



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive, Diamond Bar, CA 91765

Title Page	
Facility I.D.#:	011887
Revision #:	27
Date:	July 24, 2007

FACILITY PERMIT TO OPERATE

**NASA JET PROPULSION LAB
4800 OAK GROVE DR
PASADENA, CA 91109**

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Barry R. Wallerstein, D. Env.
EXECUTIVE OFFICER

By *Carol Coy* FOR
Carol Coy
Deputy Executive Officer
Engineering & Compliance

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

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The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1 : INTERNAL COMBUSTION EQUIPMENT					
System 1 : BUILDING 150					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 160 BHP A/N: 288576	D2		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, E448.1, H23.9, K67.10
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 377 BHP A/N: 458450	D3		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, E448.2, H23.9, K67.10
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DETROIT DIESEL, MODEL NO. 6063-TK35, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 550 BHP A/N: 458447	D154			NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B59.1, B61.3, D12.2, E448.2, H23.9, K67.10
System 2 : BUILDING 159					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 192 BHP A/N: 458449	D4		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, E448.2, H23.9, K67.10
System 3 : BUILDING 199					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 187 BHP A/N: 458448	D5		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, E448.2, H23.9, K67.10

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 (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

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Process 1 : INTERNAL COMBUSTION EQUIPMENT					
System 4 : BUILDING 202					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 302 BHP A/N: 285226	D6		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, D135.1, E448.1, H23.9, K67.10
System 5 : BUILDING 230					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 2151 BHP A/N: 458445	D7		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, C1.1, C177.1, H23.11, K67.10
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 2151 BHP A/N: 458444	D8		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, C1.1, C177.1, H23.11, K67.10
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 2151 BHP A/N: 458443	D9		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, C1.1, C177.1, H23.11, K67.10
System 6 : BUILDING 268					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, 170 BHP A/N: 285227	D10		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, D135.1, E448.1, H23.9, K67.10

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Process 1 : INTERNAL COMBUSTION EQUIPMENT					
System 7 : BUILDING 277					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, 90 BHP A/N: 249455	D11		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6- 2005] ; PM: (9) [RULE 404,2- 7-1986]	B61.3, D12.2, D135.1, E448.1, H23.9, K67.10
System 8 : BUILDING 298					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, NATURAL GAS, 450 BHP A/N: 285413	D13		NOX: PROCESS UNIT**	NOX: 3400 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	C1.1, D135.1, K67.10
System 9 : BUILDING 301					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH TURBOCHARGER, 186 BHP A/N: 458442	D14		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6- 2005] ; PM: (9) [RULE 404,2- 7-1986]	C1.1, H23.11, K67.10
System 10 : BUILDING 302					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 535 BHP A/N: 458452	D15		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6- 2005] ; PM: (9) [RULE 404,2- 7-1986]	B61.1, B61.3, D12.2, E448.3, H23.9, K67.10

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Process 1 : INTERNAL COMBUSTION EQUIPMENT					
System 11 : BUILDING 308					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, NATURAL GAS, PROPANE, WITH TURBOCHARGER, 132 BHP A/N: 366520	D16		NOX: PROCESS UNIT**	NOX: 139 LBS/1000 GAL PROPANE (5) [RULE 2012,5-6-2005] ; NOX: 3400 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	C1.1, E114.1, K67.10
System 13 : BUILDING 310					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 568 BHP A/N: 458451	D18		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, C1.1, C177.1, H23.12, K67.10
System 14 : BUILDING MESA					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, GASOLINE, 61 BHP A/N: 289485	D19		NOX: PROCESS UNIT**	NOX: 102 LBS/1000 GAL GASOLINE (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	C1.1, E114.1, K67.10
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, 337 BHP A/N: 323269	D20		NOX: PROCESS UNIT**	NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.3, D12.2, E448.1, H23.9, K67.10

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Process 1 : INTERNAL COMBUSTION EQUIPMENT					
System 15 : BUILDING 249					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, 68 BHP A/N: 458453	D138			NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B61.1, B61.3, D12.2, E448.3, H23.9, K67.10
System 16 : EAST GATE					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, JOHN DEERE, MODEL NO. 3029TF150, DIESEL FUEL, 64 BHP A/N: 458446	D155			NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] ; PM: (9) [RULE 404,2-7-1986]	B59.1, B61.3, D12.2, E448.2, H23.9, K67.10
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, KOHLER, MODEL NO. 100RZG, NATURAL GAS, WITH A THREE-WAY CATALYTIC CONVERTOR, JOHNSON MATTHEY, MODEL NO. CXX6-3, 144 BHP A/N: 436668	D159			CO: 2 GRAM/BHP-HR NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996;RULE 1303(a)(1)-BACT,12-6-2002] ; NOX: 3400 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] NOX: 1.5 GRAM/BHP-HR NATURAL GAS (4) [RULE 2005,5-6-2005] ; PM: (9) [RULE 404,2-7-1986] ; VOC: 1.5 GRAM/BHP-HR NATURAL GAS (4) [RULE 1303(a)(1)-BACT,5-10-1996 RULE 1303(a)(1)-BACT,12-6-2002]	C1.1, C1.8, D12.1, E71.4, K67.10

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Process 1 : INTERNAL COMBUSTION EQUIPMENT					
System 17 : BUILDING 179					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, JOHN DEERE, MODEL NO. 6068HF485T, DIESEL FUEL, WITH AFTERCOOLER, TURBOCHARGER, 315 BHP A/N: 468704	D164			CO: 2.6 GRAM/BHP-HR (4) [RULE 1303(a)(1)-BACT,5-10-1996;RULE 1303(a)(1)-BACT,12-6-2002] ; NOX: 469 LBS/1000 GAL DIESEL (1) [RULE 2012,5-6-2005] NOX + ROG: 3 GRAM/BHP-HR (4) [RULE 1303(a)(1)-BACT,5-10-1996;RULE 1303(a)(1)-BACT,12-6-2002;RULE 2005,5-6-2005] ; PM: 0.15 GRAM/BHP-HR (4) [RULE 1303(a)(1)-BACT,5-10-1996 RULE 1303(a)(1)-BACT,12-6-2002] ; PM: (9) [RULE 404,2-7-1986]	B59.1, B61.3, D12.2, E448.2, H23.9, K67.10
Process 2 : EXTERNAL COMBUSTION EQUIPMENT					
System 2 : BUILDING 161					
BOILER, RITE, MODEL NO. 300X, NATURAL GAS, 3 MMBTU/HR WITH A/N: 295375	D22		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005]	D332.1

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Process 2 : EXTERNAL COMBUSTION EQUIPMENT					
BURNER, ALZETA PYROMAT, MODEL NO. SB505/60IGC, NATURAL GAS, WITH LOW NOX BURNER, 3 MMBTU/HR				PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	
BOILER, RITE, MODEL NO. 300X, NATURAL GAS, 3 MMBTU/HR WITH A/N: 295383	D23		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13- 1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1
BURNER, ALZETA PYROMAT, MODEL NO. SB505/60IGC, NATURAL GAS, WITH LOW EXCESS AIR FIRING, 3 MMBTU/HR					

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Process 2 : EXTERNAL COMBUSTION EQUIPMENT					
System 4 : BUILDING 168					
BOILER, AJAX, MODEL NO. WGB2500, NATURAL GAS, 2.5 MMBTU/HR WITH A/N: 295382 BURNER, ALZETA PYROMAT, MODEL NO. SB505/50IGC, NATURAL GAS, WITH LOW NOX BURNER, 2.5 MMBTU/HR	D26		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1
System 5 : BUILDING 171					
BOILER, AJAX, MODEL NO. WGB2250D, NATURAL GAS, 2.1 MMBTU/HR WITH A/N: 322821	D27		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1

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Process 2 : EXTERNAL COMBUSTION EQUIPMENT					
BURNER, NATURAL GAS, WITH LOW NOX BURNER, 3 TOTAL; 2.1 MMBTU/HR					
BOILER, AJAX, MODEL NO. WGB2250D, NATURAL GAS, 2.1 MMBTU/HR WITH A/N: 322825	D28		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1
BURNER, NATURAL GAS, WITH LOW NOX BURNER, 3 TOTAL; 2.1 MMBTU/HR					
System 6 : BUILDING 180					
BOILER, FULTON, MODEL NO. ICS60, NATURAL GAS, NO. 1, 2.52 MMBTU/HR WITH A/N: 297842	D29		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1

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BURNER, NATURAL GAS, WITH LOW NOX BURNER, 2.52 MMBTU/HR					
BOILER, FULTON, MODEL NO. ICS60, NATURAL GAS, NO. 2, 2.52 MMBTU/HR WITH A/N: 297843	D30		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1
BURNER, NATURAL GAS, WITH LOW NOX BURNER, 2.52 MMBTU/HR					
System 8 : BUILDING 238					
BOILER, AJAX, MODEL NO. WFGD3000, NATURAL GAS, 3 MMBTU/HR WITH A/N: 291526	D33		NOX: PROCESS UNIT**	CO: 400 PPMV NATURAL GAS (5A) [RULE 1146.1,5-13-1994] ; CO: 2000 PPMV NATURAL GAS (5) [RULE 407,4-2-1982] ; NOX: 38.46 LBS/MMSCF NATURAL GAS (1) [RULE 2012,5-6-2005] PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	D332.1

