

**TECHNICAL SUPPORT DOCUMENT (TSD)**

**November 22, 2013**

**I. GENERAL COMMENTS:**

**A. Company Information**

1. Costco Wholesale Corporation (Costco)
2. Source Address: 6255 East Grant Road, Tucson, AZ 85712  
Mailing Address: 999 Lake Dr. Attn Licensing Issaquah, WA 98027

**B. Background**

Costco has been permitted since 1998. A minor revision permit application was submitted on August 3, 2010 to declare the source subject to the Environmental Protection Agency's (EPA) promulgated final National Emission Standards for Hazardous Air Pollutants (NESHAP) for gasoline dispensing facilities (40 CFR 63 Subpart CCCCCC), finalized on January 10, 2008. The amended (revised) permit and amended (revised) TSD were issued on January 27, 2011.

This renewal technical support document is issued to accompany the draft permit completed in response to the renewal application submitted July 1, 2013.

There are no New Source Performance Standards (NSPS) that apply to the process or facility.

**C. Attainment Classification**

Costco is located in a region that is designated as attainment for all criteria pollutants.

## II. SOURCE DESCRIPTION

### A. Process Description and Operating Hours

Costco has three 15,000 and one 30,000 gallon underground storage tanks (USTs) with Phase I vapor control. The facility is not restricted by hours of operation and can thus operate 8760 hours per year (24 hours per day). Costco has voluntarily proposed and accepted a restriction on throughput to 15,000,000 gallons of gasoline based on a 12-month rolling total. This throughput limit prevents Costco from becoming a major source of VOCs.

### B. Applicability Categories

There is only one category addressed by the permit; gasoline service station.

### C. Air Pollution Control Equipment

The Permittee had previously installed Stage I and Stage II vapor recovery equipment as required by ARS 41-2132. Pima County DEQ, as a delegated agency, has compliance responsibility for the Stage I controls, as well as the "housekeeping" and submerged fill requirements, as finalized in the federal regulation 40 CFR 63, Subpart CCCCCC. The Stage II requirements are not enforceable by PDEQ and emission reductions achieved by this method cannot be included in the potential to emit (PTE). The State of Arizona is the only agency that can currently inspect and enforce Stage II requirements.

## III. REGULATORY HISTORY

### A. Testing & Inspections

Inspections have been conducted regularly since 1998 with the last completed inspection in December 2007. Costco was found and is currently in compliance with the air quality permit and regulatory requirements.

### B. Excess Emissions \*

There have been no Notices of Violations or reports submitted for any excess emissions.

## IV. EMISSION ESTIMATES

### A. Facility Wide Estimates

This Costco facility has taken a voluntary throughput limit of 15,000,000 gallons. Using the following EPA AP 42, Table 5.2-7 (6/2008) emission rates, the PTE can be calculated.

|   |   |
|---|---|
| Balanced Submerged Filling              | 0.3 lb/10 <sup>3</sup> gal                          |
| Underground Tank Breathing and Emptying | 1.0 lb/10 <sup>3</sup> gal                          |
| Uncontrolled Displacement Losses        | 11.0 lb/10 <sup>3</sup> gal                         |
| Spillage                                | 0.7 lb/10 <sup>3</sup> gal                          |
| <b>TOTAL</b>                            | <b>13.0 lb/10<sup>3</sup>gal (or 0.013 lbs/gal)</b> |

Table I – Potential to Emit (PTE) and Allowable Emissions

| Pollutant                                   | Potential To Emit<br>(Tons per Year) |
|---|--------------------------------------|
| Volatile Organic Compounds (VOC)            | 97.5                                 |
| Carbon Monoxide (CO)                        | N/A                                  |
| Nitrogen Oxides (NO <sub>x</sub> )          | N/A                                  |
| Particulate Matter (as PM <sub>10</sub> )   | <1                                   |
| Sulfur Oxides (SO <sub>x</sub> )            | N/A                                  |
| Hazardous Air Pollutants (individual)       | 2.83                                 |
| Hazardous Air Pollutants<br>(Combined HAPs) | 13.3                                 |

Calculations:

$$15,000,000 \text{ gallons} * 0.013 \text{ lbs/gal} = 195,000 \text{ lbs}/2000 = 97.5 \text{ tons}$$

A report from January 1994, EPA-453/R-94-002a, called "Gasoline Distribution Industry (Stage I) - Background Information for Proposed Standards" discusses the HAPs content of the VOC Emissions from both Normal and Oxygenated Gasolines. The information for the present PTE was taken from Table C-4 and Table C-5 in that report.

