

2. Point Sources

2.1 Introduction and scope

This inventory of ozone precursors (VOC, NO_x, and CO) is one of a number of emission inventory reports being prepared to meet U.S. EPA reporting requirements. In addition to preparing periodic emissions inventories for the ozone nonattainment area (NAA) as a commitment under the current ozone State Implementation Plan (SIP), the federal Consolidated Emission Reporting Rule (CERR) requires that state and local agencies prepare emissions estimates on a county basis, and submit data electronically to the U.S. EPA for inclusion in the National Emission Inventory (NEI) for 2005. This inventory has been developed concurrently with similar inventories for PM₁₀, PM_{2.5}, NO_x, SO_x, and NH₃, as part of Maricopa County's requirements under the CERR.

In order to provide consistency among all these inventories, it was decided to standardize the definition of a “point source”. While EPA has defined minimum point source reporting thresholds for various pollutants, EPA guidance also notes that:

...we encourage organizations to provide facility-specific emissions data for all point sources, regardless of size, where they are already included in the S/L/T [state/local/tribal] emission inventory. (US EPA, 2003)

Since Maricopa County has an established annual reporting program for sources with air quality permits, the thresholds for defining a point source are lower than the minimums required by EPA. For the purposes of this inventory, a point source is a stationary operation within Maricopa County, which in 2005 emitted:

- 25 English (short) tons or more of carbon monoxide (CO); or
- 10 tons or more of volatile organic compounds (VOC), oxides of nitrogen (NO_x), or sulfur oxides (SO_x); or
- 5 tons or more of particulate matter less than 10 microns (PM₁₀) or ammonia compounds (NH_x).

Applying the above criteria, a total of 173 point sources in Maricopa County were identified (there were no point sources in the Pinal County portion of the nonattainment area). Additionally, EPA guidance requires emission inventories prepared for SIP development purposes to consider point sources with 25 miles of the nonattainment area boundary. For these sources, the traditional “major source” threshold definitions for attainment areas were applied. No additional point sources met this reporting threshold.

While the above approach results in some anomalies (e.g., a facility treated as a point source may have very low, or no, emissions of a certain pollutant), a uniform definition of “point source” ensures that all data sets, which are prepared for a variety of purposes, will be comparable.

This point source inventory includes actual emissions for the year 2005, as well as an average day during the ozone season (defined as July through September). A map with descriptions of the ozone nonattainment area and Maricopa County, are provided in Chapter 1. Questions

concerning point source emissions may be directed to Bob Downing of MCAQD at (602) 506-6790.

Several tables have been constructed to provide the point source emissions and category totals. Table 2.2–1 provides an alphabetical list of all point sources and their location. Table 2.4–1 shows the 2005 annual and average ozone season-day emissions of VOC, NO_x and CO for those point sources which reported emissions of any of these pollutants broken out by facility, while Table 2.4–2 lists the 2005 annual and ozone season-day emissions broken out by individual process types. Table 2.5–1 list emission reduction credits by eligible facility. Note that totals shown in the tables may not equal the sum of individual values due to independent rounding.

2.2 Identification of point sources

The Maricopa County Air Quality Department (MCAQD) identified point sources within Maricopa County through its permit system database and the 2005 annual emissions reports submitted to the department. In addition, the permit system was reviewed to locate new facilities that were not included in the previous emission inventory, and to identify sources that have ceased operations since the 2002 periodic inventory was compiled.

A total of 173 Maricopa County point sources were identified using the emission thresholds described in section 2.1. (To ensure consistency in calculation methodologies, 13 retail gasoline stations which met the point source emission thresholds described above, are instead treated as part of the area source category “vehicle refueling” in Chapter 3.) Of these 173 stationary point sources, 164 are MCAQD-permitted sources which reported emissions of VOC, NO_x and/or CO (160 located within the ozone nonattainment area, and 4 outside the ozone NAA). There are no facilities large enough to meet the point source definition in the Pinal County portion of the ozone NAA. Additionally, EPA guidance requires emission inventories prepared for SIP development purposes to consider point sources within 25 miles of the nonattainment area boundary. For these sources, the traditional “major source” threshold definitions for attainment areas were applied. No additional point sources met this reporting threshold.

Table 2.2–1 contains an alphabetical list of all point sources, including a unique business identification number, NAICS industry classification code, business name (including any changes from the 2002 periodic inventory), and physical address.

Table 2.2–1. Name and location of all point sources.

| ID # | NAICS | Business name | Address | City | ZIP |
|-------|--------|-------------------------------------|----------------------|----------|-------|
| 1074 | 221320 | 23rd Ave Wastewater Treatment Plant | 2470 S 22nd Ave | Phoenix | 85009 |
| 1075 | 221320 | 91st Ave Wastewater Treatment Plant | 5615 S 91st Ave | Tolleson | 85353 |
| 1387 | 332312 | Able Steel Fabricators | 4150 E Quartz Cir | Mesa | 85215 |
| 1952 | 423110 | Adesa Phoenix LLC | 400 N Beck Ave | Chandler | 85226 |
| 245 | 337122 | AF Lorts Manufacturing Company | 8120 W Harrison St | Tolleson | 85353 |
| 956 | 336413 | All Pro Industrial Finishes | 1531 W 17th St | Tempe | 85281 |
| 35541 | 33121 | Allied Tube and Conduit | 2525 N 27th Ave | Phoenix | 85009 |
| 1834 | 518210 | American Express IPC Facility | 3151 W Behrend Dr | Phoenix | 85027 |
| 35567 | 332323 | Ameri-Fab Inc. | 22640 N 21st Ave | Phoenix | 85027 |
| 31637 | 115111 | Anderson Clayton Corp.-Valencia Gin | 25500 W Southern Ave | Buckeye | 85326 |
| 3313 | 221112 | APS West Phx Power Plant | 4606 W Hadley St | Phoenix | 85043 |

* = Facility is outside the eight-hour ozone nonattainment area.

Table 2.2–1. Name and location of all point sources (continued).

