



APPLICATION COMPLETENESS CHECKLIST

GENERAL PERMIT – HOT MIX ASPHALT PLANTS

Before submitting this application to ADEQ, please ensure that you have completed the following: (PLEASE CHECK THE BOXES AND ATTACH THE COMPLETED FORM TO THE APPLICATION)

- The Application Form (Form B- page 9) has been completed and signed by the Responsible Official (see page 6 for definition of “Responsible Official”)
- Verified that the business name identified in Item #1 of the Standard Permit Application Form is registered with the Arizona Corporation Commission (Form B- page 9)
- The General Permit Application Fee of \$500 has been included in your submittal
- The Responsible Official has signed the Compliance Certification and Certification of Truth, Accuracy, and Completeness (Form H- page 36)
- The General Permit Applicability Checklist is completed (Form A- page 8)
- Emission calculations have been completed for all applicable equipment using the maximum rated capacity for each piece of equipment. If you have used the HMAP Application Emission Calculation Spreadsheet for emission calculations, the completed spreadsheet must be attached to the application.
- The Equipment List has been completed and identifies all equipment which will be covered by the General Permit. This includes type of equipment, maximum rated capacity, make, model, serial number, date or year of manufacture, and equipment identification number (Form G- page 32, and pages 33 & 34, if applicable)

APPLICATION PACKET
FOR
HOT MIX ASPHALT PLANT
GENERAL PERMIT



Arizona Department of Environmental Quality

Air Quality Division

April 30, 2012

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I. INTRODUCTION

This application has been developed specifically for applicants pursuing coverage under the hot mix asphalt plant general permit in lieu of an individual permit. To expedite the processing of an air quality control permit application, the Arizona Department of Environmental Quality (ADEQ) has created a general permit for hot mix asphalt plants (HMAP). Facilities, which meet the criteria in this general permit application, will be permitted under the HMAP general permit and will pay lower annual air quality fees than HMAP covered under individual air quality permits. This application packet assists the applicant in the submittal of information required to process their application for an air quality control permit.

II. APPLICABILITY

- A. This general permit allows collocation of crushing & screening plant (C & S) and/or concrete batch plant (CBP) in attainment areas. However, in non-attainment areas, only stand-alone HMAP are permitted. The following table provides the maximum daily production limits permitted, based on modeling analysis, for various operating scenarios. **If the daily production is likely to exceed any of the specified limits, the facility does not qualify for general permit and must apply for an individual permit.**

MODELING BASED THROUGHPUT LIMITATIONS

Facility	Maximum Daily Throughput	
	PM ₁₀ Attainment Areas	PM ₁₀ Non-attainment Areas
Stand-alone HMAP	5,280 tons	3,150 tons
HMAP collocated with C&S and CBP plants	HMAP: 4,200 tons C&S: 3,780 tons CBP: 1,275 yd ³	Not authorized

Please note that the particulate matter below 10 micron size (PM₁₀) non-attainment areas in the State are identified in Appendices A through F.

- B. In addition to the above throughput limitations, the operating hours for all equipment covered under the permit will be restricted such that the emission limits for the pollutants do not exceed limits identified in the following table. Such limits are intended to keep the facility-wide emissions below the major source thresholds and while in Maricopa County, to stay below Rule 241 Best Available Control Technology (BACT) thresholds. The operating hours will be specified on the specific Authorizations to Operate.

EMISSION LIMITS FOR STATEWIDE AND MARICOPA COUNTY

Pollutant	Maricopa County		State wide except Maricopa County
	Emission limit		Emission Limit
	Pounds per day	Tons per year	Tons per year
Particulate matter (PM)	135	22.5	Not Applicable
Particulate matter less than 10 microns (PM ₁₀)	76.5	13.5	90
Carbon monoxide (CO)	495	90	90
Nitrogen oxides (NO _x)	135	22.5	90
Sulfur dioxide (SO ₂)	135	22.5	90
Volatile organic compounds (VOC)	135	22.5	90

III. AUTHORIZATIONS TO OPERATE

- A.** Any source which is qualified to be covered by this general permit may apply to the Arizona Department of Environmental Quality (the Department) for authority to operate under this general permit. Applicants shall submit the application forms and necessary information included in Appendix 1 of the Arizona Administrative Code (A.A.C.) Title 18, Chapter 2.
- B.** If the applicant meets the criteria for coverage under this general permit, an Authorization to Operate (ATO) will be issued for each drum dryer, asphalt heater, pug mill, concrete batch plant, water heater, silo, crusher, screen and internal combustion engine (except those which are integrated into other process equipment). The ATOs attest to the parties' formal agreement to abide by all conditions contained in the general permit. Other associated pieces of equipment do not require an individual ATO but are subject to the provisions of this general permit.

IV. JURISDICTION

Maricopa County AQD and Pima and Pinal County AQCDs or Indian Reservations may administer and enforce this general permit and issue ATOs for sources under their jurisdiction.

A. Stationary Sources

Stationary sources wishing to obtain coverage under this general permit and associated ATOs will be required to apply to ADEQ, except for stationary sources which are located on an Indian Reservation or in Maricopa, Pima or Pinal Counties. These stationary sources will be required to obtain a permit from the respective AQD or AQCD.

B. Portable Sources

1. A portable source is any stationary source which is capable of being transported and operated in more than one county of Arizona.
2. According to Arizona Revised Statutes (A.R.S.) §49-402, portable sources wishing to obtain coverage under this general permit will be required to apply to ADEQ. However, if the portable source will operate for the remaining term of this general permit on an Indian Reservation or in Maricopa, Pima or Pinal Counties, then the respective AQD or AQCD will process the application for a permit.

3. A portable source which has received coverage under this general permit from an Indian Reservation or Maricopa County AQD or Pima or Pinal County AQCDs is not allowed to operate in any other county, unless one of the following occurs:
 - a. If a portable source is proposing to operate in a county without an AQCD, then the portable source will be required to apply to ADEQ and obtain coverage under this general permit before beginning operations in that county; or
 - b. If a portable source is proposing to operate for the remaining term of this general permit on an Indian Reservation or in another county with an AQD or AQCD, then the portable source will be required to apply to the respective AQD or AQCD and obtain a permit before beginning operations in that county.

If the applicant has any questions regarding jurisdictional issues, please contact the appropriate agency at the phone number below:

ADEQ:	1-800-234-5677 ext 771-2338
Maricopa County:	(602) 506-6010
Pima County:	(520) 243-7400
Pinal County:	(520) 866-6929

V. PERMIT ISSUANCE TIME FRAME

According to Arizona Administrative Code (A.A.C.) R18-1-525, ADEQ has 21 business days to determine if the submitted general permit application is complete. Once the application is determined to be complete, the Department has 103 business days to make a licensing decision on the application. The Department, upon the determination that additional information is needed, can suspend the counting of the days. In such a case, a letter will be sent to the applicant informing them that the counting of days has been suspended, and will also specify what additional information is necessary to continue processing the application.

