Class II Permit Application Renewal 2025

Station Environmental
328 E. Spears Street
Yuma, AZ 85369
(928) 269-3201

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Prepared By: Air Quality Program Manager

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Section 1 Executive Summary

MCAS Yuma currently operates under a Class II Synthetic Minor Air Permit No. 87288, previously issued on April 1st, 2021, and set to expire March 31st, 2026. This permit renewal application is being submitted and covers changes that have been made to the facility and the permit application.

Major changes have occurred with the emission calculation methodology and with the previously chosen emission factors. During the change for emission inventory reporting from the State and Local Emission Inventory System (SLEIS) to the EPA Combined Air emissions Reporting System (CAERS), the Arizona Department of Environmental Quality (ADEQ) requested that our calculation methods and emission factors be updated for more accurate inventory reporting. Each emission source has had the calculation methods and emission factors updated. This change has resulted in emission inventory changes that either produce an increase in emissions or a decrease in emissions, depending on the changes, most notably for the abrasive blasting sources.

Additional changes have been made when reviewing the NAICS sources on the installation. After careful consideration, the fuel storage tanks at the fuel farm and the gasoline dispensing and associated above ground storage tanks at the fuel farm have been transferred from NAICS 447 (gasoline dispensing facilities) to NAICS 481 (air transportation). The gasoline dispensing facility for the general public on base is still covered under NAICS 447. Additionally, two emergency generators previously permitted under NAICS 481 have been transferred to NAICS 928 for National Security.

Certain emission sources included previously on the air permit have also been removed from permitting for this renewal due to being physically removed from the premises or due to the application of insignificant or trivial activities. Three previously permitted test cells have been physically removed from the site and are not included in this permit renewal. The remaining test stand is a portable jet engine test stand and is not included in the permit renewal as it is not considered a stationary source. Additionally, after discussions with ADEQ, all welding activity has been removed from this permit renewal and are now classified as trivial or insignificant activities.

Finally, previous “voluntary limits” that had been claimed are no longer being claimed in this permit renewal. The previous limits for the emergency engines were incorrectly applied, as the EPA specifically allows for the use of 500 hours for potential to emit (PTE) calculations for emergency engines. The PTE emission summary tables indicate that that the PTE levels are below the major source threshold limit for criteria pollutants and for Hazardous Air Pollutants.

Section 2 ADEQ Permit Application Components Checklist

Table 2-1 Permit Application Components Checklist

Filing Instructions Number	Information Required	Included in Application			Comments
		Yes	No	N/A	
1	Detailed description and flow diagram of the processes at the facility	✓			Section 7
2	Description of alternating operating scenarios			✓	
3	Emission calculations expressed in pounds per hour and tons per year	✓			Section 8 & Appendix B
3.a	Emission calculations for modifications			✓	
4	Minor NSR applicability determination	✓			Section 5
5	Explanation of any proposed exemptions from otherwise applicable requirements			✓	
6	Proposed voluntary limitations			✓	
7	Comprehensive equipment list	✓			Section 4
8	A list of all insignificant activities	✓			Section 9
8.a	List of any trivial activities	✓			Section 9
8.b	List of excluded equipment	✓			Section 9
9	Any application component that is identified as confidential			✓	
10	Compliance schedule for any source not currently in compliance			✓	
11	Suggested draft permit language for minor permit revision applications			✓	

Section 3 ADEQ Administrative Completeness Checklist

Table 3-1 Permit Application Administrative Completeness Checklist

	REQUIREMENT	MEETS REQUIREMENTS			COMMENT
		YES	NO	N/A	
1	Has the standard application form been completed?	✓			Section 4
2	Has the responsible official signed the standard application form?	✓			Section 4
3	Has a process description been provided?	✓			Section 7
4	Are the facility's emissions documented with all appropriate supporting information?	✓			Section 8
5	Is the facility subject to Minor NSR requirements? If the answer is "yes," answer 6a, 6b and 6c as applicable. If the answer is "no," skip to 7.		✓		
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?			✓	
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?			✓	
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?			✓	
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?	✓			Section 4
8	Does the application include an identification and description of Pollution Controls? (if applicable)			✓	
9	For any application component claimed as confidential, are the requirements of AR.S. 49-432 and A.A.C. R18-2-305 addressed?			✓	
10	For any current non-compliance issue, is a compliance schedule attached?			✓	
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?			✓	

Section 4 Standard Class II Permit Application Form

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD CLASS II PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to (Business license name of organization that is to receive permit):
   Marine Corps Air Station Yuma

2. Mailing Address: Environmental Department, PO Box 99110
   City: Yuma State: Arizona ZIP: 85369

3. Name (or names) of Responsible Official: Col. Jared K. Stone, Commanding Officer
   Phone: 928-269-2282 Fax: N/A Email: mark.r.galate@usmc.mil

4. Facility Manager/Contact Person and Title: Mark Galate, Environmental Director
   Phone: 928-269-2282 Fax: N/A Email: mark.r.galate@usmc.mil

5. Facility Name: Marine Corps Air Station Yuma

   Facility Location/Address (Current/Proposed): Avenue 3E

   City: Yuma County: Yuma ZIP: 85369

   Indian Reservation (if applicable, which one): N/A

   Latitude/Longitude, Elevation: N32° 39’ 40.0” / W114° 35’ 11.0”, 213 ft

6. General Nature of Business: Aircraft flight training and maintenance

7. Type of Organization:
   ☐ Corporation ☐ Individual Owner ☐ Partnership ☑ Government Entity ☐ LLC

   ☐ Other _____

8. Permit Application Basis: ☐ New Source ☐ Revision ☑ Renewal of Existing Permit

   For renewal or modification, include existing permit number (and exp. date): 87288, expires March 31, 2026

   Date of Commencement of Construction or Modification: After March 31, 2026

   Primary Standard Industrial Classification Code: 45 (NAICS 481)

9. 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 Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than annually 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.

Signature of Responsible Official: GALATE.MARK.R.1079797088 Digitally signed by GALATE.MARK.R.1079797088 Date: 2025.06.05 14:47:35 -07'00'

Printed Name of Signer/Official Title: Mark Galate, Environmental Director

Date: 06/05/2025 Telephone Number: 928-269-2282

Table 4-1 Permitted Equipment List

Type of Equipment	Maximum Rated Capacity		Make (if available)	Model (if available)	Serial Number (if available)	Date of Manufacture	Equipment ID Number
BOILER HT/HW	0.199	MMBTU/HR	BRUTE ELITE	BNTV199NXN3	G14325046	2014	100
BOILER HT/HW	0.199	MMBTU/HR	LAARS NEOTHERM	NTV199NXN3	G14278410	2014	101
IR HEATER	1.200	MMBTU/HR	REZNOR	VP1N60ASN	BM146780X	2014	800
BOILER HT/HW	0.199	MMBTU/HR	LAARS NEOTHERM	NTV199NXN3	G14278431	2014	102
BOILER HT/HW	0.199	MMBTU/HR	LAARS NEOTHERM	NTV199NXN3	G21471761	2021	103
IR HEATER	1.200	MMBTU/HR	REZNOR	VP1N60ASN	BM632736X	2014	801
WATER HEATER	0.400	MMBTU/HR	AO SMITH	BTH400A100	1138M000924	2011	200
WATER HEATER	0.400	MMBTU/HR	AO SMITH	BTH400A100	1207M000790	2012	201
IR HEATER	0.480	MMBTU/HR	AMBIRAD	ARC18LR	101117430505	2011	802
IR HEATER	0.600	MMBTU/HR	AMBIRAD	ARC24LR	101117430531	2011	803
WATER HEATER	0.400	MMBTU/HR	AO SMITH	BTH400A100	1138M000923	2011	202
WATER HEATER	0.400	MMBTU/HR	AO SMITH	BTH400A100	1138M000178	2011	203
IR HEATER	0.480	MMBTU/HR	AMBIRAD	ARC18LR	1101117430528	2011	804
IR HEATER	0.600	MMBTU/HR	AMBIRAD	ARC24LR	1101117430533	2011	805
IR HEATER	0.179	MMBTU/HR	Space-Ray	CB20-N5	727162	2013	806
WATER HEATER	0.078	MMBTU/HR	AO SMITH	BTH-250A 300	2041121320945	2020	204
WATER HEATER	0.078	MMBTU/HR	AO SMITH	BTH-250A 300	2207128228013	2022	205
WATER HEATER	0.078	MMBTU/HR	AO SMITH	BTH-250A 300	2034120626160	2020	206
WATER HEATER	0.150	MMBTU/HR	AO SMITH	BTH-150300	1746108246054	2017	207
WATER HEATER	0.150	MMBTU/HR	AO SMITH	BTH-150300	1746108246055	2017	208
WATER HEATER	0.200	MMBTU/HR	AO SMITH	BTH-199300	1809109475712	2018	209
WATER HEATER	0.200	MMBTU/HR	AO SMITH	BTH-199300	1809109475716	2018	210
BOILER -HEAT	0.285	MMBTU/HR	LOCHINVAR	KBN286	A14H10290193	2014	104
WATER HEATER	0.040	MMBTU/HR	WHIRLPOOL	BFG1H5040T3NOV	0838T416337	2002	211
BOILER HT/HW	0.105	MMBTU/HR	LAARS NEOTHERM	NTH105NXN3	G14278362	2014	105

Type of Equipment	Maximum Rated Capacity		Make (if available)	Model (if available)	Serial Number (if available)	Date of Manufacture	Equipment ID Number
WATER HEATER	0.100	MMBTU/HR	AO SMITH	BTX-100300	2218129388465	2022	212
BOILER -HEAT	0.400	MMBTU/HR	LOCHINVAR	KBN400	1712105377098	2017	106
WATER HEATER	0.100	MMBTU/HR	AO SMITH	BTXL-100140	1716105857112	2017	213
BOILER -HEAT	0.999	MMBTU/HR	LOCHINVAR	FBN1001	2004117828861	2019	107
BOILER -HEAT	0.600	MMBTU/HR	LOCHINVAR	FTX600N	2007118122092	2019	108
WATER HEATER	0.078	MMBTU/HR	AO SMITH	BTH-199 300	2145126922604	2015	214
WATER HEATER	0.315	MMBTU/HR	LOCHINVAR	HVX90-150	F14J00264591	2015	215
IR HEATER	1.800	MMBTU/HR	ROBERTS-GORDON	CRV B-10	1402-027-100-0036	2013	807
BOILER -HW	0.399	MMBTU/HR	LAARS NEOTHERM	NTH399NXN3	G13261293	2013	109
WATER HEATER	0.040	MMBTU/HR	RHEEM	PROPG38-40N RH69 PD	Q062164072	2021	216
WATER HEATER	0.040	MMBTU/HR	RHEEM	PROG50-40NRH62	M391916646	2019	217
BOILER -HEAT	0.500	MMBTU/HR	LOCHINVAR	KBN501	H12H10217176	2013	110
WATER HEATER	0.156	MMBTU/HR	RHEEM	G82-156	A201903338	2019	218
BOILER -HEAT	0.399	MMBTU/HR	LOCHINVAR	KBN400	H12H10230393	2013	111
BOILER -HW	0.150	MMBTU/HR	LOCHINVAR	KBN151	H12H10225796	2013	112
WATER HEATER	0.040	MMBTU/HR	AO SMITH	GCR-40400	1707105036453	2017	219
BOILER -HT/HW	0.285	MMBTU/HR	LAARS	NTH285NXN3	G14307838	2014	113
BOILER -HT/HW	0.285	MMBTU/HR	LAARS	NTH285NXN3	G14307858	2014	114
BOILER -HEAT	0.650	MMBTU/HR	RAYPAK	H3-0652B	1008313126	2010	115
BOILER -HEAT	0.650	MMBTU/HR	RAYPAK	H3-0652C	1801457756	2018	116
BOILER -HEAT	0.200	MMBTU/HR	LOCHINVAR	KHB199N	1838111884761	2018	117
BOILER -HEAT	0.200	MMBTU/HR	LOCHINVAR	KHB199N	1839111968092	2018	118
BOILER -HEAT	0.200	MMBTU/HR	LOCHINVAR	KHB199N	1838111884734	2018	119
WATER HEATER	0.120	MMBTU/HR	AO SMITH	BTH120A100	1149M000738	2011	220
WATER HEATER	0.040	MMBTU/HR	AO SMITH	GVR40 300	1434J002499	2014	221
WATER HEATER	0.038	MMBTU/HR	VANGUARD	5AU69	VGLNQ431305966	2013	222

Type of Equipment	Maximum Rated Capacity		Make (if available)	Model (if available)	Serial Number (if available)	Date of Manufacture	Equipment ID Number
WATER HEATER	0.300	MMBTU/HR	RHEEM	G72-300A	A451902989	2019	223
BOILER -HEAT	0.399	MMBTU/HR	LOCHINVAR	KBN400	3015101823257	2015	120
WATER HEATER	0.200	MMBTU/HR	BRADFORD WHITE	EF100T199E3N2	HM15900959	2014	224
EMERGENCY ICE	315	HP	JOHN DEERE	6068HFG85	PE6068L917796	2013	300
EMERGENCY ICE	315	HP	JOHN DEERE	6068HFG85	PE6068L917800	2013	301
EMERGENCY ICE	286	HP	JOHN DEERE	6068HF485	PE6068L200888	2012	302
EMERGENCY ICE	286	HP	JOHN DEERE	6068HF485	PE6068L200882	2012	303
EMERGENCY ICE (FL)	755	HP	CUMMINS	QSX15-G9	79497909	2011	304
EMERGENCY ICE (FL)	415	HP	Detroit D.	60, Family: 4DDXL12.7VGD	06R0809992	2004	305
EMERGENCY ICE (FL)	550	HP	Detroit D.	6063TK35	06R0577636	2000	306
EMERGENCY ICE	364	HP	CUMMINS	QSL9-G2 NR3	73550984	2013	307
EMERGENCY ICE	385	HP	JOHN DEERE	6090HF484	RG6090L100592	2011	308
EMERGENCY ICE	385	HP	JOHN DEERE	6090HF484	RG6090L100583	2011	309
EMERGENCY ICE	145	HP	CUMMINS	QSB5-G3 NR3	73364708	2012	310
EMERGENCY ICE	324	HP	CUMMINS	QSB7-G5 9R3	73428170	2012	311
EMERGENCY ICE (FL)	220	HP	JOHN DEERE	6068HF275	PE6068H430893	2005	312
EMERGENCY ICE (FL)	64	HP	JOHN DEERE	3029TF150	PE3029T225491	2002	313
EMERGENCY ICE (FL)	64	HP	JOHN DEERE	3029TF150	PE3029T217153	2002	314
EMERGENCY ICE (FL)	220	HP	JOHN DEERE	6068HF275	PE6068H411366	2004	315
EMERGENCY ICE (FL)	757	HP	Volvo	TAD1631GE	2160052609	2005	316
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	11030024	2013	400
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	12060017	2013	401
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	10100016	2010	402
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	10100002	2010	403

Type of Equipment	Maximum Rated Capacity		Make (if available)	Model (if available)	Serial Number (if available)	Date of Manufacture	Equipment ID Number
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	10100033	2010	404
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	10100009	2010	405
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	11030013	2010	406
GEAR ARRESTING ENGINE	65.9	HP	WISCONSIN MOTORS	V465D1-467515	11040003	2010	407
BOOTH COATING	1000	GAL	COLMET	ECC-14-09-26-N-SB-S	JOB00055653-01	2017	519
BOOTH COATING	1000	GAL	Standard Tools and Equipment Co.	BSB-1000-58	N/A	2023	520
BLAST CABINET	68	LBS/HR	CLEMCO INDUSTRIES	PULSAR 6PE	Z56299	2014	514
BLAST CABINET	170	LBS/HR	RAPTOR BLASTER	RB5446	4623	NA	515
BLAST CABINET	14	LBS/HR	CLEMCO INDUSTRIES	PULSAR VI-P	Z56310	2016	516
BLAST CABINET	14	LBS/HR	CLEMCO INDUSTRIES	PULSAR VI-P	Z56311	2016	517
BLAST CABINET	63	LBS/HR	ECONOLINE	RA48X48CN	081748X48CB	2017	518
PARTS WASHER	35	GAL	Gray Mills	TC2420LP-B	220002	2012	500
STRIPPER TANK	455	GAL	Automated Cleaning Technologies	ACT STR6H Stripper	ACT4712-01	2019	501
PARTS WASHER	25	GAL	Gray Mills	A-40455-A	237574-054	NA	502
PARTS WASHER	25	GAL	Gray Mills	A-40455-A	237574-105	NA	503
PARTS WASHER	25	GAL	Gray Mills	TL-17	500-4531	NA	504
PARTS WASHER	35	GAL	Clarus	PCS-10	SPW-0043	2012	505
PARTS WASHER	50	GAL	Local Manufactured	Local Manufactured	SS000284	Pre2003	506
PARTS WASHER	20	GAL	Safety Kleen	33	33015709	pre2001	507
PARTS WASHER	25	GAL	Gray Mills	A42618-A	285584-03	NA	508
PARTS WASHER	25	GAL	Gray Mills	A42618-A	285584-05	NA	509
PARTS WASHER	25	GAL	Gray Mills	N/A	26023338534-02	NA	510
PARTS WASHER	15	GAL	Gray Mills	720C36	HLF79315	2018	511

Type of Equipment	Maximum Rated Capacity		Make (if available)	Model (if available)	Serial Number (if available)	Date of Manufacture	Equipment ID Number
STRIPPER TANK	312	GAL	Automated Cleaning Technologies	ACT STR 4hx/stripper	ACT471701	2020	512
PARTS WASHER	40	GAL	Gray Mills	902-A	EX76-A-07	2009	513
F24 STORAGE TANK	1052982	GAL	NA	NA	NA	1955	312
F24 STORAGE TANK	210000	GAL	NA	NA	NA	2007	336
F24 STORAGE TANK	210000	GAL	NA	NA	NA	2007	337
GASOLINE STORAGE TANK	12023	GAL	NA	NA	NA	1996	367
GASOLINE STORAGE TANK	12022	GAL	NA	NA	NA	1996	368
E85 STORAGE TANK	11732	GAL	NA	NA	NA	1996	370

Section 5 Potential To Emit Summary Tables

Potential to Emit (PTE) Summary

Boilers have a total rating of 18.18 MMBtu/hr.

IC engines have a total rating of 6377.2 HP.

NAICS Code 481 is currently permitted as a synthetic minor. The permit renewal includes updates to calculation methods and emission factors that eliminates the need for voluntary limits. The current PTE are below major source thresholds. Permitting thresholds are given in Table 5-1. Maximum potential emissions for the permit renewal are given in pounds per hour in Table 5-2 and tons per year in Table 5-3. The HAP Total listed is based on facility wide HAP emissions, not just NAICS 481. A summary of the facility wide HAP emissions can be found in Appendix A. Table 5-4 compares the permit renewal PTE with permit thresholds.

Table 5-1 Thresholds

Pollutant	Class I	Significant	Permit Exemption
CO	100	100	50
NOX	100	40	20
SOX	100	40	20
VOC	100	40	20
PM	100	25	
PM-10	100	15	7.5
PM 2.5		10 direct	5 direct
Lead	5.0	0.6	0.3
Facility Wide HAP	10/25		

Table 5-2 PTE in Pounds per Hour

NAICS 481 POLLUTANT	Abrasive	Boiler	Degreaser	ICE	Misc Materials	Booth Paint	F24 AST	GDF	TOTAL LB/HR
CO	--	1.53	--	28.23	--	--	`	--	**29.76**
NOX	--	1.26	--	74.04	--	--	--	--	**75.30**
SOX	--	0.01	--	0.08	--	--	--	--	**0.09**
PM	--	0.14	--	4.22	0.06	0.02	--	--	**4.44**
PM-10	0.19	0.14	--	4.22	0.06	0.02	--	--	**4.64**
PM2.5	0.18	0.14	--	4.22	0.06	0.02	--	--	**4.62**
VOC	--	0.10	1.19	5.32	1.82	0.79	0.04	1.94	**11.21**
LEAD	0.01	0.00	--	0.00	--	--	--	--	**0.01**
HAP TOTAL	0.30	0.01	0.01	0.24	0.30	0.14	0.00	0.19	**1.19**

Table 5-3 PTE in Tons per Year

NAICS 481 POLLUTANT	Abrasive	Boiler	Degreaser	ICE	Misc Materials	Booth Paint	F24 AST	GDF	TOTAL TONS/YR
CO	--	6.69	--	11.16	--	--	--	--	**17.85**
NOX	--	5.52	--	33.95	--	--	--	--	**39.47**
SOX	--	0.05	--	0.04	--	--	--	--	**0.09**
PM	--	0.61	--	1.94	0.27	0.10	--	--	**2.92**
PM-10	0.85	0.61	--	1.94	0.27	0.10	--	--	**3.76**
PM2.5	0.78	0.61	--	1.94	0.27	0.10	--	--	**3.69**
VOC	--	0.44	5.19	2.56	7.98	3.46	0.19	8.51	**28.33**
LEAD	0.03	0.00	--	0.00	--	--	--	--	**0.03**
HAP TOTAL	1.297	0.034	0.053	0.073	1.307	0.599	0.019	0.834	**4.215**

Table 5-4 PTE Threshold Comparison

	CO	NOX	SOX	VOC	PM10	PM 2.5	HAP	Lead
Class 1 Threshold	100	100	100	100	100		10/25	5.0
Significant Threshold	100	40	40	40	15	10		0.6
Permit Exempt Threshold	50	20	20	20	7.5	5		0.3
MCAS Yuma PTE (TPY)	18	39	0.088	28	4	4	4	0.034
PTE<Threshold	YES	YES	YES	YES	YES	YES	YES	YES

As shown in Table 5-4 above, the estimated PTE emissions for criteria pollutants and facility wide HAPs for this permit renewal application indicate that MCAS Yuma falls below Major Source emission thresholds. The reduced PTE estimates, as compared to previous permit renewal applications, are a result of ADEQ required updates to emission calculation methodology and emission factors, removal of jet engine test cells that are no longer on the facility or are considered mobile (not stationary) sources, and the transfer of equipment to other NAICS Code groups due verification of NAICS Code applicability, such as emergency generators and the installation's fuel farm. However, to maintain operating flexibility for changes in mission activities that may impact potential air pollutant emission levels, MCAS Yuma is submitting this permit renewal application for a Class II Minor Permit.

Minor New Source Review (NSR)

This is a permit renewal for an existing source. It includes changes to emission calculation methodology and emission factors, removal of jet engine test cells that are no longer on the facility or are considered mobile (not stationary) sources, and the transfer of equipment to other NAICS Code groups due verification of NAICS Code applicability, such as emergency generators and the installation's fuel farm. When emissions from this application are compared to the current permit, #87288, none of the changes in emissions are greater than the permit exemption thresholds. Table 5-5 summarizes the PTE emissions for permit #87288 and for this renewal and indicates the overall change.

Table 5-5 NSR Review Overall

POLLUTANT	Permit #87288 (TPY)	Permit renewal application (TPY)	Overall Change (TPY)	Permit Exemption Threshold (TPY)
CO	31.94	17.85	-14.09	50
NOX	58.28	39.47	-18.81	20
SOX	0.7	0.09	-0.61	20
PM	8.75	2.92	-5.83	
PM 10	8.54	3.76	-4.78	7.5
PM 2.5	8.44	3.69	-4.75	5
VOC	26.94	28.33	1.39	20
LEAD	0.05	0.03	-0.02	0.3
HAP Base-wide	7.83	4.21	-3.62	

For this permit renewal, there was no modifications due to new construction. The largest change is from including that tanks at the fuel farm and the Smith Street Station gasoline dispensing facility located at the fuel farm that have been on the installation for decades. This emission source was misclassified on previous permitting verifications and was included under NAICS Code 447 (Gas Stations) along with the installation's public gas station. This NAICS Code is mostly for commercial gas stations that are equipped with convenience stores. Military installations across the United States normally include the jet fuel storage and other fuel related activities that involve air transportation. To ensure compliance and to match other military installations, activity at the fuel farm is now being included in this permit application for NAICS Code 481. While this isn't a newly added process or pieces of equipment for MCAS Yuma or any physical change to the location, it is new for this permit. Table 5-6 below indicates the PTE emission changes for an NSR Review. The emissions impacted by the change are for VOC and HAPs, and the change is below the permitting exemption threshold, therefore, RACT determination is not required.

Table 5-6 NSR Review for Fuel Farm

POLLUTANT	Permit #87288 (TPY)	Tanks/GDF added (TPY)	change (TPY)	Permit Exemption Threshold (TPY)
CO	31.94	31.94	0	50
NOX	58.28	58.28	0	20
SOX	0.7	0.7	0	20
PM	8.75	8.75	0	
PM 10	8.54	8.54	0	7.5
PM 2.5	8.44	8.44	0	5
VOC	26.94	35.64	8.7	20
LEAD	0.05	0.05	0	0.3
HAP Base-wide	7.83	8.68	0.85	

Section 6 Facility Description

Facility Location

MCAS Yuma main station consists of approximately 4,500 acres located in the southeast portion of the City of Yuma. MCAS is bordered on the north by 32nd Street, on the east, Avenue 3E, on the south by County 14th Street, and Airport Loop Road on the west. A map of the facility provided in Figure 6-1 below. MCAS Yuma has three satellite facilities, and two ranges located in Arizona and California that are not contiguous with the main station. These satellite facilities are not included in this permit application.

Description

MCAS Yuma is a complex facility with multiple land uses, processes and activities similar to those found in a small city. With few exceptions, the buildings on the air station are now post-World War II. The main station consists of an airfield with runways, taxiways, parking aprons, hangars, and operations and training buildings. There are also family and bachelor quarters as well as personnel support facilities such as childcare center, youth facility, commissary, exchange, club, bowling alley, theater, gym, chapel, medical/dental, and social services. A drinking water treatment plant is located along Avenue 3E and adjacent to family housing. The southern portion of the station consists of munitions storage areas, Combat Arms Loading Area (CALA), and out-leased land used for agricultural practices.

MCAS Yuma was established in 1959 as Marine Corps Auxiliary Air Station. On July 20, 1962, the designation was changed to Marine Corps Air Station. The mission and characteristics have changed over the years to meet the needs of the nation and the Marine Corps. Currently MCAS Yuma is the primary aviation training base in the Marine Corps. MCAS Yuma operates the airport facility as a joint military/civilian airport. The air station is one of the largest single contributors to the economy of Yuma County.

Currently MCAS Yuma supports a variety of Marine Corps units who operate, maintain and train on Ospreys, F-35 jets, and various light and heavy attack helicopters. The mission of MCAS Yuma is to support 80 percent of the Marine Corps' air-to-ground aviation training. Each year, the air station hosts approximately 100 transient aviation units assigned to the Atlantic and Pacific Fleet Marine Forces and units from the Navy as well as other U.S. and NATO forces. This training results in an annual transient influx of 14,000 personnel and 600 aircraft at MCAS Yuma. MCAS Yuma has access to 2.8 million acres of aviation and bombing ranges, transient training facilities and good flying weather. It also serves as a base of operations supporting several tenant units.

North American Industrial Classification System (NAICS) Codes

Because of the size and complexity of MCAS Yuma, the facility is divided into 19 North American Industrial Classification System (NAICS) codes per Environmental Protection Agency (EPA) guidance, *Major Source Determinations for Military Installations under the Air Toxics, New Source Review, and Title V Operating Permit Programs of the Clean Air Act (Act)*, August 6, 1996. This application deals only with NAICS Code 481, Air Transportation. It is important to note that the process of identifying separate NAICS groups only applies to the evaluation of criteria pollutants. In accordance with 40 CFR Part 63, Hazardous Air Pollutant (HAP) emissions are evaluated on a facility wide, fence-line to fence-line, basis. NAICS 481 is located primarily around the flight line area.

Table 6-1 NAICS Codes and Descriptions

NAICS	DESCRIPTION
221	Utilities (Drinking water/sewer)
238	Specialty Trade Contractors (Installation and Logistics Maintenance)
445	Food and Beverage Stores
447	Gasoline Station
481*	Air Transportation
493	Warehousing and Storage
512	Motion Picture and Sound Recording Industries
517	Telecommunications
531	Real Estate (Bachelor Quarters and Installation Inn)
541	Professional, Scientific, and Technical Services
621	Ambulatory Health Care Services
624	Social Assistance
713	Amusement and Recreation Industries
722	Food Service and Drinking Places
811	Repair and Maintenance
812	Personal and Laundry Services
813	Religious, Grantmaking, Civic, Professional and Similar Organizations
922	Justice, Public Order and Safety Activities
928	National Security and International Affairs

*NAICS Code currently permitted for MCAS Yuma.

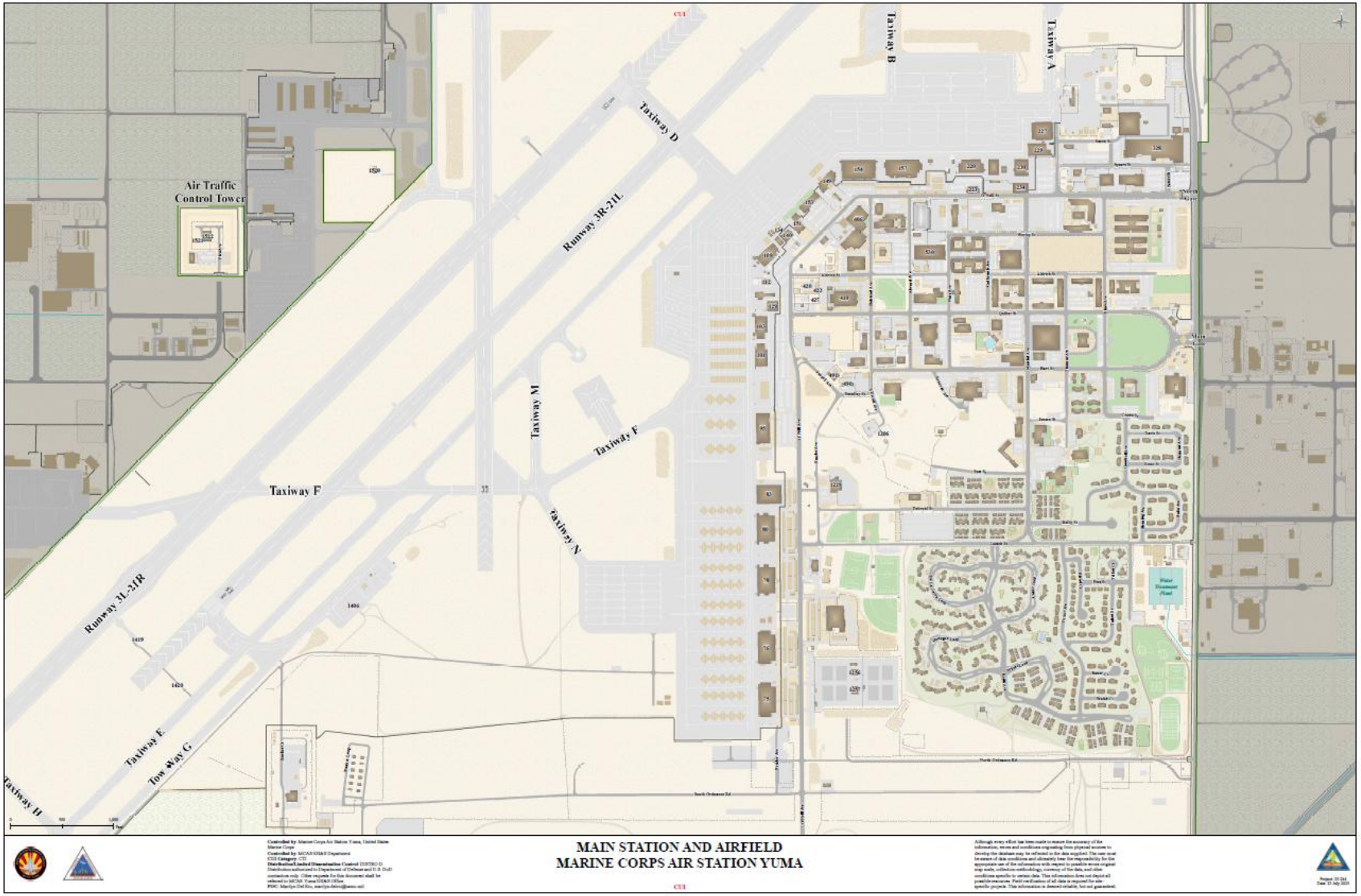


Figure 6-1 Main Station and Airfield Map

Section 7 Process Descriptions and Flow Diagrams

The following section provides descriptions for emission units and air emission processes.

External Combustion

The majority of the external combustion sources at MCAS Yuma include boilers and water heaters used for comfort heating and potable water. Other external combustion sources include infrared (IR) heaters to support mission requirements. Emissions from external combustion units occur as a result of the combustion of the fuel burned and include criteria pollutants and HAPs. Emissions depend on multiple factors including the size/type of the combustor, firing configuration, fuel type, control devices used, operating capacity, and proper operation and maintenance. All boilers, water heaters and IR heaters at MCAS Yuma utilize natural gas for fuel. None of the boilers operate at a sustained rate of 8 hours or more per any given day. Boilers cycle on as they are needed to heat water to the appropriate temperatures in holding tanks; then shut off until the water drops below a set temperature. Some of the newer systems are cascaded. Two or more boilers are staged to come on only as demand requires, doing away with the need to maintain a large tank of hot water. None of the boilers are flue recirculating gas boilers. A process flow diagram is shown in Figure 7-1.

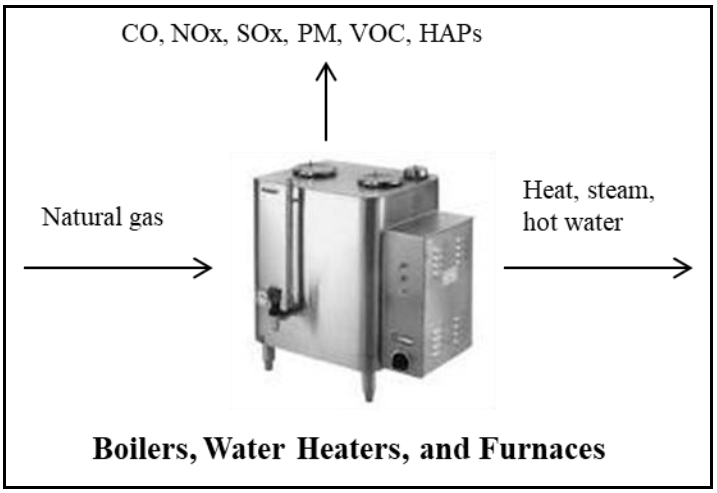


Figure 7-1 External Combustion Flow Diagram

NAICS 481 includes a total of 54 boilers/water heaters/IR heaters, of which, forty-two are equipped with low-NOx burners. The input ratings for these sources range from 0.038 MMBtu/hr. water heaters to 1.800 MMBtu/hr. IR heaters. The total input rating of all external combustion sources within this NAICS group is 18.18 MMBtu/hr.

Stationary Internal Combustion Engines (ICEs)

There are a number of IC engines in use to support operations. The majority of the engines are emergency generators which are used to provide emergency backup power to facilities/systems when the primary electrical power is not available. Additionally, MCAS Yuma maintains 4 E-28 shore-based emergency arresting gear systems. These systems are used for safely arresting an aircraft in the event of an aborted takeoff or emergency landing. The aircraft arrestment is entirely automatic. Each system is equipped with two arresting cable retraction engines, one on each side of the runway, that are only operated to rewind the cable and apply tension to the arresting system after a successful arrestment. The emergency generators utilize ultra-low sulfur diesel and the gear arresting engines use unleaded gasoline. Mobile, portable, and tactical sources are not included. A process flow diagram is shown in Figure 7-2.

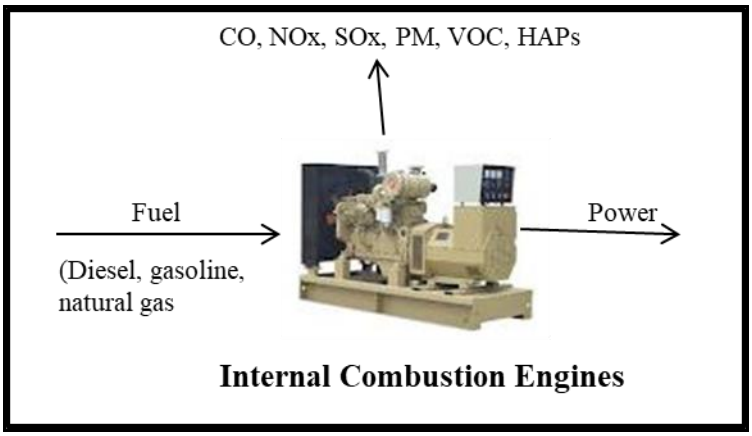


Figure 7-2 Stationary Internal Combustion Engines

Miscellaneous Chemical Use

Miscellaneous chemical usage at MCAS Yuma includes cleaners, solvents, light lubricants, oils, adhesives, sealants, aerosol painting and other materials. These are chemicals which are used in various activities and emissions are uncontrolled. The regulated air pollutants associated with miscellaneous chemicals are hazardous air pollutants (HAPs), volatile organic compounds (VOCs) and particulate matter (PM). HAP emissions are determined on a facility wide basis and a majority of the materials containing regulated air pollutants are tracked through the Hazardous Material Management System (HMMS). Some chemicals or materials that are insignificant, trivial, or have negligible emissions are exempt, or are not included. This list includes janitorial, office supplies, building maintenance and upkeep materials, and non-aerosol lubricants. A process flow diagram is shown in Figure 7-3.

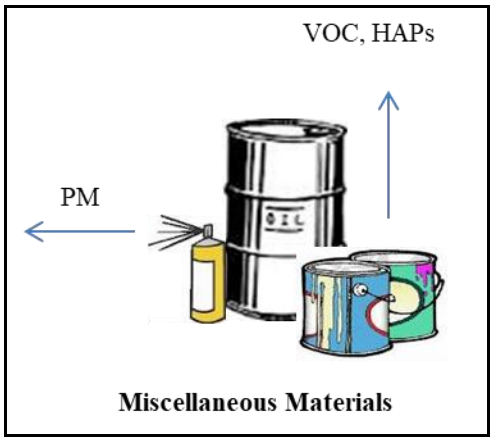


Figure 7-3 Miscellaneous Materials Process Flow Chart

Solvent Cleaning (Degreasing)

MCAS Yuma operates multiple degreasing units, including solvent tanks, parts washers and paint strippers which are used by maintenance shops to clean parts and remove old paint from aircrafts, vehicles, and equipment. Solvent cleaning machines are used to remove grease, oils, lubricants, soil, waxes, paints, and other contaminants from metal, plastic, glass and other surfaces. Regulated air pollutants from solvent cleaning include VOCs and HAPs from product evaporation. The parts washers with aqueous solutions containing no VOCs or HAPs are considered trivial sources and are excluded. A process flow diagram is shown in Figure 7-4.

