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*Commonwealth of Virginia*  
*Department of Environmental Quality*

**Technical Support Document for the  
Update to the Fredericksburg Area  
1997 8-Hour Ozone NAAQS  
Maintenance Plan: NO<sub>x</sub> Motor  
Vehicle Emission Budget Revisions  
Based on MOVES2010a**

FINAL



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## 1 Introduction

The following sections provide detailed information on point, area, nonroad, and mobile source oxides of nitrogen (NO<sub>x</sub>) emission estimates and assumptions. These data were used in the document entitled, “Maintenance Plan for the City of Fredericksburg, Spotsylvania County and Stafford County 8-hour Ozone Nonattainment Area,” which is hereafter referred to as the 1997 ozone NAAQS Fredericksburg maintenance plan. These data and assumptions are also used in the revision to this plan that is entitled, “Maintenance Plan Update for the City of Fredericksburg, Spotsylvania County, and Stafford County 1997 8-Hour Ozone NAAQS Maintenance Area: NO<sub>x</sub> Motor Vehicle Emission Budget Revisions Based on MOVES2010a.”

## 2 Point Source Emissions

The point source sector includes emissions from larger commercial, institutional, and industrial facilities, such as chemical manufacturing facilities, large waste disposal sites, and large heating and electrical generation units (EGUs). In the 1997 ozone NAAQS Fredericksburg maintenance plan, the point source sector emissions estimates for 2009 and 2015 were created using the 2004 emissions data and growing these data using growth factors calculated by the Economic Growth Analysis System (EGAS). EGAS was the United States Environmental Protection Agency’s (USEPA) recommended growth factor model at the time of the 1997 ozone NAAQS Fredericksburg maintenance plan’s development. However, EGAS factors have been determined to be too aggressive when compared against actual data. The draft Transport Rule documentation notes that an assumption of no growth from 2005 was used for both 2012 and 2014 estimates for many source sectors based on an examination of historical emissions and economic data (“TSD for the Transport Rule,” EPA-OAR, 2010). Also, the Fredericksburg area is dominated by non-point source emissions sectors; the point source emissions sector is quite small. To corroborate the assumption that point source emissions for 2009 were overestimated, the 2009 actual point source emissions for the Fredericksburg area in tons per ozone season day are provided in Table 1 to allow comparison between the actual 2009 data and the estimated 2009 data. Table 2 provides the actual 2009 emissions from facilities in the Fredericksburg area at the facility level.

*Table 1: 2009 NO<sub>x</sub> Point Source Emissions, Actual versus Estimated*

2009 Data	NO <sub>x</sub> tons/day
Estimated	0.180
Actual	0.099

*Table 2: 2009 Actual NO<sub>x</sub> Point Source Inventory, by Facility*

County Code	County	Facility ID	Plant Name	NO <sub>x</sub>
				Tons Per Day
177	Spotsylvania	0009	Titan Virginia Ready-Mix L.L.C.	0.000
177	Spotsylvania	0047	OFIC North America Incorporated	0.011
177	Spotsylvania	0043	Motors Liquidation Company	0.000
177	Spotsylvania	0044	Printpack Inc	0.000
177	Spotsylvania	0058	Mid-Atlantic Foam	0.000
177	Spotsylvania	0061	Virginia Paving Company - Fredericksburg	0.000
177	Spotsylvania	0077	Columbia Gas of Virginia	0.016
177	Spotsylvania	0099	Rappahannock Electric Coop Thornburg Middle School	0.025
177	Spotsylvania	0101	Capital One Services Inc	0.006
177	Spotsylvania	0109	Covenant Funeral Service	0.018
177	Spotsylvania	0096	AirJet Incorporated	0.000
177	Spotsylvania	0098	Fredericksburg Sand and Gravel - Fulks Pit	0.000
			<i>Subtotal:</i>	<i>0.076</i>
179	Stafford	0001	Goodloe Asphalt LC	0.004
179	Stafford	0020	FBI Academy	0.000
179	Stafford	0029	Cellofoam North America Inc	0.002
179	Stafford	0037	Mullins & Thompson Funeral Service	0.000
179	Stafford	0096	Superior Paving Corporation - Powell Lane	0.006
179	Stafford	0104	Stafford Hospital	0.000
179	Stafford	0108	Aquia Wastewater Treatment Plant	0.006
			<i>Subtotal:</i>	<i>0.018</i>
630	Fredericksburg City	0063	Superior Paving Corporation - Bellman Road	0.003
630	Fredericksburg City	0092	Harkness Hall Limited	0.000
630	Fredericksburg City	0103	Fredericksburg Wastewater Treatment Facility	0.002
			<i>Subtotal:</i>	<i>0.005</i>
			<b><i>Area Total:</i></b>	<b><i>0.099</i></b>

The data show that the NO<sub>x</sub> emissions from the point source category were overestimated in 2009 by the 1997 ozone NAAQS Fredericksburg maintenance plan. Due to the conservative nature of the 2009 NO<sub>x</sub> estimates within the 1997 ozone NAAQS Fredericksburg maintenance

plan and the small amounts of emissions associated with the point source sector in this area, recalculation of the 2009 and 2015 emissions estimates from the Fredericksburg area would not change the conclusions of the 1997 ozone NAAQS Fredericksburg maintenance plan.

### 3 Area Source Emissions

The area sector includes emissions from such source categories as surface coating, commercial and consumer solvent usage, residential heating, residential solvent use, and other sources that generally have small emissions but a large population of emitters. The 1997 ozone NAAQS Fredericksburg maintenance plan relied upon several categories of socioeconomic data to calculate emissions: population, housing by dwelling units, industrial employment, and total employment. Table 3 shows the most recent data provided by the George Washington Regional Commission's 2035 Constrained Long-Range Transportation Plan.

*Table 3: Fredericksburg Area Updated Socioeconomic Data*

FAMPO Area: Stafford, Spotsylvania, and Fredericksburg					
Data Element and Year	Population	Dwelling Units	Employment, By Place of Work		
			Retail	Industrial	Total
2000	202,120	73,622	11,022	8,463	68,663
2006 Estimated	262,278	97,263	14,512	8,837	97,231
2009 Estimated	270,603	100,351	14,257	8,257	90,849
2010 Projected	292,340	103,953	16,616	8,149	108,251
2015 Interpolated	334,785	119,900	18,798	8,329	123,410
2020 Projected	377,228	135,728	21,038	8,488	138,606
2025 Interpolated	421,158	152,728	23,144	8,639	154,002
2030 Projected	465,087	168,540	25,371	8,754	169,773
2035 Projected	504,945	183,408	27,197	8,872	178,048
Annual Growth Rate, 2000-2010	3.76%	3.51%	4.19%	-0.38%	4.66%
Percent Growth, 2000-2006	29.76%	32.11%	31.66%	4.42%	41.61%
Percent Growth, 2006-2010	11.46%	6.88%	14.50%	-7.79%	11.33%
Percent Growth, 2006-2015	27.65%	23.27%	29.54%	-5.75%	26.92%
Average Annual Growth Rate, 2000-2006	4.44%	4.75%	4.69%	0.72%	5.97%
Average Annual Growth Rate, 2006-2009	1.05%	1.05%	0.59%	-2.24%	-2.24%
Average Annual Growth Rate, 2006-2015	2.75%	2.35%	2.92%	-0.66%	2.68%

Table 4 shows the socioeconomic data for 2009 and 2015 used in the 1997 ozone NAAQS Fredericksburg maintenance plan as compared to the most recent information obtained from the George Washington Regional Commission's 2035 Constrained Long-Range Transportation Plan.

*Table 4: Socioeconomic Data Comparison for the Fredericksburg Area*

Metric	Maintenance Plan Estimate (2005)	Transportation Plan Estimate (2008)*
2009 Population	241,872	270,603
2015 Population	282,112	334,785
2009 Dwelling Units	87,191	100,351
2015 Dwelling Units	103,435	119,900
2009 Industrial Employment	22,664	8,257
2015 Industrial Employment	27,756	8,329
2009 Total Employment	93,926	90,849
2015 Total Employment	122,861	123,410

\*Data from George Washington Regional Commission's 2035 Constrained Long-Range Transportation Plan

Population and dwelling unit numbers were underestimated in the 1997 ozone NAAQS Fredericksburg maintenance plan when compared to the latest estimates used in the 2035 transportation plan for the area. However, the reverse is true for employment data. Population data is used for much of the VOC categories in the area source sector while industrial employment is important to the NO<sub>x</sub> emissions in the area source sector.

Table 5 and Table 6 provides the NO<sub>x</sub> emissions inventory calculations for area and certain nonroad sectors for 2009 and 2015, respectively, for the Fredericksburg area, as calculated for the 1997 ozone NAAQS Fredericksburg maintenance plan. The calculations identify which growth factor basis was applied to the base year emissions to determine future year estimates: population, housing, industrial employment, or total employment.

