



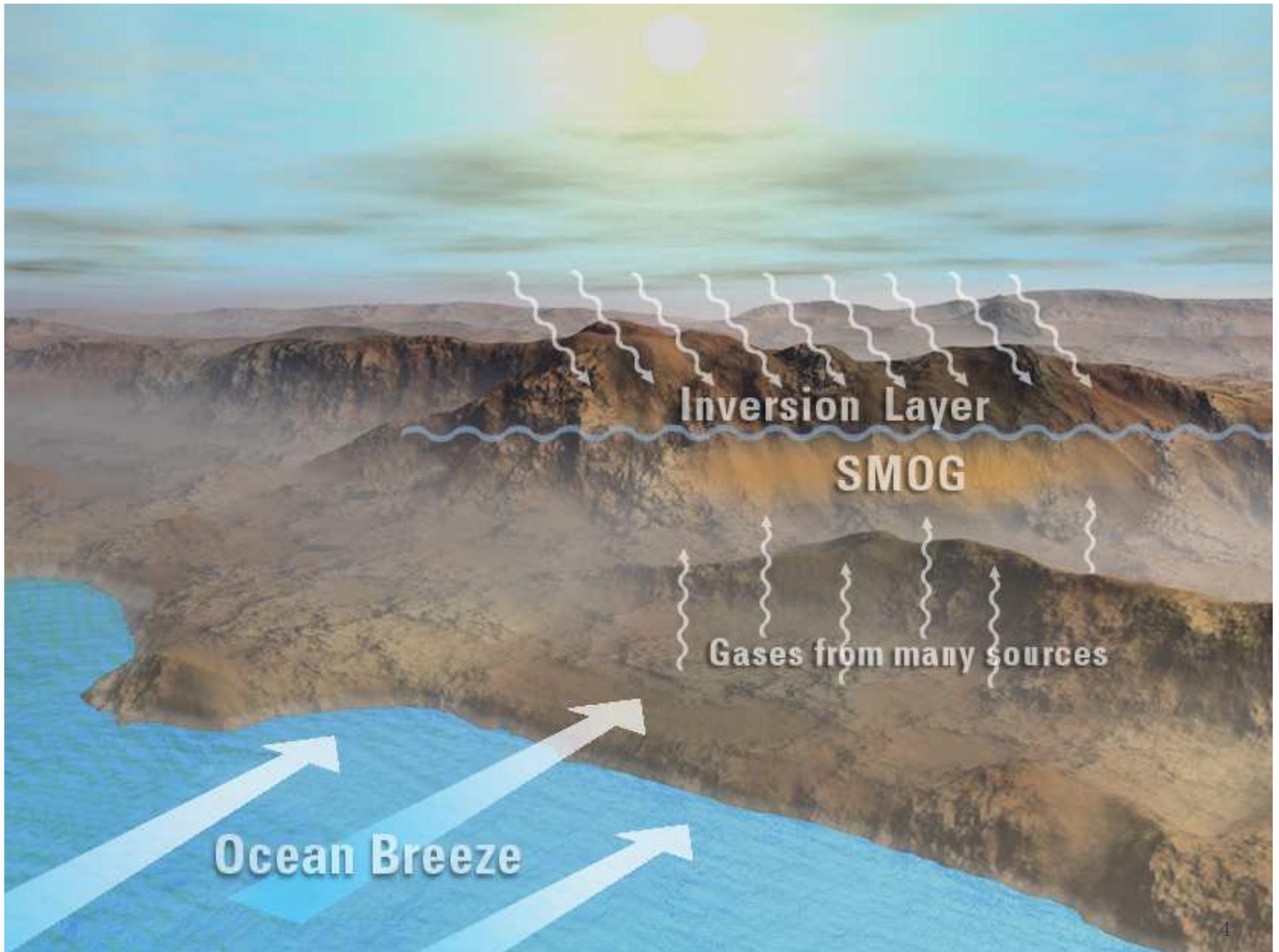
Above Ground Storage Tanks

Standing Loss Control and Phase I EVR Requirements

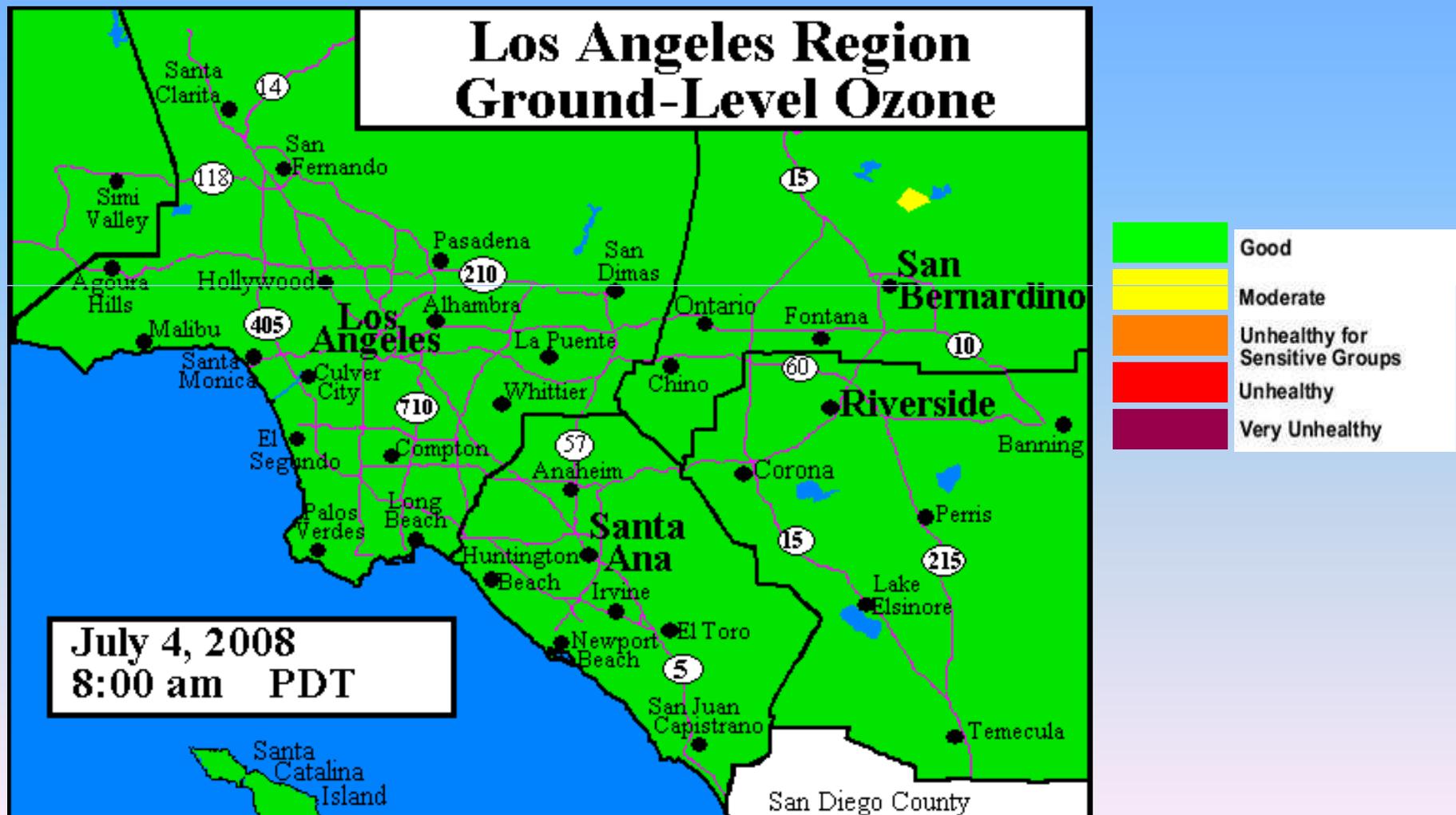
South Coast Air Quality Management District
November 2013

Outline

- Introduction
- Enhanced Vapor Recovery (EVR) Program
- Implementation in South Coast AQMD
- Permitting Information
- Compliance Deadlines
- Contact Information and Websites
- Questions & Answers



Extreme Ozone Non-Attainment



Effort Towards Attainment

- SCAQMD adopts Air Quality Management Plan (AQMP) to implement measures for attaining National Ambient Air Quality Standards (NAAQS)
- All feasible emission reduction measures must be adopted
- Rules are adopted to implement standards
- Results = most stringent air regulations

California Environmental Protection Agency



Air Resources Board

Enhanced Vapor Recovery for Aboveground Storage Tanks at Gasoline Dispensing Facilities

South Coast Air Quality Management District
Informational Sessions
November, 2013

Discussion Topics:

- ARB's Vapor Recovery Program
- Enhanced Vapor Recovery (EVR) for Aboveground Storage Tanks (AST)
- Program Information
- Contact Information

