



CPUC MHP OIR SDG&E/SoCalGas Gas Standards

June 14, 2011

CPUC MHP OIR – Applicable Gas Standards

- As adopted by General Order 112-E, the following DOT CFR Title 49 Part 192 sections , although not inclusive, are the regulatory standards covering natural gas pipeline construction applicable to MHP transfers:
 - Subpart B – Materials
 - Section 192.55 – Steel Pipe
 - Section 192.59 – Plastic Pipe
 - Subpart C – Design
 - Section 192.105 – Design formula for Steel Pipe
 - Section 192.121 – Design of Plastic Pipe
 - Subpart E – Welding of Steel in Pipelines
 - Section 192.225 – Welding procedures
 - Section 192.227 – Qualification of welders
 - Section 192.241 – Inspection and test of welds
 - Subpart F – Joining of Materials other than by Welding
 - Section 192.281 – 287 – Plastic pipe joining
 - Subpart G – General Construction Requirements for Transmission lines and Mains
 - Section 192.309 – Repair of steel pipe
 - Section 192.311 – Repair of plastic pipe
 - Section 192.319 – Installation of pipe in a ditch
 - Section 192.321 – Installation of plastic pipe
 - Section 192.325 – Underground Clearance
 - Section 192.327 – Cover

CPUC MHP OIR – Applicable Gas Standards

- Subpart H – Customer Meters, Service Regulators, and Service Lines
 - Section 192.353 – 357 – Customer meter and regulator: Location, Protection, and Installation
 - Section 192.361 – Service lines: Installation
 - Section 192.367 – Service lines: General requirements for connections to main piping
 - Section 192.371 – Service lines: Steel
 - Section 192.375 – Service lines: Plastic
 - Section 192.383 – Excess flow valve installation
- Subpart I – Requirements for Corrosion Control
 - Section 192.465 – External corrosion control: Monitoring
 - Section 192.477 – Internal corrosion control: Monitoring
 - Section 192.481 – Atmospheric corrosion control: Monitoring
- Subpart M – Maintenance
 - Section 192.723 – Distribution Systems: Leakage surveys
- To facilitate tool, maintenance, and repair consistency and to minimize costs, gas facility standardization is stressed regarding pipe material, diameter, and design.
 - Non-standard facilities require additional consideration and special arrangements that are not desired.