*Table 5: 2009 Area NO<sub>x</sub> Emissions from the 1997 Ozone NAAQS Fredericksburg Maintenance Plan*

County <sup>1</sup>	Category	Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
<b>177/SPOTSYLVANIA</b>				
177	STATIONARY SOURCE (SOLVENT USE)			
177	DRY CLEANER	1.1967	0.0000	GF_P
177	SURFACE CLEANING	1.2668	0.0000	GF_IE
177	SURFACE COATING	1.2668	0.0000	GF_IE
177	GRAPHIC ARTS	1.1967	0.0000	GF_P
177	COMM./CON. SOLVENT USE	1.1967	0.0000	GF_P
177	PESTICIDES	1.1967	0.0000	GF_P
177	LANE MARKING	1.1967	0.0000	GF_P
177	ASPHALT PAVING	1.1967	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
177	ASPHALT ROOFING		1.2206	0.0000	GF_H
177	VEHICLE REFUELING & RELATED				
177	TANK TRUCK LOADING*		1.1967	0.0000	GF_P
177	TANK TRUCK IN TRANSIT*		1.1967	0.0000	GF_P
177	UST BREATHING		1.1967	0.0000	GF_P
177	PORT FUEL CONTAINERS	RESIDENTIAL	1.1967	0.0000	GF_P
177		COMMERCIAL	1.1967	0.0000	GF_P
177	PETROLEUM VESSELS -	LDG/ UNLDG	1.1967	0.0000	GF_P
177		IN TRANSIT	1.1967	0.0000	GF_P
177		BALLASTING	1.1967	0.0000	GF_P
177	AIRCRAFT REFUELING		1.1967	0.0000	GF_P
177	FUEL CONSUMPTION (FOR HEATING)				
177	RESIDENTIAL	NAT GAS	1.2206	0.0454	GF_H
177		DISTILLATE	1.2206	0.0269	GF_H
177		COAL	1.2206	0.0006	GF_H
177		LP GAS	1.2206	0.0124	GF_H
177		WOOD	1.2206	0.0000	GF_H
177	COMMERC/INSTITUTIONAL	COAL	1.3679	0.0082	GF_TE
177		DISTILLATE	1.3679	0.0291	GF_TE
177		LP GAS	1.3679	0.0036	GF_TE
177		NAT GAS	1.3679	0.0728	GF_TE
177		RESIDUAL	1.3679	0.0076	GF_TE
177		WOOD	1.3679	0.0000	GF_TE
177	INDUSTRIAL	DISTILLATE	1.2668	0.0538	GF_IE
177		COAL	1.2668	0.6327	GF_IE
177		LP GAS	1.2668	0.0103	GF_IE
177		NAT GAS	1.2668	0.1811	GF_IE
177		RESIDUAL	1.2668	0.0354	GF_IE
177		WOOD	1.2668	0.0252	GF_IE
177	INCINERATION & BURNING				
177	FOREST WILD FIRES			0.0034	GF_P
177	STRUCTURAL FIRES		1.2206	0.0003	GF_H
177	ON-SITE INCINERATION	RESIDUAL	1.2206	0.0013	GF_H
177		COMMERCIAL	1.2668	0.0268	GF_IE
177		INDUSTRIAL	1.2668	0.0063	GF_IE

County <sup>1</sup>	Category		Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
177	PRESCRIBED BURNING		1.1967	0.0000	GF_P
177	CONTROLLED OPEN BURN	LAND CLEARING	1.1967	0.0306	GF_P
177		RESIDENTIAL	1.1967	0.0000	GF_P
177	BIOPROCESS				
177	BAKERY		1.1967	0.0000	GF_P
177	BREWERIES		1.1967	0.0000	GF_P
177	WINERIES		1.1967	0.0000	GF_P
177	DISTILLERIES		1.1967	0.0000	GF_P
177	LEAKING UST		1.1967	0.0000	GF_P
177	WASTE HANDLING FACILITIES				
177	LANDFILLS/POTWs/TSDFs		1.1967	0.0000	GF_P
<b>177/SPOTSYLVANIA AREA NO<sub>x</sub> EMISSIONS, AREA SECTOR</b>				<b>1.2140</b>	
177	NON-HIGHWAY MOBILE SOURCES				
177	AVIATION EMISSIONS	COMMERCIAL, AC	1.1967	0.0000	GF_P
177		GENERAL AVIATION	1.1967	0.0011	GF_P
177		AIR TAXI	1.1967	0.0001	GF_P
177	LOCOMOTIVE EMISSIONS	YARD LOCO.	1.1967	0.0856	GF_P
177		LINE HAUL	1.1967	0.3442	GF_P
<b>177/SPOTSYLVANIA NON-HIGHWAY MOBILE SECTOR NO<sub>x</sub> EMISSIONS</b>				<b>0.4310</b>	
<b>177/SPOTSYLVANIA AREA + NON-HIGHWAY MOBILE SECTOR NO<sub>x</sub> EMISSIONS</b>				<b>1.6450</b>	
<b>179/STAFFORD COUNTY</b>					
179	STATIONARY SOURCE (SOLVENT USE)				
179	DRY CLEANER		1.1967	0.0000	GF_P
179	SURFACE CLEANING		1.2668	0.0000	GF_IE
179	SURFACE COATING		1.2668	0.0000	GF_IE
179	GRAPHIC ARTS		1.1967	0.0000	GF_P
179	COMM./CON. SOLVENT USE		1.1967	0.0000	GF_P
179	PESTICIDES		1.1967	0.0000	GF_P
179	LANE MARKING		1.1967	0.0000	GF_P
179	ASPHALT PAVING		1.1967	0.0000	GF_P
179	ASPHALT ROOFING		1.2206	0.0000	GF_H
179	VEHICLE REFUELING & RELATED				
179	TANK TRUCK LOADING*		1.1967	0.0000	GF_P
179	TANK TRUCK IN TRANSIT*		1.1967	0.0000	GF_P
179	UST BREATHING		1.1967	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
179	PORT FUEL CONTAINERS	RESIDENTIAL	1.1967	0.0000	
179		COMMERCIAL	1.1967	0.0000	
179	PETROLEUM VESSELS -	LDG/ UNLDG	1.1967	0.0000	GF_P
179		IN TRANSIT	1.1967	0.0000	GF_P
179		BALLASTING	1.1967	0.0000	GF_P
179	AIRCRAFT REFUELING	CIVILIAN	1.1967	0.0000	GF_P
179		MILITARY	1.1967		GF_P
179	FUEL CONSUMPTION (FOR HEATING)				
179	RESIDENTIAL	NAT GAS	1.2206	0.0451	GF_H
179		DISTILLATE	1.2206	0.0267	GF_H
179		COAL	1.2206	0.0006	GF_H
179		LP GAS	1.2206	0.0123	GF_H
179		WOOD	1.2206	0.0000	GF_H
179	COMMERC/INSTITUTIONAL	COAL	1.3679	0.0100	GF_TE
179		DISTILLATE	1.3679	0.0352	GF_TE
179		LP GAS	1.3679	0.0044	GF_TE
179		NAT GAS	1.3679	0.0880	GF_TE
179		RESIDENTIAL	1.3679	0.0092	GF_TE
179		WOOD	1.3679	0.0000	GF_TE
179	INDUSTRIAL	DISTILLATE	1.2668	0.0204	GF_IE
179		COAL	1.2668	0.2404	GF_IE
179		LP GAS	1.2668	0.0039	GF_IE
179		NAT GAS	1.2668	0.0688	GF_IE
179		RESIDENTIAL	1.2668	0.0135	GF_IE
179		WOOD	1.2668	0.0000	GF_IE
179	INCINERATION & BURNING				
179	FOREST WILD FIRES		N/A	0.0016	GF_P
179	STRUCTURAL FIRES		1.2206	0.0003	GF_H
179	ON-SITE INCINERATION	RESIDENTIAL	1.2206	0.0013	GF_H
179		COMMERCIAL	1.2668	0.0266	GF_IE
179		INDUSTRIAL	1.2668	0.0024	GF_IE
179	PRESCRIBED BURNING		1.1967	0.0000	GF_P
179	CONTROLLED OPEN BURN	LAND CLEARING	1.1967	0.0000	GF_P
179		RESIDENTIAL	1.1967	0.0000	GF_P
179	BIOPROCESS				