| ID # | NAICS | Business name | Address | City | ZIP |
|-------------|--------------|--|-------------------------|--------------|------------|
| 3938 | 332812 | Arizona Galvanizing Inc. | 15775Elwood St | Goodyear | 85338 |
| 4364 | 61131 | Arizona State University | 1551 S Rural Rd | Tempe | 85287 |
| 27711 | 339999 | Armorworks LLC | 7306 S Harl Ave | Tempe | 85283 |
| 36485 | 54185 | Billboard Poster Company Inc. | 3940 W Montecito Ave | Phoenix | 85019 |
| 74058 | 321918 | Biltmore Shutters Inc. | 1138 W Watkins St | Phoenix | 85007 |
| 43124 | 313230 | Bonded Logic Inc. | 411 E Ray Rd | Chandler | 85225 |
| 3441 | 42471 | BP West Coast Products LLC/PHX Terminal | 5333 W van Buren St | Phoenix | 85043 |
| 458 | 32191 | Bryant Industries Inc. | 788 W Illini St | Phoenix | 85041 |
| 217 | 327123 | Building Products Co. | 4850 W Buckeye Rd | Phoenix | 85043 |
| 56105 | 33711 | Burdette Cabinet Co. Inc. | 3941 N Higley Rd | Mesa | 85215 |
| 1218 | 562212 | Butterfield Station Facility | 40404 S 99th Ave | Mobile | 85239 |
| 3442 | 493190 | Caljet | 125 N 53rd Ave | Phoenix | 85043 |
| 3296 | 42471 | Calvert Oil Co. | 214 Arizona Eastern Ave | Buckeye | 85326 |
| 60598 | 337211 | Case Furniture & Design LLC | 4645 W Polk St | Phoenix | 85043 |
| 1318 | 321991 | Cavco Industries Inc. (Litchfield) | 1366 S Litchfield Rd | Goodyear | 85338 |
| 1317 | 321991 | Cavco Industries Inc. (S. 35th Ave.) | 2602 S 35th Ave | Phoenix | 85009 |
| 1316 | 321991 | Cavco Industries LLC/Durango Plant | 2502 W Durango St | Phoenix | 85009 |
| 1267 | 32732 | Cemex Mesa Plants No #61 & #71 | 1901 N Alma School Rd | Mesa | 85201 |
| 1310 | 32311 | Century Graphics LLC | 2960Grand Ave | Phoenix | 85017 |
| 3297 | 42471 | Chevron USA Inc | 5110 W Madison St | Phoenix | 85043 |
| 3976 | 33711 | Cholla Custom Cabinets Inc. | 1727 E Deer Valley Dr | Phoenix | 85024 |
| 61573 | 212322 | Circle H Sand & Rock | 6400 S El Mirage Rd | Tolleson | 85353 |
| 35819 | 562212 | City of Chandler Landfill | 3850 S McQueen Rd | Chandler | 85249 |
| 38731 | 321991 | Clayton Homes-El Mirage | 12345 W Butler Dr | El Mirage | 85335 |
| 3443 | 42471 | Conoco Phillips Phoenix Terminal | 10 S 51st Ave | Phoenix | 85043 |
| 113723 | 212321 | Contractors Landfill & Recycling | 2425 N Center St | Mesa | 85201 |
| 399 | 32739 | Coreslab Structures (Ariz) Inc. | 5026 S 43rd Ave | Phoenix | 85041 |
| 1198 | 32311 | Courier Graphics Corp. | 2621 S 37th St | Phoenix | 85034 |
| 4368 | 32191 | Craftsmen in Wood Mfg. | 5441 W Hadley St | Phoenix | 85043 |
| 1389 | 541380 | Daimlerchrysler Arizona Proving Grounds | 33040 N 203rd Ave | Wittmann | 85361 |
| 3744 | 325991 | Desert Sun Fiberglass | 21412 N 14th Ave | Phoenix | 85027 |
| 130 | 331512 | Dolphin Inc. | 740 S 59th Ave | Phoenix | 85043 |
| 48771 | 32739 | Eagle Roofing Products | 4602 W Elwood St | Phoenix | 85043 |
| 3305 | 311812 | Earthgrains Baking Companies Inc. | 738 W Van Buren St | Phoenix | 85007 |
| 26 | 423810 | Empire Machinery Co. | 1725 S Country Club Dr | Mesa | 85210 |
| 1505 | 32191 | Executive Door | 3939 W Clarendon Ave | Phoenix | 85019 |
| 1488 | 115111 | Farmer's Gin Inc. | 8400 S Turner Rd | Buckeye | 85326 |
| 544 | 321991 | Fleetwood Homes of Arizona Inc #21 | 6112 N 56th Ave | Glendale | 85311 |
| 27728 | 334413 | Flipchip International LLC | 3701 E University Dr | Phoenix | 85034 |
| 881 | 334413 | Freescall Semiconductor Inc. (Alma School) | 1300 N Alma School Rd | Chandler | 85224 |
| 1109 | 334413 | Freescall Semiconductor Inc. (Elliott Rd.) | 2100 E Elliot Rd | Tempe | 85284 |
| 44439 | 221112 | Gila River Power Station | 1250 E Watermelon Rd | Gila Bend | 85337 * |
| 73110 | 424910 | Glenn Weinberger Topsoil Inc. | 39500 S 99th Ave | Maricopa Co. | 85239 |
| 508 | 337122 | Golden Eagle Manufacturing | 601 S 65th Ave | Phoenix | 85043 |
| 1418 | 326299 | Goodrich Aircraft Interior Products | 3414 S 5th St | Phoenix | 85040 |
| 699 | 212321 | Hanson Aggregates of AZ (S. 51st Ave.) | 4002 S 51st Ave | Phoenix | 85043 |
| 4498 | 212321 | Hanson Aggregates of AZ (W. Indian Sch.) | 33500 W Indian School | Phoenix | 85340 |
| 44183 | 332312 | Haulmark Industries Inc. | 8230 N El Mirage Rd | El Mirage | 85335 |
| 31565 | 32614 | Henry Products Inc. | 302 S 23rd Ave | Phoenix | 85009 |
| 138 | 321918 | Heritage Shutters Inc. | 602 W Lone Cactus Dr | Phoenix | 85027 |
| 529 | 32614 | Highland Products Inc. | 43 N 48th Ave | Phoenix | 85043 |
| 3536 | 311812 | Holsum Bakery Inc. | 2322 W Lincoln St | Phoenix | 85009 |

* = Facility is outside the eight-hour ozone nonattainment area.

Table 2.2-1. Name and location of all point sources (continued).

| ID # | NAICS | Business name | Address | City | ZIP |
|-------------|--------------|--|-------------------------|-------------|------------|
| 1059 | 336412 | Honeywell Engines Sys & Service Phx R&O | 1944 E Sky Harbor Cir | Phoenix | 85034 |
| 247 | 336413 | Honeywell Engines Systems Accessories | 1300 W Warner Rd | Tempe | 85284 |
| 355 | 336412 | Honeywell-Engines Systems & Services | 111 S 34th St | Phoenix | 85034 |
| 403 | 331316 | Hydro Aluminum North America Inc. | 249 S 51st Ave | Phoenix | 85043 |
| 777 | 32614 | Insulfoam | 3401 W Cocopah St | Phoenix | 85009 |
| 3966 | 334413 | Intel Corp.-Ocotillo Campus (Fabs 12 & 22) | 4500 S Dobson Rd | Chandler | 85248 |
| 732 | 334418 | Jabil Circuit Inc. | 615 S River Dr | Tempe | 85281 |
| 341 | 325991 | L & M Laminates & Marble | 813 E University Dr | Phoenix | 85034 |
| 96886 | 337122 | Legends Furniture | 10300 W Buckeye Rd | Tolleson | 85353 |
| 4360 | 32311 | Litho Tech Inc. | 2020 N 22nd Ave | Phoenix | 85009 |
| 857 | 334411 | Litton Electro-Optical Systems | 1215 S 52nd St | Tempe | 85281 |
| 43063 | 221112 | LSP Arlington Valley LLC | 39027 W Elliot Rd | Arlington | 85322 |
| 3300 | 92811 | Luke Air Force Base | 14002 W Marauder St | Glendale | 85309 |
| 744 | 331513 | M E Global Inc. | 5857 S Kyrene Rd | Tempe | 85283 |
| 1248 | 325991 | Maax Spas Arizona | 25605 S Arizona Ave | Chandler | 85248 |
| 31261 | 21231 | Madison Granite Supplies | 30600 N 23rd Ave | Phoenix | 85027 |
| 353 | 326199 | Marlam Industries Inc | 834 E Hammond Ln | Phoenix | 85034 |
| 289 | 115111 | Martori Farms | 51040 W Valley Rd | Aguila | 85320 * |
| 62 | 33711 | Mastercraft Cabinets Inc. | 305 S Brooks | Mesa | 85202 |
| 3326 | 325991 | Mesa Fully Formed Inc. | 1111 S Sirrine St | Mesa | 85210 |
| 1415 | 212321 | Mesa Materials Inc (Broadway) | 7845 W Broadway Rd | Phoenix | 85043 |
| 1414 | 212321 | Mesa Materials Inc (Higley) | 3410 N Higley Rd | Mesa | 85205 |
| 44186 | 221112 | Mesquite Generating Station | 37625 W Elliot Rd | Arlington | 85322 |
| 1875 | 334413 | Microchip Technology Inc. | 1200 S 52nd St | Tempe | 85281 |
| 226 | 32739 | Monier Lifetile LLC | 1832 S 51st Ave | Phoenix | 85043 |
| 34197 | 327420 | National Gypsum Co. | 1414 E Hadley St | Phoenix | 85034 |
| 910 | 334412 | Neltec Inc. | 1420 W 12th Pl | Tempe | 85281 |
| 73084 | 337122 | New Directions Incorporated | 402 S 63rd Ave | Phoenix | 85009 |
| 43530 | 221112 | New Harquahala Generating Co. | 2530 N 491st Ave | Tonopah | 85354 * |
| 1879 | 562212 | Northwest Regional Landfill | 19401 W Deer Valley | Surprise | 85374 |
| 1331 | 337122 | Oak Canyon Manufacturing Inc. | 3021 N 29th Dr | Phoenix | 85017 |
| 3953 | 33711 | Oakcraft Inc. | 7733 W Olive Ave | Peoria | 85345 |
| 27925 | 337122 | Oasis Bedroom Co. | 2022 N 22nd Ave | Phoenix | 85009 |
| 52382 | 221112 | Ocotillo Power Plant | 1500 E University Dr | Tempe | 85281 |
| 3982 | 32311 | O'Neil Printing Inc. | 366 N 2nd Ave | Phoenix | 85003 |
| 528 | 322211 | Packaging Corporation of America Inc. | 441 S 53rd Ave | Phoenix | 85043 |
| 1344 | 321991 | Palm Harbor Homes Inc. | 309 S Perry Ln | Tempe | 85281 |
| 98 | 221113 | Palo Verde Nuclear Generating Station | 5801 S Wintersburg Rd | Tonopah | 85354 |
| 428 | 115111 | Paloma Gin Properties LLC | I-8 | Gila Bend | 85337 * |
| 733 | 811412 | Pan-Glo Services | 2401 W Sherman St | Phoenix | 85009 |
| 419 | 336412 | Parker Hannifin GTFSD | 7777 N Glen Harbor Blvd | Glendale | 85307 |
| 1341 | 33992 | Penn Racquet Sports Inc. | 306 S 45th Ave | Phoenix | 85043 |
| 1014 | 327121 | Phoenix Brick Yard | 1814 S 7th Ave | Phoenix | 85007 |
| 562 | 51111 | Phoenix Newspapers Inc. | 22600 N 19th Ave | Phoenix | 85027 |
| 1154 | 33992 | Ping Inc. | 2201 W Desert Cove | Phoenix | 85029 |
| 148 | 331528 | Presto Casting Co. | 5440 W Missouri Ave | Glendale | 85301 |
| 60889 | 811198 | Purcells Western States Tire | 420 S 35th Ave | Phoenix | 85009 |
| 1030 | 32311 | Quebecor World-Phoenix Division | 1850 E Watkins St | Phoenix | 85034 |
| 44182 | 332312 | Quincy Joist Company | 22253 W Southern Ave | Buckeye | 85326 |
| 50299 | 713910 | Quintero Area Water System | 16752 W St Rt 74 | Peoria | 85382 |
| 537 | 327999 | Red Mountain Mining Inc. | 4520 N Power Rd | Mesa | 85215 |
| 42956 | 221112 | Redhawk Generating Facility | 11600 S 363rd Ave | Arlington | 85322 |
| 303 | 332431 | Rexam Beverage Can Company | 211 N 51st Ave | Phoenix | 85043 |

