TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit 25-3706
Air Discharge Permit Application CO-1112

Issued: April 30, 2025

SAFEWAY STORE No. 1078

SWCAA ID – 2209

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Appendix A – CARB Executive Order VR-101-C

ABBREVIATIONS

List of Acronyms

ADP ..... Air Discharge Permit
AP-42 ..... Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA
BACT..... Best available control technology
BART ..... Best Available Retrofit Technology
CARB ..... California Air Resources Board
CFR..... Code of Federal Regulations
EPA..... U.S. Environmental Protection Agency
EU ..... Emission Unit
EVR ..... Enhanced Vapor Recovery
LAER..... Lowest achievable emission rate
MACT..... Maximum Achievable Control Technologies
NESHAP..... National Emission Standards for Hazardous Air Pollutants
NSPS..... New Source Performance Standard
ORVR ..... Onboard Refueling Vapor Recovery
PSD ..... Prevention of Significant Deterioration
RACT..... Reasonably Available Control Technology
RCW ..... Revised Code of Washington
SEPA..... State Environmental Policy Act
Standard ..... Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
SWCAA ..... Southwest Clean Air Agency
T-BACT ..... Best Available Control Technology for toxic air pollutants
WAC ..... Washington Administrative Code

List of Units and Measures

tpy ..... Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CO ..... Carbon monoxide

CO_2 ..... Carbon dioxide

CO_2e ..... Carbon dioxide equivalent

HAP ..... Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act

NO_X ..... Nitrogen oxides

O_2 ..... Oxygen

PM ..... Particulate Matter with an aerodynamic diameter 100 µm or less

PM_{10} ..... PM with an aerodynamic diameter 10 µm or less

$PM_{2.5}$ ..... PM with an aerodynamic diameter 2.5 µm or less

SO_2 ..... Sulfur dioxide

SO_X ..... Sulfur oxides

TAP ..... Toxic air pollutant pursuant to Chapter 173-460 WAC

VOC ..... Volatile organic compound

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name:	Safeway, Inc.
Applicant Address:	1600 Evelyn Street Clackamas, OR 97015
Facility Name:	Safeway Fueling Facility No. 1078
Facility Address:	2944 Ocean Beach Hwy. Longview, WA 98632
SWCAA Identification:	2209
Contact Person:	Ms. Shawn Carter-Elton
Primary Process:	Gasoline dispensing
SIC/NAICS Code:	5541: Gasoline service stations 447110 (2012/2017 NAICS): Gas stations with convenience stores 457110 (2022 NAICS): Gas stations with convenience stores
Facility Latitude and Longitude:	46°08'52.66"N 122°57'42.11"W
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

This facility is a retail gasoline dispensing facility associated with a Safeway grocery store.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CO-1112 received March 19, 2025, for removal of balance-style Stage II vapor recovery and installation of low permeation hoses and enhanced conventional (ECO) nozzles.

4. PROCESS DESCRIPTION

This facility receives unleaded gasoline from tanker trucks for storage in two underground storage tanks or tank compartments. The gasoline storage tanks are equipped with two-point enhanced vapor balance systems that return gasoline vapors vented from the underground storage tanks to the tanker truck during filling (Stage I enhanced vapor recovery). Gasoline is dispensed from 12 multi-product blending pumps. Two of these pumps also dispense diesel through a separate hose. Vapors displaced from individual motor vehicle gasoline tanks during filling will not be returned to the gasoline storage tanks (Stage II vapor recovery).

Products at Pump	Number of Pumps
Blended gasoline through a single hose	10
Blended gasoline through as single hose, diesel through a separate hose	2

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Storage Tanks. The following storage tanks will be utilized at the facility:

Tank	Product	Capacity
1	Regular Unleaded	20,000 gallons
2 – 1	Premium Unleaded	10,000 gallons
2 - 2	Diesel	10,000 gallons

The applicant does not propose to modify the existing Stage I vapor recovery systems that substantially conform to the equipment approved as components of CARB Executive Order VR-101-C "Phil-Tite Phase I Vapor Recovery System for Gasoline Dispensing Facilities." The following equipment was originally approved:

Component	Make / Model
Drop Tube / Overfill Protection	OPW / 61SO
Fill Adapters[1]	Phil-Tite / SWF-100-B
Fill Caps	Morrison / SWF 305C
Vapor Adapters[1]	Phil-Tite / SWF-101-B
Vapor Caps	Morrison / 323C
Extractor Assembly	Universal / V421
Float Vent Valve	N/A
Spill Bucket	Unknown
Pressure / Vacuum Valve	Husky / 4885[2]

[1] This is a two point system.

[2] If the pressure / vacuum valves are replaced, the only replacements currently approved by CARB are the Husky model 5885, FFS model PV-Zero, or the OPW model 723V.

This facility will not utilize Stage II vapor recovery equipment. The following low permeation hoses and enhanced conventional nozzles will be installed:

Component	Make / Model
Nozzles	OPW / 14E
Hoses	Contitech / Futura Low Perm

5.b. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Retail Gasoline Dispensing Facility	Stage I Vapor Recovery Systems

6. EMISSIONS DETERMINATION

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

(a) Continuous emissions monitoring system (CEMS) data;

(b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
(c) Source emissions test data (other test method); and
(d) Emission factors or methodology provided in this TSD.

Nothing precludes the use, including the exclusive use of any credible evidence or information relevant to identifying or quantifying emissions if such credible evidence provides more accurate identification or quantification of actual emissions than other available information.

6.a. Gasoline Vapors. Total potential VOC emissions from the facility were estimated using the following emission factors from the California Air Resources Board December 23, 2013, document "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities":

Emission Source	VOC Emission Factor (lb/1,000 gallons of fuel)
Loading – Stage I Controlled (EVR)	0.150
Breathing – Controlled with P/V Valve	0.092
Uncontrolled Refueling – Stage II uncontrolled (non ORVR Vehicles, no Stage II)	0.84[1]
Controlled Refueling (ORVR vehicles, no Stage II)	0.151[2]
Spillage (ECO nozzles)	0.240
Hose Permeation (low permeation)	0.009
Total	**1.482**

[1] Based on 90% of the gasoline being dispensed to vehicles equipped with carbon canisters (ORVR). The base emission factor, assuming no ORVR vehicles, is 8.400 lb/1,000 gallons. 10% of the vehicles are not equipped with ORVR: 8.4 lb/1,000 gallons * (1-0.90) = 0.84 lb/1,000 gallons.
[2] This is the amount of vapor released during refueling that is attributable to those vehicles equipped with carbon canisters (ORVR) assuming carbon canisters provide for 98% control. 8.400 lb/1,000 gallons * 90% of gas dispensed to vehicles with ORVR * (2% of vapors not captured by the canister) = 0.151 lb/1,000 gallons.

The above calculations assume that 90% of the fuel is dispensed to vehicles equipped with onboard refueling vapor recovery (ORVR). SWCAA expects this level was met in Clark County in 2020 and will be (or was) met a few years later in Cowlitz, Lewis, Skamania, and Wahkiakum counties.

At a throughput of 5,000,000 gallons of gasoline per year, the facility would emit 3.71 tons of volatile organic compounds. Based on EPA Speciate 3.2 profile number 2455, approximately 50.0% of the total VOC emissions are toxic air pollutants (TAPs) as defined by WAC 173-460 (as in effect August 21, 1998), and approximately 12.9% of the total VOC emissions are federally listed hazardous air pollutants (HAPs). For a throughput of

5,000,000 gallons per year, TAP and HAP emission rates are estimated at 1.85 tons per year, and 0.48 tons per year respectively.

6.b. Emissions Summary

Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
NO_X	0	0
CO	0	0
VOC	3.71	1.10
SO_2	0	0
PM	0	0
PM_{10}	0	0
$PM_{2.5}$	0	0
CO_2/CO_2e	0	0
Toxic Air Pollutants	1.85	0.55
Hazardous Air Pollutants	0.48	0.14

[1] Based on 90% of fuel dispensed to ORVR-equipped vehicles. The magnitude of the project impact presented here assumes a gasoline throughput of 5,000,000 gallons per year.

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this ADP consistent with implementation of Best Available Control Technology (BACT):

7.a. Title 40 Code of Federal Regulations (CFR) Part 63.11110 et seq. Subpart CCCCCC "National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities" establishes emission control, testing, recordkeeping and reporting requirements for new and existing gasoline dispensing facilities. Which requirements apply to a specific facility depend upon when the facility began operation and the monthly throughput. This facility began operation prior to January 10, 2008 and has a potential throughput of 100,000 gallons per month or more. Facilities with a throughput of 100,000 gallons per month or more that began operation prior to January 10, 2008 must be in compliance with a state rule or federally enforceable permit that contains requirements to achieve emission reductions of at least 90% by January 10, 2008 or comply with requirements found in Table 1 of Subpart CCCCCC including:

(1) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnection;

(2) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor tight;
(3) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18" w.c. pressure or 5.9" w.c. vacuum during product transfer;
(4) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations;
(5) Liquid fill connections for all systems shall be equipped with vapor-tight caps;
(6) Pressure/vacuum vent valves shall be installed on the storage tank vent pipes. The positive pressure setting shall be 2.5" w.c. to 6" w.c. and the negative pressure setting shall be 6" w.c. to 10" w.c. The total leak rate for all pressure/vacuum valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0" w.c. and 0.63 cubic foot per hour at a vacuum of 4" w.c.;
(7) The vapor balance system shall be capable of meeting the static pressure performance requirement found in Table 1 of Subpart CCCCCC; and
(8) Each new or existing gasoline storage tank shall be equipped with a dual-point vapor balance system.

As of January 10, 2008 this facility was complying with the requirements of SWCAA 491 which required Stage I vapor recovery equipment as approved by CARB or SWCAA. The Stage I vapor recovery equipment provided at least 90% control of gasoline vapors; therefore, this facility is not subject to the requirements of Table 1 or any other requirement of this rule including initial notification. Note that although the rule adds no requirements for this facility, this facility is an affected source for the purposes of this rule.

7.b. Title 40 CFR Part 1090 "Regulation of Fuels, Fuel Additives, and Regulated Blendstocks" in section 1090.1550(b) requires that the flow through any nozzle dispensing gasoline into motor vehicles be limited so as not to exceed a maximum value of 10 gallons per minute.