County <sup>1</sup>	Category		Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
179	BAKERY		1.1967	0.0000	GF_P
179	BREWERIES		1.1967	0.0000	GF_P
179	WINERIES		1.1967	0.0000	GF_P
179	DISTILLERIES		1.1967	0.0000	GF_P
179	LEAKING UST		1.1967	0.0000	GF_P
179	WASTE HANDLING FACILITIES				
179	LANDFILLS		1.1967	0.0000	GF_P
179	POTW <sub>s</sub>		1.1967	0.0000	GF_P
179	TSDFs		1.1967	0.0000	GF_P
<b>179/STAFFORD AREA NO<sub>x</sub> EMISSIONS:</b>				<b>0.6044</b>	
179	NON-HIGHWAY MOBILE SOURCES				
179	AVIATION EMISSIONS	COMMERCIAL, AC	1.1967	0.0005	GF_P
179	<i>Stafford A.P. Opened Dec 01'</i>	GEN AVIATION	1.1967	0.0002	GF_P
179		AIR TAXI	1.1967	0.0000	GF_P
179		MILITARY	1.1967	0.0000	GF_P
179	LOCOMOTIVE EMISSIONS	YARD LOCO.	1.1967	0.1142	GF_P
179		LINE HAUL.	1.1967	0.4590	GF_P
179	COMMERCIAL MARINE VESSELS		1.1967	0.0000	GF_P
179	MILITARY MARINE VESSELS		1.1967	0.0000	GF_P
<b>179/STAFFORD NON-HIGHWAY MOBILE SOURCES</b>				<b>0.5802</b>	
<b>179/ STAFFORD AREA +NON-HIGHWAY MOBILE NO<sub>x</sub> EMISSIONS</b>				<b>1.1846</b>	
<b>630/ FREDERICKSBURG</b>					
630	STATIONARY SOURCE (SOLVENT USE)				
630	DRY CLEANER		1.1967	0.0000	GF_P
630	SURFACE CLEANING		1.2668	0.0000	GF_IE
630	SURFACE COATING		1.2668	0.0000	GF_IE
630	GRAPHIC ARTS		1.1967	0.0000	GF_P
630	COMM./CON. SOLVENT USE		1.1967	0.0000	GF_P
630	PESTICIDES		1.1967	0.0000	GF_P
630	LANE MARKING		1.1967	0.0000	GF_P
630	ASPHALT PAVING		1.1967	0.0000	GF_P
630	ASPHALT ROOFING		1.2206	0.0000	GF_H
630	TANK TRUCK LOADING*		1.1967	0.0000	GF_P
630	TANK TRUCK IN TRANSIT*		1.1967	0.0000	GF_P
630	UST BREATHING		1.1967	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
630	PORT FUEL CONTAINERS	RESIDENTIAL	1.1967	0.0000	
630		COMMERCIAL	1.1967	0.0000	
630	PETROLEUM VESSELS -	LDG/ UNLDG	1.1967	0.0000	GF_P
630		IN TRANSIT	1.1967	0.0000	GF_P
630		BALLASTING	1.1967	0.0000	GF_P
630	AIRCRAFT REFUELING		1.1967	0.0000	GF_P
630	FUEL CONSUMPTION (FOR HEATING)				
630	RESIDENTIAL	NAT GAS	1.2206	0.0089	GF_H
630		DISTILLATE	1.2206	0.0053	GF_H
630		COAL	1.2206	0.0001	GF_H
630		LP GAS	1.2206	0.0024	GF_H
630		WOOD	1.2206	0.0000	GF_H
630	COMMERC/INSTITUTIONAL	COAL	1.3679	0.0096	GF_TE
630		DISTILLATE	1.3679	0.0339	GF_TE
630		LP GAS	1.3679	0.0042	GF_TE
630		NAT GAS	1.3679	0.0846	GF_TE
630		RESIDUAL	1.3679	0.0089	GF_TE
630		WOOD	1.3679	0.0000	GF_TE
630	INDUSTRIAL	DISTILLATE	1.2668	0.0235	GF_IE
630		COAL	1.2668	0.2763	GF_IE
630		LP GAS	1.2668	0.0045	GF_IE
630		NAT GAS	1.2668	0.0791	GF_IE
630		RESIDUAL	1.2668	0.0155	GF_IE
630		WOOD	1.2668	0.0110	GF_IE
630	INCINERATION & BURNING				
630	FOREST WILD FIRES		1.1967	0.0000	GF_P
630	STRUCTURAL FIRES		1.2206	0.0001	GF_H
630	ON-SITE INCINERATION	RESIDENTIAL	1.2206	0.0003	GF_H
630		COMMERCIAL	1.2668	0.0052	GF_IE
630		INDUSTRIAL	1.2668	0.0027	GF_IE
630	PRESCRIBED BURNING		1.1967	0.0000	GF_P
630	CONTROLLED OPEN BURN	LAND CLEARING	1.1967	0.0000	GF_P
630		RESIDENTIAL	1.1967	0.0000	GF_P
630	BIOPROCESS				
630	BAKERY		1.1967	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2009	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
630	BREWRIES		1.1967	0.0000	GF_P
630	WINERIES		1.1967	0.0000	GF_P
630	DISTILLERIES		1.1967	0.0000	GF_P
630	LEAKING UST		1.1967	0.0000	GF_P
630	WASTE HANDLING FACILITIES				
630	LANDFILLS/POTWS/TSDF		1.1967	0.0000	GF_P
<b>630/FREDERICKSBURG AREA NO<sub>x</sub> EMISSIONS</b>				<b>0.5760</b>	
630	NON-HIGHWAY MOBILE SOURCES				
630	AVIATION EMISSIONS	ALL	1.1967	0.0000	GF_P
630	LOCOMOTIVE EMISSIONS	YARD LOCO.	1.1967	0.1038	GF_P
630		LINE HAUL	1.1967	0.4172	GF_P
630	COMMERCIAL MARINE VESSELS		1.1967	0.0000	GF_P
630	MILITARY MARINE VESSELS		1.1967	0.0000	GF_P
<b>630/FREDERICKSBURG NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>0.5210</b>	
<b>630/ FREDERICKSBURG AREA NO<sub>x</sub> EMISSIONS</b>				<b>1.0970</b>	
<b>TOTAL NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>1.5322</b>	
<b>TOTAL AREA NO<sub>x</sub> EMISSIONS FOR 2009</b>				<b>2.3944</b>	
<b>TOTAL AREA + NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS FOR 2009</b>				<b>3.9266</b>	

<sup>1</sup>177=Spotsylvania; 179=Stafford; 630=Fredericksburg

<sup>2</sup>P=Population; H=Housing/Dwelling Units; IE=Industrial Employment; TE=Total Employment

**Table 6: 2015 Area NO<sub>x</sub> Emissions from the 1997 Ozone NAAQS Fredericksburg Maintenance Plan**

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
<b>177/SPOTSYLVANIA</b>					
177	STATIONARY SOURCE (SOLVENT USE)				
177	DRY CLEANER		1.3958	0.0000	GF_P
177	SURFACE CLEANING		1.5514	0.0000	GF_IE
177	SURFACE COATING		1.5514	0.0000	GF_IE
177	GRAPHIC ARTS		1.3958	0.0000	GF_P
177	COMM./CON. SOLVENT USE		1.3958	0.0000	GF_P
177	PESTICIDES		1.3958	0.0000	GF_P
177	LANE MARKING		1.3958	0.0000	GF_P
177	ASPHALT PAVING		1.3958	0.0000	GF_P
177	ASPHALT ROOFING		1.4480	0.0000	GF_H
177	VEHICLE REFUELING & RELATED				