* = Facility is outside the eight-hour ozone nonattainment area.

Table 2.2-1. Name and location of all point sources (continued).

| ID # | NAICS | Business name | Address | City | ZIP |
|-------------|--------------|---|-----------------------|---------------|------------|
| 63 | 212321 | Rinker Materials (El Mirage) | 8635 N El Mirage Rd | El Mirage | 85335 |
| 260 | 212321 | Rinker Materials (S. 19th Ave.) | 3640 S 19th Ave | Phoenix | 85009 |
| 64781 | 212313 | Rinker Materials (S. 59th Ave.) | 5605 S 59th Ave | Laveen | 85339 |
| 213 | 212321 | Rinker Materials (W. Glendale) | 11920 W Glendale Ave | Glendale | 85307 |
| 4318 | 32732 | River Ranch Plant #40 | 5159 N El Mirage Rd | Litchfield Pk | 85340 |
| 759 | 32613 | Rogers Corp./Advanced Circuit Materials | 100 S Roosevelt Ave | Chandler | 85226 |
| 1437 | 334412 | Sanmina Phoenix Division | 5020 S 36th St | Phoenix | 85040 |
| 3315 | 221112 | Santan Generating Station | 1005 S Val Vista Rd | Gilbert | 85296 |
| 266 | 332312 | Schuff Steel Co. | 420 S 19th Ave | Phoenix | 85009 |
| 246 | 321991 | Schult Homes | 231 N Apache Rd | Buckeye | 85326 |
| 4175 | 424710 | SFPP LP Phoenix Terminal | 49 N 53rd Ave | Phoenix | 85043 |
| 50422 | 336413 | Simula Safety Systems Inc. | 7822 S 46th St | Phoenix | 85044 |
| 27933 | 562212 | Skunk Creek Landfill | 3165 W Happy Valley | Phoenix | 85027 |
| 331 | 321999 | Smurfit Stone Container Corp. | 6900 W Northern Ave | Glendale | 85303 |
| 46277 | 321999 | Southwest Forest Products Inc. | 2828 S 35th Ave | Phoenix | 85009 |
| 3316 | 221112 | SRP Agua Fria Generating Station | 7302 W Northern Ave | Glendale | 85303 |
| 3317 | 221112 | SRP Kyrene Generating Station | 7005 S Kyrene Rd | Tempe | 85283 |
| 4131 | 334413 | ST Microelectronics | 1000 E Bell Rd | Phoenix | 85022 |
| 1444 | 327123 | Staco Architectural Roof Tile | 3530 E Elwood St | Phoenix | 85040 |
| 582 | 337122 | Stone Creek Inc. | 4221 E Raymond St | Phoenix | 85040 |
| 4400 | 334413 | Sumco Southwest Corporation | 19801 N Tatum Blvd | Phoenix | 85050 |
| 378 | 212321 | Sun Land Materials | 6950 W Southern Ave | Laveen | 85339 |
| 281 | 212321 | Sun State Rock & Materials | 11500 W Beardsley Rd | Sun City | 85373 |
| 101 | 31161 | Sunland Beef Company | 651 S 91st Ave | Tolleson | 85353 |
| 42102 | 334511 | Suntron Corp. | 2401 W Grandview Rd | Phoenix | 85023 |
| 31643 | 562212 | SW Reg Municipal Solid Waste Landfill | 24427 S Hwy 85 | Buckeye | 85326 |
| 249 | 336411 | The Boeing Company | 5000 E McDowell Rd | Mesa | 85215 |
| 552 | 337122 | Thornwood Furniture Mfg. | 5125 E Madison St | Phoenix | 85034 |
| 363 | 337122 | Thunderbird Furniture | 7501 E Redfield Rd | Scottsdale | 85260 |
| 56 | 32739 | TPAC A Division of Kiewit Western Co. | 3052 S 19th Ave | Phoenix | 85009 |
| 1211 | 337122 | Trendwood Inc (E. University) | 261 E University Dr | Phoenix | 85004 |
| 1210 | 337122 | Trendwood Inc (S. 15th Ave.) | 2402 S 15th Ave | Phoenix | 85007 |
| 37546 | 32739 | Trenwyth Industries | 4626 N 42nd Ave | Phoenix | 85019 |
| 169 | 811111 | U-Haul Intl. Technical Center | 11298 S Priest Dr | Tempe | 85284 |
| 234 | 311514 | United Dairymen of Arizona | 2008 S Hardy Dr | Tempe | 85282 |
| 53 | 32739 | Utility Vault Co. | 411 E Frye Rd | Chandler | 85225 |
| 827 | 332812 | Valley Industrial Painting | 1131 W Watkins St | Phoenix | 85007 |
| 2 | 32412 | Vulcan Materials Co. (115th Ave.) | 14521 N 115th Ave | El Mirage | 85335 |
| 90 | 32732 | Vulcan Materials Co. (43rd Ave.) | 4830 S 43rd Ave | Phoenix | 85041 |
| 344 | 212321 | Vulcan Materials Co. (W. Indian School Rd.) | 11923 W Indian School | Avondale | 85039 |
| 174 | 325998 | W R Meadows of Az Inc. | 4220 S Sarival Ave | Goodyear | 85338 |
| 1239 | 332321 | Wastequip-AG | 2525 W Broadway Rd | Phoenix | 85041 |
| 36676 | 311119 | Western Milling | 310 S 24th Ave | Phoenix | 85009 |
| 141 | 424910 | Western Organics Inc. | 2807 S 27th Ave | Phoenix | 85009 |
| 398 | 212321 | Wickenburg Facility | 44605 Grand Ave | Wickenburg | 85390 |
| 20706 | 32614 | Wincup Holdings Inc. | 7980 W Buckeye Rd | Phoenix | 85043 |
| 1382 | 33711 | Woodcase Fine Cabinetry Inc. | 3255 W Osborn Rd | Phoenix | 85017 |

* = Facility is outside the eight-hour ozone nonattainment area.

2.3 Procedures for estimating emissions from point sources

Both annual and average ozone season-day emissions were estimated from annual source emission reports, MCAQD investigation reports, permit files and logs, or telephone contacts with sources. For most of the sources, material balance methods were used for determining emissions. Emissions were estimated using the emission factors from AP-42, source tests, engineering calculations, or manufacturers' specifications.

MCAQD distributes annual emissions survey forms to nearly all facilities for which MCAQD has issued an operating permit. Facilities are required to report detailed information on stacks, control devices, operating schedules, and process-level information concerning their annual activities. (Appendix 2.1 contains a copy of instructions provided to complete the annual emissions survey.) These instructions include examples and explanations on how to complete the annual emissions reporting forms that facilities must submit to MCAQD. Activity data reported for the June–August summer season is presumed to be representative of the July–September ozone season.

After a facility has submitted an annual emissions report to MCAQD, emissions inventory staff checks all reports for missing and questionable data, and check the accuracy and reasonableness of all emissions calculations with AP-42, the Factor Information and REtrieval (FIRE) software, and other EPA documentation. Control efficiencies are determined by source tests when available, or by AP-42 factors, engineering calculations, or manufacturers' specifications. MCAQD has conducted annual emissions surveys for permitted facilities since 1988, and the department's database system, EMS, contains numerous automated quality assurance/quality control checks for data input and processing.