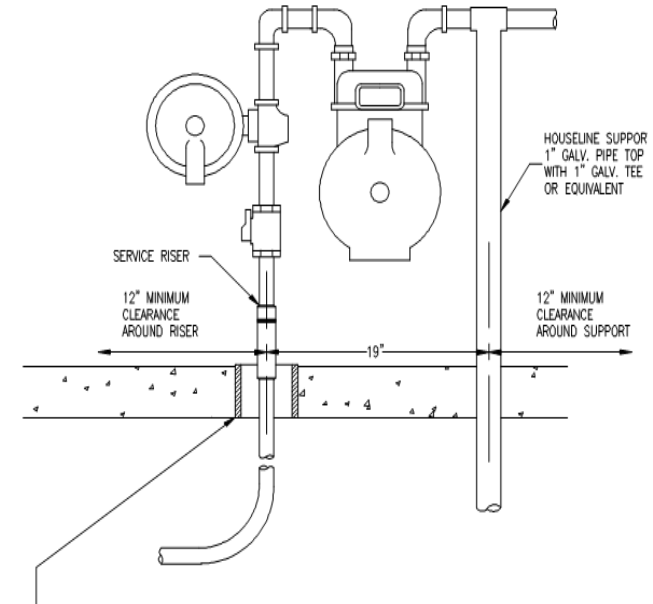
CPUC MHP OIR – Applicable Gas Standards

- SDG&E and SoCalGas have internal procedures that are more clearly defined than the DOT CFR Title 49 Part 192 (namely pipe clearance, cover, joint trenching and meter location) and must be complied with per CPUC.
 - Clearance
 - SDGE - minimum of 12” radial separation from all utilities (D7403)
 - SoCalGas – requires a minimum 12” radial separation from power, gas transmission, or sources of heat and 6” radial separation from all other substructures (184.0095)
 - Cover
 - Gas Main – Public and Private Property
 - SDGE – 30” minimum and 42” maximum from final grade
 - SoCalGas – 30” minimum from final street flow line
 - Gas Service – Private Property
 - SDGE – 24” minimum and 30” maximum from final grade
 - SoCalGas – 20” in private for direct burial
 - SoCalGas – Public Property Service – 24” minimum
 - SoCalGas – Steel Casing – 24” minimum in public, 12” minimum in private
 - Joint Trench
 - No Wet Utilities (water, sewer, storm drain) in dry utility (cable, gas, power, Telco) trench
 - For main, wet utility trench must have a minimum 5’ separation and 3’ of undisturbed soil separation from the dry utility trench
 - For services, wet utility trench must have a minimum of 12” of undisturbed soil separation from the dry utility trench

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- Gas Meter Location
 - In general, the recommended meter location is located outside, adjacent to the serving structure with no structure opening within 3' of the MSA. (D-7103) (185.0001)
 - For Mobile Home installations,
 - » At or near the corner of the mobile home or the mobile home lot closest to the utility's source
 - » On a permanently installed structure near the front lot line of the mobile home lot
 - » The MSA may not be supported solely by the gas flex connector to the mobile home. A customer provided, utility approved bracket, post or support is required
 - » A minimum of 18" horizontal clearance shall be maintained on all sides of the gas meter excluding the gas riser and support post.
 - » A minimum of 12" horizontal clearance from the riser and gas meter support
 - » A minimum of 3' horizontal working space in front of the meter set assembly is required for service/maintenance
 - » Ballard/Damage Prevention may be required if potential damage exists – evaluated on-site and on a case by case basis

An 18 inch minimum horizontal clearance shall be maintained on all sides of the gas meter excluding the gas service riser and houseline.



CPUC MHP OIR – Applicable Gas Standards

General Pipe Design Considerations

- Gas piping must be underground
- Gas piping must not be located below dwelling units or have structures built over the pipeline
- Gas piping must be comprised of utility approved materials
- Gas main piping should be installed along public or private roads
- Easements are required for all gas lines that cross between private property – “cross lot” installations
- Access to gas facilities is required to perform maintenance, repair, and emergency operations

SoCalGas Gas Standard 144.0132 outlines the MHP transfer process and adheres to the guidelines set forth in sections 2791 through 2799

4 Primary phases

- Notification
 - MHP Owner submits request and required records, preliminary MHP review to determine if MHP meets the AB 622 qualifications
- Feasibility
 - On-Site inspection, depth and clearance checks, system design and code compliance, determination of transfer or replacement requirement, existing system valuation, easements, and contract
- Construction
 - If accepted and paid, field construction, service application and transfer of facility occurs
- Completion
 - Project reconciliation and facility valuation payment to MHP

GAS CONSTRUCTION / INSTALLATION DOCUMENTATION

DOCUMENT	MANDATORY
Gas system piping design drawings	
Gas system piping As-Built drawings including trench depth and location of other substructures in trench, if any.	YES
Emergency Shutoff Valve location drawings	YES
Gas system load design calculations	
Gas system material lists and specifications (piping system materials, age, diameter, lengths, MAOP, etc.)	YES
Auxiliary system drawings (instrumentation, cathodic protection, recording systems)	YES
Construction Specifications (pipe installation and joining procedures, trench design, backfill material, compaction, etc.)	YES
Gas system installation pressure tests and inspection records	YES
Local Governmental Permit Documentation	YES
Construction contractors and consultants utilized	

OPERATION AND MAINTENANCE DOCUMENTATION

DOCUMENT	MANDATORY
Pipe damage and leak repair maintenance records	YES
Pipeline system operating history (charts, records)	
Periodic leak survey records	YES
Valve Maintenance records	YES
Cathodic Protection (CP) survey records (if applicable)	YES
Cathodic Protection (CP) maintenance records (if applicable)	YES
O&M Contractors and consultants utilized	
Emergency Response and park resident safety information	
Customer metering maintenance and repairs	