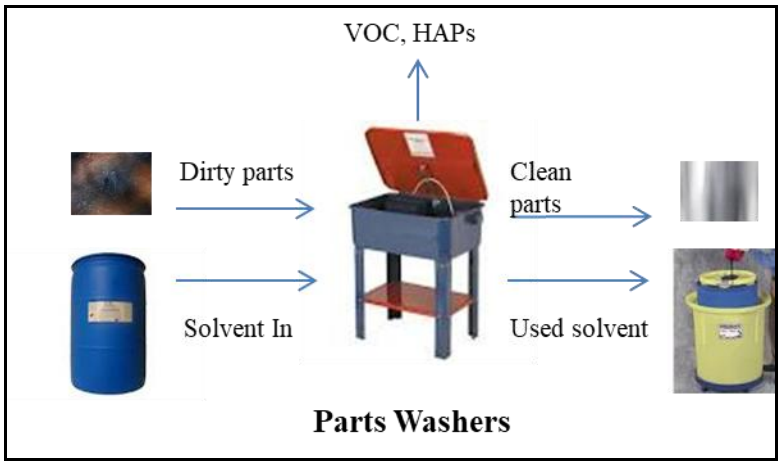


Figure 7-4 Degreasing Operation Process Flow Chart

Surface Coating Operations

Painting operations at MCAS Yuma are conducted on aircraft, vehicle, and equipment parts as part of a corrosion control program and maintenance. Operations involve the application of various types of materials that include primers, paints (polyurethane, enamels, lacquers), thinners, glazes, etc. The types of regulated air pollutants from

surface coating include VOCs, HAPs, and PM. The type and quantity of emissions are depended on the chemical composition of the material, the application technique, and whether or not a control device is used. Spray painting operations performed at the installations are required to be conducted in an enclosed area that captures 96% of the overspray, architectural and spot painting excluded. The paint booth located at building 230 utilizes high-volume low-pressure (HVLP) spray equipment to apply coatings. This paint booth is fully enclosed and is equipped with panel filters, positive air flow, and a stack vented to the top of the building. The paint booth located at building 154 is a benchtop paint booth that has an exhaust system pull the overspray through the filters and vented outside. This area is mainly used for aerosol coating operations and usage is accounted for in the materials section.

Non-booth surface coating operations (manual touch-ups/spot paint) are only permitted by station order if the area to be coated is less than 10% of the total surface area of the piece of equipment. This activity is considered insignificant and in not included in permitting calculations. Non-booth surface coating operations may occur minimally on GSE equipment and on parts too large to fit into the installation paint booths. Local procedures, such as the use of tarps, painting when the wind is less than 12 mph, and painting inside hangars are methods used to prevent overspray. HVLP paint guns with supplied air are required.

Aerosol paints are not counted in this section but are accounted for under Miscellaneous Materials. Architectural painting is exempt as a trivial activity that is part of normal plant upkeep and maintenance. A process flow diagram is shown in Figure 7-5.

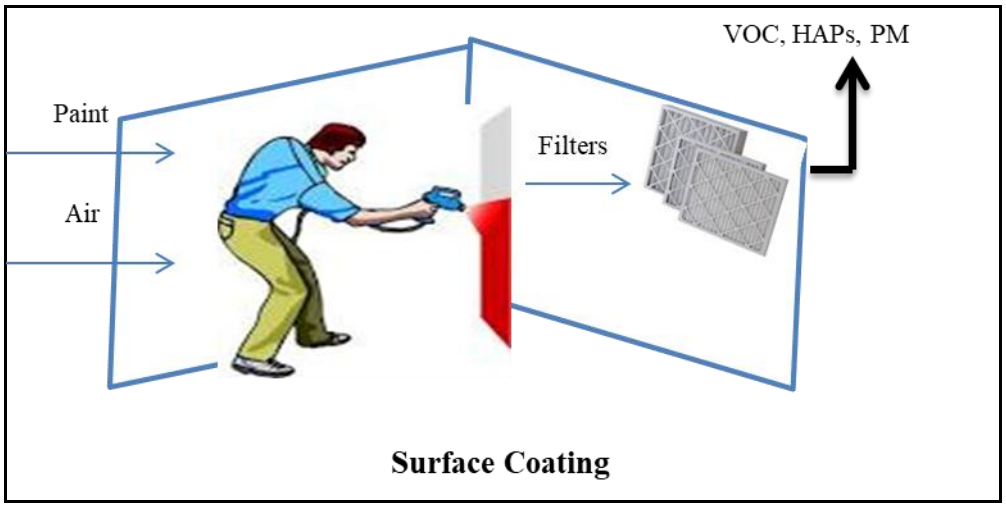


Figure 7-5 Surface Coating Operations Process Flow Chart

Fuel Dispensing - Gasoline

Fuel dispensing involves the dispensing of fuel into vehicle fuel tanks and portable fuel containers from fuel dispensing pumps. MCAS Yuma has two Gasoline above ground storage tanks (ID 367 and 368) and one E85 above ground storage tank (ID 370) located at the installation's Fuel Farm. The gasoline dispensing at the Fuel Farm is conducted at the Smith Street Station and is fueled by tanks 367 and 370 and the activity is primarily for refueling government fleet vehicles. Gasoline is loaded into tank 368 via fuel trucks from an outside contractor and is then transferred out of Tank 368 to Tank 367 for use at the Smith Street Station. Similarly, E85 is loaded into Tank 370 via fuel trucks from an outside contractor. Tank 368 is also used to transfer fuel into fuel delivery vehicles for distribution to other gasoline storage tanks and equipment on base. Emissions from the transfer of fuel from Tank 368 into the fuel delivery vessels are accounted for as a part of the fuel dispensing calculations. Fuel dispensing is a source of VOC and HAP emissions. Vehicle refueling emissions are the result of vapors displaced from the vehicle tank by dispensed fuel, from spillage of fuels from pre-fill and post-fill nozzle drip, and from "spit-back" and overflow from the fuel tank filler neck on the vehicle during filling. Breathing and working emissions from the storage tanks themselves are addressed in the Fuel Storage section. A process flow diagram is shown in Figure 7-6.

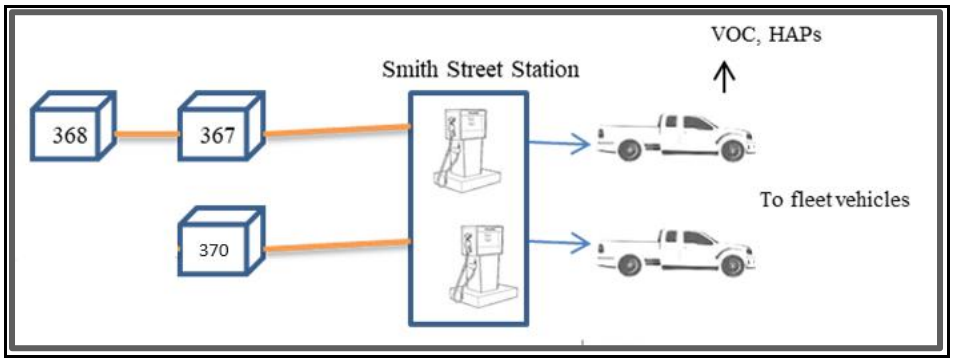


Figure 7-6 Gasoline Fuel Dispensing

Fuel Storage

MCAS Yuma stores fuel in multiple storage tanks at the Fuel Farm. The fuel tanks that are classified as significant activities contain F-24 jet fuel, gasoline or E85 fuel. Tanks at the Fuel Farm containing diesel or biodiesel are considered insignificant per A.A.C R18-2-101.68 as their capacity is less than 40,000 gallons. Regulated air pollutants from fuel storage tanks include VOCs and HAPs which are generated as vapor escapes from the higher-pressure environment inside the tank to the lower pressure environment outside the tank. A process flow diagram is shown in Figure 7-7.

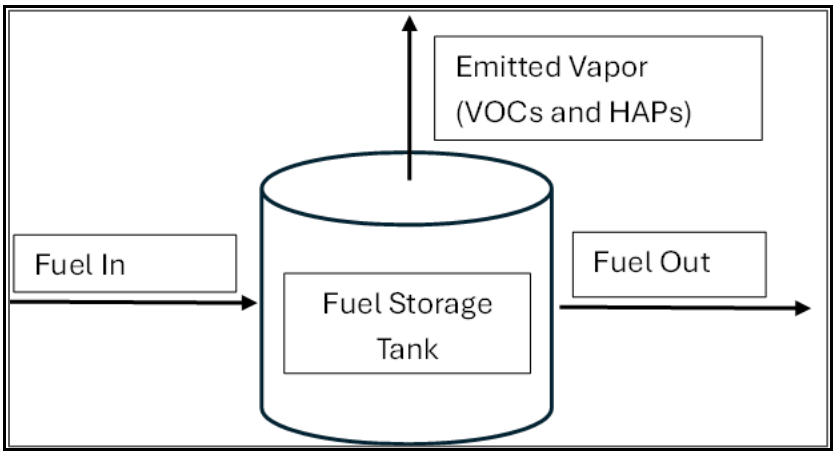


Figure 7-7 Fuel Storage

F24 Fuel Storage Tanks

F24 is received into Tank 312 via underground pipeline from the Kinder Morgan tanks (Tank Y-1 and Y-2). The Kinder Morgan tanks are not under common control and are not included in this permit application. Fuel from Tank 312 is then dispensed into tanker trucks for transport to equipment, smaller tanks, and aircraft located throughout the facility. Fuel is transferred from Tank 312 into Tank 336 and Tank 337. Tank 339 is an insignificant 4,000-gallon overflow tank that catches overflow from Tanks 336 and 337 and transfers the fuel back into Tank 312. Tanks 336 and 337 are able to transfer fuel between themselves via underground pipes and dispenses fuel to the designated hot pits on the flight light via underground pipes as well. Figure 7-8 outlines the flow of F24 fuel at the MCAS Yuma Fuel Farm.

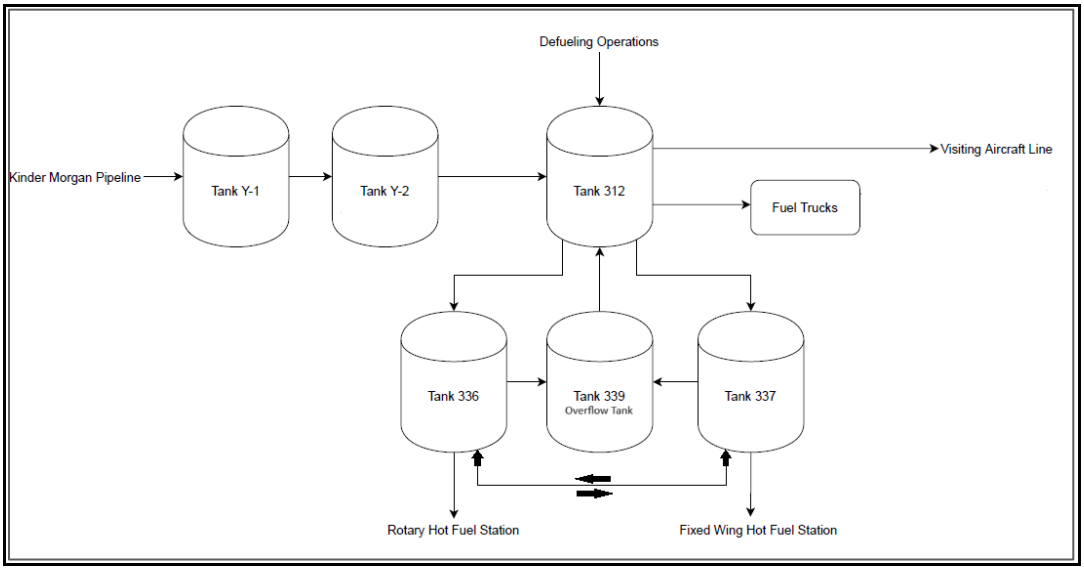


Figure 7-8 F24 Fuel Flow Diagram

Gasoline and E85 Fuel Storage Tanks

Tanks 368 and 367 are used to store Gasoline and tank 370 is the E85 storage tank. These tanks are classified as significant sources at MCAS Yuma. Gasoline is loaded into Tank 368 via tanker trucks by an outside contractor. Fuel is then transferred into Tank 367 for distribution to the Smith Street Station gas distribution facility. E85 fuel is loaded into Tank 370 via tanker trucks by an outside contractor.

Abrasive Blasting

Abrasive blasting is used for cleaning and surface preparation of aircraft parts and other miscellaneous parts at MCAS Yuma prior to repair and/or painting. The item to be cleaned is placed in an enclosed glovebox cabinet. The blasting media is directed at the part at a high velocity until the part reaches the desired state. The blast media is captured by the machine and continuously recycled through the unit until it is fully spent and is then replaced by a new supply of material. All the abrasive blasting units at MCAS Yuma are equipped with control devises, typically fabric filters, to capture particulate matter (PM) from the exhaust prior to being released into ambient air. The blast media used are glass beads, plastic beads, or walnut shell. Figure 7-9 is a process flow diagram for abrasive blasting operations.

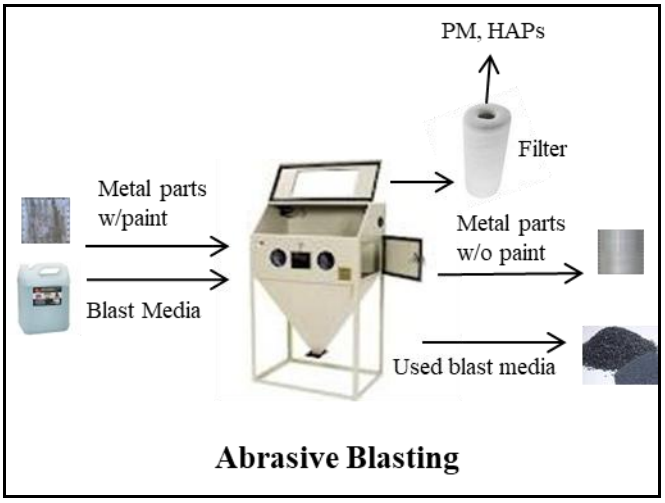


Figure 7-9 Abrasive Blasting Process Diagram

Open Burning

Routine open burning is conducted at MCAS Yuma for fire fighter training. The Crash Fire Rescue (CFR) and Aircraft Rescue and Fire Fighting (ARFF) units use a Mobile Aircraft Fire Training Device (MAFTD) fueled by propane. Fire fighter training does not require a permit per A.A.C. R18-2-602.C.2.b. and is exempt from cumulative emission calculations. Figure 7-10 is a process flow diagram for Open Burning.

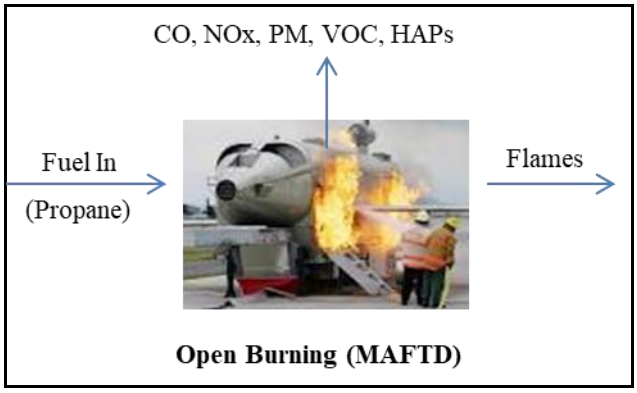


Figure 7-10 Open Burning Process Flow Diagram

Demolition and Renovation

All demolition and renovation activities are conducted in accordance with the applicable requirements of 40 CFR 61 Subpart M, Asbestos NESHAP. Required records of all activities, to include the "Renovation and Demolition Activities Form" are maintained on site by the Environmental Department Lead and Asbestos Program Manager.

Section 8 Emission Calculations and Methodology

This section contains a summary of the methodologies used to estimate the potential emissions for MCAS Yuma. Data pertaining to all equipment, usage, and calculations are maintained by MCAS Yuma.

Emission methodologies in EPA's *Compilation of Air Pollutant Emission Factors* (AP-42), *Air Emissions Guide for Air Force Stationary Sources (AFCEC),* and EPA's *TANKS 5.1* software were the primary resources used. Emission factors for equipment subject to and certified to New Source Performance Standards (NSPS) and National Emission Standard for Hazardous Air Pollutants (NESHAP) are used where applicable. Emission factors from the manufacturer are most accurate and they are used when available. Some methodologies and HAP speciation came from the San Diego Air Pollution Control District (SDAPCD) website. Chemical information for the various materials was obtained from the Hazardous Materials Management System (HMMS) used by MCAS Yuma. HMMS is a web-based system that was discussed in the processes section. This system extracts chemical composition information from recorded chemical and Safety Data Sheet (SDS) information. Chemical usage is calculated based on the weight of the material used and weight percentage of the chemical constituent. HMMS also provides VOC and HAP weight in materials used.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100)$$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

Some processes have more factors and more steps. These steps are explained in more detail in this section. Unless other information is provided, it is assumed total PM equals PM-10 and PM 2.5.

Source types found in this NAICS code and considered in this application:

- External Combustion - boilers, water heaters, infrared (IR) heaters
- Internal combustion engines (ICEs)
- Miscellaneous material usage (HAPs and VOCs)
- Degreasers, parts washers and paint stripper tanks
- Surface Coating (Paint Booth)
- Abrasive blast cabinets
- Fuel Dispensing – Gasoline
- Fuel Storage

Open burning is used only for fire fighter training and is exempt from permitting per A.A.C R18-2-602.C.2.b. Calculations are not included.

Actual equipment usage is recorded by controlling the units/departments and collected by Environmental Department on a regular basis for the 12-month rolling total as required by the current air pollution control permit. Submissions are reviewed by the Environmental staff and entered into a database for tracking.

External Combustion – Boilers, Water Heaters and Infrared Heaters

Emission Calculation Methodology

Criteria pollutant and HAP emissions from external combustion sources were calculated by first converting the heat input rating from MMBtu/hr to lb/10^6 ft^3, then multiplying by 8,760 hours per year to get the maximum annual heat usage and applying the appropriate emission factors in accordance with Equation 2-3 of the Air Emissions Guide for Air Force Stationary Sources (AFCEC, June 2025). Emission factors specific to external combustion sources were sourced from Tables 2-3 and 2-5 of the same guide. Each external combustion source was classified as either Low NOx or NOx, and this designation was used to determine NOx emissions. At MCAS Yuma, all boilers, heaters, and infrared heaters have heat input ratings below 10 MMBtu/hr. A comprehensive summary of emissions calculations, emissions factors, and equipment specifications is provided in Appendix A.

Emission Equation and Sample Calculations

Criteria pollutant and HAP Emissions from external combustion units were calculated using the following equation:

$$E_{POL} = Q \times (1000\ ft^3/MMBtu) \times (10^6\ ft^3/10^6\ ft^3) \times Hr \times EF_{POL}$$

Where:

E_{POL}	= Annual emissions of pollutant (lb/yr)
Q	= Annual quantity of fuel consumed per hour (MMBtu/hr)
1000	= convert MMBtu to ft^3 (1000 ft^3/MMBtu)
10^6	= Factor for converting ft^3 to 10 ft^3 (10^6 ft^3/10^6 ft^3)
Hr	= hours of operation (hr/yr)
$EF_{POL}P_{OL}$	= emission factor for pollutant (lbs/10^6 ft^3)

Criteria Pollutant Emission Sample Calculation
Q = 1.8 MMBtu/hr; Hr = 8760 hr/yr; EF_{CO} = 0.0824 lb/10^6 ft^3

E_{CO} = 1.8 MMBtu/hr x 1000 ft^3/MMBtu x (10^6 ft^3/10^6 ft^3) x 8760 hr/yr x (84 lb/10^6 ft^3)

E_{CO} = (15.78 10^6 ft^3/yr) x (84 lb/10^6 ft^3)

E_{CO} = 1325 lb CO/yr

HAP Emission Sample Calculation
Q = 1.8 MMBtu/hr; Hr = 8760 hr/yr; $EF_{Toluene}$ = 3.66E-02 lb/10^6 ft^3

$E_{Toluene}$ = (1.8 MMBtu/hr) x (1000 ft^3/MMBtu) x (10^6 ft^3/10^6 ft^3) x (8760 hr/yr) x (3.66E-02 lb/10^6 ft^3)

$E_{Toluene}$ = (15.78 10^6 ft^3/yr) x (3.66E-02 lb/10^6 ft^3)

$E_{Toluene}$ = 5.77E-01 lb Toluene/yr

Internal Combustion Engines (ICEs)

Emission Calculation Methodology

The make, model, and power rating of each internal combustion unit was documented through on-site field inspections. Maximum annual operating hours for emergency engines were established in accordance with the EPA's 1995 guidance document, *Calculating Potential to Emit (PTE) for Emergency Generators* (EPA, September 1995). This guidance recognizes that emergency generators are inherently limited in their operation and advises against using 8,760 hours per year for PTE calculations. Instead, the EPA recommends a default assumption of 500 hours per year to represent a "worst-case" scenario. However, based on historical data indicating prolonged emergency use, flightline emergency generators were conservatively estimated at 1,000 hours per year. Arresting gear engines, although used during emergencies, do not serve as backup power sources for facility outages; therefore, their PTE was calculated using a combined total of 1,500 hours per year.

Criteria pollutant and HAP emissions from stationary internal combustion sources were estimated using the load factor method outlined in Equation 3-2 of the Air Emissions Guide for Air Force Stationary Sources (AFCEC, June 2025). This method involves calculating emissions by multiplying the engine's rated power, annual operating hours, and applicable load factor by the corresponding emission factor. Emission factors used for estimating criteria pollutants and HAPs were sourced from Tables 3-4, 3-7, and 3-8 of the same guide. Load factors for both diesel and non-diesel generator sets were obtained from Table 3-14. Except for lead, stationary spark-ignition internal combustion engines that use gasoline were found not to emit HAPs. A detailed summary of emissions calculations, emission factors, and equipment specifications is provided in Appendix A.

Criteria Pollutant and HAP Emission Equation

Criteria pollutant and HAP Emissions from stationary internal combustion units were calculated using the following equation:

$$E_{Pol} = OT * PO * (LF/100) * EF_{Pol}$$

Where:

E_{Pol} = Annual emissions of pollutant (lb/yr)

PO = Rated power output of the engine (hp)

LF = Engine load factor (%)

100 = Factor for converting percent to fraction (%)

OT = Annual engine operating time (hr/yr) (500/1000/1500 hr/yr)

EF_{POL} = Emission factor of pollutant (lb/hp-hr)

Criteria Pollutant Emission Sample Calculation

Engine information: Displacement<10 liters/cylinder, NSPS, Manufacture year 2007

E_{NOX} = NOx emissions in lbs

PO = 145 hp diesel engine

LF = 74%

OT = 500 hrs/yr

EF_{NOX} = 6.16E-03 lb/hp-hr

E_{NOX} = (500 hr/yr) * (145 hp) * (74% / 100%) * (0.00616 lb/(hp-hr))

E_{NOX} = 330.48 lb NOX/year

HAP Emission Sample Calculation

Engine Information: Displacement<10 liters/cylinder, NSPS, Manufacture year 2007

$E_{Toluene}$ = Toluene emissions in lbs

PO = 145 hp diesel engine

LF = 74%

OT = 500 hrs/yr

$EF_{Toluene}$ = 1.56E-06 lb/hp-hr

$E_{Toluene}$ = (500 hr/yr) * (145 hp) * (74% / 100%) * (1.56E-06 lb/(hp-hr))

$E_{Toluene}$ = 0.084 lb NOX/year

Miscellaneous Chemical Use

Emission Calculation Methodology

All chemical usage at MCAS Yuma is tracked through the Hazardous Material Management System (HMMS), which monitors material receipt and issuance. HMMS generates base-wide reports of HAP and VOC usage, referencing Safety Data Sheets (SDSs) to calculate chemical weights based on concentration and total material used. Exempt materials are identified and excluded from emission summaries. VOC emissions are calculated by converting pounds used to gallons (using product density), then multiplying by VOC content (lbs/gal). NAICS codes are applied, and VOC totals are summarized accordingly. HMMS does not calculate particulate matter (PM). To allow for a conservative estimate, it was assumed that 100% of particulate sprayed would not be transferred and either emitted directly to the atmosphere or to a filter system if conducted with a booth. PM emissions from aerosol products are estimated using an average PM pound per gallon for aerosol paints and total product weight. Potential HAP emissions from miscellaneous chemical use were estimated by scaling the 2023 emissions data, used as the baseline year for this source, by a factor of 4.21. For VOC and PM, potential emissions were similarly calculated using 2021 as the baseline year, with the same scaling factor of 4.21 applied. This factor reflects the ratio of maximum annual operating hours (8,760 hours) to the site's average annual schedule of 2,080 hours (based on an 8-hour workday, five days per week). This estimate assumes chemical usage increases proportionally with base operations. CAS numbers vary annually, with many individual emissions below one pound per year. A comprehensive summary of chemical usage is provided in Appendix A.

VOC Emission Equation

VOC Emissions from miscellaneous chemical use were calculated using the following equation:

$$E_{VOC} = V \times D \times (WP_{POL}/100) = V \times (SG \times 8.34 \text{ lb/gal}) \times (WP_{POL}/100)$$
$$= (Q/D) \times VOC = V \times VOC$$

Where:

E_{VOC} = Emissions of VOC (lb/product)

V = Annual volume of chemical used (gal/product)

Q = Annual mass of chemical used (lb/product)

D = Density of the chemical (lb/gal)

SG = Specific Gravity

8.34 = Density of water (lb/gal)

WP_{POL} = Weight percent of the pollutant in the chemical product (%)

100 = Factor converting weight percent to weight fraction (%)

VOC = D x (WP_{VOC}/100) = VOC content in lb VOC/gal of coating solids

VOC Emission Sample Calculation

For the enamel with NSN 8010013316105, the following data was provided by HMMS:

V= 12.78 lbs used/product; SG = 0.83; VOC = 3.91 lb/gal

E_{VOC} = [(12.78 lb/product)/(0.83 x 8.34 lb/gal)] x 3.91 lb/gal

E_{VOC} = ((12.78 lb used/product)/6.92 lb/gal) x 3.91 lb/gal

E_{VOC} = 1.85 gal/product x 3.91 lb/gal

E_{VOC} = 7.23 lb VOC/product

PM Emission Equation

PM Emissions from miscellaneous chemical use were calculated using the following equation:

$E_{PM} = V \times D \times (WP/100) \times [1 - (TE/100)] \times [1 - (FO/100)] \times [1 - (CE/100)]$

Where:

E_{PM} = Emissions of PM (lb/product)

V = Volume of aerosols used (gal) (1.85 gal)

D = Density (lb/gal) (6.92 lb/gal)

WP_{PM} = weight percent of PM (44%),

100 = Factor converting weight percent to weight fraction (%)

CE = Efficiency of the control device, 0 if none present (%)

TE = Transfer efficiency (60%)

FO = Fallout/overspray that falls onto floor. (40%)

PM Emission Sample Calculations

The following data was provided by HMMS:

V = 1.85 gal; D = 6.92 gal; WP_{PM} = 44%; CE = 0%; TE = 60%; FO = 40%

E_{PM} = 1.85 gal x 6.92 lb/gal x (44%/100%) x [1 - (60%/100%)] x [1 - (40%/100%)] x [1 - (0%/100%)]

E_{PM} = 1.85 gal x 6.92 lb/gal x 0.44 x 0.40 x 0.60 x 1

E_{PM} = 1.35 lb PM

Abrasive Blast Cabinets

Emission Calculation Methodology

According to the specifications in the Raptor Blaster technical sheet, and based on assumed nozzle size and operating pressure, the RB5446 model is estimated to consume approximately 170 pounds of blast media per hour. Each Clemco Industries Pulsar VI-P blast cabinet is rated at 14 pounds per hour according to its specification sheet provided by the tenant units. For other blasting units lacking direct consumption data, estimates were derived using Equation 2-2 and Tables 2-2 and 2-3 per AP-42 Section 13.2.6 (EPA, September 1997). Maximum annual media usage was calculated by multiplying hourly rates by 8,760 hours. PM10 emissions were estimated using an emission factor of 7.5 pounds per 1,000 pounds of media, as outlined in Table 7-1 of the Air Emissions Guide for Air Force Stationary Sources (AFCEC, June 2025). HAP emissions were calculated by applying the weight percentage of each HAP constituent to the PM emissions. These constituent profiles and calculation methodology were obtained from guidance issued by the San Diego County Air Pollution Control District for general metal part blasting operations (SDCAPCD, August 1999). Due to the absence of emission factors for plastic media, only data for glass beads and walnut shells were used in the analysis. A comprehensive summary of emissions calculations, emissions factors, and equipment specifications is provided in Appendix A.

Mass Flow Rate Equation

For blast cabinets that do not specify the abrasive material's mass flow rate, the value was estimated using the following equation:

$$m_a = m_s \times [(d_a^2)/(d_s^2)] \times (D_a/D_s)$$

Where:

- M_a = Mass flow rate (lb/hr) of abrasive with nozzle internal diameter Da
- M_s = Mass flow rate (lb/hr) of sand with nozzle internal diameter Ds from Table 2-2 of Section 13.2.6 of AP-42 (EPA, September 1997)
- d_a = Actual nozzle internal diameter (in)
- d_s = Nozzle internal diameter (in) from Table 2-2 of Section 13.2.6 of AP-42 (EPA, September 1997)
- D_s = Bulk density of sand (99 lb/ft3) from from Table 2-3 of Section 13.2.6 of AP-42 (EPA, September 1997)
- D_a = Bulk density of abrasive (lb/ft3)

Mass Flow Rate Sample Calculations

For the Clemco Industries blast cabinet model Pulsar 6PE, the unit operates with plastic media at a nozzle size of 3/16 inch and a pressure of 80 PSI. The plastic media has a density of 50 lb/ft³. Using the reference values from Table 2-2 in Section 13.2.6 of AP-42, the estimated sand flow rate under these conditions is 135 lb/hr.

m_a = 135 lb/hr x $(3/16 \text{ in})^2/(3/16 \text{ in})^2$ x 50 lb/ft^3/99 lb/ft^3

m_a = 135 lb/hr x 1 x 0.505

m_a = 68.18 lb/hr

PM Emission Equation

PM emissions from abrasive blasting sources were calculated using the following equation:

$$E_{PM} = [Q \times (1/1000) \times EF_{Pol} \times [1 - (CE/100)]]/2000$$

Where:

E_{PM}	= Emissions of PM from abrasive blasting (tpy)
Q	= Annual blast media consumed, pounds per year (lb/yr)
1000	= Factor for converting pounds to 10^3 pounds (lb/10^3 lb)
EF_{PM}	= Emission Factor for PM, pounds per 10^3 pounds of blast media used (lb/10^3 lb)
CE	= Control Device Efficiency (%). Use 0 if no control device used.
100	= Factor for converting a percent to a fraction (%).
2000	= Convert to tons per year (tpy) (2000 lbs/ton)

PM Emission Sample Calculations

Material type	= glass beads
EF (PM)	= 7.5 pounds of controlled PM per 10^3 pounds of blasting material
Q	= 597,273 lb/yr of glass beads
CE	= 99.7%

E_{PM} =(597,273 lb/yr) x (10^3 lb/1000 lb) x (7.5 lb/10^3 lb) x [1 - (99.7%/100%)]

E_{PM} = (597.27 10^3 lb/yr) x (7.5 lb/10^3 lb) x 0.003

E_{PM} = (13.44 lb/yr)

HAP Emission Equation

Hazardous Air Pollutant Emissions from abrasive blasting cabinets were calculated using the following equation:

$$E_a = U_a \times EF$$

Where:

E_a = Annual emissions of each listed substance (lb/yr)

U_a = Annual usage of each type of blasting material (lb/yr)

EF = Mass percent of HAP in PM emissions, %

HAP Emission Sample Calculation

Material type: plastic beads; E_{PM} = 13.44 lb/yr; EF = 0.48 % lb of chromium per pound of PM

$$E_{Chromium} = (13.44 \text{ lb/yr}) \times (0.48 \text{ lb/lb PM})$$

$$E_{Chromium} = 6.45 \text{ lb Chromium/yr}$$

Degreasers and Parts Washers

Emission Calculation Methodology

Solvent usage at MCAS Yuma is tracked through HMMS, with solvents in containers of 5 gallons or more assumed to be used in parts washers. Replacement typically occurs every three months, though frequency varies by usage. Shop personnel provided input on disposal volumes and evaporation losses. All degreasers and parts cleaners are equipped with lids per local procedures, which must remain closed when not in use. Units with remote reservoirs store solvent in enclosed tanks; others retain solvent in covered tanks. VOC content is reported in pounds per gallon, and HAP content as weight percent. For maximum usage estimates, a monthly replacement schedule was assumed. Evaporation rates were set at 5% for units with remote reservoirs and 10% for those without, based on operational feedback and fluid replenishment practices. HMMS supplies solvent density, VOC content, and HAP percentages. If VOC data was missing from SDSs, ingredient lists were reviewed to determine VOC percentages. VOC emissions from degreasers and parts washers were calculated using Equations 13-1 and 13-3 from the Air Emissions Guide for Air Force Stationary Sources (AFCEC, June 2025). HAP emissions were derived using HMMS-provided weight percentages for applicable solvents. A comprehensive summary of material usage, and equipment specifications is provided in Appendix A.

VOC and HAP Emission Equation

$$E_{VOC} = (Q_A - Q_R - Q_C) \times (WP_{VOC} / 100)$$

Where:

E_{Pol} = Emissions of Pollutant in lbs

Q_A = Annual mass of solvent added, (gal/yr) (12*gallons in tank + evaporation percentage)

Q_R = Annual mass of solvent removed, (gal/yr) (12*gallons in tank)

Qc = Annual mass captured by controls, (gal/yr) (percentage given by manufacturer)

WP_{Pol} = Weight percent of the pollutant in the chemical product (%).

100 = Factor converting weight percent to weight fraction (%).

If the volume and not the mass of the chemical used during the year is known, the mass may be calculated using the chemical density as follows:

$$Q_x = V_x \times D$$

Where:

Q_x = Annual mass of chemical used, disposed, or captured (lb/yr)

V_x = Annual mass of chemical used, disposed, or captured (lb/yr)

D = Density of the chemical (lb/gal)

VOC Emission Sample Calculation

A parts washer with 50 gallons Citrikleen 20% solvent /80% water in a tank with a lid. PTE assumes full strength. VOC content of 4.34 pounds per gallon. PTE assumes solvent replaced each month. Interviews with shop personnel indicate 10% added each month due to evaporation and carry-out.

E_{VOC} = emissions of VOC in lbs

V_A = (50 gal x 12 + 50 gal = 650 gal/yr) + (650 * 10% = 65 gal) = 715 gal

V_R = 50 gal x 12 + 50 gal = 650 gal/yr

Vc = 0

C_{VOC} = 4.34 lb/gal

E_{VOC} = (715 gal - 650 gal - 0) * 4.34 lb VOC/gal

E_{VOC} = 65 gal * 4.34 lb VOC/gal

E_{VOC} = 282.1 lb VOC per year

HAP Emission Sample Calculation

A parts washer with 50 gallons Citrikleen 20% solvent /80% water in a tank with a lid. PTE assumes full strength. Density is 8.09 pounds per gallon. PTE assumes solvent replaced each month. Interviews with shop personnel indicate 10% added each month due to evaporation and carry-out. Citrikleen contains 10% by weight diethanolamine.

$E_{diethanolamine}$	= emissions of VOC in lbs
V_A	= (50 gal x 12 + 50 gal = 650 gal/yr) + (650 * 10% = 65 gal) = 715 gal
V_R	= 50 gal x 12 + 50 gal = 650 gal/yr
Vc	= 0
C_{VOC}	= 4.34 lb/gal
$E_{diethanolamine}$	= (715 gal - 650 gal - 0) x 8.09lb/gal x (10%/100%)
$E_{diethanolamine}$	= 525.85 lb/yr x 0.10
$E_{diethanolamine}$	= 52.59 lb diethanolamine per year

Booth Surface Coating Operations

Emission Calculation Methodology

A total of 15 years of paint usage data was compiled to determine actual consumption for the Colmet Paint Booth. Due to missing records from 2013 to 2015, the analysis included data from 2007–2012 and 2016–2024. To estimate potential emissions, the total usage was multiplied by a factor of 4.21, representing the ratio between maximum annual operating hours (8,760 hours) and the site's average operational schedule of 2,080 hours per year (based on an 8-hour workday, five days per week). This calculation yields an estimated maximum potential usage of approximately 1,000 gallons per year for the Colmet paint booth. Since the Standard Tools and Equipment Co. paint booth is newly installed and lacks historical usage data, the same maximum potential usage of 1,000 gallons per year was applied. Therefore, the combined maximum potential usage for both paint booths is estimated at 2,000 gallons annually. Due to the variety of paints used by the units, a single paint with the highest VOC and HAP content from the Authorized Use List (AUL) was selected to represent PTE calculations. All paint operations are tracked through HMMS, which includes SDS data detailing VOC and HAP content. VOC values may be listed as a weight percent of total volatiles or as weight per volume of coating solids; in the latter case, density is already factored in. Aircraft paints typically come in multi-component kits, mixed in specific ratios based on environmental and job-specific conditions. Emissions are calculated by applying these ratios to each component’s usage, then determining VOC and HAP contributions accordingly. Since the paints are not water-based, non-VOC weight is assumed to contribute to particulate matter. VOC and organic HAP emissions were calculated using Equation 22-1, and particulate and inorganic HAP emissions using Equation 22-2 of the Air Emissions Guide for Air Force Stationary Sources (AFCEC, June 2025).

VOC and Organic HAP Emission Equation

$E_{POL} = V \times D \times (WP_{POL}/100) \times [1-(CE/100)] = V \times VOC \times [1-(CE/100)]$

Where:

E_{POL} = Annual emissions of pollutant (lb/yr)

V = Volume of coating applied (gal/yr)

D = Density of coating applied (lb/gal)

WP_{POL} = Weight the pollutant in the coating. This may refer to total VOC in the coating or for individual pollutant for speciation purposes (%).

VOC = $D \times (WP_{VOC}/100)$ = VOC content in lb VOC/gal of coating solids

100 = Factor for converting percent to a fraction (%)

CE = Efficiency of the control device, if any

VOC Emission Sample Calculation

Polyurethane is a two-part kit, the ratio of base to catalyst is 1:1.

Q = 1000 gal/yr entire kit: ; V = base: (1000 gal/yr) x 0.5 = 500 gal; catalyst; (1000 gal/yr) x 0.5 = 500 gal; VOC = base: 2.80 lb VOC/gal; catalyst: 4.05 lb VOC/gal; CE = 0%

Base: $E_{VOC} = (500 \text{ gal/yr}) \times (2.8 \text{ lb VOC/gal}) \times [1-(0\%/100\%)]$

$E_{VOC} = 1400 \text{ lb/yr}$

Catalyst: $E_{VOC} = (500 \text{ gal/yr}) \times (4.05 \text{ lb VOC/gal}) \times [1-(0\%/100\%)]$

$E_{VOC} = 2025 \text{ lb/yr}$

Total VOC: $E_{VOC} = 1400 \text{ lb/yr} + 2025 \text{ lb/yr}$

$E_{VOC} = 3425 \text{ lb/yr}$

Organic HAP Emission Sample Calculation
Polyurethane is a two-part kit, the ratio of base to catalyst is 1:1.