2.3.1 Application of rule effectiveness

Rule effectiveness reflects the actual ability of a regulatory program to achieve the emission reductions required by regulation. The concept of applying rule effectiveness in a SIP emission inventory has evolved from the observation that regulatory programs may be less than 100 percent effective for some source categories. Rule effectiveness (RE) is applied to those sources affected by a regulation and for which emissions are determined by means of emission factors and control efficiency estimates.

In prior years, EPA guidance (US EPA, 1992) recommended using a default RE value of 80%. More recently, a workgroup consisting of emissions inventory staff from state, local and EPA offices convened to review existing rule effectiveness guidance, and develop consensus recommendation for improvements to this guidance. This work resulted in the development of questionnaires for point and area sources, which identify control program factors most likely to affect RE.

MCAQD applied this revised approach (US EPA, 2005, Appendix B) to controlled processes reported by facilities on their annual emission reports. The quantification of RE was performed for three groups of industrial processes:

- For manually controlled processes that are regulated by Maricopa County Rule 316 (Nonmetallic Mineral Processing), EPA's non-point source guidance was applied to

determine the rule effectiveness of County Rule 316. Results showed an overall rule effectiveness of 54.36%; see MCAQD (2007) for details.

- For most other processes that claimed emissions reductions through the use of a control device, EPA’s point source guidance was applied to determine the effectiveness of the reported capture and control efficiencies. Calculations were performed separately for Title V and non-Title V sources. Application of the 2005 EPA guidance resulted in overall RE values of 90.55% (for Title V processes) and 87.95% (for non-Title V). A sample questionnaire and documentation of calculations for these processes is included in Appendix 2.2.

Section 2.3.3 contains a detailed description of the application of RE for a specific process. The following sections illustrate how emission estimates were obtained for the Maricopa County-permitted sources listed in Table 2.2–1.

2.3.2 Example 1: Ocotillo Power Plant

Arizona Public Service (APS) operates a peaking electric generating plant with two steam units (gas/oil-fired boilers) and two natural-gas turbines. APS provided its total annual fuel consumption for each unit, as well as daily and seasonal operating activity. Total annual emissions from boilers and turbines are summed to obtain the facility's total annual emissions. The Ocotillo power plant provided the following data which were used to calculate CO emissions from boilers and turbines:

| SCC | Source type | Annual fuel consumption (MMCF) | CO emission factor (lb/ MMCF) | CO emissions (lbs/yr) |
|----------|----------------------|--------------------------------|-------------------------------|-----------------------|
| 10100604 | Natural gas boilers | 2,078.90 | 24 | 49,893.6 |
| 20100201 | Natural gas turbines | 71.69 | 77.9 | 5,584.7 |

Calculation of annual CO emissions:

Annual emissions (lbs) = Annual fuel consumption × emission factor

$$\begin{aligned} \text{CO emissions from natural-gas boilers} &= 2,078.90 \text{ MMCF} \times 24 \text{ lb CO/MMCF} \\ &= 49,893.6 \text{ lbs CO/yr} \end{aligned}$$

$$\begin{aligned} \text{CO emissions from natural-gas turbines} &= 71.69 \text{ MMCF} \times 77.9 \text{ lb CO/MMCF} \\ &= 5,584.7 \text{ lbs CO/yr} \end{aligned}$$

$$\begin{aligned} \text{Total CO emissions} &= 49,893.6 \text{ lbs} + 5,584.7 \text{ lbs} \\ &= 55,478.3 \text{ lbs/yr} \\ &= 27.74 \text{ tons CO/yr} \end{aligned}$$

APS provided seasonal operating data for each boiler and turbine. The seasonal activity reported for the June–August time period ranged from 25 to 95 percent among the four units. The average season-day emissions were calculated individually, as illustrated in the following example, and then summed to derive daily totals.

Calculation of ozone season-day emissions:

$$\begin{aligned} \text{Season-day emissions from steam unit \#2} &= \text{annual emissions} \times \text{seasonal activity factor} \div (\text{days/week} \times \text{weeks/season}) \\ &= 23,480.9 \text{ lb} \quad \times 44\% \quad \div (7 \times 13) \\ &= 113.5 \text{ lbs CO/season day} \end{aligned}$$

2.3.3 Example 2: Rogers Corp. Advanced Circuit Materials

This facility produces components of electronic circuit boards. One step in this operation is the production of “prepreg”, or the lamination of fabric components with a xylene-containing resin. The example below demonstrates the steps involved in calculating emissions, emissions reductions from material recycling/disposal and pollution control equipment, and the application of rule effectiveness.

$$\begin{aligned} \text{Uncontrolled annual VOC emissions (lbs)} &= \text{Material usage} \times \text{VOC emission factor} \\ &= 732,239 \text{ lb xylene/yr} \times 1 \text{ lb/lb} \\ &= 732,239 \text{ lb/yr} \end{aligned}$$

Uncontrolled emissions from many processes can be reduced in a number of ways, including: (1) capture of the pollutant-containing input material for offsite recycling or disposal, and (2) use of a control device to capture and control pollutants. The amount of pollutant captured for recycling/disposal from one or more waste streams is calculated as:

$$\text{Pollutant recaptured for recycling/disposal} = \sum (\text{Quantity of waste stream } n \times \text{average pollutant content in waste stream } n)$$

The xylene used in this process was captured in three different waste streams, as follows:

$$\begin{aligned} \text{Material recaptured} &= (92,099 \text{ lbs/yr} \times 90.7\% \text{ VOC}) + (64,634 \text{ lbs/yr} \times 47.3\% \text{ VOC}) + (11,639 \text{ lbs/yr} \times 12\%) \\ &= 83,534 + 30,572 + 1,397 \text{ lbs/yr} \\ &= 115,503 \text{ lbs VOC/yr captured for off-site recycling disposal} \end{aligned}$$

Since this material is captured before emissions from this process are vented to a control device, this off-site disposal “credit” is subtracted from the uncontrolled emissions before calculating the control device effectiveness:

$$\text{Controlled emissions} = \text{uncontrolled emissions} - \text{pollutant captured for off-site disposal} \times [1 - (\text{capture efficiency} \times \text{control device effectiveness})]$$

From the data calculated above, and the reported specifications of the control device (including source testing of the control device efficiency), total VOC controlled emissions are calculated as:

$$\begin{aligned} \text{Controlled emissions} &= 732,239 \text{ lb/yr} - 115,503 \text{ lb/yr} \times [1 - (99.5\% \text{ capture} \times 99.3\% \text{ control})] \\ &= 616,736 \times [1 - (0.988035)] \\ &= 7,379 \text{ lbs VOC/yr} \end{aligned}$$

This total was reported on the facility's annual emissions inventory as actual VOC emissions from this process. In developing the SIP inventory, rule effectiveness (RE) is applied to the reported control device efficiency (99.3%), following EPA guidelines.

As described in Section 2.3.1, a value of 87.95% RE was applied to this process. Thus the total annual emissions including RE was calculated as:

$$\begin{aligned} \text{Annual controlled VOC emissions reflecting RE} &= \text{Net uncontrolled emissions} \times [1 - (\text{RE \%} \times \text{capture efficiency} \times \text{control efficiency})] \\ &= 616,736 \text{ lbs/yr} \times [1 - (87.95\% \times 99.5\% \times 99.3\%)] \\ &= 80,807 \text{ lbs VOC/yr} \end{aligned}$$

Calculation of ozone season-day emissions:

$$\begin{aligned} \text{Season-day emissions (lbs/day)} &= \text{Annual emissions} \times \text{seasonal activity factor} \div (\text{days/week} \times \text{weeks/season}) \\ &= 80,807 \text{ lbs/yr} \times 25\% \div (7 \times 13) \\ &= 222.0 \text{ lbs VOC/day} \end{aligned}$$

2.4 Summary of point source emissions

2.4.1 Point source emissions by geographic location

Table 2.4–1 provides a summary of annual and ozone season-day emissions from all point sources, within and outside the ozone nonattainment area. Sources for which rule effectiveness has been applied are noted. Values of “0.00” and “0.0” for annual and daily emissions denote a value below the level of significance (0.005 tons/yr and 0.05 lbs/day, respectively). Note that totals shown in the tables may not equal the sum of individual values due to independent rounding.