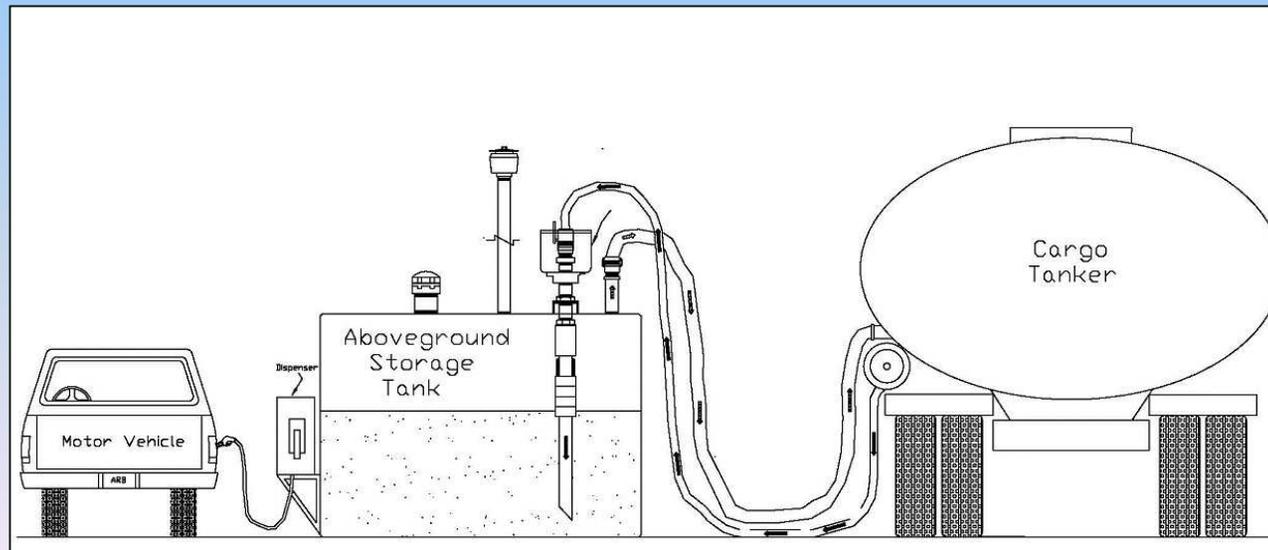
ARB's Vapor Recovery Program

ARB's Vapor Recovery Program:

Year	Regulation
1975	First Vapor Recovery Regulations
1988	Benzene ATCM
1995	Onboard Refueling Vapor Recovery (ORVR) Equipped Vehicles
2001	Enhanced Vapor Recovery (EVR) for Underground Storage Tanks
2008	Enhanced Vapor Recovery (EVR) for Aboveground Storage Tanks
2011	Low Permeation Hoses

What is Vapor Recovery?

The collection and containment of vapors that are generated during the transfer and storage of gasoline, that would otherwise be emitted to atmosphere.



ARB's Vapor Recovery Program:

- Question:
Why control the release of gasoline vapors?
- Answer:
Gasoline vapors contribute to the formation of ground level ozone and contain benzene which is considered by the State to be a toxic air contaminant.



ARB's Vapor Recovery Program:

ARB	Air Districts	Industry
<ul style="list-style-type: none">• Establish performance standards• Develop test procedures• Certify new equipment and control technologies	<ul style="list-style-type: none">• Implement and enforce rules• Permit and inspect gas stations• Provide in-use performance data to ARB	<ul style="list-style-type: none">• Develop innovative control technologies• Install, operate, and maintain control systems

Enhanced Vapor Recovery (EVR) for Aboveground Storage Tanks (ASTs)

EVR for ASTs

- In 2008, ARB adopted new vapor recovery system performance standards for aboveground gasoline storage tanks. These standards are known as “Enhanced Vapor Recovery”, or EVR.
- Requires ARB certified vapor recovery equipment upgrades over a four year time frame beginning when the first system is certified.
- Reduces air pollution emissions by nearly 2-tons per day statewide.

EVR for ASTs: Applicability

- EVR applies to gasoline dispensing facilities located in non-attainment areas for ozone.
- Does not apply to diesel tanks, bulk plants, bulk terminals, or refinery storage tanks.
- Installation thresholds vary per local air district rule requirements.



Is Your AST subject to Vapor Recovery?

District	Phase I Threshold	Phase II Threshold
San Diego County APCD	> 260 gallons for retail > 550 gallons for non retail	> 2,000 gallons dispensed per month
San Joaquin Valley APCD	> 250 gallons > 550 for agricultural tanks	> 2,000 gallons dispensed per month
South Coast AQMD	> = 251 gallons > 120 gallons for mobile fuelers	> = 251 gallons > 120 gallons for mobile fuelers

EVR for ASTs: Upgrade Deadlines

EVR Module	New Installations		Existing Installations	
	Attainment ¹	Non-Attainment ¹	Attainment ¹	Non-Attainment ¹
Standing Loss Control	4/1/09		N.A.	4/1/13
Phase I	7/1/10		N.A. ⁴	7/1/14
Phase II	Pending ²		N.A. ⁴	Pending ³
ISD	Pending ²		N.A.	Pending ³

¹ Refers to State Ozone Ambient Air Quality Standard

² The compliance date will be the date when the first Phase II or ISD System is certified

³ The compliance date will be four years from the date when the first Phase II or ISD system is certified

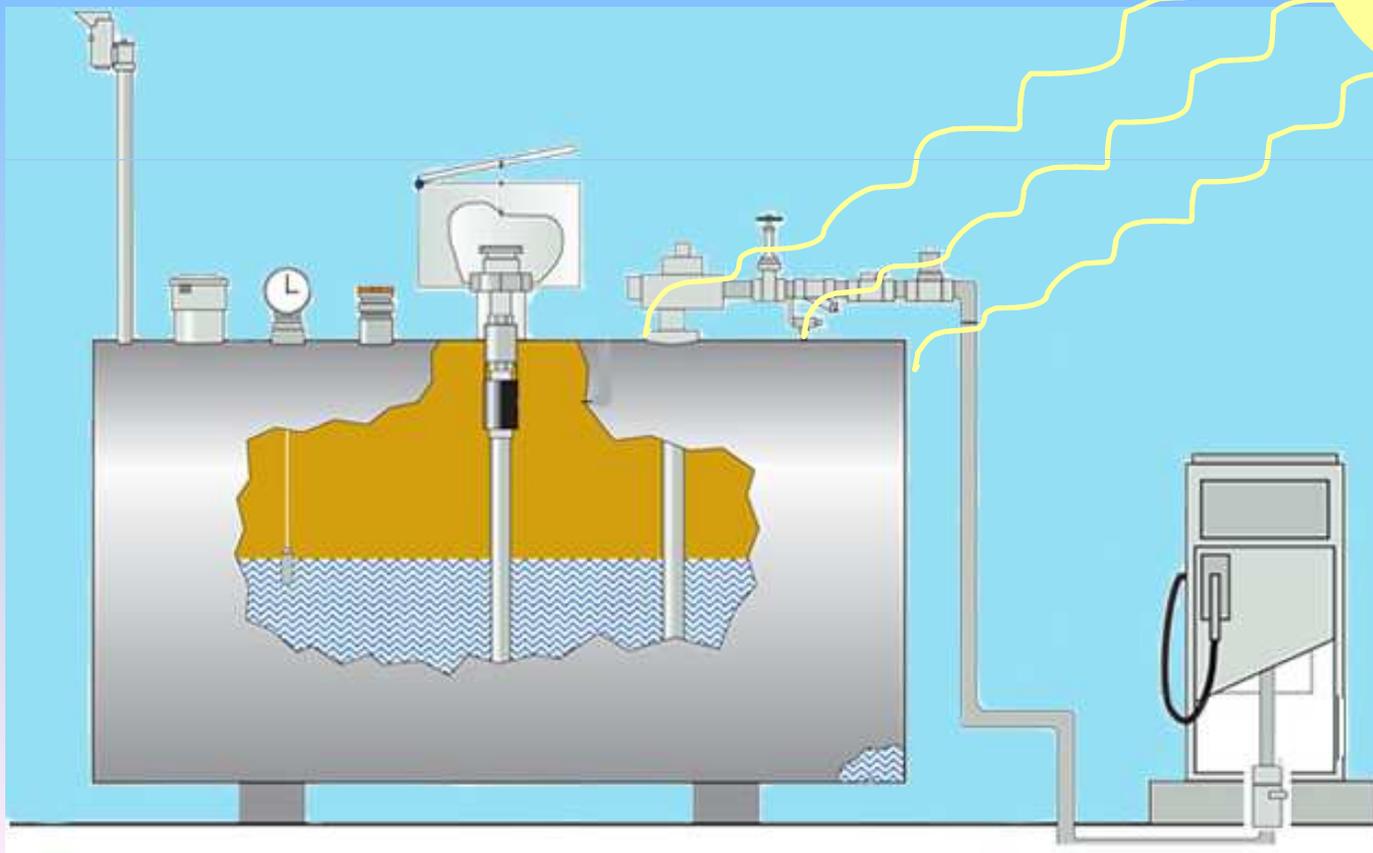
⁴ Retain pre-EVR system to comply with Benzene Air Toxic Control Measure

