

This report is being provided to meet the requirement set forth in permit condition 4.1 of the Los Alamos National Laboratory (LANL) Operating Permit Number P100. The emissions were calculated using operating data recorded during the second six months of 2004. The emissions from the first six months of 2004 were submitted in the previous Semi-Annual Emissions Report, but are included here to calculate annual emissions.

## Facility Emissions

The following table displays the actual facility-wide emissions compared with the facility wide emission limits specified in permit condition 2.11 of the Operating Permit. These emissions include insignificant sources, which are included to demonstrate that facility-wide emissions are below all PSD applicability threshold limits. Also, due to the method used for calculating Hazardous Air Pollutant (HAP) and Volatile Organic Compound (VOC) emissions from chemical use, fugitive emissions are included (see permit condition 4.1).

Pollutant	January - June Emissions (ton)	July - December Emissions (ton)	2004 Annual Emissions (ton)	Facility Wide Emission Limits (Permit Condition 2.11) (ton per year)
Nitrogen Oxides (NO <sub>x</sub> )	26.5	24.0	50.5	245
Carbon Monoxide (CO)	19.1	16.3	35.4	225
Volatile Organic Compounds (VOCs)	6.7	4.7	11.4	200
Sulfur Dioxide (SO <sub>2</sub> )	0.7	0.8	1.5	150
Particulate Matter (PM)	2.5	2.3	4.8	120
Hazardous Air Pollutants (HAPs)	4.8	1.9	6.7	24 combined
Highest Individual HAP (Hydrochloric Acid)	1.2	0.3	1.5	8 individual

## Source Emissions

The following are the actual emissions from permitted sources listed in permit condition 2.0 of the operating permit for the six month reporting period. Included with these emissions are the source specific emission limits when applicable.

### Permit Condition/Source

#### 2.1 Asphalt Production - Asphalt Plant located at TA-60

Pollutant	Jan-June Emissions (ton)	July-Dec Emissions (ton)	Annual Emissions (ton)	Emission Limits (Permit Condition 2.1.2) (ton per year)
NOx	0.0	0.0	0.0	1.0
SO <sub>2</sub>	0.0	0.0	0.0	1.0
PM	0.0	0.0	0.0	*35.4 lb/hr
CO	0.0	0.0	0.0	2.6
VOC	0.0	0.0	0.0	1.0
HAPs	0.0	0.0	0.0	No Source Permit Limit

**Note:** The Asphalt Plant did not operate during 2004.

\* The Asphalt Plant does not have a ton per year limit for PM. The lb/hr emissions will be demonstrated during the initial source compliance test.

## 2.2 Beryllium Activities

Source	Pollutant	Jan-June Emissions (gram)	July-Dec Emissions (gram)	Annual Emissions (gram)	Emission Limits (Permit Condition 2.2.2)	
Beryllium Test Facility TA-3-141	Beryllium	< 0.0033	< 0.0032	< 0.0065	3.5 gm/yr	
Target Fabrication Facility TA-35-213	Beryllium	< 0.04	< 0.009	< 0.049	0.36 gm/yr	
Plutonium Facility TA-55-PF4	Machining Operation	Beryllium	< 1.495	< 1.41	< 2.905	2.99 gm/yr
		Aluminum	< 1.495	< 1.41	< 2.905	2.99 gm/yr
	Foundry Operation	Beryllium	0	0	0	$8.73 \times 10^{-4}$ gm/yr
		Aluminum	0	0	0	$8.73 \times 10^{-4}$ gm/yr
<b>Beryllium Total (tons) =</b>		<b>&lt; <math>1.70 \times 10^{-6}</math></b>	<b>&lt; <math>1.57 \times 10^{-6}</math></b>	<b>&lt; <math>3.27 \times 10^{-6}</math></b>		
<b>Aluminum Total (tons) =</b>		<b>&lt; <math>1.65 \times 10^{-6}</math></b>	<b>&lt; <math>1.55 \times 10^{-6}</math></b>	<b>&lt; <math>3.20 \times 10^{-6}</math></b>		

**Note:** Emission values shown for the Beryllium Test Facility are from actual stack emission measurements. Emissions for the Target Fabrication Facility are based on initial compliance testing of that source and a conservative use of maximum hours of operation. Emissions for the Plutonium Facility Machining Operation are based on initial compliance testing of the source and a conservative use of maximum throughput. The Plutonium Facility Foundry Operations did not operate during 2004. Other beryllium sources listed in section 2.2 of the permit do not require reporting in the Semi-Annual Emissions Report.

## 2.3 Boilers and Heaters

Pollutant	January - June Emissions (ton)	July - December Emissions (ton)	Annual Emissions (ton)	Emission Limits (Permit Condition 2.3.2) (ton per year)
NOx	15.50	12.80	28.30	80
SO <sub>2</sub>	0.10	0.08	0.18	50
PM	1.20	1.03	2.23	50
PM-10	1.20	1.03	2.23	50
CO	12.50	10.25	22.75	80
VOC	0.90	0.71	1.61	50
HAPs	0.26	0.24	0.50	No Source Limit

**Note:** The emissions shown in this table include significant and insignificant sources. This section does not include the TA-3-22 Power Plant boilers (see section 2.9). The TA-21 steam plant boilers are included in this table.