Table 2.4–1. Annual and ozone season-day point source emissions, by facility.

| ID # | Business name | Annual (tons/yr) | | | Ozone season day (lbs/day) | | |
|-------|-------------------------------------|------------------|-----------------|-------|----------------------------|-----------------|-------|
| | | VOC | NO _x | CO | VOC | NO _x | CO |
| 1074 | 23rd Ave Wastewater Treatment Plant | 0.45 | 4.18 | 53.51 | 2.2 | 18.2 | 279.1 |
| 1075 | 91st Ave Wastewater Treatment Plant | 0.66 | 14.75 | 6.94 | 2.9 | 79.7 | 47.9 |
| 1387 | Able Steel Fabricators | 11.56 | | | 88.9 | | |
| 1952 | Adesa Phoenix LLC | 10.28 | 0.11 | 0.09 | 79.1 | 0.8 | 0.7 |
| 245 | AF Lorts Manufacturing Company | 77.72 | 0.02 | 0.02 | 747.4 | 0.2 | 0.2 |
| 956 | All Pro Industrial Finishes | 12.27 | | | 100.6 | | |
| 35541 | Allied Tube and Conduit | 29.52 | 0.11 | 0.10 | 272.5 | 1.0 | 0.8 |
| 1834 | American Express IPC Facility | 0.90 | 11.01 | 2.37 | 4.9 | 60.5 | 13.0 |
| 35567 | Ameri-Fab Inc. | 35.19 | | | 270.7 | | |
| 31637 | Anderson Clayton Corp.-Valencia Gin | 0.00 | 0.05 | 0.01 | 0.0 | 0.0 | 0.0 |
| 3313 | APS West Phx Power Plant | 36.20 | 518.91 | 72.36 | 299.9 | 4,651.7 | 637.8 |
| 3938 | Arizona Galvanizing Inc. | 0.16 | 2.84 | 2.38 | 0.9 | 15.6 | 13.1 |
| 4364 | Arizona State University | 1.86 | 11.66 | 14.87 | 8.1 | 31.7 | 23.2 |
| 27711 | Armorworks LLC | 10.69 | | | 68.6 | | |
| 36485 | Billboard Poster Company Inc. | 23.49 | | | 216.8 | | |
| 74058 | Biltmore Shutters Inc. | 11.70 | | | 90.0 | | |
| 43124 | Bonded Logic Inc. | 0.01 | 0.19 | 0.16 | 0.1 | 1.5 | 1.3 |

* = Source for which rule effectiveness has been applied.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility (continued).

| ID # | Business name | Annual (tons/yr) | | | Ozone season day (lbs/day) | | |
|--------|--|------------------|-----------------|-------|----------------------------|-----------------|---------|
| | | VOC | NO _x | CO | VOC | NO _x | CO |
| 3441 | BP West Coast Products LLC | 24.26 | | | 124.9 | | |
| 458 | Bryant Industries Inc. | 18.61 | | | 143.1 | | |
| 217 | Building Products Co. | 3.33 | 5.34 | 17.75 | 24.9 | 29.8 | 97.9 |
| 56105 | Burdette Cabinet Co. Inc. | 11.06 | | | 85.1 | | |
| 1218 | Butterfield Station Facility | 0.94 | 2.08 | 4.32 | 5.3 | 13.3 | 24.1 * |
| 3442 | Caljet | 21.58 | 1.38 | 6.89 | 118.6 | 7.6 | 37.9 |
| 3296 | Calvert Oil Co. | 11.47 | | | 63.9 | | * |
| 60598 | Case Furniture & Design LLC | 37.47 | | | 240.2 | | |
| 1318 | Cavco Industries Inc. (Litchfield) | 36.58 | | | 281.4 | | |
| 1317 | Cavco Industries Inc. (S. 35th Ave.) | 10.97 | | | 84.4 | | |
| 1316 | Cavco Industries LLC/Durango Plant | 25.02 | | | 192.5 | | |
| 1267 | Cemex Mesa Plants No #61 & #71 | 1.25 | 61.69 | 4.24 | 6.6 | 325.4 | 22.4 |
| 1310 | Century Graphics LLC | 11.52 | 0.06 | 0.05 | 88.6 | 0.4 | 0.4 * |
| 3297 | Chevron USA Inc. | 18.73 | | | 95.7 | | |
| 3976 | Cholla Custom Cabinets Inc. | 13.50 | 0.10 | 0.02 | 103.9 | 0.7 | 0.1 |
| 61573 | Circle H Sand & Rock | 1.05 | 12.82 | 2.76 | 8.0 | 98.6 | 21.2 |
| 35819 | City of Chandler Landfill | 2.86 | 6.57 | 57.72 | 15.9 | 36.7 | 328.2 |
| 38731 | Clayton Homes-El Mirage | 11.36 | | | 87.4 | | |
| 3443 | Conoco Phillips Phoenix Terminal | 12.56 | | | 66.2 | | |
| 113723 | Contractors Landfill & Recycling | 0.23 | 2.80 | 0.60 | 1.5 | 18.2 | 3.9 |
| 399 | Coreslab Structures (Ariz) Inc. | 14.76 | | | 112.0 | | |
| 1198 | Courier Graphics Corp. | 12.42 | 0.37 | 0.31 | 86.0 | 2.6 | 2.1 * |
| 4368 | Craftsmen in Wood Mfg. | 11.58 | 0.07 | 0.06 | 89.1 | 0.5 | 0.5 |
| 1389 | Daimlerchrysler Arizona Proving Ground | 1.02 | 0.14 | 0.06 | 7.1 | 0.7 | 0.6 |
| 3744 | Desert Sun Fiberglass | 21.70 | | | 166.9 | | |
| 130 | Dolphin Inc. | 6.29 | 2.27 | 1.89 | 53.2 | 18.8 | 15.7 * |
| 48771 | Eagle Roofing Products | 5.01 | 1.82 | 1.53 | 32.1 | 11.7 | 9.8 |
| 3305 | Earthgrains Baking Companies Inc. | 24.71 | 2.06 | 1.73 | 158.5 | 13.2 | 11.1 * |
| 26 | Empire Machinery Co. | 9.03 | 33.25 | 22.31 | 56.3 | 197.5 | 134.0 |
| 1505 | Executive Door | 13.42 | | | 103.2 | | |
| 1488 | Farmer's Gin Inc. | 0.02 | 0.60 | 0.10 | 0.0 | 0.0 | 0.0 |
| 544 | Fleetwood Homes of Arizona Inc. #21 | 14.57 | | | 112.1 | | |
| 27728 | Flipchip International LLC | 17.81 | 0.44 | 0.37 | 97.9 | 2.4 | 2.0 |
| 881 | Freescale Semiconductor Inc. (Alma Sch) | 48.77 | 6.92 | 2.67 | 268.8 | 70.5 | 22.2 |
| 1109 | Freescale Semiconductor Inc. (Elliott Rd.) | 11.08 | 3.11 | 0.05 | 61.3 | 21.4 | 1.4 |
| 73110 | Glenn Weinberger Topsoil Inc. | 0.01 | 0.08 | 0.02 | 0.0 | 0.4 | 0.1 |
| 508 | Golden Eagle Manufacturing | 14.97 | 0.03 | 0.02 | 115.2 | 0.2 | 0.2 |
| 1418 | Goodrich Aircraft Interior Products | 75.53 | 0.58 | 0.28 | 580.9 | 1.9 | 0.0 |
| 699 | Hanson Aggregates of AZ (S. 51st Ave.) | 5.01 | 5.64 | 6.68 | 38.5 | 43.4 | 51.4 |
| 4498 | Hanson Aggregates of AZ (W. Ind. Sch.) | 1.38 | 16.90 | 3.64 | 10.6 | 130.0 | 28.0 |
| 44183 | Haulmark Industries Inc. | 15.58 | | | 119.8 | | |
| 31565 | Henry Products Inc. | 62.26 | 0.55 | 0.46 | 480.8 | 4.2 | 3.5 * |
| 138 | Heritage Shutters Inc. | 14.56 | | | 112.0 | | |
| 529 | Highland Products Inc. | 50.29 | 1.98 | 1.66 | 276.5 | 15.2 | 12.8 * |
| 3536 | Holsum Bakery Inc. | 25.22 | 2.71 | 2.28 | 202.4 | 20.0 | 16.8 * |
| 1059 | Honeywell Engines Sys & Service | 21.52 | 1.52 | 1.95 | 137.6 | 3.1 | 6.9 |
| 247 | Honeywell Engines Systems Accessories | 3.38 | 10.39 | 3.18 | 18.6 | 57.1 | 17.5 |
| 355 | Honeywell-Engines Systems & Services | 44.60 | 64.78 | 27.42 | 280.5 | 355.9 | 150.6 |
| 403 | Hydro Aluminum North America Inc. | 38.69 | 11.95 | 11.03 | 248.0 | 76.6 | 70.7 * |
| 777 | Insulfoam | 90.54 | 1.63 | 1.37 | 534.0 | 10.4 | 8.8 * |
| 3966 | Intel Corp.-Ocotillo Campus (Fab 12 / 22) | 31.08 | 24.87 | 20.44 | 180.8 | 259.1 | 138.6 * |
| 732 | Jabil Circuit Inc. | 21.81 | | | 167.8 | | |