7.c. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act (RCW 70A.15) and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.

7.d. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an ADP for installation and establishment of an air contaminant source.

7.e. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety from new sources not provided an exemption under

WAC 173-460-030. Gasoline dispensing facilities are exempt from the provisions of WAC 173-460.

7.f. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, SO_2, NO_X, ozone, and CO in the ambient air, which must not be exceeded.

7.g. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, SO_2, concealment and masking, and fugitive dust.

7.h. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere.

7.i. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum.

7.j. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source." Sources wishing to modify existing permit terms may submit an ADP application to request such changes. An ADP must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits.

7.k. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit, or modification.

7.l. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source will be granted unless it is evidenced that:

(1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
(2) BACT will be employed for all air contaminants to be emitted by the proposed equipment;
(3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
(4) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

The facility is located in an area that is in attainment for all criteria pollutants; therefore, this regulation applies to the facility.

7.m. SWCAA 491-040(4) "Gasoline Vapor Control Requirements – Gasoline Dispensing Facilities" establishes the following requirements:

(1) All gasoline dispensing facilities with an annual gasoline throughput greater than two hundred thousand (200,000) gallons in Clark County and three hundred sixty thousand (360,000) gallons in Cowlitz, Lewis, Skamania and Wahkiakum Counties shall be subject to gasoline Stage I vapor control requirements;
(2) All gasoline dispensing stations subject to this section shall be equipped with submerged or bottom fill lines and fittings to balance gasoline vapors with the delivery transport tank;
(3) The owner or operator of a gasoline dispensing facility subject to this section shall not permit the loading of gasoline into a storage tank equipped with vapor recovery equipment from a transport tank equipped with vapor recovery fittings unless Stage I vapor recovery equipment is attached to the transport tank and operated satisfactorily;
(4) Every retailer and wholesale purchaser-consumer shall equip each pump from which gasoline is dispensed into motor vehicles with a nozzle that dispense fuel at a flow rate not to exceed 10 gallons per minute;
(5) Stage II vapor recovery equipment compatible with ORVR may be removed from service beginning January 1, 2023 after an Air Discharge Permit has been issued for the modification; and
(6) New gasoline dispensing facilities (built after February 7, 2020), or existing gasoline dispensing facilities without Stage II vapor recovery, are not required to install Stage II vapor recovery equipment.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determination(s)

8.a. Retail Gasoline Dispensing Facility. SWCAA has determined that Best Available Control Technology for the control of gasoline vapors emitted from new gasoline dispensing facilities with a throughput of more than 360,000 gallons per year in Cowlitz County consists of EVR Stage I vapor recovery equipment as tested and approved by CARB, enhanced conventional nozzles (where Stage II is not in place), and low permeation hoses if liquid gasoline is carried against the outermost hose wall.

The applicant proposes retaining Stage I enhanced vapor recovery equipment and installing enhanced conventional nozzles, and low permeation hoses. This configuration meets the requirements of BACT.

Previous BACT Determination(s)

8.b. Retail Gasoline Dispensing Facility (ADP 22-3541). SWCAA has determined that Best Available Control Technology for the control of gasoline vapors emitted from new gasoline dispensing facilities with a throughput of more than 360,000 gallons per year in Cowlitz County consists of EVR Stage I vapor recovery equipment as tested and approved by CARB, enhanced conventional nozzles (where Stage II is not in place), and low permeation hoses if throughput could exceed 1,400,000 gallons per year and liquid gasoline is carried against the outermost hose wall.

This facility is equipped with EVR Stage I vapor recovery equipment. The use of low-permeation hoses does not apply to this facility because balance-style hoses do not carry liquid against the outermost hose wall. The proposed balance-style vapor recovery system is ORVR-compatible and satisfies the requirement to utilize BACT. No additional measures are currently necessary for this facility to meet the requirements of BACT.

8.c. Retail Gasoline Dispensing Facility (ADP 03-2513). SWCAA has determined that Best Available Control Technology for the control of gasoline vapors emitted from gasoline dispensing facilities with a throughput of 1,200,000 gallons per year or more in Cowlitz county consists of Stage I and Stage II vapor recovery equipment as tested and approved by CARB. The Stage I enhanced vapor recovery equipment proposed for use by this source was approved by CARB Executive Order VR-101-C dated September 16, 2003. The Stage II vapor recovery system and equipment proposed for use at this source was approved by CARB Executive Order G-70-153-AD dated April 3, 2000.

Other Determinations

8.d. PSD Applicability. Maximum potential emissions from this facility are well below PSD thresholds; therefore, PSD permitting is not required.

8.e. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this source because it is not a major source and is not required to obtain a Part 70 permit.

9. AMBIENT IMPACT ANALYSIS

9.a. The retail gasoline dispensing facility equipped with Stage I enhanced vapor recovery systems, ECO nozzles, and low permeation hoses will not cause the ambient air quality standards established by Title 40 Code of Federal Regulations Part 50 (40 CFR 50), "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.b. The retail gasoline dispensing facility equipped with Stage I enhanced vapor recovery systems, ECO nozzles, and low permeation hoses, if properly installed and maintained, can be operated without causing a violation of the applicable emission standards which include the limits established under SWCAA 400-040 "General Standards for Maximum Emissions."

9.c. The retail gasoline dispensing facility equipped with Stage I enhanced vapor recovery systems, ECO nozzles, and low permeation hoses will not cause the requirements of WAC 173-476 "Ambient Air Quality Standards" to be violated.

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 25-3706 in response to ADP application CO-1078. ADP 25-3706 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards, as discussed below.

10.a. Supersession of Previous Permits. Air Discharge Permit 22-3541 will be superseded in its entirety.

10.b. Emission Limits. An annual VOC emission limit of 3.71 tons per year was established. This limit is based upon the facility utilizing properly operated Stage I enhanced vapor recovery systems, enhanced conventional nozzles, low permeation hoses, dispensing 90% of the fuel to ORVR-equipped vehicles, and a gasoline throughput of 5,000,000 gallons per year.

10.c. Operational Limits and Requirements. Consistent with SWCAA 400-040(4), the permittee is required to use recognized good practice and procedures to minimize odors that impact other property owners.

The gasoline throughput was limited to 5,000,000 gallons per year. At higher throughputs additional actions may be necessary to meet the requirements of BACT.

The remaining requirements are related to proper operation of the Stage I vapor recovery systems.

10.d. Monitoring and Recordkeeping Requirements. The permittee is required to record each occurrence of maintenance and repairs to vapor recovery equipment so that SWCAA and the permittee can assure that maintenance and repairs are consistent with approved vapor recovery requirements.

10.e. Reporting Requirements. Total gasoline throughput and the annual emissions inventory are required to be submitted to SWCAA by January 31st of each year (unless otherwise directed by SWCAA) to demonstrate compliance with the throughput limitation in the permit and allow for the development of a comprehensive emissions inventory. Test results must be reported to SWCAA within 14 days of test completion consistent with CARB and SWCAA reporting requirements.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown," technology-based emission standards and control technology determinations shall take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

This source is capable of achieving continuous compliance with all applicable requirements; therefore, no start-up or shutdown provisions were included in the ADP.

11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were accommodated by the approval conditions.

11.c. Pollution Prevention Measures. SWCAA conducted a review for possible pollution prevention measures outside of the use of Stage I and II vapor recovery equipment. No other pollution prevention measures were identified by either the permittee or SWCAA. Therefore, none were accommodated in the approval conditions.

12. EMISSION MONITORING AND TESTING

In accordance SWCAA 491-040(4)(n) that became effective February 7, 2020, testing of each pressure-vacuum vent valve is required every 36 months. New pressure/vacuum vent valves are typically tested at the factory, therefore initial testing does not apply to new valves with a factory test. In accordance with SWCAA 491, initial vapor recovery testing is required prior to placing the equipment back into service rather than within 60 days after startup as specified in the applicable CARB Executive Order.

For the static pressure decay test, TP-201.3 does not provide an allowable final pressure for stations without Stage II vapor recovery. Therefore, the allowable final pressure equation from 40 CFR 63 Subpart CCCCCC was included in the permit.

13. FACILITY HISTORY

13.a. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

Permit	Application	Date Issued	Description
22-3541	CO-1056	September 15, 2022	Approval to replace vacuum-assist style Stage II vapor recovery systems with balance-style Stage II vapor recovery systems.
03-2513	CO-763	December 11, 2003	Installation of new gas station with two gasoline storage tanks, EVR Stage I vapor recovery equipment, and vacuum-assist style Stage II vapor recovery equipment

Approvals in bold have been superseded or are no longer active with issuance of ADP 25-3706.

13.b. Compliance History. A search of source records on file at SWCAA did not identify any outstanding compliance issues at this facility.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a. Public Notice for ADP Application CO-1112. Public notice for ADP application CO-1112 was published on the SWCAA website for a minimum of 15 days, beginning on March 20, 2025.

14.b. Public/Applicant Comment for ADP Application CO-1112. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CO-1112. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. This project is exempt from SEPA requirements pursuant to WAC 197-11-800(3) since it only involves repair, remodeling, maintenance, or minor alteration of existing structures, equipment or facilities, and does not involve material expansions or changes in use. SWCAA issued a determination that the project is exempt from SEPA review on April 30, 2025 (Determination of SEPA Exempt - SWCAA 25-022).