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
177	TANK TRUCK LOADING*		1.3958	0.0000	GF_P
177	TANK TRUCK IN TRANSIT*		1.3958	0.0000	GF_P
177	UST BREATHING		1.3958	0.0000	GF_P
177	PORT FUEL CONTAINERS	RESIDENTIAL	1.3958	0.0000	GF_P
177		COMMERCIAL	1.3958	0.0000	GF_P
177	PETROLEUM VESSEL	LOADING/ UNLOADING	1.3958	0.0000	GF_P
177		IN TRANSIT	1.3958	0.0000	GF_P
177		BALLASTING	1.3958	0.0000	GF_P
177	AIRCRAFT REFUELING	CIVILIAN	1.3958	0.0000	GF_P
177		MILITARY	1.3958		GF_P
177	FUEL CONSUMPTION (FOR HEATING)				
177	RESIDENTIAL	NAT GAS	1.4480	0.0539	GF_H
177		DIST OIL	1.4480	0.0319	GF_H
177		COAL	1.4480	0.0007	GF_H
177		LP GAS	1.4480	0.0147	GF_H
177		WOOD	1.4480	0.0000	GF_H
177	COMMERC/INSTITUTIONAL	COAL	1.7834	0.0107	GF_TE
177		DIST OIL	1.7834	0.0380	GF_TE
177		LP GAS	1.7834	0.0047	GF_TE
177		NAT GAS	1.7834	0.0949	GF_TE
177		RES OIL	1.7834	0.0100	GF_TE
177		WOOD	1.7834	0.0001	GF_TE
177	INDUSTRIAL	DIST OIL	1.5514	0.0659	GF_IE
177		COAL	1.5514	0.7749	GF_IE
177		LP GAS	1.5514	0.0126	GF_IE
177		NAT Gas	1.5514	0.2219	GF_IE
177		RES OIL	1.5514	0.0434	GF_IE
177		WOOD	1.5514	0.0309	GF_IE
177	INCINERATION & BURNING				
177	FOREST WILD FIRES			0.0034	GF_P
177	STRUCTURAL FIRES		1.4480	0.0003	GF_H
177	ON-SITE INCINERATION	RESIDENTIAL	1.4480	0.0016	GF_H
177		COMMERCIAL	1.5514	0.0328	GF_IE
177		INDUSTRIAL	1.5514	0.0077	GF_IE
177	PRESCRIBED BURNING		1.3958	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
177	CONTROLLED OPEN BURN	LAND CLEARING	1.3958	0.0357	GF_P
177		RESIDENTIAL	1.3958	0.0000	GF_P
177	BIOPROCESS				
177	BAKERY		1.3958	0.0000	GF_P
177	BREWERIES		1.3958	0.0000	GF_P
177	WINERIES		1.3958	0.0000	GF_P
177	DISTILLERIES		1.3958	0.0000	GF_P
177	LEAKING UST		1.3958	0.0000	GF_P
177	WASTE HANDLING FACILITIES				
177	LANDFILLS		1.3958	0.0000	GF_P
177	OTWs		1.3958	0.0000	GF_P
177	TSDFs		1.3958	0.0000	GF_P
<b>177/SPOTSYLVANIA AREA NO<sub>x</sub> EMISSIONS</b>				<b>1.4904</b>	
177	NON-HIGHWAY MOBILE SOURCES				
177	AVIATION	COMMERCIAL, AC	1.3958	0.0000	
177		GENERAL AV	1.3958	0.0013	
177		AIR TAXI	1.3958	0.0001	
177		MILITARY	1.3958	0.0000	
177	LOCOMOTIVE	YARD LOCO	1.3958	0.0999	
177		LINE HAUL	1.3958	0.4015	
<b>177/SPOTSYLVANIA NON-HIGHWAY MOBILE SOURCES NO<sub>x</sub> EMISSIONS</b>				<b>0.5028</b>	
<b>177/SPOTSYLVANIA AREA+NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>1.9932</b>	
<b>179/STAFFORD</b>					
179	STATIONARY SOURCE (SOLVENT USE)				
179	DRY CLEANER		1.3958	0.0000	GF_P
179	SURFACE CLEANING		1.5514	0.0000	GF_IE
179	SURFACE COATING		1.5514	0.0000	GF_IE
179	GRAPHIC ARTS		1.3958	0.0000	GF_P
179	COMM./CON. SOLVENT USE		1.3958	0.0000	GF_P
179	PESTICIDES		1.3958	0.0000	GF_P
179	LANE MARKING		1.3958	0.0000	GF_P
179	ASPHALT PAVING		1.3958	0.0000	GF_P
179	ASPHALT ROOFING		1.4480	0.0000	GF_H
179	VEHICLE REFUELING & RELATED				
179	TANK TRUCK LOADING*		1.3958	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
179	TANK TRUCK IN TRANSIT*		1.3958	0.0000	GF_P
179	UST BREATHING		1.3958	0.0000	GF_P
179	PORT FUEL CONTAINERS	RESIDENTIAL	1.3958	0.0000	
179		COMMERCIAL	1.3958	0.0000	
179	PETROLEUM VESSEL	LOADING/ UNLOADING	1.3958	0.0000	GF_P
179		IN TRANSIT	1.3958	0.0000	GF_P
179		BALLASTING	1.3958	0.0000	GF_P
179	AIRCRAFT REFUELING	CIVILIAN	1.3958	0.0000	GF_P
179		MILITARY	1.3958		GF_P
179	FUEL CONSUMPTION (FOR HEATING)				
179	RESIDENTIAL	NAT GAS	1.4480	0.0535	GF_H
179		DIST OIL	1.4480	0.0317	GF_H
179		COAL	1.4480	0.0007	GF_H
179		LP GAS	1.4480	0.0146	GF_H
179		WOOD	1.4480	0.0000	GF_H
179	COMMERC/INSTITUTIONAL	COAL	1.7834	0.0130	GF_TE
179		DIST OIL	1.7834	0.0459	GF_TE
179		LP GAS	1.7834	0.0057	GF_TE
179		NAT GAS	1.7834	0.1148	GF_TE
179		RES OIL	1.7834	0.0120	GF_TE
179		WOOD	1.7834	0.0000	GF_TE
179	INDUSTRIAL	DIST OIL	1.5514	0.0250	GF_IE
179		COAL	1.5514	0.2944	GF_IE
179		LP GAS	1.5514	0.0048	GF_IE
179		NAT GAS	1.5514	0.0843	GF_IE
179		RES OIL	1.5514	0.0165	GF_IE
179		WOOD	1.5514	0.0000	GF_IE
179	INCINERATION & BURNING				
179	FOREST WILD FIRES		N/A	0.0016	GF_P
179	STRUCTURAL FIRES		1.4480	0.0003	GF_H
179	ON-SITE INCINERATION	RESIDENTIAL	1.4480	0.0016	GF_H
179		COMMERCIAL	1.5514	0.0326	GF_IE
179		INDUSTRIAL	1.5514	0.0029	GF_IE
179	PRESCRIBED BURNING		1.3958	0.0000	GF_P
179	CONTROLLED OPEN BURN	LAND CLEARING	1.3958	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
179		RESIDENTIAL	1.3958	0.0000	GF_P
179	BIOPROCESS				
179	BAKERY		1.3958	0.0000	GF_P
179	BREWERIES		1.3958	0.0000	GF_P
179	WINERIES		1.3958	0.0000	GF_P
179	DISTILLERIES		1.3958	0.0000	GF_P
179	LEAKING UST		1.3958	0.0000	GF_P
179	WASTE HANDLING FACILITIES				
179	LANDFILLS		1.3958	0.0000	GF_P
179	POTWs		1.3958	0.0000	GF_P
179	TSDFs		1.3958	0.0000	GF_P
<b>179/STAFFORD AREA SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>0.7559</b>	
179	NON-HIGHWAY MOBILE SOURCES				
179	AVIATION EMISSIONS	COMMERCIAL, AC	1.3958	0.0005	GF_P
179	<i>Stafford A.P. Opened Dec 01'</i>	GENERAL AVIATION	1.3958	0.0003	GF_P
179		AIR TAXI	1.3958	0.0000	GF_P
179		MILITARY	1.3958	0.0000	GF_P
179	LOCOMOTIVE EMISSIONS	YARD LOCO.	1.3958	0.1332	GF_P
179		LINE HAUL.	1.3958	0.5353	GF_P
<b>179/STAFFORD NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>0.6693</b>	
<b>179/STAFFORD AREA NO<sub>x</sub> EMISSIONS</b>				<b>1.4252</b>	
630	STATIONARY SOURCE (SOLVENT USE)				
630	DRY CLEANER		1.3958	0.0000	GF_P
630	SURFACE CLEANING		1.5514	0.0000	GF_IE
630	SURFACE COATING		1.5514	0.0000	GF_IE
630	GRAPHIC ARTS		1.3958	0.0000	GF_P
630	COMM./CON. SOLVENT USE		1.3958	0.0000	GF_P
630	PESTICIDES		1.3958	0.0000	GF_P
630	LANE MARKING		1.3958	0.0000	GF_P
630	ASPHALT PAVING		1.3958	0.0000	GF_P
630	ASPHALT ROOFING		1.4480	0.0000	GF_H
630	VEHICLE REFUELING & RELATED				
630	TANK TRUCK LOADING*		1.3958	0.0000	GF_P
630	TANK TRUCK IN TRANSIT*		1.3958	0.0000	GF_P
630	UST BREATHING		1.3958	0.0000	GF_P

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
630	PORTABLE FUEL CONTAINERS	RESIDENTIAL	1.3958	0.0000	
630		COMMERCIAL	1.3958	0.0000	
630	PETROLEUM VESSELS	LOADING/ UNLOADING	1.3958	0.0000	GF_P
630		IN TRANSIT	1.3958	0.0000	GF_P
630		BALLASTING	1.3958	0.0000	GF_P
630	AIRCRAFT REFUELING	CIVILIAN	1.3958	0.0000	GF_P
630		MILITARY	1.3958		GF_P
630	FUEL CONSUMPTION (FOR HEATING)				
630	RESIDENTIAL	NAT GAS	1.4480	0.0105	GF_H
630		DIST OIL	1.4480	0.0062	GF_H
630		COAL	1.4480	0.0001	GF_H
630		LP GAS	1.4480	0.0029	GF_H
630		WOOD	1.4480	0.0000	GF_H
630	COMMERC/INSTITUTIONAL	COAL	1.7834	0.0125	GF_TE
630		DIST OIL	1.7834	0.0441	GF_TE
630		LP GAS	1.7834	0.0055	GF_TE
630		NAT GAS	1.7834	0.1103	GF_TE
630		RES OIL	1.7834	0.0116	GF_TE
630		WOOD	1.7834	0.0001	GF_TE
630	INDUSTRIAL	DIST OIL	1.5514	0.0288	GF_IE
630		COAL	1.5514	0.3384	GF_IE
630		LP GAS	1.5514	0.0055	GF_IE
630		NAT GAS	1.5514	0.0969	GF_IE
630		RES OIL	1.5514	0.0190	GF_IE
630		WOOD	1.5514	0.0135	GF_IE
630	INCINERATION & BURNING				
630	FOREST WILD FIRES		1.3958	0.0000	GF_P
630	STRUCTURAL FIRES		1.4480	0.0001	GF_H
630	ON-SITE INCINERATION	RESIDENTIAL	1.4480	0.0003	GF_H
630		COMMERCIAL	1.5514	0.0064	GF_IE
630		INDUSTRIAL	1.5514	0.0034	GF_IE
630	PRESCRIBED BURNING		1.3958	0.0000	GF_P
630	CONTROLLED OPEN BURN	LAND CLEARING	1.3958	0.0000	GF_P
630		RESIDENTIAL	1.3958	0.0000	GF_P
630	BIOPROCESS				