* (1)(1A)(1B) Denotes RECLAIM emission factor (2)(2A)(2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 2 : EXTERNAL COMBUSTION EQUIPMENT					
BURNER, POWER FLAME, MODEL NO. NOVA LNCR2G20B, NATURAL GAS, WITH LOW NOX BURNER, 3 MMBTU/HR					
Process 3 : SURFACE COATING EQUIPMENT					
System 4 : COATING OPERATION, BLDG. 18					
SPRAY COATING OPERATION, 8 FT. W. X 8 FT. H. X 6 FT.-9 IN. D., WITH SPRAY BOOTH A/N: 354582	D38			PM: (9) [RULE 404,2-7-1986] ; VOC: (9) [RULE 1107,11-9- 2001;RULE 1107,1-6-2006;RULE 1124,9-21-2001;RULE 1145,2-14- 1997 RULE 1145,12-3-2004;RULE 1171,11-7-2003;RULE 1171,7- 14-2006]	A63.1, C6.1, D322.1, E175.1, H23.1, K67.3
Process 4 : DEGREASING/CLEANING EQUIPMENT					
System 3 : BUILDING 103					
CLEANER, MICROCEL CENTRIFUGAL SYSTEM, 38 IN. W. X 75 IN. L. X 67 IN. H., 28 GALLON CAPACITY A/N: 375751	D137				H23.4
Process 5 : FUEL STORAGE AND DISPENSING					
FUEL DISPENSING NOZZLE, BALANCE RETRACTOR PHASE II CONTROL, GASOLINE A/N: 441777	D68				J110.1, J121.1, J373.1

* (1)(1A)(1B) Denotes RECLAIM emission factor (2)(2A)(2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 5 : FUEL STORAGE AND DISPENSING					
STORAGE TANK, UNDERGROUND, CARB ENHANCED VAPOR RECOVERY PHASE I, GASOLINE, WITH VAPOR RECOVERY SYSTEM, 10000 GALS A/N: 441777	D69				C1.7, J109.1, K67.1
Process 6 : CIRCUIT BOARDS R & D					
System 1 : BUILDING 103					
SOLDER MACHINE, GPD GLOBAL LTS-1000APC SOLDER DIP TINNING, WITH VAPOR PHASE REFLOW SYSTEM, R&D TECHNICAL SERVICES, MODEL NO. RD2, 7.1 KW A/N: 401919	D75				A63.2, B27.2
Process 7 : MICRO-DEVICES R & D					
System 1 : BUILDING 302					
DEPOSITION REACTOR, THOMAS SWAN, MODEL NO. EPITOR II, METAL ORGANIC VAPOR PHASE EPITAXY A/N: 346766	D83	C128			K67.2
System 3 : BUILDING 302					
ETCHER, REACTIVE ION, PLASMA FAB A/N: 454660	D90	C131			
ETCHER, PLASMA TECH, REACTIVE ION A/N: 454660	D101	C131			

* (1)(1A)(1B) Denotes RECLAIM emission factor (2)(2A)(2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 7 : MICRO-DEVICES R & D					P13.1
DEPOSITION REACTOR, MICROSCIENCE, CHEMICAL VAPOR DEPOSITION A/N: 454660	D103	C127			
DEPOSITION REACTOR, GSI, CHEMICAL VAPOR DEPOSITION A/N: 454660	D104	C127			
DEPOSITION REACTOR, GLASS TECH, CHEMICAL VAPOR DEPOSITION A/N: 454660	D105	C127			
DEPOSITION REACTOR, JPL, CHEMICAL VAPOR DEPOSITION A/N: 454660	D106	C127			
FURNACE, THERMCO, MINI BRUTE, DIFFUSION A/N: 454660	D108	C127			
FURNACE, THERMCO, MINI BRUTE, DIFFUSION A/N: 454660	D109	C127			
FURNACE, THERMCO, MINI BRUTE, DIFFUSION A/N: 454660	D110	C127			
FURNACE, TYSTAR, TYTAN, LPCVD A/N: 454660	D117	C131			
FURNACE, TYSTAR, TYTAN, LPCVD A/N: 454660	D118	C127			
FURNACE, TYSTAR, TYTAN, LPCVD A/N: 454660	D119	C127			

* (1)(1A)(1B) Denotes RECLAIM emission factor
 (2)(2A)(2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit
 (4) Denotes BACT emission limit
 (5)(5A)(5B) Denotes command and control emission limit
 (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit
 (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits
 (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 7 : MICRO-DEVICES R & D					P13.1
FURNACE, TYSTAR, TYTAN, LPCVD A/N: 454660	D120	C127			
DEPOSITION REACTOR, PLASMA THERM, MODEL NO. 790, PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION A/N: 454660	D124	C127			
ETCHER, PLASMA THERM, MODEL NO. SLR770, ELECTRON CYCLOTRON A/N: 454660	D125	C131			
ETCHER, SURFACE TECHNOLOGY, MULTIPLEX INDUCTIVELY COUPLED A/N: 454660	D126	C131			
ETCHER, REACTIVE ION, CHLORINE, UNAXIS, MODEL NO. SLN-ICP A/N: 454660	D160	C131			B27.4
ETCHER, REACTIVE ION, FLUORINE, UNAXIS, MODEL NO. SLN-ICP A/N: 454660	D161	C131			
FURNACE, WET OXIDATION, TYSTAR, MODEL NO. MINI TYTAN 4600 A/N: 454660	D162	C131			
FURNACE, LPCVD, TYSTAR, MODEL NO. MINI TYTAN 4600 A/N: 454660	D163	C127			B27.5

* (1)(1A)(1B) Denotes RECLAIM emission factor (2)(2A)(2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 7 : MICRO-DEVICES R & D					P13.1
System 4 : BUILDING 302					
DEGREASER, AIRLESS, AIR-TIGHT, TIYODA-SEREC, CLEANING CHAMBER DIMENSIONS: 8 IN. DIA. X 12 IN. H., 5 LBS ACTIVATED CARBON FILTER A/N: 415437	D158			HAP: (10) [40CFR 63 Subpart T, #30,6-5-1995]	A63.3, B27.3, E71.5, H23.8, K67.11
Process 8 : AIR POLLUTION CONTROL					
System 1 : BUILDING 302					
INCINERATOR, CONTROLLED DECOMPOSITION OXIDATION UNITS, 14 TOTAL, EACH DELATECH, MODEL NO. 805, 3 KVA A/N: 415436	C127	D103 D104 D105 D106 D108 D109 D110 D118 D119 D120 D124 C131 D163			
SCRUBBER, AIXTRON, MODEL NO. A2STE, WITH TWO ABSORPTION COLUMNS A/N: 415436	C128	D83 C131			
SCRUBBER, VIRON, MODEL NO. VHS108108FRP, WITH MIST ELIMINATOR A/N: 415436	C131	D90 D101 D117 D125 D126 C127 C128 D160 D161 D162		PM: (9) [RULE 404,2-7-1986]	C8.1, C8.2, K67.4

* (1)(1A)(1B) Denotes RECLAIM emission factor (2)(2A)(2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 10 : R219 EXEMPT EQUIPMENT SUBJECT TO SOURCE-SPECIFIC RULES					
RULE 219 EXEMPT EQUIPMENT, LAMINATING EQUIPMENT, LOW USE OR EMISSIONS	E140			VOC: (9) [RULE 1168,10-3-2003;RULE 1168,1-7-2005;RULE 1171,11-7-2003;RULE 1171,7-14-2006]	H23.5
RULE 219 EXEMPT EQUIPMENT, COOLING TOWERS	E141				H23.2
RULE 219 EXEMPT EQUIPMENT, REFRIGERANT RECOVERY AND/OR RECYCLING UNITS,	E142				H23.3
RULE 219 EXEMPT EQUIPMENT, ABRASIVE BLASTING EQUIPMENT, GLOVE-BOX, < = 53 FT3, WITH DUST FILTER	E143			PM: (9) [RULE 1140,2-1-1980;RULE 1140,8-2-1985;RULE 404,2-7-1986;RULE 405,2-7-1986]	D322.3, D381.1, E102.1, K67.5
RULE 219 EXEMPT EQUIPMENT, CLEANING EQUIPMENT	E144				H23.4
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, LOW USE OR EMISSIONS	E145			VOC: (9) [RULE 1107,11-9-2001;RULE 1107,1-6-2006;RULE 1124,9-21-2001;RULE 1171,11-7-2003;RULE 1171,7-14-2006]	H23.5
RULE 219 EXEMPT EQUIPMENT, FOAM PACKAGING EQUIPMENT USING < = 20 GPD	E146				

* (1)(1A)(1B)Denotes RECLAIM emission factor (2)(2A)(2B)Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5)(5A)(5B)Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
 (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 10 : R219 EXEMPT EQUIPMENT SUBJECT TO SOURCE-SPECIFIC RULES					
RULE 219 EXEMPT EQUIPMENT, EQUIPMENT USED FOR THE TRANSFER OF < 20,000 GPD OF UNHEATED ORGANIC MATERIAL	E147				
RULE 219 EXEMPT EQUIPMENT, AIR CONDITIONING UNITS	E148				H23.3
RULE 219 EXEMPT EQUIPMENT, REFRIGERATION UNITS	E149				H23.3
RULE 219 EXEMPT EQUIPMENT, EXEMPT HAND WIPING OPERATIONS	E150			VOC: (9) [RULE 1171,11-7-2003;RULE 1171, 7-14-2006]	H23.5
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E151			VOC: (9) [RULE 1113,11-8-1996;RULE 1113, 6-9-2006;RULE 1171,11-7-2003;RULE 1171, 7-14-2006]	K67.6
RULE 219 EXEMPT EQUIPMENT, SMALL BOILERS, WATER HEATERS AND PROCESS HEATERS, > 1 MMBTU/HR AND < = 2 MMBTU/HR	E152			CO: 400 PPMV (5A) [RULE 1146.2,1-9-1998;RULE 1146.2, 1-7-2005] ; CO: 2000 PPMV (5) [RULE 407,4-2-1982] ; PM: 0.1 GRAINS/SCF (5) [RULE 409,8-7-1981]	
RULE 219 EXEMPT EQUIPMENT, FIRE EXTINGUISHING EQUIPMENT USING HALONS	E153				H23.10

* (1)(1A)(1B)Denotes RECLAIM emission factor
 (2)(2A)(2B)Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit
 (4) Denotes BACT emission limit
 (5)(5A)(5B)Denotes command and control emission limit
 (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit
 (8)(8A)(8B)Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
 (9) See App B for Emission Limits
 (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

**FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB**

SECTION D: DEVICE ID INDEX

**The following sub-section provides an index
to the devices that make up the facility
description sorted by device ID.**

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: DEVICE ID INDEX

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D28	9	2	5
D29	9	2	6
D30	10	2	6
D33	10	2	8
D38	11	3	4
D68	11	5	0
D69	12	5	0
D75	12	6	1
D83	12	7	1
D90	12	7	3
D101	12	7	3
D103	13	7	3
D104	13	7	3
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FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: DEVICE ID INDEX

Device Index For Section D			
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D118	13	7	3
D119	13	7	3
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D125	14	7	3
D126	14	7	3
C127	15	8	1
C128	15	8	1
C131	15	8	1
D137	11	4	3
D138	5	1	15
E140	16	10	0
E141	16	10	0
E142	16	10	0
E143	16	10	0
E144	16	10	0
E145	16	10	0
E146	16	10	0
E147	17	10	0
E148	17	10	0
E149	17	10	0
E150	17	10	0
E151	17	10	0
E152	17	10	0
E153	17	10	0
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D158	15	7	4
D159	5	1	16
D160	14	7	3
D161	14	7	3
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**FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB**

SECTION D: DEVICE ID INDEX

Device Index For Section D			
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FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F1.1 The operator shall limit the material processed to no more than 1 ton(s) in any one year.