REQUIRED DOT 49 CFR 192 CODE COMPLIANCE DOCUMENTATION

DOCUMENT	MANDATORY
Reportable Incident Reports	YES
Operating and Maintenance (O&M) Plan	
DOT required periodic inspection and survey records	YES
CPCU/DOT oversight records (records of inspections or audits recommendations and actions taken)	YES

CPUC MHP OIR – MHP EXAMPLES

The following slides, although not a general statement or indicative of the overall condition of mobile home park owned facilities in the SDGE or SoCalGas territories, represent examples of privately operated gas systems encountered over the years

**Above
Ground
Gas
Mains
and Gas
Services**



**Above
Ground
Gas
Mains
and Gas
Services**

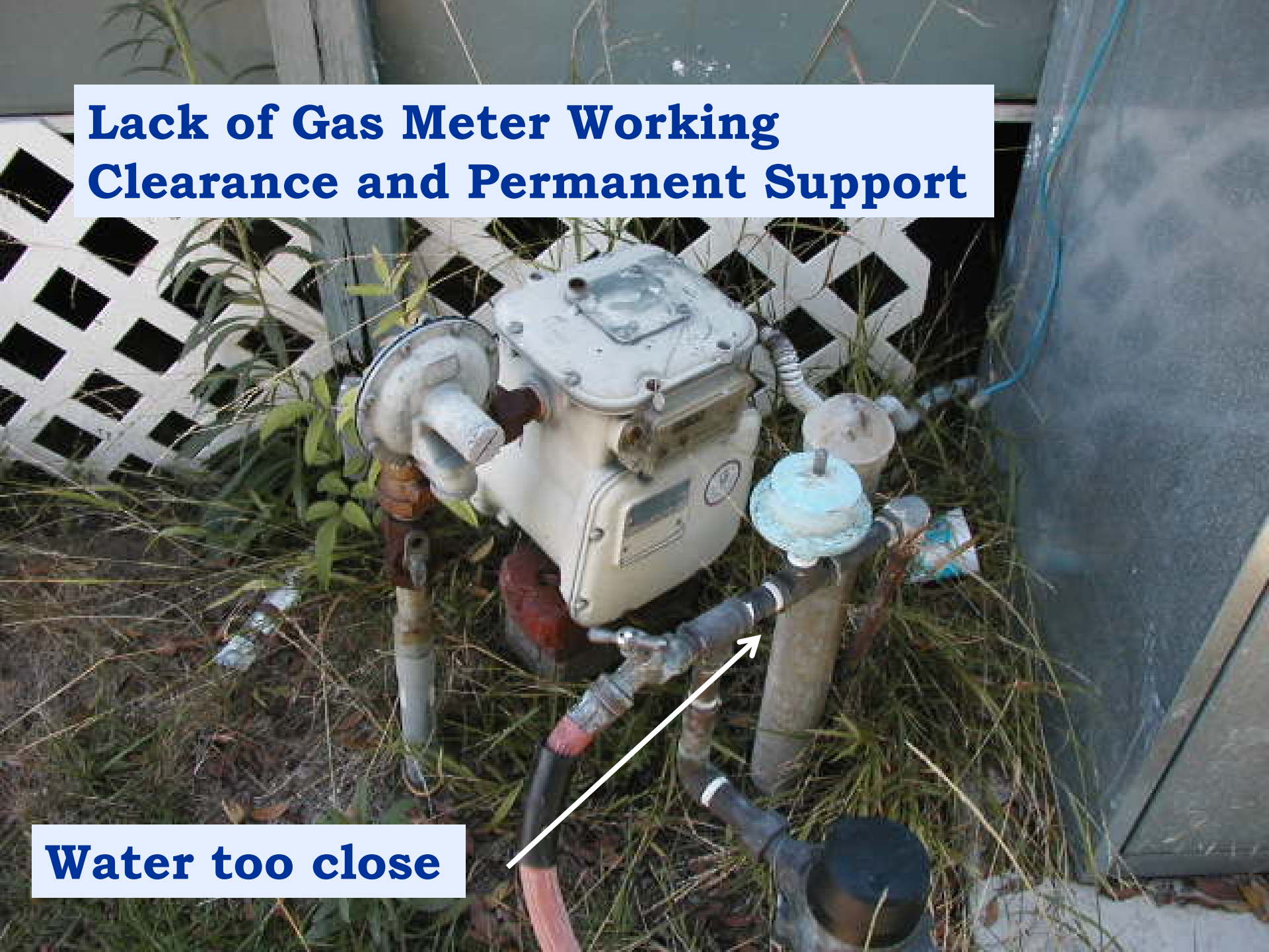