In a worst case scenario, for approximately six months of the year, gasoline oxygenated with MTBE would be in use, emitting VOC vapors containing a maximum of 16.3% HAPs. For the other six months, non-oxygenated gasoline would be in use, emitting VOC vapors containing a maximum 11.0% HAPs. Instead of requiring the source to maintain records showing when MTBE gasoline was delivered, PDEQ took the most conservative approach of estimating HAPs and averaged the two percentages thus using a number of 13.65% of VOC emissions to calculate combined HAPs emitted. In the future, should there be a need to limit HAPs based on the time of the year, the permit will be reopened and revised with the appropriate conditions.

PDEQ has calculated the combined HAP emission based on this average:  $97.5 \text{ tone} * 0.1365 = 13.3 \text{ tons per year}$ . Further, in one half of the year, Hexane, the individual HAP with the highest concentration is 4.4% In the other half of the year, Hexane is 1.4% Using the average of those at 2.9%, the highest concentration of an individual HAP is 2.83 tons per year ( $0.029 * 97.5 = 2.83$ ).

Based on the facility PTE, Costco is a **Class II; synthetic minor source** for VOCs, an area source for HAPs and a true minor source for all other criteria pollutants.

## V. APPLICABLE REQUIREMENTS

### A. NESHAP

40 CFR 63, Subpart CCCCC

National Emission Standards for Hazardous Air Pollutants for Source Categories: Gasoline Dispensing Facilities.

These Standards were promulgated on January 10, 2008, amended on March 7, 2008 and amendments are pending from December 15, 2009. All final and pending amendments have been included in the permit text. Any further updates will be incorporated as PDEQ becomes aware.

**B. NSPS** – (New Source Performance Standards) No NSPS rules apply to this source.

**C. Pima County Code (PCC) Title 17, Chapter 17.16:**

- 17.12.185 Permit Contents for Class II and Class III permits
- 17.16.020 Noncompliance with Applicable Standards
- 17.16.230 Standards of Performance for Storage Vessels for Petroleum Liquids

**VI NON-APPLICABLE REQUIREMENTS**

40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

This standard does not apply because gasoline service stations are specifically excluded by 40 CFR 60.111b(d)(6)

**VII. PERMIT CONTENTS**

**A. Applicability:**

Costco is required to obtain a permit for the gasoline service station, pursuant to PCC 17.12.140.B.3.a. The facility’s VOC potential to emit exceeds the permit threshold of 40 tpy.

**B. Emission Limits and Standards:**

1. Operational Limitations

| Standard | Discussion   | Authority          |
|----------|--|--------------------|
| II.A.1   | "Once in, always in rule," for monthly throughput limits. If a Permittee exceeds a throughput threshold, the standards governing that higher throughput will be enforced permanently, despite any subsequent drop below the higher throughput limit. This was added in the revision of the Final Rule. | 40 CFR 63.11111(i) |
| II.A.2   | Requirement to seek a significant permit revision, if any 365-day, rolling total throughput exceeds the declared 15,000,000 gallons. A Class I permit will be required should VOC emissions exceed 100 tons based on the 365-day, rolling throughput total.  | PCC 17.12.190.B    |