For the purpose of this condition, material processed shall be defined as the total of all non-ferrous metals melted at this facility.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition.

[RULE 1407, 7-8-1994]

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

F14.1 The operator shall not use fuel oil containing sulfur compounds in excess of 0.05 percent by weight.

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

F14.2 The operator shall not purchase diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

This condition shall become effective on or after June 1, 2004.

[RULE 431.2, 9-15-2000]

PROCESS CONDITIONS

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

P13.1 All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	109
VOC	District Rule	1164

[RULE 109, 5-2-2003; RULE 1164, 1-13-1995]

[Processes subject to this condition : 7]

SYSTEM CONDITIONS

S1.1 The operator shall limit the material processed to no more than 800 cubic feet per year.

For the purpose of this condition, material processed shall be defined as the total quantity of 100 percent Arsine used.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Systems subject to this condition : Process 7, System 1]

S1.2 The operator shall limit the material processed to no more than 400 cubic feet per year.

For the purpose of this condition, material processed shall be defined as the total quantity of 50 percent Arsine used.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Systems subject to this condition : Process 7, System 3]

DEVICE CONDITIONS

A. Emission Limits

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A63.1 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
VOC	Less than or equal to 2.25 LBS IN ANY ONE DAY

[RULE 1303(b)(2)-O set, 5-10-1996]

[Devices subject to this condition : D38]

A63.2 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
VOC	Less than or equal to 4.8 LBS IN ANY ONE DAY

[RULE 1303(b)(2)-O set, 5-10-1996]

[Devices subject to this condition : D75]

A63.3 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
VOC	Less than or equal to 2.29 LBS IN ANY ONE MONTH

The operator shall calculate the emission limit(s) in a manner approved by the District.

[RULE 1303(b)(2)-O set, 5-10-1996; 40CFR 63 Subpart T, 12-8-2000]

[Devices subject to this condition : D158]

B. Material/Fuel Type Limits

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- B27.2 The operator shall not use materials, with the exception of those containing isopropyl alcohol and lead, containing any toxic air contaminants (TACs) identified in the SCAQMD Rule 1401, as amended 15-jun-2001.

[RULE 1401, 6-15-2001]

[Devices subject to this condition : D75]

- B27.3 The operator shall not use materials, with the exception of those containing ethyl benzene, hexane, IPA, MEK, methanol, methylene chloride, trichloroethylene, toluene and xylene, containing any toxic air contaminants (TACs) identified in the SCAQMD Rule 1401, as amended 05/03/2002.

[RULE 1401, 5-2-2003]

[Devices subject to this condition : D158]

- B27.4 The operator shall not use materials, with the exception of those containing chlorine, containing any toxic air contaminants (TACs) identified in the SCAQMD Rule 1401, as amended 03/04/2005.

[RULE 1401, 3-4-2005]

[Devices subject to this condition : D160]

- B27.5 The operator shall not use materials, with the exception of those containing ammonia, containing any toxic air contaminants (TACs) identified in the SCAQMD Rule 1401, as amended 03/04/2005.

[RULE 1401, 3-4-2005]

[Devices subject to this condition : D163]

- B59.1 The operator shall only use the following material(s) in this device :

Fuel oil with a sulfur content that complies with Rule 431.2.

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D154, D155, D164]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

B61.1 The operator shall not use fuel oil containing the following specified compounds:

Compound	weight percent
Sulfur less than or equal to	0.05

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D2, D3, D4, D5, D6, D7, D8, D9, D10, D15, D18, D138]

B61.3 The operator shall not use fuel oil containing the following specified compounds:

Compound	ppm by weight
Sulfur less than or equal to	15

[RULE 1470, 3-4-2005]

[Devices subject to this condition : D2, D3, D4, D5, D6, D10, D11, D15, D18, D20, D138, D154, D155, D164]

C. Throughput or Operating Parameter Limits

C1.1 The operator shall limit the operating time to no more than 200 hour(s) in any one year.

To comply with this condition, the operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1304(a)-Modeling and O set Exemption, 6-14-1996; RULE 2012, 5-6-2005]

[Devices subject to this condition : D7, D8, D9, D13, D14, D16, D18, D19, D159]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- C1.7 The operator shall limit the material processed to no more than 18750 gallon(s) per month.

For the purpose of this condition, material processed shall be defined as the maximum combined amount of gasoline dispensed from devices D61 and D69.

[RULE 1303(b)(2)-O set, 5-10-1996]

[Devices subject to this condition : D69]

- C1.8 The operator shall limit the operating time to no more than 50 hour(s) in any one year.

For the purpose of this condition, operating time shall be defined as maintenance and testing hours only. Operation beyond 50 hours per year for maintenance and testing is allowed only during emergencies resulting in an interruption of service of the primary power supply or during Stage II or III electrical emergencies declared by the electrical grid operator. Operators are allowed to use emergency spark-ignition engines as part of an interruptible electric service program.

An interruptible electric service program is a program in which the facility receives payment or reduced rates in return for a requirement to reduce its electric load on the grid when requested to do so by the utility, the grid operator or other organization.

[RULE 1304(a)-Modeling and O set Exemption, 6-14-1996]

[Devices subject to this condition : D159]

- C6.1 The operator shall use this equipment in such a manner that the differential pressure being monitored, as indicated below, does not exceed 0.25 inches water column.

To comply with this condition, the operator shall install and maintain a(n) differential pressure gauge to accurately indicate the differential pressure across the exhaust filters.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D38]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- C8.1 The operator shall use this equipment in such a manner that the pH being monitored, as indicated below, is not less than 7 of the pH scale.

To comply with this condition, the operator shall install and maintain a(n) pH meter to accurately indicate the pH of the caustic solution.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C131]

- C8.2 The operator shall use this equipment in such a manner that the flow rate being monitored, as indicated below, is not less than 270 gpm.

To comply with this condition, the operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the caustic solution supplied to the scrubber.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C131]

- C177.1 The operator shall set and maintain the fuel injection timing of the engine at 4 degrees retarded relative to standard timing.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D7, D8, D9, D18]

D. Monitoring/Testing Requirements

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- D12.1 The operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature at the inlet and outlet of the catalyst.

The operator shall also install and maintain a device to continuously record the parameter being measured.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D159]

- D12.2 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 6-3-2005; RULE 1304(a)-Modeling and O set Exemption, 6-14-1996; RULE 1470, 3-4-2005; RULE 2012, 5-6-2005]

[Devices subject to this condition : D2, D3, D4, D5, D6, D10, D11, D15, D20, D138, D154, D155, D164]

- D135.1 The operator shall inspect, adjust, and certify the ignition or fuel injection timing of this engine a minimum of once every 3 years of operation. Inspections, adjustments, and certifications shall be performed by a qualified mechanic and performed in accordance with the engine manufacturer's specifications and procedures.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D6, D10, D11, D13]

- D322.1 The operator shall perform a weekly inspection of the equipment and filter media for leaks, broken or torn filter media, and improperly installed filter media.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D38]

- D322.3 The operator shall perform annual inspection of the equipment and filter media for leaks, broken or torn filter media, and improperly installed filter media.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E143]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

D332.1 The operator shall determine compliance with the CO emission limit(s) by conducting a test at least every five years using a portable analyzer and AQMD-approved test method or, if not available, a non-AQMD approved test method. The test shall be conducted when the equipment is operating under normal conditions to demonstrate compliance with Rule 1146.1 concentration limit. The operator shall comply with all general testing, reporting, and recordkeeping requirements in Sections E and K of this permit.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D22, D23, D26, D27, D28, D29, D30, D33]

D381.1 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on an annual basis, at least, unless the equipment did not operate during the entire annual period. The routine annual inspection shall be conducted while the equipment is in operation and during daylight hours. If any visible emissions (not including condensed water vapor) are detected, the operator shall take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

- 1). Stack or emission point identification;
- 2). Description of any corrective actions taken to abate visible emissions; and
- 3). Date and time visible emission was abated.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E143]

E. Equipment Operation/Construction Requirements

E71.4 The operator shall only operate this equipment during emergencies resulting in an interruption of service of the primary power supply or during Stage II or III electrical emergency declared by the California Independent System Operator. The engine may also be operated for maintenance and testing purposes.

[RULE 1304(a)-Modeling and O set Exemption, 6-14-1996]

[Devices subject to this condition : D159]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E71.5 The operator shall not operate this equipment if the concentration of hydrocarbons from the carbon filter exceeds 15 ppmv, as methane, using a photo ionization detector or any other AQMD-approved method. The carbon shall be changed before this concentration is reached. Hydrocarbon concentrations shall be measured each time the equipment is in operation and records shall be maintained of the measurement dates, measured concentrations and the carbon replacement dates. These records shall be retained at the facility for at least five years.

[RULE 109, 5-2-2003; RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D158]

E102.1 The operator shall discharge dust collected in this equipment only into closed containers.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E143]

E114.1 The operator shall not use this equipment in conjunction with any utility voluntary demand reduction program.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D16, D19]

E175.1 The operator shall not use this equipment unless all exhaust air passes through the following:

Filter media at least 2 inches thick.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D38]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E448.1 The operator shall comply with the following requirements:

The engine shall not be operated more than 200 hours in any one year, which includes 20 hours in any one year for maintenance and testing.

