

City of Tucson 'Thomas O Price Service Center'

Air Quality Permit 1845

Technical Support Document (TSD)

I. General Comments:

A. Company Information

1. Source Name: City of Tucson Thomas O Price Service Center
2. Source Address: 4004 South Park Avenue, Tucson Avenue 85714

B. Background

The facility constitutes a Class II, True Minor Source of all criteria pollutants. The Thomas O. Price Service Center operates under the following industrial classifications:

- SVEU systems: SIC code: 1799 (NAICS 562910)
- Maintenance and Repair Facility: SIC code: 9229 (NAICS 922190)

This TSD was updated for the renewal of the permit. The renewal application was received on December 22, 2006. The Permit was amended on June 22, 2017 to update the generator information and PTE estimates.

C. Attainment Classification

The Thomas O Price Service Center is located in an area that is in attainment for all pollutants.

II. Source Description

A. Process Description

The Thomas O Price Service Center operates two soil vapor extraction units (SVEU), 6 emergency generators and 6 natural gas fired boilers.

The SVEU units and boilers are exclusively fired by natural gas. The two emergency generators located at the CNG Plant are dual fired with diesel & natural gas fuel and the remaining generators fire either diesel or natural gas.

B. Operating Capacity and Schedule

The operating schedule at the facility is not limited and the facility and equipment is permitted for operation 7/days/week, 24 hours a day, 365 days a year.

C. Air Pollution Control Equipment

No post combustion air pollution control equipment is being operated on the boilers or stationary rotating machinery. The soil vapor extraction units operate thermal or catalytic oxidizer air pollution controls to reduce the gasoline range organics emitted to the ambient air.

III. Regulatory History

The Thomas O Price Service Center is currently in compliance with all Pima County Code requirements.

IV. Emissions Estimates

Emission estimates were derived using emission factors from AP-42 tables. AP-42 tables 3.3-1 thru 3 and 3.4-1 thru 4 (Diesel Industrial Engines and Large Stationary Diesel Engines) were used for emergency generator emission factors. For the boilers, the emission factors for natural gas were used from AP-42 tables 1.3-1 and 2.

Federal requirements currently limit “emergency” designated generators to operate no more than 100 hours of operation for maintenance and readiness testing, while there is no limit on hours of operation during true emergencies.

In accordance with the federal limits, the controlled facility-wide PTE has been calculated using 100 hours of operation for the emergency designated generators.

The following table outlines the City of Tucson – Thomas O. Price Service Center’s controlled potential to emit air pollutants.

Controlled Permit-Wide Potential Emissions of Pollutants ¹ (tons/yr)									
Conventional or Criteria Air Pollutant								HAPs	
PM _{2.5}	PM ₁₀	PM	NO _x	VOC	CO	SO ₂	Lead	Total	Single
< 0.61	0.62	0.62	9.13	6.18	6.94	0.14	Negligible	0.93	< 0.43

¹ The actual emissions are based on the continuous operation of the soil vapor extraction units and boilers. The emergency (standby) generators are limited to operate 100 hrs/yr for maintenance and testing (no operational limitation during true emergencies). Total HAPs includes 0.43 tons/yr of benzene emissions from the soil vapor extraction systems. All provisions of this Permit that are federally enforceable or material permit conditions are specifically indicated as such.

V. Applicable Requirements

40 CFR, Part 60 Standards of Performance for New Stationary Sources

Appendix A-4 Method 9 – Visual determination of the opacity of emissions from stationary sources
Subpart IIII for Stationary Internal Combustion Engines ‘ICE’
Subpart JJJJ for Stationary Internal Combustion Engines ‘ICE’

Pima County Code Title 17, Chapter 17.12 – Permits and Permit Revisions

Article I – General Provisions

- 17.12.010 Statutory Authority
- 17.12.020 Planning, Constructing, or Operating Without a Permit
- 17.12.040 Reporting requirements
- 17.12.045 Test methods and procedures
- 17.12.050 Performance tests
- 17.12.080 Permit Display or Posting

Article II – Individual Source Permits

- 17.12.165 Permit application processing procedures for Class II and Class III permits
- 17.12.185 Permit contents for Class II and Class III permits
- 17.12.190 Permits containing synthetic emission limitations and standards
- 17.12.235 Facility Changes that require a permit revision
- 17.12.240 Procedures for certain changes that do not require a permit revision Class II or Class III
- 17.12.255 Minor Permit Revision
- 17.12.260 Significant Permit Revision
- 17.12.270 Permit Reopenings – Revocation and reissuance – Termination
- 17.12.350 Material permit condition

Article VI – Individual Source Permits

- 17.12.520 Fees related to Class II and Class III permits

Pima County Code Title 17, Chapter 17.16 – Emission Limiting Standards

Article I – General Provisions

- 17.16.010 Local rules and standards; Applicability of more than one standard
- 17.16.020 Noncompliance with applicable standards
- 17.16.030 Odor limiting standards