VI. DISCLAIMER

This application packet does not waive the rights of the Director as provided under Arizona Administrative Code (A.A.C.) R18-2-304 to request that additional information be submitted by the applicant to assist in the processing of the application for an air quality permit. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed permit. If there is any difference between this application packet and Title 18, Chapter 2 of the A.A.C, the A.A.C shall take precedence.

APPLICATION INSTRUCTIONS

This section of the application packet helps the applicant assemble a complete application, make the appropriate calculations, complete a compliance plan/certification, and submit all information in a manner that will expedite the application review.

ADEQ recognizes that HMAP, in general, move and change equipment configuration frequently. The information provided in the application should reflect the current configuration.

Please read all sections of this application packet very carefully. Provide all information requested. The final application submitted should include all the forms in the application packet. Make additional copies of the forms as necessary to be sure that all information is included.

Form A: General Permit Applicability Checklist

Form A of this application packet has been developed to determine if your facility qualifies for coverage. Those facilities which do not qualify must obtain an individual air quality permit.

Form B: General Permit Application Form

Please complete all lines.

Note: The “Responsible Official” is the owner or partner of the company in most cases. It may also be the president or vice-president of larger companies. If there is a question as to who the responsible official is, please contact ADEQ for more information at 602-771-2338.

Forms C: Emission Calculations

An Excel spreadsheet was developed to assist applicants in completing their emission calculations. The emissions calculation spreadsheet is available at the following address:

http://www.azdeq.gov/environ/air/permits/download/hmap_eqa.xls

If the above calculation spreadsheet is submitted, the applicant is not required to complete Tables 1 through 25 of Form C of this application. Otherwise, the applicant must complete Tables 1 through 25 of Form C. These tables provide worksheets to assist the applicant in calculating emission rates. Emissions factors are based on AP-42, Compilation of Air Pollutant Emission Factors by Environmental Protection Agency.

The applicant may, however, choose to use emission factors provided by manufacturer data or test results. In such an event, supporting documents (manufacturer’s data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors.

Form D: Table 22 should be used to calculate the facility wide annual emissions, and the annual synthetic minor operating hour limitation for statewide operations in **attainment areas**.

Form E: Table 23 should be used to calculate the facility wide annual emissions, and the annual synthetic minor operating hour limitation for statewide operations in **non-attainment areas outside of Maricopa County**.

Form F: Table 24 should be used to calculate the daily and annual emissions, and daily and annual synthetic minor operating hour limitation for operations **inside Maricopa County**.

Form G: Equipment List

ADEQ needs to be able to identify all pieces of equipment covered under the general permit. Use Form G to provide a list of all equipment including boilers, engines, and pollution control devices to be permitted.

Separate forms must be used for equipment associated with HMAP, C&S and CBP plants. Please make additional copies of Form G, if required.

Form H: Compliance Certification / Certification of Truth, Accuracy, and Completeness

A “Certification of Compliance with all Applicable Requirements” and “Certification of Truth, Accuracy, and Completeness” must be signed by the Responsible Official. Form H can be used to satisfy this requirement.

Form I: Fee Summary

Form I is a summary of fees associated with this General Permit.

ADDITIONAL INFORMATION

Dust Control Plan

If the initial location of the facility is in Maricopa County, the facility must submit a Dust Control Plan as described under Maricopa County Rule 316. The applicant may use the form available at Maricopa County Air Quality Department’s website by clicking the following link. This form must be filled in and submitted to ADEQ along with the application.

<http://www.maricopa.gov/aq/divisions/compliance/dust/docs/pdf/DustControlPlan.pdf>

FILING INSTRUCTIONS

1. An application fee of \$500 must be submitted by all applicants requesting a new or renewal permit, and by applicants requesting an equipment change. Please make your check or money order payable to ADEQ. The application fee must accompany each application submittal.
2. Please mail the completed application packet and the \$500.00 application fee to the following address:

Arizona Department of Environmental Quality
Air Quality Division
Permits Section
1110 West Washington Street, 3415A-3
Phoenix, Arizona 85007-2935

FORM A: GENERAL PERMIT APPLICABILITY CHECKLIST

The following questions have been developed to determine if your facility qualifies for coverage under the Hot Mix Asphalt Plant (HMAP) general permit or is required to obtain an individual air quality permit pursuant to A.A.C. R18-2-302.

This general permit allows collocation of crushing & screening plant and/or concrete batch plant in attainment areas. However, in non-attainment areas, only stand-alone hot mix asphalt plant is permitted. The following table lists the maximum daily production limits permitted, based on modeling analysis, for various operating scenarios. **If the daily production is likely to exceed any of the specified limits, the facility does not qualify for general permit and must apply for an individual permit.**

MAXIMUM PRODUCTION LIMITS

Facility	Maximum Daily Production	
	PM ₁₀ Attainment Areas	PM ₁₀ Non-attainment Areas
Stand-alone HMAP	5,280 tons	3,150 tons
HMAP collocated with C&S and CBP plants	HMAP: 4,200 tons C&S: 3,780 tons CBP: 1,275 yd ³	Not authorized

1. Can the facility comply with the throughput limitations in the table above?

YES NO **If the answer is NO**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is YES, complete **Forms C, D and E** and then proceed to Question 2.

2. Will the facility be able to limit its operating hours to the number of hours calculated in Form D (Table 22) while operating in **attainment areas**?

YES NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

3. Will the facility be able to limit its operating hours to the number of hours calculated in Form E (Table 23) while operating in **non-attainment areas outside of Maricopa County**?

YES NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

4. Will the facility be operating in Maricopa County?

YES NO **If the answer is YES**, complete **Form F** and then proceed to Question 5.

5. Will the facility be able to limit its operating hours to the number of daily and annual hours calculated in Form F (Table 24) while **operating in Maricopa County**?

YES NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

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FORM C: EMISSION CALCULATIONS

I. HOT MIX ASPHALT PLANT (HMAP) EMISSIONS

A. Particulate Matter emissions from Drum Dryer

Table 1 is provided to calculate potential to emit (PTE) for particulate matter emissions for rotary drum dryer. The factors are taken from Section 11.1, AP-42. The applicant may, instead, choose to use emission factors provided by the manufacturer or test results. In such an event, supporting documents (manufacturer's data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements for the use of any site-specific stack test data as emission factors.

Rated capacity of the HMAP: _____ (a) tons per hour

Table 1 – Particulate Matter Emissions

Pollution Control Device	AP-42 Emission Factor		Emission factor (other)		Emissions	
	PM	PM ₁₀	PM	PM ₁₀	PM	PM ₁₀
	Pound per ton of asphalt		Pound per ton of asphalt		Pounds per hour	
	b	c	d	e	A = a x (b or d)	B = a x (c or e)
Baghouse	0.033	0.023				
Venturi Scrubber	0.045	0.019				

Emissions from Table 1 (Columns A and B) must be transferred to HMAP, Total Emissions, Table 9.

B. Other Criteria Pollutant Emissions from Drum Dryer

Table 2 is provided to calculate PTE for other criteria pollutants for rotary drum dryer. The factors are taken from Section 11.1, AP-42. The applicant may, instead, choose to use emission factors provided by the manufacturer or test results. In such an event, supporting documents (manufacturer's data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements for the use of any site-specific stack test data as emission factors.