Operation beyond the allotted time for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

In the event as described in the paragraph above, the engine shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

This engine shall not be used as part of an interruptible service contract in which a facility receives a payment or reduced rates in return for reducing electric load on the grid when requested by the utility or the grid operator.

[RULE 1470, 3-4-2005]

[Devices subject to this condition : D2, D6, D10, D11, D20]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E448.2 The operator shall comply with the following requirements:

The engine shall not be operated more than 200 hours in any one year, which includes 50 hours in any one year for maintenance and testing.

Operation beyond the allotted time for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

In the event as described in the paragraph above, the engine shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

This engine shall not be used as part of an interruptible service contract in which a facility receives a payment or reduced rates in return for reducing electric load on the grid when requested by the utility or the grid operator.

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and O set Exemption, 6-14-1996**; RULE 1470, 3-4-2005; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D3, D4, D5, D154, D155, D164]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E448.3 The operator shall comply with the following requirements:

The engine shall not be operated more than 200 hours in any one year, which includes 30 hours in any one year for maintenance and testing.

Operation beyond the allotted time for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

In the event as described in the paragraph above, the engine shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

This engine shall not be used as part of an interruptible service contract in which a facility receives a payment or reduced rates in return for reducing electric load on the grid when requested by the utility or the grid operator.

[RULE 1470, 3-4-2005]

[Devices subject to this condition : D15, D138]

H. Applicable Rules

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	109
PM	District Rule	481

[RULE 109, 5-2-2003; RULE 481, 1-11-2002]

[Devices subject to this condition : D38]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

H23.2 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Chromium, Hexavalent	District Rule	1404

[RULE 1404, 4-6-1990]

[Devices subject to this condition : E141]

H23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Refrigerants	District Rule	1415
Refrigerants	40CFR82, SUBPART	F

[RULE 1415, 10-14-1994; **40CFR 82 Subpart F, 5-14-1993**]

[Devices subject to this condition : E142, E148, E149]

H23.4 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
ROG	District Rule	1122

[**RULE 1122, 10-1-2004**]

[Devices subject to this condition : D137, E144]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

H23.5 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	109

[RULE 109, 5-2-2003]

[Devices subject to this condition : E140, E145, E150]

H23.8 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	109
HAPs	40CFR63, SUBPART	T
VOC	District Rule	1122

[RULE 109, 5-2-2003; RULE 1122, 10-1-2004; 40CFR 63 Subpart T, 12-8-2000]

[Devices subject to this condition : D158]

H23.9 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Sulfur compounds	District Rule	431.2
PM	District Rule	1470

[RULE 1470, 3-4-2005; RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D2, D3, D4, D5, D6, D10, D11, D15, D20, D138, D154, D155, D164]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

H23.10 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Halon	District Rule	1418

[RULE 1418, 9-10-1999]

[Devices subject to this condition : E153]

H23.11 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Sulfur compounds	District Rule	431.2

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D7, D8, D9, D14]

H23.12 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Sulfur compounds	District Rule	431.2
PM	District Rule	1470

This equipment shall be operated in compliance with Rule 1470 effective 1/1/2008.

[RULE 1470, 3-4-2005; RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D18]

J. Rule 461

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- J109.1 The operator shall use, except for diesel transfer, the phase I vapor recovery system in full operation whenever this equipment is in use. This system shall be installed, operated and maintained to meet all CARB certification requirements.

[RULE 461, 6-3-2005]

[Devices subject to this condition : D69]

- J110.1 The operator shall use, except for diesel transfer, the phase II vapor recovery system in full operation whenever gasoline from this equipment is dispensed to motor vehicles as defined in Rule 461. This system shall be installed, operated and maintained to meet all CARB certification requirements.

[RULE 461, 6-3-2005]

[Devices subject to this condition : D68]

- J121.1 The operator shall replace seals, fittings, and piping with methanol-compatible materials before the dispensing system is charged with methanol.

[RULE 1170, 5-6-1988]

[Devices subject to this condition : D68]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

J373.1 The operator shall comply with the following gasoline transfer and dispensing requirements:

a). The Phase II vapor recovery systems shall be installed, operated, and maintained such that the maximum allowable pressure through the system including nozzle, vapor hose, swivels, and underground piping does not exceed the dynamic back pressures described by the California Air Resources Board (CARB) Executive Order by which the system was certified:

Nitrogen Flowrates (CFH)	Dynamic Back Pressure (Inches of Water)
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40	0.16
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Within thirty days of the issuance date of this permit or within thirty days of the start of operation of the equipment, dynamic back pressure tests shall be conducted to determine the Phase II system vapor recovery back pressures. The tests shall be conducted in accordance with CARB Test Procedure Method TP-201.4. Results shall be submitted to the AQMD, Engineering and Compliance, within thirty (30) days of tests.

The AQMD shall be notified by e-mail at R461testing@aqmd.gov or by facsimile at telephone number (909) 396-3606 at least twenty-four hours prior to testing. Such notification shall include the name of the owner or operator; the name of the contractors; the location of the facility; and the scheduled start and completion dates of the dynamic back pressure test.

The test shall be conducted as frequently as that required by the most recent amendment to Rule 461 or CARB Executive Order requirements, whichever is more stringent.

[RULE 461, 6-3-2005]

[Devices subject to this condition : D68]

K. Record Keeping/Reporting

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Records which clearly identify and locate the methanol compatible storage tank and its piping, such records shall state the tank manufacturer and date of installation.

[RULE 1170, 5-6-1988]

[Devices subject to this condition : D69]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

K67.2 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Monthly records of the total amount of 100 percent Arsine used. All records shall be prepared in a format which is acceptable to the AQMD

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D83]

K67.3 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Name of person conducting inspection and maintenance of the filter media.

Date, time and results of the inspection.

Date, time and description of repairs made.

Weekly record of pressure drop across the filter media.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D38]

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Flow rate of the scrubbing solution, determined and recorded once every day.

Scrubbing solution pH, determined and recorded once every day.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : C131]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

K67.5 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Name of person conducting inspection and maintenance of the filter media.

Date, time, and results of inspection.

Date, time and description of repairs made.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E143]

K67.6 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E151]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

K67.10 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

An engine operating log shall be kept and maintained on file to record when this engine is started manually. The log shall list the date of operation, the timer reading in hours at the beginning and end of operation and the reason for operation.

By January 15th of each year, the operator shall total and record the total hours of operation (including hours for both manual operation and automatic operation) for the previous calendar year.

All records required by this permit shall be kept in a format that is acceptable to the District, shall be retained on the premises for at least three years and shall be made available to any District representative upon request.

[RULE 1110.2, 6-3-2005; RULE 1304(a)-Modeling and O set Exemption, 6-14-1996; RULE 1470, 3-4-2005; RULE 2012, 5-6-2005]

[Devices subject to this condition : D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D13, D14, D15, D16, D18, D19, D20, D138, D154, D155, D159, D164]

K67.11 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Type of solvent used.

Total quantity of solvent used in any one day and in any one month.

Daily and monthly VOC emissions expressed in pounds per day or month.

VOC content of the solvent.

[RULE 109, 5-2-2003]

[Devices subject to this condition : D158]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

GENERAL PROVISIONS

1. This permit may be revised, revoked, reopened and reissued, or terminated for cause, or for failure to comply with regulatory requirements, permit terms, or conditions. [3004(a)(7)(C)]
2. This permit does not convey any property rights of any sort or any exclusive privilege. [3004(a)(7)(E)]

Permit Renewal and Expiration

3. (A) Except for solid waste incineration facilities subject to standards under Section 129(e) of the Clean Air Act, this permit shall expire five years from the date that the initial Title V permit is issued. The operator's right to operate under this permit terminates at midnight on this date, unless the facility is protected by an application shield in accordance with Rule 3002(b), due to the filing of a timely and complete application for a Title V permit renewal, consistent with Rule 3003. [3004(a)(2), 3004(f)]

(B) A Title V permit for a solid waste incineration facility combusting municipal waste subject to standards under Section 129(e) of the Clean Air Act shall expire 12 years from the date of issuance unless such permit has been renewed pursuant to this regulation. These permits shall be reviewed by the Executive Officer at least every five years from the date of issuance. [3004(f)(2)]
4. To renew this permit, the operator shall submit to the Executive Officer an application for renewal at least 180 days, but not more than 545 days, prior to the expiration date of this permit. [3003(a)(6)]

Duty to Provide Information

5. The applicant for, or holder of, a Title V permit shall furnish, pursuant to Rule 3002(d) and (e), timely information and records to the Executive Officer or designee within a reasonable time as specified in writing by the Executive Officer or designee. [3004(a)(7)(F)]

Payment of Fees

6. The operator shall pay all required fees specified in Regulation III - Fees. [3004(a)(7)(G)]

Reopening for Cause

7. The Executive Officer will reopen and revise this permit if any of the following circumstances occur:
 - (A) Additional regulatory requirements become applicable with a remaining permit term of three or more years. Reopening is not required if the effective date of the requirement is later than the expiration date of this permit, unless the permit or any of its terms and conditions has been extended pursuant to paragraph (f)(4) of Rule 3004.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

- (B) The Executive Officer or EPA Administrator determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
- (C) The Executive Officer or EPA Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements. [3005(g)(1)]

COMPLIANCE PROVISIONS

- 8. The operator shall comply with all regulatory requirements, and all permit terms and conditions, except:
 - (A) As provided for by the emergency provisions of condition no. 17 or condition no. 18, or
 - (B) As provided by an alternative operating condition granted pursuant to a federally approved (SIP-approved) Rule 518.2.