Appendix A

CARB Executive Order VR-101-C

Phil-Tite Phase I Vapor Recovery System

State of California
AIR RESOURCES BOARD

Executive Order VR-101-C
Phil-Tite Phase I Vapor Recovery System

WHEREAS, the California Air Resources Board (CARB) has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during the filling of underground gasoline storage tanks, in its **CP-201, *Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities*** (Certification Procedure) as last amended July 1, 2003 incorporated by reference in title 17, California Code of Regulations, Section 94011;

WHEREAS, CARB has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, test procedures for determining the compliance of Phase I vapor recovery systems with emission standards;

WHEREAS, Phil-Tite Enterprises (Phil-Tite) requested and was granted certification of the Phil-Tite Phase I Vapor Recovery System (Phil-Tite system) pursuant to the Certification Procedure on June 19, 2001 by Executive Order VR-101-A, as modified July 12, 2002 by Executive Order VR-101-B;

WHEREAS, Phil-Tite requested a further modification to the certification to include additional components of the Phil-Tite system;

WHEREAS, the requested modifications to the certification of the Phil-Tite system have been tested and evaluated pursuant to the Certification Procedure;

WHEREAS, the Certification Procedure provides that the CARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system, including modifications, conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities (GDF); and

WHEREAS, I, William V. Loscutoff, Chief of the Monitoring and Laboratory Division, find that the Phil-Tite Phase I Vapor Recovery System, including modifications, conforms with all of the requirements set forth in the Certification Procedure, and results in a vapor recovery system which is at least 98.0 percent efficient as tested in accordance with test procedure **TP-201.1**, ***Volumetric Efficiency for Phase I Systems***;

NOW THEREFORE, IT IS HEREBY ORDERED that the Phil-Tite System is certified to be at least 98.0 percent efficient when installed and maintained as specified herein and in the following Exhibits. Exhibit 1 contains a list of the certified components. Exhibit 2 contains the performance standards and specifications, typical installation drawings and maintenance intervals for the Phil-Tite System as installed in a gasoline dispensing facility (GDF). Exhibit 3

contains the manufacturing specifications. Exhibit 4 is test procedure ***Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves***

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, and the Division of Occupational Safety and Health of the Department of Industrial Relations are made conditions of this certification.

IT IS FURTHER ORDERED that Phil-Tite shall provide a warranty for the vapor recovery system and components to the initial purchaser and each subsequent purchaser within the warranty period. The manufacturer of components not manufactured by Phil-Tite, shall provide a warranty for each of their components certified herein. This warranty shall include the ongoing compliance with all applicable performance standards and specifications, and shall comply with all warranty requirements in Section 9.2 of the Certification Procedure. Phil-Tite may specify that the warranty is contingent upon the use of trained installers. Copies of the warranty for the system and components shall be made available to the gasoline dispensing facility owner/operator.

IT IS FURTHER ORDERED that the certified Phil-Tite system shall be installed and maintained in accordance with the ***ARB-Approved Installation and Maintenance Manual*** **for the Phil-Tite Phase I Vapor Recovery System.** A copy of this Executive Order and manual shall be maintained at each GDF where a certified Phil-Tite system is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacture's name and model number.

IT IS FURTHER ORDERED that any alteration in the equipment, parts, design, installation or operation of the system certified hereby is prohibited and deemed inconsistent with this certification unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer's delegate.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Phil-Tite System shall conduct, and pass, the following tests no later than 60 days after startup and at least once every 3 years after startup testing, using the latest adopted version of the following test procedures. TP-201.3, ***Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities***, TP-201.1B, ***Static Torque of Rotatable Phase I Adaptors*** and depending on the system configuration, either TP-201-1D, ***Leak Rate of Drop Tube Overfill Prevention Device and Spill Container Drain Valve***; or TP-201.1C, ***Leak Rate of Drop Tube/Drain Valve Assembly.*** Shorter time periods may be specified in accordance with local district requirements. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to the policies established by that district. Alternative test procedures may be used if determined by the Executive Officer, in writing, to yield comparable results. Testing the P/V valve will be at the option of the local districts. If P/V valve testing is required by the district, the test shall be conducted in accordance with Exhibit 4.

IT IS FURTHER ORDERED that the Phil-Tite System shall be compatible with fuels in common use in California at the time of certification and any modifications to comply with future California fuel requirements shall be approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the certification of the Phil-Tite Phase I vapor recovery system is valid through June 30, 2005.

IT IS FURTHER ORDERED that Executive Order VR-101-B issued on July 12, 2002 is hereby superceded by this Executive Order.

Executed at Sacramento, California, this 16th day of September 2003.

William V. Loscutoff, Chief
Monitoring and Laboratory Division

Attachments:

Exhibit 1 Phil-Tite Phase I Vapor Recovery System Equipment List
Exhibit 2 Installation, Maintenance and Compliance Specifications
Exhibit 3 Manufacturing Performance Standards and Specifications
Exhibit 4 Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valve

Executive Order VR-101-C Phil-Tite Phase I Vapor Recovery System

Exhibit 1

Phil-Tite Phase I Vapor Recovery System Equipment List

Equipment	Manufacturer/Model Number
Spill Container	Phil-Tite 85100-F = Product (replacement spill container) 85000-S = Product with Stainless Steel (SS) Sleeve 85000-GS = Product with SS Sleeve and Gravel Shield 85000-EXT = Product, external for sump configuration 85100-15 = Product, 15-gallon capacity 85101-NV = Vapor (replacement spill container) 85001-NV-S = Vapor with Stainless Steel (SS) Sleeve 85001-NV-GS = Vapor with SS Sleeve and Gravel Shield 85001-NV-EXT= Vapor, external for sump configuration
Spill Container Lid **Sump Configuration Lid[1]**	Phil-Tite 85011 (not required with sump configuration lid) Fibre-Lite FL-36 inch
Debris Bucket	Phil-Tite PP-1005 TB (product) (required) Phil-Tite PP-1005 TBP (vapor) (not required)
Product Adaptor	Phil-Tite SWF-100-B
Vapor Adaptor	Phil-Tite SWV-101-B
Riser Adaptor	Phil-Tite M/F4X4
Dust Cap	Morrison Brothers 323C-0100ACEVR (vapor) Morrison Brothers 305C-0100ACEVR(product) OPW 1711T-EVR (vapor) OPW 634TT-EVR (product)
Pressure/Vacuum Vent Valve	Husky 4885
Tank Gauge Port Components	Ever-Tite 4097AGBR (adaptor) Ever-Tite 4097AGMBRNL (adaptor) Ever-Tite 4097MBR (cap) Veeder-Root 312020-952 (cap & adaptor)
Extractor[1]	Universal V421 OPW 233
Ball Float Vent Valve[1]	Universal 37

[1] Component optional for vapor recovery system configuration; other requirements may apply.

	OPW	53VML
	OPW	30MV
Drop Tube Overfill Prevention Device[1]		
	Phil-Tite	61SO-PT
Drop Tube[1]	OPW	61-T (various lengths)
Riser Offset[1]	Phil-Tite	M-6050
Double Fill[1]	Phil-Tite	(configuration only)
Sump Configuration[1]	Phil-Tite	85000-EXT-CA2
Tank Bottom Protector[1]	Phil-Tite	TBP-3516

The following components may not be installed as new or replacement parts on or after September 1, 2002. These components, if installed prior to September 1, 2002, may be used for the remainder of their useful life.

Component Name	Manufacturer	Model Number
Drop Tube	EBW	782-204 (various lengths)
	Emco Wheaton	A0020 (various lengths)
Extractor Fitting	EBW	3XX Series
	Emco Wheaton	A0079 Series

Table 1
Components Exempt from Identification Requirements

Component Name	Manufacturer	Model Number
Drop Tube	OPW	61-T Straight Drop Tube
Ball Float	Universal	Model 37
Tank Gauge Components	Ever-Tite	4097 AGBR, AGMBRNL, MBR
Riser Adaptor	Phil-Tite	M/F4X4
Riser Offset	Phil-Tite	M-6050

[1] Component optional for vapor recovery system configuration; other requirements may apply.

Executive Order VR-101-C Phil-Tite Phase I Vapor Recovery System

Exhibit 2

Installation, Maintenance and Compliance Specifications

This exhibit contains the installation, maintenance and compliance standards and specifications applicable to a Phil-Tite system installed in a gasoline dispensing facility (GDF).

General Specifications

1. Typical installations of the Phil-Tite System are shown in Figures 2A and 2B.

2. The Phil-Tite System shall be installed and maintained in accordance with the ***ARB-Approved Installation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System.***

3. Any repair or replacement of system components shall be done in accordance with the ***ARB-Approved Installation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System***.

4. The Phil-Tite System shall comply with the applicable performance standards and performance specifications in CP-201. Compliance of the system and all components shall be demonstrated in accordance with the latest adopted version of **TP-201.3, *Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities***.

5. There shall be at least one vapor recovery connection, throughout all Phase I deliveries, between the cargo tank and the GDF storage tank into which fuel is being delivered to ensure that vapor is returned to the cargo tank from the underground storage tank system.

Pressure/Vacuum Vent Valves For Storage Tank Vent Pipes

1. No more than three certified pressure/vacuum vent valves (P/V valves) listed in Exhibit 1 shall be installed on any GDF underground storage tank system.

2. Compliance detemination of the following P/V valve performance specifications shall be at the option of the districts:

    1. The leak rate of each P/V valve shall not exceed 0.05 cubic feet per hour (CFH) at 2.00 inches of H_2O positive pressure and 0.21 CFH at -4.00 inches negative pressure as determined by Exhibit 4, ***Leak Rate and Cracking Pressure of Pressure/Vacuum Valves***.
    2. The positive pressure setting is 3.0 ± 0.5 inches of H_2O and the negative pressure setting is -8.0 ± 2.0 inches of H_2O as determined by Exhibit 4, ***Leak Rate and Cracking Pressure of Pressure/Vacuum Valves***.

3. A manifold may be installed on the vent pipes to reduce the number of potential leak sources and P/V valves installed. Vent pipe manifolds shall be constructed of steel pipe or an equivalent material that has been listed for use with gasoline. If a material other

than steel is used, the GDF operator shall make available information demonstrating that the material is compatible for use with gasoline. One example of a typical vent pipe manifold is shown in Figure 2F. This shows only one typical configuration; other manifold configurations may be used. For example, a tee may be located in a different position, or fewer pipes may be connected, or more than one P/V valve may be installed on the manifold.

4. The vent pipe manifold shall be installed at a height not less than 12 feet above the grade used for gasoline cargo tank delivery operations and shall conform to all applicable regulations.