EVR for ASTs: Standing Loss Control

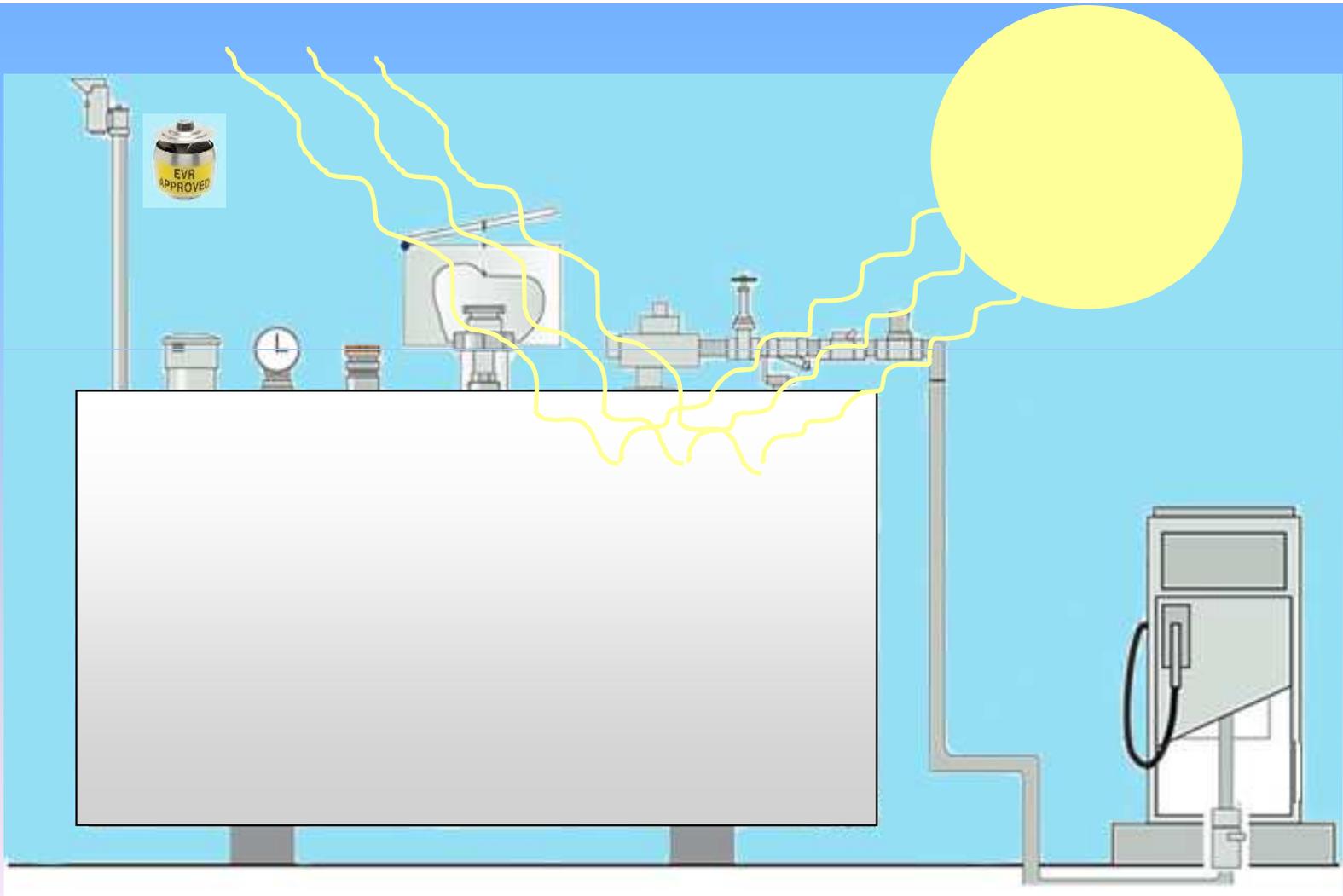
- Standing losses are evaporative emissions that escape through open vent pipes and leaks in the tank. They occur when internal tank pressure increases as a result of diurnal temperature changes.
- As of April 1, 2009, new AST installations must be equipped with a certified protected (insulated) tank pressure vacuum (PV) vent valve.
- As of April 1, 2013, existing single-wall ASTs must apply a certified coating and install a PV vent valve.
- Some existing protected tanks may require coating and PV vent valve.
- Currently there are (5) certified ASTs, (4) paints and (1) PV vent valve.

AST Without Standing Loss Control

Gasoline Vapor



AST With Standing Loss Control

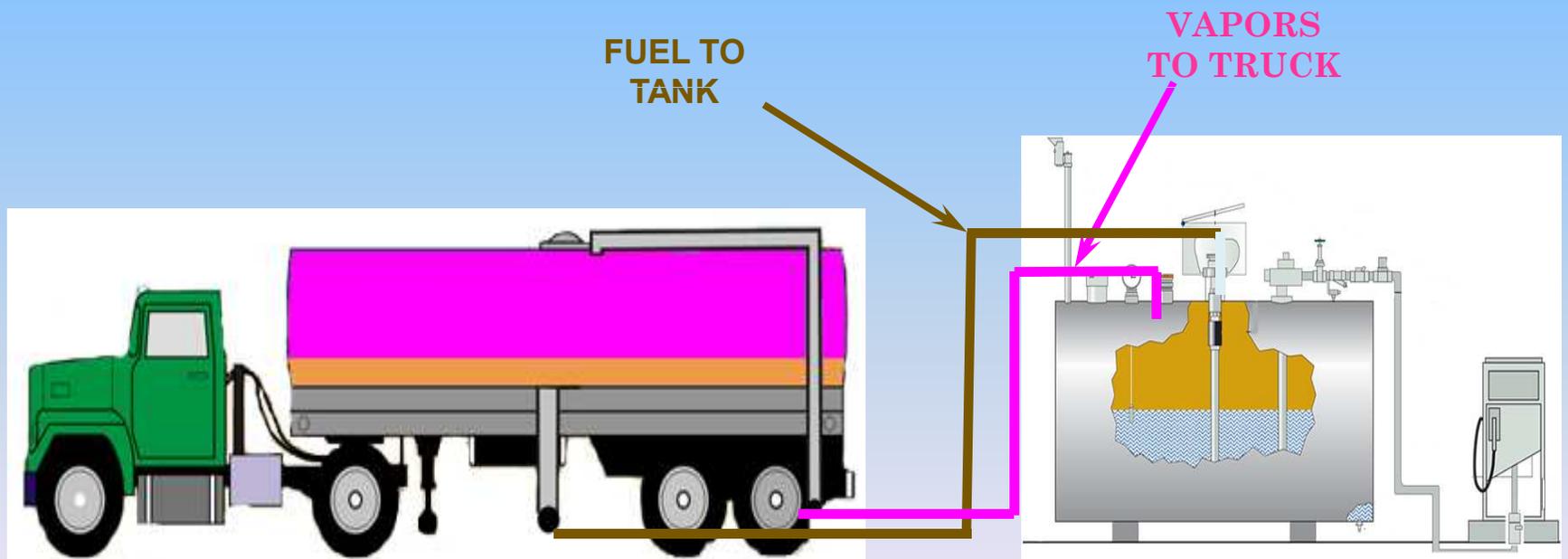


EVR for ASTs: Phase I Vapor Recovery

- Phase I: Control of vapors during the transfer of gasoline from the cargo tank to the aboveground storage tank.
- Equipment similar to UST systems, except:
 - Emergency vents
 - Non-rotatable vapor and product adaptors
 - Mechanical tank gauges
- Two certified systems:
 - OPW
 - Morrison Brothers

Phase I Vapor Recovery:

Important Deadline: Existing Sites
Need To Upgrade to “EVR” by July 1,
2014.