Any non-compliance with any federally enforceable permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or denial of a permit renewal application. Non-compliance may also be grounds for civil or criminal penalties under the California State Health and Safety Code. [3004(a)(7)(A)]

- 9. The operator shall allow the Executive Officer or authorized representative, upon presentation of appropriate credentials to:
 - (A) Enter the operator's premises where emission-related activities are conducted, or records are kept under the conditions of this permit;
 - (B) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
 - (C) Inspect at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - (D) Sample or monitor at reasonable times, substances or parameters for the purpose of assuring compliance with the facility permit or regulatory requirements. [3004(a)(10)(B)]
- 10. All terms and conditions in this permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the EPA Administrator and citizens under the federal Clean Air Act, unless the term or condition is designated as not federally enforceable. Each day during any portion of which a violation occurs is a separate offense. [3004(g)]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

11. A challenge to any permit condition or requirement raised by EPA, the operator, or any other person, shall not invalidate or otherwise affect the remaining portions of this permit. [3007(b)]
12. The filing of any application for a permit revision, revocation, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition. [3004(a)(7)(D)]
13. It shall not be a defense for a person in an enforcement action, including those listed in Rule 3002(c)(2), that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit, except as provided for in "Emergency Provisions" of this section. [3004(a)(7)(H)]
14. The operator shall not build, erect, install, or use any equipment, the use of which, without resulting in a reduction in the total release of air contaminants to atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Chapter 3 (commencing with Section 41700) of Part 4, of Division 26 of the California Health and Safety Code or of AQMD rules. This rule shall not apply to cases in which the only violation involved is of Section 41700 of the California Health and Safety Code, or Rule 402 of AQMD Rules. [408]
15. Nothing in this permit or in any permit shield can alter or affect:
 - (A) Under Section 303 of the federal Clean Air Act, the provisions for emergency orders;
 - (B) The liability of the operator for any violation of applicable requirements prior to or at the time of permit issuance;
 - (C) The applicable requirements of the Acid Rain Program, Regulation XXXI;
 - (D) The ability of EPA to obtain information from the operator pursuant to Section 114 of the federal Clean Air Act;
 - (E) The applicability of state or local requirements that are not "applicable requirements", as defined in Rule 3000, at the time of permit issuance but which do apply to the facility, such as toxics requirements unique to the State; and
 - (F) The applicability of regulatory requirements with compliance dates after the permit issuance date. [3004(c)(3)]
16. For any portable equipment that requires an AQMD or state permit or registration, excluding a) portable engines, b) military tactical support equipment and c) AQMD-permitted portable equipment that are not a major source, are not located at the facility for more than 12 consecutive months after

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

commencing operation, and whose operation does not conflict with the terms or conditions of this Title V permit: 1) the facility operator shall keep a copy of the AQMD or state permit or registration; 2) the equipment operator shall comply with the conditions on the permit or registration and all other regulatory requirements; and 3) the facility operator shall treat the permit or registration as a part of its Title V permit, subject to recordkeeping, reporting and certification requirements. [3004(a)(1)]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

EMERGENCY PROVISIONS

17. An emergency¹ constitutes an affirmative defense to an action brought for non-compliance with a technology-based emission limit only if:
- (A) Properly signed, contemporaneous operating records or other credible evidence demonstrate that:
 - (1) An emergency occurred and the operator can identify the cause(s) of the emergency;
 - (2) The facility was operated properly (i.e. operated and maintained in accordance with the manufacturer's specifications, and in compliance with all regulatory requirements or a compliance plan), before the emergency occurred;
 - (3) The operator took all reasonable steps to minimize levels of emissions that exceeded emissions standard, or other requirements in the permit; and,
 - (4) The operator submitted a written notice of the emergency to the AQMD within two working days of the time when the emissions limitations were exceeded due to the emergency. The notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - (B) The operator complies with the breakdown provisions of Rule 430 - Breakdown Provisions, or subdivision (i) of Rule 2004 - Requirements, whichever is applicable. [3002(g), 430, 2004(i)]
18. The operator is excused from complying with any regulatory requirement that is suspended by the Executive Officer during a state of emergency or state of war emergency, in accordance with Rule 118 - Emergencies. [118]

¹ "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the operator, including acts of God, which: (A) requires immediate corrective action to restore normal operation; and (B) causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency; and (C) is not caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

RECORDKEEPING PROVISIONS

19. In addition to any other recordkeeping requirements specified elsewhere in this permit, the operator shall keep records of required monitoring information, where applicable, that include:
- (A) The date, place as defined in the Title V permit, and time of sampling or measurements;
 - (B) The date(s) analyses were performed;
 - (C) The company or entity that performed the analyses;
 - (D) The analytical techniques or methods used;
 - (E) The results of such analyses; and
 - (F) The operating conditions as existing at the time of sampling or measurement. [3004(a)(4)(B)]
20. The operator shall maintain records pursuant to Rule 109 and any applicable material safety data sheet (MSDS) for any equipment claimed to be exempt from a written permit by Rule 219 based on the information in those records. [219(o)]
21. The operator shall keep all records of monitoring data required by this permit or by regulatory requirements for a period of at least five years from the date of the monitoring sample, measurement, report, or application. [3004(a)(4)(E)]

REPORTING PROVISIONS

22. The operator shall comply with the following requirements for prompt reporting of deviations:
- (A) Breakdowns shall be reported as required by Rule 430 - Breakdown Provisions or subdivision (i) of Rule 2004 - Requirements, whichever is applicable.
 - (B) Other deviations from permit or applicable rule emission limitations, equipment operating conditions, or work practice standards, determined by observation or by any monitoring or testing required by the permit or applicable rules that result in emissions greater than those allowed by the permit or applicable rules shall be reported within 72 hours (unless a shorter reporting period is specified in an applicable State or Federal Regulation) of discovery of the deviation by contacting AQMD enforcement personnel assigned to this facility or otherwise calling (800) CUT-SMOG.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

- (C) A written report of such deviations reported pursuant to (B), and any corrective actions or preventative measures taken, shall be submitted to AQMD, in an AQMD approved format, within 14 days of discovery of the deviation.
 - (D) All other deviations shall be reported with the monitoring report required by condition no. 23. [3004(a)(5)]
23. Unless more frequent reporting of monitoring results are specified in other permit conditions or in regulatory requirements, the operator shall submit reports of any required monitoring to the AQMD at least twice per year. The report shall include a) a statement whether all monitoring required by the permit was conducted; and b) identification of all instances of deviations from permit or regulatory requirements. A report for the first six calendar months of the year is due by August 31 and a report for the last six calendar months of the year is due by February 28. [3004(a)(4)(F)]
24. The operator shall submit to the Executive Officer and to the Environmental Protection Agency (EPA), an annual compliance certification. For RECLAIM facilities, the certification is due when the Annual Permit Emissions Program (APEP) report is due and shall cover the same reporting period. For other facilities, the certification is due on March 1 for the previous calendar year. The certification need not include the period preceding the date the initial Title V permit was issued. Each compliance certification shall include:
- (A) Identification of each permit term or condition that is the basis of the certification;
 - (B) The compliance status during the reporting period;
 - (C) Whether compliance was continuous or intermittent;
 - (D) The method(s) used to determine compliance over the reporting period and currently, and
 - (E) Any other facts specifically required by the Executive Officer to determine compliance.
- The EPA copy of the certification shall be sent to: Director of the Air Division Attn: Air-3 USEPA, Region IX 75 Hawthorne St. San Francisco, CA 94105 [3004(a)(10)(E)]
25. All records, reports, and documents required to be submitted by a Title V operator to AQMD or EPA shall contain a certification of accuracy consistent with Rule 3003(c)(7) by a responsible official (as defined in Rule 3000). [3004(a)(12)]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

PERIODIC MONITORING

26. All periodic monitoring required by this permit pursuant to Rule 3004(a)(4)(c) is based on the requirements and justifications in the AQMD document "Periodic Monitoring Guidelines for Title V Facilities" or in case-by-case determinations documented in the Title V application file. [3004(a)(4)]

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

SECTION K: TITLE V Administration

FACILITY RULES

This facility is subject to the following rules and regulations:

With the exception of Rule 402, 473, 477, 1118 and Rules 1401 through 1420, the following rules that are designated as non-federally enforceable are pending EPA approval as part of the state implementation plan. Upon the effective date of that approval, the approved rule(s) will become federally enforceable, and any earlier versions of those rules will no longer be federally enforceable.

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 109	5-2-2003	Federally enforceable
RULE 1107	1-6-2006	Non federally enforceable
RULE 1107	11-9-2001	Federally enforceable
RULE 1110.2	6-3-2005	Non federally enforceable
RULE 1113	11-8-1996	Federally enforceable
RULE 1113	6-9-2006	Non federally enforceable
RULE 1122	10-1-2004	Federally enforceable
RULE 1124	9-21-2001	Federally enforceable
RULE 1140	2-1-1980	Federally enforceable
RULE 1140	8-2-1985	Non federally enforceable
RULE 1145	12-3-2004	Non federally enforceable
RULE 1145	2-14-1997	Federally enforceable
RULE 1146.1	5-13-1994	Federally enforceable
RULE 1146.2	1-7-2005	Non federally enforceable
RULE 1146.2	1-9-1998	Federally enforceable
RULE 1164	1-13-1995	Federally enforceable
RULE 1168	1-7-2005	Non federally enforceable
RULE 1168	10-3-2003	Federally enforceable
RULE 1170	5-6-1988	Non federally enforceable
RULE 1171	11-7-2003	Federally enforceable
RULE 1171	7-14-2006	Non federally enforceable
RULE 118	12-7-1995	Non federally enforceable
RULE 1303(a)(1)-BACT	12-6-2002	Non federally enforceable
RULE 1303(a)(1)-BACT	5-10-1996	Federally enforceable
RULE 1303(b)(2)-O set	12-6-2002	Non federally enforceable
RULE 1303(b)(2)-O set	5-10-1996	Federally enforceable
RULE 1304(a)-Modeling and O set Exemption	6-14-1996	Federally enforceable
RULE 1401	12-7-1990	Non federally enforceable
RULE 1401	3-4-2005	Non federally enforceable