Methyl isobutyl ketone 108101= base: 1.0% by wt; catalyst: 18% by wt; Q = 2000 gal/yr entire kit;

V = base: (1000 gal/yr) x 0.5 = 500 gal; catalyst; (1000 gal/yr) x 0.5 = 500 gal;

D = base: 12.10 lb/gal; catalyst: 8.26 lb/gal; CE = 0%

Base: E_{108101} = 500 gal/yr x 12.10 lb/gal x (1%/100%) x [1-(0%/100%)]

E_{108101} = 60.5 lb/yr

Catalyst: E_{108101} = 500 gal/yr x 8.26 lb/gal x (18%/100%) x [1-(0%/100%)]

E_{108101} = 743.4 lb/yr

Total 108101: E_{108101} = 60.5 lb/yr + 743.4 lb/yr

E_{108101} = 803.9 lb/yr

Particulate and Inorganic HAP Emission Equation:

$$E_{POL} = Q \times (WP_{POL}/100) \times [1- (TE/100)] \times [1-(CE/100)] \times C_{POL}$$
$$= Q \times (D - VOC) \times [1- (TE/100)] \times [1-(CE/100)] \times C_{POL}$$

Where:

E_{POL} = Annual emissions of pollutant (lb/yr)

Q = Quantity of coating used during the year(gal/yr)

D = Density of coating applied (lb/gal)

WP_{POL} = Weight the pollutant in the coating. This may refer to total solids in the coating or for individual pollutant for speciation purposes (%).

VOC = D x (WP_{VOC}/100) = VOC content in lb VOC/gal of coating solids

C_{POL} = Fractional percentage of PM10 or PM2.5 to total PM. For solvent-based surface coating, this value is 0.960 for PM10 and 0.925 for PM2.5. For water-based coatings, this value is 0.680 for PM10 and 0.620 for PM2.5.

100 = Factor for converting percent to a fraction (%)

TE = Transfer efficiency (%)

CE = Efficiency of the control device, if any

PM Emission Sample Calculation

Polyurethane is a two-part kit, the ratio of base to catalyst is 3:1.

Q = 1000 gal/yr entire kit;

V = base 1000 gal/yr * 0.75 = 750 gal/yr; catalyst 1000 gal/yr * 0.25 = 250 gal/yr;

D = base: 10.01 lb/gal; catalyst: 9.10 lb/gal;

VOC = base: 4.10 lb VOC/gal; catalyst: 1.72 lb VOC/gal;

TE = 65% ; FE = 95% ; C_{PM10} = 0.96; $C_{PM2.5}$ = 0.93

Base: E_{PM} = 750 gal/yr x (10.01 lb/gal - 4.10 lb VOC/gal) x [1-(65%/100%)] x [1-(95%/100%)]

E_{PM} = 750 gal/yr x 5.91 lb/gal x 0.35 x 0.05

E_{PM} = 77.6 lb/yr

Catalyst: E_{PM} = 250 gal/yr x (9.10 lb/gal - 1.72 lb VOC/gal) x [1-(65%/100%)] x [1-(95%/100%)]

E_{PM} = 250 gal/yr x 7.38 lb/gal x 0.35 x 0.05

E_{PM} = 32.29 lb/yr

Total PM: E_{PM} = 77.6 lb/yr + 32.29 lb/yr

E_{PM} = 109.89 lb/yr

Total PM10: E_{PM10} = 109.89 lb/yr x 0.96

E_{PM10} = 105.5 lb/yr

Total PM2.5: $E_{PM2.5}$ = 109.89 lb/yr x 0.93

$E_{PM2.5}$ = 102.2 lb/yr

Inorganic HAP Emission Sample Calculation
Polyurethane is a two-part kit, the ratio of base to catalyst is 3:1.

Barium Chromium 1029443 = 1.0% by wt base; Q = 2000 gal/yr entire kit;

V = base 1000 gal/yr * 0.75 = 750 gal/yr; catalyst 1000 gal/yr * 0.25 = 250 gal/yr

D = base: 10.01 lb/gal; catalyst: 9.10 lb/gal;

VOC = base: 4.10 lb VOC/gal; catalyst: 1.72 lb VOC/gal

TE = 65% ; FE = 95%; $WP_{1029443}$ = base: 1.0% by weight; catalyst: 0.0% by weight

Base: $E_{1029443}$ = 750 gal/yr x (1%/100) x [1-(65%/100%)] x [1-(95%/100%)]

$E_{1029443}$ = 750 gal/yr x 0.01 x 0.35 x 0.05

$E_{1029443}$ = 0.13 lb/yr

Catalyst: $E_{1029443}$ = 250 gal/yr x (0%/100) x [1-(65%/100%)] x [1-(95%/100%)]

$E_{1029443}$ = 500 gal/yr x 0.0 x 0.35 x 0.05

$E_{1029443}$ = 0.0 lb/yr

Total PM: $E_{1029443}$ = 0.13 lb/yr + 0 lb/yr

$E_{1029443}$ = 0.13 lb/yr

Fuel Storage

Emission Calculation Methodology

Throughput for storage tanks is defined as the volume of fuel loaded into the tanks. The highest recorded throughput from 2020 to 2024 was used to estimate maximum potential throughput, this value was multiplied by a factor of 4.21, reflecting the ratio of maximum annual operating hours (8,760) to the site's average schedule of 2,080 hours per year (based on 8 hours/day, 5 days/week). This conservative approach assumes fuel throughput increases proportionally with base operations.

Potential emissions for each tank were calculated using this adjusted throughput. Tank design and configuration, such as diameter and shell height, significantly influence vapor emissions. VOC emissions were calculated using the EPA Tanks 5.1 program, which requires input of tank-specific parameters and throughput data. HAP emissions were determined by multiplying total VOC emissions by the vapor-phase weight fraction of each HAP, as listed in Table 9-1 of the Air Emissions Guide for Air Force Stationary Sources (AFCEC, June 2025). Detailed calculations, emission factors, and equipment specifications are provided in Appendix A.

HAP Emission Equation

$E_{HAP} = E_{VOC} \times (WP_{HAP}/100)$

Where:

E_{HAP} = Total HAP emitted from fuel working and breathing losses (lb/yr)

E_{VOC} = Total VOCs emitted due to fuel working and breathing losses (lb/yr)

WP_{HAP} = Weight percent of HAP in the fuel (%)

EF_{Pol} = Emission Factor (lb/10^3 lb)

100 = Factor for converting a percent to a fraction (%)

HAP Emission Sample Calculation

For Tank 312, using a throughput of 59,715,000 gal and the specific tank characteristics, the EPA Tanks 5.1 program calculated the total VOC emissions emitted from the tanks as being 216.77 lbs/yr.

$WP_{Toluene} = 2.83\%$

$E_{Toluene} = (216.77 \text{ lbs/yr}) \times (2.83\% / 100\%)$

$E_{Toluene} = (6.13 \text{ lbs/yr})$

Fuel Dispensing - Gasoline

Emission Calculation Methodology

MCAS Yuma has one gasoline dispensing facility being considered for this permit and it is used primarily to refuel government vehicles (Smith Street Station). There are 3 tanks that dispense at the Smith Street Station, Tanks 367, 368, and 370. Tanks 367 and 368 contain gasoline whereas tank 370 contains E85. Throughput for the gasoline dispensing facility (GDF) is the combined volume of fuel issued out of the 3 tanks. The highest recorded throughput for each tank from 2020 to 2024 was used to represent actual usage of the GDF. To estimate potential emissions, this value was multiplied by a factor of 4.21, reflecting the ratio of maximum annual operating hours (8,760) to the site's average schedule of 2,080 hours per year (based on 8 hours/day, 5 days/week). This conservative approach assumes fuel throughput increases proportionally with base operations. VOC emissions resulting from vapor displacement during fuel dispensing and evaporation from spills were calculated using Equation 6-3 from the Air Force Guide for Air Force Stationary Sources (AFCEC, June 2025). Emission factors for vehicle refueling operations, sourced from Table 5.2-7 in Chapter 5 of AP-42 (EPA, June 2008), are 11 lb per 1,000 gallons for uncontrolled displacement losses and 0.7 lb per 1,000 gallons for spillage. As stated previously, HAP emissions were estimated by multiplying the total VOC emissions by the vapor-phase weight fraction of each HAP present in the fuel. Detailed calculations, emission factors, and equipment specifications are provided in Appendix A.

VOC Emission Equation

$$E_{VOC} = Q \times (1/1000) \times EF_{POL}$$

Where:

E_{VOC} = Total VOCs emitted due to fuel dispensing activities (lb/yr)

$= E_{VOC,Disp} + E_{VOC,Spills}$

Q = Annual quantity of fuel dispensed at the service station (gal/yr)

EF_{VOC} = Emission Factor ($lb/10^3$ lb)

VOC Emission Sample Calculation

For the Smith Street Station:

$Q = 327{,}000$ gal/yr

EF_{VOC} = Vapor displacement: 11 $lb/10^3$ gal; Spillage: 0.7 $lb/10^3$ gal

Vapor displacement: $E_{VOC,Disp} = 327{,}000$ gal/yr x (1/1000) x 11 $lb/10^3$ gal

$E_{VOC,Disp} = 3{,}597$ lb/yr

Evaporative Fuel: $E_{VOC,Spills} = 327{,}000$ gal/yr x (1/1000) x 0.7 $lb/10^3$ gal

$E_{VOC,Spills} = 228.90$ lb/yr

Total VOC: $E_{VOC} = 3{,}597$ lb/yr + 228.9 lb/yr

$E_{VOC} = 3{,}825.9$ lb/yr

HAP Emission Equation

$$E_{HAP} = E_{VOC} \times (WP_{HAP}/100)$$

Where:

E_{HAP} = Total HAP emitted from gasoline dispensing activities (lb/yr)

E_{VOC} = Total VOCs emitted from gasoline dispensing activities (lb/yr)

WP_{HAP} = Weight percent of HAP in the fuel (%)

EF_{Pol} = Emission Factor ($lb/10^3$ lb)

100 = Factor for converting a percent to a fraction (%)

HAP Emission Sample Calculation
For the Smith Street Station:

$E_{VOC,Disp}$= 3,597 lb/yr; $E_{VOC,Spills}$ = 228.90 lb/yr

$WP_{Toluene}$ = 7.00% for Gasoline Liquid Phase; 0.67% for Gasoline Vapor Phase

$E_{Toluene, Disp}$ = (3,597 lb/yr) x (0.67% / 100%)

$E_{Toluene, Disp}$ = 24.1 lb/yr

$E_{Toluene, Spills}$ = (228.9 lb/yr) x (7.00% / 100%)

$E_{Toluene, Spills}$ = 16.02 lb/yr

$E_{Toluene}$ = 24.1 lb/yr + 16.02 lb/yr

$E_{Toluene}$ = 40.1 lb/yr

Section 9 Insignificant and Trivial Activities

Insignificant and trivial activities as defined in the Arizona Administrative Code are exempt from permitting requirements. Insignificant activities are defined at A.A.C. R18-2-101.68 and trivial activities are defined at A.A.C. R18-2-101.146. Table 9-1 below summarizes the sources at MCAS Yuma that meet the definition of insignificant or trivial. Additionally, Table 9-2 below summarizes sources that are not defined insignificant or trivial per A.A.C. but can be justifiably excluded from permitting. Table 9-3 summarizes equipment that has been removed from this permit renewal application due to being removed from the facility or NAICS restructuring. The most common insignificant and trivial activities at MCAS Yuma are summarized from A.A.C. below.

Insignificant Activities

R18-2-101.68.a.i – Petroleum product storage tanks for diesel, fuel oil, lubricating oil, transformer oil, and used oil with capacity of 40,000 gallons or less.

R18-2-101.68.d – Site maintenance activities to include housekeeping activities and architectural painting.

R18-2-101.68.f – Ancillary non-industrial activities to include the use of consumer products, provided the product is used in the same manner as normal consumer use.

Trivial Activities

R18-2-101.146.b.iii - Brazing, soldering, and welding equipment and cutting torches related to manufacturing and construction activities. Brazing, soldering, and welding equipment related to manufacturing and construction activities that emit HAP metals are insignificant activities based on size or production level thresholds.

R18-2-101.146.c.i - Plant and building maintenance and upkeep activities, including grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots, if these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and do not otherwise trigger a permit revision.

R18-2-101.146.c.ii - repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating, degreasing, or solvent metal cleaning.

R18-2-101.146.c.iii - janitorial services and consumer use of janitorial products.

R18-2-101.146.d.i and ii – air conditioning units and ventilating units used for human comfort.

R18-2-101.146.d.ix - use of consumer products.

Table 9-1 Insignificant and Trivial Activities

Building	Name	Model	Serial Number	Material	Rating		Exemption	Reference
78	Tank Fire Suppression			AFFF	25000	GAL	Trivial activity	R18-2-101.146.g.i
80	Tank Fire Suppression			AFFF	25000	GAL	Trivial activity	R18-2-101.146.g.i
81	Tank Fire Suppression			AFFF	25000	GAL	Trivial activity	R18-2-101.146.g.i
95	Tank Fire Suppression			AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
95	Tank Fire Suppression			AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
95	Tank Fire Suppression			AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
97	Tank Fire Suppression			AFFF	3500	GAL	Trivial activity	R18-2-101.146.g.i
97	Tank Fire Suppression			AFFF	3500	GAL	Trivial activity	R18-2-101.146.g.i
101	Tank Fire Suppression	CCS3-1603/8VA	RV3175-AT	AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
101	Tank Fire Suppression	CCS3-1603/8VA	RV3174-AT	AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
103	Tank Fire Suppression	CCS3-1603/8VA	RV3173-AT	AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
103	Tank Fire Suppression	CCS3-1603/8VA	RV3172-AT	AFFF	1600	GAL	Trivial activity	R18-2-101.146.g.i
109	Tank Fire Suppression	CCS-400VDF	SVA4313-AT	AFFF	400	GAL	Trivial activity	R18-2-101.146.g.i
109	Tank Fire Suppression	CCS-400VDF	SVA4312-AT	AFFF	400	GAL	Trivial activity	R18-2-101.146.g.i
220	Tank Fire Suppression	CCS3-406VA	RV2010-AT	AFFF	400	GAL	Trivial activity	R18-2-101.146.g.i
220	Tank Fire Suppression	CCS3-600VA	RV2012-AT	AFFF	600	GAL	Trivial activity	R18-2-101.146.g.i
220	Tank Fire Suppression	CCS3-406VA	RV2009-AT	AFFF	400	GAL	Trivial activity	R18-2-101.146.g.i
220	Tank Fire Suppression	CCS3-600VA	RV2011-AT	AFFF	600	GAL	Trivial activity	R18-2-101.146.g.i
227	Tank Fire Suppression			AFFF	400	GAL	Trivial activity	R18-2-101.146.g.i
227	Tank Fire Suppression			AFFF	400	GAL	Trivial activity	R18-2-101.146.g.i

Building	Name	Model	Serial Number	Material	Rating		Exemption	Reference
75	Tank Ice			Diesel	758	GAL	Insignificant activity	R18.2.101.68.a.i
76	Tank Ice			Diesel	758	GAL	Insignificant activity	R18.2.101.68.a.i
78	Tank Ice			Diesel	370	GAL	Insignificant activity	R18.2.101.68.a.i
80	Tank Ice			Diesel	370	GAL	Insignificant activity	R18.2.101.68.a.i
134	Tank Ice			Diesel	2525	GAL	Insignificant activity	R18.2.101.68.a.i
151	Tank Ice			Diesel	204	GAL	Insignificant activity	R18.2.101.68.a.i
151	Tank Ice			Diesel	500	GAL	Insignificant activity	R18.2.101.68.a.i
153	Tank Ice			Diesel	250	GAL	Insignificant activity	R18.2.101.68.a.i
157	Tank Ice			Diesel	516	GAL	Insignificant activity	R18.2.101.68.a.i
406	Tank Ice			Diesel	994	GAL	Insignificant activity	R18.2.101.68.a.i
406	Tank Ice			Diesel	994	GAL	Insignificant activity	R18.2.101.68.a.i
410	Tank Ice			Diesel	140	GAL	Insignificant activity	R18.2.101.68.a.i
1206	Tank Ice			Diesel	1000	GAL	Insignificant activity	R18.2.101.68.a.i
1419	Tank Ice			Diesel	60	GAL	Insignificant activity	R18.2.101.68.a.i
1419	Tank Ice			Diesel	500	GAL	Insignificant activity	R18.2.101.68.a.i
1420	Tank Ice			Diesel	60	GAL	Insignificant activity	R18.2.101.68.a.i
1420	Tank Ice			Diesel	500	GAL	Insignificant activity	R18.2.101.68.a.i
1520	Tank Ice			Diesel	196	GAL	Insignificant activity	R18.2.101.68.a.i
1520	Tank Ice			Diesel	500	GAL	Insignificant activity	R18.2.101.68.a.i
1521	Tank Ice			Diesel	1800	GAL	Insignificant activity	R18.2.101.68.a.i
420	Tank Cryo			Liquid Oxygen	3000	GAL	Trivial activity	R18-2-146.e.1
420	Tank Cryo			Liquid Oxygen	2000	GAL	Trivial activity	R18-2-146.e.1
420	Tank Cryo			Nitrogen	2000	GAL	Trivial activity	R18-2-146.e.1
420	Tank Cryo			Nitrogen	2000	GAL	Trivial activity	R18-2-146.e.1

Building	Name	Model	Serial Number	Material	Rating		Exemption	Reference
311	Tank, above ground (323)	BRYANT		F24	8000	GAL	Insignificant activity	R18.2.101.68.a.i
311	Tank, above ground (339)			F24	4000	GAL	Insignificant activity	R18.2.101.68.a.i
366	Tank, above ground (366)			Biodiesel	12032	GAL	Insignificant activity	R18.2.101.68.a.i
369	Tank, above ground (369)			Biodiesel	12032	GAL	Insignificant activity	R18.2.101.68.a.i
371	Tank, above ground (371)			ULS Diesel	11518	GAL	Insignificant activity	R18.2.101.68.a.i
149	MAFTD Gen	CR621C		Diesel	40	HP	Off-road, trailer mounted	Mobile/Not Stationary
151	Pony Motor	830104045D785	296830	Diesel	80	HP	Trivial activity	R18-2-146.b.xxii
151	Pony Motor	830104045 D785	296829	Diesel	80	HP	Trivial activity	R18-2-146.b.xxii
151	Pony Motor	830104045 D785	295211	Diesel	80	HP	Trivial activity	R18-2-146.b.xxii
151	Pony Motor	830104045 D785	296831	Diesel	80	HP	Trivial activity	R18-2-146.b.xxii
1420	Emerg. Ice	SD0025GG222.2D18HPYY3	3015247727	Diesel	39	HP	Insignificant activity	Less than 50 HP
230	NID Bath	GB3509-01	53045	MAGNAFLOW BATH	15	GAL	Trivial activity	R18-2-146.f.iii
230	NID Bath	GB3509-01	53045	MAGNAFLOW BATH	15	GAL	Trivial activity	R18-2-146.f.iii
230	NID Bath	ZA-28	M268636	ZYGLO EMULSIFIER	20	GAL	Trivial activity	R18-2-146.f.iii
230	NID Bath	ZA-28	M268636	ZYGLO PENETRANT	20	GAL	Trivial activity	R18-2-146.f.iii
129	NDI Ultrasonic	2510R-MTH	RLB09103632F		0.75	GAL	Trivial activity	R18-2-146.f.iii

Building	Name	Model	Serial Number	Material	Rating		Exemption	Reference
129	Parts Washer	PRO	AU-OMG5022DB	7930-MC-002-1279	35	GAL	Negligible emissions	NO VOC OR HAP
140	Parts Washer	600E	600E001509	Bio-Circle	25	GAL	Negligible emissions	NO VOC OR HAP
420	Parts Washer	AZ04145-C2G	8505833-K8H	AquaVantage 815 GD	30	GAL	Negligible emissions	NO VOC OR HAP
491	Parts Washer	300A	103-512	Bio-Circle	36	GAL	Negligible emissions	NO VOC OR HAP
491	Parts Washer	300A	502-241	Bio-Circle	36	GAL	Negligible emissions	NO VOC OR HAP
491	Parts Washer	300A	104-218	Bio-Circle	29	GAL	Negligible emissions	NO VOC OR HAP
83	Parts Washer	79260	18031758	Power Green	35	GAL	Negligible emissions	NO VOC OR HAP
129	Stripper Rinse Tank	ACT S6 RINSE	ACT4712-02	Water	455	GAL	Negligible emissions	NO VOC OR HAP
234	Stripper Rinse Tank	ACT S4X RINSE	ACT471702	Water	312	GAL	Negligible emissions	NO VOC OR HAP
234	Welder	TRAILBLAZER 250G		Gasoline	5256	LB	Inactive.	Deployments only
230	Welder GMAW	AEROWAVE	LE343525	Electric	3504	LBS	Inactive.	Deployments only
129	Welder GMAW	Dynasty 280	NB140580L	Electric	3504	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
129	Welder GMAW	MILLERMATIC 180	LJ240717N	Electric	1752	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
129	Welder GMAW	MILLERMATIC 350P	MF283016N	Electric	3153	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
83	Welder SMAW	IDEAL ARC SP-255	U1961008068	Electric	3504	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
83	Welder TIG	Dynasty 200	KJ096961	Electric	3504	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
83	Welder TIG	Dynasty 200	KJ096961	Electric	3504	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
230	Welder TIG	TRAILBLAZER	MJ370336R	Electric	5256	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i
230	Welder TIG	DYNASTY 400	ND300602L	Electric	3504	LBS	Trivial activity	R18-2-101-146.b.iii/ R-18-2-101-146.c.i

Table 9-2 Excluded from Permitting

Source Type	Exclusion Rationale
Portable Jet Engine Test Stand	Considered a mobile source
Chillers	Equipment are closed-loop non-emitters
Aircraft Defueling	Not a stationary source

Table 9-3 Removed Equipment

Source Type							Exclusion Rational
ID	Building	Name	Make	Model	Serial Number	Rating	
358	MQ9	Emergency ICE	John Deere	6068HFG08	PE6068U066727	201 HP	Moved to NAICS 928
359	MQ9	Emergency ICE	John Deere	6068HFG08	PE6068U064622	201 HP	Moved to NAICS 928
525	310	Engine Test Cell T-10	Rolls Royce	F402-RR-408			Removed From Facility
524	310	Engine Test Cell T-26	Lucas Mark IV APU	GTS-APU-CR00305	LZH0026		Removed From Facility
578	1409	Engine Test Cell T-36	Rolls Royce	F402-RR-408			Removed From Facility

Section 10 Regulatory Compliance Summary

Permit Requirements

The current ADEQ Air Permit: 87288 was issued April 1, 2021, and expires March 31, 2026. Table 5-1 summarizes permit requirements that will be included in the permit renewal that are part of the current permit. Table 5-2 summarizes permit requirements for storage tanks and gasoline dispensing facilities that are newly applicable to this permit renewal.

Table 10-1 Permit Requirements

Equipment/ Process	ID	Requirement Description	Reference
Boilers	100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120	Fuel is limited to natural gas in all boilers, water heaters, and IR heaters. Maximum particulate matter emission limitation is provided by the following equation: $E=1.02Q^{0.769}$ Where: E= maximum particulate emission rate in pounds-mass per hour Q= heat input in million BTU per hour Opacity of emission emitted from stacks associated with boilers must not exceed 15%, measured in accordance with EPA Reference Method 9.	A.A.C. R18-2-306A.2 and -331.A.3.e A.A.C. R18-2-724.C.1 A.A.C. R18-2-724.J
Water Heaters	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224		
IR Heaters	800, 801, 802, 803, 804, 805, 806, 807,		
Emergency ICEs	300, 301, 302, 303, 304, 305, 308, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316	Emergency ICEs are limited to burning only diesel fuel. For emergency ICEs not regulated by NSPS, particulate matter emission limitations are calculated by the following equation: $E= 1.02Q^{0.769}$ Where: E= maximum allowable particulate emissions rate in pounds-mass per hour Q= heat input in million BTU per hour Opacity of smoke emitted into the atmosphere shall not exceed 40%,	A.A.C. R18-2-306.A.2 A.A.C. R18-2-719.C.1 A.A.C. R18-2-719.E

		measured in accordance with EPA Reference Method 9. For emergency ICEs regulated by NSPS, emergency ICE shall be limited to emergency situations and required testing and maintenance (logbook must be maintained). Operations for maintenance and testing is limited to 100 hours per year, operations other than emergency, maintenance and testing, and operation in non-emergency situations are limited to 50 hours per year, to be included in the 100 hour per year total. **There is no limit on the use of emergency ICE in emergency situations.** Emergency ICE regulated by NSPS shall comply with emission standards listed in the applicable regulations for the same model year and cylinder displacement. A non-resettable hour meter must be installed. For emergency ICE regulated by NESHAP, operation is limited to emergency situations and required maintenance and testing. Maintenance and testing operations are limited to no more than 100 hours per year, operations in non-emergency situations are limited to 50 hours per year which is counted towards the 100-hour limit. A logbook must be maintained. Required oil change, air cleaner, and hose/belt maintenance shall be conducted in accordance with federal regulations.	NSPS 40 CFR 60 Subpart IIII, 40 CFR 60.4211(f) 40 CFR 60.4205(a), (b), (c), and (f) 40 CFR 60.4209(a), R18-2-306.A.3, 40 CFR 63.6625(t) NESHAP 40 CFR 63 Subpart ZZZZ, 40 CFR 63.6640(f)(1)(ii) NESHAP 40 CFR 63 Subpart ZZZZ
Gear Arresting Engines	400, 401, 402, 403, 404, 405, 406, 407	Gear arresting engines are limited to burning gasoline fuel. For gear arrester engines not regulated by NSPS, particulate matter emission limitations are calculated by the following equation: $E= 1.02Q^{0.769}$ Where: E= maximum allowable particulate emissions rate in pounds-mass per hour Q= heat input in million BTU per hour Opacity of smoke emitted into the atmosphere shall not exceed 40%,	A.A.C. R18-2-306.A.2 A.A.C. R18-2-719.C.1 A.A.C. R18-2-719.E

		measured in accordance with EPA Reference Method 9. For gear arresting engines regulated by NESHAP, operation is limited to emergency situations and required maintenance and testing. Maintenance and testing operations are limited to no more than 100 hours per year, operations in non-emergency situations are limited to 50 hours per year which is counted towards the 100-hour limit. A logbook must be maintained.	NESHAP 40 CFR 63 Subpart ZZZZ, 40 CFR 63.6640(f)(1)(ii)
Abrasive Blast Cabinets	514, 515, 516, 517, 518	Visible emissions from sandblasting or other abrasive blasting operations shall not exceed 20% opacity. A logbook shall be maintained recording each abrasive blasting operation.	A.A.C. R18-2-702.B.3 A.A.C. R18-2-726 A.A.C. R18-2-306.A.3.c
Parts Washers/ Degreasers	500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513	Gaseous or odorous emissions shall not be emitted, and materials must be processed, stored, used and transported in a manner to not evaporate, leak, escape or otherwise discharge into the ambient air.	A.A.C. R18-2-730.D, F, G
Booth Painting	519, 520	No spray-painting operation shall be conducted without minimizing organic solvent emissions. Operations, other than architectural coating and spot painting, shall be conducted in an enclosed area with controls containing no less than 96% of overspray. A logbook must be maintained recording each time a spray-painting project is conducted in a paint booth. Visible emissions from painting operations shall not exceed 20% opacity.	A.A.C. R18-2-727.A A.A.C. R18-2-306.A.3.c A.A.C. R18-2-702.B.3
Miscellaneous Material Use Facility-wide -HAP	NA	All emission units within the MCAS Yuma fenceline, regardless of NAICS code designation, shall be included in HAP emission calculations. Records of daily usage of all materials containing HAPs shall be maintained. A facility wide Mass Balance shall be conducted if monthly total HAP material usage is greater than 25% of the same month from the previous year.	A.A.C. R18-2-306.01

Fugitive Dust: Open Areas, Roadways and Streets, Storage Piles, and Material Handling	N/A	Opacity of emissions from any fugitive dust non-point source shall not exceed 40%. Reasonable precautions must be used to prevent excessive amounts of particulate matter from becoming airborne.	A.A.C. R18-2-614 A.A.C. R18-2-604, 605, 606, 607
Demolition and Renovation (HAP)	N/A	None	NESHAP 40 CFR 61 Subpart M, A.A.C. R18-2-306

Table 10-2 Newly Applicable Permit Requirements

Equipment/ Process	ID	Requirement Description	Reference
F24 Fuel Storage Tanks	312, 336, 337	Storage vessels for petroleum liquids (non-gasoline) shall follow all applicable federal standards set forth in NSPS and NESHAP and state requirements.	40 CFR 60 Subpart Kb A.A.C R18-2-710 A.A.C R18-2-905
Gasoline Dispensing Facility (GDF) – Smith Street Station	367, 368, 370	Monthly throughput of gasoline is the total volume of gasoline loaded into all gasoline storage tanks during a month, as calculated on a rolling thirty-day average. Gasoline shall be handled in a manner that will not result in vapor releases to the atmosphere for extended periods of time. All gasoline shall be loaded into storage tanks by utilizing submerged filling. Monthly records of gasoline throughput for the GDF shall be maintained.	40 CFR 63 Subpart CCCCC 40 CFR 63.11116 40 CFR 63.11117

Compliance Schedule

MCAS Yuma is currently in compliance with all applicable requirements. Therefore, a compliance schedule to bring sources into compliance is not necessary. MCAS Yuma will work with the ADEQ to create a schedule for compliance resulting from any new permit requirements or future state and federal rules.

Rule Requirement Review

Rule applicability was performed during the permit renewal application process. This permit application reviewed the rules that could possibly be applicable based on equipment and operations conducted at MCAS Yuma.

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

When a new source is proposed at MCAS Yuma, New Source Performance Standards (NSPS) will be reviewed to determine applicability as required by the general provision in Subpart A.

Subpart IIII, Standards of performance for Stationary Compression Ignition Internal Combustion Engines. MCAS Yuma is compliant with this standard. New stationary sources must meet the applicable emission standards based on year of manufacture and rating. A non-resettable hour meter must be installed before operation begins. Records are maintained noting maintenance and operational times with maintenance times limited to 100 hours per year.

Subpart JJJJ, Standards of performance for Stationary Spark Ignition Internal Combustion Engines. MCAS Yuma is compliant with this standard. New stationary sources must meet the applicable emission standards based on year of manufacture and rating. A non-resettable hour meter must be installed before operation begins. Records are maintained noting maintenance and operational times with maintenance times limited to 100 hours per year.

40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP)

MCAS Yuma will comply with Subpart M regulations concerning asbestos demolition and renovation, section 61.145.

40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAP)

After review of all emission sources and updates to Potential to Emit calculations and emission factors, MCAS Yuma is not a major source of Hazardous Air Pollutants. NESHAP standards will be reviewed to ensure that all applicable sources comply with these requirements. NESHAPs that were reviewed for applicability include:

Subpart T, regulations controlling air emissions from halogenated solvents does not apply. MCAS Yuma does not use halogenated solvents in their parts washers or paint stripping equipment.

Subpart MMMM, regulations controlling air emissions from surface coating of miscellaneous metal parts and products does not apply. MCAS Yuma is not a major source.

Subpart ZZZZ, regulations controlling air emissions from reciprocating internal combustion engines applies to new and existing diesel engines. MCAS Yuma will comply with Subpart ZZZZ.

Subpart PPPPP, regulations controlling air emissions from engine test cells does not apply. MCAS Yuma is not a major source.

Subpart HHHHHH, regulations for controlling air emissions from paint stripping and miscellaneous surface coating operations at area sources does not apply. Operations at Department of Defense facilities is exempt per 63.11169(d)(1) and (2).

Subpart JJJJJJ, regulation for area boilers does not apply. All boilers on MCAS Yuma are fueled by natural gas.

EPA Mandatory Greenhouse Gas Reporting Rule (EPA MRR) (74 FR Part 98)

MCAS Yuma's annual greenhouse gas (GHG) emissions are below the mandatory reporting limit. Therefore, MCAS Yuma is not required to report GHG emissions.

New Source Review, BACT/LAER Determination, Emission Offsets

This permit application is for a renewal; therefore, there are no increases in emissions requiring Best Available Control Technology (BACT) or Lowest Achievable Emission Rate (LAER) determination or offsets. If a new source were to be proposed, MCAS Yuma would perform all New Source Review, BACT, and LAER determination as required, and review the purchase of emission offsets if necessary.

Arizona Revised Statues and Arizona Administrative Code Title 18, Chapter 2, Air Quality

Article 1 – General

MCAS Yuma will continue to comply with this rule by interpreting all rule requirements using these general definitions, unless other definitions are given within a specific rule. [Amended by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2).]

Article 2 – Ambient Air Quality Standards; Area Designations; Classifications

This rule refers to requirements for ADEQ. Therefore, MCAS Yuma does not have to perform any actions to comply with this rule. [Amended by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2).]

Article 3 – Permits and Permit Revisions

MCAS Yuma will not commence construction of, operate, or make modifications to any source subject to the regulations under this rule without first obtaining a permit or permit revision. MCAS Yuma will submit permit applications, appropriate forms, certifications and fees as well as data from any requests for additional information in a timely manner. Upon approval of the registration program, MCAS Yuma will submit applications for registration in accordance with the rules.

Subsection 333. Acid rain regulations, 40 CFR Parts 72, 74, 76 and its appendices, do not apply to MCAS Yuma.

Subsection 334. MCAS Yuma will comply with the Minor New Source Review section by determining if a new source or minor revision to a source has the potential to emit any regulated minor NSR pollutant equal to or greater than the permitting exemption threshold. [New Section made by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2).]

Article 4 – Permit Requirements for New Major Sources and Major Modifications to Existing Major Sources

MCAS Yuma is not classified as a major source. As a result, this subchapter does not apply. [New Section made by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2).]

Article 5 – General Permits

MCAS Yuma's is not applying for a general permit. As a result, this rule does not apply. [New Section made by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2).]

Article 6 – Emissions from Existing and New Nonpoint Sources

Subsection 602. Firefighter training in the fire tower and on the MAFTD is exempt from permitting. The MAFTD engine is captured under stationary sources.

Subsection 604-605. MCAS Yuma will use reasonable precautions to keep dust to a minimum on open areas and dry washes, when cleaning or repairing roadways and alleys, and when transporting materials.

Subsection 606-607. Reasonable precautions will be used to keep dust to a minimum from storage piles and material handling. Opacity will not exceed 40% using EPA Method 9 for applicable activities.

Subsection 609-613. The rules for agricultural practices do not apply to MCAS Yuma.

Subsection 614, opacity of an emission from any nonpoint source, except fire fighter training, shall not be greater than 40% measured according to the 40 CFR 60, Appendix A, Reference Method 9.

[Amended by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2).

Article 7 –Existing Stationary Sources Performance Standards

Subsection 703. Where applicable, MCAS Yuma will follow the guidelines for the equipment listed under subsection 703 for general fuel burning equipment. Opacity will not exceed 40% using EPA Method 9 for applicable activities.

Subsection 719. MCAS Yuma will follow the guidelines for the equipment listed for existing stationary rotating machinery. Particulate matter emission rates will meet requirements. Sulfur emission will not exceed the allowed rate and low sulfur fuel will be used. Opacity will not exceed 40% using EPA Method 9.

Subsection 724. MCAS Yuma will follow the guidelines for the equipment listed. For boilers under 250 MMBtu/hr aggregate, particulate matter emission rates will meet requirements. Opacity will not exceed 15% using EPA Method 9.

Subsection 726. MCAS Yuma will follow the guidelines for the equipment listed. For abrasive blasting operations, good modern practices will be used to minimize dust emissions.

Subsection 727. MCAS Yuma will follow the guidelines for the equipment listed for spray painting operations. This does not cover architectural or spot painting. Painting will be done in an enclosed area that contains 96% of the overspray. Architectural painting will not contain photochemically reactive solvents over the allowed concentrations.

For unclassified sources. Opacity will not exceed 40% using EPA Method 9 for applicable sources.

Subpart 730. Particulate matter, nitrogen dioxides and sulfur dioxides will not be emitted in rates greater than those specified. No person shall emit gaseous or odorous materials from equipment, operations or premises under the person's control in such quantities or concentrations as to cause

air pollution. Materials containing volatile compounds shall be processed, stored, used and transported in such a manner that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. A stack, vent or other outlet will not discharge fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property. This section would include the jet engine test cell, welding, and parts washers and degreasers. [Amended by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012 (Supp. 12-2)]

Article 8 – Emissions from Mobile Sources (New and Existing)

Mobile sources and off-road machinery shall not emit smoke or dust the opacity of which exceeds 40% for any period greater than 10 consecutive seconds. Visible emissions when starting cold equipment is exempt from for the first 10 minutes. Reasonable precautions to prevent particulate matter from becoming airborne when cleaning any site, roadway, or alley.

[Effective November 15, 1993 (Supp. 93-4).]

Article 9 – New Source Performance Standards

Subsection 905. For petroleum liquid storage vessels. MCAS Yuma will comply with this section for applicable fuel tanks. [Effective November 15, 1993 (Supp. 93-4).]

Article 10 – Motor Vehicles; Inspections and Maintenance

MCAS Yuma is outside the mandatory testing areas. This rule does not apply. [Amended by final rulemaking at 8 A.A.R. 90, effective January 1, 2002 (Supp. 01-4).]

Article 11 – Federal Hazardous Air Pollutants

MCAS Yuma shall comply with applicable Federal NESHAPs. [Amended by final rulemaking at 13 A.A.R. 4199, effective January 5, 2008 (Supp. 07-4).]

Article 12 – Emission Bank

This does not apply to MCAS Yuma.

Article 13 – Diesel Conversion Grant Program

This does not apply to MCAS Yuma.

Article 14 – Conformity Determination

MCAS Yuma complies with Federal General Conformity Rules. The transportation portion will comply with these requirements. [Adopted effective June 15, 1995 (Supp. 95-2).]

Article 15 – Forest and Range Management Burns

This does not apply to MCAS Yuma.

Article 16 – Regional Haze

This Article expired and does not apply to MCAS Yuma.

Article 17 - Arizona State Hazardous Air Pollutants Program

This Article expired in 2016 and no longer applies to MCAS Yuma.

Section 11 Updates for Permit Renewal

The executive summary highlighted the changes that have occurred for this permit renewal. This section covers those changes and provides tables highlighting the changes that have occurred for the individual pieces of equipment.

Equipment Changes

The tables below showcase minor changes that have been made for this permit renewal for equipment ID numbers, typo corrections, and removal/replacement for certain equipment.