Rated capacity of the HMAP: _____ (a) tons per hour

Type of fuel used: _____

Table 2 – Other criteria Pollutants from Dryer

Pollutant	Emission Factor (pound per ton of asphalt)				Emissions (lb/hr)
	Natural Gas	Fuel Oil #2 / Diesel	Waste Oil / Fuel oil #6	Other	
	b				A = a x b
CO	0.13	0.13	0.13		
NO _x	0.026	0.055	0.055		
SO ₂	0.0034	0.011	0.058		
VOCs	0.032	0.032	0.032		

Emissions from Table 2 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

C: Particulate Matter Emissions from Material Handling Operations in HMAP

(Do not use this table for emissions from collocated C&S or CBP)

Table 3 – HMAP Material handling Operations Emissions

Rated capacity of the hot mix asphalt plant: _____ (a) tons per hour

Pollutant	Emission Factor	Emissions
	Pounds per ton of asphalt	Pounds per hour
	b	A= a x b
PM	0.00818	
PM ₁₀	0.00357	

Emissions from Table 3 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

D. Silo Filling and Plant Load-out Emissions in HMAP

Rated capacity of the HMAP: _____ (a) tons per hour

Table 4: Emissions from Silo Filling and Plant Load out

Pollutant	Emission Factor	Emissions
	Pounds per ton of asphalt	Pounds per hour
	b	A=a x b
PM	0.00092	
PM ₁₀	0.00092	
CO	0.0017	
VOC	0.011	

Emissions from Table 4 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

E. Asphalt Heater Emissions

Table 5 is provided to determine emissions from asphalt heater. The factors are taken from AP-42.

Type of fuel used: _____

Fuel consumption in asphalt heater: _____ (a) in gallons per hour for fuel oil no. 2, diesel, & LPG; and natural gas in cubic foot per hour.

Table 5: Emissions from Asphalt Heater

Pollutant	Emission Factor			Emissions
	Diesel / Fuel oil # 2	LPG	Natural Gas	Pounds per hr
	Pounds per gallon	Pounds per gallon	Pound per cubic foot	
	b			A = a x b
PM	0.002	0.0005	0.0000076	
PM ₁₀	0.002	0.0005	0.0000076	
CO	0.0012	0.002	0.0000089	
NO _x	0.02	0.0145	0.0001	
SO _x	0.0002	0.000076	0.0000006	
VOC	0.00056	0.00055	0.0000055	

Emissions from Table 5 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

F. Internal Combustion Engines (ICEs) associated with HMAP

This form must be completed in order to calculate the emissions from the internal combustion engines (ICE) associated with HMA plant. Emissions need not be calculated for mobile sources and engines that meet the regulatory definition of ‘non road engines’.

Table 6 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs.

The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 7**.

Table 6: Emissions from ICEs associated with HMAP

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ (a) HP
 Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ (b) HP
 Total HP of all natural gas / LPG fired ICEs: _____ (c) HP

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/LPG-fired Engines	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/LPG-fired Engines	
	Pounds per hp-hr			Pounds per hour			
	d	e	f	A = a x d	B = b x e	C = c x f	
PM	0.0022	0.0007	0.0000694				
PM ₁₀	0.0022	0.0007	0.0000005				
CO	0.00668	0.0055	0.00222				
NO _x	0.031	0.024	0.0286				
SO ₂	0.0000121	0.0000121	0.0000041				
VOCs	0.00247	0.000705	0.000826				

Emissions from column E1 of Table 6 must be transferred to Table 8.

If the facility wishes to use **manufacturer's data or test results** in place of ADEQ emission factors for any/all of ICEs associated with HMAP, Table 7 must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 7: Emissions from ICEs associated with HMAP

ICE 1: _____ (a) HP Fuel used: _____
 ICE 2: _____ (b) HP Fuel used: _____
 ICE 3: _____ (c) HP Fuel used: _____
 ICE 4: _____ (d) HP Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	$A = a \times e$	$B = b \times f$	$C = c \times g$	$D = d \times h$	$E2 = A + B + C + D$
PM									
PM ₁₀									
CO									
NO _x									
SO ₂									
VOCs									

Emissions from columns E2 of Table 7 must be transferred to Table 8.

Table 8: Total Emissions from ICEs associated with HMAP

Pollutant	Total Emissions from Table 6 (E1)	Total Emissions from Table 7 (E2)	Total Emissions from all ICEs in HMAP (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM ₁₀			
CO			
NO _x			
SO ₂			
VOCs			

Total Emissions from all ICEs in HMAP (Table 8) must be transferred to HMAP, Total Emissions, Table 9.

F. Total Emissions from Hot Mix Asphalt Plant

Table 9: HMAP -Total Emissions

Pollutant	Drum Dryer	Material Handling	Silo fill out and loading	Asphalt Heater	HMAP Generators	Total Emissions
	Tables 1 and 2	Table 3	Table 4	Table 5	Table 8	A
	Pounds per hour					Pounds per hour
PM						
PM ₁₀						
CO						
NO _x						
SO ₂						
VOC						

Emissions from column A of Table 9 must be transferred to Tables 22, 23, and 24 for calculation of facility-wide emissions and synthetic minor operating hour limitations.

II. EMISSIONS FROM THE CRUSHING & SCREENING (C&S) PLANT

A. Particulate Matter Emissions from the C&S Plant

The form is designed to calculate the emissions for more than one equipment in each category. Provide equipment's rated capacity in column 'a'. If there is more than one equipment for the same capacity, enter the number in column 'b'. If additional equipment in same category has different capacity, use additional line provided.

Table 10: Emissions from C&S Plant

Emission Source	Rated Capacity	Number of operations	Emission Factor		Emissions	
	Tons per hour	Number	PM	PM ₁₀	PM	PM ₁₀
	a	b	c	d	A = a x b x c	B = a x b x d
Batch Drop Operation			0.0011	0.000526		
Batch Drop Operation			0.0011	0.000526		
Feed Hopper			0.0011	0.000526		
Feed Hopper			0.0011	0.000526		
Crusher			0.0012	0.00054		
Crusher			0.0012	0.00054		
Crusher			0.0012	0.00054		
Screen			0.0022	0.00074		
Screen			0.0022	0.00074		
Fine Screen			0.0036	0.0022		
Stackers			0.0011	0.000526		
Stackers			0.0011	0.000526		
Transfer points			0.00014	0.000046		
Transfer points			0.00014	0.000046		
Transfer points			0.00014	0.000046		
Total Emissions						

Total Emissions from columns A and B of Table 10 must be transferred to C&S Plant, Total Emissions, Table 14.

B. Internal Combustion Engines (ICEs) associated with C&S Plant

This form must be completed in order to calculate the emissions from the internal combustion engines (ICE) associated with C & S operations. Emissions need not be calculated for mobile sources and engines that meet the regulatory definition of ‘non road engines’.

Table 11 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs.

The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 12**.

