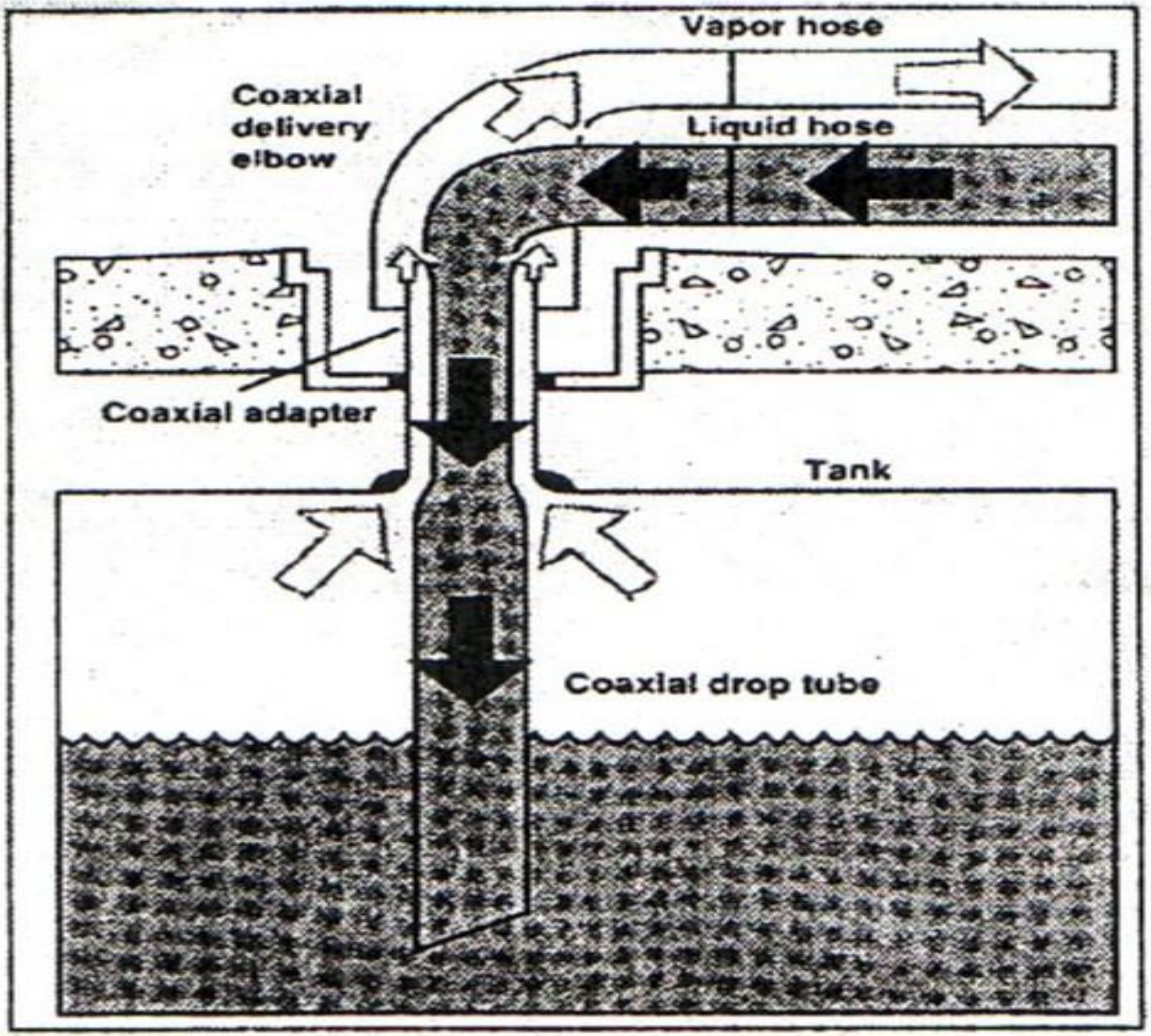
Two-Point Stage I System



Two-Point Stage I System

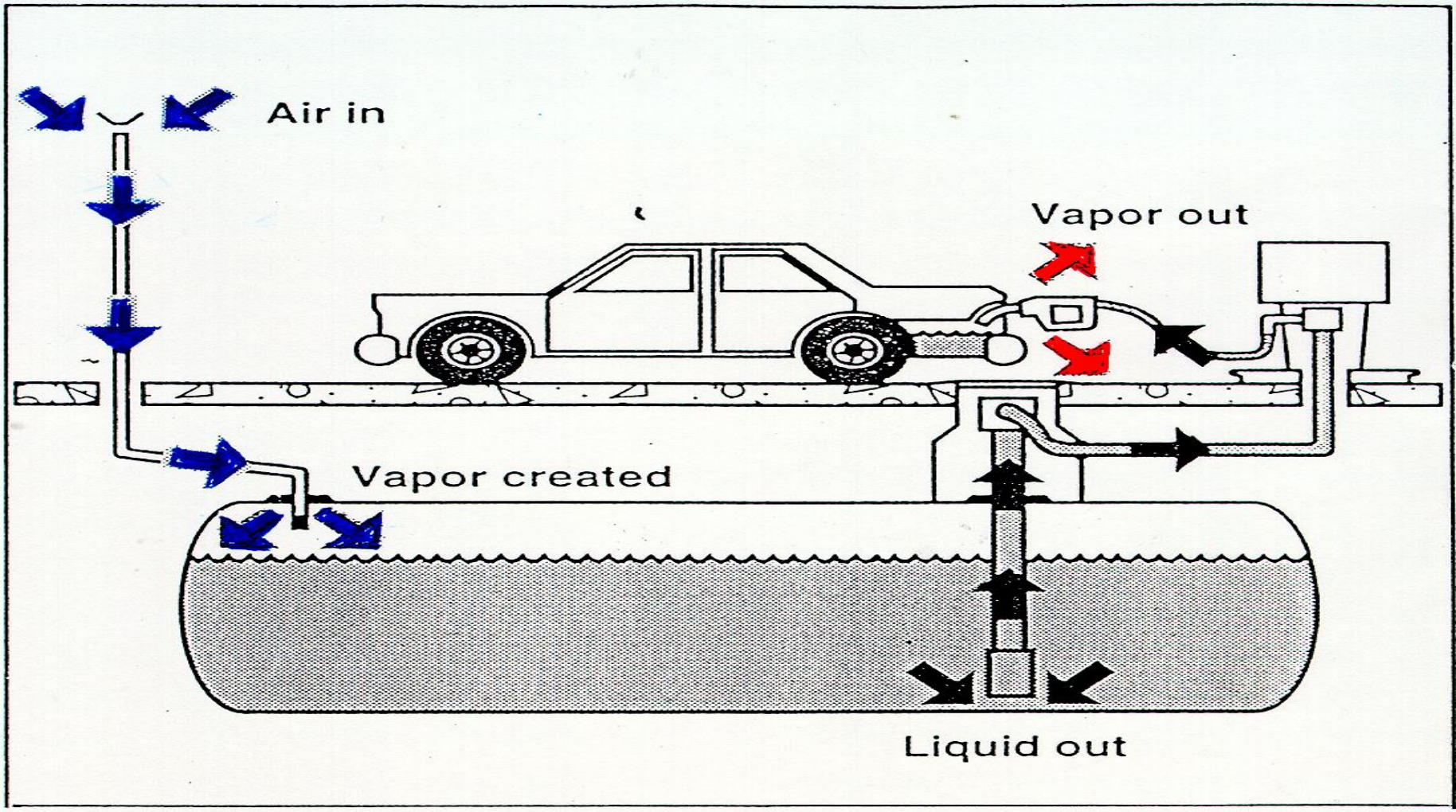
The MOPETP approved Two Point Stage I System showing underground manifolding. The black arrows indicate the product, gasoline liquid; the red arrows indicate the vapors returning to the delivery vessel. This is a mass balance system, powered only by gravity and displacement energies. The chevron above the vent stack indicates the utilization of a pressure/vacuum valve with a 3" w.c. pressure and a 8" w.c. vacuum set points.


TRANSPORT
DTC
DELIVERY CO.