**Above
Ground
Gas
Main**



Lack of Gas Meter Working Clearance and Permanent Support

Water too close





**Non Standard Joining
of Two Pipe Sizes for
Gas Main**

Non-compliant Gas Pipe Support



Above Ground Gas Main

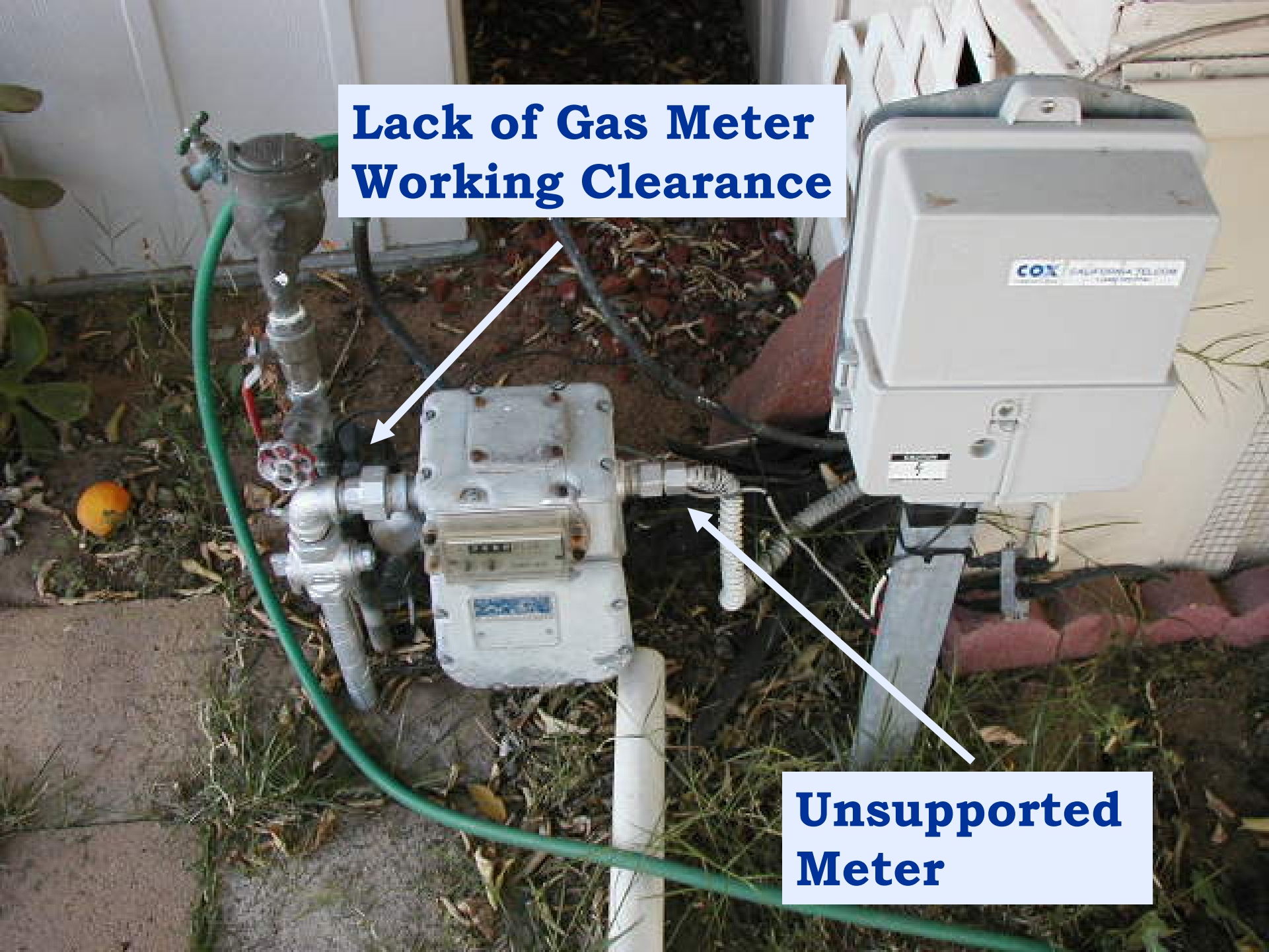


**Lack of Working
Clearance For
Gas Regulator**



**Lack of Gas Meter
Working Clearance**

**Unsupported
Meter**



ADDITIONAL MHP EXAMPLES

The following slides are from a recent leak investigation excavation at a CPUC mandated MHP gas facility transfer to SoCalGas. It was ruled and determined that the system was able to safely deliver gas and therefore met the MINIMUM transfer requirements