Table 11: Emissions from ICEs associated with C&S Plant

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ (a) HP
 Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ (b) HP
 Total HP of all natural gas / LPG fired ICEs: _____ (c) HP

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	
	(Pounds per hp-hr)			Pounds per hour			
	d	e	f	A = a x d	B = b x e	C = c x f	
PM	0.0022	0.0007	0.0000694				
PM ₁₀	0.0022	0.0007	0.0000005				
CO	0.00668	0.0055	0.00222				
NO _x	0.031	0.024	0.0286				
SO ₂	0.0000121	0.0000121	0.0000041				
VOCs	0.00247	0.0007050	0.000826				

Emissions from column E1 of Table 11 must be transferred to Table 13.

If the facility wishes to use **manufacturers' data or test results** in place of ADEQ emission factors for any/all of ICEs associated with the C&S plant, Table 12 must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 12: Emissions from ICEs associated with C&S Plant

ICE 1: _____ (a) HP Fuel used: _____
 ICE 2: _____ (b) HP Fuel used: _____
 ICE 3: _____ (c) HP Fuel used: _____
 ICE 4: _____ (d) HP Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	$A = a \times e$	$B = b \times f$	$C = c \times g$	$D = d \times h$	$E2 = A + B + C + D$
PM									
PM ₁₀									
CO									
NO _x									
SO ₂									
VOCs									

Emissions from columns E2 of Table 12 must be transferred to Table 13.

Table 13: Total Emissions from ICEs associated with C&S Plant

Pollutant	Total Emissions from Table 11 (E1)	Total Emissions from Table 12 (E2)	Emissions from all ICEs in C&S Plant (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM ₁₀			
CO			
NO _x			
SO ₂			
VOCs			

Total emissions from all ICEs in C&S Plant in Table 13 must be transferred to must be transferred to C & S Plant, Total Emissions, Table 14.

C. Total Emissions from C&S Plant

Table 14: Total Emissions from C&S Plant

Pollutant	C&S Emissions	C&S Plant Generators	Total C&S Plant Emissions
	Table 10	Table 13	A
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM ₁₀			
CO			
NO _x			
SO _x			
VOC			

Total C&S Plant emissions from Column A of table 14 must be transferred to Table 22 for calculation of facility-wide emissions and synthetic minor operating hour limitations.

III. CONCRETE BATCH PLANT (CBP) EMISSIONS

A. Particulate Matter Emissions

Maximum Rated Capacity of CBP: _____ (a) Cubic yards per hour

Table 15: Emissions from Concrete Batch Plant

Pollutant	Emission factor	Emissions
	Pounds per cubic yd	Pounds per hour
	b	A= a x b
PM	0.01204	
PM ₁₀	0.00481	

Emissions from columns A of Table 15 must be transferred to must be transferred to CBP, Total Emissions, Table 20.

B. Emissions from Boilers/Heaters in CBP

Table 9 is provided to determine emissions from boiler/heater in the CBP. The factors are taken from AP-42.

Fuel used: _____

Capacity of boilers/heaters: _____ (a) MMBtu/hr

Table 16: Emissions from boiler/heater in CBP

Pollutant	Emission Factors			Emissions
	Fuel Oil #2 /Diesel	Natural gas/LPG	Propane	
	lb/MMBtu			lb/hr
	b			A= a x b
PM	0.024	0.00724	0.00663	
PM ₁₀	0.024	0.00724	0.00663	
CO	0.0365	0.08	0.0354	
NO _x	0.146	0.0952	0.21	
SO ₂	0.00152	0.00057	-	
VOCs	0.0025	0.00524	0.00331	

Emissions from columns A of Table 16 must be transferred to must be transferred to CBP, Total Emissions, Table 20.

C. Internal Combustion Engines (ICEs) associated with CBP

This form must be completed in order to calculate the emissions from the ICEs associated with CBP. Emissions need not be calculated for mobile sources and engines that meet the regulatory definition of ‘non road engines’.

Table 17 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs.

The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 18**.

Table 17: Emissions from ICEs associated with CBP

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ (a) HP
 Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ (b) HP
 Total HP of all natural gas / LPG fired ICEs: _____ (c) HP

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	Diesel Engines (Smaller than 600 HP)	Diesel Engines (larger than 600 HP)	Natural gas/ LPG-fired Engines	
	(Pounds per hp-hr)			Pounds per hour			
	d	e	f	A = a x d	B = b x e	C = c x f	
PM	0.0022	0.0007	0.0000694				
PM ₁₀	0.0022	0.0007	0.0000005				
CO	0.00668	0.0055	0.00222				
NO _x	0.031	0.024	0.0286				
SO ₂	0.0000121	0.0000121	0.0000041				
VOCs	0.00247	0.0007050	0.000826				

Emissions from column E1 of Table 17 must be transferred to Table 19.

If the facility wishes to use **manufacturers' data or test results** in place of ADEQ emission factors for any/all of ICEs associated with CBP, Table 18 must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 18: Emissions from ICEs associated with CBP

ICE 1: _____ (a) HP Fuel used: _____
 ICE 2: _____ (b) HP Fuel used: _____
 ICE 3: _____ (c) HP Fuel used: _____
 ICE 4: _____ (d) HP Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	$A = a \times e$	$B = b \times f$	$C = c \times g$	$D = d \times h$	$E2 = A + B + C + D$
PM									
PM ₁₀									
CO									
NO _x									
SO ₂									
VOCs									

Emissions from columns E2 of Table 18 must be transferred to Table 19.

Table 19: Total Emissions from all ICEs associated with CBP

Pollutant	Total Emissions from Table 17 (E1)	Total Emissions from Table 18 (E2)	Total Emissions from all ICEs in CBP (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM ₁₀			
CO			
NO _x			
SO ₂			
VOCs			

Total emissions from all ICEs in CBP (Table 19) must be transferred to must be transferred to CBP, Total Emissions, Table 20.

C. Total Emissions from Concrete Batch Plant

Table 20: Total Emissions from CBP

Pollutant	CBP	Boiler/Heater	CBP Generators	Total CBP Emissions
	Table 15	Table 16	Table 19	A
	Pounds per hour			Pounds per hour
PM				
PM ₁₀				
CO				
NO _x				
SO _x				
VOC				

Total CBP emissions from Column 'A' of Table 20 must be transferred to Table 22 for calculation of facility-wide emissions and synthetic minor operating hour limitations.

IV. FUGITIVE EMISSIONS

Total vehicle miles traveled: _____ VMT (a)

No. of storage piles: _____ (b)

Table 21: Total Fugitive Emissions

Pollutant	Vehicular traffic emissions		Storage Piles emissions		Total Fugitive emissions
	Emission factor	Emissions	Emission factor	Emissions	
	Pounds per VMT-hr	Pounds per hour	Pounds per pile-hr	Pounds per hour	Pounds per hour
	c	e= a x c	d	f= b x d	A= e + f
PM	0.66		0.0001		
PM ₁₀	0.17		0.00005		

Emissions from columns A of Table 21 must be transferred to Tables 22, 23, and 24 for calculation of facility-wide emissions and synthetic minor operating hour limitation.

FORM D: STATEWIDE SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN ATTAINMENT AREAS

Table 22 is to be used for calculating synthetic minor limitations for the facility that will be operating in the attainment areas. Calculated emissions from Tables 9, 14, 20 and 21 are utilized to calculate annual emissions and annual synthetic minor operating hour limitation for operations in attainment areas.