Table 11-1 Boilers, Water Heaters, IR Heaters Changes

Equipment List									
Changes Indicated	Type	Capacity, MMBtu/hr	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REMOVED	~~Boiler-HT/HW~~	~~0.199~~	~~Laars Neotherm~~	~~NTV199NXN3~~	~~263~~		~~75~~	~~G14278427~~	~~2014~~
REPLACED	Boiler-HT/HW	0.199	Brute Elite	BNTV199NXN3	263	100	75	G14325046	2014
UPDATE	Boiler-HT/HW	0.199	Laars Neotherm	NTV199NXN3	264	101	75	~~G14278418~~ G14278410	2014
UPDATE	IR Heater	~~0.360~~ 1.200	Reznor	VP1N60ASN	265	800	75	BM146780X	2014
	Boiler-HT/HW	0.199	Laars Neotherm	NTV199NXN3	259	102	76	G14278431	2014
REMOVED	~~Boiler-HT/HW~~	~~0.199~~	~~Laars Neotherm~~	~~NTV199NXN3~~	~~260~~		~~76~~	~~G14278407~~	~~2014~~
REPLACED	Boiler-HT/HW	0.199	Laars Neotherm	NTV199NXN3	260	103	76	G21471761	2021
UPDATE	IR Heater	~~0.360~~ 1.200	Reznor	VP1N60ASN	261	801	76	BM632736X	2014

Changes Indicated	Type	Capacity, MMBtu/hr	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
UPDATE	Water Heater	0.400	AO Smith	~~BTH400~~ BTH400A100	253	200	78	1138M000924	~~2012~~ 2011
UPDATE	Water Heater	0.400	AO Smith	~~BTH400~~ BTH400A100	254	201	78	1207M000790	2012
UPDATE	IR Heater	~~0.366~~ 0.480	Ambirad	ARC18LR	255	802	78	101117430505	2011
UPDATE	IR Heater	~~0.492~~ 0.600	Ambirad	ARC24LR	256	803	78	101117430531	2011
UPDATE	Water Heater	0.400	AO Smith	BTH400A100	249	202	80	1138M000923	~~2012~~ 2011
UPDATE	Water Heater	0.400	AO Smith	BTH400A100	250	203	80	1138M000178	~~2012~~ 2011
UPDATE	IR Heater	~~0.366~~ 0.480	Ambirad	ARC18LR	251	804	80	101117430528	2011
UPDATE	IR Heater	~~0.492~~ 0.600	Ambirad	ARC24LR	252	805	80	101117430533	2011
UPDATE	IR Heater	~~0.300~~ 0.179	Space-Ray	CB20-N5	888	806	83	727162	2012
NEW ADDITION	Water Heater	0.078	AO Smith	BTH-250A 300		204	95	2041121320945	2020
NEW ADDITION	Water Heater	0.078	AO Smith	BTH-250A 300		205	95	2207128228013	2022
NEW ADDITION	Water Heater	0.078	AO Smith	BTH-250A 300		206	95	2034120626160	2020
REMOVED	~~Boiler-Heat~~	~~0.333~~	~~Raypak~~	~~H3-0333~~	~~102~~		~~101~~	~~9811154374~~	~~1999~~
REMOVED	~~Water Heater~~	~~0.040~~	~~Whirlpool~~	~~N40T121-403 low NO_x~~	~~889~~		~~101~~	~~1514101282405~~	~~2015~~
REPLACED	Water Heater	0.150	AO Smith	BTH-150300	102	207	101	1746108246054	2017
REPLACED	Water Heater	0.150	AO Smith	BTH-150300	889	208	101	1746108246055	2017

Changes Indicated	Type	Capacity, MMBtu/hr	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REMOVED	~~Water Heater~~	~~0.199~~	~~AO Smith~~	~~BTH199100~~	~~228~~		~~103~~	~~0827M000793~~	~~2008~~
REMOVED	~~Water Heater~~	~~0.199~~	~~AO Smith~~	~~BTH199100~~	~~229~~		~~103~~	~~0827M000789~~	~~2008~~
REPLACED	Water Heater	0.200	AO Smith	BTH-199300	228	209	103	1809109475712	2018
REPLACED	Water Heater	0.200	AO Smith	BTH-199300	229	210	103	1809109475716	2018
	Boiler-Heat	0.285	Lochinvar	KBN286	832	104	109	A14H10290193	2014
UPDATE	Water Heater	0.040	Whirlpool	BFG1H5040T3NOV	230	211	109	~~0838T46337~~ 0838T416337	2002
UPDATE	Boiler-HT/HW	0.105	Laars Neotherm	~~NTH105NXNS~~ NTH105NXN3	806	105	112	G14278362	2014
NEW ADDITION	Water Heater	0.100	AO Smith	BTX-100300		212	140	2218129388465	2022
REMOVED	~~Water Heater~~	~~0.034~~	~~Rheem~~	~~PROG40S-34NRH62~~	~~890~~		~~144~~	~~Q071731980~~	~~2017~~
REMOVED	~~Water Heater~~	~~0.038~~	~~Vanguard~~	~~5AU69~~	~~266~~		~~146~~	~~VGLNQ431305965~~	~~2013~~
REMOVED	~~Boiler-Heat~~	~~0.399~~	~~Lochinvar~~	~~KBN400~~	~~293~~		~~146~~	~~H12H10230403~~	~~2013~~
UPDATE	Boiler-Heat	0.400	Lochinvar	KBN400	141	106	149	~~1712105377095~~ 1712105377098	2017
REMOVED	~~Water Heater~~	~~0.100~~	~~AO Smith~~	~~BTXL-100~~	~~142~~		~~149~~	~~100211240~~	~~2017~~
REPLACED	Water Heater	0.100	AO Smith	BTXL-100140	142	213	149	1716105857112	2017
REMOVED	~~Boiler-Heat~~	~~0.627~~	~~Raypak~~	~~H2-0624~~	~~220~~		~~153~~	~~808286340~~	~~Pre-2005~~
REMOVED	~~Water Heater~~	~~0.075~~	~~Rheem~~	~~PRO+G75-76N RH~~	~~143~~		~~153~~	~~Q521723434~~	~~N/A~~

Changes Indicated	Type	Capacity, MMBtu/hr	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REPLACED	Boiler-Heat	0.999	Lochinvar	FBN1001	220	107	153	2004117828861	2019
REPLACED	Boiler-Heat	0.600	Lochinvar	FTX600N	143	108	153	2007118122092	2019
NEW ADDITION	Water Heater	0.078	AO Smith	BTH-199 300		214	154	2145126922604	2021
NEW ADDITION	Water Heater	0.315	Lochinvar	HVX90-150		215	157	F14J00264591	2015
	IR Heater	1.800	Roberts Gordon	CRV B-10	269	807	157	1402-027-100-0036	2013
	Boiler-HT/HW	0.399	Laars Neotherm	NTH399NXN3	842	109	220	G13261293	2013
REMOVED	~~Water Heater~~	~~0.075~~	~~Rheem~~	~~42V75F~~	~~298~~		~~223~~	~~RHLNM221213151~~	~~2012~~
REPLACED	Water Heater	0.040	Rheem	PROPG38-40N RH69 PD	298	216	223	Q062164072	2021
REMOVED	~~Water Heater~~	~~0.154~~	~~AO Smith~~	~~BTR154106~~	~~134~~		~~227~~	~~ME000934039~~	~~1992~~
REPLACED	Water Heater	0.040	Rheem	PROG50-40NRH62	134	217	227	M391916646	2019
	Boiler-Heat	0.500	Lochinvar	KBN501	294	110	227	H12H10217176	2013
REMOVED	~~Water Heater~~	~~0.200~~	~~Rheem~~	~~G100-200~~	~~126~~		~~230~~	~~URNG0998G00679~~	~~1992~~
REPLACED	Water Heater	0.156	Rheem	G82-156	126	218	230	A201903338	2019
	Boiler-Heat	0.399	Lochinvar	KBN400	295	111	230	H12H10230393	2013
	Boiler-Heat	0.150	Lochinvar	KBN151	296	112	234	H12H10225796	2013
REMOVED	~~Water Heater~~	~~0.040~~	~~AO Smith~~	~~SLGCV40100~~	~~130~~		~~328B~~	~~J07J044802~~	~~2007~~

Changes Indicated	Type	Capacity, MMBtu/hr	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REPLACED	Water Heater	0.04	AO Smith	GCR-40400	130	219	328B	1707105036453	2017
	Boiler-HT/HW	0.285	Laars Neotherm	NTH285NXN3	834	113	406	G14307838	2014
	Boiler-HT/HW	0.285	Laars Neotherm	NTH285NXN3	835	114	406	G14307858	2014
	Boiler-Heat	0.650	Raypak	H3-0652B	246	115	406A	1008313126	2010
REMOVED	~~Boiler-Heat~~	~~0.650~~	~~Raypak~~	~~H3-0652B~~	~~247~~		~~406A~~	~~1008313125~~	~~2010~~
REPLACED	Boiler-Heat	0.650	Raypak	H3-0652C	247	116	406A	1801457756	2018
REMOVED	~~Boiler-HT/HW~~	~~0.500~~	~~Laars Neotherm~~	~~NTH500NJN3~~	~~270~~		~~408~~	~~G13276665~~	~~2013~~
UPDATE	Boiler-Heat	0.200	Lochinvar	~~KHN199 (~~KHB199N)	181	117	410	~~183811184761~~ 1838111884761	2018
UPDATE	Boiler-Heat	0.200	Lochinvar	~~KHN199 (~~KHB199N)	186	118	410	1839111968092	2018
UPDATE	Boiler-Heat	0.200	Lochinvar	~~KHN199 (~~KHB199N)	189	119	410	1838111884734	2018
	Water Heater	0.120	AO Smith	BTH120A100	274	220	410	1149M000738	2011
UPDATE	Water Heater	0.040	AO Smith	GVR40 300 ~~low NOx~~	891	221	490	1434J002499	2014
REMOVE	~~Water Heater~~	~~0.040~~	~~AO Smith~~	~~GVR40 400~~	~~895~~		~~495~~	~~1606J002499~~	~~2016~~
REMOVE	~~Boiler-Heat~~	~~0.100~~	~~Ajax~~	~~WGH100S~~	~~218~~		~~510~~	~~6882~~	~~1983~~
	Water Heater	0.038	Vanguard	5AU69	807	222	530	VGNLQ431305966	2013
REMOVED	~~Boiler-HW~~	~~0.399~~	~~AO Smith~~	~~BT400A118~~	~~892~~		~~1229~~	~~1648104152134~~	~~2016~~

Changes Indicated	Type	Capacity, MMBtu/hr	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REPLACED	Water Heater	0.300	Rheem	G72-300A	892	223	1229	A451902989	2019
	Boiler-Heat	0.399	Lochinvar	KBN400	893	120	1229	3015101823257	2015
UPDATE	Water Heater	0.200	Bradford White	EF100T199E3N2	830	224	1256	~~HM159009596~~ HM15900959	2014
REMOVE	Boiler-Heat	0.395	TBD	TBD	864		TBD	TBD	1989
REMOVE	Water Heater	0.038	TBD	TBD	865		TBD	TBD	2015
REMOVE	Boiler-HT/HW	0.199	TBD	TBD	866		TBD	TBD	2015
REMOVE	Boiler-HT/HW	0.199	TBD	TBD	867		TBD	TBD	2015
REMOVE	Water Heater	0.199	TBD	TBD	869		TBD	TBD	2015
REMOVE	Boiler-Heat	0.399	TBD	TBD	870		TBD	TBD	2015
REMOVE	Water Heater	0.400	TBD	TBD	872		TBD	TBD	2015
REMOVE	Water Heater	0.400	TBD	TBD	873		TBD	TBD	2015

Table 11-2 Internal Combustion Engines Changes

Equipment List									
Changes Indicated	**Type**	**Capacity, HP**	**Make**	**Model**	**Equipment ID 87288**	**NEW Equipment ID**	**Building Number**	**Serial Number**	**Year of Manufacture**
	Emergency ICE	315	Kohler	220REOZJF	352		75	SGM3262D	2013
UPDATE	Emergency ICE	315	JOHN DEERE	6068HFG85	352	300	75	PE6068L917796	2013
	Emergency ICE	315	Kohler	220REOZJF	351		76	SGM3262C	2013
UPDATE	Emergency ICE	315	JOHN DEERE	6068HFG85	351	301	76	PE6068L917800	2013
	Emergency ICE	286	Onsite Energy	431CSL62061	343		78	MX168398	2012
UPDATE	Emergency ICE	286	JOHN DEERE	6068HF485	343	302	78	PE6068L200888	2012
	Emergency ICE	286	Onsite Energy	431CSL62061	342		80	MX168027	2012
UPDATE	Emergency ICE	286	JOHN DEERE	6068HF485	342	303	80	PE6068L200882	2012
	Emergency ICE (FL)	755	Cummins	500DFEK-756913	341		134	H110234933	2011
UPDATE	Emergency ICE (FL)	755	Cummins	QSX15-G9	341	304	134	79497909	2011
	Emergency ICE (FL)	415	Kohler	250REOZD	301		151	2020818	2004
UPDATE	Emergency ICE (FL)	490	Detroit D.	60, Family: 4DDXl12.7VGD	301	305	151	06R0809992	2004
	Emergency ICE (FL)	550	Kohler	250REOZD	302		153	656546	1998
UPDATE	Emergency ICE (FL)	550	Detroit D.	6063TK35	302	306	153	06R0577636	2000
	Emergency ICE	364	Cummings	DSHAD-1333043	350		157	G13053-1560	2013

Changes Indicated	Type	Capacity, HP	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
UPDATE	Emergency ICE	364	Cummings	QSL9-G2 NR3	350	307	157	73550984	2013
	Emergency ICE	385	Kohler	250REOZJE	338		406	2327521	2011
UPDATE	Emergency ICE	385	JOHN DEERE	6090HF484	338	308	406	RG6090L100592	2011
	Emergency ICE	385	Kohler	250REOZJE	339		406	2327554	2011
UPDATE	Emergency ICE	385	JOHN DEERE	6090HF484	339	309	406	RG6090L100583	2011
	Emergency ICE	145	Onan	DSFAA-10094821	349		410	B120308603	2012
UPDATE	Emergency ICE	145	Cummins	QSB5-G3 NR3	349	310	410	73364708	2012
	Emergency ICE	324	Cummins	DSGAD	354		427	G120367158	2012
UPDATE	Emergency ICE	324	Cummins	QSB7-G5 9R3	354	311	427	73428170	2012
	Emergency ICE (FL)	220	Kohler	135REOZJC	304		1215	2029656	2005
UPDATE	Emergency ICE (FL)	220	JOHN DEERE	6068HF275	304	312	~~1215~~ 1206	PE6068H430893	2005
	Emergency ICE (FL)	64	Kohler	30REOZJB	305		1419	0744638	2002
UPDATE	Emergency ICE (FL)	64	JOHN DEERE	3029TF150	305	313	1419	PE3029T225491	2002
	Emergency ICE (FL)	64	Kohler	30REOZJB	306		1420	0744639	2002
UPDATE	Emergency ICE (FL)	64	JOHN DEERE	3029TF150	306	314	1420	PE3029T217153	2002
NEW ADDITION	Emergency ICE (FL)	39	TBD	TBD	TBD	TBD	1420	TBD	2024
	Emergency ICE (FL)	220	Kohler	135REOZJC	319		1520	2021767	2004

Changes Indicated	Type	Capacity, HP	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
UPDATE	Emergency ICE (FL)	220	JOHN DEERE	6068HF275	319	315	1520	PE6068H411366	2004
	Emergency ICE (FL)	757	Kohler	500REOZJV	307		1521	2027943	2005
UPDATE	Emergency ICE (FL)	660	Volvo	TAD1631GE	307	316	1521 (ATC)	2160052609	2005
REMOVE	Emergency ICE	315	TBD	TBD	363 (ATC)		TBD	TBD	2013
REMOVE	Emergency ICE	315	TBD	TBD	364		TBD	TBD	2013
REMOVE	Emergency ICE	315	TBD	TBD	365		TBD	TBD	2013
REMOVE	Emergency ICE	364	TBD	TBD	366		TBD	TBD	2013
MOVED TO NAICS 928	Emergency ICE	201	Kohler	125REOZJ4	358		MQ-9	TBD	2018
MOVED TO NAICS 928	Emergency ICE	201	JOHN DEERE	6068HFG08	358		MQ-9	PE6068U066727	2018
MOVED TO NAICS 928	Emergency ICE	201	Kohler	125REOZJ4	359		MQ-9	TBD	2018
MOVED TO NAICS 928	Emergency ICE	201	JOHN DEERE	6068HFG08	359		MQ-9	PE6068U064622	2018
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	437	400	Flight Line	11030024	2013
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	438	401	Flight Line	12060017	2013
UPDATE	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	429	402	Flight Line	~~101000162~~ 10100016	2010

Changes Indicated	Type	Capacity, HP	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	430	403	Flight Line	10100002	2010
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	431	404	Flight Line	10100033	2010
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	432	405	Flight Line	10100009	2010
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	433	406	Flight Line	11030013	2010
	Gear Arrestor Engine	65.9	Wisconsin Motors	V465D1-467515	434	407	Flight Line	11040003	2010

Table 11-3 Additional Equipment Changes

Equipment List									
Changes Indicated	**Type**	**Capacity**	**Make**	**Model**	**Equipment ID 87288**	**NEW Equipment ID**	**Building Number**	**Serial Number**	**Year of Manufacture**
REMOVED FROM FACILITY	~~Engine Test Cell T-10~~	~~381,000~~	~~Rolls Royce~~	~~F402-RR-408~~	~~525~~		~~310~~	~~NA~~	~~Pre 2001~~
REMOVED FROM FACILITY	~~Engine Test Cell T-26~~		~~Lucas Mark IV APU~~	~~GTS-APU-CR00305~~	~~524~~		~~310~~	~~LZH0026~~	~~Pre 2001~~
REMOVED FROM FACILITY	~~Engine Test Cell T-36~~		~~Rolls Royce~~	~~F402-RR-408~~	~~578~~		~~1410~~	~~NA~~	~~2006~~
REMOVED AS MOBILE	~~Engine Test Cell F-5~~	~~74,000~~	~~General Electric~~	~~A/M37T-23~~	~~526~~		~~1409~~	~~NA~~	~~2006~~
REMOVED	~~Blast Cabinet~~	~~194472~~	~~Zero Blast Cabinets~~	~~3048INEX 300RDF~~	~~549~~		~~78~~	~~54413~~	~~2009~~
	Blast Cabinet	86 LBS/HR	Clemco	Pulsar 6PE	513	514	83	Z56299	2014
REMOVED	~~Blast Cabinet~~	~~194472~~	~~Clemco Ind/ Zero Products~~	~~3048INEX 14303~~	~~500~~		~~129~~	~~52736~~	~~2006~~
NEW ADDITION	Blast Cabinet	170 LBS/HR	Raptor Blastor	RB5446		515	129	4623	NA
NEW ADDITION	Blast Cabinet	14 LBS/HR	Clemco Industries	Pulsar VI-P		516	129	Z56310	2016
NEW ADDITION	Blast Cabinet	14 LBS/HR	Clemco Industries	Pulsar VI-P		517	230	Z56311	2016
	Blast Cabinet	~~700800~~ 63 LBS/HR	Econoline	RA48X48CN	507	518	230	081748X48CB	2017
REMOVED	~~Blast Cabinet~~	~~194472~~	~~Allsource~~	~~41500~~	~~577~~		~~240~~	~~NA~~	~~2010~~

Changes Indicated	Type	Capacity	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
UPDATE	Parts Washer	35 GAL	Gray Mills	~~TG2420LP B~~ TC2420LP-B	596	500	83	220002	2012
UPDATE	Parts Washer Strip Tank	455 GAL	Automated Cleaning Technologies	~~ACT 4XH/Stripper~~ ACT STR6H Stripper		501	129	~~ACT471701~~ ACT4712-01	~~2020~~ 2019
EXCLUDED NO VOC OR HAP	~~Parts Washer Rinse Tank~~	~~455~~	~~Automated Cleaning Technologies~~	~~ACT S4XH Rinse ACT S6 Rinse~~			~~129~~	~~ACT471702 ACT4712-02~~	~~2020 2019~~
NEW ADDITION	Parts Washer	25 GAL	Gray Mills	A-40455-A		502	129	237574-054	NA
NEW ADDITION	Parts Washer	25 GAL	Gray Mills	A-40455-A		503	129	237574-105	NA
NEW ADDITION	Parts Washer	150 GAL	Gray Mills	TL-17		504	129	500-4531	NA
NEW ADDITION	Parts Washer	25 GAL	Clarus	PCS-10		505	129	SPW-0043	NA
UPDATE	Parts Washer	50 GAL	~~NA~~ Local Manufactured	~~SS000284~~ Local manufactured	505	506	~~204~~ 129	~~NA~~ SS000284	Pre 2003
EXCLUDED NO VOC OR HAP	~~Parts Washer~~	~~25~~	~~Omegasonics~~	~~PRO~~			~~129~~	~~AU-OMG5022DB-342~~	~~NA~~
REMOVE	~~Parts Washer Aqueous~~	~~45~~	~~Zep~~	~~S82701~~	~~600~~		~~149~~	~~NA~~	~~NA~~
REMOVE	~~Parts Washer~~	~~45~~	~~Gray Mills~~	~~PL422-A~~	~~503~~		~~203~~	~~IDNU-J-5~~	~~Pre 2001~~
REMOVE	~~Parts Washer~~	~~20~~	~~Micro Sonic~~	~~81000SBC~~	~~504~~		~~204~~	~~888001096~~	~~Pre 2002~~
EXCLUDED NO VOC OR HAP	~~Parts Washer~~	~~35~~	~~CRC~~	~~SMARTWASHER MODEL 28~~			~~157~~	~~2106232 2106067~~	~~2018~~
REMOVE	~~Parts Washer~~	~~25~~	~~Kleer Flo~~	~~PW100G~~	~~583~~		~~204~~	~~1527~~	~~2001~~

Changes Indicated	Type	Capacity	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REMOVE	~~Parts Washer~~	~~25~~	~~Kleer Flo~~	~~PW100~~	~~550~~		~~204~~	~~1757~~	~~2001~~
REMOVE	~~Cleaner Pressure Stream Jet~~	~~70~~	~~Better Engineering~~	~~F-SM-3000-N~~	~~587~~		~~204~~	~~21296~~	~~2012~~
	Parts Washer	20	Safety Cleen	33	552	507	227	33015709	Pre 2001
REMOVE	~~Parts Washer~~	~~29~~	~~Ramco~~	~~MK24CMS~~	~~511~~		~~229~~	~~JB1538-05-121~~	~~2008~~
REMOVE	~~Parts Washer Ultrasonic~~	~~1~~	~~Ney Industries~~	~~HT 1206/NC HT1206/NOC~~	~~591~~		~~229~~	~~B515327-A3J~~	~~NA~~
REMOVE	~~Parts Washer~~	~~26~~	~~Kafka~~	~~Oil Eater Basic~~	~~509~~		~~230~~	~~Fontaine 100~~	~~2017~~
REMOVE	~~Parts Washer Paint Gun Clnr~~	~~5~~	~~Inland Technology~~	~~IT-200~~	~~512~~		~~230~~	~~472 854117~~	~~Pre 2001~~
REMOVE	~~Parts Washer~~	~~25~~	~~Ramco~~	~~MK24CMS~~	~~514~~		~~230~~	~~JB1431-04-008~~	~~2008~~
REMOVE	~~Parts Washer~~	~~25~~	~~Ramco~~	~~MK24CMS~~	~~515~~		~~230~~	~~JB1431-04-013~~	~~2008~~
REMOVE	~~Parts Washer Strip Tank~~	~~550~~	~~Automated Cleaning Technologies~~	~~STR7H~~	~~516~~		~~230~~	~~ACT1678-06~~	~~2008~~
REMOVE	~~Parts Washer~~	~~70~~	~~Better Engineering~~	~~F-SM-3000-N~~	~~592~~		~~230~~	~~21297~~	~~2010~~
	Parts Washer	25 GAL	Gray Mills	A42618-A	529	508	230	285584-03	NA
	Parts Washer	25 GAL	Gray Mills	A42618-A	530	509	230	285584-05	NA
NEW ADDITION	Parts Washer	25 GAL	Gray Mills	N/A		510	230	26023338534-02	NA

Changes Indicated	Type	Capacity	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
REMOVE	~~Parts Washer Aqueous~~		~~Gray Mills~~	~~A-40455-A~~			~~230~~	~~239364-050~~	
REMOVE	~~Parts Washer Aqueous~~		~~Gray Mills~~	~~A-40455-A~~			~~230~~	~~239364-059~~	
REMOVE	~~Parts Washer Aqueous~~		~~Clarus Technologies~~	~~PCS-10~~			~~230~~	~~SPW-00V8~~	
	Parts Washer	15	Gray Mills	720C36	590	511	234	HLF79315	2018
REMOVE	Parts Washer	25	Ramco	MK24CMS	517		234	JB1538-05-127	2009
NEW ADDITION	Parts Washer Strip Tank	312	Automated Cleaning Technologies	ACT STR4HX STRIPPER		512	234	ACT471701	2020
EXCLUDED	~~Parts Washer Rinse Tank~~	~~312~~	~~Automated Cleaning Technologies~~	~~ACT S4X RINSE~~			~~234~~	~~ACT471702~~	~~2020~~
EXCLUDED	~~Parts Washer~~	~~30~~	~~BLACKSTONE-NEY ULTRASONICS~~	~~AZ04145-C2G~~			~~420~~	~~8505833-K8H~~	
UPDATE	Parts Washer	40	Gray Mills	902-A	553	513	1229	~~E876 A 07~~ EX76-A-07	2009
REMOVE	Parts Washer	30	TBD	TBD	608		TBD	TBD	2015
	Booth Coating	1,000 GAL	COLMET	ECC-14-09-26-N-SB-S	599	519	230	JOB00055653-01	2017
NEW ADDITION	Booth Coating	1,000 GAL	Standard Tools and Equipment Co.	ECC-14-09-26-N-SB-S		520	154	BSB-1000-58	2023

Changes Indicated	Type	Capacity	Make	Model	Equipment ID 87288	NEW Equipment ID	Building Number	Serial Number	Year of Manufacture
NEW ADDITION	F24 Fuel Storage Tank	1,052,982 GAL	NA	NA		312	311 Fuel Farm	NA	1955
NEW ADDITION	F24 Fuel Storage Tank	210,000 GAL	NA	NA		336	311 Fuel Farm	NA	2007
NEW ADDITION	F24 Fuel Storage Tank	210,000 GAL	NA	NA		337	311 Fuel Farm	NA	2007
NEW ADDITION	Gasoline Storage Tank	12,023 GAL	NA	NA		367	311 Fuel Farm	NA	1996
NEW ADDITION	Gasoline Storage Tank	12,022 GAL	NA	NA		368	311 Fuel Farm	NA	1996
NEW ADDITION	E85 Storage Tank	11,732 GAL	NA	NA		370	311 Fuel Farm	NA	1996

Appendix A Calculations

MCAS Yuma

Class II Permit Renewal

Permit No. 87288 – Renewal Calculations

Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Source List and Usage

ID Number	Building	Unit Description	Date of Manufacture	Rating (MMBtu/hr)	Fuel Type	Control	Maximum Operation (hr/yr)	Calculated Rating (Ft3/yr)	1000000 ft3 Used
100	75	BOILER -HT/HW	2014	0.199	Natural Gas	Low NOx	8760	1743240	1.743
101	75	BOILER HT/HW	2014	0.199	Natural Gas	Low NOx	8760	1743240	1.743
800	75	IR HEATER	2014	1.200	Natural Gas	non-Low NOx	8760	10512000	10.512
102	76	BOILER HT/HW	2014	0.199	Natural Gas	Low NOx	8760	1743240	1.743
103	76	BOILER HT/HW	2021	0.199	Natural Gas	Low NOx	8760	1743240	1.743
801	76	IR HEATER	2014	1.200	Natural Gas	non-Low NOx	8760	10512000	10.512
200	78	WATER HEATER	2011	0.400	Natural Gas	Low NOx	8760	3504000	3.504
201	78	WATER HEATER	2012	0.400	Natural Gas	Low NOx	8760	3504000	3.504
802	78	IR HEATER	2011	0.480	Natural Gas	non-Low NOx	8760	4204800	4.205
803	78	IR HEATER	2011	0.600	Natural Gas	non-Low NOx	8760	5256000	5.256
202	80	WATER HEATER	2011	0.400	Natural Gas	Low NOx	8760	3504000	3.504
203	80	WATER HEATER	2011	0.400	Natural Gas	Low NOx	8760	3504000	3.504
804	80	IR HEATER	2011	0.480	Natural Gas	non-Low NOx	8760	4204800	4.205
805	80	IR HEATER	2011	0.600	Natural Gas	non-Low NOx	8760	5256000	5.256
806	83	IR HEATER	2013	0.179	Natural Gas	non-Low NOx	8760	1568040	1.568
204	95	WATER HEATER	2020	0.078	Natural Gas	Low NOx	8760	683280	0.683
205	95	WATER HEATER	2022	0.078	Natural Gas	Low NOx	8760	683280	0.683
206	95	WATER HEATER	2020	0.078	Natural Gas	Low NOx	8760	683280	0.683
207	101	WATER HEATER	2017	0.150	Natural Gas	Low NOx	8760	1314000	1.314
208	101	WATER HEATER	2017	0.150	Natural Gas	Low NOx	8760	1314000	1.314
209	103	WATER HEATER	2018	0.200	Natural Gas	Low NOx	8760	1751124	1.751
210	103	WATER HEATER	2018	0.200	Natural Gas	Low NOx	8760	1751124	1.751
104	109	BOILER -HEAT	2014	0.285	Natural Gas	Low NOx	8760	2496600	2.497
211	109	WATER HEATER	2002	0.040	Natural Gas	Low NOx	8760	350400	0.350
105	112	BOILER -HT/HW	2014	0.105	Natural Gas	Low NOx	8760	919800	0.920
212	140	WATER HEATER	2022	0.100	Natural Gas	Low NOx	8760	876000	0.876
106	149N	BOILER -HEAT	2017	0.400	Natural Gas	Low NOx	8760	3503124	3.503
213	149N	WATER HEATER	2017	0.100	Natural Gas	Low NOx	8760	876000	0.876
107	153	BOILER -HEAT	2019	0.999	Natural Gas	Low NOx	8760	8751240	8.751
108	153	BOILER -HEAT	2019	0.600	Natural Gas	Low NOx	8760	5256000	5.256
214	154	WATER HEATER	2015	0.078	Natural Gas	Low NOx	8760	683280	0.683
215	157	WATER HEATER	2015	0.315	Natural Gas	Low NOx	8760	2759400	2.759
807	157	IR HEATER	2013	1.800	Natural Gas	non-Low NOx	8760	15768000	15.768
109	220	BOILER -HW	2013	0.399	Natural Gas	Low NOx	8760	3495240	3.495
216	223	WATER HEATER	2021	0.040	Natural Gas	Low NOx	8760	350400	0.350
217	227	WATER HEATER	2019	0.040	Natural Gas	Low NOx	8760	350400	0.350
110	227	BOILER -HEAT	2013	0.500	Natural Gas	Low NOx	8760	4380000	4.380
218	230	WATER HEATER	2019	0.156	Natural Gas	non-Low NOx	8760	1366560	1.367
111	230	BOILER -HEAT	2013	0.399	Natural Gas	Low NOx	8760	3495240	3.495
112	234	BOILER -HW	2013	0.150	Natural Gas	Low NOx	8760	1314000	1.314
219	328B	WATER HEATER	2017	0.040	Natural Gas	Low NOx	8760	350400	0.350
113	406	BOILER -HT/HW	2014	0.285	Natural Gas	Low NOx	8760	2496600	2.497
114	406	BOILER -HT/HW	2014	0.285	Natural Gas	Low NOx	8760	2496600	2.497
115	406A	BOILER -HEAT	2010	0.650	Natural Gas	Low NOx	8760	5694000	5.694
116	406A	BOILER -HEAT	2018	0.650	Natural Gas	Low NOx	8760	5694000	5.694
117	410	BOILER -HEAT	2018	0.200	Natural Gas	Low NOx	8760	1752000	1.752
118	410	BOILER -HEAT	2018	0.200	Natural Gas	Low NOx	8760	1752000	1.752
119	410	BOILER -HEAT	2018	0.200	Natural Gas	Low NOx	8760	1752000	1.752
220	410	WATER HEATER	2011	0.120	Natural Gas	Low NOx	8760	1051200	1.051
221	490	WATER HEATER	2014	0.040	Natural Gas	non-Low NOx	8760	350400	0.350
222	530	WATER HEATER	2013	0.038	Natural Gas	Low NOx	8760	332880	0.333
223	1229	WATER HEATER	2019	0.300	Natural Gas	non-Low NOx	8760	2628000	2.628
120	1229	BOILER -HEAT	2015	0.399	Natural Gas	Low NOx	8760	3495240	3.495
224	1256	WATER HEATER	2014	0.200	Natural Gas	Low NOx	8760	1752000	1.752

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Emission Factors

Pollutant	CAS Number	Natural Gas lb/1000000 ft3
CO	-	84
NOx	-	100
Low NOx	-	50
SOx	-	0.6
PM	-	7.6
PM10	-	7.6
PM2.5	-	7.6
VOC	-	5.5
Total HAPs	-	9.20E-02
Acenaphthene	83-32-9	1.80E-06
Acenaphthylene	208-96-8	1.80E-06
Acetaldehyde	75-07-0	4.30E-03
Acrolein	107-02-8	2.70E-03
Anthracene	120-12-7	2.40E-06
Arsenic	7440-38-2	2.00E-04
Benz[a]anthracene	56-55-3	1.80E-06
Benzene	71-43-2	8.00E-03
Benzo[b]fluoranthene	205-99-2	1.80E-06
Benzo[k]fluoranthene	207-08-9	1.80E-06
Benzo[g,h,i]perylene	191-24-2	1.60E-06
Benzo[a]pyrene	50-32-8	1.60E-06
Beryllium	7440-41-7	1.20E-05
Cadmium	7440-43-9	1.10E-03
Chromium	7440-47-3	1.40E-03
Chrysene	218-01-9	1.80E-06
Cobalt	7440-48-4	8.40E-05
Dibenz[a,h]anthracene	53-70-3	1.60E-06
Dichlorobenzene	25321-22-6	1.20E-03
7,12-Dimethylbenz[a]an	57-97-6	1.60E-05
Ethylbenzene	100-41-4	9.50E-03
Fluoranthene	206-44-0	3.00E-06
Fluorene	86-73-7	2.80E-06
Formaldehyde	50-00-0	1.70E-02
Hexane	110-54-3	6.30E-03
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06
Lead	7439-92-1	5.00E-04
Manganese	7439-96-5	3.80E-04
Mercury	7439-97-6	2.60E-04
3-Methylcholanthrene	56-49-5	1.80E-06
2-Methylnaphthalene	91-57-6	2.40E-05
Naphthalene	91-20-3	3.00E-04
Nickel	7440-02-0	2.10E-03
Phenanthrene	85-01-8	1.70E-05
Pyrene	129-00-0	5.00E-06
Selenium	7782-49-2	2.40E-05
Toluene	108-88-3	3.66E-02