No visual substructure evidence was submitted during the determination

**Acceptable
Meter Location**



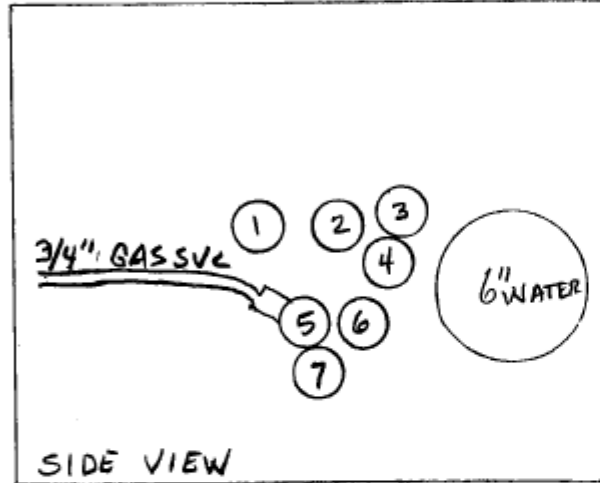
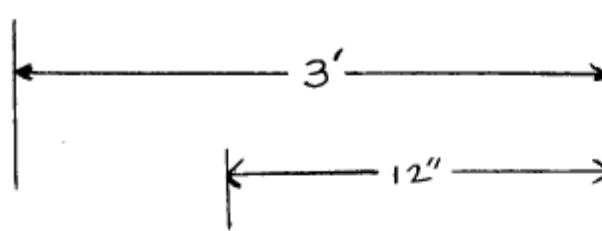


EXCAVATION SITE

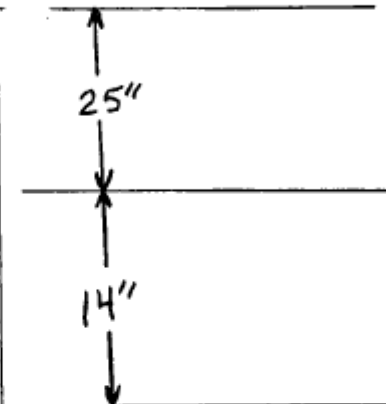
**CLOSE UP VIEW OF
EXCAVATION SITE**



**HERE
IS
WHAT
WE
FOUND
BELOW
GROUND**



- ① = 1 1/2" ELECTRICITY MAIN
- ② = 1" ELECTRICAL SERVICE
- ③ = 1" ELECTRICAL SERVICE
- ④ = 1" CABLE TV
- ⑤ = 1 1/2" GAS MAIN
- ⑥ = 1 1/2" GAS MAIN
- ⑦ = 1 1/2" GAS MAIN



WATER IN TRENCH

- * 25" COVER ON GAS MAIN
- * 17" COVER ON GAS SERVICE
- * GAS MAINS AND ELECTRICAL MAIN HAVE 3" SEPARATION
- * GAS SVC + ELECTRICAL SVC. HAVE 1" SEPARATION
- * THE 3 GAS MAINS ARE ALMOST TOUCHING EACH OTHER