Table 22: Synthetic Minor Limitation – Attainment Areas

Pollutants	Hot Mix Asphalt Plant	C&S	CBP	Fugitives	Total Potential Emissions		Emission limit	Hours of operation
	From Table 9	From Table 14	From Table 20	From Table 21				
	Pounds per hour				Pounds per hour	Tons per year	Tons per year	Hours
	a	b	c	d	e=a+b+c+d	f=e*4.38	g	A=g/f*8760 (not to exceed 8760 hours)
PM ₁₀							90	
CO							90	
NO _x							90	
SO ₂							90	
VOCs							90	

The **lowest number** in column A is the synthetic minor limitation for annual operating hours for the operations in attainment areas, and should be indicated below.

Annual Operating hours for the operations in attainment areas: _____ hours

FORM E: STATEWIDE SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN NON-ATTAINMENT AREAS OUTSIDE MARICOPA COUNTY

This table is to be used for calculating synthetic minor limitations for the facility that will be operating in non-attainment areas outside Maricopa County. Calculated emissions from Tables 9 and 21 are utilized to calculate annual emissions and annual synthetic minor operating hour limitation for operations in non-attainment areas outside Maricopa County.

Table 23: Synthetic Minor Limitation – Non-Attainment Areas Outside Maricopa County

Pollutants	Hot Mix Asphalt Plant	Fugitives	Total Emissions		Emission limit	Hours of operation (Max.)
	From Table 9	From Table 21				
	Pounds per hour		Pounds per hour	Tons per year	Tons per year	Hrs
	a	b	c=a+b	d=c*4.38	e	A=e/d*8760 (not to exceed 8760 hrs)
PM ₁₀					90	
CO					90	
NO _x					90	
SO ₂					90	
VOCs					90	

The **lowest number** in column A is the synthetic minor limitation for annual operating hours for the operations in non-attainment areas outside Maricopa County, and should be indicated below.

Annual Operating hours in non-attainment areas outside Maricopa County: _____ hours

FORM F: SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN MARICOPA COUNTY

NOTE: This form is to be filled only if the facility intends to operate in Maricopa County. If you have answered NO to Question No. 5 in FORM A, do not fill this form.

This table is to be used for calculating synthetic minor limitations for the facility that will be operating inside Maricopa County. Calculated emissions from Tables 9 and 21 are utilized to calculate daily & annual emissions, and daily & annual synthetic minor operating hour limitations for operations in Maricopa County.

Table 24: Synthetic Minor Limitation – Maricopa County

Pollutants	HMAP	Fugitives	Total Emissions			Rule 241 emission thresholds		Hours of operation	
	From Table 9	From Table 21							
	Pounds per hour		Pounds per hour	Pounds per day	Tons per year	Pounds per day	Tons per year	Per Day	Per Yr
	a	b	c=a+b	d=c*24	e=c*4.38	f	g	A=f/d*24 (not to exceed 24 hours)	B=g/e*8760 (not to exceed 8760 hours)
PM						135	22.5		
PM ₁₀						76	13.5		
CO						495	90		
NO _x						135	22.5		
SO ₂						135	22.5		
VOCs						135	22.5		

The lowest numbers in Columns ‘A’ and ‘B’ are the daily & annual synthetic minor operating hour limitations for operations in Maricopa County. These should be filled in Table 25 below:

Table 25: Operating Hours Limitation in Maricopa County

Daily Hours of Operation (Maximum)	Annual Hours of Operation (Maximum)

FORM G

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FORM H: COMPLIANCE CERTIFICATION AND CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

This certification must be signed by the Responsible Official. Applications without a signed certification will be deemed incomplete.

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the general permit and will continue to comply with such requirements and any future requirements that become effective during the life of the general permit. I will present a certification of compliance to ADEQ no less than semiannually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Typed or Printed Company Name: _____

Official Title of Signer: _____

Typed or Printed Name of Signer: _____

Signature of Responsible Official: _____ Date: _____

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FORM I: Fee Rule Summary for Hot Mix Asphalt Plant General Permits

SOURCE			
GENERAL PERMIT			
CLASS II			
TITLE V		NON - TITLE V	
APPLICATION FEE \$500	<u>ANNUAL ADMINISTRATIVE FEE</u> \$4,520	APPLICATION FEE \$500	<u>ANNUAL INSPECTION FEE</u> \$3,020
<p>There is a \$500 fee for facility changes that require the issuance of new Authorizations to Operate. There is no fee for transfers, administrative amendments, or facility change notices that do not require a permit revision.</p> <p>Administrative and Inspection fees are due no later than February 1st of each year.</p>			