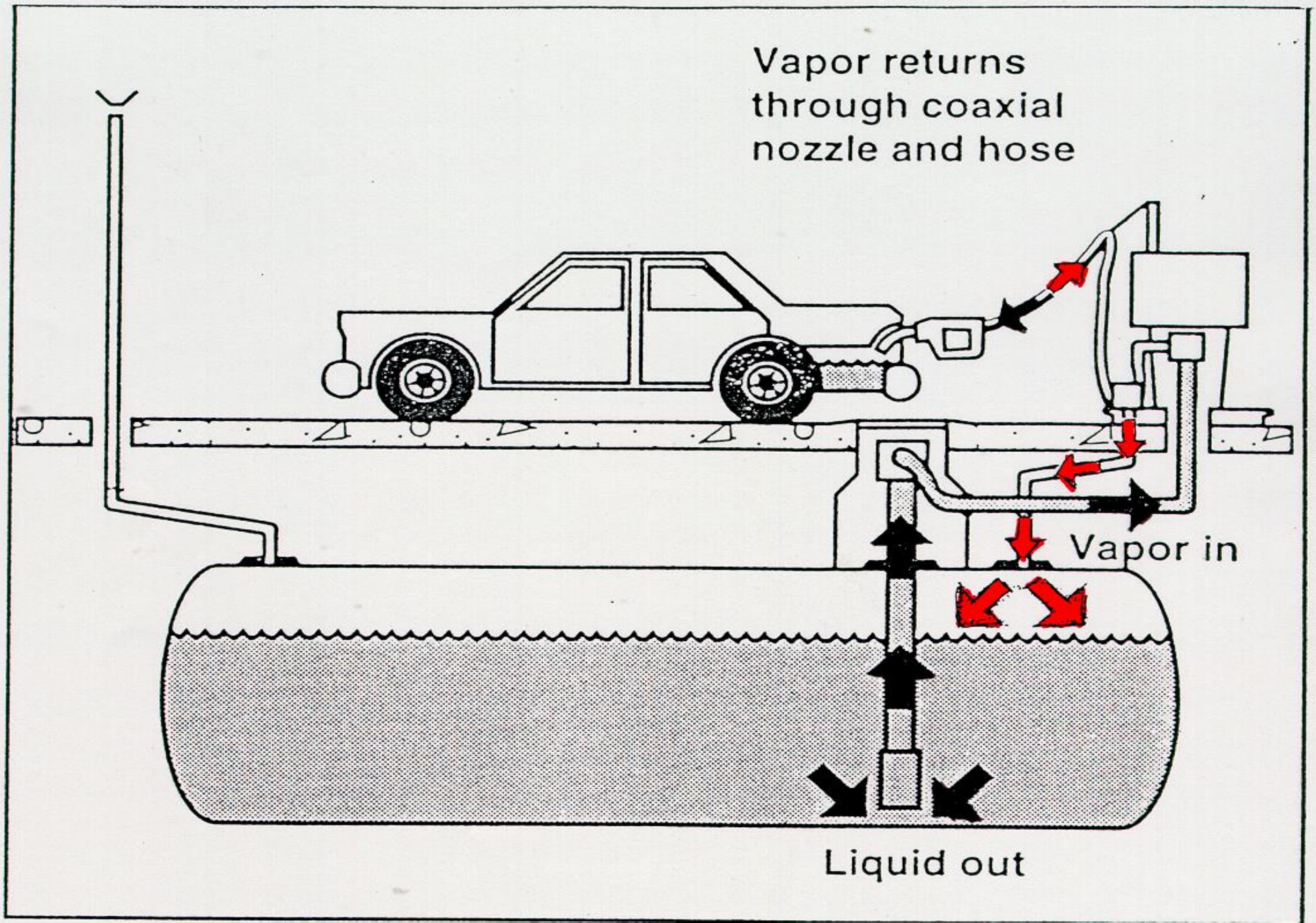


Coaxial Stage I System

UNCONTROLLED GASOLINE REFUELING



STAGE II SYSTEM



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Contact Information

- Publications
  - http://www.epa.gov/ttn/atw/area/arearules.html
  - http://www.epa.gov/ttn/atw/area/bulkgasb.pdf
  - http://www.epa.gov/ttn/atw/area/gdfb.pdf

- Contacts
  - APCP Richard Swartz 573-751-4817 richard.swartz@dnr.mo.gov
  - EPA Bill Peterson 913-551-7881 peterson.bill@epa.gov