REQUIRE 30" COVER

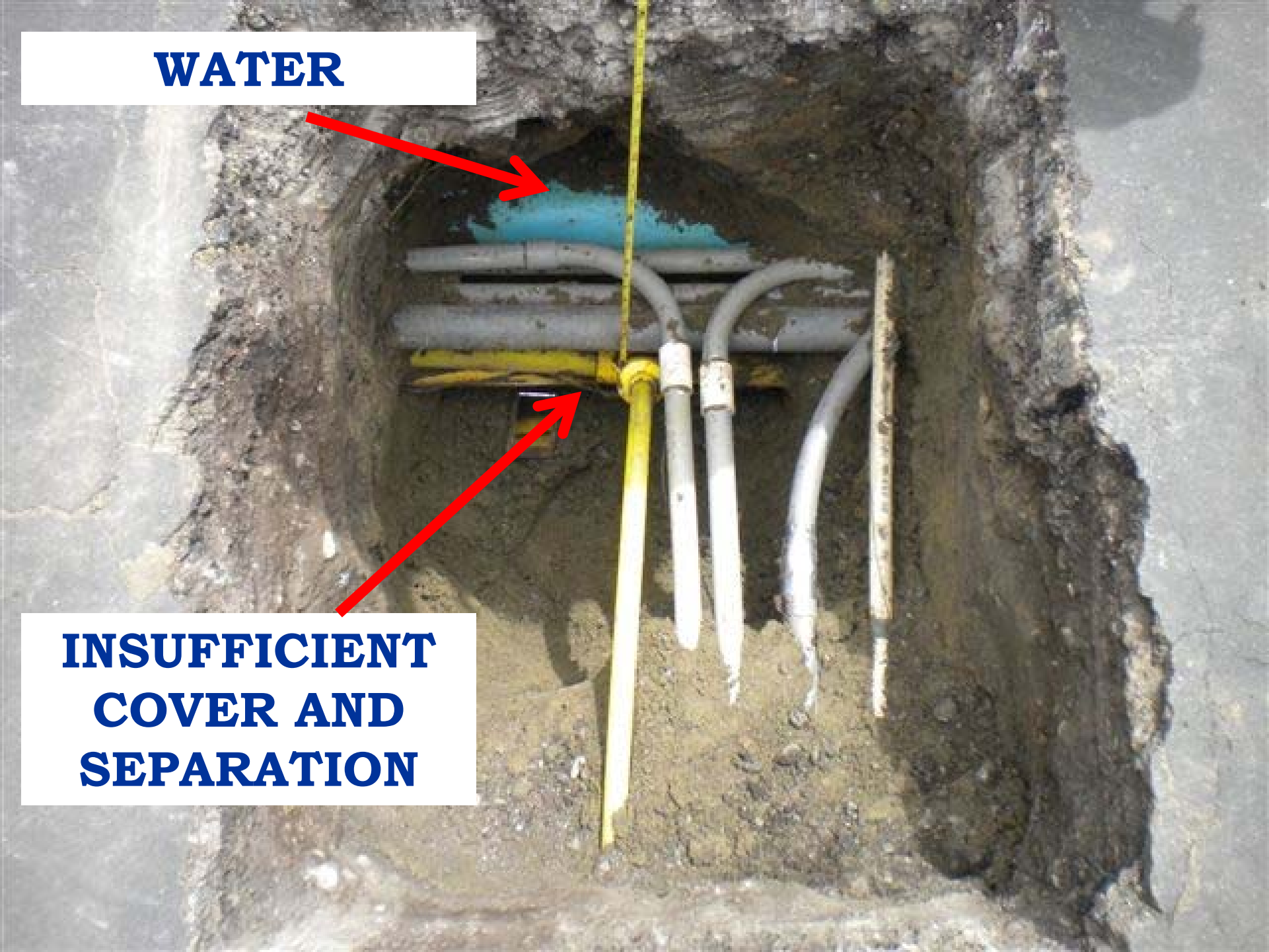
REQUIRE 20" COVER

REQUIRE 12" OF SEPARATION

REQUIRE 6" OF SEPARATION

WATER