5. Each P/V valve shall have permanently affixed to it a yellow or gold-colored label with black lettering stating the following specifications:

Positive pressure setting: 3.0 ± 0.5 inches H_2O
Negative pressure setting: -8.0 ± 2.0 inches H_2O
Positive Leakrate: 0.05 CFH at 2.0 inches H_2O
Negative Leakrate: 0.21 CFH at -4.0 inches H_2O

Rotatable Product and Vapor Recovery Adaptors

1. Rotatable product and vapor recovery adaptors shall be capable of at least 360-degree rotation and have an average static torque not to exceed 108 pound-inch (9 pound-foot). Compliance with this requirement shall be demonstrated in accordance with the latest adopted version of TP-201.1B, ***Static Torque of Rotatable Phase I Adaptors***.

2. The vapor adaptor poppet shall not leak when closed. Compliance with this requirement may be verified by the use of commercial liquid leak detection solution, or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists.)

Vapor Recovery and Product Adaptor Dust Caps

1. Dust caps with intact gaskets shall be installed on all Phase I tank adaptors.

Spill Container Drain Valve

1. The spill container drain valve is configured to drain liquid directly into the drop tube and is isolated from the underground storage tank ullage space. The leak rate of the drain valve shall not exceed 0.17 CFH at 2.00 inches H_2O. Depending on the presence of the drop tube overfill prevention device, compliance with this requirement shall be demonstrated in accordance with the latest adopted version of either TP-201.1C, ***Leak Rate of Drop Tube Overfill Prevention Device and Spill Container Drain Valve***; or TP-201.1D, ***Leak Rate of Drop Tube/Drain Valve Assembly.***

Drop Tube Overfill Prevention Device

1. The Drop Tube Overfill Prevention Device (overfill device) is designed to restrict the flow of gasoline delivered to the underground storage when liquid levels exceed a specified

capacity. The drop tube overfill device is not a required component of the vapor recovery system, but may be installed as an optional component of the system. Other requirements may apply.

2. The leak rate of the overfill device shall not exceed 0.17 CFH at 2.00 inches H_2O when tested as in accordance with the latest adopted version of TP-201.1D, ***Leak Rate of Drop Tube Overfill Prevention Device and Spill Container Drain Valves***.

Threaded Riser Adaptor

1. The Threaded Riser Adaptor shall provide a machined surface on which a gasket can seal and ensures that the seal is not compromised by an improperly cut or improperly finished riser. A Threaded Riser adaptor shall be installed on the following required connections. As an option, the adaptor may be installed on other connections.

    a. Product Spill Container (required)
    b. Vapor Recovery Spill Container (required)
    c. Tank Gauging Components (required)

Ball Float Vent Valve

1. A ball float vent valve (ball float) is designed to restrict the flow of a gasoline delivery by using back pressure when the storage tank levels exceed a specified level. If installed, a ball float must be installed at each vapor and vent connection to the tank. Ball floats are not required components of the vapor recovery system, but may be installed as optional components for vapor recovery; other requirements may apply.

Vapor Recovery Riser Offset

1. The vapor recovery tank riser may be offset from the tank connection to the vapor recovery Spill Container provided that the maximum horizontal distance (offset distance) does not exceed twenty (20) inches. One example of an offset is shown in Figure 2E.

2. A vapor recovery riser shall be offset up to 20 inches horizontal distance with use of commercially available, four (4) inch steel pipe fittings, a Phil-Tite Model M-6050 Vapor Riser Offset, or a combination of the two products. An example of a Phil-Tite Model M-6050 configuration is shown in Figure 2E.

Tank Gauge Port Components

1. The tank gauge adaptor and cap are paired. Therefore, an adaptor manufactured by one company shall be used only with a cap manufactured by the same company.

Connections and Fittings

1. All connections and fittings not specifically certified with an allowable leak rate shall not leak. The absence of vapor leaks may be verified with the use of commercial liquid leak detection solution (LDS), or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists).

Double Fill Configuration

1. A Phil-Tite Double Fill Configuration shall be allowed for installation provided that no more than two fill points are installed on any single underground storage tank and that no offset of the vapor recovery riser pipe is installed. An example of a Phil-Tite Double Fill configuration is shown in Figure 2C.

2. Two vapor return hoses shall be connected to the double fill configuration with at least one connection to each cargo tank(s) used to simultaneously deliver gasoline through two product hoses into a single tank.

Sump Configuration

1. The Phil-Tite Sump Configuration is designed to place the spill containers inside of an underground sump with a single exterior lid. Phil-Tite sump configuration that uses the thirty-six inch Fibre Lite F-36 lid do not require the Phil-Tite 85011 Cast Lids. The Phil-Tite "-EXT" Spill Container uses a permanently installed composite ring in place of the separate stainless steel ring. An example of a Phil-Tite Sump Configuration is shown in Figure 2D.

Maintenance Records

1. Each GDF operator/owner shall keep records of maintenance performed at the facility. Such record shall be maintained on site or in accordance with district requirements or policies. The records shall include the test or maintenance date, repair date to correct test failure, maintenance or test performed, and, if applicable, affiliation, telephone number and name of individual conducting maintenance or test. An example of a Phase I Maintenance Record is shown in Figure 2G.

Table 2-1
Gasoline Dispensing Facility Compliance Standards and Specifications

Component	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Overfill Prevention Device	TP-201.1D	≤0.17 CFH at 2.00 inches H_2O
Spill Container Drain Valve	TP-201.1C or TP-201.1D	≤0.17 CFH at 2.00 inches H_2O
P/V Valve[1]	Exhibit 4	Positive pressure setting: 3.0 ± 0.5 inches H_2O Negative pressure setting: -8.0 ± 2.0 inches H_2O Positive Leakrate: 0.05 CFH at 2.0 inches H_2O Negative Leakrate: 0.21 CFH at -4.0 inches H_2O
Gasoline Dispensing Facility	TP-201.3	As specified in TP-201.3 and/or CP-201
Connections and fittings certified without an allowable leak rate	Leak Detection Solution or bagging	No leaks

Table 2-2
Maintenance Intervals for Phil-Tite System Components

Manufacturer	Component	Maintenance Interval
Husky	Pressure/Vacuum Vent Valve	Annual
OPW	Dust Cap	Annual
OPW	61-T Straight Drop Tube	Annual
OPW	Ball Float (all models)	Every 3 years
Phil-Tite	Spill Container (all models)	Every 3 years
Phil-Tite	Drop Tube Overfill Prevention Device	Annual
Phil-Tite	SWV-101-B Vapor Recovery Adaptor	Annual
Universal	Ball Float	Every 3 years

[1] Compliance determination is at the option of the district.