County <sup>1</sup>	Category		Growth Factor 2002-2015	NO <sub>x</sub> tpd	GF Source <sup>2</sup>
630	BAKERY		1.3958	0.0000	GF_P
630	BREWERIES		1.3958	0.0000	GF_P
630	WINERIES		1.3958	0.0000	GF_P
630	DISTILLERIES		1.3958	0.0000	GF_P
630	LEAKING UST		1.3958	0.0000	GF_P
630	WASTE HANDLING FACILITIES				
630	LANDFILLS		1.3958	0.0000	GF_P
630	POTWs		1.3958	0.0000	GF_P
630	TSDFs		1.3958	0.0000	GF_P
<b>630/FREDERICKSBURG AREA SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>0.7159</b>	
630	NON-HIGHWAY MOBILE SOURCES				
630	LOCOMOTIVE EMISSIONS	YARD LOCO.	1.3958	0.1211	GF_P
630		LINE HAUL.	1.3958	0.4866	GF_P
<b>630/FREDERICKSBURG NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>0.6077</b>	
<b>620/FREDERICKSBURG AREA+NON-HIGHWAY MOBILE SOURCE NO<sub>x</sub> EMISSIONS</b>				<b>1.3236</b>	
<b>TOTAL AREA NO<sub>x</sub> EMISSIONS</b>				<b>2.9622</b>	
<b>TOTAL NON-HIGHWAY MOBILE NO<sub>x</sub> EMISSIONS</b>				<b>1.7798</b>	
<b>TOTAL AREA + NON-HIGHWAY MOBILE NO<sub>x</sub> EMISSIONS</b>				<b>4.7420</b>	

<sup>1</sup>177=Spotsylvania; 179=Stafford; 630=Fredericksburg

<sup>2</sup>P=Population; H=Housing/Dwelling Units; IE=Industrial Employment; TE=Total Employment

The Mid-Atlantic Regional Air Management Association (MARAMA) 2007 inventory was developed using the more recent inventory methodologies as suggested by USEPA and the Eastern Regional Technical Advisory Committee (ERTAC).

Table 7 shows the annual values from the MARAMA 2007 inventory in tons of NO<sub>x</sub> per year for those line items with NO<sub>x</sub> emissions. The tons per year values are converted to tons per day values by assuming 260 days per year (52 weeks per year and 5 days per week) and the application of a seasonal adjustment factor appropriate to the Fredericksburg area. The data in this draft area source inventory show that the Fredericksburg region's area NO<sub>x</sub> emissions estimates for 2007, 2013, and 2017 are all less than the estimated ozone season tons per day values used in the 1997 ozone NAAQS Fredericksburg area maintenance plan. These data are summarized in Table 8. Therefore, the changes in area sector planning assumptions and calculation methodologies that have been implemented since the development of the 1997 ozone NAAQS Fredericksburg area maintenance plan do not change the ultimate conclusion of that plan: the region's emissions will continue to remain beneath the 2004 attainment year emissions cap for NO<sub>x</sub>. Based on this analysis, Virginia does not believe that re-creating the area source emissions inventory for the Fredericksburg region is necessary for this SIP revision to update the NO<sub>x</sub> motor vehicle emissions budgets based on MOVES2010a outputs.

**Table 7: MARAMA 2007, 2013, and 2017 Area Source NO<sub>x</sub> Emissions Estimates**

SCC	SCC DESCRIPTION	NO <sub>x</sub> , tpd			Seasonal Adjust-ment Factor	NO <sub>x</sub> , tpd		
		2007	2013	2017		2007	2013	2017
<b>51-177/ Spotsylvania</b>								
2102002000	Stationary Fuel Comb /Industrial /Bituminous/Subbituminous Coal /Total: All	32.447	31.281	32.055	1	0.125	0.120	0.123
2102004000	Stationary Fuel Comb /Industrial /Distillate Oil /Total: Boilers and IC Engines	21.77	20.502	20.435	1	0.084	0.079	0.079
2102005000	Stationary Fuel Comb /Industrial /Residual Oil /Total: All Boiler Types	3.282	2.704	2.573	1	0.013	0.010	0.010
2102006000	Stationary Fuel Comb /Industrial /Natural Gas /Total: Boilers and IC Engine	2.903	2.805	2.876	1	0.011	0.011	0.011
2102007000	Stationary Fuel Comb /Industrial /Liquified Petroleum Gas /Total: All Boilers	2.385	2.309	2.6	1	0.009	0.009	0.010
2102008000	Stationary Fuel Comb /Industrial /Wood /Total: All Boiler Types	3.182	3.083	3.207	1	0.012	0.012	0.012
2102011000	Stationary Fuel Comb /Industrial /Kerosene /Total: All Boiler Types	0.038	0.036	0.036	1	0.000	0.000	0.000
2103001000	Stationary Fuel Comb /Commercial/Institutional /Anthracite Coal /Total: All	0.032	0.032	0.032	1	0.000	0.000	0.000
2103002000	Stationary Fuel Comb /Commercial/Institutional /Bituminous/Subbituminous	1.287	1.295	1.295	0.6	0.003	0.003	0.003
2103004000	Stationary Fuel Comb /Commercial/Institutional /Distillate Oil /Total: Boil	6.964	5.913	5.673	0.6	0.016	0.014	0.013
2103005000	Stationary Fuel Comb /Commercial/Institutional /Residual Oil /Total: All Bo	0.034	0.034	0.034	0.6	0.000	0.000	0.000
2103006000	Stationary Fuel Comb /Commercial/Institutional /Natural Gas /Total: Boilers	24.5	26.069	27.051	0.6	0.057	0.060	0.062
2103007000	Stationary Fuel Comb /Commercial/Institutional /Liquified Petroleum Gas /To	1.5	1.501	1.537	0.6	0.003	0.003	0.004
2103008000	Stationary Fuel Comb /Commercial/Institutional /Wood /Total: All Boiler Types	0.086	0.087	0.087	0.6	0.000	0.000	0.000
2103011000	Stationary Fuel Comb /Commercial/Institutional /Kerosene /Total: All Combustion	0.549	0.808	0.858	0.6	0.001	0.002	0.002
2104002000	Stationary Fuel Comb /Residential /Bituminous/Subbituminous Coal /Total	0.577	0.652	0.621	0.3	0.001	0.001	0.001
2104004000	Stationary Fuel Comb /Residential /Distillate Oil /Total: All Combustor Types	25.637	22.257	19.934	0.3	0.030	0.026	0.023
2104006000	Stationary Fuel Comb /Residential /Natural Gas /Total: All Combustor Types	60.29	61.933	63.711	0.3	0.070	0.071	0.074
2104007000	Stationary Fuel Comb /Residential /Liquified Petroleum Gas /Total: All Comb	14.059	12.211	11.82	0.3	0.016	0.014	0.014
2104008100	Stationary Fuel Comb /Residential /Wood /Fireplace: general	3.328	3.528	3.661	0	0.000	0.000	0.000
2104008210	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; non-	3.21	2.825	2.568	0	0.000	0.000	0.000
2104008220	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; EPA	0.839	0.939	1.006	0	0.000	0.000	0.000
2104008230	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; EPA	0.246	0.275	0.295	0	0.000	0.000	0.000

SCC	SCC DESCRIPTION	NO <sub>x</sub> , tpd			Seasonal Adjust-ment Factor	NO <sub>x</sub> , tpd		
		2007	2013	2017		2007	2013	2017
2104008310	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, non-EPA c	1.351	1.188	1.08	0	0.000	0.000	0.000
2104008320	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, EPA certified	0.352	0.394	0.423	0	0.000	0.000	0.000
2104008330	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, EPA certified	0.104	0.116	0.125	0	0.000	0.000	0.000
2104008400	Stationary Fuel Comb /Residential /Wood /Woodstove: pellet-fired, general	0.126	0.141	0.151	0	0.000	0.000	0.000
2104008510	Stationary Fuel Comb /Residential /Wood /Furnace: Indoor, cordwood-fired	0.348	0.306	0.278	0	0.000	0.000	0.000
2104008610	Stationary Fuel Comb /Residential /Wood /Hydronic heater: outdoor	0.14	0.148	0.154	0	0.000	0.000	0.000
2104009000	Stationary Fuel Comb /Residential /Firelog /Total: All Combustor Types	1.134	1.202	1.247	0	0.000	0.000	0.000
2104011000	Stationary Fuel Comb /Residential /Kerosene /Total: All Heater Types	4.26	3.329	2.968	0.6	0.010	0.008	0.007
2601010000	On-site Incineration /Industrial /Total	1.602	1.602	1.602	1	0.006	0.006	0.006
2601020000	On-site Incineration /Commercial/Institutional /Total	9.58	9.58	9.58	1	0.037	0.037	0.037
2601030000	On-site Incineration /Residential /Total	0.491	0.491	0.491	1	0.002	0.002	0.002
2610000100	Open Burning /All Categories /Yard Waste - Leaf Species Unspecified	0.975	0.975	0.975	1	0.004	0.004	0.004
2610000400	Open Burning /All Categories /Yard Waste - Brush Species Unspecified	0.786	0.786	0.786	1	0.003	0.003	0.003
2610000500	Open Burning /All Categories /Land Clearing Debris	36.402	36.402	36.402	1	0.140	0.140	0.140
2610030000	Open Burning /Residential /Household Waste (use 26-10-000-xxx for Yard Waste)	21.744	21.744	21.744	1	0.084	0.084	0.084
2810001000	Forest Wildfires - Wildfires – Unspecified	0.086	0.086	0.086	1	0.000	0.000	0.000
2810015000	Prescribed Forest Burning /Unspecified	0.101	0.101	0.101	1	0.000	0.000	0.000
2810030000	Structure Fires /Unspecified	4.416	4.416	4.416	1	0.017	0.017	0.017
<b>51-179/ Stafford</b>								
2102002000	Stationary Fuel Comb /Industrial /Bituminous/Subbituminous Coal /Total: All	15.74	15.175	15.55	1	0.061	0.058	0.060
2102004000	Stationary Fuel Comb /Industrial /Distillate Oil /Total: Boilers and IC Engines	10.56	9.946	9.913	1	0.041	0.038	0.038
2102005000	Stationary Fuel Comb /Industrial /Residual Oil /Total: All Boiler Types	1.592	1.312	1.248	1	0.006	0.005	0.005
2102006000	Stationary Fuel Comb /Industrial /Natural Gas /Total: Boilers and IC Engine	1.408	1.361	1.395	1	0.005	0.005	0.005
2102007000	Stationary Fuel Comb /Industrial /Liquified Petroleum Gas /Total: All Boilers	1.157	1.12	1.261	1	0.004	0.004	0.005
2102008000	Stationary Fuel Comb /Industrial /Wood /Total: All Boiler Types	1.544	1.496	1.556	1	0.006	0.006	0.006