## 2.4 Carpenter Shops

Shop	Pollutant	January - June Emissions (ton)	July - December Emission (ton)	Annual Emissions (ton)	Emission Limits (Permit Condition 2.4.2) (ton per year)
TA-3-38	PM <sub>10</sub>	0.016	0.005	0.021	3.07
TA-15-563	PM <sub>10</sub>	0	0	0	2.81

Note: The TA-15-563 Carpenter Shop did not operate during 2004.

## 2.5 Chemical Usage

Pollutant	January - June Emissions (ton)	July - December Emissions (ton)	Annual Emissions (ton)	Emission Limits (Permit Condition 2.5.3.1)
VOCs	4.91	3.04	7.95	Source limits refer to facility wide limits. (See Facility Emissions Table on Page 1)
HAPs	4.28	1.44	5.72	
Highest Individual HAP (Hydrochloric Acid)	1.19	0.32	1.51	

## 2.6 Degreasers

Degreaser TA-55-DG-1	January - June Emissions (ton)	July - December Emissions (ton)	Annual Emissions (ton)	Emission Limits (Permit Condition 2.6.2.1) (ton per year)
VOCs	0.004	0.007	0.011	Source limits refer to facility wide limits. (See Facility Emissions Table on Page 1)
HAPs	0.004	0.007	0.011	

Note: Degreasers TA-55-DG-2 and TA-55-DG-3 were not used in 2004. These degreasers are not expected to be used in the near future and are in storage.

## 2.7 Internal Combustion Sources

Generator TA-33-G-1	Jan-June Emissions (ton)	July-Dec Emissions (ton)	Annual (ton)	Emission Limits (Permit Condition 2.7.2) (ton per year)
TSP	0.0	0.0	0.0	0.6
PM <sub>10</sub>	0.0	0.0	0.0	0.6
NO <sub>x</sub>	0.0	0.0	0.0	18.1
CO	0.0	0.0	0.0	15.2
VOC	0.0	0.0	0.0	0.3
SO <sub>x</sub>	0.0	0.0	0.0	2.5
HAPs	0.0	0.0	0.0	No Source Limit

**Note:** The TA-33-G-1 generator did not operate during 2004.

Standby Generators	Jan-June Emissions (ton)	July-Dec Emissions (ton)	Annual (ton)	Emission Limits
TSP	0.10	0.20	0.30	No Source Specific Emission Limits for Standby Generators
PM <sub>10</sub>	0.10	0.20	0.30	
NO <sub>x</sub>	2.20	3.67	5.87	
CO	0.50	0.86	1.36	
VOC	0.10	0.22	0.32	
SO <sub>x</sub>	0.50	0.60	1.10	
HAPs	1.1E-03	1.5E-03	2.6E-03	

**Note:** Standby Generators are insignificant sources. Insignificant source information is provided to demonstrate compliance with PSD applicability thresholds.

### 2.8.a Paper Shredder

Emission Unit TA-52-11	January - June Emissions (ton)	July - December Emissions (ton)	Annual Emissions (ton)	Emission Limit (Permit Condition 2.8.2.1) (ton per year)
TSP	0.0012	0.0000	0.0012	13

**Note:** The paper shredder was shutdown in July 2004 and was replaced with a new data disintegrator (see data disintegrator - section 2.8.b).

**2.8.b Data Disintegrator (Unit replaced paper shredder)**

Emission Unit TA-52-11	January - June Emissions (ton)	July - December Emissions (ton)	Annual Emissions (ton)	Emission Limits (NSR Permit No. 2195-H) (ton)
TSP	0.00	0.10	0.10	9.9
PM10	0.00	0.09	0.09	9.9

**Note:** The data disintegrator was started on August 18, 2004, and replaced the existing paper shredder. This unit and its allowable emissions will be included in the next LANL Title V operating permit modification. The data disintegrator was installed under Air Quality Permit No. 2195-H. The emissions from this unit are included in the facility wide total.

**2.9 Power Plant at Technical Area 3 (TA-3-22)**

Pollutant	January - June Emissions (ton)	July - December Emissions (ton)	Annual Emissions (ton)	Emission Limits (Permit Condition 2.9.2) 12 mo. rolling total (ton)	Emission Limits (NSR Permit No. 2195BM1) 12 mo. rolling total (ton)
NOx	8.85	7.49	16.34	99.6	60.2
SO <sub>2</sub>	0.15	0.15	0.30	36.9	7.9
TSP	1.18	1.00	2.18	15.7	8.4
PM <sub>10</sub>	1.17	0.99	2.16	15.7	8.2
CO	6.10	5.16	11.26	81.3	41.3
VOC	0.83	0.70	1.53	11.1	5.6
HAPs	0.29	0.24	0.53	No Source Limit	No Source Limit

**Note:** The allowable emission limits from Air Quality Permit No. 2195BM1 are included above. This permit was issued on July 30, 2004, for the installation of a combustion turbine. Installation of the turbine is not yet complete. These limits are the most current applicable limits for the power plant boilers. These new limits will be included in the next LANL Title V operating permit modification.

**2.10 Rock Crusher**

The Rock Crusher was not used in 2004. The unit was retired June 10, 2004.