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RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 1401	5-2-2003	Non federally enforceable
RULE 1401	6-15-2001	Non federally enforceable
RULE 1404	4-6-1990	Non federally enforceable
RULE 1407	7-8-1994	Non federally enforceable
RULE 1415	10-14-1994	Non federally enforceable
RULE 1418	9-10-1999	Non federally enforceable
RULE 1470	3-4-2005	Non federally enforceable
RULE 2005	5-6-2005	Federally enforceable
RULE 2012	5-6-2005	Federally enforceable
RULE 204	10-8-1993	Federally enforceable
RULE 217	1-5-1990	Federally enforceable
RULE 219	7-14-2006	Non federally enforceable
RULE 219	9-4-1981	Federally enforceable
RULE 3002	11-14-1997	Federally enforceable
RULE 3003	11-14-1997	Federally enforceable
RULE 3003	3-16-2001	Non federally enforceable
RULE 3004	12-12-1997	Federally enforceable
RULE 3004(a)(4)-Periodic Monitoring	12-12-1997	Federally enforceable
RULE 3005	11-14-1997	Federally enforceable
RULE 3005	3-16-2001	Non federally enforceable
RULE 3007	10-8-1993	Federally enforceable
RULE 304	6-9-2006	Non federally enforceable
RULE 401	11-9-2001	Non federally enforceable
RULE 401	3-2-1984	Federally enforceable
RULE 402	5-7-1976	Non federally enforceable
RULE 404	2-7-1986	Federally enforceable
RULE 405	2-7-1986	Federally enforceable
RULE 407	4-2-1982	Federally enforceable
RULE 408	5-7-1976	Federally enforceable
RULE 409	8-7-1981	Federally enforceable
RULE 430	7-12-1996	Non federally enforceable
RULE 431.2	5-4-1990	Federally enforceable
RULE 431.2	9-15-2000	Non federally enforceable
RULE 442	12-15-2000	Federally enforceable
RULE 461	6-3-2005	Federally enforceable
RULE 481	1-11-2002	Federally enforceable
40CFR 63 Subpart T	12-8-2000	Federally enforceable

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SECTION K: TITLE V Administration

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
40CFR 63 Subpart T, #30	6-5-1995	Federally enforceable
RULE 701	6-13-1997	Federally enforceable
40CFR 82 Subpart F	5-14-1993	Federally enforceable

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1107 1-6-2006]

Except as otherwise provided in Rule 1107

(1) VOC Content of Coatings

A person shall not apply to metal parts and products subject to the provisions of this rule any coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits specified below:

VOC LIMITS								
Less Water and Less Exempt Compounds								
Effective Dates								
Coating	Air-Dried				Baked			
	gm/l		lb/gal		gm/l		lb/gal	
	Current	7/1/07	Current	7/1/07	Current	7/1/07	Current	7/1/07
General One-Component	275	275	2.3	2.3	275	275	2.3	2.3
General Multi-Component	340	340	2.8	2.8	275	275	2.3	2.3
Military Specification	340	340	2.8	2.8	275	275	2.3	2.3
Etching Filler	420	420	3.5	3.5	420	420	3.5	3.5
Solar-Absorbent	420	420	3.5	3.5	360	360	3.0	3.0
Heat-Resistant	420	420	3.5	3.5	360	360	3.0	3.0
Extreme High-Gloss	420	340	3.5	2.8	360	360	3.0	3.0
Metallic	420	420	3.5	3.5	420	420	3.5	3.5

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1107 1-6-2006]

VOC LIMITS								
Less Water and Less Exempt Compounds								
Effective Dates, cont.								
Coating	Air-Dried				Baked			
	gm/l		lb/gal		gm/l		lb/gal	
	Current	7/1/07	Current	7/1/07	Current	7/1/07	Current	7/1/07
Extreme Performance	420	420	3.5	3.5	360	360	3.0	3.0
Prefabricated Architectural One-Component	420	275	3.5	2.3	275	275	2.3	2.3
Prefabricated Architectural Multi-Component	420	340	3.5	2.8	275	275	2.3	2.3
Touch Up	420	420	3.5	3.5	360	360	3.0	3.0
Repair	420	420	3.5	3.5	360	360	3.0	3.0
Silicone Release	420	420	3.5	3.5	420	420	3.5	3.5
High-Performance Architectural	420	420	3.5	3.5	420	420	3.5	3.5
Camouflage	420	420	3.5	3.5	420	420	3.5	3.5
Vacuum-Metalizing	420	420	3.5	3.5	420	420	3.5	3.5
Mold-Seal	420	420	3.5	3.5	420	420	3.5	3.5
High-Temperature	420	420	3.5	3.5	420	420	3.5	3.5
Electric-Insulating Varnish	420	420	3.5	3.5	420	420	3.5	3.5
Pan Backing	420	420	3.5	3.5	420	420	3.5	3.5
Pretreatment Coatings	420	420	3.5	3.5	420	420	3.5	3.5

- (2) A person shall not use VOC-containing materials which have a VOC content of more than 200 grams per liter of material for stripping any coating governed by this rule.

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1107 11-9-2001]

Except as otherwise provided in Rule 1107

(1) VOC Content of Coatings

A person shall not apply to metal parts and products subject to the provisions of this rule any coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits specified below:

LIMITS				
Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds				
<u>Coating</u>	<u>Air Dried</u>	<u>(lb/gal)</u>	<u>Baked</u>	<u>(lb/gal)</u>
General				
One-Component	275	(2.3)	275	(2.3)
Multi-Component	340	(2.8)	275	(2.3)
Military Specification	340	(2.8)	275	(2.3)
Etching Filler	420	(3.5)	420	(3.5)
Solar-Absorbent	420	(3.5)	360	(3.0)
Heat-Resistant	420	(3.5)	360	(3.0)
Extreme High-Gloss	420	(3.5)	360	(3.0)
Metallic	420	(3.5)	420	(3.5)
Extreme Performance	420	(3.5)	360	(3.0)
Prefabricated Architectural Component	420	(3.5)	275	(2.3)
Touch Up	420	(3.5)	360	(3.0)
Repair	420	(3.5)	360	(3.0)
Silicone Release	420	(3.5)	420	(3.5)
High Performance Architectural	420	(3.5)	420	(3.5)
Camouflage	420	(3.5)	420	(3.5)
Vacuum-Metalizing	420	(3.5)	420	(3.5)
Mold-Seal	420	(3.5)	420	(3.5)
High-Temperature	420	(3.5)	420	(3.5)
Electric-Insulating Varnish	420	(3.5)	420	(3.5)
Pan Backing	420	(3.5)	420	(3.5)
Pretreatment Coatings	420	(3.5)	420	(3.5)

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1107 11-9-2001]

- (2) A person shall not use VOC-containing materials which have a VOC content of more than 200 grams per liter of material for stripping any coating governed by this rule.

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

- (1) Except as provided in paragraphs (c)(2), (c)(3), and (c)(4) of Rule 1113, the operator shall not supply, sell, offer for sale, apply, or solicit the application of, any architectural coating which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, or manufacture, blend, or repackage such a coating for use within the District.
- (2) Except as provided in paragraphs (c)(3) and (c)(4) of Rule 1113, the operator shall not supply, sell, offer for sale, apply, solicit the application of, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified.

TABLE OF STANDARDS

VOC LIMITS

Grams of VOC Per Liter of Coating, Less Water And Less Exempt Compounds

COATING	Limit*	Effective Date of Adoption	Effective 1/1/1998	Effective 1/1/1999	Effective 7/1/2001	Effective 1/1/2005	Effective 7/1/2008
Bond Breakers	350						
Clear Wood Finishes							
Varnish	350						
Sanding Sealers	350						
Lacquer	680		550			275	
Concrete-Curing Compounds	350						
Dry-Fog Coatings	400						
Fire-proofing Exterior Coatings	350	450		350			
Fire-Retardant Coatings							
Clear	650						
Pigmented	350						
Flats	250						
Graphic Arts (Sign) Coatings	500					100	50
Industrial Maintenance							

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APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

Primers and Topcoats						
Alkyds	420					
Catalyzed Epoxy	420					
Bituminous Coatings	420					
Materials						
Inorganic Polymers	420					
Vinyl Chloride Polymers	420					
Chlorinated Rubber	420					
Acrylic Polymers	420					
Urethane Polymers	420					
Silicones	420					
Unique Vehicles	420					
Japans/Faux Finishing	350	700		350		
Coatings						
Magnesite Cement Coatings	600			450		
Mastic Coatings	300					
Metallic Pigmented Coatings	500					
Multi-Color Coatings	420		250			
Pigmented Lacquer	680		550		275	
Pre-Treatment Wash Primers	780					
Primers, Sealers, and	350					
Undercoaters						
Quick-Dry Enamels	400					
Roof Coatings	300					
Shellac						
Clear	730					
Pigmented	550					
Stains	350					
Swimming Pool Coatings						
Repair	650					
Other	340					
Traffic Coatings	250		150			
Waterproofing Sealers	400					
Wood Preservatives						
Below-Ground	350					
Other	350					

* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards

**FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
[RULE 1113 11-8-1996]**

TABLE OF STANDARDS (cont.)

VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS **[RULE 1113 6-9-2006]**

- (1) Except as provided in paragraphs (c)(2), (c)(3), (c)(4), and specified coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage any architectural coating for use in the District which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, and no person shall apply or solicit the application of any architectural coating within the District that exceeds 250 grams of VOC per liter of coating as calculated in this paragraph.
- (2) Except as provided in paragraphs (c)(3), (c)(4), and designated coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified, and no person shall apply or solicit the application of any architectural coating within the District that exceeds the VOC limit as specified in this paragraph. No person shall apply or solicit the application within the District of any industrial maintenance coatings for residential use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings; or of any rust-preventative coating for industrial use, unless such a rust preventative coating complies with the Industrial Maintenance Coating VOC limit specified in the Table of Standards.