SCC	SCC DESCRIPTION	NO <sub>x</sub> , tpd			Seasonal Adjust-ment Factor	NO <sub>x</sub> , tpd		
		2007	2013	2017		2007	2013	2017
210201000	Stationary Fuel Comb /Industrial /Kerosene /Total: All Boiler Types	0.013	0.013	0.012	1	0.000	0.000	0.000
2103001000	Stationary Fuel Comb /Commercial/Institutional /Anthracite Coal /Total: All	0.033	0.033	0.033	1	0.000	0.000	0.000
2103002000	Stationary Fuel Comb /Commercial/Institutional /Bituminous/Subbituminous	1.571	1.58	1.58	0.6	0.004	0.004	0.004
2103004000	Stationary Fuel Comb /Commercial/Institutional /Distillate Oil /Total: Boil	8.498	7.215	6.922	0.6	0.020	0.017	0.016
2103005000	Stationary Fuel Comb /Commercial/Institutional /Residual Oil /Total: All	0.041	0.041	0.041	0.6	0.000	0.000	0.000
2103006000	Stationary Fuel Comb /Commercial/Institutional /Natural Gas /Total: Boilers	29.896	31.811	33.009	0.6	0.069	0.073	0.076
2103007000	Stationary Fuel Comb /Commercial/Institutional /Liquified Petroleum Gas	1.83	1.832	1.875	0.6	0.004	0.004	0.004
2103008000	Stationary Fuel Comb /Commercial/Institutional /Wood /Total: All Boiler Types	0.105	0.107	0.107	0.6	0.000	0.000	0.000
2103011000	Stationary Fuel Comb /Commercial/Institutional /Kerosene /Total: All Combustion	0.67	0.986	1.046	0.6	0.002	0.002	0.002
2104002000	Stationary Fuel Comb /Residential /Bituminous/Subbituminous Coal /Total	0.558	0.631	0.601	0.3	0.001	0.001	0.001
2104004000	Stationary Fuel Comb /Residential /Distillate Oil /Total: All Combustor Types	24.811	21.54	19.292	0.3	0.029	0.025	0.022
2104006000	Stationary Fuel Comb /Residential /Natural Gas /Total: All Combustor Types	58.349	59.938	61.659	0.3	0.067	0.069	0.071
2104007000	Stationary Fuel Comb /Residential /Liquified Petroleum Gas /Total	13.606	11.817	11.439	0.3	0.016	0.014	0.013
2104008100	Stationary Fuel Comb /Residential /Wood /Fireplace: general	2.98	3.159	3.278	0	0.000	0.000	0.000
2104008210	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; non-	2.875	2.53	2.3	0	0.000	0.000	0.000
2104008220	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; EPA	0.751	0.841	0.901	0	0.000	0.000	0.000
2104008230	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; EPA	0.22	0.246	0.263	0	0.000	0.000	0.000
2104008310	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, non-EPA c	1.213	1.068	0.971	0	0.000	0.000	0.000
2104008320	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, EPA certified	0.316	0.354	0.38	0	0.000	0.000	0.000
2104008330	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, EPA certified	0.094	0.105	0.112	0	0.000	0.000	0.000
2104008400	Stationary Fuel Comb /Residential /Wood /Woodstove: pellet-fired, general	0.124	0.139	0.149	0	0.000	0.000	0.000
2104008510	Stationary Fuel Comb /Residential /Wood /Furnace: Indoor, cordwood-fired,	0.31	0.273	0.248	0	0.000	0.000	0.000
2104008610	Stationary Fuel Comb /Residential /Wood /Hydronic heater: outdoor	0.128	0.136	0.141	0	0.000	0.000	0.000
2104009000	Stationary Fuel Comb /Residential /Firelog /Total: All Combustor Types	1.112	1.179	1.224	0	0.000	0.000	0.000
2104011000	Stationary Fuel Comb /Residential /Kerosene /Total: All Heater Types	4.123	3.222	2.873	0.6	0.010	0.007	0.007

SCC	SCC DESCRIPTION	NO <sub>x</sub> , tpd			Seasonal Adjust-ment Factor	NO <sub>x</sub> , tpd		
		2007	2013	2017		2007	2013	2017
2601010000	On-site Incineration /Industrial /Total	0.472	0.472	0.472	1	0.002	0.002	0.002
2601020000	On-site Incineration /Commercial/Institutional /Total	9.271	9.271	9.271	1	0.036	0.036	0.036
2601030000	On-site Incineration /Residential /Total	0.475	0.475	0.475	1	0.002	0.002	0.002
2610000100	Open Burning /All Categories /Yard Waste - Leaf Species Unspecified	0.743	0.743	0.743	1	0.003	0.003	0.003
2610000400	Open Burning /All Categories /Yard Waste - Brush Species Unspecified	0.599	0.599	0.599	1	0.002	0.002	0.002
2610000500	Open Burning /All Categories /Land Clearing Debris	46.667	46.667	46.667	1	0.179	0.179	0.179
2610030000	Open Burning /Residential /Household Waste (use 26-10-000-xxx for Yard Waste)	16.58	16.58	16.58	1	0.064	0.064	0.064
2810001000	Forest Wildfires - Wildfires – Unspecified	0.002	0.002	0.002	1	0.000	0.000	0.000
2810030000	Structure Fires /Unspecified	0.932	0.932	0.932	1	0.004	0.004	0.004
<b>51-630/ Fredericksburg</b>								
2102002000	Stationary Fuel Comb /Industrial /Bituminous/Subbituminous Coal /Total: All	6.407	6.177	6.33	1	0.025	0.024	0.024
2102004000	Stationary Fuel Comb /Industrial /Distillate Oil /Total: Boilers and IC Engines	4.299	4.048	4.035	1	0.017	0.016	0.016
2102005000	Stationary Fuel Comb /Industrial /Residual Oil /Total: All Boiler Types	0.648	0.534	0.508	1	0.002	0.002	0.002
2102006000	Stationary Fuel Comb /Industrial /Natural Gas /Total: Boilers and IC Engine	0.573	0.554	0.568	1	0.002	0.002	0.002
2102007000	Stationary Fuel Comb /Industrial /Liquified Petroleum Gas /Total: All Boilers	0.471	0.456	0.513	1	0.002	0.002	0.002
2102008000	Stationary Fuel Comb /Industrial /Wood /Total: All Boiler Types	0.628	0.609	0.633	1	0.002	0.002	0.002
2102011000	Stationary Fuel Comb /Industrial /Kerosene /Total: All Boiler Types	0.008	0.007	0.007	1	0.000	0.000	0.000
2103001000	Stationary Fuel Comb /Commercial/Institutional /Anthracite Coal /Total: All	0.034	0.034	0.034	1	0.000	0.000	0.000
2103002000	Stationary Fuel Comb /Commercial/Institutional /Bituminous/Subbituminous	1.283	1.29	1.29	0.6	0.003	0.003	0.003
2103004000	Stationary Fuel Comb /Commercial/Institutional /Distillate Oil /Total: Boil	6.942	5.894	5.654	0.6	0.016	0.014	0.013
2103005000	Stationary Fuel Comb /Commercial/Institutional /Residual Oil /Total: All Boilers	0.033	0.033	0.033	0.6	0.000	0.000	0.000
2103006000	Stationary Fuel Comb /Commercial/Institutional /Natural Gas /Total: Boilers	24.421	25.985	26.963	0.6	0.056	0.060	0.062
2103007000	Stationary Fuel Comb /Commercial/Institutional /Liquified Petroleum Gas /Total	1.495	1.496	1.532	0.6	0.003	0.003	0.004
2103008000	Stationary Fuel Comb /Commercial/Institutional /Wood /Total: All Boiler Types	0.086	0.087	0.087	0.6	0.000	0.000	0.000
2103011000	Stationary Fuel Comb /Commercial/Institutional /Kerosene /Total: All Combustion	0.547	0.805	0.855	0.6	0.001	0.002	0.002