Article II – Visible Emission Standards

- 17.16.040 Standards and applicability (includes NESHAP)
- 17.16.050 Visibility limiting standard

Article IV – New and Existing Stationary Source Performance Standards

- 17.16.130 Applicability
- 17.16.165 Standards of performance for fossil-fuel fired industrial commercial equipment
- 17.16.340 Standards of performance for stationary rotating machinery
- 17.16.430 Standards of performance for unclassified sources

Pima County Code Title 17, Chapter 17.20 – Emissions Source Testing and Monitoring

- 17.20.010 Source sampling, monitoring and testing
- 17.20.040 Concealment of emissions

Pima County Code Title 17, Chapter 17.24:

- 17.24.020 Recordkeeping for compliance determination

VI. Requirements Specifically Identified As Non-Applicable

In accordance with 40 CFR 63.6585(f)(3), NESHAP Subpart ZZZZ does not apply to institutional generators that are not operated for more than 100 hours for maintenance and readiness testing.

NESHAP Subpart JJJJ does not apply to the boilers since they are fired exclusively with natural gas.

VII. Permit changes and Applicability Determinations

A. Permit and Permit Summary

The Specific Conditions have been organized into permit sections specific to the equipment and emission source categories at the facility.

B. Applicability (Section 1):

This Section of the permit provides a reference for the PCC and federal rules that apply to the facility and operations, and to help organize the permit sections.

C. Facility-Wide Operations (Section 2):

This Section incorporates the facility wide provisions applicable to all sources at the facility and is used to streamline provisions that may apply to the specific sources and operations in other Sections of the permit. The facility-wide provisions include the following: general control standards, materials handling standards, odor limiting standard, opacity limit, visibility limiting standard, and asbestos requirements for demolition and renovation activities. This Section also includes the facility-wide provisions for monitoring, recordkeeping, reporting, facility changes, and testing.

D. Soil Vapor Extraction Systems (Section 3):

This Section incorporates applicable PCC requirements and operating limitations for operation of the two soil vapor extraction systems in operation at the facility, including the recordkeeping and reporting requirements.

E. NSPS for CI ICE (Section 4):

This section of the permit applies to compression ignition emergency designated engines that are subject to NSPS, Subpart IIII.

Emergency designated engines are limited by the federal requirements to operate less than 100 hour per calendar year for maintenance and readiness testing and less than 50 of the 100 hours per year can be used for limited qualified non-emergency situations. There is no time limit on the use of emergency designated engines in emergency situations.

F. NSPS for SI ICE (Section 5):

This section of the permit applies to spark ignition emergency designated engines that are subject to NSPS, Subpart JJJJ.

Emergency designated engines are limited by the federal requirements to operate less than 100 hour per calendar year for maintenance and readiness testing and less than 50 of the 100 hours per year can be used for limited qualified non-emergency situations. There is no time limit on the use of emergency designated engines in emergency situations.

G. Non-NSPS/Non-NESHAP ICE (Section 6):

This section of the permit applies to older engines that are not subject to NSPS or NESHAP requirements for facilities whose SIC codes designate them as not subject to NESHAP subpart ZZZZ if only operated for emergency purposes. These engines are limited to no more than 100 hours of operation for maintenance and readiness testing. There is no time limit on the use of emergency designated engines in emergency situations.

H. Fossil Fuel Fired Industrial and Commercial Equipment (Boilers and Heaters) (Section 7):

This Section incorporates applicable PCC requirements and operating limitations for boilers, heaters, and fuel fired equipment to avoid certain requirements in PCC 17.16.165, 40 CFR Part 60, NSPS Subpart Dc and 40 CFR Part 63, and NESHAP Subpart JJJJJ for certain classes of boilers.

The boilers in the equipment list are limited to firing natural gas. The specific definition for natural gas in this Section is taken from the NESHAP Subpart JJJJ standard and is a broad definition that also includes LPG or Propane for use in temporary boilers or as an alternate fuel if required.

I. General Conditions (Section 8):

This Section contains the standard general permit conditions that are applicable to all permitted class II/III sources in Pima County.

VII. Periodic Monitoring

The Permit requires the Permittee to submit semiannual reports of required monitoring when deviations from permit conditions have occurred during the semiannual periods of January through June, and July through December. Otherwise the permit requires the Permittee to maintain the required periodic monitoring on site and to submit the records when requested by the Control Officer to demonstrate compliance.