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APPENDIX B: RULE EMISSION LIMITS [RULE 1113 6-9-2006]

TABLE OF STANDARDS VOC LIMITS

Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	Ceiling Limit*	Current Limit	Effective Date					
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Bond Breakers	350							
Clear Wood Finishes	350					275		
Varnish	350					275		
Sanding Sealers	350					275		
Lacquer	680	550			275			
Clear Brushing Lacquer	680				275			
Concrete-Curing Compounds	350						100	
Concrete-Curing Compounds For Roadways and Bridges**	350							
Dry-Fog Coatings	400						150	
Fire-Proofing Exterior Coatings	450	350						
Fire-Retardant Coatings***								
Clear	650							
Pigmented	350							
Flats	250	100						50
Floor Coatings	420		100			50		
Graphic Arts (Sign) Coatings	500							
Industrial Maintenance (IM) Coatings	420			250		100		
High Temperature IM Coatings			420					
Zinc-Rich IM Primers	420		340			100		
Japans/Faux Finishing Coatings	700	350						
Magnesite Cement Coatings	600	450						
Mastic Coatings	300							
Metallic Pigmented Coatings	500							
Multi-Color Coatings	420	250						
Nonflat Coatings	250		150			50		
Nonflat High Gloss	250		150				50	
Pigmented Lacquer	680	550			275			

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 6-9-2006]

COATING CATEGORY	Ceiling Limit*	Current Limit	Effective Date					
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Pre-Treatment Wash Primers	780		420					
Primers, Sealers, and Undercoaters	350		200			100		
Quick-Dry Enamels	400		250			150	50	
Quick-Dry Primers, Sealers, and Undercoaters	350		200			100		
Recycled Coatings			250					
Roof Coatings	300		250		50			
Roof Coatings, Aluminum	500				100			
Roof Primers, Bituminous	350		350					
Rust Preventative Coatings	420		400			100		
Shellac								
Clear	730							
Pigmented	550							
Specialty Primers	350					250	100	
Stains	350		250				100	
Stains, Interior	250							
Swimming Pool Coatings								
Repair	650		340					
Other	340							
Traffic Coatings	250	150					100	
Waterproofing Sealers	400		250			100		
Waterproofing Concrete/Masonry Sealers	400					100		
Wood Preservatives								
Below-Ground	350							
Other	350							

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 6-9-2006]

- * The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.
- ** Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.
- *** The Fire-Retardant Coating category will be eliminated on January 1, 2007 and subsumed by the coating category for which they are formulated.

TABLE OF STANDARDS (cont.) VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1124 9-21-2001]

Except as otherwise provided in Rule 1124

- (1) VOC Content of Aerospace Materials
 - (A) A person shall not apply to aerospace components any materials, including any VOC-containing materials added to the original material supplied by the manufacturer, which contain VOC in excess of the limits specified below:

VOC Limit			
Grams of VOC per Liter, Less Water and Less Exempt Compounds			
Primers	Current VOC Limit	VOC Limit Effective 1-1-03	VOC Limit Effective 1-1-05
General Primer	350	350	350
Low-Solids Corrosion Resistant Primer	350	350	350
Pretreatment Primer	780	780	780
Rain Erosion-Resistant Coating Compatible Primer	850	850	850
Adhesion Promoter	850	850	250
Adhesive Bonding Primer			
New Commercial Aircraft	805	250	250
All Military Aircraft	805	805	805
Remanufactured Commercial Aircraft Parts	805	805	805
Sonic and Acoustic Applications	805	805	805
Adhesive Bonding Primer			
Long Term	250	250	250
Short Term	250	250	250

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1124 9-21-2001]

Coatings	Current VOC Limit	VOC Limit Effective 3-01-02
Topcoat	420	420
Clear Topcoat	520	520
Unicoat	420	420
Wing Coating	750	750
Impact Resistant Coating	420	420
High-Temperature Coating	850	850
Antichafe Coating	600	420
Rain Erosion-Resistant Coating	800	800
Conformal Coating	750	750
Optical Anti-Reflective Coating	700	700
Scale Inhibitor	880	880
Metallized Epoxy Coating	700	700
Electric or Radiation Effect Coating	800	800
Temporary Protective Coating	250	250
Fuel Tank Coatings	420	420
Mold Release Coatings	780	780
Flight Test Coatings		
Used on Missiles or Single Use Target Craft	420	420
All Other	840	840
Fire Resistant Coatings		
Commercial	650	650
Military	970	800
Wire Coatings		
Phosphate Ester Resistant Ink	925	925
Other	420	420
Space Vehicle Coatings		
Electrostatic Discharge Protection Coating	800	800
Other	1000	1000

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1124 9-21-2001]**

Adhesives	Current VOC Limit
Non-Structural Adhesive	250
Structural Adhesive	
Autoclavable	50
Non-Autoclavable	850
Space Vehicle Adhesive	800
Fuel Tank Adhesive	620

Sealants	Current VOC Limit	VOC Limit Effective 3-01-02
Fastener Sealant	675	675
Extrudable, Rollable or Brushable Sealant	600	280
Other	600	600

Maskants	Current VOC Limit
For Chemical Processing	250
For Chemical Milling	
Type I	250
Type II	160
Photolithographic	850
Touch-up, Line Sealer Maskants	750

Lubricants	Current VOC Limit
Fastener Installation	
Solid-Film Lubricant	880
Dry Lubricative Materials	675
Fastener-Lubricative Coatings, Fastener Manufacturing	
Solid Film Lubricant	250
Dry Lubricative Materials	120
Barrier Coating	420
Non-Fastener Lubricative Coatings, Fastener Manufacturing	
Solid Film Lubricant	880
Dry Lubricative Materials	675

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1124 9-21-2001]**

VOC LIMIT	
Grams of VOC per Liter of Material	
Cleaning Solvents and Strippers	Current VOC Limit
Cleaning Solvents	200 g/L or 45 mm Hg VOC Composite Partial Pressure
Strippers	300 g/L or 9.5 mm Hg VOC Composite Partial Pressure

- (B) Documents shall be provided to the Executive Officer or his designee demonstrating that unicoat is being used in lieu of the application of a primer and topcoat, and the applicant must receive written approval for the use of unicoat specifying the conditions of application from the Executive Officer or his designee.
- (C) For low-solids adhesives, coatings, primers or sealants, the appropriate limits in subparagraph (c)(1)(A) shall be expressed in grams of VOC per liter of material.
- (2) Solvent Cleaning Operations; Storage and Disposal of VOC-Containing Materials
 - (A) Cleaning of material application equipment and storage of solvent laden cloth and paper shall comply with provisions of Rule 1171.
 - (B) A person shall not atomize any solvent into open air.

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS **[RULE 1140 2-1-1980]**

- (1) The operator shall not, if he complies with an applicable performance standard in section (b)(4) of Rule 1140, discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:
 - (A) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines,
or
 - (B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (1)(A).
- (2) The operator shall not, if he is not complying with an applicable performance standard in section (b)(4) of Rule 1140, discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:
 - (A) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines,
or
 - (B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (2)(A).

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS **[RULE 1140 8-2-1985]**

- (1) The operator shall not, if he complies with an applicable performance standard in section (b)(4) of Rule 1140, discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:
 - (A) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines,
or
 - (B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (1)(A).
- (2) The operator shall not, if he is not complying with an applicable performance standard in section (b)(4) of Rule 1140, discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:
 - (A) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines,
or
 - (B) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (2)(A).

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1145 2-14-1997]

Except as otherwise provided in Rule 1145, the operator shall not apply on plastics, glass, or rubber any coatings which are applied with a VOC content in excess of the limits specified below:

COATING	VOC LIMITS			
	<u>Less Water and Less Exempt</u>			
	<u>Compounds</u>			
	Current		On and After 1-1-98	
	g/L	lbs/gal	g/L	lbs/gal
General Coatings				
One-component	275	2.3	275	2.3
Two-component	420	3.5	420	3.5
Military Spec. Coating				
One-component	340	2.8	340	2.8
Two-component	420	3.5	420	3.5
Multi-Colored Coatings	685	5.7	685	5.7
Mold Seal Coatings	750	6.3	750	6.3
Vacuum Metalizing Coatings	800	6.7	800	6.7
Mirror Backing				
Curtain Coated	500	4.2	500	4.2
Roll Coated	430	3.6	430	3.6
Optical Coatings	800	6.7	800	6.7
Electric Dissipating Coatings and Shock-Free Coatings	800	6.7	360	3.0
Metallic Coatings	420	3.5	420	3.5

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1168 1-7-2005]**

- (1) Unless otherwise specified in paragraph (c)(2), a person shall not apply any adhesives, adhesive bonding primers, adhesive primers, or any other primer which have a VOC content in excess of 250 g/L less water and less exempt compounds.
- (2) A person shall not apply adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primer which have a VOC content in excess of the limits specified below:

VOC Limit*, Less Water and Less Exempt Compounds in Grams per Liter

Architectural Applications	Current VOC Limit*
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1168 1-7-2005]**

Specialty Applications	VOC Limits and Effective Dates**			
	Current VOC Limit*	1-1-05	7-1-05	1-1-07
PVC Welding	510			
CPVC Welding	490			
ABS Welding	400		325	
Plastic Cement Welding	350	250		
Adhesive Primer for Plastic	650		550	
Computer Diskette Manufacturing	350			
Contact Adhesive	80			
Special Purpose Contact Adhesive	250			
Tire Retread	100			
Adhesive Primer for Traffic Marking Tape	150			
Structural Wood Member Adhesive	140			
Sheet Applied Rubber Lining Operations	850			
Top and Trim Adhesive	540			250

** The specified limits remain in effect unless revised limits are listed in subsequent columns.

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1168 1-7-2005]

For adhesives, adhesive bonding primers, or any other primer not regulated by the above two tables and applied to the following substrates, the following limits shall apply:

Substrate Specific Applications	Current VOC Limit*
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass	80

If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

Sealants	Current VOC Limit*
Architectural	250
Marine Deck	760
Nonmembrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420

FACILITY PERMIT TO OPERATE NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 1168 1-7-2005]

Sealant Primers	Current VOC Limit*
Architectural	
Non Porous	250
Porous	775
Modified Bituminous	500
Marine Deck	760
Other	750

* For low-solid adhesives or sealants the VOC limit is expressed in grams per liter of material as determined in paragraph (b)(32); for all other adhesives and sealants, VOC limits are expressed as grams of VOC per liter of adhesive or sealant less water and less exempt compounds as determined in paragraph (b)(31).