* = Source for which rule effectiveness has been applied.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility (continued).

| ID # | Business name | Annual (tons/yr) | | | Ozone season day (lbs/day) | | |
|-------|---|------------------|-----------------|--------|----------------------------|-----------------|---------|
| | | VOC | NO _x | CO | VOC | NO _x | CO |
| 341 | L & M Laminates & Marble | 45.63 | | | 292.5 | | |
| 96886 | Legends Furniture | 16.24 | | | 199.9 | | |
| 4360 | Litho Tech Inc. | 11.37 | | | 87.5 | | |
| 857 | Litton Electro-Optical Systems | 16.05 | | | 103.9 | | |
| 43063 | LSP Arlington Valley LLC | 5.66 | 51.81 | 58.25 | 52.9 | 485.4 | 539.8 |
| 3300 | Luke Air Force Base | 34.76 | 9.37 | 6.27 | 260.0 | 45.2 | 27.2 * |
| 744 | M E Global Inc. | 22.35 | 40.38 | 53.28 | 169.9 | 325.2 | 360.8 * |
| 1248 | Maax Spas Arizona | 51.65 | | | 556.2 | | |
| 31261 | Madison Granite Supplies | 3.07 | 31.84 | 20.51 | 23.7 | 244.9 | 157.8 |
| 353 | Marlam Industries Inc. | 80.87 | 0.04 | 0.03 | 622.0 | 0.3 | 0.3 |
| 62 | Mastercraft Cabinets Inc. | 101.66 | 0.13 | 0.11 | 907.1 | 0.9 | 0.8 |
| 3326 | Mesa Fully Formed Inc. | 41.01 | | | 315.5 | | |
| 1415 | Mesa Materials Inc. (Broadway) | 5.42 | 9.52 | 22.08 | 50.1 | 87.9 | 203.8 |
| 1414 | Mesa Materials Inc. (Higley) | 3.64 | 7.02 | 19.17 | 33.6 | 64.8 | 177.0 |
| 44186 | Mesquite Generating Station | 8.41 | 210.54 | 22.37 | 50.3 | 1,255.1 | 134.0 * |
| 1875 | Microchip Technology Inc. | 35.40 | 6.36 | 4.66 | 196.8 | 62.8 | 31.6 * |
| 226 | Monier Lifetile LLC | 11.51 | 0.54 | 0.45 | 73.8 | 3.4 | 2.9 |
| 34197 | National Gypsum Co. | 0.98 | 17.96 | 14.69 | 6.4 | 118.8 | 94.8 |
| 910 | Neltec Inc. | 25.52 | 10.73 | 2.00 | 140.2 | 59.0 | 11.0 * |
| 73084 | New Directions Incorporated | 25.42 | | | 195.6 | | |
| 1879 | Northwest Regional Landfill | 0.68 | 8.75 | 2.27 | 99.6 | 132.4 | 133.9 |
| 1331 | Oak Canyon Manufacturing Inc. | 90.83 | | | 5.0 | 62.9 | 13.6 |
| 3953 | Oakcraft Inc. | 88.19 | 0.14 | 0.12 | 698.7 | | |
| 27925 | Oasis Bedroom Co. | 15.58 | | | 565.3 | 1.1 | 0.9 |
| 52382 | Ocotillo Power Plant | 6.18 | 97.46 | 27.74 | 119.9 | | |
| 3982 | O'Neil Printing Inc. | 34.22 | | | 56.4 | 966.4 | 272.8 |
| 528 | Packaging Corporation of America Inc. | 6.34 | 13.88 | 11.66 | 263.2 | | |
| 1344 | Palm Harbor Homes Inc. | 13.45 | | | 48.8 | 106.8 | 89.7 |
| 98 | Palo Verde Nuclear Generating Station | 28.76 | 82.56 | 24.55 | 103.5 | | |
| 73 | Pan-Glo Services | 13.25 | 0.72 | 0.60 | 72.9 | 5.5 | 4.6 * |
| 419 | Parker Hannifin GTFSD | 22.09 | | | 141.6 | | |
| 1341 | Penn Racquet Sports Inc. | 221.40 | 5.17 | 4.34 | 1,703.1 | 38.8 | 32.6 * |
| 1014 | Phoenix Brick Yard | 1.53 | 10.27 | 34.60 | 9.0 | 56.4 | 190.1 |
| 562 | Phoenix Newspapers Inc. | 12.26 | 0.59 | 0.22 | 67.9 | 16.5 | 3.2 |
| 1154 | Ping Inc. | 12.99 | 0.17 | 0.14 | 99.7 | 0.5 | 0.5 |
| 148 | Presto Casting Co. | 10.16 | 1.19 | 0.93 | 78.2 | 9.1 | 7.1 |
| 60889 | Purcells Western States Tire | 6.19 | 0.16 | 0.13 | 66.6 | 1.2 | 1.0 |
| 1030 | Quebecor World-Phoenix Division | 74.19 | 1.76 | 39.99 | 361.5 | 9.9 | 225.6 * |
| 44182 | Quincy Joist Company | 79.47 | | | 611.3 | | |
| 50299 | Quintero Area Water System | 1.06 | 13.39 | 2.89 | 5.9 | 74.1 | 16.0 |
| 537 | Red Mountain Mining Inc. | 0.69 | 8.46 | 1.82 | 5.3 | 65.0 | 14.0 |
| 42956 | Redhawk Generating Facility | 7.41 | 145.02 | 134.65 | 62.2 | 1,238.3 | 1,151.9 |
| 303 | Rexam Beverage Can Company | 118.93 | 5.22 | 4.39 | 653.5 | 28.7 | 24.1 * |
| 63 | Rinker Materials (El Mirage) | 0.00 | 0.25 | 0.06 | 0.0 | 1.6 | 0.4 |
| 260 | Rinker Materials (S. 19th Ave.) | 1.22 | 4.90 | 14.67 | 9.5 | 37.5 | 130.0 |
| 64781 | Rinker Materials (S. 59th Ave.) | 2.36 | 29.20 | 6.31 | 15.1 | 187.2 | 40.5 |
| 213 | Rinker Materials (W. Glendale) | 7.77 | 7.44 | 29.54 | 57.1 | 54.6 | 219.5 |
| 4318 | River Ranch Plant #40 | 0.15 | | | 1.2 | | |
| 759 | Rogers Corp./Advanced Circuit Materials | 49.76 | 1.33 | 7.31 | 284.3 | 7.3 | 40.2 * |
| 1437 | Sanmina Phoenix Division | 29.25 | 1.24 | 1.04 | 187.5 | 8.0 | 6.7 * |
| 3315 | Santan Generating Station | 14.58 | 220.66 | 106.40 | 118.2 | 2,054.9 | 920.8 |
| 266 | Schuff Steel Co. | 4.97 | 10.46 | 2.25 | 38.2 | 80.5 | 17.3 |

* = Source for which rule effectiveness has been applied.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility (continued).