Figure 2A

Typical Product Side Installation Using Phil-Tite System

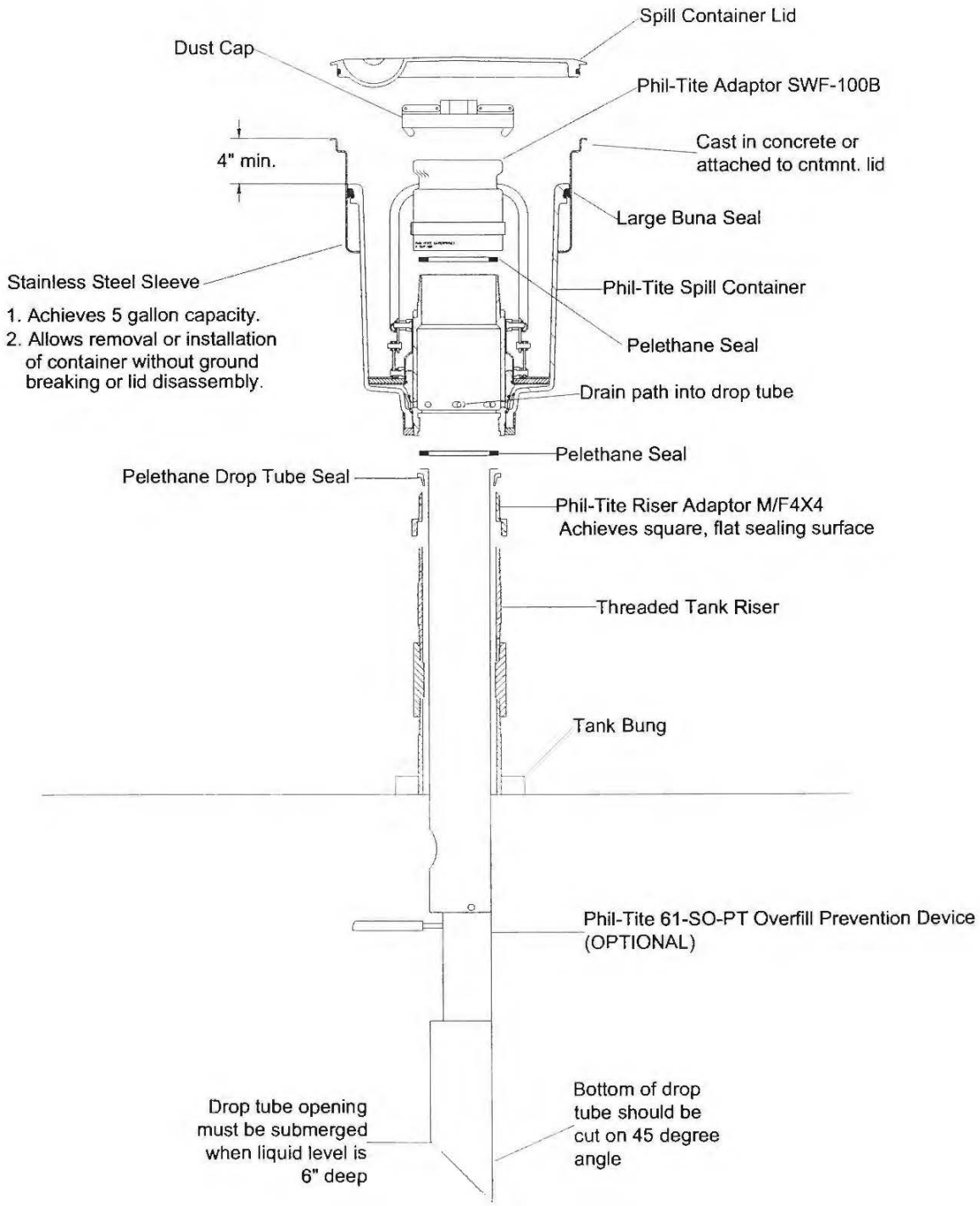


Figure 2B

Typical Vapor Recovery Installation Using Phil-Tite System

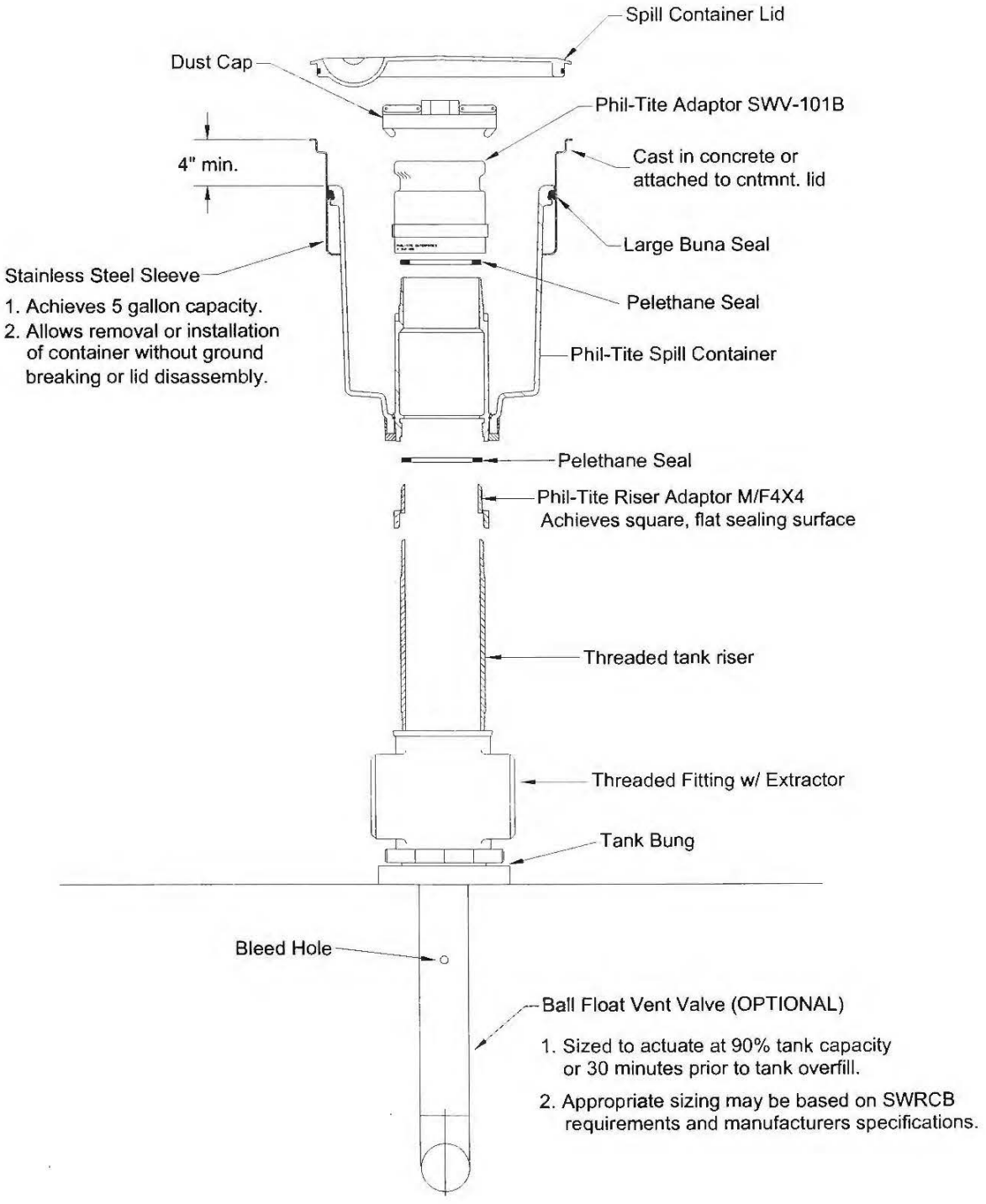


Figure 2C

Typical Phil-Tite Double Fill Configuration

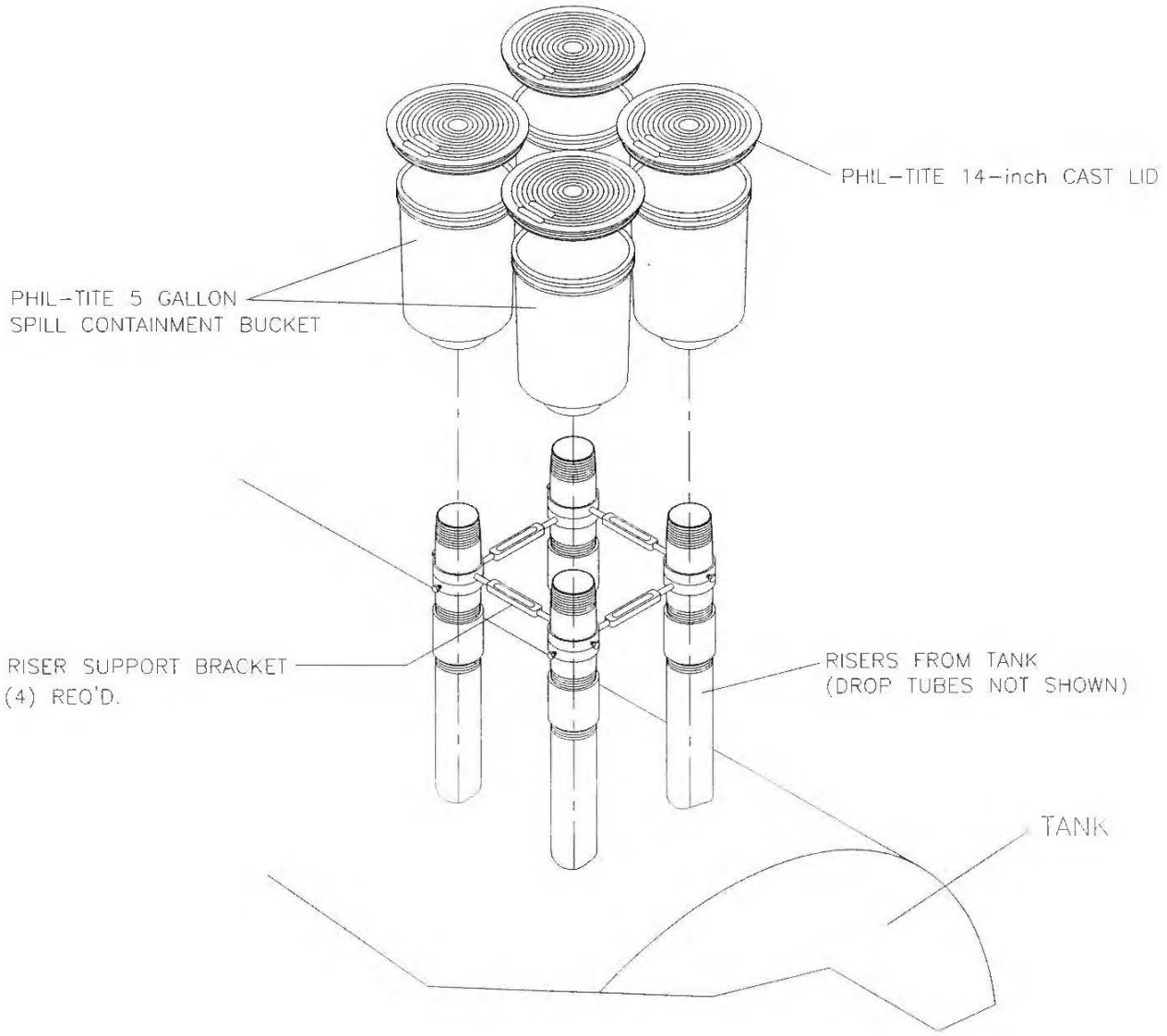


Figure 2D

Typical Phil-Tite Sump Configuration

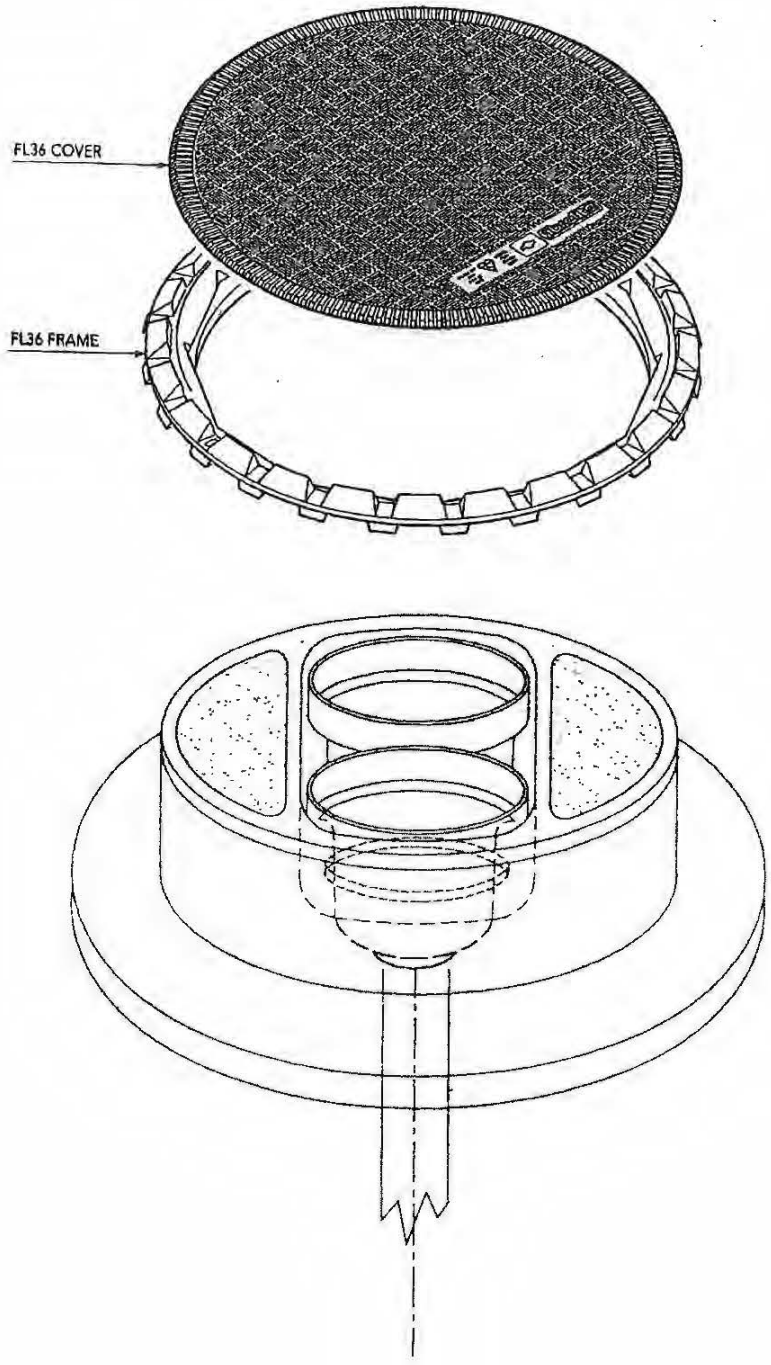
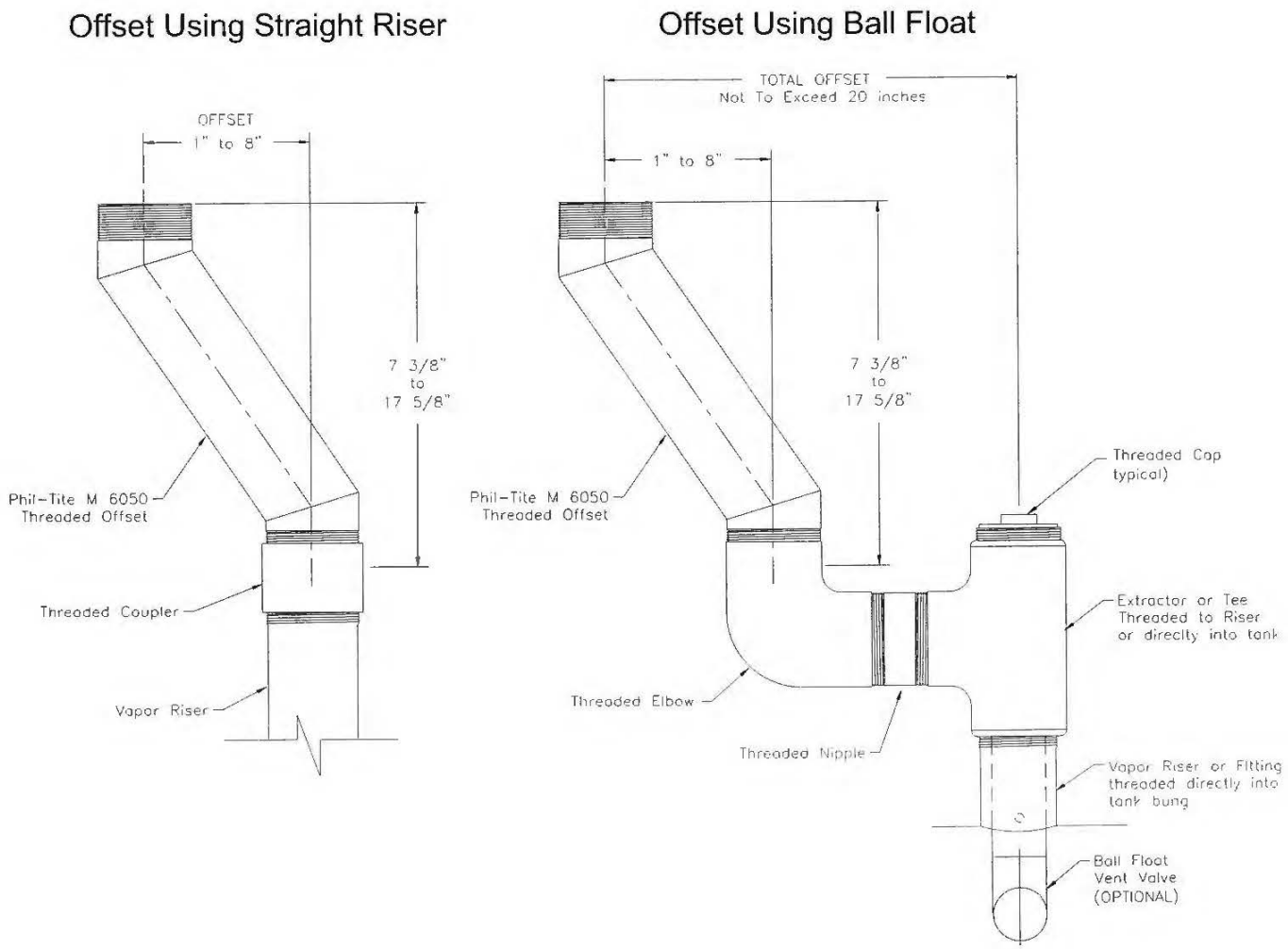


Figure 2E

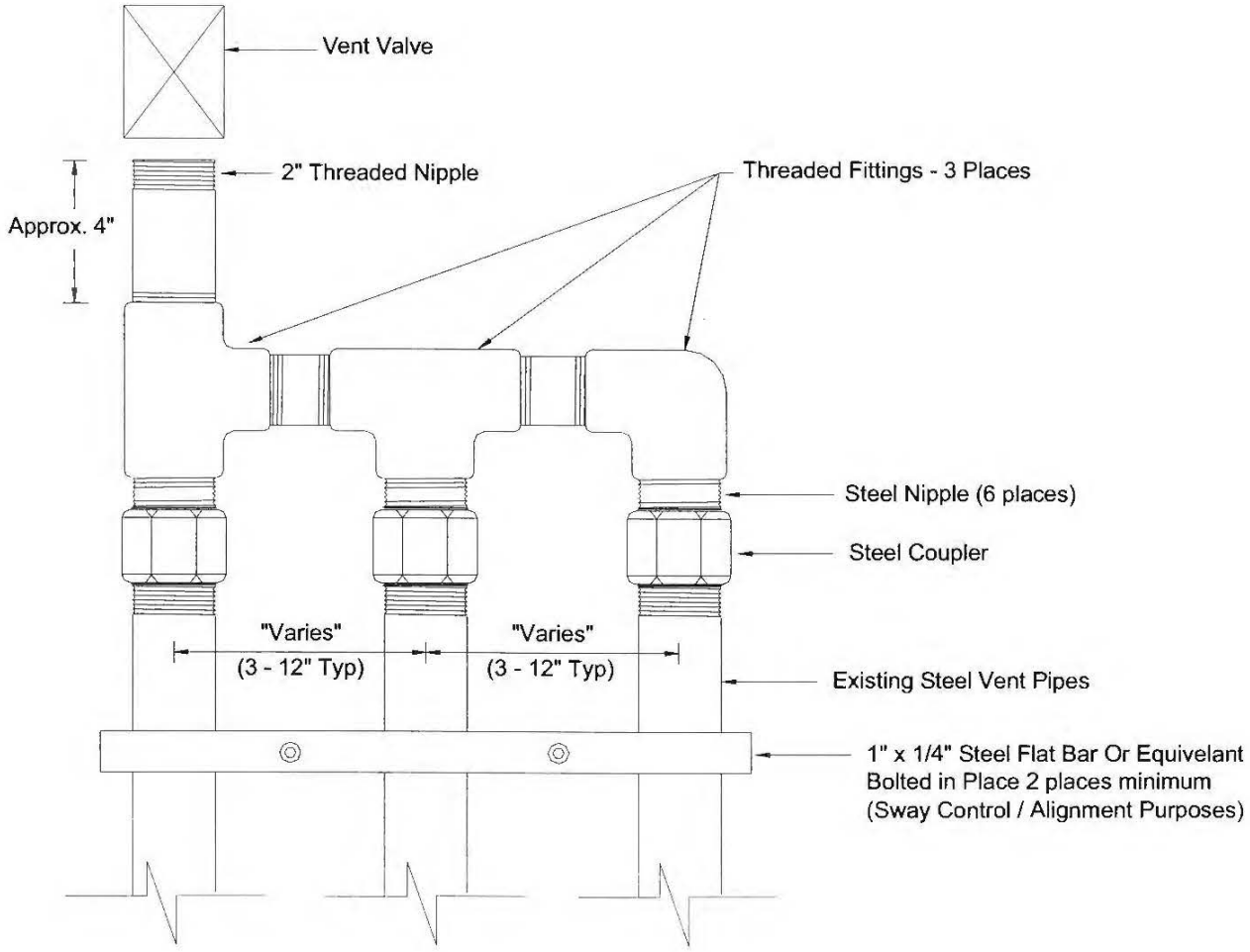
Typical Phil-Tite Model M-6050 Vapor Recovery Riser Offset



Note: This figure represents one instance where a vapor recovery riser has been offset in order to construct a two-point Phase I vapor recovery system. The above figure illustrates an offset using a 90-degree elbow. However, in some instances, elbows less than 90 degrees may be used. All fittings and pipe nipples shall be 4-inch diameter similar to those of the spill container and rotatable Phase I adaptors in order to reduce back pressure during a gasoline delivery.

Figure 2F

Typical Vent Pipe Manifold



Note: This shows one typical configuration; other manifold configurations may be used. For example, a tee may be located in a different position, or fewer pipes may be connected, or more than one P/V valve may be installed on the manifold.

Figure 2G

Example of a GDF Phase I Maintenance Record

Date of Maintenance/ Test/Inspection/ Failure	Repair Date to Correct Test Failure	Maintenance/Test/Inspection Performed and Outcome	Affiliation	Name of Individual Conducting Maintenance or Test(s)	Telephone Number

Executive Order VR-101-C Phil-Tite Phase I Vapor Recovery System

Exhibit 3

Manufacturing Performance Standards and Specifications

The Phil-Tite system and all components shall be manufactured in compliance with the performance standards and specifications in CP-201, as well as the requirements specified in this Executive Order. All components shall be manufactured as certified; no change to the equipment, parts, design, materials or manufacturing process shall be made unless approved in writing by the Executive Officer. Unless specified in Exhibit 2 or in the ARB approved Installation, Operation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System, the requirements of this section apply to the manufacturing process and are not appropriate for determining the compliance status of a GDF.