2. Air Pollution Controls

| Standard | Discussion   | Authority   |
|----------|--|---|
| II.B.1   | Requirement to minimize vapor releases by employing measures to minimize spills, employ expeditious cleanup, use gasketed seals and minimize gasoline sent to open waste collection systems.   | 40 CFR<br>63.11116(a)   |
| II.B.2   | Requirement to install submerged filling devices on all gasoline storage tanks greater than 249 gallons. Those installed on or before 11/9/06 shall be no more than 12 inches from the bottom of the tank, while those installed after 11/9/06 must be no more than 6 inches from the bottom. An amendment to the Final Rule allows for submerged pipes not meeting these specifications to be considered if the Permittee can prove the tank's liquid level will always be above the entire opening of the tank. This source's renewal permit application stated submerged fill pipes are already at 6", so the other options were excluded.  | 40 CFR<br>63.11117(b)   |
| II.B.3   | Requirement for sources with monthly throughputs of 100,000 gallons or more, to operate a vapor balance system in compliance with one of three options: adherence to existing enforceable State, local or tribal rules, meeting certain requirements; adherence to a specific list of management practices; or, achievement of a 95% emission reduction. While this source did have Stage I vapor balance installed subject to ARS 41.2132, that statute does not meet the requirements dictated in 40 CFR 63.11118(b)(2)(ii). The state regulation requires neither an "emissions reduction of at least 90 percent," nor "management practices at least as stringent as those in Table 1..." Therefore, the facility must comply with Table 1 of the NESHAP. (There is always the "standing" provision in 40 CFR 63.6(g) that allows for alternate methods upon proving equivalency.) | 40 CFR<br>63.11118(b)(1),<br>Table 1 to<br>Subpart<br>CCCCC,<br>40 CFR 63.6(g),<br>40 CFR<br>63.11120(b)(1) |

C. Monitoring & Recordkeeping Requirements:

1. Operational Limitations

| Standard | Discussion  | Authority               |
|----------|---|-------------------------|
| III.A.1  | Requirement to operate and maintain the GDF and all associated pollution control equipment and monitoring equipment in a manner consistent with safety and minimizing emissions. Standard operation and maintenance requirement.  | 40 CFR<br>63.6(e)(1)(i) |
| III.A.2  | Requirement to provide proof of throughput upon request.  | 40 CFR<br>63.11111 (e)  |
| III.A.3  | Calculation clarification for monthly throughputs. Each day's addition or subtraction of fuel must be added to previous 364 days and the current 365 readings divided by 12. This gives a rolling, monthly throughput updated each day. This was clarified in the additions to the Final Rule. Which ever method of throughput is chosen, incoming or outgoing, it must be the method used for ALL throughput calculations. Shows compliance with II.A.2 of the permit. | 40 CFR<br>63.11132      |

**Costco Wholesale Corporation  
Gasoline Station #407  
Air Quality Permit # 2213**

2. Air Pollution Controls

| Standard | Discussion   | Authority              |
|----------|--|------------------------|
| III.B.1  | Requirement to inspect submerged fill devices at least annually. This equipment must be continuously operational to limit a source's potential to emit. This is a PDEQ-specific requirement. | PCC<br>17.12.185.A.3.c |
| III.B.2  | Requirement to inspect vapor balance systems at least annually. This equipment must be continuously operational to limit a source's potential to emit. This is a PDEQ-specific requirement.  | PCC<br>17.12.185.A.3.c |

3. Recordkeeping

| Standard | Discussion   | Authority                                     |
|----------|--|---|
| III.C.1  | Federal requirement to document throughput.  | 40 CFR<br>63.11111(e)                         |
| III.C.2  | Detailed explanation of recorded data required to comply with III.B.1 & 2 of the permit (annual inspections of submerged fill equipment and vapor balance equipment). This is a PDEQ-specific requirement. | PCC<br>17.12.185.A.3.c                        |
| III.C.3  | Requirement to retain records of testing results performed under section V of the Specific Conditions, for 5 years and make available for inspection.  | 40 CFR<br>63.11125 &<br>40 CFR<br>63.11120(c) |
| III.C.4  | Requirement to maintain all other records demonstrating compliance with permit or Pima County code for 5 years.  | PCC<br>17.12.185.A.4.b                        |