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Emissions

Pollutant	CAS Number	EID 100		EID 101		EID 800		EID 102		EID 103		EID 801		EID 200		EID 201		EID 802		EID 803		EID 202		EID 203	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	0.017	0.073	0.017	0.073	0.101	0.442	0.017	0.073	0.017	0.073	0.101	0.442	0.034	0.147	0.034	0.147	0.040	0.177	0.050	0.221	0.034	0.147	0.034	0.147
NOx	-	0.010	0.044	0.010	0.044	0.120	0.526	0.010	0.044	0.010	0.044	0.120	0.526	0.020	0.088	0.020	0.088	0.048	0.210	0.060	0.263	0.020	0.088	0.020	0.088
SOx	-	1.19E-04	5.23E-04	1.19E-04	5.23E-04	7.20E-04	3.15E-03	1.19E-04	5.23E-04	1.19E-04	5.23E-04	7.20E-04	3.00E-03	2.40E-04	1.00E-03	2.40E-04	1.05E-03	2.88E-04	1.26E-03	3.60E-04	1.58E-03	2.40E-04	1.05E-03	2.40E-04	1.05E-03
Pb	-	9.95E-08	4.36E-07	9.95E-08	4.36E-07	6.00E-07	2.63E-06	9.95E-08	4.36E-07	9.95E-08	4.36E-07	6.00E-07	2.63E-06	2.00E-07	8.76E-07	2.00E-07	8.76E-07	2.40E-07	1.05E-06	3.00E-07	1.31E-06	2.00E-07	8.76E-07	2.00E-07	8.76E-07
PM	-	0.002	0.007	0.002	0.007	0.009	0.040	0.002	0.007	0.002	0.007	0.009	0.040	0.003	0.013	0.003	0.013	0.004	0.016	0.005	0.020	0.003	0.013	0.003	0.013
PM10	-	0.002	0.007	0.002	0.007	0.009	0.040	0.002	0.007	0.002	0.007	0.009	0.040	0.003	0.013	0.003	0.013	0.004	0.016	0.005	0.020	0.003	0.013	0.003	0.013
PM2.5	-	0.002	0.007	0.002	0.007	0.009	0.040	0.002	0.007	0.002	0.007	0.009	0.040	0.003	0.013	0.003	0.013	0.004	0.016	0.005	0.020	0.003	0.013	0.003	0.013
VOC	-	0.001	0.005	0.001	0.005	0.007	0.029	0.001	0.005	0.001	0.005	0.007	0.029	0.002	0.010	0.002	0.010	0.003	0.012	0.003	0.014	0.002	0.010	0.002	0.010
Total HAPs	-	1.83E-05	8.02E-05	1.83E-05	8.02E-05	1.10E-04	4.84E-04	1.83E-05	8.02E-05	1.83E-05	8.02E-05	1.10E-04	4.84E-04	3.68E-05	1.61E-04	3.68E-05	1.61E-04	4.42E-05	1.94E-04	5.52E-05	2.42E-04	3.68E-05	1.61E-04	3.68E-05	1.61E-04
Acenaphthene	83-32-9	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Acenaphthylene	208-96-8	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Acetaldehyde	75-07-0	8.56E-07	3.75E-06	8.56E-07	3.75E-06	5.16E-06	2.26E-05	8.56E-07	3.75E-06	8.56E-07	3.75E-06	5.16E-06	2.26E-05	1.72E-06	7.53E-06	1.72E-06	7.53E-06	2.06E-06	9.04E-06	2.58E-06	1.13E-05	1.72E-06	7.53E-06	1.72E-06	7.53E-06
Acrolein	107-02-8	5.37E-07	2.35E-06	5.37E-07	2.35E-06	3.24E-06	1.42E-05	5.37E-07	2.35E-06	5.37E-07	2.35E-06	3.24E-06	1.42E-05	1.08E-06	4.73E-06	1.08E-06	4.73E-06	1.30E-06	5.68E-06	1.62E-06	7.10E-06	1.08E-06	4.73E-06	1.08E-06	4.73E-06
Anthracene	120-12-7	4.78E-10	2.09E-09	4.78E-10	2.09E-09	2.88E-09	1.26E-08	4.78E-10	2.09E-09	4.78E-10	2.09E-09	2.88E-09	1.26E-08	9.60E-10	4.20E-09	9.60E-10	4.20E-09	1.15E-09	5.05E-09	1.44E-09	6.31E-09	9.60E-10	4.20E-09	9.60E-10	4.20E-09
Arsenic	7440-38-2	3.98E-08	1.74E-07	3.98E-08	1.74E-07	2.40E-07	1.05E-06	3.98E-08	1.74E-07	3.98E-08	1.74E-07	2.40E-07	1.05E-06	8.00E-08	3.50E-07	8.00E-08	3.50E-07	9.60E-08	4.20E-07	1.20E-07	5.26E-07	8.00E-08	3.50E-07	8.00E-08	3.50E-07
Benz[a]anthracene	56-55-3	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Benzene	71-43-2	1.59E-06	6.97E-06	1.59E-06	6.97E-06	9.60E-06	4.20E-05	1.59E-06	6.97E-06	1.59E-06	6.97E-06	9.60E-06	4.20E-05	3.20E-06	1.40E-05	3.20E-06	1.40E-05	3.84E-06	1.68E-05	4.80E-06	2.10E-05	3.20E-06	1.40E-05	3.20E-06	1.40E-05
Benzo[b]fluoranthene	205-99-2	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Benzo[k]fluoranthene	207-08-9	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Benzo[g,h,i]perylene	191-24-2	3.18E-10	1.39E-09	3.18E-10	1.39E-09	1.92E-09	8.41E-09	3.18E-10	1.39E-09	3.18E-10	1.39E-09	1.92E-09	8.41E-09	6.40E-10	2.80E-09	6.40E-10	2.80E-09	7.68E-10	3.36E-09	9.60E-10	4.20E-09	6.40E-10	2.80E-09	6.40E-10	2.80E-09
Benzo[a]pyrene	50-32-8	3.18E-10	1.39E-09	3.18E-10	1.39E-09	1.92E-09	8.41E-09	3.18E-10	1.39E-09	3.18E-10	1.39E-09	1.92E-09	8.41E-09	6.40E-10	2.80E-09	6.40E-10	2.80E-09	7.68E-10	3.36E-09	9.60E-10	4.20E-09	6.40E-10	2.80E-09	6.40E-10	2.80E-09
Beryllium	7440-41-7	2.39E-09	1.05E-08	2.39E-09	1.05E-08	1.44E-08	6.31E-08	2.39E-09	1.05E-08	2.39E-09	1.05E-08	1.44E-08	6.31E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08	5.76E-09	2.52E-08	7.20E-09	3.15E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08
Cadmium	7440-43-9	2.19E-07	9.59E-07	2.19E-07	9.59E-07	1.32E-06	5.78E-06	2.19E-07	9.59E-07	2.19E-07	9.59E-07	1.32E-06	5.78E-06	4.40E-07	1.93E-06	4.40E-07	1.93E-06	5.28E-07	2.31E-06	6.60E-07	2.89E-06	4.40E-07	1.93E-06	4.40E-07	1.93E-06
Chromium	7440-47-3	2.79E-07	1.22E-06	2.79E-07	1.22E-06	1.68E-06	7.36E-06	2.79E-07	1.22E-06	2.79E-07	1.22E-06	1.68E-06	7.36E-06	5.60E-07	2.45E-06	5.60E-07	2.45E-06	6.72E-07	2.94E-06	8.40E-07	3.68E-06	5.60E-07	2.45E-06	5.60E-07	2.45E-06
Chrysene	218-01-9	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Cobalt	7440-48-4	1.67E-08	7.32E-08	1.67E-08	7.32E-08	1.01E-07	4.42E-07	1.67E-08	7.32E-08	1.67E-08	7.32E-08	1.01E-07	4.42E-07	3.36E-08	1.47E-07	3.36E-08	1.47E-07	4.03E-08	1.77E-07	5.04E-08	2.21E-07	3.36E-08	1.47E-07	3.36E-08	1.47E-07
Dibenz[a,h]anthracene	53-70-3	3.18E-10	1.39E-09	3.18E-10	1.39E-09	1.92E-09	8.41E-09	3.18E-10	1.39E-09	3.18E-10	1.39E-09	1.92E-09	8.41E-09	6.40E-10	2.80E-09	6.40E-10	2.80E-09	7.68E-10	3.36E-09	9.60E-10	4.20E-09	6.40E-10	2.80E-09	6.40E-10	2.80E-09
Dichlorobenzene	25321-22-6	2.39E-07	1.05E-06	2.39E-07	1.05E-06	1.44E-06	6.31E-06	2.39E-07	1.05E-06	2.39E-07	1.05E-06	1.44E-06	6.31E-06	4.80E-07	2.10E-06	4.80E-07	2.10E-06	5.76E-07	2.52E-06	7.20E-07	3.15E-06	4.80E-07	2.10E-06	4.80E-07	2.10E-06
7,12-Dimethylbenz[a]anthracene	57-97-6	3.18E-09	1.39E-08	3.18E-09	1.39E-08	1.92E-08	8.41E-08	3.18E-09	1.39E-08	3.18E-09	1.39E-08	1.92E-08	8.41E-08	6.40E-09	2.80E-08	6.40E-09	2.80E-08	7.68E-09	3.36E-08	9.60E-09	4.20E-08	6.40E-09	2.80E-08	6.40E-09	2.80E-08
Ethylbenzene	100-41-4	1.89E-06	8.28E-06	1.89E-06	8.28E-06	1.14E-05	4.99E-05	1.89E-06	8.28E-06	1.89E-06	8.28E-06	1.14E-05	4.99E-05	3.80E-06	1.66E-05	3.80E-06	1.66E-05	4.56E-06	2.00E-05	5.70E-06	2.50E-05	3.80E-06	1.66E-05	3.80E-06	1.66E-05
Fluoranthene	206-44-0	5.97E-10	2.61E-09	5.97E-10	2.61E-09	3.60E-09	1.58E-08	5.97E-10	2.61E-09	5.97E-10	2.61E-09	3.60E-09	1.58E-08	1.20E-09	5.26E-09	1.20E-09	5.26E-09	1.44E-09	6.31E-09	1.80E-09	7.88E-09	1.20E-09	5.26E-09	1.20E-09	5.26E-09
Fluorene	86-73-7	5.57E-10	2.44E-09	5.57E-10	2.44E-09	3.36E-09	1.47E-08	5.57E-10	2.44E-09	5.57E-10	2.44E-09	3.36E-09	1.47E-08	1.12E-09	4.91E-09	1.12E-09	4.91E-09	1.34E-09	5.89E-09	1.68E-09	7.36E-09	1.12E-09	4.91E-09	1.12E-09	4.91E-09
Formaldehyde	50-00-0	3.38E-06	1.48E-05	3.38E-06	1.48E-05	2.04E-05	8.94E-05	3.38E-06	1.48E-05	3.38E-06	1.48E-05	2.04E-05	8.94E-05	6.80E-06	2.98E-05	6.80E-06	2.98E-05	8.16E-06	3.57E-05	1.02E-05	4.47E-05	6.80E-06	2.98E-05	6.80E-06	2.98E-05
Hexane	110-54-3	1.25E-06	5.49E-06	1.25E-06	5.49E-06	7.56E-06	3.31E-05	1.25E-06	5.49E-06	1.25E-06	5.49E-06	7.56E-06	3.31E-05	2.52E-06	1.10E-05	2.52E-06	1.10E-05	3.02E-06	1.32E-05	3.78E-06	1.66E-05	2.52E-06	1.10E-05	2.52E-06	1.10E-05
Indeno(1,2,3-cd)pyrene	193-39-5	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
Lead	7439-92-1	9.95E-08	4.36E-07	9.95E-08	4.36E-07	6.00E-07	2.63E-06	9.95E-08	4.36E-07	9.95E-08	4.36E-07	6.00E-07	2.63E-06	2.00E-07	8.76E-07	2.00E-07	8.76E-07	2.40E-07	1.05E-06	3.00E-07	1.31E-06	2.00E-07	8.76E-07	2.00E-07	8.76E-07
Manganese	7439-96-5	7.56E-08	3.31E-07	7.56E-08	3.31E-07	4.56E-07	2.00E-06	7.56E-08	3.31E-07	7.56E-08	3.31E-07	4.56E-07	2.00E-06	1.52E-07	6.66E-07	1.52E-07	6.66E-07	1.82E-07	7.99E-07	2.28E-07	9.99E-07	1.52E-07	6.66E-07	1.52E-07	6.66E-07
Mercury	7439-97-6	5.17E-08	2.27E-07	5.17E-08	2.27E-07	3.12E-07	1.37E-06	5.17E-08	2.27E-07	5.17E-08	2.27E-07	3.12E-07	1.37E-06	1.04E-07	4.56E-07	1.04E-07	4.56E-07	1.25E-07	5.47E-07	1.56E-07	6.83E-07	1.04E-07	4.56E-07	1.04E-07	4.56E-07
3-Methylcholanthrene	56-49-5	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	3.58E-10	1.57E-09	3.58E-10	1.57E-09	2.16E-09	9.46E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09	8.64E-10	3.78E-09	1.08E-09	4.73E-09	7.20E-10	3.15E-09	7.20E-10	3.15E-09
2-Methylnaphthalene	91-57-6	4.78E-09	2.09E-08	4.78E-09	2.09E-08	2.88E-08	1.26E-07	4.78E-09	2.09E-08	4.78E-09	2.09E-08	2.88E-08	1.26E-07	9.60E-09	4.20E-08	9.60E-09	4.20E-08	1.15E-08	5.05E-08	1.44E-08	6.31E-08	9.60E-09	4.20E-08	9.60E-09	4.20E-08
Naphthalene	91-20-3	5.97E-08	2.61E-07	5.97E-08	2.61E-07	3.60E-07	1.58E-06	5.97E-08	2.61E-07	5.97E-08	2.61E-07	3.60E-07	1.58E-06	1.20E-07	5.26E-07	1.20E-07	5.26E-07	1.44E-07	6.31E-07	1.80E-07	7.88E-07	1.20E-07	5.26E-07	1.20E-07	5.26E-07
Nickel	7440-02-0	4.18E-07	1.83E-06	4.18E-07	1.83E-06	2.52E-06	1.10E-05	4.18E-07	1.83E-06	4.18E-07	1.83E-06	2.52E-06	1.10E-05	8.40E-07	3.68E-06	8.40E-07	3.68E-06	1.01E-06	4.42E-06	1.26E-06	5.52E-06	8.40E-07	3.68E-06	8.40E-07	3.68E-06
Phenanthrene	85-01-8	3.38E-09	1.48E-08	3.38E-09	1.48E-08	2.04E-08	8.94E-08	3.38E-09	1.48E-08	3.38E-09	1.48E-08	2.04E-08	8.94E-08	6.80E-09	2.98E-08	6.80E-09	2.98E-08	8.16E-09	3.57E-08	1.02E-08	4.47E-08	6.80E-09	2.98E-08	6.80E-09	2.98E-08
Pyrene	129-00-0	9.95E-10	4.36E-09	9.95E-10	4.36E-09	6.00E-09	2.63E-08	9.95E-10	4.36E-09	9.95E-10	4.36E-09	6.00E-09	2.63E-08	2.00E-09	8.76E-09	2.00E-09	8.76E-09	2.40E-09	1.05E-08	3.00E-09	1.31E-08	2.00E-09	8.76E-09	2.00E-09	8.76E-09
Selenium	7782-49-2	4.78E-09	2.09E-08	4.78E-09	2.09E-08	2.88E-08	1.26E-07	4.78E-09	2.09E-08	4.78E-09	2.09E-08	2.88E-08	1.26E-07	9.60E-09	4.20E-08	9.60E-09	4.20E-08	1.15E-08	5.05E-08	1.44E-08	6.31E-08	9.60E-09	4.20E-08	9.60E-09	4.20E-08
Toluene	108-88-3	7.28E-06	3.19E-05	7.28E-06	3.19E-05	4.39E-05	1.92E-04	7.28E-06	3.19E-05	7.28E-06	3.19E-05	4.39E-05	1.92E-04	1.46E-05	6.41E-05	1.46E-05	6.41E-05	1.76E-05	7.69E-05	2.20E-05	9.62E-05	1.46E-05	6.41E-05	1.46E-05	6.41E-05

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Emissions (Cont.)

Pollutant	CAS Number	EID 804		EID 805		EID 806		EID 204		EID 205		EID 206		EID 207		EID 208		EID 209		EID 210		EID 104		EID 211	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	0.040	0.177	0.050	0.221	0.015	0.066	0.007	0.029	0.007	0.029	0.007	0.029	0.013	0.055	0.013	0.055	0.017	0.074	0.017	0.074	0.024	0.105	0.003	0.015
NOx	-	0.048	0.210	0.060	0.263	0.018	0.078	0.004	0.017	0.004	0.017	0.004	0.017	0.008	0.033	0.008	0.033	0.010	0.044	0.010	0.044	0.014	0.062	0.002	0.009
SOx	-	2.88E-04	1.26E-03	3.60E-04	1.58E-03	1.07E-04	4.70E-04	4.68E-05	2.05E-04	4.68E-05	2.05E-04	4.68E-05	2.05E-04	9.00E-05	3.94E-04	9.00E-05	3.94E-04	1.20E-04	5.25E-04	1.20E-04	5.25E-04	1.71E-04	7.49E-04	2.40E-05	1.05E-04
Pb	-	2.40E-07	1.05E-06	3.00E-07	1.31E-06	8.95E-08	3.92E-07	3.90E-08	1.71E-07	3.90E-08	1.71E-07	3.90E-08	1.71E-07	7.50E-08	3.29E-07	7.50E-08	3.29E-07	1.00E-07	4.38E-07	1.00E-07	4.38E-07	1.43E-07	6.24E-07	2.00E-08	8.76E-08
PM	-	0.004	0.016	0.005	0.020	0.001	0.006	0.001	0.003	0.001	0.003	0.001	0.003	0.001	0.005	0.001	0.005	0.002	0.007	0.002	0.007	0.002	0.009	0.000	0.001
PM10	-	0.004	0.016	0.005	0.020	0.001	0.006	0.001	0.003	0.001	0.003	0.001	0.003	0.001	0.005	0.001	0.005	0.002	0.007	0.002	0.007	0.002	0.009	0.000	0.001
PM2.5	-	0.004	0.016	0.005	0.020	0.001	0.006	0.001	0.003	0.001	0.003	0.001	0.003	0.001	0.005	0.001	0.005	0.002	0.007	0.002	0.007	0.002	0.009	0.000	0.001
VOC	-	0.003	0.012	0.003	0.014	0.001	0.004	0.000	0.002	0.000	0.002	0.000	0.002	0.001	0.004	0.001	0.004	0.001	0.005	0.001	0.005	0.002	0.007	0.000	0.001
Total HAPs	-	4.42E-05	1.94E-04	5.52E-05	2.42E-04	1.65E-05	7.22E-05	7.18E-06	3.14E-05	7.18E-06	3.14E-05	7.18E-06	3.14E-05	1.38E-05	6.05E-05	1.38E-05	6.05E-05	1.84E-05	8.06E-05	1.84E-05	8.06E-05	2.62E-05	1.15E-04	3.68E-06	1.61E-05
Acenaphthene	83-32-9	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Acenaphthylene	208-96-8	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Acetaldehyde	75-07-0	2.06E-06	9.04E-06	2.58E-06	1.13E-05	7.70E-07	3.37E-06	3.35E-07	1.47E-06	3.35E-07	1.47E-06	3.35E-07	1.47E-06	6.45E-07	2.83E-06	6.45E-07	2.83E-06	8.60E-07	3.76E-06	8.60E-07	3.76E-06	1.23E-06	5.37E-06	1.72E-07	7.53E-07
Acrolein	107-02-8	1.30E-06	5.68E-06	1.62E-06	7.10E-06	4.83E-07	2.12E-06	2.11E-07	9.22E-07	2.11E-07	9.22E-07	2.11E-07	9.22E-07	4.05E-07	1.77E-06	4.05E-07	1.77E-06	5.40E-07	2.36E-06	5.40E-07	2.36E-06	7.70E-07	3.37E-06	1.08E-07	4.73E-07
Anthracene	120-12-7	1.15E-09	5.05E-09	1.44E-09	6.31E-09	4.30E-10	1.88E-09	1.87E-10	8.20E-10	1.87E-10	8.20E-10	1.87E-10	8.20E-10	3.60E-10	1.58E-09	3.60E-10	1.58E-09	4.80E-10	2.10E-09	4.80E-10	2.10E-09	6.84E-10	3.00E-09	9.60E-11	4.20E-10
Arsenic	7440-38-2	9.60E-08	4.20E-07	1.20E-07	5.26E-07	3.58E-08	1.57E-07	1.56E-08	6.83E-08	1.56E-08	6.83E-08	1.56E-08	6.83E-08	3.00E-08	1.31E-07	3.00E-08	1.31E-07	4.00E-08	1.75E-07	4.00E-08	1.75E-07	5.70E-08	2.50E-07	8.00E-09	3.50E-08
Benz[a]anthracene	56-55-3	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Benzene	71-43-2	3.84E-06	1.68E-05	4.80E-06	2.10E-05	1.43E-06	6.27E-06	6.24E-07	2.73E-06	6.24E-07	2.73E-06	6.24E-07	2.73E-06	1.20E-06	5.26E-06	1.20E-06	5.26E-06	1.60E-06	7.00E-06	1.60E-06	7.00E-06	2.28E-06	9.99E-06	3.20E-07	1.40E-06
Benzo[b]fluoranthene	205-99-2	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Benzo[k]fluoranthene	207-08-9	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Benzo[g,h,i]perylene	191-24-2	7.68E-10	3.36E-09	9.60E-10	4.20E-09	2.86E-10	1.25E-09	1.25E-10	5.47E-10	1.25E-10	5.47E-10	1.25E-10	5.47E-10	2.40E-10	1.05E-09	2.40E-10	1.05E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09	4.56E-10	2.00E-09	6.40E-11	2.80E-10
Benzo[a]pyrene	50-32-8	7.68E-10	3.36E-09	9.60E-10	4.20E-09	2.86E-10	1.25E-09	1.25E-10	5.47E-10	1.25E-10	5.47E-10	1.25E-10	5.47E-10	2.40E-10	1.05E-09	2.40E-10	1.05E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09	4.56E-10	2.00E-09	6.40E-11	2.80E-10
Beryllium	7440-41-7	5.76E-09	2.52E-08	7.20E-09	3.15E-08	2.15E-09	9.41E-09	9.36E-10	4.10E-09	9.36E-10	4.10E-09	9.36E-10	4.10E-09	1.80E-09	7.88E-09	1.80E-09	7.88E-09	2.40E-09	1.05E-08	2.40E-09	1.05E-08	3.42E-09	1.50E-08	4.80E-10	2.10E-09
Cadmium	7440-43-9	5.28E-07	2.31E-06	6.60E-07	2.89E-06	1.97E-07	8.62E-07	8.58E-08	3.76E-07	8.58E-08	3.76E-07	8.58E-08	3.76E-07	1.65E-07	7.23E-07	1.65E-07	7.23E-07	2.20E-07	9.63E-07	2.20E-07	9.63E-07	3.14E-07	1.37E-06	4.40E-08	1.93E-07
Chromium	7440-47-3	6.72E-07	2.94E-06	8.40E-07	3.68E-06	2.51E-07	1.10E-06	1.09E-07	4.78E-07	1.09E-07	4.78E-07	1.09E-07	4.78E-07	2.10E-07	9.20E-07	2.10E-07	9.20E-07	2.80E-07	1.23E-06	2.80E-07	1.23E-06	3.99E-07	1.75E-06	5.60E-08	2.45E-07
Chrysene	218-01-9	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Cobalt	7440-48-4	4.03E-08	1.77E-07	5.04E-08	2.21E-07	1.50E-08	6.59E-08	6.55E-09	2.87E-08	6.55E-09	2.87E-08	6.55E-09	2.87E-08	1.26E-08	5.52E-08	1.26E-08	5.52E-08	1.68E-08	7.35E-08	1.68E-08	7.35E-08	2.39E-08	1.05E-07	3.36E-09	1.47E-08
Dibenz[a,h]anthracene	53-70-3	7.68E-10	3.36E-09	9.60E-10	4.20E-09	2.86E-10	1.25E-09	1.25E-10	5.47E-10	1.25E-10	5.47E-10	1.25E-10	5.47E-10	2.40E-10	1.05E-09	2.40E-10	1.05E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09	4.56E-10	2.00E-09	6.40E-11	2.80E-10
Dichlorobenzene	25321-22-6	5.76E-07	2.52E-06	7.20E-07	3.15E-06	2.15E-07	9.41E-07	9.36E-08	4.10E-07	9.36E-08	4.10E-07	9.36E-08	4.10E-07	1.80E-07	7.88E-07	1.80E-07	7.88E-07	2.40E-07	1.05E-06	2.40E-07	1.05E-06	3.42E-07	1.50E-06	4.80E-08	2.10E-07
7,12-Dimethylbenz[a]anthracene	57-97-6	7.68E-09	3.36E-08	9.60E-09	4.20E-08	2.86E-09	1.25E-08	1.25E-09	5.47E-09	1.25E-09	5.47E-09	1.25E-09	5.47E-09	2.40E-09	1.05E-08	2.40E-09	1.05E-08	3.20E-09	1.40E-08	3.20E-09	1.40E-08	4.56E-09	2.00E-08	6.40E-10	2.80E-09
Ethylbenzene	100-41-4	4.56E-06	2.00E-05	5.70E-06	2.50E-05	1.70E-06	7.45E-06	7.41E-07	3.25E-06	7.41E-07	3.25E-06	7.41E-07	3.25E-06	1.43E-06	6.24E-06	1.43E-06	6.24E-06	1.90E-06	8.32E-06	1.90E-06	8.32E-06	2.71E-06	1.19E-05	3.80E-07	1.66E-06
Fluoranthene	206-44-0	1.44E-09	6.31E-09	1.80E-09	7.88E-09	5.37E-10	2.35E-09	2.34E-10	1.02E-09	2.34E-10	1.02E-09	2.34E-10	1.02E-09	4.50E-10	1.97E-09	4.50E-10	1.97E-09	6.00E-10	2.63E-09	6.00E-10	2.63E-09	8.55E-10	3.74E-09	1.20E-10	5.26E-10
Fluorene	86-73-7	1.34E-09	5.89E-09	1.68E-09	7.36E-09	5.01E-10	2.20E-09	2.18E-10	9.57E-10	2.18E-10	9.57E-10	2.18E-10	9.57E-10	4.20E-10	1.84E-09	4.20E-10	1.84E-09	5.60E-10	2.45E-09	5.60E-10	2.45E-09	7.98E-10	3.50E-09	1.12E-10	4.91E-10
Formaldehyde	50-00-0	8.16E-06	3.57E-05	1.02E-05	4.47E-05	3.04E-06	1.33E-05	1.33E-06	5.81E-06	1.33E-06	5.81E-06	1.33E-06	5.81E-06	2.55E-06	1.12E-05	2.55E-06	1.12E-05	3.40E-06	1.49E-05	3.40E-06	1.49E-05	4.85E-06	2.12E-05	6.80E-07	2.98E-06
Hexane	110-54-3	3.02E-06	1.32E-05	3.78E-06	1.66E-05	1.13E-06	4.94E-06	4.91E-07	2.15E-06	4.91E-07	2.15E-06	4.91E-07	2.15E-06	9.45E-07	4.14E-06	9.45E-07	4.14E-06	1.26E-06	5.52E-06	1.26E-06	5.52E-06	1.80E-06	7.86E-06	2.52E-07	1.10E-06
Indeno(1,2,3-cd)pyrene	193-39-5	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
Lead	7439-92-1	2.40E-07	1.05E-06	3.00E-07	1.31E-06	8.95E-08	3.92E-07	3.90E-08	1.71E-07	3.90E-08	1.71E-07	3.90E-08	1.71E-07	7.50E-08	3.29E-07	7.50E-08	3.29E-07	1.00E-07	4.38E-07	1.00E-07	4.38E-07	1.43E-07	6.24E-07	2.00E-08	8.76E-08
Manganese	7439-96-5	1.82E-07	7.99E-07	2.28E-07	9.99E-07	6.80E-08	2.98E-07	2.96E-08	1.30E-07	2.96E-08	1.30E-07	2.96E-08	1.30E-07	5.70E-08	2.50E-07	5.70E-08	2.50E-07	7.60E-08	3.33E-07	7.60E-08	3.33E-07	1.08E-07	4.74E-07	1.52E-08	6.66E-08
Mercury	7439-97-6	1.25E-07	5.47E-07	1.56E-07	6.83E-07	4.65E-08	2.04E-07	2.03E-08	8.88E-08	2.03E-08	8.88E-08	2.03E-08	8.88E-08	3.90E-08	1.71E-07	3.90E-08	1.71E-07	5.20E-08	2.28E-07	5.20E-08	2.28E-07	7.41E-08	3.25E-07	1.04E-08	4.56E-08
3-Methylcholanthrene	56-49-5	8.64E-10	3.78E-09	1.08E-09	4.73E-09	3.22E-10	1.41E-09	1.40E-10	6.15E-10	1.40E-10	6.15E-10	1.40E-10	6.15E-10	2.70E-10	1.18E-09	2.70E-10	1.18E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	5.13E-10	2.25E-09	7.20E-11	3.15E-10
2-Methylnaphthalene	91-57-6	1.15E-08	5.05E-08	1.44E-08	6.31E-08	4.30E-09	1.88E-08	1.87E-09	8.20E-09	1.87E-09	8.20E-09	1.87E-09	8.20E-09	3.60E-09	1.58E-08	3.60E-09	1.58E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08	6.84E-09	3.00E-08	9.60E-10	4.20E-09
Naphthalene	91-20-3	1.44E-07	6.31E-07	1.80E-07	7.88E-07	5.37E-08	2.35E-07	2.34E-08	1.02E-07	2.34E-08	1.02E-07	2.34E-08	1.02E-07	4.50E-08	1.97E-07	4.50E-08	1.97E-07	6.00E-08	2.63E-07	6.00E-08	2.63E-07	8.55E-08	3.74E-07	1.20E-08	5.26E-08
Nickel	7440-02-0	1.01E-06	4.42E-06	1.26E-06	5.52E-06	3.76E-07	1.65E-06	1.64E-07	7.17E-07	1.64E-07	7.17E-07	1.64E-07	7.17E-07	3.15E-07	1.38E-06	3.15E-07	1.38E-06	4.20E-07	1.84E-06	4.20E-07	1.84E-06	5.99E-07	2.62E-06	8.40E-08	3.68E-07
Phenanthrene	85-01-8	8.16E-09	3.57E-08	1.02E-08	4.47E-08	3.04E-09	1.33E-08	1.33E-09	5.81E-09	1.33E-09	5.81E-09	1.33E-09	5.81E-09	2.55E-09	1.12E-08	2.55E-09	1.12E-08	3.40E-09	1.49E-08	3.40E-09	1.49E-08	4.85E-09	2.12E-08	6.80E-10	2.98E-09
Pyrene	129-00-0	2.40E-09	1.05E-08	3.00E-09	1.31E-08	8.95E-10	3.92E-09	3.90E-10	1.71E-09	3.90E-10	1.71E-09	3.90E-10	1.71E-09	7.50E-10	3.29E-09	7.50E-10	3.29E-09	1.00E-09	4.38E-09	1.00E-09	4.38E-09	1.43E-09	6.24E-09	2.00E-10	8.76E-10
Selenium	7782-49-2	1.15E-08	5.05E-08	1.44E-08	6.31E-08	4.30E-09	1.88E-08	1.87E-09	8.20E-09	1.87E-09	8.20E-09	1.87E-09	8.20E-09	3.60E-09	1.58E-08	3.60E-09	1.58E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08	6.84E-09	3.00E-08	9.60E-10	4.20E-09
Toluene	108-88-3	1.76E-05	7.69E-05	2.20E-05	9.62E-05	6.55E-06	2.87E-05	2.85E-06	1.25E-05	2.85E-06	1.25E-05	2.85E-06	1.25E-05	5.49E-06	2.40E-05	5.49E-06	2.40E-05	7.32E-06	3.20E-05	7.32E-06	3.20E-05	1.04E-05	4.57E-05	1.46E-06	6.41E-06

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Emissions (Cont.)

		EID 105		EID 212		EID 106		EID 213		EID 107		EID 108		EID 214		EID 215		EID 807		EID 109		EID 216		EID 217	
Pollutant	CAS Number	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	0.009	0.039	0.008	0.037	0.034	0.147	0.008	0.037	0.084	0.368	0.050	0.221	0.007	0.029	0.026	0.116	0.151	0.662	0.034	0.147	0.003	0.015	0.003	0.015
NOx	-	0.005	0.023	0.005	0.022	0.020	0.088	0.005	0.022	0.050	0.219	0.030	0.131	0.004	0.017	0.016	0.069	0.180	0.788	0.020	0.087	0.002	0.009	0.002	0.009
SOx	-	6.30E-05	2.76E-04	6.00E-05	2.63E-04	2.40E-04	1.05E-03	6.00E-05	2.63E-04	5.99E-04	2.63E-03	3.60E-04	1.58E-03	4.68E-05	2.05E-04	1.89E-04	8.28E-04	1.08E-03	4.73E-03	2.39E-04	1.05E-03	2.40E-05	1.05E-04	2.40E-05	1.05E-04
Pb	-	5.25E-08	2.30E-07	5.00E-08	2.19E-07	2.00E-07	8.76E-07	5.00E-08	2.19E-07	5.00E-07	2.19E-06	3.00E-07	1.31E-06	3.90E-08	1.71E-07	1.58E-07	6.90E-07	9.00E-07	3.94E-06	2.00E-07	8.74E-07	2.00E-08	8.76E-08	2.00E-08	8.76E-08
PM	-	0.001	0.003	0.001	0.003	0.003	0.013	0.001	0.003	0.008	0.033	0.005	0.020	0.001	0.003	0.002	0.010	0.014	0.060	0.003	0.013	0.000	0.001	0.000	0.001
PM10	-	0.001	0.003	0.001	0.003	0.003	0.013	0.001	0.003	0.008	0.033	0.005	0.020	0.001	0.003	0.002	0.010	0.014	0.060	0.003	0.013	0.000	0.001	0.000	0.001
PM2.5	-	0.001	0.003	0.001	0.003	0.003	0.013	0.001	0.003	0.008	0.033	0.005	0.020	0.001	0.003	0.002	0.010	0.014	0.060	0.003	0.013	0.000	0.001	0.000	0.001
VOC	-	0.001	0.003	0.001	0.002	0.002	0.010	0.001	0.002	0.005	0.024	0.003	0.014	0.000	0.002	0.002	0.008	0.010	0.043	0.002	0.010	0.000	0.001	0.000	0.001
Total HAPs	-	9.67E-06	4.23E-05	9.20E-06	4.03E-05	3.68E-05	1.61E-04	9.20E-06	4.03E-05	9.20E-05	4.03E-04	5.52E-05	2.42E-04	7.18E-06	3.14E-05	2.90E-05	1.27E-04	1.66E-04	7.26E-04	3.67E-05	1.61E-04	3.68E-06	1.61E-05	3.68E-06	1.61E-05
Acenaphthene	83-32-9	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Acenaphthylene	208-96-8	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Acetaldehyde	75-07-0	4.52E-07	1.98E-06	4.30E-07	1.88E-06	1.72E-06	7.53E-06	4.30E-07	1.88E-06	4.30E-06	1.88E-05	2.58E-06	1.13E-05	3.35E-07	1.47E-06	1.35E-06	5.93E-06	7.74E-06	3.39E-05	1.72E-06	7.51E-06	1.72E-07	7.53E-07	1.72E-07	7.53E-07
Acrolein	107-02-8	2.84E-07	1.24E-06	2.70E-07	1.18E-06	1.08E-06	4.73E-06	2.70E-07	1.18E-06	2.70E-06	1.18E-05	1.62E-06	7.10E-06	2.11E-07	9.22E-07	8.51E-07	3.73E-06	4.86E-06	2.13E-05	1.08E-06	4.72E-06	1.08E-07	4.73E-07	1.08E-07	4.73E-07
Anthracene	120-12-7	2.52E-10	1.10E-09	2.40E-10	1.05E-09	9.60E-10	4.20E-09	2.40E-10	1.05E-09	2.40E-09	1.05E-08	1.44E-09	6.31E-09	1.87E-10	8.20E-10	7.56E-10	3.31E-09	4.32E-09	1.89E-08	9.58E-10	4.19E-09	9.60E-11	4.20E-10	9.60E-11	4.20E-10
Arsenic	7440-38-2	2.10E-08	9.20E-08	2.00E-08	8.76E-08	8.00E-08	3.50E-07	2.00E-08	8.76E-08	2.00E-07	8.75E-07	1.20E-07	5.26E-07	1.56E-08	6.83E-08	6.30E-08	2.76E-07	3.60E-07	1.58E-06	7.98E-08	3.50E-07	8.00E-09	3.50E-08	8.00E-09	3.50E-08
Benz[a]anthracene	56-55-3	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Benzene	71-43-2	8.40E-07	3.68E-06	8.00E-07	3.50E-06	3.20E-06	1.40E-05	8.00E-07	3.50E-06	7.99E-06	3.50E-05	4.80E-06	2.10E-05	6.24E-07	2.73E-06	2.52E-06	1.10E-05	1.44E-05	6.31E-05	3.19E-06	1.40E-05	3.20E-07	1.40E-06	3.20E-07	1.40E-06
Benzo[b]fluoranthene	205-99-2	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Benzo[k]fluoranthene	207-08-9	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Benzo[g,h,i]perylene	191-24-2	1.68E-10	7.36E-10	1.60E-10	7.01E-10	6.40E-10	2.80E-09	1.60E-10	7.01E-10	1.60E-09	7.00E-09	9.60E-10	4.20E-09	1.25E-10	5.47E-10	5.04E-10	2.21E-09	2.88E-09	1.26E-08	6.38E-10	2.80E-09	6.40E-11	2.80E-10	6.40E-11	2.80E-10
Benzo[a]pyrene	50-32-8	1.68E-10	7.36E-10	1.60E-10	7.01E-10	6.40E-10	2.80E-09	1.60E-10	7.01E-10	1.60E-09	7.00E-09	9.60E-10	4.20E-09	1.25E-10	5.47E-10	5.04E-10	2.21E-09	2.88E-09	1.26E-08	6.38E-10	2.80E-09	6.40E-11	2.80E-10	6.40E-11	2.80E-10
Beryllium	7440-41-7	1.26E-09	5.52E-09	1.20E-09	5.26E-09	4.80E-09	2.10E-08	1.20E-09	5.26E-09	1.20E-08	5.25E-08	7.20E-09	3.15E-08	9.36E-10	4.10E-09	3.78E-09	1.66E-08	2.16E-08	9.46E-08	4.79E-09	2.10E-08	4.80E-10	2.10E-09	4.80E-10	2.10E-09
Cadmium	7440-43-9	1.16E-07	5.06E-07	1.10E-07	4.82E-07	4.40E-07	1.93E-06	1.10E-07	4.82E-07	1.10E-06	4.81E-06	6.60E-07	2.89E-06	8.58E-08	3.76E-07	3.47E-07	1.52E-06	1.98E-06	8.67E-06	4.39E-07	1.92E-06	4.40E-08	1.93E-07	4.40E-08	1.93E-07
Chromium	7440-47-3	1.47E-07	6.44E-07	1.40E-07	6.13E-07	5.60E-07	2.45E-06	1.40E-07	6.13E-07	1.40E-06	6.13E-06	8.40E-07	3.68E-06	1.09E-07	4.78E-07	4.41E-07	1.93E-06	2.52E-06	1.10E-05	5.59E-07	2.45E-06	5.60E-08	2.45E-07	5.60E-08	2.45E-07
Chrysene	218-01-9	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Cobalt	7440-48-4	8.82E-09	3.86E-08	8.40E-09	3.68E-08	3.36E-08	1.47E-07	8.40E-09	3.68E-08	8.39E-08	3.68E-07	5.04E-08	2.21E-07	6.55E-09	2.87E-08	2.65E-08	1.16E-07	1.51E-07	6.62E-07	3.35E-08	1.47E-07	3.36E-09	1.47E-08	3.36E-09	1.47E-08
Dibenz[a,h]anthracene	53-70-3	1.68E-10	7.36E-10	1.60E-10	7.01E-10	6.40E-10	2.80E-09	1.60E-10	7.01E-10	1.60E-09	7.00E-09	9.60E-10	4.20E-09	1.25E-10	5.47E-10	5.04E-10	2.21E-09	2.88E-09	1.26E-08	6.38E-10	2.80E-09	6.40E-11	2.80E-10	6.40E-11	2.80E-10
Dichlorobenzene	25321-22-6	1.26E-07	5.52E-07	1.20E-07	5.26E-07	4.80E-07	2.10E-06	1.20E-07	5.26E-07	1.20E-06	5.25E-06	7.20E-07	3.15E-06	9.36E-08	4.10E-07	3.78E-07	1.66E-06	2.16E-06	9.46E-06	4.79E-07	2.10E-06	4.80E-08	2.10E-07	4.80E-08	2.10E-07
7,12-Dimethylbenz[a]anthracene	57-97-6	1.68E-09	7.36E-09	1.60E-09	7.01E-09	6.40E-09	2.80E-08	1.60E-09	7.01E-09	1.60E-08	7.00E-08	9.60E-09	4.20E-08	1.25E-09	5.47E-09	5.04E-09	2.21E-08	2.88E-08	1.26E-07	6.38E-09	2.80E-08	6.40E-10	2.80E-09	6.40E-10	2.80E-09
Ethylbenzene	100-41-4	9.98E-07	4.37E-06	9.50E-07	4.16E-06	3.80E-06	1.66E-05	9.50E-07	4.16E-06	9.49E-06	4.16E-05	5.70E-06	2.50E-05	7.41E-07	3.25E-06	2.99E-06	1.31E-05	1.71E-05	7.49E-05	3.79E-06	1.66E-05	3.80E-07	1.66E-06	3.80E-07	1.66E-06
Fluoranthene	206-44-0	3.15E-10	1.38E-09	3.00E-10	1.31E-09	1.20E-09	5.25E-09	3.00E-10	1.31E-09	3.00E-09	1.31E-08	1.80E-09	7.88E-09	2.34E-10	1.02E-09	9.45E-10	4.14E-09	5.40E-09	2.37E-08	1.20E-09	5.24E-09	1.20E-10	5.26E-10	1.20E-10	5.26E-10
Fluorene	86-73-7	2.94E-10	1.29E-09	2.80E-10	1.23E-09	1.12E-09	4.90E-09	2.80E-10	1.23E-09	2.80E-09	1.23E-08	1.68E-09	7.36E-09	2.18E-10	9.57E-10	8.82E-10	3.86E-09	5.04E-09	2.21E-08	1.12E-09	4.89E-09	1.12E-10	4.91E-10	1.12E-10	4.91E-10
Formaldehyde	50-00-0	1.79E-06	7.82E-06	1.70E-06	7.45E-06	6.80E-06	2.98E-05	1.70E-06	7.45E-06	1.70E-05	7.44E-05	1.02E-05	4.47E-05	1.33E-06	5.81E-06	5.36E-06	2.35E-05	3.06E-05	1.34E-04	6.78E-06	2.97E-05	6.80E-07	2.98E-06	6.80E-07	2.98E-06
Hexane	110-54-3	6.62E-07	2.90E-06	6.30E-07	2.76E-06	2.52E-06	1.10E-05	6.30E-07	2.76E-06	6.29E-06	2.76E-05	3.78E-06	1.66E-05	4.91E-07	2.15E-06	1.98E-06	8.69E-06	1.13E-05	4.97E-05	2.51E-06	1.10E-05	2.52E-07	1.10E-06	2.52E-07	1.10E-06
Indeno(1,2,3-cd)pyrene	193-39-5	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
Lead	7439-92-1	5.25E-08	2.30E-07	5.00E-08	2.19E-07	2.00E-07	8.76E-07	5.00E-08	2.19E-07	5.00E-07	2.19E-06	3.00E-07	1.31E-06	3.90E-08	1.71E-07	1.58E-07	6.90E-07	9.00E-07	3.94E-06	2.00E-07	8.74E-07	2.00E-08	8.76E-08	2.00E-08	8.76E-08
Manganese	7439-96-5	3.99E-08	1.75E-07	3.80E-08	1.66E-07	1.52E-07	6.66E-07	3.80E-08	1.66E-07	3.80E-07	1.66E-06	2.28E-07	9.99E-07	2.96E-08	1.30E-07	1.20E-07	5.24E-07	6.84E-07	3.00E-06	1.52E-07	6.64E-07	1.52E-08	6.66E-08	1.52E-08	6.66E-08
Mercury	7439-97-6	2.73E-08	1.20E-07	2.60E-08	1.14E-07	1.04E-07	4.55E-07	2.60E-08	1.14E-07	2.60E-07	1.14E-06	1.56E-07	6.83E-07	2.03E-08	8.88E-08	8.19E-08	3.59E-07	4.68E-07	2.05E-06	1.04E-07	4.54E-07	1.04E-08	4.56E-08	1.04E-08	4.56E-08
3-Methylcholanthrene	56-49-5	1.89E-10	8.28E-10	1.80E-10	7.88E-10	7.20E-10	3.15E-09	1.80E-10	7.88E-10	1.80E-09	7.88E-09	1.08E-09	4.73E-09	1.40E-10	6.15E-10	5.67E-10	2.48E-09	3.24E-09	1.42E-08	7.18E-10	3.15E-09	7.20E-11	3.15E-10	7.20E-11	3.15E-10
2-Methylnaphthalene	91-57-6	2.52E-09	1.10E-08	2.40E-09	1.05E-08	9.60E-09	4.20E-08	2.40E-09	1.05E-08	2.40E-08	1.05E-07	1.44E-08	6.31E-08	1.87E-09	8.20E-09	7.56E-09	3.31E-08	4.32E-08	1.89E-07	9.58E-09	4.19E-08	9.60E-10	4.20E-09	9.60E-10	4.20E-09
Naphthalene	91-20-3	3.15E-08	1.38E-07	3.00E-08	1.31E-07	1.20E-07	5.25E-07	3.00E-08	1.31E-07	3.00E-07	1.31E-06	1.80E-07	7.88E-07	2.34E-08	1.02E-07	9.45E-08	4.14E-07	5.40E-07	2.37E-06	1.20E-07	5.24E-07	1.20E-08	5.26E-08	1.20E-08	5.26E-08
Nickel	7440-02-0	2.21E-07	9.66E-07	2.10E-07	9.20E-07	8.40E-07	3.68E-06	2.10E-07	9.20E-07	2.10E-06	9.19E-06	1.26E-06	5.52E-06	1.64E-07	7.17E-07	6.62E-07	2.90E-06	3.78E-06	1.66E-05	8.38E-07	3.67E-06	8.40E-08	3.68E-07	8.40E-08	3.68E-07
Phenanthrene	85-01-8	1.79E-09	7.82E-09	1.70E-09	7.45E-09	6.80E-09	2.98E-08	1.70E-09	7.45E-09	1.70E-08	7.44E-08	1.02E-08	4.47E-08	1.33E-09	5.81E-09	5.36E-09	2.35E-08	3.06E-08	1.34E-07	6.78E-09	2.97E-08	6.80E-10	2.98E-09	6.80E-10	2.98E-09
Pyrene	129-00-0	5.25E-10	2.30E-09	5.00E-10	2.19E-09	2.00E-09	8.76E-09	5.00E-10	2.19E-09	5.00E-09	2.19E-08	3.00E-09	1.31E-08	3.90E-10	1.71E-09	1.58E-09	6.90E-09	9.00E-09	3.94E-08	2.00E-09	8.74E-09	2.00E-10	8.76E-10	2.00E-10	8.76E-10
Selenium	7782-49-2	2.52E-09	1.10E-08	2.40E-09	1.05E-08	9.60E-09	4.20E-08	2.40E-09	1.05E-08	2.40E-08	1.05E-07	1.44E-08	6.31E-08	1.87E-09	8.20E-09	7.56E-09	3.31E-08	4.32E-08	1.89E-07	9.58E-09	4.19E-08	9.60E-10	4.20E-09	9.60E-10	4.20E-09
Toluene	108-88-3	3.84E-06	1.68E-05	3.66E-06	1.60E-05	1.46E-05	6.41E-05	3.66E-06	1.60E-05	3.66E-05	1.60E-04	2.20E-05	9.62E-05	2.85E-06	1.25E-05	1.15E-05	5.05E-05	6.59E-05	2.89E-04	1.46E-05	6.40E-05	1.46E-06	6.41E-06	1.46E-06	6.41E-06

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Emissions (Cont.)