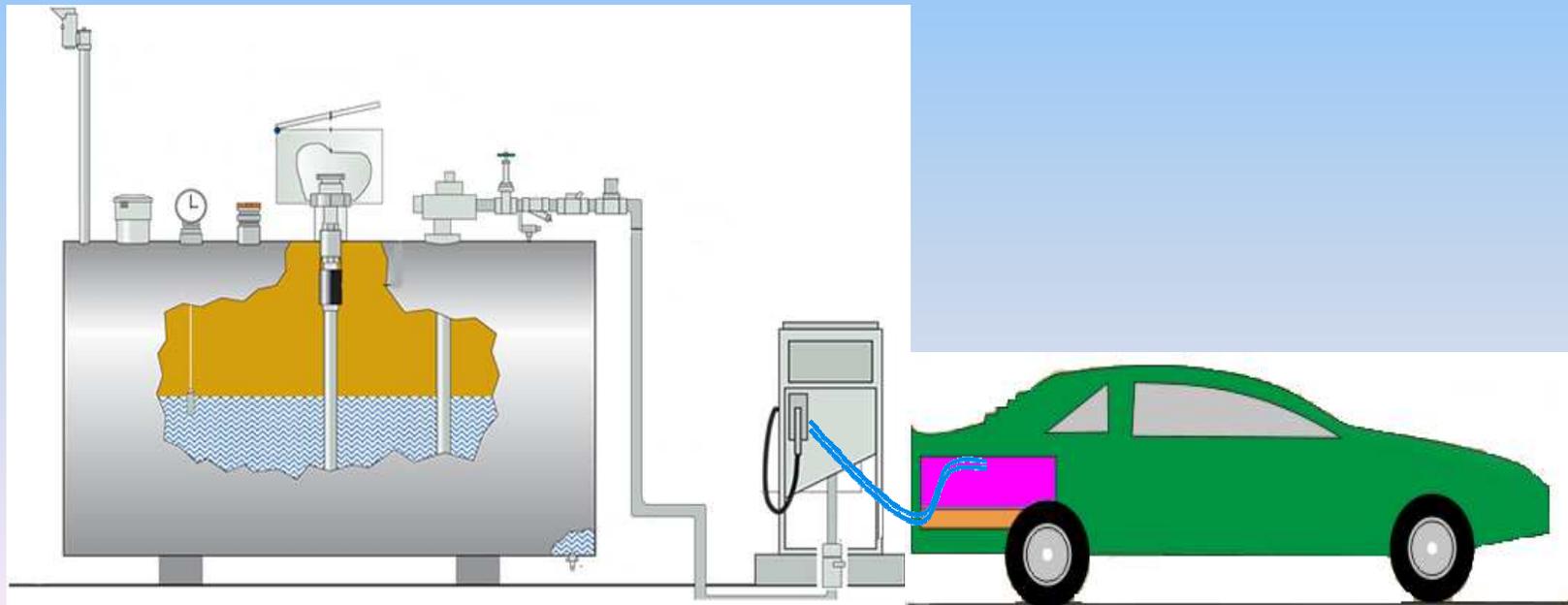


EVR for ASTs: Phase II Vapor Recovery and ISD

- Phase II: Control of vapors during the transfer of gasoline from the AST to the vehicle.
- ISD: Monitoring system (similar to the check engine light on your car)
- Currently no certified Phase II EVR & ISD systems for AST.
- New and existing sites can use Pre-EVR until such a time as an EVR system is certified.
- Once a Phase II EVR system for AST is certified, owners and operators have (4) years to comply.

Phase II Vapor Recovery

Important Note: ARB has not yet certified a Phase II /ISD EVR system for AST. Therefore, pre-EVR Phase II systems can remain in use.



AST Program Information

AST Program Information:

- Vapor Recovery Program Web Page:
www.arb.ca.gov/vapor/vapor.htm
- Frequently Asked Questions (FAQs):
<http://www.arb.ca.gov/vapor/faq.htm>
- Air District Contacts for EVR:
<http://www.arb.ca.gov/vapor/contacts.htm>

AST Program Information:

- Standing Loss Control EVR Executive Orders:

<http://www.arb.ca.gov/vapor/eo-astslc.htm>

- Phase I EVR Executive Orders:

<http://www.arb.ca.gov/vapor/eo-astphasei.htm>

- Phase II Pre-EVR Executive Orders:

<http://www.arb.ca.gov/vapor/above/above.htm>

ARB Contact Information:

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AST EVR Implementation in SCAQMD

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AST EVR Implementation in SCAQMD

- Requirements
 - Standing Loss Control
 - Phase I EVR
- Implementation
- Installation Scenarios
- Permitting Information
- AST Deadlines
- Contact Information and Helpful Websites
Links

Standing Loss Control Requirements

- Unprotected or Uncertified Protected ASTs
 - Pressure Vacuum Valve – Husky 5885
 - Certified Coatings
- Certified Protected ASTs
 - Pressure Vacuum Valve – Husky 5885
 - Five AST Manufacturers Listed in EO VR-302

Certified Pressure Vacuum Valve

Only one - Husky 5885



Standing Loss Control (SLC) Certified Coatings

- Four coating systems certified for SLC
- Only 2 coating systems are approved for application on **EXISTING** ASTs in SCAQMD:
 - Ponderosa Paint Company, Inc.
 - Jones-Blair Paint Company

Ponderosa Paint Company System

PPC™ Enviro-Clad 2600 White (100) paint Base (A) and Enviro-Clad 2600 Catalyst (B)



Jones-Blair Paint Company System

Jones-Blair Paint Company #33014 White Ureprime® HS4 Primer and #99951 Ureprime® HS4 Primer and Acrylithane™ HS4 Enamel Catalyst



Jones-Blair Paint Company #4600-040 Acrylithane™ HS4, High Gloss White Acrylic Urethane and #99951 Ureprime® HS4 Primer and Acrylithane™ HS4 Enamel Catalyst



Certified Protected ASTs (VR-302)



**Modern Custom Fabrication
SuperVault MH Series**



**Steel Tank Institute
Fireguard Protected AST**



**ConVault® Inc
ConVault AST**



**Containment Solutions, Inc
Hoover Vault Tanks**



**Jensen Precast
Armor Cast®**

Implementation – SLC and Phase I EVR

Aboveground Storage Tanks

Standing Loss Control

Advisory #02-13 issued in March 2013 alerting deadline for SLC and Phase I EVR for AST:

- No permit for SLC
- Two Compliant Coatings
- Proper Recordkeeping for SLC
- Permit application needed for Phase I EVR

Phase I EVR Requirements

Required Components Include:

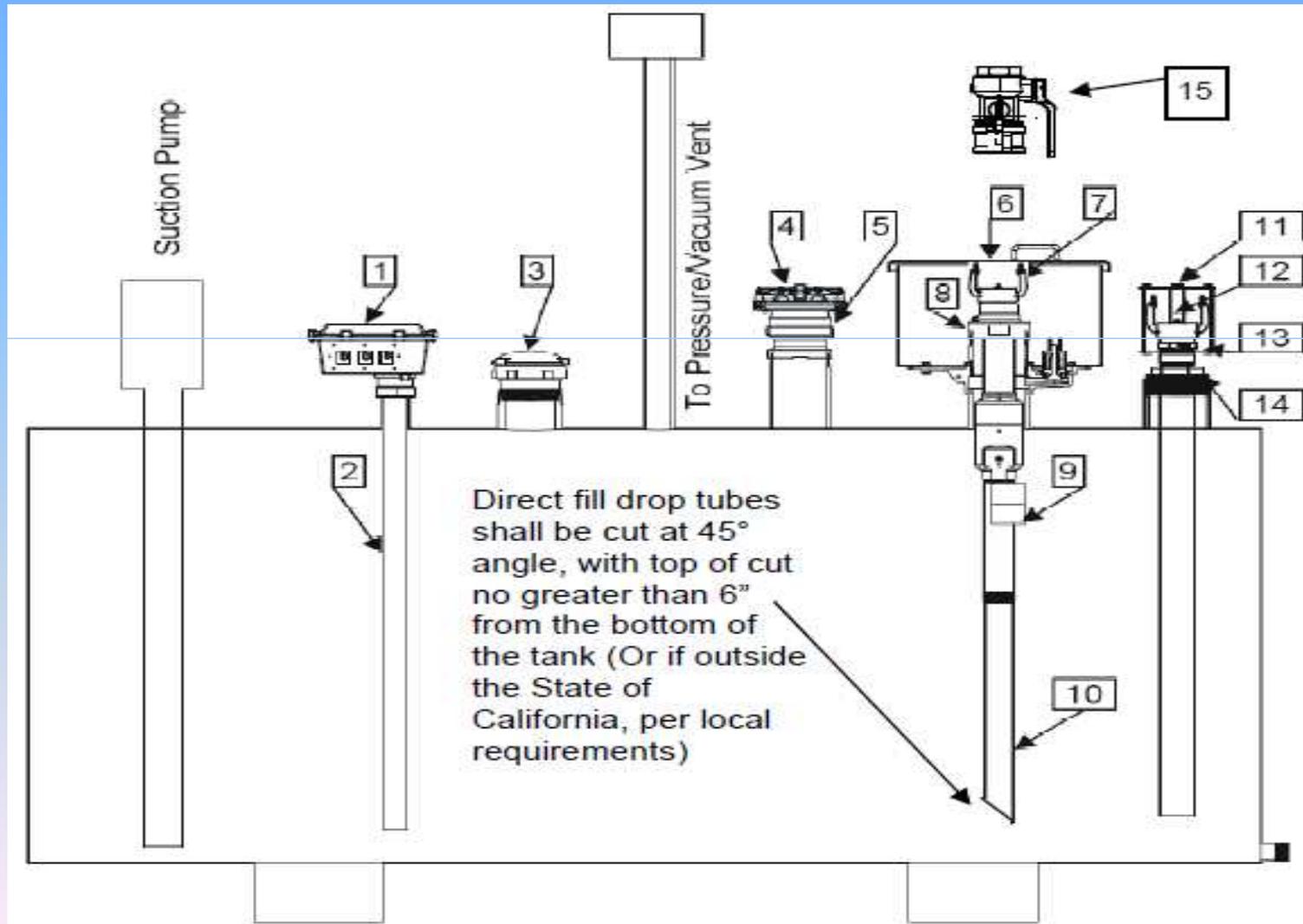
- Emergency Vent
- Spill Container and Drain Valve
- Drop Tube with Overflow Prevention
- Product & Vapor Adaptors & Dust Caps
- Product Coupler
- Port for Tank Gauging, with Drop Tube and Caps/Adaptors