| ID # | Business name | Annual (tons/yr) | | | Ozone season day (lbs/day) | | |
|---|--|------------------|-----------------|-----------------|----------------------------|-----------------|----------------|
| | | VOC | NO _x | CO | VOC | NO _x | CO |
| 246 | Schult Homes | 10.24 | | | 79.6 | | |
| 4175 | SFPP LP Phoenix Terminal | 325.25 | 6.64 | 4.81 | 1,758.9 | 36.5 | 26.4 * |
| 50422 | Simula Safety Systems Inc. | 36.54 | 0.08 | 0.06 | 234.2 | 0.5 | 0.4 |
| 27933 | Skunk Creek Landfill | 14.13 | 1.83 | 0.54 | 77.7 | 10.1 | 2.9 |
| 331 | Smurfit Stone Container Corp. | 0.88 | 10.81 | 2.33 | 6.8 | 83.1 | 17.9 |
| 46277 | Southwest Forest Products Inc. | 1.59 | 19.51 | 4.20 | 12.2 | 150.1 | 32.3 |
| 3316 | SRP Agua Fria Generating Station | 6.32 | 352.99 | 74.15 | 84.2 | 5,626.3 | 1,180.7 |
| 3317 | SRP Kyrene Generating Station | 1.38 | 47.07 | 19.04 | 11.7 | 456.0 | 193.7 |
| 4131 | ST Microelectronics | 33.99 | 4.02 | 3.37 | 186.8 | 22.1 | 18.5 * |
| 1444 | Staco Architectural Roof Tile | 12.86 | 0.07 | 0.06 | 98.9 | 0.6 | 0.5 |
| 582 | Stone Creek Inc. | 21.41 | | | 164.7 | | |
| 4400 | Sumco Southwest Corporation | 14.67 | 11.19 | 2.39 | 87.0 | 68.1 | 13.1 * |
| 378 | Sun Land Materials | 0.86 | 10.57 | 2.28 | 6.6 | 81.3 | 17.5 |
| 281 | Sun State Rock & Materials | 0.40 | 32.09 | 0.96 | 2.6 | 205.7 | 6.2 |
| 101 | Sunland Beef Company | 15.13 | 11.19 | 9.40 | 97.7 | 83.1 | 69.8 |
| 42102 | Suntron Corp. | 13.26 | | | 102.0 | | |
| 31643 | SW Reg Municipal Solid Waste Landfill | 15.09 | 6.35 | 1.39 | 88.6 | 40.7 | 8.9 |
| 249 | The Boeing Company | 28.11 | 3.17 | 1.91 | 216.2 | 24.2 | 14.6 |
| 552 | Thornwood Furniture Mfg. | 75.45 | | | 580.4 | | * |
| 363 | Thunderbird Furniture | 16.12 | 0.03 | 0.03 | 124.0 | 0.3 | 0.2 |
| 56 | TPAC A Division of Kiewit Western Co. | 0.10 | 1.77 | 1.49 | 0.7 | 13.6 | 11.4 |
| 1211 | Trendwood Inc. (E. University) | 55.09 | | | 423.8 | | |
| 1210 | Trendwood Inc. (S. 15th Ave.) | 62.21 | | | 478.5 | | |
| 37546 | Trenwyth Industries | 11.19 | 0.09 | 0.07 | 107.6 | 0.8 | 0.7 |
| 169 | U-Haul Intl. Technical Center | 16.62 | | | 106.5 | | |
| 234 | United Dairymen of Arizona | 2.09 | 16.60 | 26.91 | 11.1 | 84.5 | 142.3 |
| 53 | Utility Vault Co. | 10.25 | 2.36 | 0.51 | 94.3 | 18.1 | 3.9 |
| 827 | Valley Industrial Painting | 24.71 | | | 190.1 | | |
| 2 | Vulcan Materials Co. (115th Ave.) | 0.36 | 10.85 | 22.90 | 3.1 | 83.4 | 176.1 |
| 90 | Vulcan Materials Co. (43rd Ave.) | 3.60 | 5.88 | 1.39 | 33.5 | 54.3 | 12.8 |
| 344 | Vulcan Materials Co. (Indian School Rd.) | 0.13 | | | 1.4 | | |
| 174 | W R Meadows of AZ Inc. | 11.62 | 0.14 | 0.11 | 190.7 | 1.7 | 1.5 |
| 1239 | Wastequip-AG | 14.59 | | | 93.5 | | |
| 36676 | Western Milling | 0.36 | 0.96 | 0.32 | 2.8 | 7.4 | 2.4 |
| 141 | Western Organics Inc. | 0.30 | | | 1.9 | | |
| 398 | Wickenburg Facility | 0.46 | 5.65 | 1.22 | 3.5 | 43.5 | 9.4 |
| 20706 | Wincup Holdings Inc. | 104.38 | 13.24 | 11.12 | 642.3 | 81.5 | 68.5 * |
| 1382 | Woodcase Fine Cabinetry Inc. | 19.77 | | | 152.1 | | |
| Ozone Nonattainment Area Totals: | | 3,769.67 | 2,493.05 | 1,234.11 | 26,566.2 | 22,306.3 | 9,591.0 |

Facilities outside the ozone NAA:

| ID # | Business name | Annual (tons/yr) | | | Ozone season day (lbs/day) | | |
|--------------------------------------|-------------------------------|------------------|-----------------|-----------------|----------------------------|-----------------|-----------------|
| | | VOC | NO _x | CO | VOC | NO _x | CO |
| | Gila River Power Station | 1.48 | 353.59 | 74.50 | 16.0 | 3,636.4 | 766.2 * |
| | Martori Farms | 2.70 | 0.05 | 0.04 | 20.1 | | |
| | New Harquahala Generating Co. | 18.13 | 24.10 | 24.36 | 99.6 | 132.4 | 133.9 |
| | Paloma Gin Properties LLC | | 0.08 | 0.07 | | | |
| Other Than NAA Totals: | | 22.31 | 377.82 | 98.97 | 135.7 | 3,768.8 | 900.1 |
| Total Point Source Emissions: | | 3,791.98 | 2,870.87 | 1,333.08 | 26,701.9 | 26,075.1 | 10,491.0 |

*Source for which rule effectiveness has been applied.

2.4.2 Point source emissions by process type

Table 2.4–2 lists annual and ozone season-day emissions from the all point sources addressed in this chapter, listed by major SCC type.

Table 2.4–2. Maricopa County annual and ozone season-day point source emissions, by process type.

| CATEGORY | | Annual (tons/yr) | | | Ozone season day (lbs/day) | | |
|--------------|--------------------------------------|------------------|-----------------|-----------------|----------------------------|-----------------|-----------------|
| SCC Category | | VOC | NO _x | CO | VOC | NO _x | CO |
| 101 | External Combustion – EGUs | 10.18 | 414.28 | 92.82 | 126.7 | 6,185.7 | 1,351.3 |
| 102 | External Combustion – Industrial | 30.45 | 169.62 | 200.82 | 199.4 | 1,046.8 | 1,203.1 |
| 103 | External Combustion – Comm./inst. | 2.03 | 26.82 | 27.99 | 8.3 | 118.4 | 97.9 |
| 201 | Internal Combustion – EGUs | 68.22 | 1,585.54 | 497.25 | 567.8 | 14,203.0 | 4,451.9 |
| 202 | Internal Combustion – Industrial | 45.95 | 422.28 | 130.54 | 298.4 | 2,854.7 | 866.2 |
| 203 | Internal Combustion – Comm./inst. | 2.57 | 31.90 | 6.89 | 16.1 | 202.5 | 43.8 |
| 204 | Internal Combustion – Engine testing | 7.65 | 61.43 | 24.42 | 45.4 | 346.5 | 140.1 |
| 302 | Food/Agriculture | 63.01 | | | 444.5 | | |
| 304 | Industrial. Proc: Secondary Metal | 34.79 | 37.81 | 52.02 | 267.0 | 306.8 | 351.0 |
| 305 | Mineral Products | 44.47 | 64.05 | 167.51 | 351.1 | 495.5 | 1,249.7 |
| 306 | Petroleum Industry | 5.12 | | | 0.0 | | |
| 307 | Ind. Proc: Paper/Wood | 10.18 | | | 78.7 | | |
| 308 | Ind. Proc: Rubber/Plastic | 519.03 | | | 3,659.0 | | |
| 312 | Ind. Proc: Misc. Machinery | 0.53 | | | 4.1 | | |
| 313 | Ind. Proc: Elec. Equipment | 105.42 | 14.58 | 5.50 | 600.4 | 86.8 | 30.2 |
| 330 | Industrial Processes, NEC | 0.45 | | | 2.9 | | |
| 385 | Ind. Proc: Cooling Towers | 3.75 | | | 26.9 | | |
| 390 | In-Process Fuel Use | 0.04 | | | 0.2 | | |
| 399 | Ind. Proc: Misc. Mfg | 250.90 | | | 1,884.1 | | |
| 401 | Organic Solvent Evaporation | 180.43 | | | 1,220.5 | | |
| 402 | Surface Coating | 1,764.24 | 8.36 | | 13,170.6 | 45.9 | |
| 403 | Petroleum Product Storage | 6.39 | 6.64 | 4.81 | 47.2 | 36.5 | 26.4 |
| 404 | Petroleum Liquid Storage | 412.38 | | | 2,250.3 | | |
| 405 | Printing/Publishing | 180.47 | | | 1,180.5 | | |
| 406 | Transp./Mktg. Petroleum Products | 7.92 | | | 52.8 | | |
| 407 | Organic Chemical Storage | 4.62 | | | 25.4 | | |
| 490 | Organic Solvent Evaporation | 0.01 | | | 0.0 | | |
| 501 | Solid Waste Disposal.: Municipal | 29.92 | 26.31 | 118.36 | 168.9 | 139.2 | 656.5 |
| 502 | Solid Waste Disposal.: Comm./Inst. | 0.87 | 1.24 | 4.14 | 4.8 | 6.8 | 22.8 |
| | | 3,791.98 | 2,870.87 | 1,333.08 | 26,701.9 | 26,075.1 | 10,491.0 |
| n/a | Emission reduction credits | 97.2 | 9.8 | 14.3 | 532.6 | 53.7 | 78.4 |
| | | 3,889.18 | 2,880.67 | 1,347.38 | 27,234.5 | 26,128.8 | 10,569.4 |

2.5 Emission reduction credits

A major source or major modification planned in a nonattainment area must obtain emissions reductions as a condition for approval. These emissions reductions, generally obtained from existing sources located in the vicinity of a proposed source must offset the emissions increase from the new source or modification. The obvious purpose of acquiring offsetting emissions decreases is to allow an area to move towards attainment of the national ambient air quality standards while still allowing some industrial growth.