Pressure/Vacuum Vent Valves for Storage Tank Vent Pipes

1. Each Pressure/Vacuum Vent Valve (P/V valve) shall be 100 percent performance tested at the factory for cracking pressure and leak rate at each specified pressure setting and shall be done in accordance to Exhibit 4. Each P/V valve shall be shipped with an card or label stating the performance specifications listed below, and a statement that the valve was tested to, and met, these specifications.

    a. The pressure settings for the P/V valve
        Positive pressure setting of 3.0 ± 0.5 inches H_2O.
        Negative pressure setting of -8.0 ± 2.0 inches H_2O.

    b. The leak rate for each P/V valve, including connections, shall not exceed:
        0.05 CFH at 2.0 inches H_2O.
        0.21 CFH at -4.0 inches H_2O.

2. Each P/V valve shall have permanently affixed to it a yellow or gold label with black lettering listing the positive and negative pressure settings specified above. The lettering of the label shall have a minimum font size of 20.

Rotatable Product and Vapor Recovery Adaptors

1. The rotatable product and vapor recovery adaptors shall not leak.

2. The product adaptor cam and groove shall be manufactured in accordance with the cam and groove specifications shown in Figure 3A of CP-201.

3. The vapor recovery adaptor cam and groove shall be manufactured in accordance with the cam and groove specifications shown in Figure 3B of CP-201.

4. Each product and vapor recovery adaptor shall be 100 percent performance tested at the factory for static torque, rotatability, and the absence of liquid or vapor leaks. Each adaptor shall have affixed to it a card or label stating the performance specification listed below, and a statement that the adaptor was factory tested to, and met, the following specifications:

a. The average static torque for the rotatable adaptor shall not exceed 108 pound-inch average static torque when tested in accordance with the latest adopted version of TP-201.1B, ***Static Torque of Rotatable Phase I Adaptors.***

b. The rotatable adaptor shall be capable of rotating at least 360 degrees when tested in accordance with the latest adopted version of TP-201.1B, ***Static Torque of Rotatable Phase I Adaptors***.

Spill Container and Drain Valves

1. Each Spill Container Drain Valve shall be 100 percent performance tested at the factory. Each Spill Container Drain Valve shall have affixed to it a card or label stating the performance specifications listed below, and a statement that the valve was tested to, and met, the following performance specification;

   a. The maximum leak rate shall not exceed 0.17 CFH at 2.00 inches H_2O when tested in accordance with the latest adopted version of either TP-201.1C, ***Leak Rate of Drop Tube/Drain Valve*** or TP-201.1D, ***Leak Rate of Drop Tube Overfill Prevention Device.***

Drop Tube Overfill Prevention Device

1. Each Drop Tube Overfill Prevention Device shall be 100 percent performance tested at the factory to verify that it does not exceed the maximum allowable leak rate. Each Drop Tube Overfill Prevention Device shall have affixed to it a card or label stating the performance specifications listed below, and a statement that the device was tested to, and met, the following performance specification;

   a. The maximum leak rate shall not exceed 0.17 CFH at 2.00 inches H_2O when tested in accordance with the latest adopted version of TP-201.1D, ***Leak Rate of Drop Tube Overfill Prevention Device.***

Table 3-1
Manufacturing Component Standards and Specifications

Component	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Rotatable Phase I Adaptors	Micrometer	Cam and Groove Specifications (CP-201)
Overfill Prevention Device	TP-201.1D	≤0.17 CFH at 2.00 inches H_2O
Spill Container Drain Valve	TP-201.1C or TP-201.1D	≤0.17 CFH at 2.00 inches H_2O
Pressure/Vacuum Vent Valve	Exhibit 4	Positive Pressure: 3.0 ±0.5 inches H_2O Negative Pressure: -8.0 ±2.0 inches H_2O Leak rate: ≤ 0.05 CFH at +2.0 inches H_2O ≤ 0.21 CFH at -4.0 inches H_2O

Executive Order VR-101-C Phil-Tite Phase I Vapor Recovery System

Exhibit 4

Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves

Definitions common to all certification and test procedures are in:

D-200 Definitions for Vapor Recovery Procedures

For the purpose of this procedure, the term "CARB" refers to the California Air Resources Board, and the term "Executive Officer" refers to the CARB Executive Officer or his or her authorized representative or designate.

1. PURPOSE AND APPLICABILITY

The purpose of this procedure is to determine the pressure and vacuum at which a Pressure-/Vacuum Vent Valve (P/V Valve) actuates, and to determine the volumetric leak rate at a given pressure as specified in CP-201, Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities. This procedure is applicable for certification and compliance testing of P/V Valves.

2. PRINCIPLE AND SUMMARY OF TEST PROCEDURE

The volumetric leak rate of a P/V Valve is determined by measuring the positive and negative flow rates at corresponding pressures. The positive and negative cracking pressures of the valve are determined by measuring the pressure at which the P/V Valve opens to atmospheric pressure. With the exception of certification testing performed by the Executive Officer, these measurements are determined by removing the P/V Valve and conducting the test on a test stand. A flow metering device is used to introduce flow while measuring pressure.

3. BIASES AND INTERFERENCES

3.1 Installing a P/V Valve onto the test stand in a manner that is not in accordance with the manufacturer's recommended installation instructions can produce erroneous results.

3.2 Leaks in the test stand or test equipment can produce erroneous results.

4. SENSITIVITY, RANGE, AND PRECISION

4.1 Electronic Pressure Measuring Device. Minimum sensitivity shall be 0.01 inches H_2O with a maximum full-scale range of 20 inches H_2O and minimum accuracy of plus or minus 0.50 percent full-scale range.

4.2 Flow Meter. The measurable leak rate is dependent upon the sensitivity, range and precision of the flow meter used for testing. For electronic flow metering devices, the minimum sensitivity shall be 1.0 ml/min (0.0021 CFH) with a minimum full-scale accuracy of ±1.0 percent. For rotameters, the flow meter minimum sensitivity shall be 12.5 ml/min (.026 CFH) with minimum accuracy of ± 5 percent full-scale. The device scale shall be 150mm (5.91 inches) tall to provide a sufficient number of graduations for readability.

5. EQUIPMENT

5.1 Nitrogen. Use commercial grade gaseous nitrogen in a high-pressure cylinder equipped with a pressure regulator and one (1.00) psig pressure relief valve. As an alternative, compressed air may be used to pressurize to the minimum working pressure required by the Flow Metering device.

5.2 Ballast Tank. If required, use a commercially available tank (2 gallon minimum), capable of being pressurized or evacuated (placed under vacuum) to the minimum working pressure required by the flow-metering device(s).

5.3 Vacuum Pump or Vacuum Generating Device. Use a commercially available vacuum pump or equivalent, capable of evacuating the ballast tank or test stand to the minimum working pressure required by the flow-metering device.

5.4 Electronic Pressure Gauge. Use an electronic pressure gauge or digital manometer that conforms to the minimum requirements listed in section **4** to measure the pressure inside of the test stand.

5.5 Flow Metering Device(s). Use either an electronic flow-metering device or Rotameter as described below to measure or introduce a volumetric flow rate. Although the use of either type of instrument is allowed, electronic flow metering devices provide higher accuracy and precision. For the purpose of certification testing, only electronic flow metering devices shall be used.

5.5.1 Electronic Flow Metering Device. Use a Mass Flow Meter that conforms to the minimum requirements listed in section 4 to introduce nitrogen or compressed air into the test stand. The Mass Flow Meter shall be equipped with a high precision needle valve to accurately adjust the flow settings. The meter may be used for both positive and negative flow rates by reconfiguring the pressure or vacuum lines.

5.5.2 Rotameters. Two (2) devices required. Use two Flow Meters with minimum specifications described in Section 4 to measure or introduce flow rates. One meter shall use a needle valve oriented for introducing positive flow and the other using an inverted needle valve for introducing vacuum.

5.6 Test Stand. If a bench test arrangement is used, use a test stand as shown in Figure 1, or equivalent, equipped with a 2-inch NPT threaded pipe on at least one end for attaching the P/V Valve in an upright position. If other than 2-inch NPT is required, use an adaptor to reduce or enlarge the 2 inch pipe. The test stand shall be equipped with at least two (2) ports used for introducing flow and measuring pressure. Use a bypass valve to enable the tester to set the required flow without pressurizing the P/V Valve. Once the required flow rate is set, the bypass valve shall be closed to route the flow into the stand and pressurize the P/V Valve to check cracking pressure. Test stands may be constructed of various materials or dimensions. For certification testing conducted by Executive Officer only, the P/V valve may be isolated and tested in place at the facility.

6. PRE-TEST PROCEDURES

6.1 All pressure measuring device(s) shall be bench calibrated using a reference gauge, incline manometer or NIST traceable standard at least once every six (6) months. Calibration shall be performed at 20, 50, and 80 percent of full scale. Accuracy shall be within five (5) percent at each of these calibration points.

6.2 Electronic pressure measuring devices shall be calibrated immediately prior to testing using the zero gauge pressure adjustment knob located on the instrument.

6.3 The Flow Metering device(s) shall be calibrated using a reference meter or NIST traceable standard. Calibrations shall be performed at 20, 50, and 80 percent of full-scale range and shall take place at a minimum of once every six (6) months.

6.4 Leak check the test stand or test assembly prior to installing the P/V Valve.

(a) Install a 2-inch cap onto the NPT threads in place of the P/V Valve using pipe sealant or Teflon tape.

(b) Check all fittings for tightness and proper assembly.

(c) Slowly establish a stable gauge pressure in the test stand between 18.00 and 20.00 inches water column and allow pressure to stabilize.

(d) Check for leaks by applying a leak detection solution around all fittings and joints and by observing the pressure for pressure changes that may identify a leak. If no bubbles form, the test stand is leak tight.