Phase I EVR Requirements

Optional Components Include:

- Drop Tube Diffuser
- Mechanical Tank Gauge
- Liquid Overfill Alarm

Typical Phase I EVR - Direct Fill (Example 1)



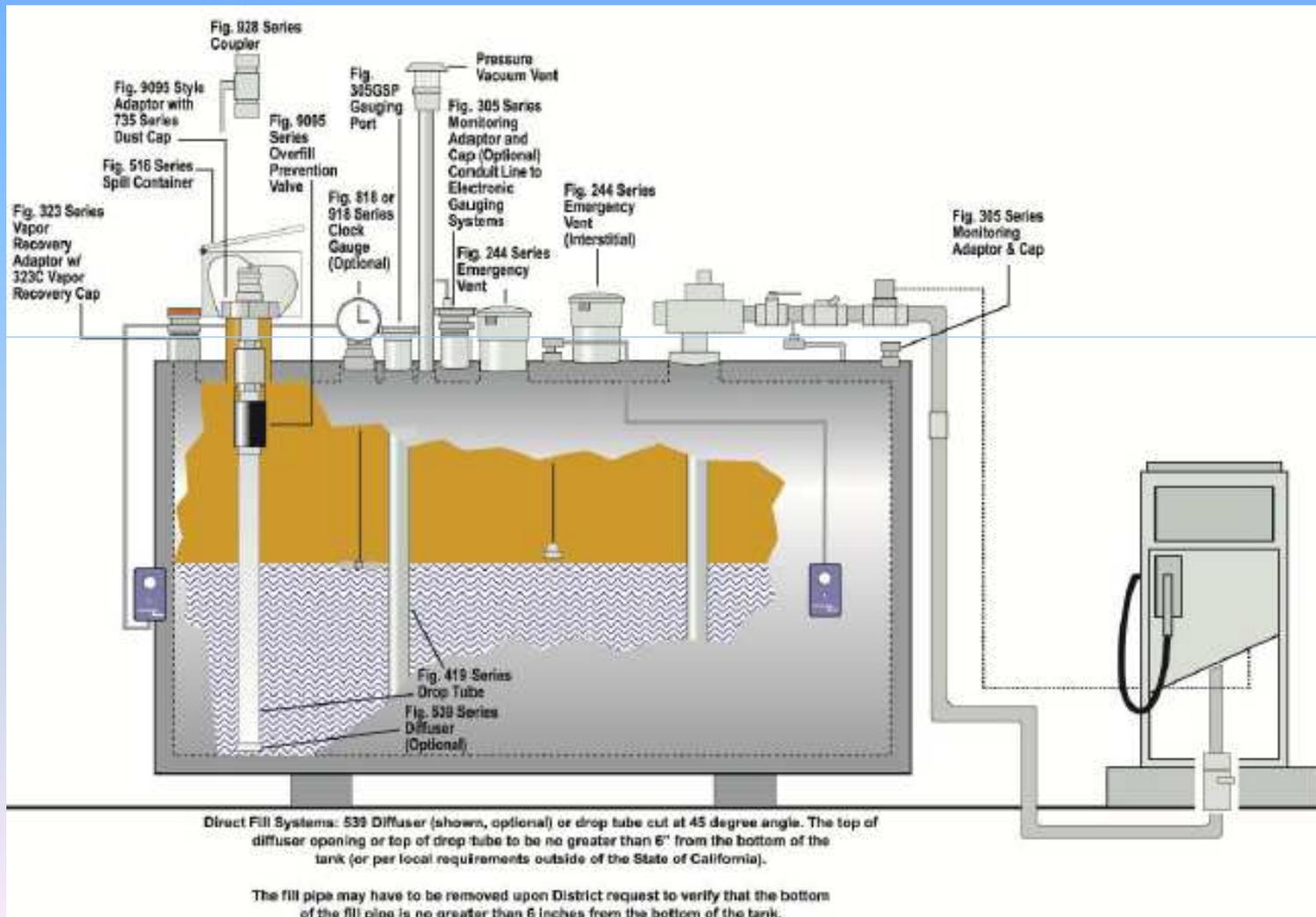
Typical Phase I EVR - Direct Fill (Example 1)

1. 200 TG Series Tank Gauge (optional)
2. 61T Series Drop Tube
3. 301 Series Emergency Vent
4. 1711T or 1711LPC Series Vapor Recovery Cap
5. 1611AV or 61VSA Series Vapor Recovery Adaptor

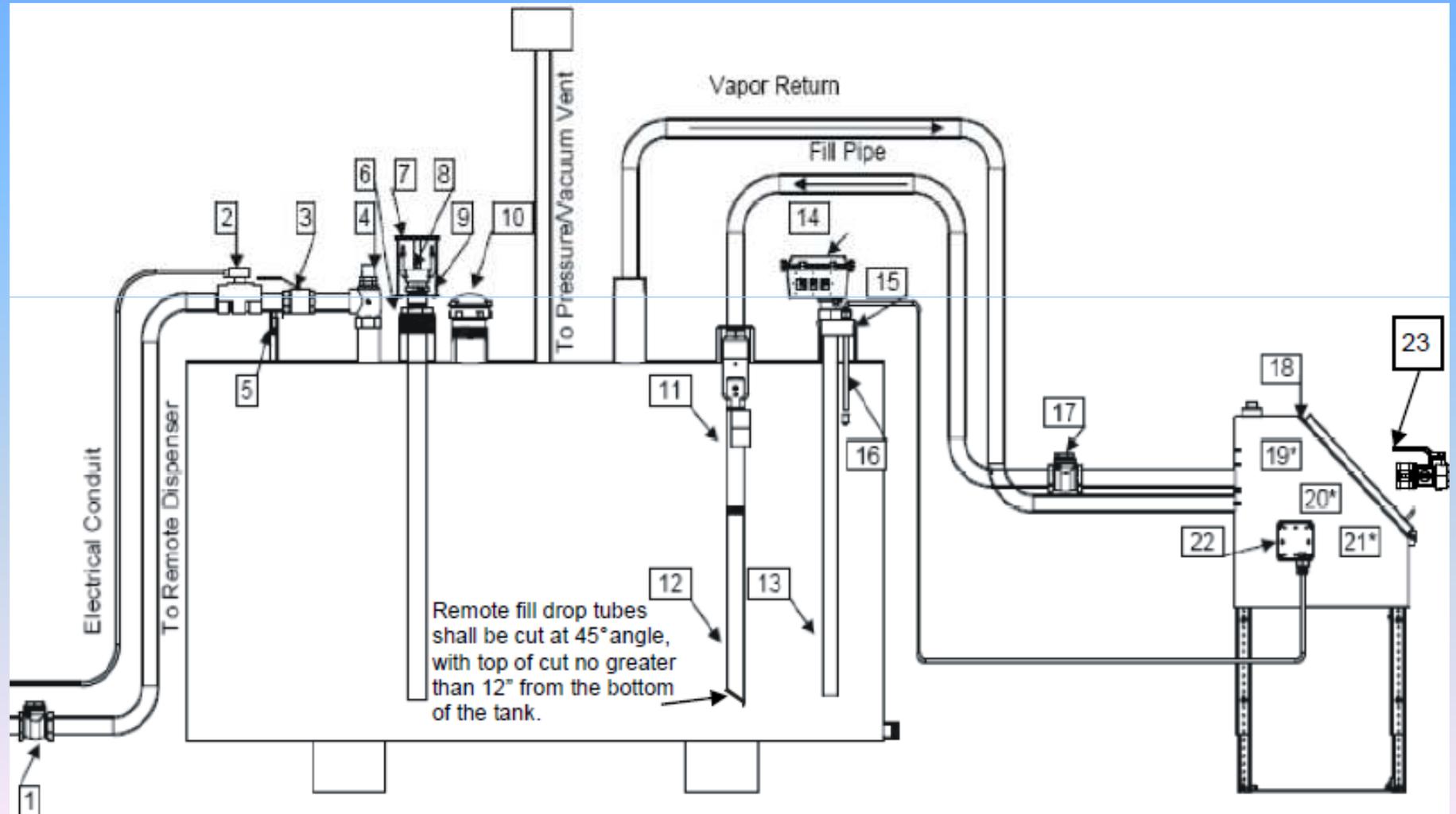
6. 331/332 Series Spill Container
7. 634B Series Dust Cap
8. 1611AN/1612AN Series Kamvalok Adaptor
9. 61fSTOP-XXXXT Series Overfill Prevention Valve
10. 61FT Series Drop Tube