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III. NON-ATTAINMENT AREAS - SUMMARY AND CLASSIFICATION

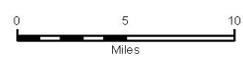
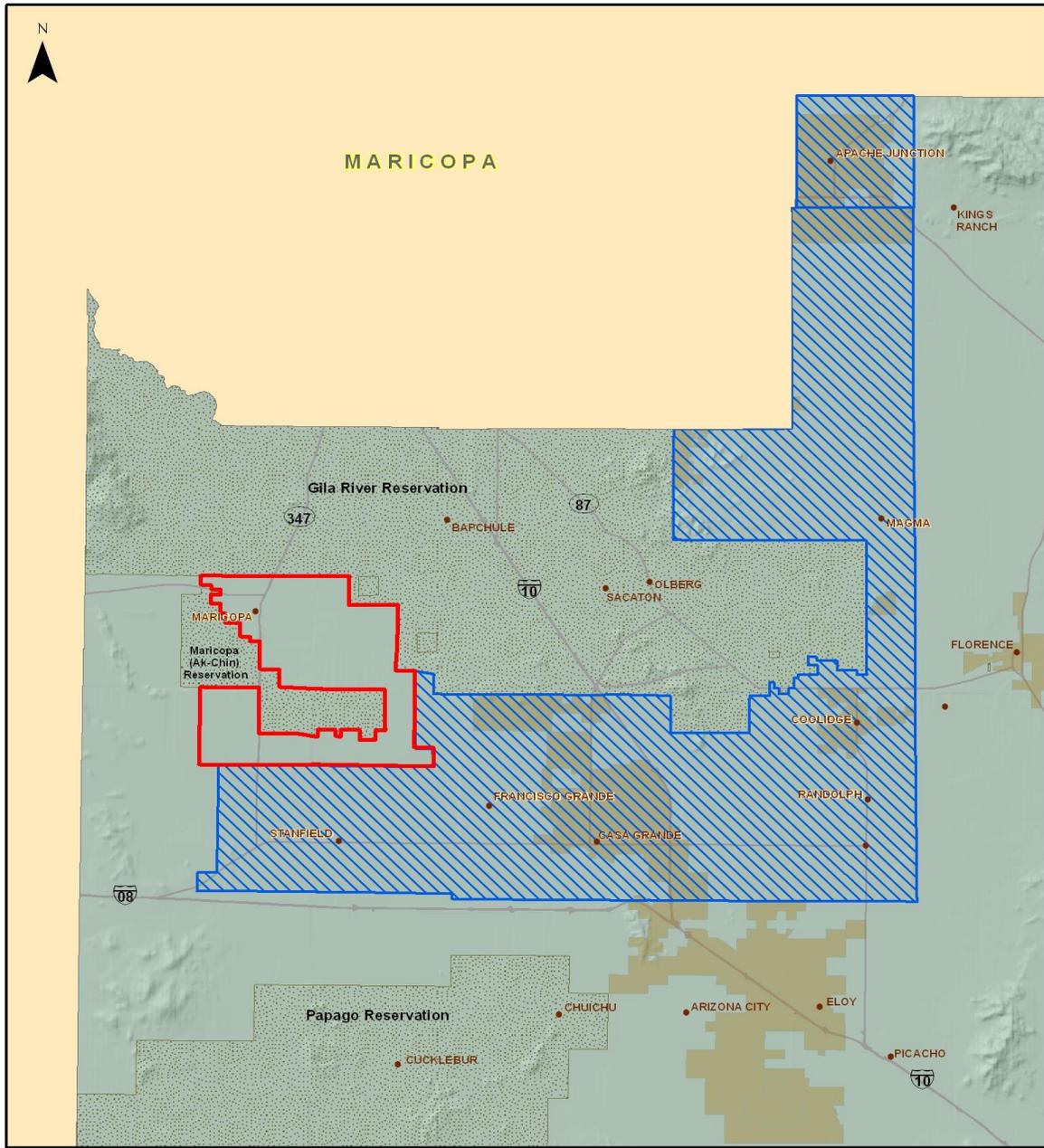
County	Townships	Section Where Visual Representation Is Shown
Maricopa	All	N/A
Pinal County and the Phoenix Planning Area	T1S, R8E; T2S, R8E; T3S, R7E; T3S, R8E; T4S, R8E (excluding all lands within the Gila River Indian Community); T5S, R4E (Only sections 12, 13, 24 and 25); T5S, R5E – R8E (excluding all lands within the Gila River Indian Community); T6S, R3E – R8E; T7S, R3E – R8E Sections 1-6. Phoenix Planning Area: T1N, R8E.	Appendix A
Santa Cruz	The Nogales area located in the southern part of Santa Cruz County. The portions of the following Townships which are within the State of Arizona and lie east of 111 degrees longitude: T23S, R13E, T23S, R14E, T24S, R13E, T24S, R14E.	Appendix B
Gila and Pinal	T1S, R13E (sections 7–36); T1S, R14E (sections 25–36); T2S, R13E; T2S, R14E; T2S, R15E; T3S, R13E; T3S, R14E; T3S, R15E; T3S, R16E (except that portion in the San Carlos Apache Indian Reservation); T4S, R13E; T4S, R14E; T4S, R15E; T4S, R16E; T5S, R13E; T5S, R14E; T5S, R15E; T5S, R16E; T6S, R13E; T6S, R14E; T6S, R15E; and T6S, R16E. Miami planning area T1N, R13E; T1N, R14E; T1N, R15E; T1S, R13E (sections 1–6); T1S, R14E (sections 1-24); T1S, R14 1/2E; and T1S, R15E.	Appendix C
Pima	The Rillito planning area which is located in the southern part of Pima County. The following townships are located in non-attainment areas: T11S-R9E, T11S-R10E, T11S-R11E, T11S-R12E, T12S-R8E, T12S-R9E, T12S-R10E, T12S-R11E and T12S-R12E. The Ajo planning area Township T12S, R6W, T12S, R5W (sections 6–8, 17-20, and 29-32).	Appendix D
Yuma	The Lower Colorado River Valley, in the southwestern part of Yuma County. The following townships are located in non-attainment areas: T7S-R21W, T7S-R22W, T8S-R21W, T8S-R22W, T8S-R23W, T8S-R24W, T9S-R21W, T9S-R22W, T9S-R23W, T9S-R24W, T9S-R25W, T10S-R21W, T10S-R22W, T10S-R23W, T10S-R24W, and T10S-R25W.	Appendix E
Cochise	The Douglas and Paul Spur areas; the following townships are located in non-attainment areas: T23S-R25E; T23S-R26E, T23S-R27E, T23S-R28E, T24S-R25E, T24S-R26E, T24S-R27E, and T24S-R28E.	Appendix F

- Notes
1. No operations are permitted within the portion of Pinal County: T4S, R3E – R4E, T5S, R3E – R4E (excluding sections 12, 13, 24, and 25) identified as “Prohibited Area” in Appendix “A” of the general permit.
 2. No operations are permitted in the portions of Santa Cruz County, identified as a non-attainment area in Appendix “B”, on any day that the Nogales particle pollution risk forecast at <http://www.azdeq.gov/envIRON/air/ozone/nogales.pdf> shows the risk of unhealthy particulate matter concentration to be High or if the Air Quality Index (AQI) for PM_{2.5} is forecast as Unhealthy for Sensitive Groups.

APPENDIX "A"

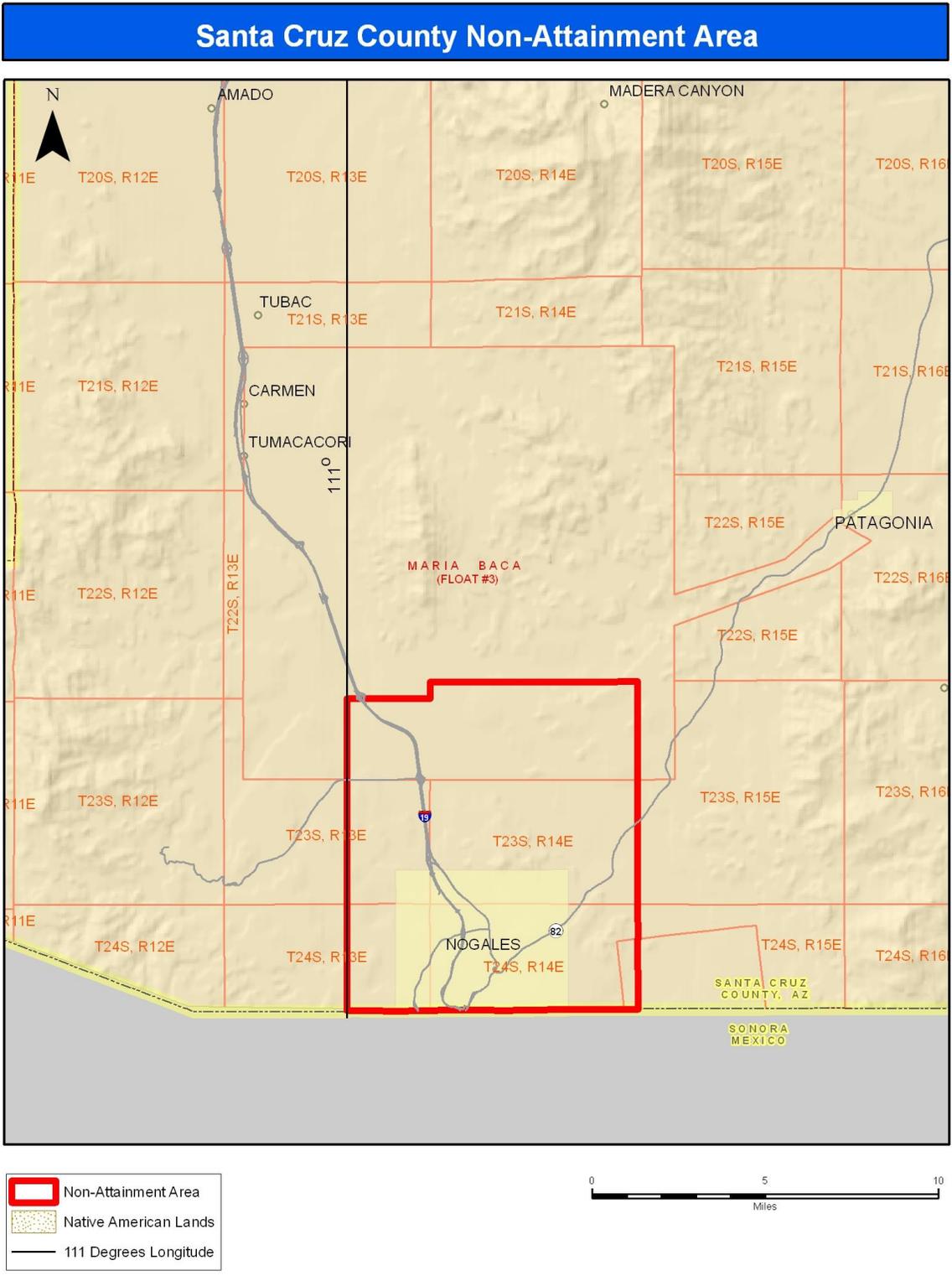
**GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE PINAL COUNTY PROHIBITED AND NON-ATTAINMENT AREAS**