SCC	SCC DESCRIPTION	NO <sub>x</sub> , tpd			Seasonal Adjust-ment Factor	NO <sub>x</sub> , tpd		
		2007	2013	2017		2007	2013	2017
2104002000	Stationary Fuel Comb /Residential /Bituminous/Subbituminous Coal /Total	0.109	0.123	0.117	0.3	0.000	0.000	0.000
2104004000	Stationary Fuel Comb /Residential /Distillate Oil /Total: All Combustor Types	4.835	4.197	3.759	0.3	0.006	0.005	0.004
2104006000	Stationary Fuel Comb /Residential /Natural Gas /Total: All Combustor Types	11.369	11.679	12.014	0.3	0.013	0.013	0.014
2104007000	Stationary Fuel Comb /Residential /Liquified Petroleum Gas /Total: All	2.651	2.303	2.229	0.3	0.003	0.003	0.003
2104008100	Stationary Fuel Comb /Residential /Wood /Fireplace: general	0.46	0.488	0.506	0	0.000	0.000	0.000
2104008210	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts;	0.427	0.375	0.341	0	0.000	0.000	0.000
2104008220	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; EPA	0.111	0.125	0.133	0	0.000	0.000	0.000
2104008230	Stationary Fuel Comb /Residential /Wood /Woodstove: fireplace inserts; EPA	0.033	0.037	0.039	0	0.000	0.000	0.000
2104008310	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, non-EPA certified	0.181	0.159	0.145	0	0.000	0.000	0.000
2104008320	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, EPA certified	0.047	0.053	0.056	0	0.000	0.000	0.000
2104008330	Stationary Fuel Comb /Residential /Wood /Woodstove: freestanding, EPA certified	0.014	0.015	0.017	0	0.000	0.000	0.000
2104008400	Stationary Fuel Comb /Residential /Wood /Woodstove: pellet-fired, general	0.016	0.018	0.019	0	0.000	0.000	0.000
2104008610	Stationary Fuel Comb /Residential /Wood /Hydronic heater: outdoor	0.019	0.02	0.02	0	0.000	0.000	0.000
2104009000	Stationary Fuel Comb /Residential /Firelog /Total: All Combustor Types	0.139	0.147	0.153	0	0.000	0.000	0.000
2104011000	Stationary Fuel Comb /Residential /Kerosene /Total: All Heater Types	0.803	0.628	0.56	0.6	0.002	0.001	0.001
2601010000	On-site Incineration /Industrial /Total	0.779	0.779	0.779	1	0.003	0.003	0.003
2601020000	On-site Incineration /Commercial/Institutional /Total	1.806	1.806	1.806	1	0.007	0.007	0.007
2601030000	On-site Incineration /Residential /Total	0.093	0.093	0.093	1	0.000	0.000	0.000
2810001000	Forest Wildfires - Wildfires – Unspecified	0.006	0.006	0.006	1	0.000	0.000	0.000
2810030000	Structure Fires /Unspecified	0.69	0.69	0.69	1	0.003	0.003	0.003
	<b>Area Source NO<sub>x</sub> Emission Totals:</b>	<b>627.575</b>	<b>614.783</b>	<b>616.218</b>		<b>1.555</b>	<b>1.527</b>	<b>1.535</b>

*Table 8: Area Source NO<sub>x</sub> Comparison*

Area Source NO <sub>x</sub> tons/day	2007 (MARAMA)	2009 (1997 Plan)	2013 (MARAMA)	2015 (1997 Plan)	2017 (MARAMA)
	1.555	2.394	1.527	2.962	1.535

#### 4 Nonroad Emissions Inventory

The nonroad emissions category includes a diverse collection of engines, equipment, vehicles, and vessels. These include outdoor power equipment, recreational vehicles, farm and construction machinery, lawn and garden equipment, marine vessels, locomotives, and many other applications. Until the mid-1990s, emissions from these engines were largely uncontrolled. However, USEPA has adopted more stringent emission standards for most of these engines, resulting in significant emission reductions that were phased in over time.

In the 1997 ozone NAAQS Fredericksburg maintenance plan, USEPA’s draft NONROAD2004 model was used to determine the NO<sub>x</sub> emissions from this category of equipment. Since that time, USEPA has twice updated the nonroad emissions estimation tool, once in 2005 and again in 2008. NONROAD2008a is now the latest version of this model and is required by USEPA for use in new SIP inventory development. Most of the changes between these versions allow the model to account for emission reductions associated with a variety of new rules that affect equipment in this sector:

- The November 2002 final rule (67 FR 68242) on recreation vehicles, nonroad large spark ignition equipment, and diesel recreational marine engines over 50 hp (only the exhaust benefits were covered in draft NONROAD2004);
- Diesel recreational marine standards in the 2008 final rule on locomotive and marine engines (73 FR 25098); and
- The October 2008 small spark ignition and spark ignition recreational marine final rule (73 FR 59034).

However, some changes have increased overall NO<sub>x</sub> emissions from this sector for certain counties, as shown in Table 9. For each year analyzed, the NO<sub>x</sub> emissions calculated by the NONROAD2008a model are higher than those estimated by the NONROAD2004 model, although the NONROAD2008a model provides for a greater reduction in NO<sub>x</sub> emissions between the attainment year and the interim/out years. The results of both models demonstrate a downward trend in the nonroad sector’s NO<sub>x</sub> emissions, which supports the conclusion that the area will continue to experience good air quality into the future.

**Table 9: NO<sub>x</sub> Nonroad Emissions - NONROAD Model Comparisons**

<b>Inventory Year</b>	<b>2004</b>		<b>2009</b>		<b>2015</b>	
<b>NONROAD Model Version</b>	<b>2008a</b>	<b>2004</b>	<b>2008a</b>	<b>2004</b>	<b>2008a</b>	<b>2004</b>
Fredericksburg	0.156	0.169	0.119	0.121	0.073	0.081
Spotsylvania	2.359	2.149	2.033	1.850	1.400	1.308
Stafford	2.435	1.283	2.134	1.109	1.480	0.806
<b>Total NO<sub>x</sub></b>	<b>4.950</b>	<b>3.601</b>	<b>4.286</b>	<b>3.080</b>	<b>2.953</b>	<b>2.195</b>

*Data supplied in units of ozone season tons per day of NO<sub>x</sub>.*

To create the estimates contained in Table 9, nonroad emissions were calculated with EPA's NONROAD2008a model for all nonroad engine types except for aircraft, locomotives, and commercial/military marine vessels, which were inventoried separately. Table 10 and Table 11 below summarize the NONROAD2008A inputs for each jurisdiction and analysis year.

**Table 10: NONROAD2008a Model Inputs for Stafford County**

<b>Year</b>	<b>2004</b>	<b>2009</b>	<b>2015</b>
Fuel RVP for gas	6.8	6.8	6.8
Oxygen Weight %	2.1	3.43	3.43
Gasoline Sulfur %	0.0120	0.0030	0.0030
Diesel Sulfur %	0.2284	0.0351	0.0011
Marine Diesel Sulfur %	0.2637	0.0435	0.0056
CNG/LPG Sulfur %	0.003	0.003	0.003
Minimum Temp (F)	67.6	67.6	67.6
Maximum Temp (F)	97.1	97.1	97.1
Average Temp (F)	82.35	82.35	82.35
Stage II Control%	77	77	77
EtOH blend mkt %	0.00	9.81	9.81
EtOH volume %	0.00	100	100
Oxygenate Type	MTBE	Ethanol	Ethanol

**Table 11: NONROAD2008a Model Inputs for Fredericksburg City and Spotsylvania County**

Year	2004	2009	2015
Fuel RVP for gas	8.4	8.4	8.4
Oxygen Weight %	0	0	0
Gasoline Sulfur %	0.0121	0.0030	0.0030
Diesel Sulfur %	0.2284	0.0351	0.0011
Marine Diesel Sulfur %	0.2637	0.0435	0.0056
CNG/LPG Sulfur %	0.003	0.003	0.003
Minimum Temp (F)	67.6	67.6	67.6
Maximum Temp (F)	97.1	97.1	97.1
Average Temp (F)	82.35	82.35	82.35
Stage II Control %	0.00	0.00	0.00
EtOH blend mkt %	0.00	0.00	0.00
EtOH volume %	0.00	0.00	0.00
Oxygenate Type	n/a	n/a	n/a

Stafford County’s inputs are based on reformulated gasoline (RFG) and the presence of a Stage II vapor recovery program, while Fredericksburg City’s and Spotsylvania County’s inputs are based on southern-grade conventional gasoline and no Stage II vapor recovery program. The temperature inputs for the entire Fredericksburg maintenance area were based on the average minimum and maximum temperatures on the 10 highest 8-hour ozone exceedance days between 2002 and 2004. All emissions were calculated for a typical summer weekday. Table 12 summarizes the 2004, 2009, and 2015 NONROAD2008a results for the Fredericksburg area.