**INSUFFICIENT
COVER AND
SEPARATION**

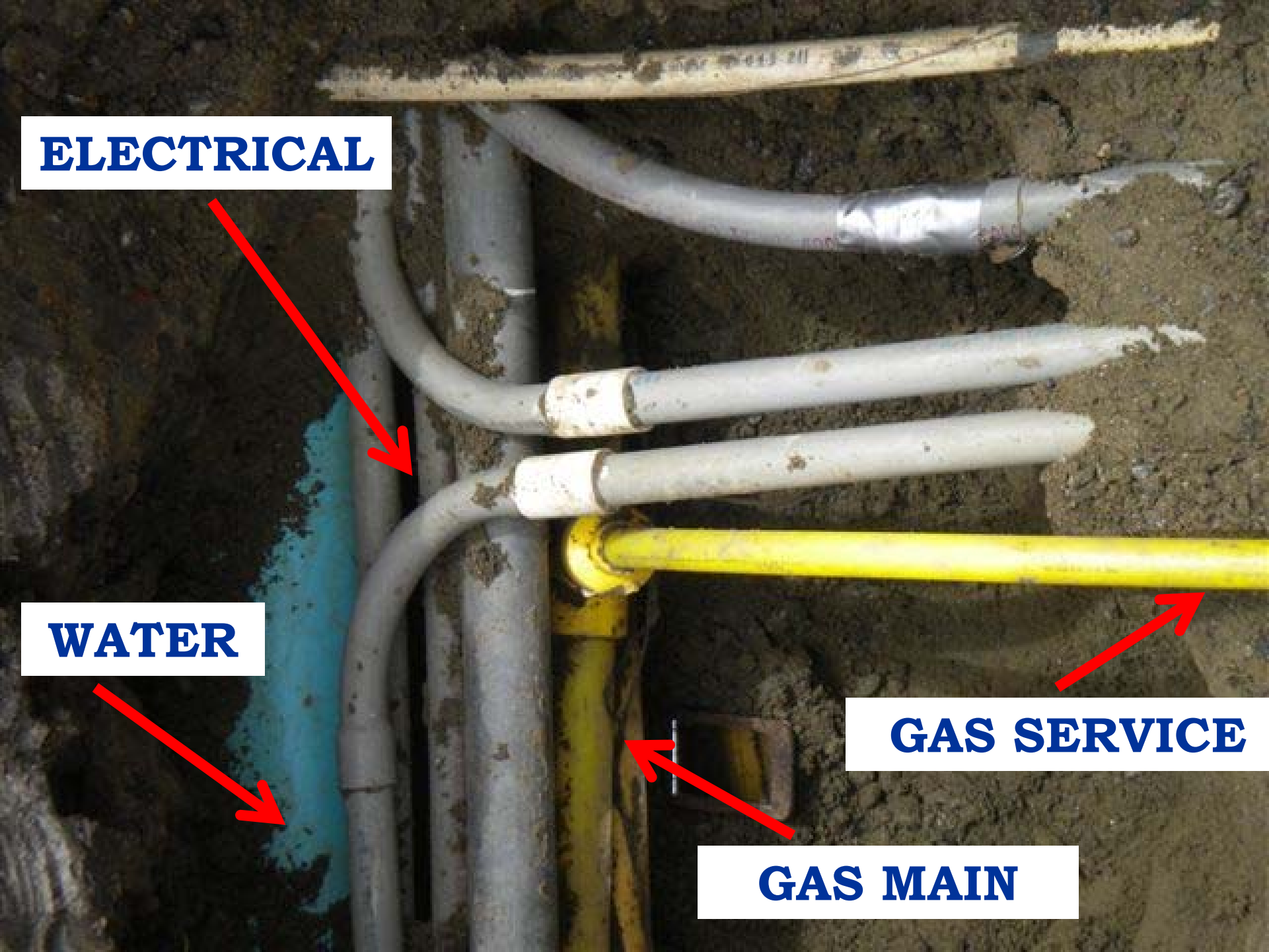


ELECTRICAL

WATER

GAS SERVICE

GAS MAIN



MINIMAL SEPARATION



MIRROR