(e) If soap bubbles form or the test stand pressure will not stabilize, repeat (a) through (d); it may be necessary to place the test apparatus in an environment that is free from the effects of wind or sunlight.

TEST PROCEDURE

7.1 Install the P/V Valve in an upright position following the installation instructions provided by the manufacturer. Incorrectly installing the valve will invalidate any pressure versus flow rate measurement.

7.2 Positive Leak Rate. Slowly open the control valve on the Positive Flow Metering device until the pressure stabilizes at the positive leak rate pressure described in CP-201 section 3. Maintain steady state pressure by using the control valve for at least ten (10) seconds. Steady state flow is indicated by a pressure change of no more than 0.05 inches H_2O on the pressure gauge. Record the final flow rate on the data sheet and close the control valve.

7.3 Positive Cracking Pressure. Open the bypass valve to route the flow outside of the test assembly. Open the control valve on the Positive Flow Metering device to establish a flow rate of 120 ml/min. Once flow is stabilized, close the bypass valve to route the flow into the test assembly. Observe the pressure. The P/V Valve should "crack" at a pressure within the range of positive cracking pressure as described in CP-201 section 3. This is marked by a sudden drop in pressure. Record the cracking pressure (highest pressure achieved) on the data sheet and close the control valve.

7.4 Negative Leak Rate. Open the control valve on the Negative Flow Metering device until the pressure stabilizes at the negative leak rate pressure described in CP-201 section 3. Maintain steady state pressure by using the control valve for at least ten (10) seconds. Steady state flow is indicated by a pressure change of no more than 0.05 inches H_2O on the pressure gauge. Record the final flow rate on the data sheet and close the control valve.

7.5 Negative Cracking Pressure. Open the bypass valve to route the flow outside of the test assembly. Open the control valve on the Negative Flow Metering device to establish a negative flow rate of 200 ml/min. Once flow is stabilized, close the bypass valve to route the flow into the test assembly. Observe the pressure. The P/V Valve should "crack" at a pressure within the range of negative cracking pressure as described in CP-201 section 3. This is marked by a sudden drop in vacuum. Record the cracking pressure (highest vacuum achieved) on the data sheet and close the control valve.

8. POST-TEST PROCEDURES

8.1 Remove the P/V Valve from the test assembly.

8.2 Disassemble the pressure regulator from the compressed nitrogen cylinder (if used) and place the safety cap back on the cylinder.

8.3 Disassemble all remaining test equipment and store in a protected location.

9. CALCULATING RESULTS

9.1 Commonly used flow rate conversions:

1 CFH = 471.95 ml/min

Example: Convert 0.17 CFH to ml/min:

0.17 CFH (471.95) = 80 ml/min

1 ml/min = 0.00212 CFH

Example: Convert 100 ml/min to CFH:

100 ml/min (0.00212) = 0.21 CFH

10. REPORTING RESULTS

10.1 Record the station or location name, address and tester information on Form 1.

10.2 Record the P/V Valve manufacturer's name and model number on Form 1.

10.3 Record the results of the test(s) on Form 1. Use additional copies of Form 1 if needed to record additional P/V Valve tests.

10.4 Alternate data sheets or Forms may be used provided they contain the same parameters as identified on Form 1.

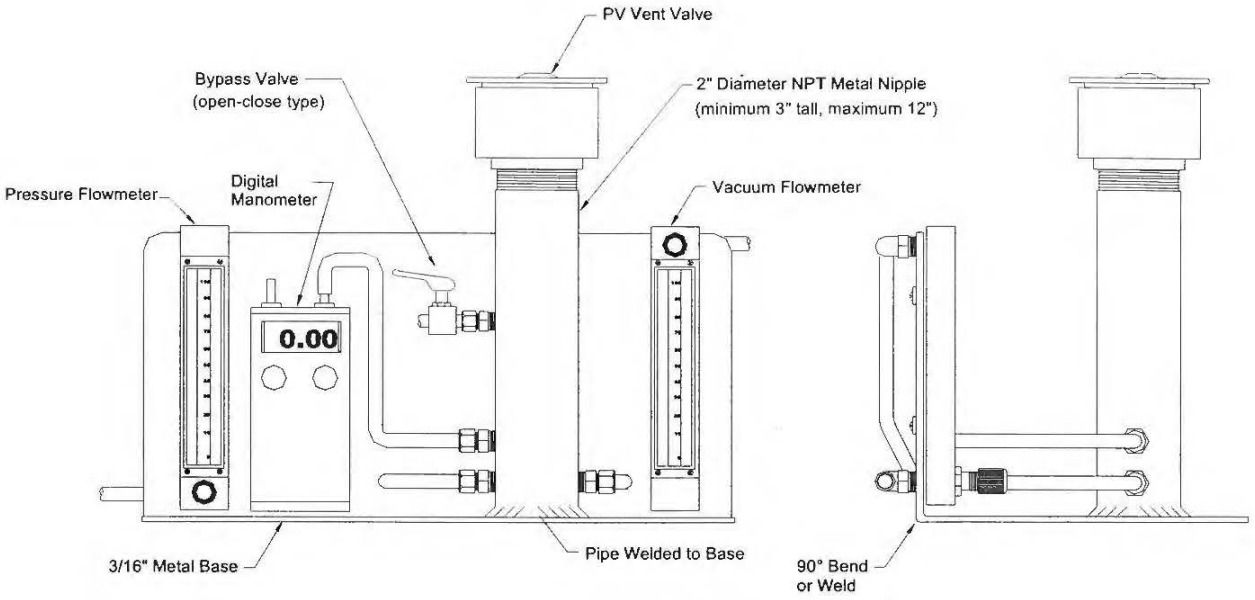
10.5 Use the formulas and example equation provided in Section 9 to convert the flow measurements into units of cubic feet per hour (CFH).

10.6 For certification testing, compare results to the performance standards listed in Table 3-1 of CP-201. For compliance testing, compare the results to the manufacturer's specifications listed on the P/V Valve for both leak rate and cracking pressure. For volumetric leak rates less than the manufacturers specified leakrate and cracking pressures within the manufacturers specified range, circle Pass on the data sheet where provided. If either the volumetric leak rate or cracking pressure exceeds the manufacturers specifications, circle Fail on the data sheet where provided.

11. ALTERNATIVE TEST PROCEDURES

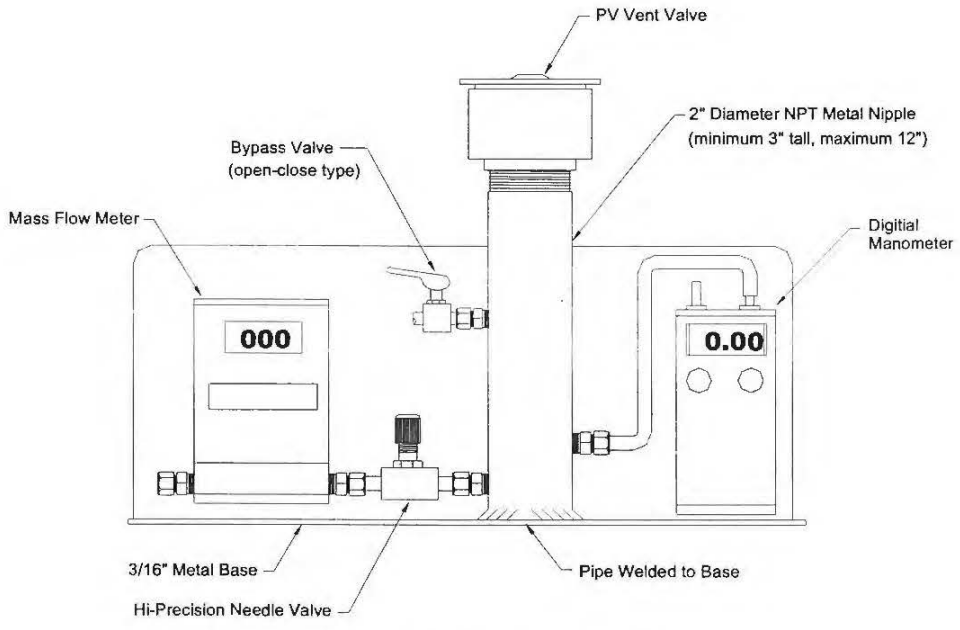
This procedure shall be conducted as specified. Any modifications to this test procedure shall not be used unless prior written approval has been obtained from the Executive Officer pursuant to section 14 of CP-201.

Figure 1
Example of Test Stand



FLOW METER CONFIGURATION

SIDE VIEW



MASS FLOW METER CONFIGURATION

Form 1

Pressure/Vacuum (P/V) Vent Valve Data Sheet

Facility Name:	Test Date:
Address:	**Test Company**:
City :	**Tester Name**:

P/V Valve Manufacturer: **Model Number:** **Pass Fail**	
Manufacturers Specified Positive Leak Rate (CFH):	Manufacturers Specified Negative Leak Rate (CFH):
Measured Positive Leak Rate (CFH):	Measured Negative Leak Rate (CFH):
Positive Cracking Pressure (in. H_2O):	Negative Cracking Pressure (in. H_2O):

P/V Valve Manufacturer: **Model Number:** **Pass Fail**	
Manufacturers Specified Positive Leak Rate (CFH):	Manufacturers Specified Negative Leak Rate (CFH):
Measured Positive Leak Rate (CFH):	Measured Negative Leak Rate (CFH):
Positive Cracking Pressure (in. H_2O):	Negative Cracking Pressure (in. H_2O):

P/V Valve Manufacturer: **Model Number:** **Pass Fail**	
Manufacturers Specified Positive Leak Rate (CFH):	Manufacturers Specified Negative Leak Rate (CFH):
Measured Positive Leak Rate (CFH):	Measured Negative Leak Rate (CFH):
Positive Cracking Pressure (in. H_2O):	Negative Cracking Pressure (in. H_2O):

P/V Valve Manufacturer: **Model Number:** **Pass Fail**	
Manufacturers Specified Positive Leak Rate (CFH):	Manufacturers Specified Negative Leak Rate (CFH):
Measured Positive Leak Rate (CFH):	Measured Negative Leak Rate (CFH):
Positive Cracking Pressure (in. H_2O):	Negative Cracking Pressure (in. H_2O):