11. 204247 Fill Prevention Cage
12. 634B-0150 or 634BK-0090 Cap
13. 633AST-2190 Adaptor
14. 53-00XX Series Double Tapped Bushing
15. 1711D-YYYY Kamvalok Coupler

Typical Phase I EVR - Direct Fill (Example 2)



Typical Phase I EVR - Remote Fill (Example 1)



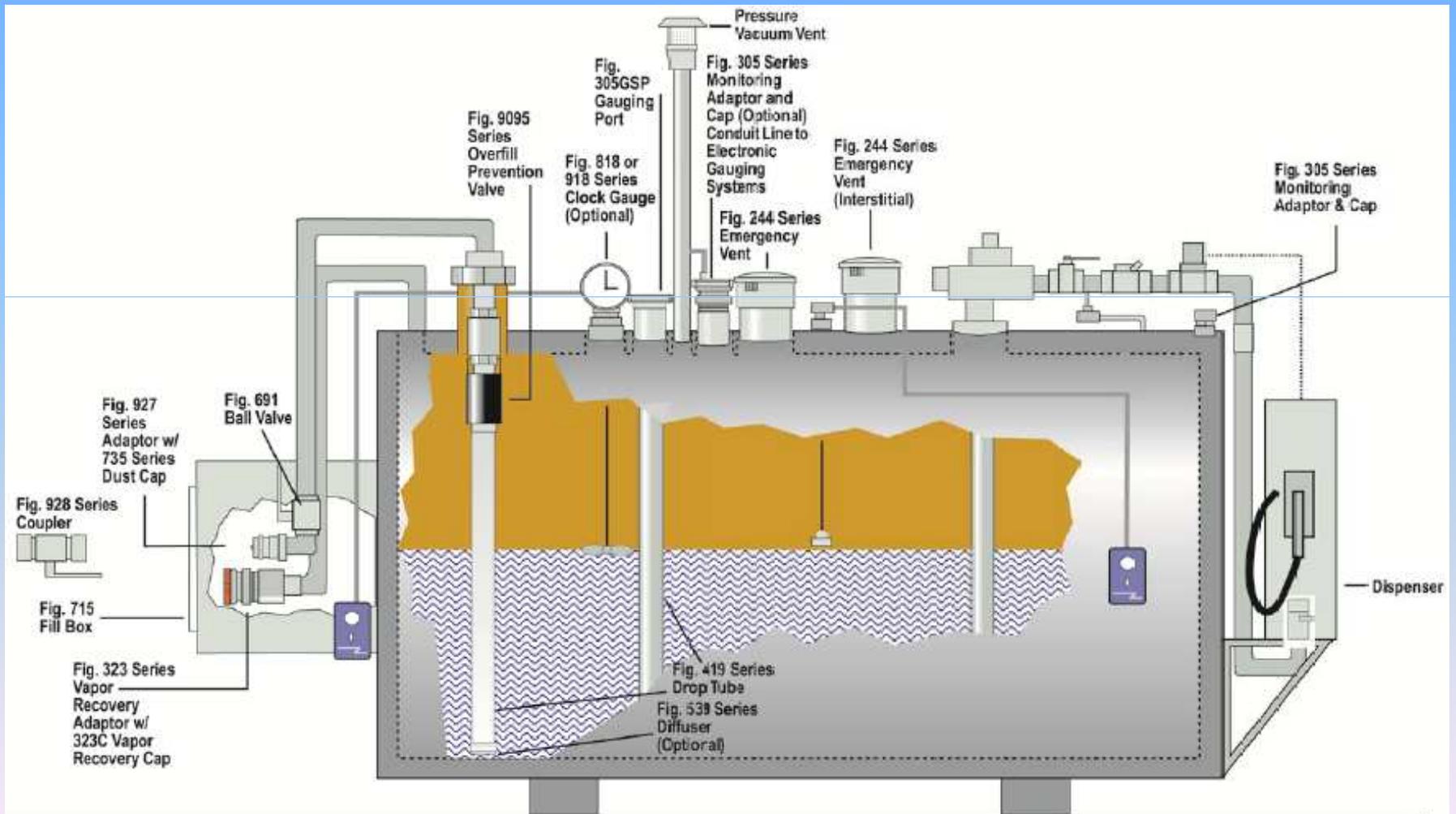
Typical Phase I EVR - Remote Fill (Example 1)

1. 178S Series Emergency Valve (optional)
2. 821 Series Solenoid Valve (optional)
3. 21BV Series Ball Valve (optional)
4. 199ASV Series Anti-Siphon Valve (optional)
5. 82RV Series Pressure Relief Valve (optional)
6. 53-00XX Series Double Tapped Bushing (optional)
7. 204247 Fill Prevention Cage
8. 634B-0150 or 634BK-0090 Cap
9. 633AST-0XXX Adaptor
10. 301 Series Emergency Vent
11. 61fSTOP-XXXXT Series Overfill Prevention Valve
12. 61FT Series Drop Tube
13. 61T Series Drop Tube
14. 200TG Series Tank Gauge (optional)
15. TGTA-0400 4" Gauge/Alarm Combo Fitting (optional)
16. 44TA-LLFS Liquid Level Float Switch (optional)
17. 175 Series Swing Check Valve (optional)

18. 6211R Series Remote Spill Container
19. 1611AN/1612AN Series Kamvalok Adaptor *
20. 1611AV or 61VSA Series Vapor Recovery Adaptor *
21. 1711T or 1711LPC Series Vapor Recovery Cap *
22. 144TA/444TA Series Tank Alarm (optional)
23. 1711D-YYYY Kamvalok Coupler

*Inside Spill Container

Typical Phase I EVR - Remote Fill (Example 2)



Installation Scenarios

Aboveground Storage Tanks

Installation Scenarios

Question 1:

How do I meet SLC and Phase I EVR requirements if I have an uncertified **EXISTING** AST?

Answer 1:

Tank Type	SLC	Phase I EVR
Uncertified Existing AST	Install Reflective Coating & P/V Valve from VR-301	Install either VR-401 or VR-402

Installation Scenarios

Question 2:

What openings are required for my EXISTING AST to install Phase I EVR equipment?

Installation Scenarios

Answer 2:

The following ports/bungs/openings are required to install these Phase I EVR equipment at existing AST:

- Emergency Vent
- Product Adaptor/ Submerged Drop Tube
- Vapor Adaptor
- PV Valve
- Gauging Port

Installation Scenarios

Question 3:

What if my EXISTING AST does not have all of the required openings to install Phase I EVR equipment?

Installation Scenarios

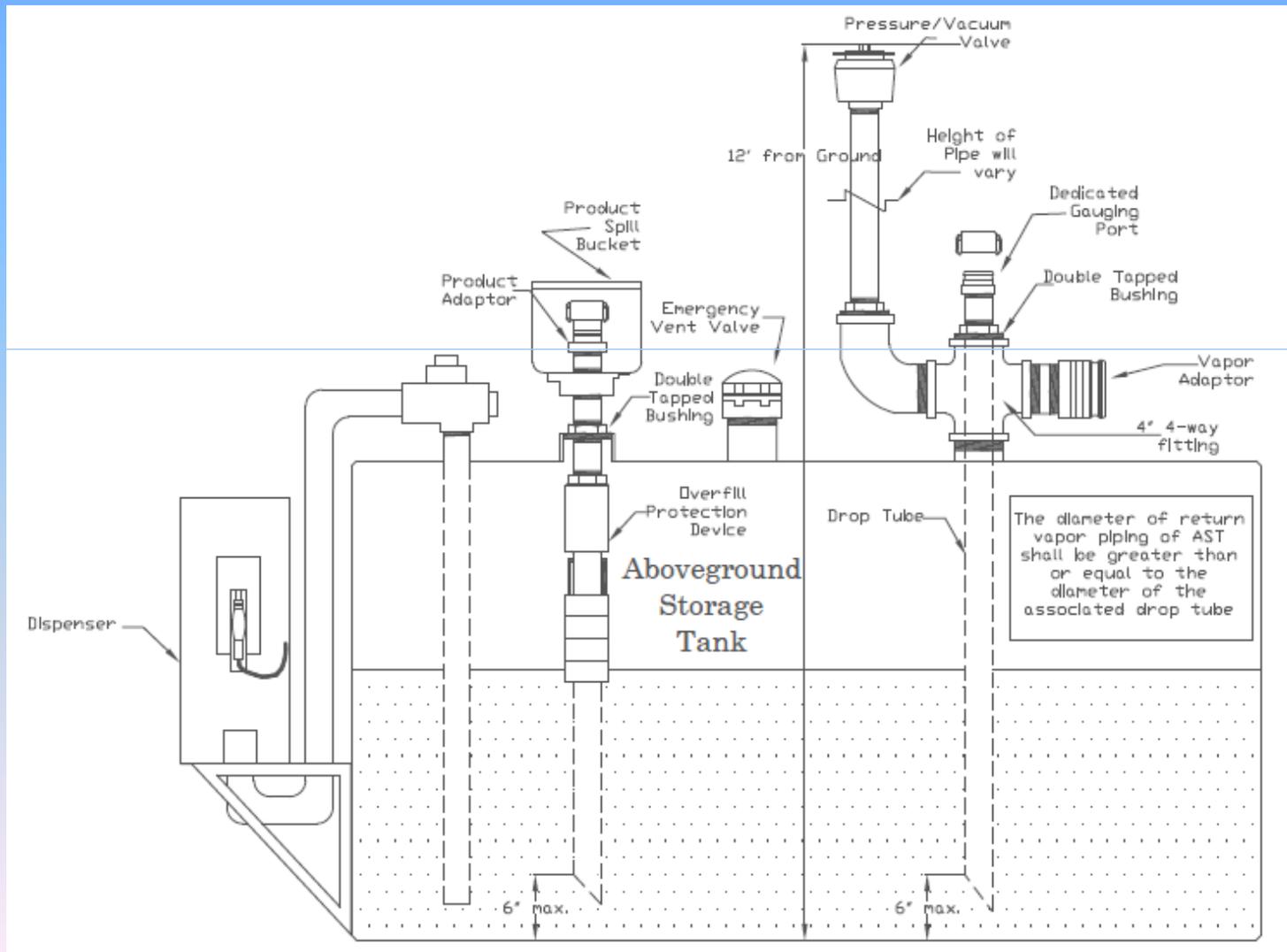
Answer 3:

Per CARB Advisory 438, if existing AST does not have correct sizing and/or available number of ports/openings on tank, then pipe fittings are allowed so as to accommodate several pieces of Phase I EVR equipment in more than one port

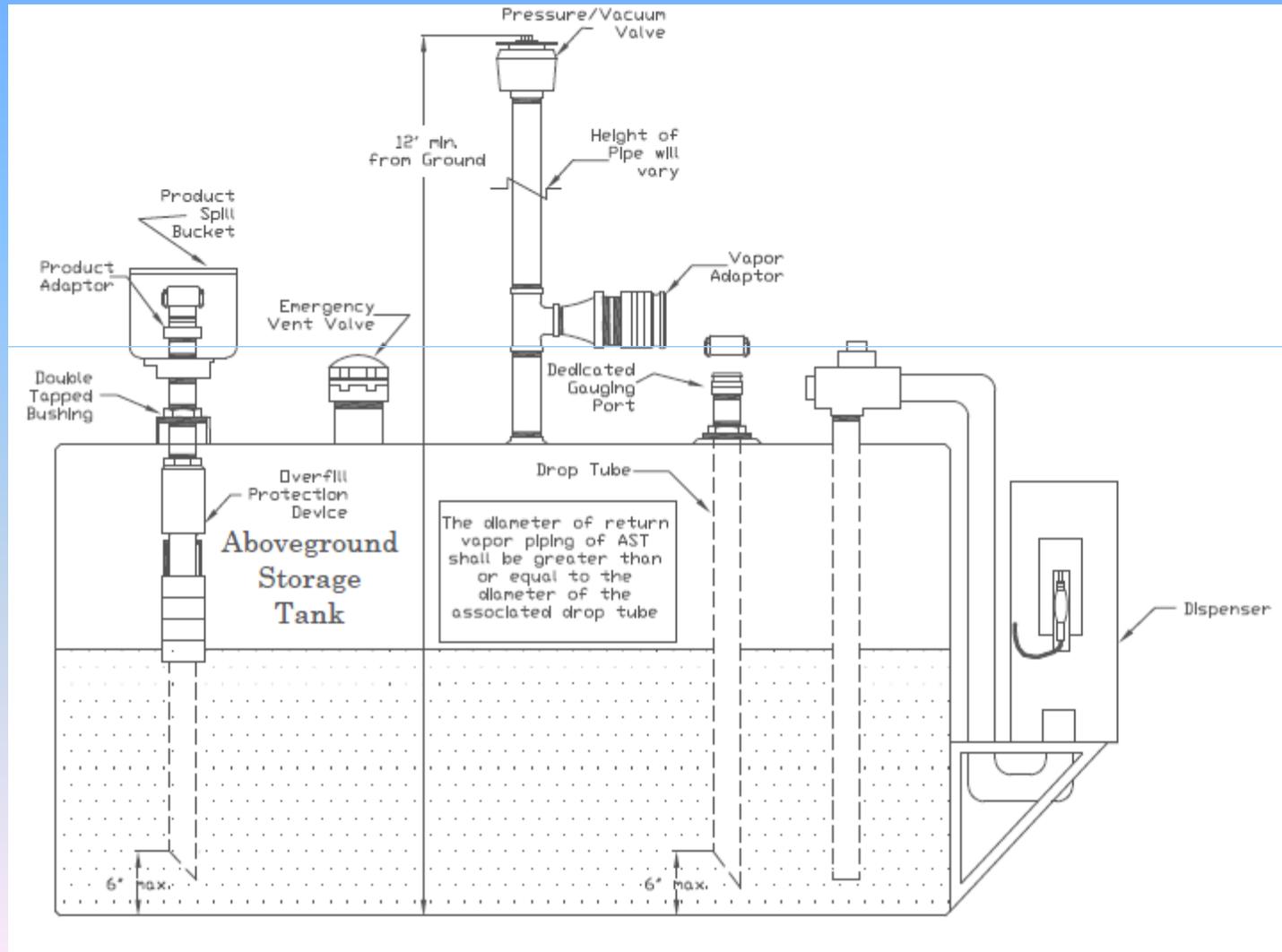
Refer to Examples



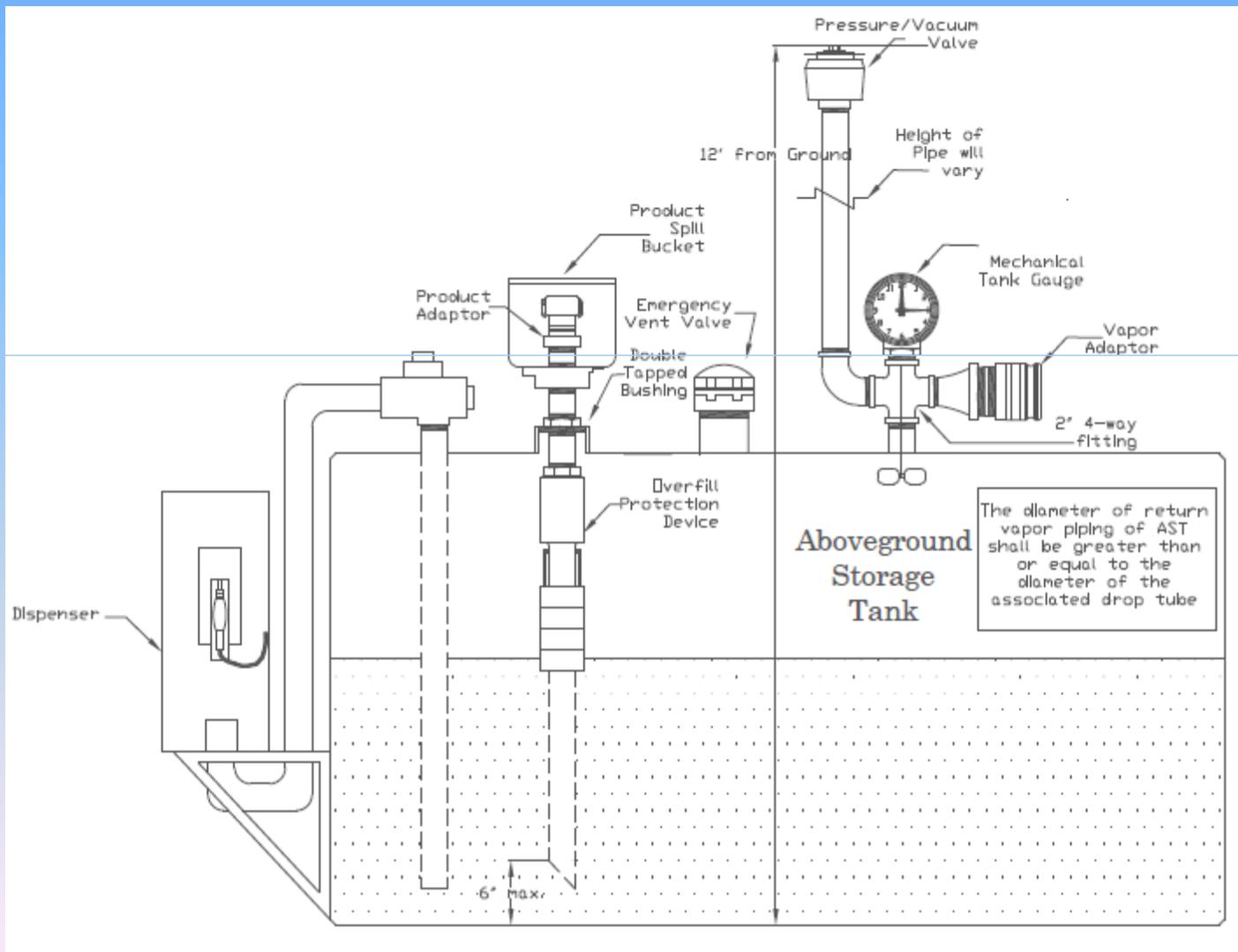
Installation Scenarios – Alternate 1



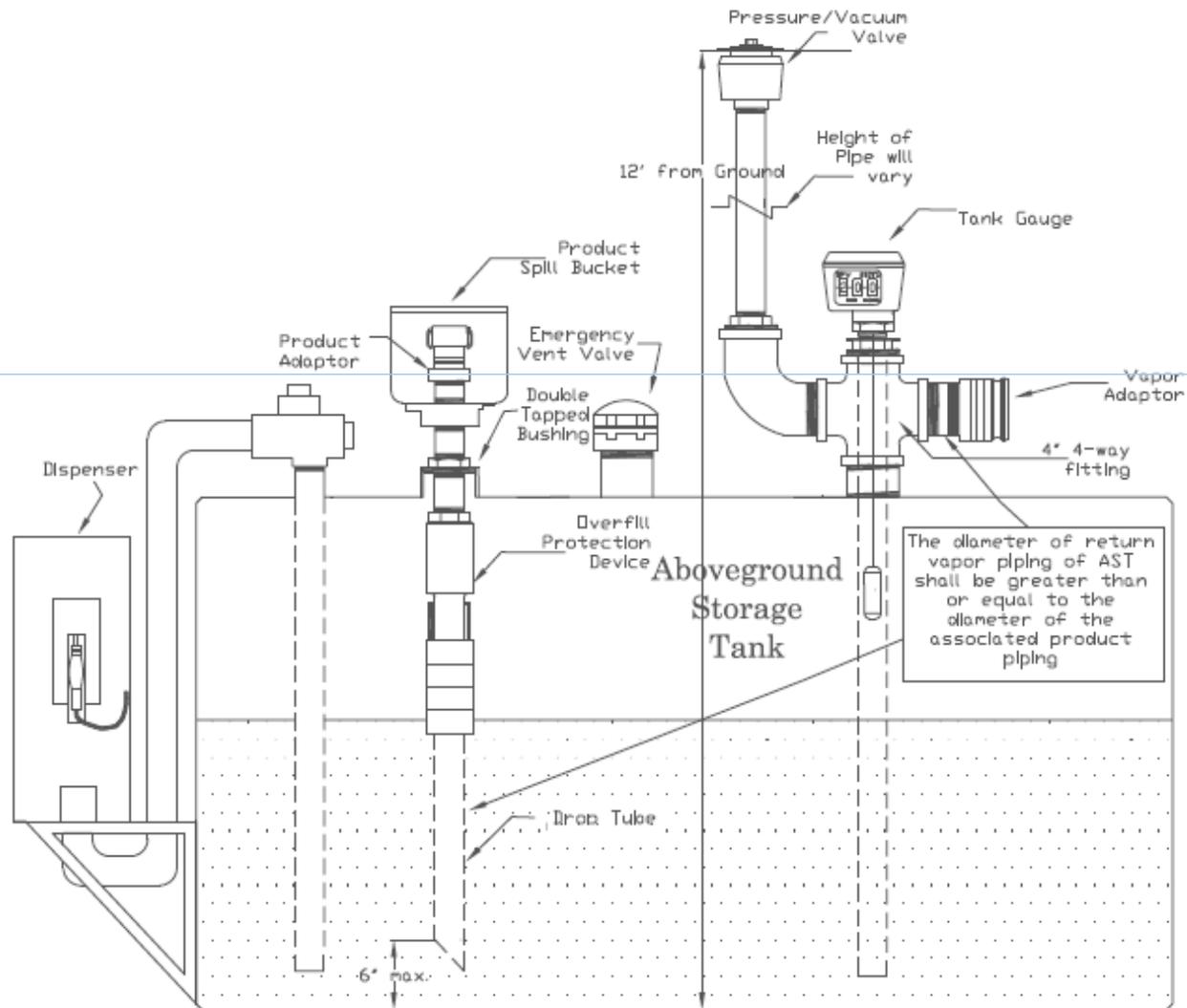
Installation Scenarios – Alternate 2



Installation Scenarios – Alternate 3



Installation Scenarios – Alternate 4



Installation Scenarios

Question 4:

How do I meet SLC and Phase I EVR requirements if I need to install a NEW AST?

Answer 4:

Tank Type	SLC	Phase I EVR
New AST	Install AST & install P/V Valve from VR-302	Install either VR-401 or VR-402

Installation Scenarios

Question 5:

What if the uncertified EXISTING AST is shaded by a structure OR it is fully enclosed in a structure. Does it still need to be painted to meet SLC?

Answer 5:

Yes, reflective coating will still be required.

Installation Scenarios

Question 6:

What documentation do I need to keep to show proof of my AST meeting SLC and Phase I EVR compliance?

Answer 6:

- Information on reflective coating used, invoices with date(s) to demonstrate when installed
- Invoice for P/V Valve and documentation on ICC-VI contractor that performed installation

Installation Scenarios

Question 7:

Can I “mix and match” components from different Executive Orders to install at my AST?

Answer 7:

No. Use only the components listed in each individual Executive Order, unless specified in any CARB advisories

Permitting Information

Aboveground Storage Tanks

Permit Requirements

- SCAQMD permits are required for gasoline storage and transfer system with an AST with 251 gallons or more capacity
- Permitted AST are required to comply with state EVR requirements according to program schedule:
 - April 1, 2013 for SLC
 - July 1, 2014 for Phase I EVR

SLC Permitting Requirements

- No permit modification is required for complying with SLC unless installing new protected tank
- Recordkeeping as specified under EO VR-302 for coating application
- Permit is required for a **NEW** AST to meet both SLC and Phase I EVR:
 - Submit application prior to installation
 - Specify the tank (from VR-302)
 - Specify the Phase I EVR (from VR-401 or VR-402)

Recordkeeping for Coating Applications

- Recordkeeping form from VR-302 is acceptable with facility identified
- Provide contractor's Certification Number from International Code Council (ICC)
- Submit both when applying for permit for Phase I EVR