Pollutant	CAS Number	EID 110		EID 218		EID 111		EID 112		EID 219		EID 113		EID 114		EID 115		EID 116		EID 117		EID 118		EID 119	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	0.042	0.184	0.013	0.057	0.034	0.147	0.013	0.055	0.003	0.015	0.024	0.105	0.024	0.105	0.055	0.239	0.055	0.239	0.017	0.074	0.017	0.074	0.017	0.074
NOx	-	0.025	0.110	0.016	0.068	0.020	0.087	0.008	0.033	0.002	0.009	0.014	0.062	0.014	0.062	0.033	0.142	0.033	0.142	0.010	0.044	0.010	0.044	0.010	0.044
SOx	-	3.00E-04	1.31E-03	9.36E-05	4.10E-04	2.39E-04	1.05E-03	9.00E-05	3.94E-04	2.40E-05	1.05E-04	1.71E-04	7.49E-04	1.71E-04	7.49E-04	3.90E-04	1.71E-03	3.90E-04	1.71E-03	1.20E-04	5.26E-04	1.20E-04	5.26E-04	1.20E-04	5.26E-04
Pb	-	2.50E-07	1.10E-06	7.80E-08	3.42E-07	2.00E-07	8.74E-07	7.50E-08	3.29E-07	2.00E-08	8.76E-08	1.43E-07	6.24E-07	1.43E-07	6.24E-07	3.25E-07	1.42E-06	3.25E-07	1.42E-06	1.00E-07	4.38E-07	1.00E-07	4.38E-07	1.00E-07	4.38E-07
PM	-	0.004	0.017	0.001	0.005	0.003	0.013	0.001	0.005	0.000	0.001	0.002	0.009	0.002	0.009	0.005	0.022	0.005	0.022	0.002	0.007	0.002	0.007	0.002	0.007
PM10	-	0.004	0.017	0.001	0.005	0.003	0.013	0.001	0.005	0.000	0.001	0.002	0.009	0.002	0.009	0.005	0.022	0.005	0.022	0.002	0.007	0.002	0.007	0.002	0.007
PM2.5	-	0.004	0.017	0.001	0.005	0.003	0.013	0.001	0.005	0.000	0.001	0.002	0.009	0.002	0.009	0.005	0.022	0.005	0.022	0.002	0.007	0.002	0.007	0.002	0.007
VOC	-	0.003	0.012	0.001	0.004	0.002	0.010	0.001	0.004	0.000	0.001	0.002	0.007	0.002	0.007	0.004	0.016	0.004	0.016	0.001	0.005	0.001	0.005	0.001	0.005
Total HAPs	-	4.60E-05	2.02E-04	1.44E-05	6.29E-05	3.67E-05	1.61E-04	1.38E-05	6.05E-05	3.68E-06	1.61E-05	2.62E-05	1.15E-04	2.62E-05	1.15E-04	5.98E-05	2.62E-04	5.98E-05	2.62E-04	1.84E-05	8.06E-05	1.84E-05	8.06E-05	1.84E-05	8.06E-05
Acenaphthene	83-32-9	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Acenaphthylene	208-96-8	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Acetaldehyde	75-07-0	2.15E-06	9.42E-06	6.71E-07	2.94E-06	1.72E-06	7.51E-06	6.45E-07	2.83E-06	1.72E-07	7.53E-07	1.23E-06	5.37E-06	1.23E-06	5.37E-06	2.80E-06	1.22E-05	2.80E-06	1.22E-05	8.60E-07	3.77E-06	8.60E-07	3.77E-06	8.60E-07	3.77E-06
Acrolein	107-02-8	1.35E-06	5.91E-06	4.21E-07	1.84E-06	1.08E-06	4.72E-06	4.05E-07	1.77E-06	1.08E-07	4.73E-07	7.70E-07	3.37E-06	7.70E-07	3.37E-06	1.76E-06	7.69E-06	1.76E-06	7.69E-06	5.40E-07	2.37E-06	5.40E-07	2.37E-06	5.40E-07	2.37E-06
Anthracene	120-12-7	1.20E-09	5.26E-09	3.74E-10	1.64E-09	9.58E-10	4.19E-09	3.60E-10	1.58E-09	9.60E-11	4.20E-10	6.84E-10	3.00E-09	6.84E-10	3.00E-09	1.56E-09	6.83E-09	1.56E-09	6.83E-09	4.80E-10	2.10E-09	4.80E-10	2.10E-09	4.80E-10	2.10E-09
Arsenic	7440-38-2	1.00E-07	4.38E-07	3.12E-08	1.37E-07	7.98E-08	3.50E-07	3.00E-08	1.31E-07	8.00E-09	3.50E-08	5.70E-08	2.50E-07	5.70E-08	2.50E-07	1.30E-07	5.69E-07	1.30E-07	5.69E-07	4.00E-08	1.75E-07	4.00E-08	1.75E-07	4.00E-08	1.75E-07
Benz[a]anthracene	56-55-3	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Benzene	71-43-2	4.00E-06	1.75E-05	1.25E-06	5.47E-06	3.19E-06	1.40E-05	1.20E-06	5.26E-06	3.20E-07	1.40E-06	2.28E-06	9.99E-06	2.28E-06	9.99E-06	5.20E-06	2.28E-05	5.20E-06	2.28E-05	1.60E-06	7.01E-06	1.60E-06	7.01E-06	1.60E-06	7.01E-06
Benzo[b]fluoranthene	205-99-2	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Benzo[k]fluoranthene	207-08-9	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Benzo[g,h,i]perylene	191-24-2	8.00E-10	3.50E-09	2.50E-10	1.09E-09	6.38E-10	2.80E-09	2.40E-10	1.05E-09	6.40E-11	2.80E-10	4.56E-10	2.00E-09	4.56E-10	2.00E-09	1.04E-09	4.56E-09	1.04E-09	4.56E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09
Benzo[a]pyrene	50-32-8	8.00E-10	3.50E-09	2.50E-10	1.09E-09	6.38E-10	2.80E-09	2.40E-10	1.05E-09	6.40E-11	2.80E-10	4.56E-10	2.00E-09	4.56E-10	2.00E-09	1.04E-09	4.56E-09	1.04E-09	4.56E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09
Beryllium	7440-41-7	6.00E-09	2.63E-08	1.87E-09	8.20E-09	4.79E-09	2.10E-08	1.80E-09	7.88E-09	4.80E-10	2.10E-09	3.42E-09	1.50E-08	3.42E-09	1.50E-08	7.80E-09	3.42E-08	7.80E-09	3.42E-08	2.40E-09	1.05E-08	2.40E-09	1.05E-08	2.40E-09	1.05E-08
Cadmium	7440-43-9	5.50E-07	2.41E-06	1.72E-07	7.52E-07	4.39E-07	1.92E-06	1.65E-07	7.23E-07	4.40E-08	1.93E-07	3.14E-07	1.37E-06	3.14E-07	1.37E-06	7.15E-07	3.13E-06	7.15E-07	3.13E-06	2.20E-07	9.64E-07	2.20E-07	9.64E-07	2.20E-07	9.64E-07
Chromium	7440-47-3	7.00E-07	3.07E-06	2.18E-07	9.57E-07	5.59E-07	2.45E-06	2.10E-07	9.20E-07	5.60E-08	2.45E-07	3.99E-07	1.75E-06	3.99E-07	1.75E-06	9.10E-07	3.99E-06	9.10E-07	3.99E-06	2.80E-07	1.23E-06	2.80E-07	1.23E-06	2.80E-07	1.23E-06
Chrysene	218-01-9	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Cobalt	7440-48-4	4.20E-08	1.84E-07	1.31E-08	5.74E-08	3.35E-08	1.47E-07	1.26E-08	5.52E-08	3.36E-09	1.47E-08	2.39E-08	1.05E-07	2.39E-08	1.05E-07	5.46E-08	2.39E-07	5.46E-08	2.39E-07	1.68E-08	7.36E-08	1.68E-08	7.36E-08	1.68E-08	7.36E-08
Dibenz[a,h]anthracene	53-70-3	8.00E-10	3.50E-09	2.50E-10	1.09E-09	6.38E-10	2.80E-09	2.40E-10	1.05E-09	6.40E-11	2.80E-10	4.56E-10	2.00E-09	4.56E-10	2.00E-09	1.04E-09	4.56E-09	1.04E-09	4.56E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09	3.20E-10	1.40E-09
Dichlorobenzene	25321-22-6	6.00E-07	2.63E-06	1.87E-07	8.20E-07	4.79E-07	2.10E-06	1.80E-07	7.88E-07	4.80E-08	2.10E-07	3.42E-07	1.50E-06	3.42E-07	1.50E-06	7.80E-07	3.42E-06	7.80E-07	3.42E-06	2.40E-07	1.05E-06	2.40E-07	1.05E-06	2.40E-07	1.05E-06
7,12-Dimethylbenz[a]anthracene	57-97-6	8.00E-09	3.50E-08	2.50E-09	1.09E-08	6.38E-09	2.80E-08	2.40E-09	1.05E-08	6.40E-10	2.80E-09	4.56E-09	2.00E-08	4.56E-09	2.00E-08	1.04E-08	4.56E-08	1.04E-08	4.56E-08	3.20E-09	1.40E-08	3.20E-09	1.40E-08	3.20E-09	1.40E-08
Ethylbenzene	100-41-4	4.75E-06	2.08E-05	1.48E-06	6.49E-06	3.79E-06	1.66E-05	1.43E-06	6.24E-06	3.80E-07	1.66E-06	2.71E-06	1.19E-05	2.71E-06	1.19E-05	6.18E-06	2.70E-05	6.18E-06	2.70E-05	1.90E-06	8.32E-06	1.90E-06	8.32E-06	1.90E-06	8.32E-06
Fluoranthene	206-44-0	1.50E-09	6.57E-09	4.68E-10	2.05E-09	1.20E-09	5.24E-09	4.50E-10	1.97E-09	1.20E-10	5.26E-10	8.55E-10	3.74E-09	8.55E-10	3.74E-09	1.95E-09	8.54E-09	1.95E-09	8.54E-09	6.00E-10	2.63E-09	6.00E-10	2.63E-09	6.00E-10	2.63E-09
Fluorene	86-73-7	1.40E-09	6.13E-09	4.37E-10	1.91E-09	1.12E-09	4.89E-09	4.20E-10	1.84E-09	1.12E-10	4.91E-10	7.98E-10	3.50E-09	7.98E-10	3.50E-09	1.82E-09	7.97E-09	1.82E-09	7.97E-09	5.60E-10	2.45E-09	5.60E-10	2.45E-09	5.60E-10	2.45E-09
Formaldehyde	50-00-0	8.50E-06	3.72E-05	2.65E-06	1.16E-05	6.78E-06	2.97E-05	2.55E-06	1.12E-05	6.80E-07	2.98E-06	4.85E-06	2.12E-05	4.85E-06	2.12E-05	1.11E-05	4.84E-05	1.11E-05	4.84E-05	3.40E-06	1.49E-05	3.40E-06	1.49E-05	3.40E-06	1.49E-05
Hexane	110-54-3	3.15E-06	1.38E-05	9.83E-07	4.30E-06	2.51E-06	1.10E-05	9.45E-07	4.14E-06	2.52E-07	1.10E-06	1.80E-06	7.86E-06	1.80E-06	7.86E-06	4.10E-06	1.79E-05	4.10E-06	1.79E-05	1.26E-06	5.52E-06	1.26E-06	5.52E-06	1.26E-06	5.52E-06
Indeno(1,2,3-cd)pyrene	193-39-5	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
Lead	7439-92-1	2.50E-07	1.10E-06	7.80E-08	3.42E-07	2.00E-07	8.74E-07	7.50E-08	3.29E-07	2.00E-08	8.76E-08	1.43E-07	6.24E-07	1.43E-07	6.24E-07	3.25E-07	1.42E-06	3.25E-07	1.42E-06	1.00E-07	4.38E-07	1.00E-07	4.38E-07	1.00E-07	4.38E-07
Manganese	7439-96-5	1.90E-07	8.32E-07	5.93E-08	2.60E-07	1.52E-07	6.64E-07	5.70E-08	2.50E-07	1.52E-08	6.66E-08	1.08E-07	4.74E-07	1.08E-07	4.74E-07	2.47E-07	1.08E-06	2.47E-07	1.08E-06	7.60E-08	3.33E-07	7.60E-08	3.33E-07	7.60E-08	3.33E-07
Mercury	7439-97-6	1.30E-07	5.69E-07	4.06E-08	1.78E-07	1.04E-07	4.54E-07	3.90E-08	1.71E-07	1.04E-08	4.56E-08	7.41E-08	3.25E-07	7.41E-08	3.25E-07	1.69E-07	7.40E-07	1.69E-07	7.40E-07	5.20E-08	2.28E-07	5.20E-08	2.28E-07	5.20E-08	2.28E-07
3-Methylcholanthrene	56-49-5	9.00E-10	3.94E-09	2.81E-10	1.23E-09	7.18E-10	3.15E-09	2.70E-10	1.18E-09	7.20E-11	3.15E-10	5.13E-10	2.25E-09	5.13E-10	2.25E-09	1.17E-09	5.12E-09	1.17E-09	5.12E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09	3.60E-10	1.58E-09
2-Methylnaphthalene	91-57-6	1.20E-08	5.26E-08	3.74E-09	1.64E-08	9.58E-09	4.19E-08	3.60E-09	1.58E-08	9.60E-10	4.20E-09	6.84E-09	3.00E-08	6.84E-09	3.00E-08	1.56E-08	6.83E-08	1.56E-08	6.83E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08
Naphthalene	91-20-3	1.50E-07	6.57E-07	4.68E-08	2.05E-07	1.20E-07	5.24E-07	4.50E-08	1.97E-07	1.20E-08	5.26E-08	8.55E-08	3.74E-07	8.55E-08	3.74E-07	1.95E-07	8.54E-07	1.95E-07	8.54E-07	6.00E-08	2.63E-07	6.00E-08	2.63E-07	6.00E-08	2.63E-07
Nickel	7440-02-0	1.05E-06	4.60E-06	3.28E-07	1.43E-06	8.38E-07	3.67E-06	3.15E-07	1.38E-06	8.40E-08	3.68E-07	5.99E-07	2.62E-06	5.99E-07	2.62E-06	1.37E-06	5.98E-06	1.37E-06	5.98E-06	4.20E-07	1.84E-06	4.20E-07	1.84E-06	4.20E-07	1.84E-06
Phenanthrene	85-01-8	8.50E-09	3.72E-08	2.65E-09	1.16E-08	6.78E-09	2.97E-08	2.55E-09	1.12E-08	6.80E-10	2.98E-09	4.85E-09	2.12E-08	4.85E-09	2.12E-08	1.11E-08	4.84E-08	1.11E-08	4.84E-08	3.40E-09	1.49E-08	3.40E-09	1.49E-08	3.40E-09	1.49E-08
Pyrene	129-00-0	2.50E-09	1.10E-08	7.80E-10	3.42E-09	2.00E-09	8.74E-09	7.50E-10	3.29E-09	2.00E-10	8.76E-10	1.43E-09	6.24E-09	1.43E-09	6.24E-09	3.25E-09	1.42E-08	3.25E-09	1.42E-08	1.00E-09	4.38E-09	1.00E-09	4.38E-09	1.00E-09	4.38E-09
Selenium	7782-49-2	1.20E-08	5.26E-08	3.74E-09	1.64E-08	9.58E-09	4.19E-08	3.60E-09	1.58E-08	9.60E-10	4.20E-09	6.84E-09	3.00E-08	6.84E-09	3.00E-08	1.56E-08	6.83E-08	1.56E-08	6.83E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08	4.80E-09	2.10E-08
Toluene	108-88-3	1.83E-05	8.02E-05	5.71E-06	2.50E-05	1.46E-05	6.40E-05	5.49E-06	2.40E-05	1.46E-06	6.41E-06	1.04E-05	4.57E-05	1.04E-05	4.57E-05	2.38E-05	1.04E-04	2.38E-05	1.04E-04	7.32E-06	3.21E-05	7.32E-06	3.21E-05	7.32E-06	3.21E-05

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: External Combustions (Boilers/Water Heaters/IR Heaters)

Emissions (Cont.)

Pollutant	CAS Number	EID 220		EID 221		EID 222		EID 223		EID 120		EID 224	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	0.010	0.044	0.003	0.015	0.003	0.014	0.025	0.110	0.034	0.147	0.017	0.074
NOx	-	0.006	0.026	0.004	0.018	0.002	0.008	0.030	0.131	0.020	0.087	0.010	0.044
SOx	-	7.20E-05	3.15E-04	2.40E-05	1.05E-04	2.28E-05	9.99E-05	1.80E-04	7.88E-04	2.39E-04	1.05E-03	1.20E-04	5.26E-04
Pb	-	6.00E-08	2.63E-07	2.00E-08	8.76E-08	1.90E-08	8.32E-08	1.50E-07	6.57E-07	2.00E-07	8.74E-07	1.00E-07	4.38E-07
PM	-	0.001	0.004	0.000	0.001	0.000	0.001	0.002	0.010	0.003	0.013	0.002	0.007
PM10	-	0.001	0.004	0.000	0.001	0.000	0.001	0.002	0.010	0.003	0.013	0.002	0.007
PM2.5	-	0.001	0.004	0.000	0.001	0.000	0.001	0.002	0.010	0.003	0.013	0.002	0.007
VOC	-	0.001	0.003	0.000	0.001	0.000	0.001	0.002	0.007	0.002	0.010	0.001	0.005
Total HAPs	-	1.10E-05	4.84E-05	3.68E-06	1.61E-05	3.50E-06	1.53E-05	2.76E-05	1.21E-04	3.67E-05	1.61E-04	1.84E-05	8.06E-05
Acenaphthene	83-32-9	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Acenaphthylene	208-96-8	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Acetaldehyde	75-07-0	5.16E-07	2.26E-06	1.72E-07	7.53E-07	1.63E-07	7.16E-07	1.29E-06	5.65E-06	1.72E-06	7.51E-06	8.60E-07	3.77E-06
Acrolein	107-02-8	3.24E-07	1.42E-06	1.08E-07	4.73E-07	1.03E-07	4.49E-07	8.10E-07	3.55E-06	1.08E-06	4.72E-06	5.40E-07	2.37E-06
Anthracene	120-12-7	2.88E-10	1.26E-09	9.60E-11	4.20E-10	9.12E-11	3.99E-10	7.20E-10	3.15E-09	9.58E-10	4.19E-09	4.80E-10	2.10E-09
Arsenic	7440-38-2	2.40E-08	1.05E-07	8.00E-09	3.50E-08	7.60E-09	3.33E-08	6.00E-08	2.63E-07	7.98E-08	3.50E-07	4.00E-08	1.75E-07
Benz[a]anthracene	56-55-3	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Benzene	71-43-2	9.60E-07	4.20E-06	3.20E-07	1.40E-06	3.04E-07	1.33E-06	2.40E-06	1.05E-05	3.19E-06	1.40E-05	1.60E-06	7.01E-06
Benzo[b]fluoranthene	205-99-2	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Benzo[k]fluoranthene	207-08-9	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Benzo[g,h,i]perylene	191-24-2	1.92E-10	8.41E-10	6.40E-11	2.80E-10	6.08E-11	2.66E-10	4.80E-10	2.10E-09	6.38E-10	2.80E-09	3.20E-10	1.40E-09
Benzo[a]pyrene	50-32-8	1.92E-10	8.41E-10	6.40E-11	2.80E-10	6.08E-11	2.66E-10	4.80E-10	2.10E-09	6.38E-10	2.80E-09	3.20E-10	1.40E-09
Beryllium	7440-41-7	1.44E-09	6.31E-09	4.80E-10	2.10E-09	4.56E-10	2.00E-09	3.60E-09	1.58E-08	4.79E-09	2.10E-08	2.40E-09	1.05E-08
Cadmium	7440-43-9	1.32E-07	5.78E-07	4.40E-08	1.93E-07	4.18E-08	1.83E-07	3.30E-07	1.45E-06	4.39E-07	1.92E-06	2.20E-07	9.64E-07
Chromium	7440-47-3	1.68E-07	7.36E-07	5.60E-08	2.45E-07	5.32E-08	2.33E-07	4.20E-07	1.84E-06	5.59E-07	2.45E-06	2.80E-07	1.23E-06
Chrysene	218-01-9	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Cobalt	7440-48-4	1.01E-08	4.42E-08	3.36E-09	1.47E-08	3.19E-09	1.40E-08	2.52E-08	1.10E-07	3.35E-08	1.47E-07	1.68E-08	7.36E-08
Dibenz[a,h]anthracene	53-70-3	1.92E-10	8.41E-10	6.40E-11	2.80E-10	6.08E-11	2.66E-10	4.80E-10	2.10E-09	6.38E-10	2.80E-09	3.20E-10	1.40E-09
Dichlorobenzene	25321-22-6	1.44E-07	6.31E-07	4.80E-08	2.10E-07	4.56E-08	2.00E-07	3.60E-07	1.58E-06	4.79E-07	2.10E-06	2.40E-07	1.05E-06
7,12-Dimethylbenz[a]ant	57-97-6	1.92E-09	8.41E-09	6.40E-10	2.80E-09	6.08E-10	2.66E-09	4.80E-09	2.10E-08	6.38E-09	2.80E-08	3.20E-09	1.40E-08
Ethylbenzene	100-41-4	1.14E-06	4.99E-06	3.80E-07	1.66E-06	3.61E-07	1.58E-06	2.85E-06	1.25E-05	3.79E-06	1.66E-05	1.90E-06	8.32E-06
Fluoranthene	206-44-0	3.60E-10	1.58E-09	1.20E-10	5.26E-10	1.14E-10	4.99E-10	9.00E-10	3.94E-09	1.20E-09	5.24E-09	6.00E-10	2.63E-09
Fluorene	86-73-7	3.36E-10	1.47E-09	1.12E-10	4.91E-10	1.06E-10	4.66E-10	8.40E-10	3.68E-09	1.12E-09	4.89E-09	5.60E-10	2.45E-09
Formaldehyde	50-00-0	2.04E-06	8.94E-06	6.80E-07	2.98E-06	6.46E-07	2.83E-06	5.10E-06	2.23E-05	6.78E-06	2.97E-05	3.40E-06	1.49E-05
Hexane	110-54-3	7.56E-07	3.31E-06	2.52E-07	1.10E-06	2.39E-07	1.05E-06	1.89E-06	8.28E-06	2.51E-06	1.10E-05	1.26E-06	5.52E-06
Indeno(1,2,3-cd)pyrene	193-39-5	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
Lead	7439-92-1	6.00E-08	2.63E-07	2.00E-08	8.76E-08	1.90E-08	8.32E-08	1.50E-07	6.57E-07	2.00E-07	8.74E-07	1.00E-07	4.38E-07
Manganese	7439-96-5	4.56E-08	2.00E-07	1.52E-08	6.66E-08	1.44E-08	6.32E-08	1.14E-07	4.99E-07	1.52E-07	6.64E-07	7.60E-08	3.33E-07
Mercury	7439-97-6	3.12E-08	1.37E-07	1.04E-08	4.56E-08	9.88E-09	4.33E-08	7.80E-08	3.42E-07	1.04E-07	4.54E-07	5.20E-08	2.28E-07
3-Methylcholanthrene	56-49-5	2.16E-10	9.46E-10	7.20E-11	3.15E-10	6.84E-11	3.00E-10	5.40E-10	2.37E-09	7.18E-10	3.15E-09	3.60E-10	1.58E-09
2-Methylnaphthalene	91-57-6	2.88E-09	1.26E-08	9.60E-10	4.20E-09	9.12E-10	3.99E-09	7.20E-09	3.15E-08	9.58E-09	4.19E-08	4.80E-09	2.10E-08
Naphthalene	91-20-3	3.60E-08	1.58E-07	1.20E-08	5.26E-08	1.14E-08	4.99E-08	9.00E-08	3.94E-07	1.20E-07	5.24E-07	6.00E-08	2.63E-07
Nickel	7440-02-0	2.52E-07	1.10E-06	8.40E-08	3.68E-07	7.98E-08	3.50E-07	6.30E-07	2.76E-06	8.38E-07	3.67E-06	4.20E-07	1.84E-06
Phenanthrene	85-01-8	2.04E-09	8.94E-09	6.80E-10	2.98E-09	6.46E-10	2.83E-09	5.10E-09	2.23E-08	6.78E-09	2.97E-08	3.40E-09	1.49E-08
Pyrene	129-00-0	6.00E-10	2.63E-09	2.00E-10	8.76E-10	1.90E-10	8.32E-10	1.50E-09	6.57E-09	2.00E-09	8.74E-09	1.00E-09	4.38E-09
Selenium	7782-49-2	2.88E-09	1.26E-08	9.60E-10	4.20E-09	9.12E-10	3.99E-09	7.20E-09	3.15E-08	9.58E-09	4.19E-08	4.80E-09	2.10E-08
Toluene	108-88-3	4.39E-06	1.92E-05	1.46E-06	6.41E-06	1.39E-06	6.09E-06	1.10E-05	4.81E-05	1.46E-05	6.40E-05	7.32E-06	3.21E-05

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Stationary Internal Combustion

Source List and Usage

ID No	Building	Unit Description	Manufacturer	Model Number	Serial Number	Date of Manufacture	Displacement (liters / cylinder)	Load Factor	Fuel Type	Power Rating	Power Rating Units	NSPS Applicability	Maximum Usage (hr/yr)
300	75	EMERGENCY ICE	JOHN DEERE	6068HFG85	PE6068L917796	2013	<10	0.74	DIESEL	315	HP	NSPS	500
301	76	EMERGENCY ICE	JOHN DEERE	6068HFG85	PE6068L917800	2013	<10	0.74	DIESEL	315	HP	NSPS	500
302	78	EMERGENCY ICE	JOHN DEERE	6068HF485	PE6068L200888	2012	<10	0.74	DIESEL	286	HP	NSPS	500
303	80	EMERGENCY ICE	JOHN DEERE	6068HF485	PE6068L200882	2012	<10	0.74	DIESEL	286	HP	NSPS	500
304	134	EMERGENCY ICE (I	CUMMINS	QSX15-G9	79497909	2011	<10	0.74	DIESEL	755	HP	NSPS	1000
305	151	EMERGENCY ICE (I	Detroit D.	60, Family: 4DDXL12	06R0809992	2004	<10	0.74	DIESEL	415	HP	non-NSPS	1000
306	153	EMERGENCY ICE (I	Detroit D.	6063TK35	06R0577636	2000	<10	0.74	DIESEL	550	HP	non-NSPS	1000
307	157	EMERGENCY ICE	CUMMINS	QSL9-G2 NR3	73550984	2013	<10	0.74	DIESEL	364	HP	NSPS	500
308	406	EMERGENCY ICE	JOHN DEERE	6090HF484	RG6090L100592	2011	<10	0.74	DIESEL	385	HP	NSPS	500
309	406	EMERGENCY ICE	JOHN DEERE	6090HF484	RG6090L100583	2011	<10	0.74	DIESEL	385	HP	NSPS	500
310	410	EMERGENCY ICE	CUMMINS	QSB5-G3 NR3	73364708	2012	<10	0.74	DIESEL	145	HP	NSPS	500
311	427	EMERGENCY ICE	CUMMINS	QSB7-G5 9R3	73428170	2012	<10	0.74	DIESEL	324	HP	NSPS	500
312	1206	EMERGENCY ICE (I	JOHN DEERE	6068HF275	PE6068H430893	2005	<10	0.74	DIESEL	220	HP	non-NSPS	1000
313	1419	EMERGENCY ICE (I	JOHN DEERE	3029TF150	PE3029T225491	2002	<10	0.74	DIESEL	64	HP	non-NSPS	1000
314	1420	EMERGENCY ICE (I	JOHN DEERE	3029TF150	PE3029T217153	2002	<10	0.74	DIESEL	64	HP	non-NSPS	1000
315	1520	EMERGENCY ICE (I	JOHN DEERE	6068HF275	PE6068H411366	2004	<10	0.74	DIESEL	220	HP	non-NSPS	1000
316	1521	EMERGENCY ICE (I	Volvo	TAD1631GE	2160052609	2005	<10	0.74	DIESEL	757	HP	non-NSPS	1000
400	G1 Port	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	11030024	2013	<10	0.68	GASOLINE	65.9	HP	non-NSPS	1500
401	G1 Starboard	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	12060017	2013	<10	0.68	GASOLINE	65.9	HP	non-NSPS	
402	G2 Port	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	10100016	2010	<10	0.68	GASOLINE	65.9	HP	non-NSPS	
403	G2 Starboard	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	10100002	2010	<10	0.68	GASOLINE	65.9	HP	non-NSPS	
404	G3 Port	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	10100033	2010	<10	0.68	GASOLINE	65.9	HP	non-NSPS	
405	G3 Starboard	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	10100009	2010	<10	0.68	GASOLINE	65.9	HP	non-NSPS	
406	G4 Port	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	11030013	2010	<10	0.68	GASOLINE	65.9	HP	non-NSPS	
407	G4 Starboard	GEAR ARRESTER E	WISCONSIN MOTOI	V465D1-467515	11040003	2010	<10	0.68	GASOLINE	65.9	HP	non-NSPS	

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Stationary Internal Combustion

Criteria Pollutant Emission Factors

ID No	Date of Manufacture	Rating (HP)	Fuel Type	Displacement (liters / cylinder)	Load Factor	NSPS Applicability	Internal Combustion Engine Emission Factors						
							CO	NOX	SOX	VOC	PM10	PM2.5	Pb
							lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hp-hr
300	2013	315	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
301	2013	315	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
302	2012	286	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
303	2012	286	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
304	2011	755	DIESEL	<10	0.74	NSPS	5.73E-03	1.03E-02	1.26E-05	2.86E-04	3.31E-04	3.31E-04	-
305	2004	415	DIESEL	<10	0.74	non-NSPS	7.68E-03	3.57E-02	1.26E-05	2.79E-03	2.51E-03	2.51E-03	-
306	2000	550	DIESEL	<10	0.74	non-NSPS	7.68E-03	3.57E-02	1.26E-05	2.79E-03	2.51E-03	2.51E-03	-
307	2013	364	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
308	2011	385	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
309	2011	385	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
310	2012	145	DIESEL	<10	0.74	NSPS	8.16E-03	6.16E-03	1.26E-05	4.81E-04	4.85E-04	4.85E-04	-
311	2012	324	DIESEL	<10	0.74	NSPS	5.73E-03	6.16E-03	1.26E-05	4.81E-04	3.31E-04	3.31E-04	-
312	2005	220	DIESEL	<10	0.74	non-NSPS	7.68E-03	3.57E-02	1.26E-05	2.79E-03	2.51E-03	2.51E-03	-
313	2002	64	DIESEL	<10	0.74	non-NSPS	7.68E-03	3.57E-02	1.26E-05	2.79E-03	2.51E-03	2.51E-03	-
314	2002	64	DIESEL	<10	0.74	non-NSPS	7.68E-03	3.57E-02	1.26E-05	2.79E-03	2.51E-03	2.51E-03	-
315	2004	220	DIESEL	<10	0.74	non-NSPS	7.68E-03	3.57E-02	1.26E-05	2.79E-03	2.51E-03	2.51E-03	-
316	2005	757	DIESEL	<10	0.74	non-NSPS	6.88E-03	2.59E-02	1.26E-05	7.16E-04	8.09E-04	8.09E-04	-
400	2013	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
401	2013	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
402	2010	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
403	2010	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
404	2010	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
405	2010	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
406	2010	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	-
407	2010	65.9	GASOLINE	<10	0.68	non-NSPS	6.96E-03	1.10E-02	5.91E-04	1.34E-02	7.21E-04	7.21E-04	6.17E-06

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Stationary Internal Combustion

Criteria Pollutant Emissions

ID No	Criteria Pollutant Emissions													
	CO		NOX		SOX		VOC		PM10		PM2.5		Pb	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
300	1.34	0.33	1.44	0.36	2.94E-03	7.34E-04	0.11	0.03	0.08	0.02	0.08	0.02	-	-
301	1.34	0.33	1.44	0.36	2.94E-03	7.34E-04	0.11	0.03	0.08	0.02	0.08	0.02	-	-
302	1.21	0.30	1.30	0.33	2.67E-03	6.67E-04	0.10	0.03	0.07	0.02	0.07	0.02	-	-
303	1.21	0.30	1.30	0.33	2.67E-03	6.67E-04	0.10	0.03	0.07	0.02	0.07	0.02	-	-
304	3.20	1.60	5.75	2.88	7.04E-03	3.52E-03	0.16	0.08	0.18	0.09	0.18	0.09	-	-
305	2.36	1.18	10.96	5.48	3.87E-03	1.93E-03	0.86	0.43	0.77	0.39	0.77	0.39	-	-
306	3.13	1.56	14.53	7.26	5.13E-03	2.56E-03	1.14	0.57	1.02	0.51	1.02	0.51	-	-
307	1.54	0.39	1.66	0.41	3.39E-03	8.48E-04	0.13	0.03	0.09	0.02	0.09	0.02	-	-
308	1.63	0.41	1.75	0.44	3.59E-03	8.97E-04	0.14	0.03	0.09	0.02	0.09	0.02	-	-
309	1.63	0.41	1.75	0.44	3.59E-03	8.97E-04	0.14	0.03	0.09	0.02	0.09	0.02	-	-
310	0.88	0.22	0.66	0.17	1.35E-03	3.38E-04	0.05	0.01	0.05	0.01	0.05	0.01	-	-
311	1.37	0.34	1.48	0.37	3.02E-03	7.55E-04	0.12	0.03	0.08	0.02	0.08	0.02	-	-
312	1.25	0.63	5.81	2.91	2.05E-03	1.03E-03	0.45	0.23	0.41	0.20	0.41	0.20	-	-
313	0.36	0.18	1.69	0.85	5.97E-04	2.98E-04	0.13	0.07	0.12	0.06	0.12	0.06	-	-
314	0.36	0.18	1.69	0.85	5.97E-04	2.98E-04	0.13	0.07	0.12	0.06	0.12	0.06	-	-
315	1.25	0.63	5.81	2.91	2.05E-03	1.03E-03	0.45	0.23	0.41	0.20	0.41	0.20	-	-
316	3.85	1.93	14.51	7.25	7.06E-03	3.53E-03	0.40	0.20	0.45	0.23	0.45	0.23	-	-
400-407	0.31	0.23	0.49	0.37	0.03	0.02	0.60	0.45	0.03	0.02	0.03	0.02	2.76E-04	2.07E-04
Total	28.23	11.16	74.04	33.95	0.08	0.04	5.32	2.56	4.22	1.94	4.22	1.94	2.76E-04	2.07E-04