**D. Reporting Requirements:**

| Standard | Discussion  | Authority   |
|----------|---|---|
| IV.A     | Requirement to submit a Notification of Performance Test prior to testing required in section V.A & V.B of the Specific Conditions.   | 40 CFR 63.9(e)<br>40 CFR<br>63.1124(b)(4)             |
| IV.B     | Requirement to submit a Notification of Compliance Status within 60 days of completing required performance testing.  | 40 CFR<br>63.1124(b)(2)<br>& 40 CFR<br>63.9(h)(2)(ii) |
| IV.C     | Requirement to report results of all volumetric efficiency tests, required under section V.B of the Specific Conditions, within 180 of performance test completion.   | 40 CFR<br>63.11126                                    |
| IV.D     | Requirement to submit a notification to PDEQ upon surpassing 90 tons of VOC (13,850,000 gallons) in any 365-day rolling total. This will enable PDEQ to monitor the source as it approaches the Class I threshold of 100 tons VOC.        | PCC<br>17.12.185.A.2<br>PCC<br>17.12.185.A.5          |
| IV.E     | Requirement to submit annual emissions inventory upon request. Currently, PDEQ only requires an annual emission inventory from Class I sources, but may request from Class II and Class III sources for specific data-gathering projects. | PCC 17.12.320   |

**E. Testing Requirements:**

| Standard | Discussion   | Authority                |
|----------|--|--------------------------|
| V.A.1    | Requirement to test leak rate and pressure of vapor balance system at installation and every three (3) years thereafter. Test Method via CARB or equivalent. | 40 CFR<br>63.11120(a)(1) |
| V.A.2    | Requirement to test static pressure of vapor balance system at installation and every three (3) years thereafter. Test method via CARB or equivalent.        | 40 CFR<br>63.11120(a)(2) |
| V.A.3    | Deadline requirements for completing initial compliance performance tests. This was added in an amendment to the Final Rule                                  | 40 CFR<br>63.11113(e)    |
| V.B      | Requirement for all testing to be conducted under normal operating conditions  | 40 CFR<br>63.11120(c)    |

**F. Facility Changes:**

| Standard | Discussion  | Authority  |
|----------|---|--|
| VI       | Requirement to submit the appropriate change or revision should a need arise. | PCC<br>17.12.240,<br>PCC<br>17.12.255<br>PCC 17.12.260 |

**G. Additional Permit Conditions:**

| Standard | Discussion   | Authority                                 |
|----------|--|---|
| I.A      | Requirement to comply with all permit conditions and applicable standards.                 | PCC<br>17.12.185.A.7.a                    |
| I.B      | Requirement to report excess emissions.  | PCC<br>17.12.185.A.5,<br>PCC 17.12.040    |
| I.C      | Requirement dismissing lost production as excuse for not complying with permit conditions. | PCC<br>17.12.185.A.7.b                    |
| I.D      | PDEQ disclaimer of any rights or privileges to permit holder.                              | PCC<br>17.12.185.A.7.d                    |
| I.E      | Requirement for source to pay permit fees  | PCC<br>17.12.185.A.8,<br>PCC<br>17.12.520 |
| II       | Disclaimer that permit may be revised or terminated for cause                              | PCC<br>17.12.185.A.7.c                    |
| III.A    | Requirement for permittee to provide requested information and records.                    | PCC<br>17.12.185.A.7.e                    |
| III.B    | Requirement correct or resubmit any known incorrect information                            | PCC<br>17.12.185.165.G                    |
| IV       | Severability Clause  | PCC<br>17.12.185.A.6                      |

**VIII. Permit Contents - Attachments**

| Standard     | Discussion                     | Authority                                    |
|--------------|--------------------------------|--|
| Attachment I | List of applicable regulations | PCC 17.12.185<br>PCC 17.12.190<br>PCC 16.230 |
| Attachment 2 | Equipment List                 | PCC 17.12.165                                |

**IX. IMPACTS TO AMBIENT AIR QUALITY**

This is a renewal of an existing air quality operating permit. There is no new equipment and therefore no new requirements or newly promulgated regulations to consider. As an existing source, modeling is not required to complete processing of this permit. In addition, there are no local requirements that require modeling.

**X. CONTROL TECHNOLOGY DETERMINATION**

Stage I vapor control, submerged fill and management practices per 40 CFR 63, Subpart CCCCCC, as detailed in amended permit and this TSD.

**XI. PREVIOUS PERMIT CONDITIONS**

None were removed in this renewal.

**XII. INSIGNIFICANT ACTIVITIES**

None identified by Costco.