IX. Control Technology Determination

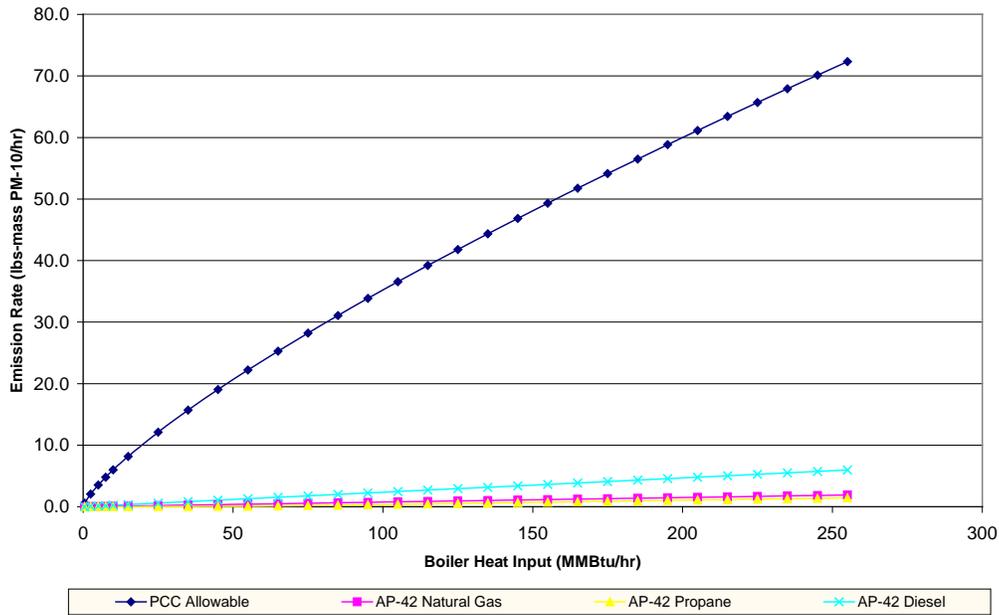
No control technologies needed to be determined; the source is not subject to RACT, BACT or LAER.

X. Exclusion of PCC Particulate Matter Discharge Rate Standards

The applicable PCC rule for limiting the maximum particulate matter discharge rates is not normally included in Class II and III area source permits as explained below.

- For particulate matter sources, the calculated maximum particulate matter discharge rate, as provided in Title 17, yields maximum rates that far exceed the emissions expected from most typical area sources. For example a 200 ton/hour process source, which is typical for an average construction aggregate screening operation, would be limited to a maximum particulate matter discharge rate of 40.4 lbs/hour or 177 tons/year. This limit far exceeds estimated emissions from typical sources using EPA AP-42 emission factors and the source is far more likely to exceed opacity and visibility limiting standards well before reaching this limit.
- With regard to fuel burning equipment, PCC 17.16.165.C limits the emissions of particulate matter from commercial and industrial fossil-fuel fired equipment (including but not limited to boilers). This limit is not normally included in permits because allowable emissions are consistently over an entire order of magnitude higher than EPA AP-42 estimated potential emissions. The chart over page illustrates the point.

Comparison of Emissions of PM-10 for Boilers: PCC Allowable vs AP-42 Estimated



Comparative Chart of Allowable Particulate Emissions Under Pima County Code, Title 17, and Estimated Potential Emissions based on EPA AP-42 Estimates for External Combustion Sources. Allowable emissions are consistently over ten times estimated potential emissions. Therefore, it is not necessary to include the standard in the permit explicitly, but by reference in Attachment 1.

XI. Exclusion of PCC Sulfur Dioxide Emission Standards

Compliance with the fuel sulfur limitation requirements in the permit shall ensure compliance with the Sulfur Dioxide Standards of PCC 17.16.165.E and 17.16.340.F; which limit the emission of SO₂ to 1.0 pound per million BTU of heat input when burning low sulfur fuel. The definition of low sulfur fuel (PCC 17.04.340.A. “Low Sulfur Fuel”) is fuel oil containing less than 0.9 percent sulfur by weight. “High Sulfur Fuel” is defined as fuel oil containing 0.9% wt. or more Sulfur. In accordance with EPA AP-42 Appendix A, page A-5, the heating value of diesel fuel is estimated at 137,000 BTU per gallon. Thus, 1 million BTU of heat input is equivalent to 7.3 gallons of diesel. At 7.05 lbs per gallon, 51.47 lbs of diesel will produce 1 million BTU. At 0.9% 51.47 lbs of diesel contains 0.46 lbs of sulfur. Combined with Oxygen to form SO₂, and assuming 100% of the sulfur in the fuel forms SO₂, this would yield 0.92 lb SO₂ per 1MMBtu. Thus, low sulfur fuel oil will produce 0.92 lbs of SO₂ per million BTU of heat input. This is roughly 8% less than the prescribed 1.0 pound SO₂ per million BTU limit.

An excess emissions report is required to be submitted to the control officer should the fuel oils fired in stationary rotating machinery contain 0.9% wt. Sulfur or greater since the permit explicitly prohibits the use of high sulfur oil by the Permittee.

Natural gas, gasoline, No. 1 and 2 distillate fuel oils, jet fuel, and diesel delivered to Pima County consistently show sulfur levels below this limit as shown in fuel supplier certifications which verify the sulfur content of the fuel fired. The equipment specific sulfur content limitations in the permit and the prohibition to use high sulfur oil allow for the omission of PCC 17.16.165.E and PCC 17.16.340.F; these rules are incorporated by reference in Attachment 1 of the permit.