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1168 10-3-2003]**

- (1) Unless otherwise specified in paragraph (c)(2), a person shall not apply any adhesives, adhesive bonding primers, adhesive primers, or any other primer which have a VOC content in excess of 250 g/L less water and less exempt compounds.
- (2) A person shall not apply adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primer which have a VOC content in excess of the limits specified below:

VOC Limit*, Less Water and Less Exempt Compounds in Grams per Liter

Architectural Applications	Current VOC Limit
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

* For low-solid adhesives or sealants the VOC limit is expressed in grams per liter of material as determined in paragraph (b)(32); for all other adhesives and sealants, VOC limits are expressed as grams of VOC per liter of adhesive or sealant less water and less exempt compounds as determined in paragraph (b)(31).

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1168 10-3-2003]**

.Specialty Applications	VOC Limits and Effective Dates**			
	Current VOC Limit	6-7-02	1-1-03	1-1-05
PVC Welding	510			285
CPVC Welding	490			270
ABS Welding	400			
Plastic Cement Welding	350			250
Adhesive Primer for Plastic	650			250
Computer Diskette Manufacturing	350			
Contact Adhesive	250		80	
Special Purpose Contact Adhesive	250			
Tire Retread	100			
Adhesive Primer for Traffic Marking Tape	150			
Structural Wood Member Adhesive	140			
Sheet Applied Rubber Lining Operations	850			
Top and Trim Adhesive	250	540		250

** The specified limits remain in effect unless revised limits are listed in subsequent columns.

Substrate Specific Applications	Current VOC Limit
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1168 10-3-2003]**

Substrate Specific Applications	Current VOC Limit
Wood	30
Fiberglass	80

If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

Sealants	Current VOC Limit
Architectural	250
Marine Deck	760
Nonmembrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420

Sealant Primers	Current VOC Limit
Architectural	
Non Porous	250
Porous	775
Modified Bituminous	500
Marine Deck	760
Other	750

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1171 11-7-2003]**

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS
	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application	
(i) General	25 (0.21)
(ii) Electrical Apparatus Components & Electronic Components	500 (4.2)
(iii) Medical Devices & Pharmaceuticals	800 (6.7)
(B) Repair and Maintenance Cleaning	
(i) General	25 (0.21)
(ii) Electrical Apparatus Components & Electronic Components	900 (7.5)
(iii) Medical Devices & Pharmaceuticals	
(A) Tools, Equipment, & Machinery	800 (6.7)
(B) General Work Surfaces	600 (5.0)

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1171 11-7-2003]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS
	VOC g/l (lb/gal)
(C) Cleaning of Coatings or Adhesives Application Equipment	550 (4.6)
(D) Cleaning of Ink Application Equipment	
(i) General	25 (0.21)
(ii) Flexographic Printing	25 (0.21)
(iii) Gravure Printing	
(A) Publication	750 (6.3)
(B) Packaging	25 (0.21)
(iv) Lithographic or Letter Press Printing	
(A) Roller Wash – Step 1	600 (5.0)
(B) Roller Wash-Step 2, Blanket Wash, & On-Press Components	800 (6.7)
(C) Removable Press Components	25 (0.21)
(v) Screen Printing	750 (6.3)
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	800 (6.7)

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1171 11-7-2003]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS
	VOC g/l (lb/gal)
(vii) Specialty Flexographic Printing	600 (5.0)
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1171 7-14-2006]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

	CURRENT LIMITS*	EFFECTIVE 1/1/2008
SOLVENT CLEANING ACTIVITY	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application		
(i) General	25 (0.21)	
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)	
(iii) Medical Devices & Pharmaceuticals	800 (6.7)	
(B) Repair and Maintenance Cleaning		
(i) General	25 (0.21)	
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)	

**FACILITY PERMIT TO OPERATE
 NASA JET PROPULSION LAB**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 1171 7-14-2006]**

	CURRENT LIMITS*	EFFECTIVE 1/1/2008
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(iii) Medical Devices & Pharmaceuticals		
(A) Tools, Equipment, & Machinery	800 (6.7)	
(B) General Work Surfaces	600 (5.0)	
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)	
(D) Cleaning of Ink Application Equipment		
(i) General	25 (0.21)	
(ii) Flexographic Printing	25 (0.21)	
(iii) Gravure Printing		
(A) Publication	100 (0.83)	
(B) Packaging	25 (0.21)	
(iv) Lithographic (Offset) or Letter Press Printing		
(A) Roller Wash, Blanket Wash, & On-Press Components		
(I) Newsprint	100 (0.83)	

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 1171 7-14-2006]

	CURRENT LIMITS*	EFFECTIVE 1/1/2008
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(II) Other Substrates	500 (4.2)	100 (0.83)
(B) Removable Press Components	25 (0.21)	
(v) Screen Printing	500 (4.2)	100 (0.83)
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)	
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)	

* The specified limits remain in effect unless revised limits are listed in subsequent columns.

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 404 2-7-1986]

The operator shall not discharge into the atmosphere from this equipment, particulate matter in excess of the concentration at standard conditions, shown in Table 404(a).

Where the volume discharged is between figures listed in the Table, the exact concentration permitted to be discharged shall be determined by linear interpolation.

For the purposes of this rule, emissions shall be averaged over one complete cycle of operation or one hour, whichever is the lesser time period.

TABLE 404(a)

Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions		Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions	
		Milligrams per Cubic Meter	Grains per Cubic Foot			Milligrams per Cubic Meter	Grains per Cubic Foot
Cubic meters Per Minute	Cubic feet Per Minute			Cubic meters Per Minute	Cubic feet Per Minute		
25 or less	883 or less	450	0.196	900	31780	118	0.0515
30	1059	420	.183	1000	35310	113	.0493
35	1236	397	.173	1100	38850	109	.0476
40	1413	377	.165	1200	42380	106	.0463
45	1589	361	.158	1300	45910	102	.0445
50	1766	347	.152	1400	49440	100	.0437
60	2119	324	.141	1500	52970	97	.0424
70	2472	306	.134	1750	61800	92	.0402

FACILITY PERMIT TO OPERATE
NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS
[RULE 404 2-7-1986]

Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions		Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions	
Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot	Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot
80	2825	291	.127	2000	70630	87	.0380
90	3178	279	.122	2250	79460	83	.0362
100	3531	267	.117	2500	88290	80	.0349
125	4414	246	.107	3000	105900	75	.0327
150	5297	230	.100	4000	141300	67	.0293
175	6180	217	.0947	5000	176600	62	.0271
200	7063	206	.0900	6000	211900	58	.0253
250	8829	190	.0830	8000	282500	52	.0227
300	10590	177	.0773	10000	353100	48	.0210
350	12360	167	.0730	15000	529700	41	.0179
400	14130	159	.0694	20000	706300	37	.0162
450	15890	152	.0664	25000	882900	34	.0148
500	17660	146	.0637	30000	1059000	32	.0140
600	21190	137	.0598	40000	1413000	28	.0122
700	24720	129	.0563	50000	1766000	26	.0114
800	28250	123	.0537	70000 or more	2472000 or more	23	.0100

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 405 2-7-1986]

The operator shall not discharge into the atmosphere from this equipment, solid particulate matter including lead and lead compounds in excess of the rate shown in Table 405(a).

Where the process weight per hour is between figures listed in the table, the exact weight of permitted discharge shall be determined by linear interpolation.

For the purposes of this rule, emissions shall be averaged over one complete cycle of operation or one hour, whichever is the lesser time period.

TABLE 405(a)

Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All Points of Process		Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All points of Process	
		Kilograms Per Hour	Pounds Per Hour			Kilograms Per Hour	Pounds Per Hour
100 or less	220 or less	0.450	0.99	9000	19840	5.308	11.7
150	331	0.585	1.29	10000	22050	5.440	12.0
200	441	0.703	1.55	12500	27560	5.732	12.6
250	551	0.804	1.77	15000	33070	5.982	13.2
300	661	0.897	1.98	17500	38580	6.202	13.7
350	772	0.983	2.17	20000	44090	6.399	14.1
400	882	1.063	2.34	25000	55120	6.743	14.9
450	992	1.138	2.51	30000	66140	7.037	15.5
500	1102	1.209	2.67	35000	77160	7.296	16.1
600	1323	1.340	2.95	40000	88180	7.527	16.6
700	1543	1.461	3.22	45000	99210	7.738	17.1
800	1764	1.573	3.47	50000	110200	7.931	17.5
900	1984	1.678	3.70	60000	132300	8.277	18.2
1000	2205	1.777	3.92	70000	154300	8.582	18.9

FACILITY PERMIT TO OPERATE

NASA JET PROPULSION LAB

APPENDIX B: RULE EMISSION LIMITS [RULE 405 2-7-1986]

Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All Points of Process		Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All points of Process	
		Kilograms Per Hour	Pounds Per Hour			Kilograms Per Hour	Pounds Per Hour
1250	2756	2.003	4.42	80000	176400	8.854	19.5
1500	3307	2.206	4.86	90000	198400	9.102	20.1
1750	3858	2.392	5.27	100000	220500	9.329	20.6
2000	4409	2.563	5.65	125000	275600	9.830	21.7
2250	4960	2.723	6.00	150000	330700	10.26	22.6
2500	5512	2.874	6.34	175000	385800	10.64	23.5
2750	6063	3.016	6.65	200000	440900	10.97	24.2
3000	6614	3.151	6.95	225000	496000	11.28	24.9
3250	7165	3.280	7.23	250000	551200	11.56	25.5
3600	7716	3.404	7.50	275000	606300	11.82	26.1
4000	8818	3.637	8.02	300000	661400	12.07	26.6
4500	9921	3.855	8.50	325000	716500	12.30	27.1
5000	11020	4.059	8.95	350000	771600	12.51	27.6
6000	13230	4.434	9.78	400000	881800	12.91	28.5
7000	15430	4.775	10.5	450000	992100	13.27	29.3
8000	17640	5.089	11.2	500000 or more	1102000 or more	13.60	30.0