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Stationary Internal Combustion

HAP Emission Factors for Stationary Compression Ignition ICOM Engines

ID No	HAP Emission Factors																							
	Acenaphthene	Acenaphthylene	Acetaldehyde	Acrolein	Anthracene	Benz[a]anthracene	Benzene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[g,h,i]perylene	Benzo[a]pyrene	1,3-Butadiene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Formaldehyde	Indeno[1,2,3-c,d]pyrene	Lead	Naphthalene	Phenanthrene	Pyrene	Toluene	Xylenes - Mixed isomers
	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr	ef lb/hp-hr
300	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
301	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
302	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
303	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
304	1.25E-08	2.46E-08	6.72E-08	2.10E-08	3.28E-09	1.66E-09	2.07E-06	2.96E-09	5.81E-10	1.48E-09	6.85E-10	-	4.08E-09	9.22E-10	1.07E-08	3.41E-08	2.10E-07	1.10E-09	-	3.47E-07	1.09E-07	9.89E-09	7.49E-07	5.15E-07
305	1.15E-08	4.09E-08	6.20E-06	7.48E-07	1.51E-08	1.36E-08	7.55E-06	8.02E-10	1.25E-09	3.96E-09	1.52E-09	3.16E-07	2.86E-09	4.72E-09	6.16E-08	2.36E-07	9.55E-06	3.03E-09	-	6.86E-07	2.38E-07	3.87E-08	3.31E-06	2.31E-06
306	1.15E-08	4.09E-08	6.20E-06	7.48E-07	1.51E-08	1.36E-08	7.55E-06	8.02E-10	1.25E-09	3.96E-09	1.52E-09	3.16E-07	2.86E-09	4.72E-09	6.16E-08	2.36E-07	9.55E-06	3.03E-09	-	6.86E-07	2.38E-07	3.87E-08	3.31E-06	2.31E-06
307	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
308	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
309	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
310	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
311	5.41E-09	1.93E-08	2.92E-06	3.52E-07	7.12E-09	6.40E-09	3.55E-06	3.78E-10	5.90E-10	1.86E-09	7.16E-10	1.49E-07	1.34E-09	2.22E-09	2.90E-08	1.11E-07	4.50E-06	1.43E-09	-	3.23E-07	1.12E-07	1.82E-08	1.56E-06	1.09E-06
312	1.15E-08	4.09E-08	6.20E-06	7.48E-07	1.51E-08	1.36E-08	7.55E-06	8.02E-10	1.25E-09	3.96E-09	1.52E-09	3.16E-07	2.86E-09	4.72E-09	6.16E-08	2.36E-07	9.55E-06	3.03E-09	-	6.86E-07	2.38E-07	3.87E-08	3.31E-06	2.31E-06
313	1.15E-08	4.09E-08	6.20E-06	7.48E-07	1.51E-08	1.36E-08	7.55E-06	8.02E-10	1.25E-09	3.96E-09	1.52E-09	3.16E-07	2.86E-09	4.72E-09	6.16E-08	2.36E-07	9.55E-06	3.03E-09	-	6.86E-07	2.38E-07	3.87E-08	3.31E-06	2.31E-06
314	1.15E-08	4.09E-08	6.20E-06	7.48E-07	1.51E-08	1.36E-08	7.55E-06	8.02E-10	1.25E-09	3.96E-09	1.52E-09	3.16E-07	2.86E-09	4.72E-09	6.16E-08	2.36E-07	9.55E-06	3.03E-09	-	6.86E-07	2.38E-07	3.87E-08	3.31E-06	2.31E-06
315	1.15E-08	4.09E-08	6.20E-06	7.48E-07	1.51E-08	1.36E-08	7.55E-06	8.02E-10	1.25E-09	3.96E-09	1.52E-09	3.16E-07	2.86E-09	4.72E-09	6.16E-08	2.36E-07	9.55E-06	3.03E-09	-	6.86E-07	2.38E-07	3.87E-08	3.31E-06	2.31E-06
316	3.79E-08	7.47E-08	2.04E-07	6.37E-08	9.95E-09	5.03E-09	6.28E-06	8.98E-09	1.76E-09	4.50E-09	2.08E-09	-	1.24E-08	2.80E-09	3.26E-08	1.04E-07	6.38E-07	3.35E-09	-	1.05E-06	3.30E-07	3.00E-08	2.27E-06	1.56E-06
400-407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.17E-06	-	-	-	-	-

HAP Emissions (lb/hr)

ID No	HAP Emissions																							
	Acenaphthene	Acenaphthylene	Acetaldehyde	Acrolein	Anthracene	Benz[a]anthracene	Benzene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[g,h,i]perylene	Benzo[a]pyrene	1,3-Butadiene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Formaldehyde	Indeno[1,2,3-c,d]pyrene	Lead	Naphthalene	Phenanthrene	Pyrene	Toluene	Xylenes - Mixed isomers	HAP Total
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
300	1.26E-06	4.50E-06	6.81E-04	8.21E-05	1.66E-06	1.49E-06	8.28E-04	8.81E-08	1.38E-07	4.34E-07	1.67E-07	3.47E-05	3.12E-07	5.17E-07	6.76E-06	2.59E-05	1.05E-03	3.33E-07	-	7.53E-05	2.61E-05	4.24E-06	3.64E-04	2.54E-04	3.44E-03
301	1.26E-06	4.50E-06	6.81E-04	8.21E-05	1.66E-06	1.49E-06	8.28E-04	8.81E-08	1.38E-07	4.34E-07	1.67E-07	3.47E-05	3.12E-07	5.17E-07	6.76E-06	2.59E-05	1.05E-03	3.33E-07	-	7.53E-05	2.61E-05	4.24E-06	3.64E-04	2.54E-04	3.44E-03
302	1.14E-06	4.08E-06	6.18E-04	7.45E-05	1.51E-06	1.35E-06	7.51E-04	8.00E-08	1.25E-07	3.94E-07	1.52E-07	3.15E-05	2.84E-07	4.70E-07	6.14E-06	2.35E-05	9.52E-04	3.03E-07	-	6.84E-05	2.37E-05	3.85E-06	3.30E-04	2.31E-04	3.12E-03
303	1.14E-06	4.08E-06	6.18E-04	7.45E-05	1.51E-06	1.35E-06	7.51E-04	8.00E-08	1.25E-07	3.94E-07	1.52E-07	3.15E-05	2.84E-07	4.70E-07	6.14E-06	2.35E-05	9.52E-04	3.03E-07	-	6.84E-05	2.37E-05	3.85E-06	3.30E-04	2.31E-04	3.12E-03
304	6.98E-06	1.37E-05	3.75E-05	1.17E-05	1.83E-06	9.27E-07	1.16E-03	1.65E-06	3.25E-07	8.27E-07	3.83E-07	-	2.28E-06	5.15E-07	5.98E-06	1.91E-05	1.17E-04	6.15E-07	-	1.94E-04	6.09E-05	5.53E-06	4.18E-04	2.88E-04	2.34E-03
305	3.53E-06	1.26E-05	1.90E-03	2.30E-04	4.64E-06	4.18E-06	2.32E-03	2.46E-07	3.84E-07	1.22E-06	4.67E-07	9.70E-05	8.78E-07	1.45E-06	1.89E-05	7.25E-05	2.93E-03	9.31E-07	-	2.11E-04	7.31E-05	1.19E-05	1.02E-03	7.09E-04	9.63E-03
306	4.68E-06	1.66E-05	2.52E-03	3.04E-04	6.15E-06	5.54E-06	3.07E-03	3.26E-07	5.09E-07	1.61E-06	6.19E-07	1.29E-04	1.16E-06	1.92E-06	2.51E-05	9.61E-05	3.89E-03	1.23E-06	-	2.79E-04	9.69E-05	1.58E-05	1.35E-03	9.40E-04	1.28E-02
307	1.46E-06	5.20E-06	7.87E-04	9.48E-05	1.92E-06	9.56E-04	1.02E-07	1.59E-07	5.01E-07	1.93E-07	4.01E-05	3.61E-07	5.98E-07	7.81E-06	2.99E-05	1.21E-03	3.85E-07	-	8.70E-05	3.02E-05	4.90E-06	4.20E-04	2.94E-04	3.98E-03
308	1.54E-06	5.50E-06	8.32E-04	1.00E-04	2.03E-06	1.82E-06	1.01E-03	1.08E-07	1.68E-07	5.30E-07	2.04E-07	4.25E-05	3.82E-07	6.32E-07	8.26E-06	3.16E-05	1.28E-03	4.07E-07	-	9.20E-05	3.19E-05	5.19E-06	4.44E-04	3.11E-04	4.21E-03
309	1.54E-06	5.50E-06	8.32E-04	1.00E-04	2.03E-06	1.82E-06	1.01E-03	1.08E-07	1.68E-07	5.30E-07	2.04E-07	4.25E-05	3.82E-07	6.32E-07	8.26E-06	3.16E-05	1.28E-03	4.07E-07	-	9.20E-05	3.19E-05	5.19E-06	4.44E-04	3.11E-04	4.21E-03
310	5.80E-07	2.07E-06	3.13E-04	3.78E-05	7.64E-07	6.87E-07	3.81E-04	4.06E-08	6.33E-08	2.00E-07	7.68E-08	1.60E-05	1.44E-07	2.38E-07	3.11E-06	1.19E-05	4.83E-04	1.53E-07	-	3.47E-05	1.20E-05	1.95E-06	1.67E-04	1.17E-04	1.58E-03
311	1.30E-06	4.63E-06	7.00E-04	8.44E-05	1.71E-06	1.53E-06	8.51E-04	9.06E-08	1.41E-07	4.46E-07	1.72E-07	3.57E-05	3.21E-07	5.32E-07	6.95E-06	2.66E-05	1.08E-03	3.43E-07	-	7.74E-05	2.69E-05	4.36E-06	3.74E-04	2.61E-04	3.54E-03
312	1.87E-06	6.66E-06	1.01E-03	1.22E-04	2.46E-06	2.21E-06	1.23E-03	1.31E-07	2.04E-07	6.45E-07	2.47E-07	5.14E-05	4.66E-07	7.68E-07	1.00E-05	3.84E-05	1.55E-03	4.93E-07	-	1.12E-04	3.87E-05	6.30E-06	5.39E-04	3.76E-04	5.10E-03
313	5.45E-07	1.94E-06	2.94E-04	3.54E-05	7.15E-07	6.44E-07	3.58E-04	3.80E-08	5.92E-08	1.88E-07	7.20E-08	1.50E-05	1.35E-07	2.24E-07	2.92E-06	1.12E-05	4.52E-04	1.44E-07	-	3.25E-05	1.13E-05	1.83E-06	1.57E-04	1.09E-04	1.48E-03
314	5.45E-07	1.94E-06	2.94E-04	3.54E-05	7.15E-07	6.44E-07	3.58E-04	3.80E-08	5.92E-08	1.88E-07	7.20E-08	1.50E-05	1.35E-07	2.24E-07	2.92E-06	1.12E-05	4.52E-04	1.44E-07	-	3.25E-05	1.13E-05	1.83E-06	1.57E-04	1.09E-04	1.48E-03
315	1.87E-06	6.66E-06	1.01E-03	1.22E-04	2.46E-06	2.21E-06	1.23E-03	1.31E-07	2.04E-07	6.45E-07	2.47E-07	5.14E-05	4.66E-07	7.68E-07	1.00E-05	3.84E-05	1.55E-03	4.93E-07	-	1.12E-04	3.87E-05	6.30E-06	5.39E-04	3.76E-04	5.10E-03
316	2.12E-05	4.18E-05	1.14E-04	3.57E-05	5.57E-06	2.82E-06	3.52E-03	5.03E-06	9.86E-07	2.52E-06	1.17E-06	-	6.95E-06	1.57E-06	1.83E-05	5.83E-05	3.57E-04	1.88E-06	-	5.88E-04	1.85E-04	1.68E-05	1.27E-03	8.74E-04	7.13E-03
400-407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.76E-04	-	-	-	-	-	2.76E-04

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Stationary Internal Combustion

HAP Emissions (TPY)

ID No	HAP Emissions																								
	Acenaphthene	Acenaphthylene	Acetaldehyde	Acrolein	Anthracene	Benz[a]anthracene	Benzene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[g,h,i]perylene	Benzo[a]pyrene	1,3-Butadiene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Formaldehyde	Indeno[1,2,3-c,d]pyrene	Lead	Naphthalene	Phenanthrene	Pyrene	Toluene	Xylenes - Mixed isomers	HAP Total
	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	lb/hr
300	3.15E-07	1.12E-06	1.70E-04	2.05E-05	4.15E-07	3.73E-07	2.07E-04	2.20E-08	3.44E-08	1.08E-07	4.17E-08	8.68E-06	7.81E-08	1.29E-07	1.69E-06	6.47E-06	2.62E-04	8.33E-08	-	1.88E-05	6.53E-06	1.06E-06	9.09E-05	6.35E-05	8.60E-04
301	3.15E-07	1.12E-06	1.70E-04	2.05E-05	4.15E-07	3.73E-07	2.07E-04	2.20E-08	3.44E-08	1.08E-07	4.17E-08	8.68E-06	7.81E-08	1.29E-07	1.69E-06	6.47E-06	2.62E-04	8.33E-08	-	1.88E-05	6.53E-06	1.06E-06	9.09E-05	6.35E-05	8.60E-04
302	2.86E-07	1.02E-06	1.54E-04	1.86E-05	3.77E-07	3.39E-07	1.88E-04	2.00E-08	3.12E-08	9.84E-08	3.79E-08	7.88E-06	7.09E-08	1.17E-07	1.53E-06	5.87E-06	2.38E-04	7.57E-08	-	1.71E-05	5.93E-06	9.63E-07	8.25E-05	5.77E-05	7.81E-04
303	2.86E-07	1.02E-06	1.54E-04	1.86E-05	3.77E-07	3.39E-07	1.88E-04	2.00E-08	3.12E-08	9.84E-08	3.79E-08	7.88E-06	7.09E-08	1.17E-07	1.53E-06	5.87E-06	2.38E-04	7.57E-08	-	1.71E-05	5.93E-06	9.63E-07	8.25E-05	5.77E-05	7.81E-04
304	3.49E-06	6.87E-06	1.88E-05	5.87E-06	9.16E-07	4.64E-07	5.78E-04	8.27E-07	1.62E-07	4.13E-07	1.91E-07	-	1.14E-06	2.58E-07	2.99E-06	9.53E-06	5.87E-05	3.07E-07	-	9.69E-05	3.04E-05	2.76E-06	2.09E-04	1.44E-04	1.17E-03
305	1.77E-06	6.28E-06	9.52E-04	1.15E-04	2.32E-06	2.09E-06	1.16E-03	1.23E-07	1.92E-07	6.08E-07	2.33E-07	4.85E-05	4.39E-07	7.25E-07	9.46E-06	3.62E-05	1.47E-03	4.65E-07	-	1.05E-04	3.65E-05	5.94E-06	5.08E-04	3.55E-04	4.81E-03
306	2.34E-06	8.32E-06	1.26E-03	1.52E-04	3.07E-06	2.77E-06	1.54E-03	1.63E-07	2.54E-07	8.06E-07	3.09E-07	6.43E-05	5.82E-07	9.61E-07	1.25E-05	4.80E-05	1.94E-03	6.17E-07	-	1.40E-04	4.84E-05	7.88E-06	6.74E-04	4.70E-04	6.38E-03
307	3.64E-07	1.30E-06	1.97E-04	2.37E-05	4.79E-07	4.31E-07	2.39E-04	2.55E-08	3.97E-08	1.25E-07	4.82E-08	1.00E-05	9.02E-08	1.49E-07	1.95E-06	7.47E-06	3.03E-04	9.63E-08	-	2.18E-05	7.54E-06	1.23E-06	1.05E-04	7.34E-05	9.94E-04
308	3.85E-07	1.37E-06	2.08E-04	2.51E-05	5.07E-07	4.56E-07	2.53E-04	2.69E-08	4.20E-08	1.32E-07	5.10E-08	1.06E-05	9.54E-08	1.58E-07	2.07E-06	7.91E-06	3.21E-04	1.02E-07	-	2.30E-05	7.98E-06	1.30E-06	1.11E-04	7.76E-05	1.05E-03
309	3.85E-07	1.37E-06	2.08E-04	2.51E-05	5.07E-07	4.56E-07	2.53E-04	2.69E-08	4.20E-08	1.32E-07	5.10E-08	1.06E-05	9.54E-08	1.58E-07	2.07E-06	7.91E-06	3.21E-04	1.02E-07	-	2.30E-05	7.98E-06	1.30E-06	1.11E-04	7.76E-05	1.05E-03
310	1.45E-07	5.18E-07	7.83E-05	9.44E-06	1.91E-07	1.72E-07	9.52E-05	1.01E-08	1.58E-08	4.99E-08	1.92E-08	4.00E-06	3.59E-08	5.96E-08	7.78E-07	2.98E-06	1.21E-04	3.84E-08	-	8.66E-06	3.00E-06	4.88E-07	4.18E-05	2.92E-05	3.96E-04
311	3.24E-07	1.16E-06	1.75E-04	2.11E-05	4.27E-07	3.84E-07	2.13E-04	2.27E-08	3.54E-08	1.11E-07	4.29E-08	8.93E-06	8.03E-08	1.33E-07	1.74E-06	6.65E-06	2.70E-04	8.57E-08	-	1.94E-05	6.71E-06	1.09E-06	9.35E-05	6.53E-05	8.85E-04
312	9.36E-07	3.33E-06	5.05E-04	6.09E-05	1.23E-06	1.11E-06	6.15E-04	6.53E-08	1.02E-07	3.22E-07	1.24E-07	2.57E-05	2.33E-07	3.84E-07	5.01E-06	1.92E-05	7.77E-04	2.47E-07	-	5.58E-05	1.94E-05	3.15E-06	2.69E-04	1.88E-04	2.55E-03
313	2.72E-07	9.69E-07	1.47E-04	1.77E-05	3.58E-07	3.22E-07	1.79E-04	1.90E-08	2.96E-08	9.38E-08	3.60E-08	7.48E-06	6.77E-08	1.12E-07	1.46E-06	5.59E-06	2.26E-04	7.18E-08	-	1.62E-05	5.64E-06	9.16E-07	7.84E-05	5.47E-05	7.42E-04
314	2.72E-07	9.69E-07	1.47E-04	1.77E-05	3.58E-07	3.22E-07	1.79E-04	1.90E-08	2.96E-08	9.38E-08	3.60E-08	7.48E-06	6.77E-08	1.12E-07	1.46E-06	5.59E-06	2.26E-04	7.18E-08	-	1.62E-05	5.64E-06	9.16E-07	7.84E-05	5.47E-05	7.42E-04
315	9.36E-07	3.33E-06	5.05E-04	6.09E-05	1.23E-06	1.11E-06	6.15E-04	6.53E-08	1.02E-07	3.22E-07	1.24E-07	2.57E-05	2.33E-07	3.84E-07	5.01E-06	1.92E-05	7.77E-04	2.47E-07	-	5.58E-05	1.94E-05	3.15E-06	2.69E-04	1.88E-04	2.55E-03
316	1.06E-05	2.09E-05	5.71E-05	1.78E-05	2.79E-06	1.41E-06	1.76E-03	2.52E-06	4.93E-07	1.26E-06	5.83E-07	-	3.47E-06	7.84E-07	9.13E-06	2.91E-05	1.79E-04	9.38E-07	-	2.94E-04	9.24E-05	8.40E-06	6.36E-04	4.37E-04	3.56E-03
400-407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.07E-04	-	-	-	-	-	2.07E-04

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Paint Booth Coating

Source List and Usage

ID Number	Building Number	Unit Description	Manufacture	Model Number	Serial Number	Date of Manufacture	Max Potential Throughput (gal/yr)
519	230	Booth Coating	Colmet	ECC-14-09-26-N-SB-S	JOB00055653-01	2017	1,000
520	154	Booth Coating	Standard Tools and Equipment	BSB-1000-58	N/A	2023	1,000

Paint Usage

ID 519 Paint Throughput		
	Actual Usage	Max Potential Usage
Year	gal/yr	gal/yr
2007	49.9	210.079
2008	30.7	129.247
2009	41.2	173.452
2010	27.3	114.933
2011	12.35	51.9935
2012	13.7	57.677
2013	Data not Available	Data not Available
2014	Data not Available	Data not Available
2015	Data not Available	Data not Available
2016	12.28	51.6988
2017	7.11	29.9331
2018	5.11	21.5131
2019	6.15	25.8915
2020	2.16	9.0936
2021	1.45	6.1045
2022	1.97	8.2937
2023	3.52	14.8192
2024	1.16	4.8836
Max Throughput	216.060	909.613

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Paint Booth Coating

Criteria Pollutant Emissions

	Criteria Pollutant Emissions					
	ID 519			ID 520		
Pollutant	(lb/hr)	(lb/yr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)
VOC	0.391	3421.614	1.711	0.40	3502.982	1.751
Total PM	0.011	94.617	0.047	0.013	109.892	0.055
PM10	0.010	90.833	0.045	0.012	105.496	0.053
PM2.5	0.010	87.994	0.044	0.012	102.199	0.051

HAP Weight Percent

		HAP Wt %	
		ID 519	ID 520
Pollutant	CAS #	wt %	wt%
Ethylbenzene	100-41-4	1.00	-
Hexamethylene-1,6-diisocyanate	822-06-0	-	1.00
Methyl isobutyl ketone	108-10-1	19.00	-
Toluene	108-88-3	1.00	1.00
Xylene	1330-20-7	2.90	-

HAP Emissions

		HAP Emissions					
		EID 519			EID 520		
Pollutant	CAS #	(lb/hr)	(lb/yr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)
Ethylbenzene	100-41-4	0.007	60.500	0.030	-	-	-
Hexamethylene-1,6-diisocyanate	822-06-0	-	-	-	0.003	22.750	0.011
Methyl isobutyl ketone	108-10-1	0.092	803.900	0.402	-	-	-
Toluene	108-88-3	0.007	60.500	0.030	0.009	75.075	0.038
Xylene	1330-20-7	0.020	175.450	0.088	-	-	-
	HAP Total	0.13	1100.35	0.55	0.01	97.83	0.05

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Miscellaneous Material Usage

Source List and Usage

Unit Description	Material Usage Year	Material	Control
Miscellaneous Material Use Facility Wide	2023	Misc	N/A

Emissions

CAS NO	Pollutant	2023 Emissions (lb/yr)	Potential Emissions (lb/yr)	Potential Emissions (lb/hr)	Potential Emissions (TPY)
-	481 VOC Total	3790.15	15956.52	1.82	7.98
-	481 PM Total	562.63	536.96	0.06	0.27
-	Base-wide HAP Total	620.67	2613.02	0.30	1.31
50-00-0	Formaldehyde	0.01	0.04	0.00	0.00
62-73-7	Dichlorvos	0.00	0.00	0.00	0.00
67-56-1	Methanol	17.93	75.49	0.01	0.04
67-66-3	Trichloromethane	18.44	77.63	0.01	0.04
68-12-2	Dimethyl Formamide	0.00	0.00	0.00	0.00
71-43-2	Benzene	0.03	0.13	0.00	0.00
75-00-3	Ethyl Chloride	0.00	0.00	0.00	0.00
75-09-2	Dichloromethane	0.00	0.00	0.00	0.00
75-21-8	Ethylene oxide	0.01	0.04	0.00	0.00
75-56-9	Propylene oxide	0.01	0.04	0.00	0.00
79-00-5	1,1,2-trichloroethane	0.00	0.00	0.00	0.00
79-01-6	Trichloroethylene	0.00	0.00	0.00	0.00
79-10-7	Acrylic Acid	0.00	0.00	0.00	0.00
80-62-6	2-Propenoic Acid, (Methyl Methacrylate)	243.87	1026.69	0.12	0.51
84-74-2	Dibutylphthalate	0.00	0.00	0.00	0.00
91-20-3	Napthalene	3.60	15.16	0.00	0.01
95-48-7	o-Cresol	0.00	0.00	0.00	0.00
98-82-8	Cumene	0.05	0.21	0.00	0.00
98-86-2	Acetophenone	0.00	0.00	0.00	0.00
100-41-4	Ethyl Benzene	3.42	14.40	0.00	0.01
100-42-5	Styrene	0.00	0.00	0.00	0.00
101-68-8	Methylene Diphenyl Diisocyanate	3.14	13.22	0.00	0.01
106-50-3	Para-Phenylenediamine	0.00	0.00	0.00	0.00
106-51-4	Quinone	0.00	0.00	0.00	0.00
106-88-7	1,2-Epoxybutane	0.00	0.00	0.00	0.00
106-89-8	Epichlorohydrin	0.00	0.00	0.00	0.00
107-21-1	1,2-Ethanediol/ethylene glycol	4.71	19.83	0.00	0.01
108-10-1	Methyl Isobutyl Ketone	27.87	117.33	0.01	0.06
108-88-3	Toluene	34.05	143.35	0.02	0.07
108-95-2	Phenol	0.84	3.54	0.00	0.00
110-54-3	Hexane	1.10	4.63	0.00	0.00
111-42-2	Diethanolamine	29.09	122.47	0.01	0.06
117-81-7	Bis(2-Ethylhexyl)phthalate (DEHP)	0.00	0.00	0.00	0.00
121-44-8	Triethylamine	0.00	0.00	0.00	0.00
121-69-7	N,N-Dimethylbenzenamine	0.03	0.13	0.00	0.00
123-31-9	Hydroquinone	0.00	0.00	0.00	0.00
123-91-1	p-Dioxane	0.01	0.04	0.00	0.00
127-18-4	Tetrachloroethylene	0.00	0.00	0.00	0.00
540-84-1	2,2,4-Trimethylpentane	0.00	0.00	0.00	0.00
584-84-9	2,4-Toluene Diisocyanate	0.00	0.00	0.00	0.00
822-06-0	Hexamethylene-1,6-Diisocyanate	19.75	83.15	0.01	0.04
1120-71-4	1,2-Oxathiolane 2,2-dioxide	0.00	0.00	0.00	0.00
1330-20-7	Xylenes (mixed isomers)	14.83	62.43	0.01	0.03
7647-01-0	Hydrochloric Acid	0.00	0.00	0.00	0.00
7664-39-3	Hydrofluoric Acid	0.00	0.00	0.00	0.00
7723-14-0	Phosphorus	0.00	0.00	0.00	0.00
	Antimony Compounds	0.00	0.00	0.00	0.00
	Arsenic Compounds	0.00	0.00	0.00	0.00
	Beryllium Compounds	0.00	0.00	0.00	0.00
	Cadmium Compounds	0.00	0.00	0.00	0.00
	Chromium Compounds	29.27	123.23	0.01	0.06
	Cobalt Compounds	0.24	1.01	0.00	0.00
	Cyanide Compounds	0.00	0.00	0.00	0.00
	Glycol Ethers	49.67	209.11	0.02	0.10
	Lead Compounds	0.78	3.28	0.00	0.00
	Manganese Compounds	97.11	408.83	0.05	0.20
	Mercury Compounds	0.37	1.56	0.00	0.00
	Nickel Compounds	20.47	86.18	0.01	0.04
	Polycyclic Organic Compounds	0.00	0.00	0.00	0.00
	Radionuclides	0.00	0.00	0.00	0.00
	Selenium Compounds	0.00	0.00	0.00	0.00

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Abrasive Blasting

Source List and Usage

ID Number	Building Number	Unit Description	Manufacture	Model Number	Serial Number	Date of Manufacture	Material Type	Nozzle Size (in)	Nozzle Pressure (psig)	Control Efficiency	Abrasive Flow Rate Through Nozzle (lb/hr)	Max Throughput (lb/yr)
514	83	BLAST CABINET	CLEMCO INDUSTRIES	PULSAR 6PE	Z56299	2014	Plastic Media	3/16	80	99.70%	68.18	597,273
515	129	BLAST CABINET	RAPTER BLASTOR	RB5446	4623	NA	Glass Beads	3/16	60	85.00%	170.00	1,489,200
516	129	BLAST CABINET	CLEMCO	PULSAR VI	Z56310	2016	Glass Beads	3/16	60	99.70%	14.00	122,640
517	230	BLAST CABINET	CLEMCO INDUSTRIES	ZERO PULSAR	Z56311	NA	Glass Beads	3/16	60	99.70%	14.00	122,640
518	230	BLAST CABINET	ECONOLINE	RA48X48CN	081748X48CB	2017	Walnut Shells	1/4	80	99.98%	62.73	549,491

Emission Factors

Pollutant	CAS #	Glass Beads	Walnut Shells
Criteria Pollutant		**lb/1000 lb**	**lb/1000 lb**
PM10	-	7.50	7.50
PM2.5	-	6.89	6.89
HAP		**lb/lb PM**	**lb/lb PM**
Lead	7439-92-1	0.04	0.04
Cadmium	7440-43-9	0.05	0.05
Chromium	7440-47-3	0.48	0.48
Lead	7439-92-1	0.04	0.04
Manganese	7439-96-5	0.48	0.48
Nickel	7440-02-0	0.48	0.48

Emissions

		Emissions														
		EID 514			EID 515			EID 516			EID 517			EID 518		
Pollutant	CAS #	(lb/hr)	(lb/yr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)
PM10	-	0.002	13.439	0.007	0.191	1675.350	0.838	0.000	2.759	0.001	0.000	2.759	0.001	0.000	0.824	0.000
PM2.5	-	0.001	12.346	0.006	0.176	1539.088	0.770	0.000	2.535	0.001	0.000	2.535	0.001	0.000	0.757	0.000
Lead	-	6.14E-05	0.538	2.69E-04	7.65E-03	67.014	3.35E-02	1.26E-05	0.110	5.52E-05	1.26E-05	0.110	5.52E-05	3.76E-06	0.033	1.65E-05
Total HAP	-	0.002	20.561	0.010	0.293	2563.286	1.282	0.000	4.222	0.002	0.000	4.222	0.002	0.000	1.261	0.001
Cadmium	7440-43-9	7.67E-05	0.672	3.36E-04	9.56E-03	83.768	4.19E-02	1.58E-05	0.138	6.90E-05	1.58E-05	0.138	6.90E-05	4.70E-06	0.041	2.06E-05
Chromium	7440-47-3	0.001	6.451	0.003	0.092	804.168	0.402	0.000	1.325	0.001	0.000	1.325	0.001	0.000	0.396	0.000
Manganese	7439-96-5	0.001	6.451	0.003	0.092	804.168	0.402	0.000	1.325	0.001	0.000	1.325	0.001	0.000	0.396	0.000
Nickel	7440-02-0	0.001	6.451	0.003	0.092	804.168	0.402	0.000	1.325	0.001	0.000	1.325	0.001	0.000	0.396	0.000
Lead	7439-92-1	6.14E-05	0.538	0.000	7.65E-03	67.014	0.034	1.26E-05	0.110	0.000	1.26E-05	0.110	0.000	3.76E-06	0.033	0.000

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Degreasers and Parts Washers

Source List and Usage

EID	Building Number	Unit Description	Manufacture	Model Number	Material	Control	Tank Size (gal)	Max Throughput (gal/yr)
500	83	PARTS WASHER	Gray Mills	TC2420LP-B	PRO SOLV 680 II	LID	35	455
501	129	STRIPPER TANK	Automated Cleaning Technologies	ACT STR6H Stripper	Act Turbo Strip (7930-mc-000-3660)	LID	455	5915
502	129	PARTS WASHER	Gray Mills	A-40455-A	PRO SOLV 680 II	LID	25	325
503	129	PARTS WASHER	Gray Mills	A-40455-A	PRO SOLV 680 II	LID	25	325
504	129	PARTS WASHER	Gray Mills	TL-17	PRO SOLV 680 II	LID	25	325
505	129	PARTS WASHER	Clarus	PCS-10	MIL-PRF-680 TY 2 (PRO SOLV 680 II)	CARBON FILTER	35	455
506	129	PARTS WASHER	Local Manufactured	Local Manufactured	CITRIKLEEN	LID	50	650
507	227	PARTS WASHER	Safty Kleen	33	SAFETY KLEEN PREMIUM	LID	20	260
508	230	PARTS WASHER	Gray Mills	A42618-A	PRO SOLV 680 II	LID	25	325
509	230	PARTS WASHER	Gray Mills	A42618-A	PRO SOLV 680 II	LID	25	325
510	230	PARTS WASHER	Gray Mills	N/A	PRO SOLV 680 II	LID	25	325
511	234	PARTS WASHER	Gray Mills	720C36	PRO SOLV 680 II	LID	15	195
512	234	STRIPPER TANK	Automated Cleaning Technologies	ACT STR 4hx/stripper	Act Turbo Strip (7930-mc-000-3660)	LID	312	4056
513	1229	PARTS WASHER	Gray Mills	902-A	Safety-Kleen MIL-PRF-680, Type II	LID/REMOTE RES	40	520

Solvent List and Constituents

Solvent Name	Density (lb/gal)	VOC (lb/gal)	HAP Pollutant Name	HAP Wt%
Act turbo strip	8.51	8.00	-	-
Pro solv 680 ii	6.55	6.4	-	-
Citrikleen HD (1:5 water)	8.09	4.34	Diethanolamine	10
			Glycol Ethers	10
Safety-kleen MIL-PRF-680, type II	6.40	6.40	-	-
Safety kleen premium	6.67	6.67	-	-

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Degreasers and Parts Washers

Emissions

	Emissions					
	VOC Emissions			HAP Emissions		
Facility ID	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy
500	0.033	291.200	0.146	--	--	--
501	0.540	4731.645	2.366	--	--	--
502	0.024	208.000	0.104	--	--	--
503	0.024	208.000	0.104	--	--	--
504	0.024	208.000	0.104	--	--	--
505	0.017	145.600	0.073	--	--	--
506	0.032	282.075	0.141	0.012	105.170	0.053
507	0.020	173.420	0.087	--	--	--
508	0.024	208.000	0.104	--	--	--
509	0.024	208.000	0.104	--	--	--
510	0.024	208.000	0.104	--	--	--
511	0.014	124.800	0.062	--	--	--
512	0.368	3220.464	1.610	--	--	--
513	0.019	166.400	0.083	--	--	--
Total Emissions	1.185	10383.604	5.192	0.012	105.170	0.053

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Fuel Dispensing – Gasoline

Source List and Usage

Tank ID	BLDG Number	Unit Description	Fuel Type	Fuel Throughput (gal/yr)					Max Throughput (GPY)
				2020	2021	2022	2023	2024	
367, 368, 370	Smith Street Station	AST Dispensing Displacement Spillage	Gasoline	77,675.00	64,301.00	73,686.00	65,990.00	32,498.00	327,012

Emission Factors for Gasoline Dispensing

Emission Source	Emission Factor (lb/1000 gal)
	Gasoline
Displacement	11
Spillage	0.7

HAP Speciation for Fuel (Weight%)

HAP	CAS#	Gasoline	
		Vapor Phase	Liquid Phase
Benzene	71-43-2	6.10E-01	3.36E-02
1,3-Butadiene	106-99-0	2.19E-04	1.78E-03
Cumene	98-82-8	5.00E-01	7.79E-03
Ethylbenzene	100-41-4	1.40E+00	4.67E-02
Hexane	110-54-3	1.00E+00	5.48E-01
Isoooctane (2,2,4-Trimethyl Pentane)	91-20-3	4.00E+00	4.84E-02
Naphthalene	91-20-3	1.74E-01	1.54E-04
Toluene	108-88-3	7.00E+00	6.69E-01
Xylenes	1330-20-7	7.00E+00	2.05E-01

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Fuel Dispensing – Gasoline

Emissions

Fuel Type	CAS#	367, 368, 370 Smith Street Station Emissions					
		AST Dispensing Displacement			Spillage		
		lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy
VOC	--	4.106E-01	3.597E+03	1.799E+00	2.613E-02	2.289E+02	1.145E-01
Total HAPs	--	8.774E-03	7.686E+01	3.843E-02	5.984E-03	5.242E+01	2.621E-02
Benzene	71-43-2	2.505E-03	2.194E+01	1.097E-02	4.703E-04	4.120E+00	2.060E-03
1,3-Butadiene	106-99-0	7.309E-06	6.403E-02	3.201E-05	5.592E-08	4.898E-04	2.449E-07
Cumene	98-82-8	3.199E-05	2.802E-01	1.401E-04	1.307E-04	1.145E+00	5.723E-04
Ethylbenzene	100-41-4	1.918E-04	1.680E+00	8.399E-04	3.658E-04	3.205E+00	1.602E-03
Hexane	110-54-3	2.250E-03	1.971E+01	9.856E-03	2.613E-04	2.289E+00	1.145E-03
Isoooctane (2,2,4-Trimethyl Pentane)	91-20-3	1.987E-04	1.741E+00	8.705E-04	1.045E-03	9.156E+00	4.578E-03
Naphthalene	91-20-3	2.747E-03	2.406E+01	1.203E-02	5.226E-05	4.578E-01	2.289E-04
Toluene	108-88-3	2.747E-03	2.406E+01	1.203E-02	1.829E-03	1.602E+01	8.012E-03
Xylenes	1330-20-7	8.418E-04	7.374E+00	3.687E-03	1.829E-03	1.602E+01	8.012E-03

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Fuel Storage

Source List and Usage

EID	BLDG Number	Unit Description	Fuel Type	Fuel Throughput (gal/yr)					Max Throughput (gal/yr)
				2020	2021	2022	2023	2024	
312	311 Fuel Farm	Aboveground-F24-1,052,982 gal	F24	14,184,051.00	9,803,751.00	11,969,878.00	13,716,509.00	12,949,657.00	59,715,000
336	311 Fuel Farm	Aboveground-F24-210,000 gal	F24	3,073,867.00	658,296.00	1,509,143.00	1,138,957.00	1,763,633.00	12,941,000
337	311 Fuel Farm	Aboveground-F24-210,000 gal	F24	1,835,897.00	1,444,818.00	1,775,107.00	3,307,438.00	1,705,765.00	14,000,000
367	311 Fuel Farm	Aboveground-Gasoline-12,023 gal	Gasoline	24,326.00	37,776.00	43,299.00	39,369.00	32,934.00	183,000
368	311 Fuel Farm	Aboveground-Gasoline-12,022 gal	Gasoline	16,757.00	25,000.00	49,893.00	41,102.00	25,194.00	210,000
370	311 Fuel Farm	Aboveground-E85-11,732 gal	E85	42,019.00	22,275.00	26,309.00	24,618.00	7,023.00	177,000

HAP Speciation for Fuel (Weight%)

HAP	CAS#	Gasoline		F24	
		Vapor Phase	Liquid Phase	Vapor Phase	Liquid Phase
Benzene	71-43-2	6.10E-01	3.36E-02	3.36E-02	1.55E+00
1,3-Butadiene	106-99-0	2.19E-04	1.78E-03	--	--
Cumene	98-82-8	5.00E-01	7.79E-03	1.80E-01	3.81E-01
Ethylbenzene	100-41-4	1.40E+00	4.67E-02	1.58E-01	7.16E-01
Fluorene	86-73-7	--	--	3.42E+03	1.21E-06
Hexane	110-54-3	1.00E+00	5.48E-01	--	--
Isoooctane (2,2,4-Trimethyl Pentane)	540-84-1	4.00E+00	4.84E-02	1.22E-03	2.00E-03
Naphthalene	91-20-3	1.74E-01	1.54E-04	2.66E-01	3.20E-02
Phenylbenzene (1,1-biphenyl)	92-52-4	--	--	6.74E-02	7.79E-04
Pyrene	129-00-0	--	--	1.24E-05	3.31E-11
Toluene	108-88-3	7.00E+00	6.69E-01	2.18E-01	2.83E+00
Xylenes	1330-20-7	7.00E+00	2.05E-01	1.18E+00	4.69+00

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Renewal Calculations
Source Type: Fuel Storage

Emissions

		Emissions											
		Tank 312			Tank 336			Tank 337			Total		
Fuel Type	CAS#	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy
VOC	--	2.47E-02	2.17E+02	1.08E-01	8.96E-03	7.85E+01	3.92E-02	9.67E-03	8.47E+01	4.23E-02	4.34E-02	3.80E+02	1.90E-01
Total HAPs	--	2.52E-03	2.21E+01	1.11E-02	9.14E-04	8.00E+00	4.00E-03	4.42E-03	3.88E+01	1.94E-02	7.86E-03	6.89E+01	3.44E-02
Benzene	71-43-2	3.84E-04	3.36E+00	1.68E-03	1.39E-04	1.22E+00	6.08E-04	1.50E-04	--	6.56E-04	6.72E-04	4.58E+00	2.94E-03
1,3-Butadiene	106-99-0	--	--	--	--	--	--	--	--	--	--	--	--
Cumene	98-82-8	1.00E-04	8.76E-01	4.38E-04	3.41E-05	2.99E-01	1.49E-04	3.68E-05	3.23E-01	1.61E-04	1.71E-04	1.50E+00	7.49E-04
Ethylbenzene	100-41-4	1.77E-04	1.55E+00	7.76E-04	6.41E-05	5.62E-01	2.81E-04	6.92E-05	6.06E-01	3.03E-04	3.11E-04	2.72E+00	1.36E-03
Fluorene	86-73-7	1.31E-09	1.15E-05	5.74E-09	4.75E-10	4.16E-06	2.08E-09	5.12E-10	4.49E-06	5.12E-10	2.30E-09	2.01E-05	8.34E-09
Hexane	110-54-3	--	--	--	--	--	--	--	--	--	--	--	--
Isoooctane (2,2,4-Trimethyl Pentane)	540-84-1	4.95E-07	4.34E-03	2.17E-06	1.79E-07	1.57E-03	7.85E-07	1.93E-07	1.69E-03	8.47E-07	8.67E-07	7.60E-03	3.80E-06
Naphthalene	91-20-3	7.92E-06	6.94E-02	3.47E-05	2.87E-06	2.51E-02	1.26E-05	3.09E-06	2.71E-02	1.36E-05	1.39E-05	1.22E-01	6.08E-05
Phenylbenzene (1,1-biphenyl)	92-52-4	1.93E-07	1.69E-03	8.44E-07	6.98E-08	6.11E-04	3.06E-07	7.53E-08	6.60E-04	3.30E-07	3.38E-07	2.96E-03	1.48E-06
Pyrene	129-00-0	8.19E-15	7.18E-11	3.59E-14	2.96E-15	2.60E-11	1.30E-14	3.20E-15	2.80E-11	1.40E-14	1.44E-14	1.26E-10	6.29E-14
Toluene	108-88-3	7.00E-04	6.13E+00	3.07E-03	2.53E-04	2.22E+00	1.11E-03	2.74E-04	2.40E+00	1.20E-03	1.23E-03	1.08E+01	5.38E-03
Xylenes	1330-20-7	1.16E-03	1.02E+01	5.08E-03	4.20E-04	3.68E+00	1.84E-03	4.53E-04	3.97E+00	1.99E-03	2.03E-03	1.78E+01	8.91E-03

Emissions (cont.)