Pinal County Prohibited and Nonattainment Area



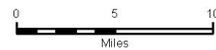
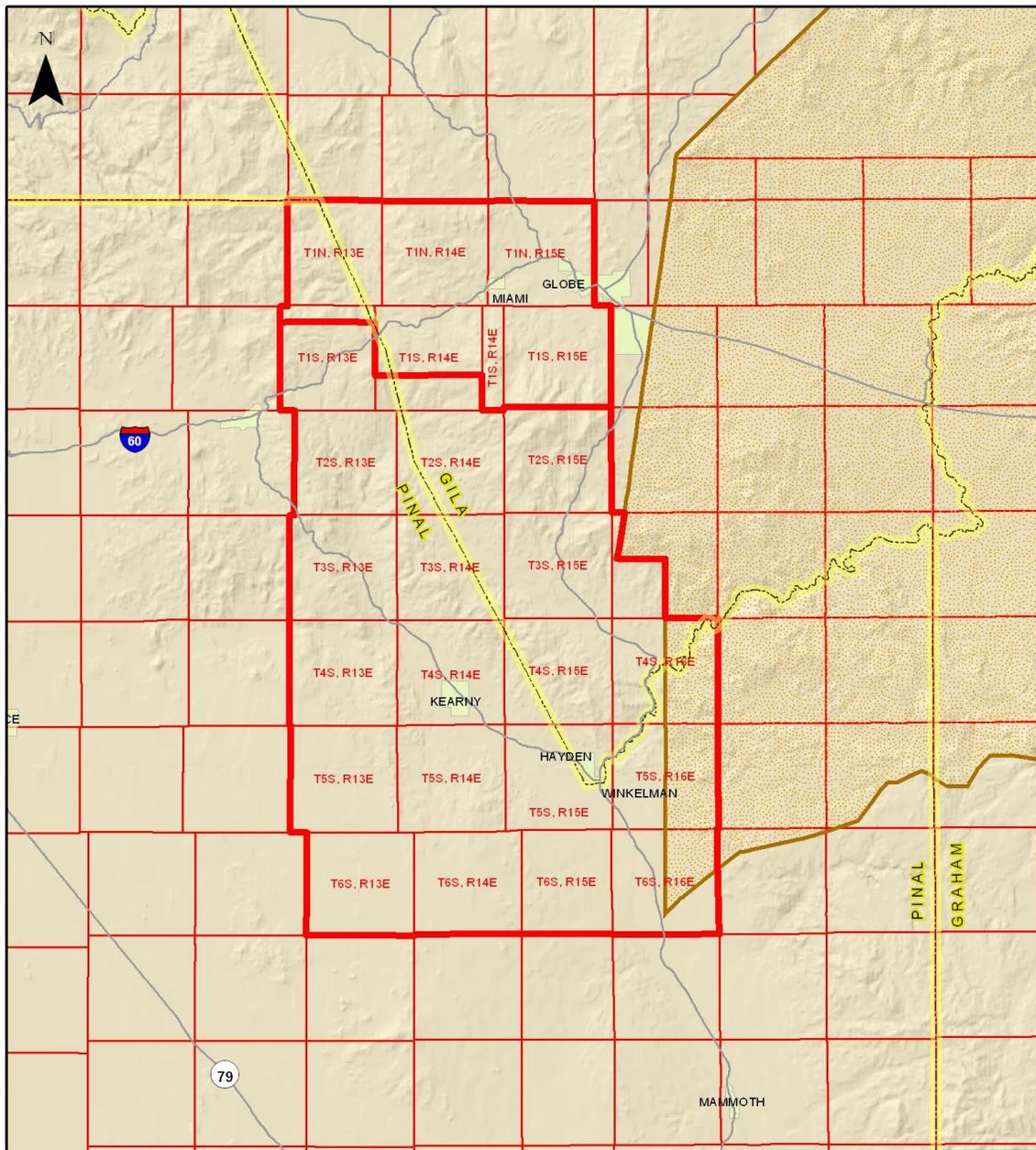
APPENDIX "B"

**GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE SANTA CRUZ COUNTY NON-ATTAINMENT AREAS**



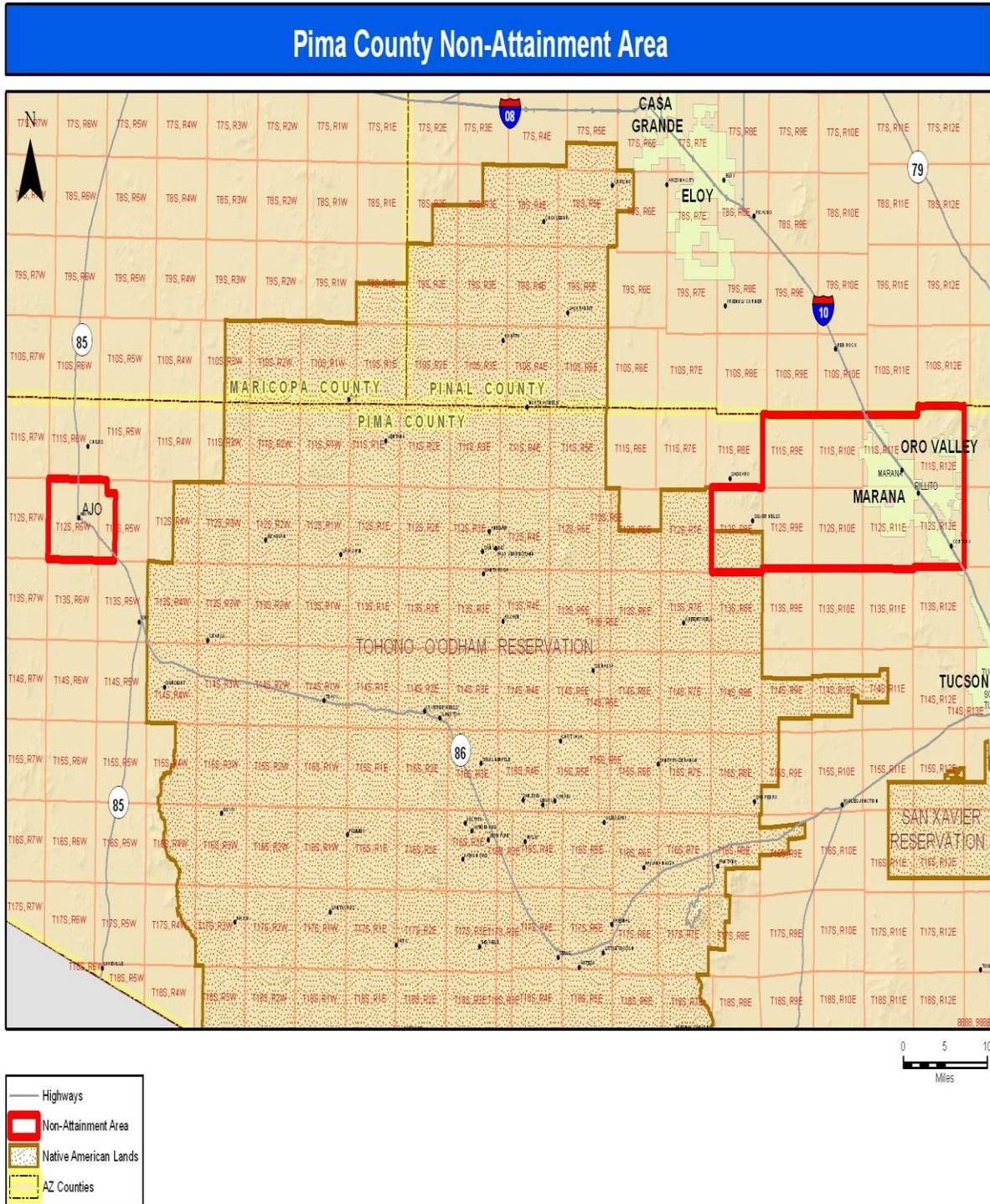
APPENDIX "C"
GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE PINAL AND GILA COUNTY PM₁₀ NON-ATTAINMENT AREAS

PM₁₀ Non-Attainment Areas- Pinal and Gila Counties

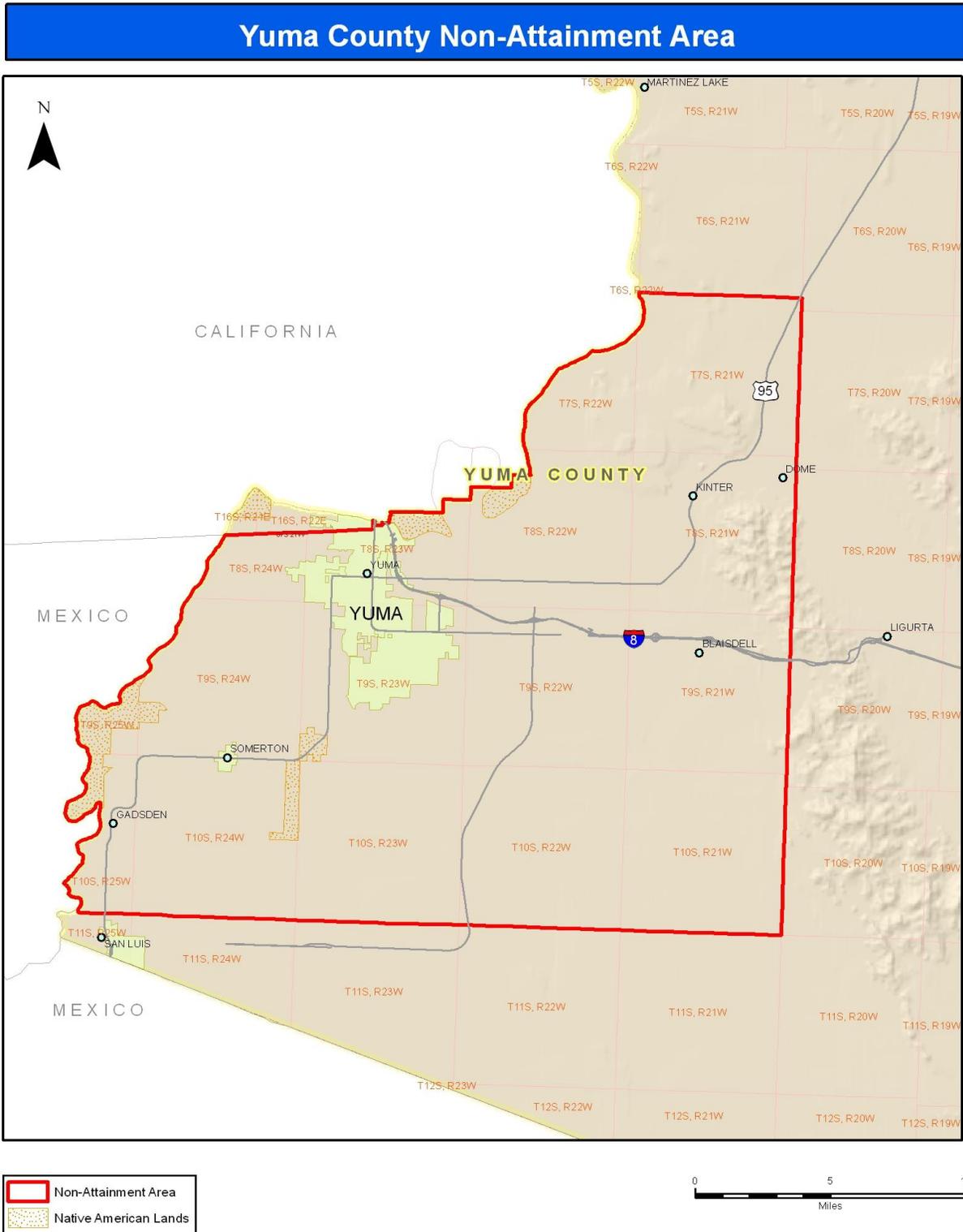


APPENDIX "D"

**GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE PIMA COUNTY NON-ATTAINMENT AREA**



APPENDIX "E"
GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE YUMA COUNTY NON-ATTAINMENT AREAS



APPENDIX "F"

**GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE COCHISE COUNTY NON-ATTAINMENT AREAS**

Cochise County Non-Attainment Area