In order for these emission reductions to be available in the future for offsetting, they must be: 1) explicitly included and quantified as growth in projection year inventories required in rate of progress plans or attainment demonstrations that were based on 1990 actual inventories, and 2)

meet the requirements outlined in MCAQD Rule 240 (Permit Requirements for New Major Sources and Major Modification to Existing Major Sources).

Table 2.5–1 provides a list of emission reduction credits for VOC, NO_x, and CO. Two previously operational facilities maintain emission reduction credits that are still valid for inclusion in this report and the rate of progress plan.

Table 2.5–1. Emission reduction credits.

| ID | Facility | Emission reduction credits (tons) | | |
|---------|--|-----------------------------------|-----------------|-------------|
| | | VOC | NO _x | CO |
| 1151 | Freescale Semiconductor, Inc. (formerly Motorola Mesa) | 17.1 | 9.8 | 14.3 |
| 72 | Woodstuff Manufacturing | 80.1 | – | – |
| Totals: | | 97.2 | 9.8 | 14.3 |

2.6 Quality assurance / quality control procedures

2.6.1 Emission survey preparation and data collection

The MCAQD's Emissions Inventory (EI) Unit annually collects point source criteria pollutant emission data from sources in the county. MCAQD annually reviews EPA guidance, documents from the Emission Inventory Improvement Program (EIIP), and other source materials to ensure that the most current emission factors and emission calculation methods are used for each year's survey. Each January, the EI Unit prepares a pre-populated hard copy of the preceding year's submissions and mails reporting forms to permitted sources, along with detailed instructions for completing the forms. (A copy of these instructions is included as Appendix 2.1). The EI Unit asks sources to verify and update the data. The EI Unit also holds monthly workshops from January through April to assist businesses in completing EI forms.

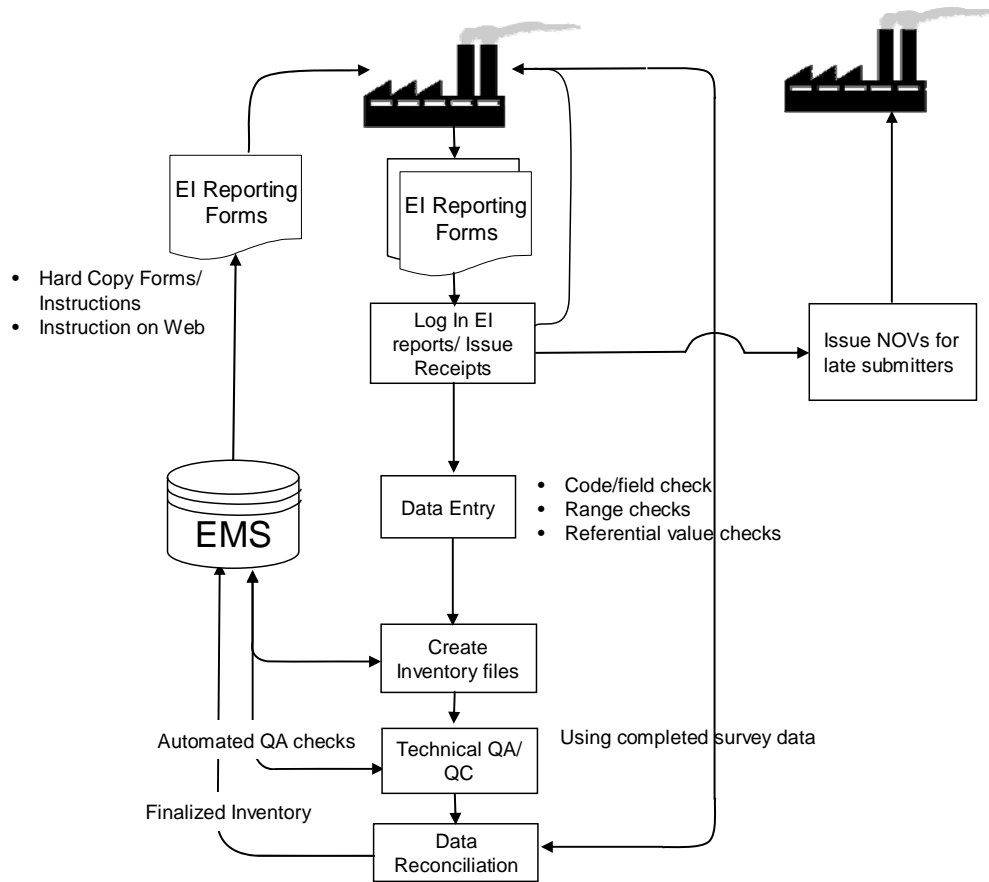
The general data flow for data collection and inventory preparation is shown in Figure 2.6–1.

2.6.2 Submission processing

Submitted EI reports are logged in as they are received, and receipts are issued for emissions fees paid. The data are input “as received” into the department's data base. During data entry, numerous automated quality control (QC) checks are performed, including:

- Pull-down menus to minimize data entry errors (e.g., city, pollutant, emission factor unit, etc.)
- Mandatory data field requirement checks (e.g., a warning screen appears if a user tries to save an emission record with a missing emission factor).
- Range checks (e.g., were valid SCC, Tier, SIC, and NAICS codes entered?)
- Referential value checks (e.g., emission factor units, annual throughput units)
- Automatic formatting of date, time, telephone number fields, etc.

Figure 2.6–1. Data flow for point source emission inventories.



Automated quality assurance (QA) checks on the report that has been entered include the following:

- Comparing reported emission factors to SCC reference lists
- Comparing reported emission factors to material name reference list
- Checking the report for calculation errors. This includes annual throughput, emission factors, unit conversion factors (e.g., BTU to therms), capture efficiency, primary / secondary control device efficiency, and any offsite recycling credits claimed.
- Checking the report for completeness of required data.

When data entry is complete, an electronic version of the original data is preserved separately to document changes made during the technical review and QA/QC process.

When errors are flagged, the businesses are contacted and correct information is obtained and input to the EMS. Outstanding reporting issues are documented. Confidential business information (CBI) is identified by a checkbox on the form, and these data elements are flagged during data entry and are not transmitted to the EPA. To prepare the inventory for submittal to

the National Emissions Inventory (NEI), the EI Unit runs Microsoft Access queries on the data in the EMS to pull fields for the NEI Input format (NIF) tables.

2.6.3 Analysis of annual point source emissions data for this inventory

Two environmental planners checked inventory accuracy and reasonableness, and assured that all point sources had been identified and that the methodology applied to calculate emissions was appropriate and that the calculations were correct. Other reasonableness checks were conducted by recalculating emissions using methods other than those used to make the initial emissions calculations and then comparing results. QA was conducted by checking all emissions reports submitted to MCAQD for the year 2005 for missing and questionable data and by checking the accuracy and reasonableness of all emissions calculations made for such reports. Notes concerning follow-up calls and corrections to calculations were documented on each 2005 annual emissions report.

The QA point source coordinator reviewed checked calculations, identified errors, and performed completeness, reasonableness and accuracy checks.

2.7 References

- MCAQD, 2007. 2005 Periodic Emission Inventory for PM-10 for the Maricopa County, Arizona, Nonattainment Area. Maricopa County Air Quality Department, May 2007
- US EPA, 1992. Guidelines for Estimating and Applying Rule Effectiveness for Ozone/CO State Implementation Plan Base Year Inventories. US EPA Office of Air Quality Planning and Standards, Research Triangle Park, NC. Rep. EPA-452/R-92-010, November 1992. Available at: http://www.epa.gov/ttn/chief/old/eidocs/454r92010_nov1992.pdf
- US EPA, 2003. 2002 National Emission Inventory (NEI) Preparation Plan (draft). US EPA Office of Air Quality Planning and Standards, Research Triangle Park, NC, Dec. 19, 2003. Available at: [http://www.epa.gov/ttn/ chief/net/2002inventory.html](http://www.epa.gov/ttn/chief/net/2002inventory.html).
- US EPA, 2005, Appendix B. Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations. US EPA Office of Air Quality Planning and Standards, Research Triangle Park, NC. Draft Rep. Revised Nov. 2005. Available at: <http://www.epa.gov/ttn/chief/eidocs/eiguid/>