		Emissions											
		EID 367			EID 368			EID 370			Total		
Fuel Type	CAS#	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy
VOC	--	5.69E-01	4.99E+03	2.49E+00	6.03E-01	5.29E+03	2.64E+00	3.33E-01	2.91E+03	1.46E+00	1.51E+00	1.32E+04	6.59E+00
Total HAPs	--	1.22E-02	1.07E+02	5.33E-02	1.29E-02	1.13E+02	5.65E-02	7.11E-03	6.23E+01	3.11E-02	3.22E-02	2.82E+02	1.41E-01
Benzene	71-43-2	3.47E-03	3.04E+01	1.52E-02	3.68E-03	3.22E+01	1.61E-02	2.03E-03	1.78E+01	8.89E-03	9.18E-03	8.04E+01	4.02E-02
1,3-Butadiene	106-99-0	1.01E-05	8.88E-02	4.44E-05	1.07E-05	9.41E-02	4.70E-05	5.92E-06	5.19E-02	2.59E-05	2.68E-05	2.35E-01	1.17E-04
Cumene	98-82-8	4.44E-05	3.89E-01	1.94E-04	4.70E-05	4.12E-01	2.06E-04	2.59E-05	2.27E-01	1.13E-04	1.17E-04	1.03E+00	5.14E-04
Ethylbenzene	100-41-4	2.66E-04	2.33E+00	1.16E-03	2.82E-04	2.47E+00	1.23E-03	1.55E-04	1.36E+00	6.80E-04	7.03E-04	6.16E+00	3.08E-03
Fluorene	86-73-7	--	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	3.12E-03	2.73E+01	1.37E-02	3.31E-03	2.90E+01	1.45E-02	1.82E-03	1.60E+01	7.98E-03	8.25E-03	7.23E+01	3.61E-02
Isoooctane (2,2,4-Trimethyl Pentane)	540-84-1	2.76E-04	2.41E+00	1.21E-03	2.92E-04	2.56E+00	1.28E-03	1.61E-04	1.41E+00	7.05E-04	7.29E-04	6.38E+00	3.19E-03
Naphthalene	91-20-3	8.77E-07	7.68E-03	3.84E-06	9.29E-07	8.14E-03	4.07E-06	5.12E-07	4.49E-03	2.24E-06	2.32E-06	2.03E-02	1.02E-05
Phenylbenzene (1,1-biphenyl)	92-52-4	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	129-00-0	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	3.81E-03	3.34E+01	1.67E-02	4.04E-03	3.54E+01	1.77E-02	2.22E-03	1.95E+01	9.75E-03	1.01E-02	8.82E+01	4.41E-02
Xylenes	1330-20-7	1.17E-03	1.02E+01	5.11E-03	1.24E-03	1.08E+01	5.42E-03	6.82E-04	5.97E+00	2.99E-03	3.09E-03	2.70E+01	1.35E-02

MCAS Yuma
Class II Permit Renewal
Permit No. 87288 – Hazardous Air Pollutant Emission Summary
Source Type: Facility Wide

		ABR		BLR		DEG		ICE		PNT		MAT		F24 Fuel		GDF	
CAS	HAZARDOUS AIR POLLUTANT	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
79345	1,1,2,2,-Tetrachloroethane							2.74E-05	6.85E-06								
79005	1,1,2-Trichloroethane							2.19E-05	5.47E-06			0.00E+00	0.00E+00				
75343	1,1-Dichloroethane							1.62E-05	4.05E-06								
106934	1,2-Dibromethane							3.04E-05	7.60E-06								
107062	1,2-Dichloroethane							1.62E-05	4.05E-06								
78875	1,2-Dichloropropane							1.84E-05	4.61E-06								
106887	1,2-Epoxybutane											0.00E+00	0.00E+00				
107211	1,2-Ethanediol/ethylene glycol											2.26E-03	9.91E-03				
106990	1,3-Butadiene							1.96E-03	5.81E-04							7.25E-05	3.18E-04
542756	1,3-Dichloropropene							1.81E-05	4.52E-06								
1120714	1,2-Oxathiolane 2,2-dioxide (1,3-Propane sultone)											0.00E+00	0.00E+00				
540841	2,2,4-Trimethylpentane							1.72E-04	4.30E-05			0.00E+00	0.00E+00	8.67E-07	3.80E-06	2.02E-02	8.84E-02
584849	2,4-Toluene Diisocyanate											0.00E+00	0.00E+00				
80626	2-Propenoic Acid, (Methyl Methacrylate)											1.17E-01	5.13E-01				
75070	Acetaldehyde			3.63E-04	1.59E-03			4.10E-02	1.20E-02								
98862	Acetophenone											0.00E+00	0.00E+00				
107028	Acrolein			2.28E-04	1.00E-03			7.83E-03	2.18E-03								
79107	Acrylic Acid											0.00E+00	0.00E+00				
N010	Antimony Compounds											0.00E+00	0.00E+00				
N020	Arsenic Compounds			1.69E-05	7.41E-05							0.00E+00	0.00E+00				
71432	Benzene			6.76E-04	2.96E-03			5.17E-02	1.62E-02			1.44E-05	6.32E-05	6.72E-04	2.94E-03	3.27E-02	1.43E-01
50328	Benzo[a]pyrene			1.35E-07	5.92E-07			1.15E-05	3.70E-06								
205992	Benzo[b]fluoranthene			1.52E-07	6.66E-07			1.74E-05	6.24E-06								
191242	Benzo[g,h,i]perylene			1.35E-07	5.92E-07			2.89E-05	9.20E-06								
207089	Benzo[k]fluoranthene			1.52E-07	6.66E-07			9.55E-06	3.07E-06								
N050	Beryllium Compounds			1.01E-06	4.44E-06							0.00E+00	0.00E+00				
92524	Biphenyl (Phenylbenzene)							1.45E-04	3.64E-05					3.38E-07	1.48E-06		
117817	Bis(2-Ethylhexyl)phthalate (DEHP)											0.00E+00	0.00E+00				
N078	Cadmium Compounds	9.68E-03	4.24E-02	9.30E-05	4.07E-04							0.00E+00	0.00E+00				
56235	Carbon tetrachloride							2.52E-05	6.30E-06								
108907	Chlorobenzene							2.09E-05	5.22E-06								
75003	Chloroethane (Ethyl Chloride)							1.29E-06	3.22E-07			0.00E+00	0.00E+00				
67663	Chloroform (Trichloromethane)							1.95E-05	4.88E-06			8.86E-03	3.88E-02				
N090	Chromium Compounds	9.29E-02	4.07E-01	1.18E-04	5.18E-04							1.41E-02	6.16E-02				
N096	Cobalt Compounds			7.10E-06	3.11E-05							1.15E-04	5.05E-04				
98828	Cumene											2.40E-05	1.05E-04	1.65E-04	7.24E-04	2.59E-03	1.14E-02
N106	Cyanide Compounds											0.00E+00	0.00E+00				
84742	Dibutylphthalate											0.00E+00	0.00E+00				
25321226	Dichlorobenzene			1.01E-04	4.44E-04												
75092	Dichloromethane							1.38E-05	3.44E-06			0.00E+00	0.00E+00				
62737	Dichlorvos											0.00E+00	0.00E+00				
111422	Diethanolamine					6.00E-03	2.63E-02					1.40E-02	6.12E-02				
68122	Dimethyl Formamide											0.00E+00	0.00E+00				
106898	Epichlorohydrin											0.00E+00	0.00E+00				
100414	Ethylbenzene			8.03E-04	3.52E-03			2.73E-05	6.83E-06	6.91E-03	3.03E-02	1.64E-03	7.20E-03	3.11E-04	1.36E-03	8.26E-03	3.62E-02
75218	Ethylene oxide											4.81E-06	2.11E-05				
50000	Formaldehyde			1.44E-03	6.29E-03			9.10E-02	2.56E-02			4.81E-06	2.11E-05				
N230	Glycol Ethers					6.00E-03	2.63E-02					2.39E-02	1.05E-01				
822060	Hexamethylene-1,6-Diisocyanate									2.60E-03	1.14E-02	9.49E-03	4.16E-02				
110543	Hexane			5.33E-04	2.33E-03			7.63E-04	1.91E-04			5.29E-04	2.32E-03			2.66E-02	1.16E-01
7647010	Hydrochloric Acid											0.00E+00	0.00E+00				
7664393	Hydrofluoric Acid											0.00E+00	0.00E+00				
123319	Hydroquinone											0.00E+00	0.00E+00				
N420	Lead Compounds	7.74E-03	3.39E-02	4.23E-05	1.85E-04			2.76E-04	2.07E-04			3.75E-04	1.64E-03				
N450	Manganese Compounds	9.29E-02	4.07E-01	3.21E-05	1.41E-04							4.67E-02	2.04E-01				
N458	Mercury Compounds			2.20E-05	9.63E-05							1.78E-04	7.79E-04				
67561	Methanol							1.72E-03	4.30E-04			8.62E-03	3.77E-02				
108101	Methyl Isobutyl Ketone									9.18E-02	4.02E-01	1.34E-02	5.87E-02				
101688	Methylene Diphenyl Diisocyanate											1.51E-03	6.61E-03				
121697	N,N-Dimethylbenzenamine											1.44E-05	6.32E-05				
91203	Naphthalene			2.54E-05	1.11E-04			5.41E-03	1.74E-03			1.73E-03	7.58E-03	1.39E-05	6.08E-05	9.19E-04	4.02E-03
N495	Nickel Compounds	9.29E-02	4.07E-01	1.78E-04	7.78E-04							9.84E-03	4.31E-02				
95487	o-Cresol											0.00E+00	0.00E+00				
106503	Para-Phenylenediamine											0.00E+00	0.00E+00				
123911	p-Dioxane											4.81E-06	2.11E-05				
108952	Phenol							1.64E-05	4.11E-06			4.04E-04	1.77E-03				
7723140	Phosphorus											0.00E+00	0.00E+00				
	Polycyclic Organic Compounds			6.98E-06	3.06E-05			4.68E-03	1.48E-03			0.00E+00	0.00E+00	5.25E-10	2.30E-09		
75569	Propylene oxide											4.81E-06	2.11E-05				
106514	Quinone											0.00E+00	0.00E+00				
	Radionuclides											0.00E+00	0.00E+00				
N725	Selenium Compounds			2.03E-06	8.89E-06							0.00E+00	0.00E+00				
100425	Styrene							1.62E-05	4.05E-06			0.00E+00	0.00E+00				
127184	Tetrachloroethylene											0.00E+00	0.00E+00				
108883	Toluene			3.09E-03	1.36E-02			2.22E-02	6.90E-03	1.55E-02	6.78E-02	1.64E-02	7.17E-02	1.23E-03	5.38E-03	5.88E-02	2.58E-01
79016	Trichloroethylene											0.00E+00	0.00E+00				
121448	Triethylamine											0.00E+00	0.00E+00				
75014	Vinyl Chloride							1.02E-05	2.56E-06								
1330207	Xylenes (mixed isomers)							1.54E-02	4.79E-03	2.00E-02	8.77E-02	7.13E-03	3.12E-02	2.03E-03	8.91E-03	4.02E-02	1.76E-01
	Total HAP	2.96E-01	1.30E+00	7.78E-03	3.41E-02	1.20E-02	5.26E-02	2.45E-01	7.25E-02	1.37E-01	5.99E-01	2.98E-01	1.31E+00	4.42E-03	1.94E-02	1.90E-01	8.34E-01

Appendix B Emission Source Form

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
100	BOILER -HT/HW	CO	0.02	146.43	0.07			
		NOX	0.01	87.16	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.59	0.00			
		PM-10/2.5	0.00	13.25	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
101	BOILER HT/HW	CO	0.00	0.16	0.07			
		NOX	0.01	87.16	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.59	0.00			
		PM-10/2.5	0.00	13.25	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
800	IR HEATER	CO	0.10	883.01	0.44			
		NOX	0.12	1051.20	0.53			
		SOX	0.00	6.31	0.00			
		VOC	0.01	57.82	0.03			
		PM-10/2.5	0.01	79.89	0.04			
		Lead	0.00	0.01	0.00			
		HAP	0.00	0.97	0.00			
102	BOILER HT/HW	CO	0.02	146.43	0.07			
		NOX	0.01	87.16	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.59	0.00			
		PM-10/2.5	0.00	13.25	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
103	BOILER HT/HW	CO	0.02	146.43	0.07			
		NOX	0.01	87.16	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.59	0.00			
		PM-10/2.5	0.00	13.25	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
801	IR HEATER	CO	0.10	883.01	0.44			
		NOX	0.12	1051.20	0.53			
		SOX	0.00	6.31	0.00			
		VOC	0.01	57.82	0.03			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
801	IR HEATER (CON'T)	PM-10/2.5	0.01	79.89	0.04			
		Lead	0.00	0.01	0.00			
		HAP	0.00	0.97	0.00			
200	WATER HEATER	CO	0.03	294.34	0.15			
		NOX	0.02	175.20	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.27	0.01			
		PM-10/2.5	0.00	26.63	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
201	WATER HEATER	CO	0.03	294.34	0.15			
		NOX	0.02	175.20	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.27	0.01			
		PM-10/2.5	0.00	26.63	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
802	IR HEATER	CO	0.04	353.20	0.18			
		NOX	0.05	420.48	0.21			
		SOX	0.00	2.52	0.00			
		VOC	0.00	23.13	0.01			
		PM-10/2.5	0.00	31.96	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.39	0.00			
803	IR HEATER	CO	0.05	441.50	0.22			
		NOX	0.06	525.60	0.26			
		SOX	0.00	3.15	0.00			
		VOC	0.00	28.91	0.01			
		PM-10/2.5	0.00	39.95	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.48	0.00			
202	WATER HEATER	CO	0.03	294.34	0.15			
		NOX	0.02	175.20	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.27	0.01			
		PM-10/2.5	0.00	26.63	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
203	WATER HEATER	CO	0.03	294.34	0.15			
		NOX	0.02	175.20	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.27	0.01			
		PM-10/2.5	0.00	26.63	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
804	IR HEATER	CO	0.04	353.20	0.18			
		NOX	0.05	420.48	0.21			
		SOX	0.00	2.52	0.00			
		VOC	0.00	23.13	0.01			
		PM-10/2.5	0.00	31.96	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.39	0.00			
805	IR HEATER	CO	0.05	441.50	0.22			
		NOX	0.06	525.60	0.26			
		SOX	0.00	3.15	0.00			
		VOC	0.00	28.91	0.01			
		PM-10/2.5	0.00	39.95	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.48	0.00			
806	IR HEATER	CO	0.02	131.72	0.07			
		NOX	0.02	156.80	0.08			
		SOX	0.00	0.94	0.00			
		VOC	0.00	8.62	0.00			
		PM-10/2.5	0.00	11.92	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.14	0.00			
204	WATER HEATER	CO	0.01	57.40	0.03			
		NOX	0.00	34.16	0.02			
		SOX	0.00	0.41	0.00			
		VOC	0.00	3.76	0.00			
		PM-10/2.5	0.00	5.19	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.06	0.00			
205	WATER HEATER	CO	0.01	57.40	0.03			
		NOX	0.00	34.16	0.02			
		SOX	0.00	0.41	0.00			
		VOC	0.00	3.76	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
205	WATER HEATER (CON'T)	PM-10/2.5	0.00	5.19	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.06	0.00			
206	WATER HEATER	CO	0.01	57.40	0.03			
		NOX	0.00	34.16	0.02			
		SOX	0.00	0.41	0.00			
		VOC	0.00	3.76	0.00			
		PM-10/2.5	0.00	5.19	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.06	0.00			
207	WATER HEATER	CO	0.01	110.38	0.06			
		NOX	0.01	65.70	0.03			
		SOX	0.00	0.79	0.00			
		VOC	0.00	7.23	0.00			
		PM-10/2.5	0.00	9.99	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.12	0.00			
208	WATER HEATER	CO	0.01	110.38	0.06			
		NOX	0.01	65.70	0.03			
		SOX	0.00	0.79	0.00			
		VOC	0.00	7.23	0.00			
		PM-10/2.5	0.00	9.99	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.12	0.00			
209	WATER HEATER	CO	0.02	147.09	0.07			
		NOX	0.01	87.56	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.63	0.00			
		PM-10/2.5	0.00	13.31	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
210	WATER HEATER	CO	0.02	147.09	0.07			
		NOX	0.01	87.56	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.63	0.01			
		PM-10/2.5	0.00	13.31	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
104	BOILER -HEAT	CO	0.02	209.71	0.10			
		NOX	0.01	124.83	0.06			
		SOX	0.00	1.50	0.00			
		VOC	0.00	13.73	0.01			
		PM-10/2.5	0.00	18.97	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.23	0.00			
211	WATER HEATER	CO	0.00	29.43	0.01			
		NOX	0.00	17.52	0.01			
		SOX	0.00	0.21	0.00			
		VOC	0.00	1.93	0.00			
		PM-10/2.5	0.00	2.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.03	0.00			
105	BOILER -HT/HW	CO	0.01	77.26	0.04			
		NOX	0.01	45.99	0.02			
		SOX	0.00	0.55	0.00			
		VOC	0.00	5.06	0.00			
		PM-10/2.5	0.00	6.99	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.08	0.00			
212	WATER HEATER	CO	0.01	73.58	0.04			
		NOX	0.01	43.80	0.02			
		SOX	0.00	0.53	0.00			
		VOC	0.00	4.82	0.00			
		PM-10/2.5	0.00	6.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.08	0.00			
106	BOILER -HEAT	CO	0.03	294.26	0.15			
		NOX	0.02	175.16	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.27	0.01			
		PM-10/2.5	0.00	26.62	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
213	WATER HEATER	CO	0.01	73.58	0.04			
		NOX	0.01	43.80	0.02			
		SOX	0.00	0.53	0.00			
		VOC	0.00	4.82	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
213	WATER HEATER (CON'T)	PM-10/2.5	0.00	6.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.08	0.00			
107	BOILER -HEAT	CO	0.08	735.10	0.37			
		NOX	0.05	437.56	0.22			
		SOX	0.00	5.25	0.00			
		VOC	0.01	48.13	0.02			
		PM-10/2.5	0.01	66.51	0.03			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.81	0.00			
108	BOILER -HEAT	CO	0.05	441.50	0.22			
		NOX	0.03	262.80	0.13			
		SOX	0.00	3.15	0.00			
		VOC	0.00	28.91	0.01			
		PM-10/2.5	0.00	39.95	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.48	0.00			
214	WATER HEATER	CO	0.01	57.40	0.03			
		NOX	0.00	34.16	0.02			
		SOX	0.00	0.41	0.00			
		VOC	0.00	3.76	0.00			
		PM-10/2.5	0.00	5.19	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.06	0.00			
215	WATER HEATER	CO	0.03	231.79	0.12			
		NOX	0.02	137.97	0.07			
		SOX	0.00	1.66	0.00			
		VOC	0.00	15.18	0.01			
		PM-10/2.5	0.00	20.97	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.25	0.00			
807	IR HEATER	CO	0.15	1324.51	0.66			
		NOX	0.18	1576.80	0.79			
		SOX	0.00	9.46	0.00			
		VOC	0.01	86.72	0.04			
		PM-10/2.5	0.01	119.84	0.06			
		Lead	0.00	0.01	0.00			
		HAP	0.00	1.45	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
109	BOILER -HW	CO	0.03	293.60	0.15			
		NOX	0.02	174.76	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.22	0.01			
		PM-10/2.5	0.00	26.56	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
216	WATER HEATER	CO	0.00	29.43	0.01			
		NOX	0.00	17.52	0.01			
		SOX	0.00	0.21	0.00			
		VOC	0.00	1.93	0.00			
		PM-10/2.5	0.00	2.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.03	0.00			
217	WATER HEATER	CO	0.00	29.43	0.01			
		NOX	0.00	17.52	0.01			
		SOX	0.00	0.21	0.00			
		VOC	0.00	1.93	0.00			
		PM-10/2.5	0.00	2.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.03	0.00			
110	BOILER -HEAT	CO	0.04	367.92	0.18			
		NOX	0.03	219.00	0.11			
		SOX	0.00	2.63	0.00			
		VOC	0.00	24.09	0.01			
		PM-10/2.5	0.00	33.29	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.40	0.00			
218	WATER HEATER	CO	0.01	114.79	0.06			
		NOX	0.02	136.66	0.07			
		SOX	0.00	0.82	0.00			
		VOC	0.00	7.52	0.00			
		PM-10/2.5	0.00	10.39	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.13	0.00			
111	BOILER -HEAT	CO	0.03	293.60	0.15			
		NOX	0.02	174.76	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.22	0.01			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
111	BOILER-HEAT (CON'T)	PM-10/2.5	0.00	26.56	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
112	BOILER -HW	CO	0.01	110.38	0.06			
		NOX	0.01	65.70	0.03			
		SOX	0.00	0.79	0.00			
		VOC	0.00	7.23	0.00			
		PM-10/2.5	0.00	9.99	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.12	0.00			
219	WATER HEATER	CO	0.00	29.43	0.01			
		NOX	0.00	17.52	0.01			
		SOX	0.00	0.21	0.00			
		VOC	0.00	1.93	0.00			
		PM-10/2.5	0.00	2.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.03	0.00			
113	BOILER -HT/HW	CO	0.02	209.71	0.10			
		NOX	0.01	124.83	0.06			
		SOX	0.00	1.50	0.00			
		VOC	0.00	13.73	0.01			
		PM-10/2.5	0.00	18.97	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.23	0.00			
114	BOILER -HT/HW	CO	0.02	209.71	0.10			
		NOX	0.01	124.83	0.06			
		SOX	0.00	1.50	0.00			
		VOC	0.00	13.73	0.01			
		PM-10/2.5	0.00	18.97	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.23	0.00			
115	BOILER -HEAT	CO	0.05	478.30	0.24			
		NOX	0.03	284.70	0.14			
		SOX	0.00	3.42	0.00			
		VOC	0.00	31.32	0.02			
		PM-10/2.5	0.00	43.27	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.52	0.00			

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Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
116	BOILER -HEAT	CO	0.05	478.30	0.24			
		NOX	0.03	284.70	0.14			
		SOX	0.00	3.42	0.00			
		VOC	0.00	31.32	0.02			
		PM-10/2.5	0.00	43.27	0.02			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.52	0.00			
117	BOILER -HEAT	CO	0.02	147.17	0.07			
		NOX	0.01	87.60	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.64	0.01			
		PM-10/2.5	0.00	13.32	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
118	BOILER -HEAT	CO	0.02	147.17	0.07			
		NOX	0.01	87.60	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.64	0.00			
		PM-10/2.5	0.00	13.32	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
119	BOILER -HEAT	CO	0.02	147.17	0.07			
		NOX	0.01	87.60	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.64	0.00			
		PM-10/2.5	0.00	13.32	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
220	WATER HEATER	CO	0.01	88.30	0.04			
		NOX	0.01	52.56	0.03			
		SOX	0.00	0.63	0.00			
		VOC	0.00	5.78	0.00			
		PM-10/2.5	0.00	7.99	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.10	0.00			
221	WATER HEATER	CO	0.00	29.43	0.01			
		NOX	0.00	35.04	0.02			
		SOX	0.00	0.21	0.00			
		VOC	0.00	1.93	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
221	WATER HEATER (CON'T)	PM-10/2.5	0.00	2.66	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.03	0.00			
222	WATER HEATER	CO	0.00	27.96	0.01			
		NOX	0.00	16.64	0.01			
		SOX	0.00	0.20	0.00			
		VOC	0.00	1.83	0.00			
		PM-10/2.5	0.00	2.53	0.00			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.03	0.00			
223	WATER HEATER	CO	0.03	220.75	0.11			
		NOX	0.03	262.80	0.13			
		SOX	0.00	1.58	0.00			
		VOC	0.00	14.45	0.01			
		PM-10/2.5	0.00	19.97	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.24	0.00			
120	BOILER -HEAT	CO	0.03	293.60	0.15			
		NOX	0.02	174.76	0.09			
		SOX	0.00	2.10	0.00			
		VOC	0.00	19.22	0.01			
		PM-10/2.5	0.00	26.56	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.32	0.00			
224	WATER HEATER	CO	0.02	147.17	0.07			
		NOX	0.01	87.60	0.04			
		SOX	0.00	1.05	0.00			
		VOC	0.00	9.64	0.00			
		PM-10/2.5	0.00	13.32	0.01			
		Lead	0.00	0.00	0.00			
		HAP	0.00	0.16	0.00			
300	EMERGENCY ICE	CO	1.34	11700.41	0.33			
		NOX	1.44	12578.45	0.36			
		SOX	0.00	25.73	0.00			
		VOC	0.11	982.18	0.03			
		PM-10/2.5	0.08	675.89	0.02			
		HAP	0.00	30.14	0.00			
		LEAD	0.00	0.00	0.00			

						USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
301	EMERGENCY ICE	CO	1.34	11700.41	0.33			
		NOX	1.44	12578.45	0.36			
		SOX	0.00	25.73	0.00			
		VOC	0.11	982.18	0.03			
		PM-10/2.5	0.08	675.89	0.02			
		HAP	0.00	30.14	0.00			
		LEAD	0.00	0.00	0.00			
302	EMERGENCY ICE	CO	1.21	10623.23	0.30			
		NOX	1.30	11420.43	0.33			
		SOX	0.00	23.36	0.00			
		VOC	0.10	891.76	0.03			
		PM-10/2.5	0.07	613.66	0.02			
		HAP	0.00	27.37	0.00			
		LEAD	0.00	0.00	0.00			
303	EMERGENCY ICE	CO	1.21	10623.23	0.30			
		NOX	1.30	11420.43	0.33			
		SOX	0.00	23.36	0.00			
		VOC	0.10	891.76	0.03			
		PM-10/2.5	0.07	613.66	0.02			
		HAP	0.00	27.37	0.00			
		LEAD	0.00	0.00	0.00			
304	EMERGENCY ICE (FL)	CO	3.20	28043.83	1.60			
		NOX	5.75	50410.38	2.88			
		SOX	0.01	61.67	0.00			
		VOC	0.16	1399.74	0.08			
		PM-10/2.5	0.18	1619.98	0.09			
		HAP	0.00	20.54	0.00			
		LEAD	0.00	0.00	0.00			
305	EMERGENCY ICE (FL)	CO	2.36	20660.71	1.18			
		NOX	10.96	96040.00	5.48			
		SOX	0.00	33.90	0.00			
		VOC	0.86	452.11	0.43			
		PM-10/2.5	0.77	6752.39	0.39			
		HAP	0.01	84.32	0.00			
		LEAD	0.00	0.00	0.00			
306	EMERGENCY ICE (FL)	CO	3.13	27381.66	1.56			
		NOX	14.53	127281.92	7.26			
		SOX	0.01	44.92	0.00			
		VOC	1.14	9947.24	0.57			

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Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
306	EMERGENCY ICE (FL) (CON'T)	PM-10/2.5	1.02	8948.95	0.51			
		HAP	0.01	111.75	0.01			
		LEAD	0.00	0.00	0.00			
307	EMERGENCY ICE	CO	1.54	13520.47	0.39			
		NOX	1.66	14535.10	0.41			
		SOX	0.00	29.73	0.00			
		VOC	0.13	1134.96	0.03			
		PM-10/2.5	0.09	781.03	0.02			
		HAP	0.00	34.83	0.00			
		LEAD	0.00	0.00	0.00			
308	EMERGENCY ICE	CO	1.63	14300.50	0.41			
		NOX	1.75	15373.66	0.44			
		SOX	0.00	31.45	0.00			
		VOC	0.14	1200.44	0.03			
		PM-10/2.5	0.09	826.08	0.02			
		HAP	0.00	36.84	0.00			
		LEAD	0.00	0.00	0.00			
309	EMERGENCY ICE	CO	1.63	14300.50	0.41			
		NOX	1.75	15373.66	0.44			
		SOX	0.00	31.45	0.00			
		VOC	0.14	1200.44	0.03			
		PM-10/2.5	0.09	826.08	0.02			
		HAP	0.00	36.84	0.00			
		LEAD	0.00	0.00	0.00			
310	EMERGENCY ICE	CO	0.88	7669.98	0.22			
		NOX	0.66	5790.08	0.17			
		SOX	0.00	11.84	0.00			
		VOC	0.05	452.11	0.01			
		PM-10/2.5	0.05	455.87	0.01			
		HAP	0.00	13.87	0.00			
		LEAD	0.00	0.00	0.00			
311	EMERGENCY ICE	CO	1.37	12034.71	0.34			
		NOX	1.48	12937.83	0.37			
		SOX	0.00	26.46	0.00			
		VOC	0.12	1010.24	0.03			
		PM-10/2.5	0.08	695.20	0.02			
		HAP	0.00	31.00	0.00			
		LEAD	0.00	0.00	0.00			

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Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
312	EMERGENCY ICE (FL)	CO	1.25	10952.66	0.63			
		NOX	5.81	50912.77	2.91			
		SOX	0.00	17.97	0.00			
		VOC	0.45	3978.90	0.23			
		PM-10/2.5	0.41	3579.58	0.20			
		HAP	0.01	44.70	0.00			
		LEAD	0.00	0.00	0.00			
313	EMERGENCY ICE (FL)	CO	0.36	3186.23	0.18			
		NOX	1.69	14810.99	0.85			
		SOX	0.00	5.23	0.00			
		VOC	0.13	1157.50	0.07			
		PM-10/2.5	0.12	1041.33	0.06			
		HAP	0.00	13.00	0.00			
		LEAD	0.00	0.00	0.00			
314	EMERGENCY ICE (FL)	CO	0.36	3186.23	0.18			
		NOX	1.69	14810.99	0.85			
		SOX	0.00	5.23	0.00			
		VOC	0.13	1157.50	0.07			
		PM-10/2.5	0.12	1041.33	0.06			
		HAP	0.00	13.00	0.00			
		LEAD	0.00	0.00	0.00			
315	EMERGENCY ICE (FL)	CO	1.25	10952.66	0.63			
		NOX	5.81	50912.77	2.91			
		SOX	0.00	17.97	0.00			
		VOC	0.45	3978.90	0.23			
		PM-10/2.5	0.41	3579.58	0.20			
		HAP	0.01	44.70	0.00			
		LEAD	0.00	0.00	0.00			
316	EMERGENCY ICE (FL)	CO	3.85	33761.38	1.93			
		NOX	14.51	127095.88	7.25			
		SOX	0.01	61.83	0.00			
		VOC	0.40	3513.54	0.20			
		PM-10/2.5	0.45	3969.91	0.23			
		HAP	0.01	62.45	0.00			
		LEAD	0.00	0.00	0.00			

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Emission Point		Regulated Air Pollutant Name	PTE			PTE AFTER MODIFICATION		CHANGE
ID #	Name		lbs/hr	lb/yr	tons/yr	lbs/hr	tons/yr	tons/yr
400-407	GEAR ARRESTING ENGINE	CO	0.31	2732.17	0.23			
		NOX	0.49	4318.08	0.37			
		SOX	0.03	232.00	0.02			
		VOC	0.60	5260.21	0.45			
		PM-10/2.5	0.03	283.03	0.02			
		HAP	0.00	0.00	0.00			
		LEAD	0.00	0.00	0.00			
519	BOOTH COATING	VOC	0.39	3421.61	1.71			
		PM	0.01	94.62	0.05			
		PM10	0.01	90.83	0.05			
		PM2.5	0.01	87.99	0.04			
		HAP	0.13	1100.35	0.55			
520	BOOTH COATING	VOC	0.40	3502.98	1.75			
		PM	0.01	109.89	0.05			
		PM10	0.01	105.50	0.05			
		PM2.5	0.01	102.20	0.05			
		HAP	0.01	97.83	0.05			
514	BLAST CABINET	PM-10	0.00	13.44	0.01			
		PM-2.5	0.00	12.35	0.01			
		LEAD	0.00	0.54	0.00			
		HAP TOTAL	0.00	20.56	0.01			
515	BLAST CABINET	PM10	0.19	1675.35	0.84			
		PM2.5	0.18	1539.09	0.77			
		LEAD	0.01	67.01	0.03			
		HAP TOTAL	0.29	2563.29	1.28			
516	BLAST CABINET	PM10	0.00	2.76	0.00			
		PM2.5	0.00	2.53	0.00			
		LEAD	0.00	0.11	0.00			
		HAP TOTAL	0.00	4.22	0.00			
517	BLAST CABINET	PM10	0.00	2.76	0.00			
		PM2.5	0.00	2.53	0.00			
		LEAD	0.00	0.11	0.00			
		HAP TOTAL	0.00	4.22	0.00			
518	BLAST CABINET	PM10	0.00	0.82	0.00			
		PM2.5	0.00	0.76	0.00			
		LEAD	0.00	0.03	0.00			
		HAP TOTAL	0.00	1.26	0.00			
500	PARTS WASHER	VOC	0.03	291.20	0.15			
501	STRIPPER TANK	VOC	0.54	4731.65	2.37			

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Emission Point		**Regulated Air Pollutant Name**	**PTE**			**PTE AFTER MODIFICATION**		**CHANGE**
ID #	**Name**		**lbs/hr**	**lb/yr**	**tons/yr**	**lbs/hr**	**tons/yr**	**tons/yr**
502	PARTS WASHER	VOC	0.02	208.00	0.10			
503	PARTS WASHER	VOC	0.02	208.00	0.10			
504	PARTS WASHER	VOC	0.02	208.00	0.10			
505	PARTS WASHER	VOC	0.02	145.60	0.07			
506	PARTS WASHER	VOC	0.03	282.07	0.14			
		HAP	0.01	105.17	0.05			
507	PARTS WASHER	VOC	0.02	173.42	0.09			
508	PARTS WASHER	VOC	0.02	208.00	0.10			
509	PARTS WASHER	VOC	0.02	208.00	0.10			
510	PARTS WASHER	VOC	0.02	208.00	0.10			
511	PARTS WASHER	VOC	0.01	124.80	0.06			
512	STRIPPER TANK	VOC	0.37	3220.46	1.61			
513	PARTS WASHER	VOC	0.02	166.40	0.08			
312	F24 Aboveground Storage Tank	VOC	0.02	216.77	0.11			
		HAP	0.00	22.11	0.01			
336	F24 Aboveground Storage Tank	VOC	0.01	78.45	0.04			
		HAP	0.00	8.00	0.00			
337	F24 Aboveground Storage Tank	VOC	0.01	84.70	0.04			
		HAP	0.00	8.64	0.00			
367	Gasoline Aboveground Storage Tank	VOC	0.57	4987.71	2.49			
		HAP	0.01	106.74	0.05			
368	Gasoline Aboveground Storage Tank	VOC	0.60	5285.44	2.64			
		HAP	0.01	113.11	0.06			
370	E85 Aboveground Storage Tank	VOC	0.33	2913.33	1.46			
		HAP	0.01	62.35	0.03			
367, 368, 370	Smith Street Station	VOC	0.44	3825.90	1.91			
		HAP	0.01	129.39	0.06			