AST Manufacturer, Model, Serial Number, or other ID Information	Product Purchase Date and Quantity of Product Purchased	Date of Application	Mix Ratio	Method of Surface Preparation and Application (for White Paint Only)	Average Ambient Temperature and Atmospheric Observations (for White Paint Applications)	Name, Affiliation, and Contact Information of Person/Company Installing P/V Valve and/or Preparing and Applying Paint

Phase I EVR for Existing AST

- Permit amendment is required for modifications to an **EXISTING** AST to meet Phase I EVR
- Submit application and obtain permit prior to modification:
 - Specify the existing tank manufacturer to be modified (from VR-301)
 - Specify the Phase I EVR manufacturer selected (from VR401 or VR-402)
 - If existing AST is not listed in VR-301, submit invoice for proof of Husky 5885 P/V Valve **AND** invoice to show it was painted with approved paint*

Phase I EVR for New AST

- New permit is required
- Submit application and obtain permit prior to installation:
 - Specify the tank (from VR-302)
 - Specify the Phase I EVR manufacturer selected (from VR401 or VR-402)

Permitting Information

For new AST installation or modifications, submit the following:

- Option 1: Normal Permit Processing (approx. 5 to 6 weeks)
 - Complete form 400-A
 - Complete form 400-CEQA
 - Complete form 400-E-11
 - Submit permit processing fee: \$1,391.92 (as of August 2013)

Permitting Information

- Option 2: Expedited Permit Processing (approx. 3 weeks)
 - Complete form 400-A
 - Complete form 400-CEQA
 - Complete form 400-E-11
 - Complete form 400-XPP
 - Submit expedited permit processing fee: **\$2,087.88** (as of August 2013)

AST Deadlines

- Standing Loss Control (SLC) by April 1, 2013 (past deadline)
- Phase I EVR by July 1, 2014

TIME IS OF THE ESSENCE!



Start permit application process ASAP!

Helpful Website Links - CARB

Executive Orders for Standing Loss Control

<http://www.arb.ca.gov/vapor/eo-astslc.htm>

Executive Orders for Phase I EVR for ASTs

<http://www.arb.ca.gov/vapor/eo-astphasei.htm>

Frequently Asked Questions for ASTs

<http://www.arb.ca.gov/vapor/faq.htm>

Helpful Website Links - SCAQMD

Compliance Advisory for AST, 03/21/13

http://www.aqmd.gov/comply/Rule461/Useful_doc/Advisory02-13.pdf

Rule 461

<http://www.aqmd.gov/rules/reg/reg04/r461.pdf>

CARB Contact Information

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- Lou Roberto – Supervisor
 - (909) 396-2349 lroberto@aqmd.gov
- Bobby Mendoza – Supervisor
 - (909) 396-2412 bmendoza@aqmd.gov
- George Kasper – Supervisor
 - (909) 396-2378 gkasper@aqmd.gov
- Randy Matsuyama – Engineer (Permitting)
 - (909)396-2551 rmatsuyama@aqmd.gov

Questions? / Thank You!