**Table 12: NONROAD2008a NO<sub>x</sub> Emissions for Fredericksburg, Stafford, and Spotsylvania**

NO <sub>x</sub> Nonroad Emissions in tons/day			
Locality	2004	2009	2015
Fredericksburg	0.156	0.119	0.073
Spotsylvania	2.359	2.033	1.400
Stafford	2.435	2.134	1.480
Total NO <sub>x</sub>	4.950	4.286	2.953

Appendix A provides the 2004, 2007, 2009, and 2015 NONROAD2008A results by jurisdiction and by SCC for NO<sub>x</sub>.

Table 12 also demonstrates that changes to the NONROAD model do not affect the conclusions in the 1997 ozone NAAQS Fredericksburg maintenance plan. Emissions of NO<sub>x</sub> will decrease in future years as compared to 2004, and the area should continue to maintain compliance with the 1997 ozone NAAQS.

## 5 Motor Vehicle Emissions NO<sub>x</sub> Inventories and NO<sub>x</sub> Budgets

In March 2010, EPA officially released the Motor Vehicle Emissions Simulator model (MOVES2010) for use in SIPs and transportation conformity analyses. The use of this model is required after a two-year conformity grace period expires in March 2012. Several subsequent updates to the model have also been issued. The most recent update, called MOVES2010a, was released in August 2010. This section documents the development of revised on-road mobile source NO<sub>x</sub> emission inventories for the Fredericksburg ozone maintenance area using MOVES2010a. In the 1997 ozone NAAQS Fredericksburg maintenance plan, the mobile source emission inventory was compiled using MOBILE6.2 for an average ozone-season weekday in calendar year 2002, with projection inventories for calendar years 2004, 2009, and 2015. This revised NO<sub>x</sub> highway emission inventory prepared using MOVES2010a utilizes the same activity data from the 1997 ozone NAAQS Fredericksburg maintenance plan updated with the latest available planning assumptions, where appropriate. The revised emission inventories are for calendar years 2004 and 2009 with a projection inventory for calendar year 2015.

The on-road mobile source inventory includes emissions produced by the operation of highway motor vehicles that are registered for use on public roadways and that burn gasoline, diesel, or compressed natural gas fuel. This inventory covers all classes of vehicles from motorcycles to heavy-duty tractor trailers operating on roads ranging from rural access roads to interstate highways. Table 13 shows each of the 13 MOVES2010a vehicle classes that were modeled.

*Table 13: Mobile Source Vehicle Types*

SOURCE TYPE ID	SOURCE TYPE NAME
11	Motorcycle
21	Passenger Car
31	Passenger Truck
32	Light Commercial Truck
41	Intercity Bus
42	Transit Bus
43	School Bus
51	Refuse Truck
52	Single Unit Short-haul Truck
53	Single Unit Long-haul Truck
54	Motor Home
61	Combination Short-haul Truck
62	Combination Long-haul Truck

The process of estimating on-road mobile source emissions using MOVES2010a requires the input of motor vehicle and traffic related information such as vehicle miles traveled (VMT), vehicle population, age and distribution of registered vehicles, vehicle speeds, fuel specifications, and mobile control programs such as inspection and maintenance programs. While the MOBILE6.2 model estimates the pollutant emission rate associated with a particular

level of activity, MOVES2010a estimates pollutant emissions for the collection of inputs supplied. Table 14 summarizes the attainment, interim, and projection year highway mobile source NO<sub>x</sub> emissions for the Fredericksburg maintenance area as estimated by MOVES2010a.

*Table 14: NO<sub>x</sub> Highway Mobile Source Emissions in tons/day*

Locality	2004	2009	2015
Fredericksburg	3.307	2.137	1.174
Spotsylvania	10.350	7.630	4.551
Stafford	10.408	7.848	4.208
Total NO <sub>x</sub>	24.064	17.615	9.933

Emission modeling using MOVES2010a was performed for each of the jurisdictions within the Fredericksburg maintenance area. Each MOVES2010a input file contains meteorology data, vehicle population, vehicle age distribution, annual VMT, various VMT distributions (by road type, by month, by type of day), fuel specifications, average speed distribution, and control program data (i.e., for inspection and maintenance and/or stage 2 programs). The same activity data in the 1997 ozone NAAQS Fredericksburg maintenance plan are re-used for this analysis, where appropriate. However, as MOVES2010a is radically different from MOBILE6.2, some additional inputs are necessary. Also, any projected inputs from the 1997 ozone NAAQS Fredericksburg maintenance plan that could be replaced by actual year-specific data were updated with the latest available data.

The temperature and humidity inputs, as submitted in the 1997 ozone NAAQS Fredericksburg maintenance plan and re-used here, are derived by accumulating hourly data from the 10 highest 8-hour ozone days recorded at the air monitoring station in Stafford County between 2002 and 2004. These days and their corresponding 8-hour ozone values are shown in Table 15.

*Table 15: 10 Highest 8-Hour Ozone Readings, 2002-2004, Stafford County Monitor*

Stafford Air Monitor 2002-2004 10 Highest 8-hour Ozone Readings (ppm)	
8/13/2002	0.126
6/25/2003	0.109
8/1/2002	0.108
6/24/2003	0.099
7/2/2004	0.098
6/25/2002	0.094
8/12/2002	0.094
7/16/2002	0.091
8/14/2002	0.091
6/11/2002	0.090

The average temperature and relative humidity for each hour of the day on the 10 highest 8-hour ozone days are shown in Table 16. These 24 hourly temperature and relative humidity values were used in the MOVES2010a input files for all analysis years.

*Table 16: Average Hourly Meteorological Data*

<b>Time (EDT)</b>	<b>Temperature (F)</b>	<b>Relative Humidity (%)</b>
12:00 AM	73.94	71.9
1:00 AM	72.68	73.9
2:00 AM	72.14	74.0
3:00 AM	71.06	75.7
4:00 AM	70.16	78.0
5:00 AM	69.26	78.8
6:00 AM	68.36	79.9
7:00 AM	69.44	80.2
8:00 AM	73.40	72.3
9:00 AM	78.80	63.8
10:00 AM	85.46	52.1
11:00 AM	89.60	46.6
12:00 PM	92.84	41.5
1:00 PM	94.28	38.5
2:00 PM	95.54	36.2
3:00 PM	95.00	38.6
4:00 PM	96.08	35.8
5:00 PM	95.18	35.5
6:00 PM	94.10	37.3
7:00 PM	91.94	41.1
8:00 PM	87.26	51.1
9:00 PM	81.86	60.2
10:00 PM	79.52	62.8
11:00 PM	77.36	67.7

For all analysis years, Stafford County was modeled with RFG characterized by a Reid vapor pressure (RVP) of 6.8 psi, with Stage II refueling controls, and an enhanced acceleration simulation mode (ASM) inspection and maintenance (I/M) program. Fredericksburg City and Spotsylvania County were modeled with conventional southern grade gasoline using an average RVP of 8.4 psi and no I/M or Stage II programs.

As summarized in Table 17, the Virginia Department of Transportation (VDOT) provided jurisdictional, road-specific, average daily VMT and speed data for calendar year 2007 that were based on the region's travel demand model, and average growth rates that were compounded annually to estimate VMT for the years of 2009 and 2015. In the 1997 ozone NAAQS Fredericksburg maintenance plan, calendar year 2004 VMT is estimated from calendar

year 2002 data. In this revision, that 2002 basis is replaced by 2004 VMT data provided by VDOT. The 2004 VMT by jurisdiction is presented in Table 18.

*Table 17: 2007 Mobile Source Activity Data*

FIPS	Jurisdiction Name	FC	Road Type	Daily VMT	Annual VMT	SPEED	GROWTH RATE
177	Spotsylvania	1	Rural Principal Arterial - Interstate	492,279	179,681,799	65	1.0263
177	Spotsylvania	2	Rural Principal Arterial - Other	80,379	29,338,504	53	1.1088
177	Spotsylvania	6	Rural Minor Arterial	450,620	164,476,463	52	1.0206
177	Spotsylvania	7	Rural Major Collector	354,805	129,504,005	30	1.0241
177	Spotsylvania	8	Rural Minor Collector	20,183	7,366,794	33	1.0241
177	Spotsylvania	9	Rural Local System	154,346	56,336,464	25	1.0420
177	Spotsylvania	11	Urban Principal Arterial - Interstate	606,994	221,552,664	64	1.0264
177	Spotsylvania	14	Urban Principal Arterial - Other	466,073	170,116,630	39	1.0313
177	Spotsylvania	16	Urban Minor Arterial	260,955	95,248,708	43	1.0052
177	Spotsylvania	17	Urban Collector	300,052	109,519,146	26	1.0241
177	Spotsylvania	19	Urban Local System	238,826	87,171,524	12.9	1.0420
179	Stafford	2	Rural Principal Arterial - Other	205,146	74,878,365	53	1.0155
179	Stafford	6	Rural Minor Arterial	110,893	40,476,081	54	1.0313
179	Stafford	7	Rural Major Collector	148,223	54,101,411	29	1.0259
179	Stafford	8	Rural Minor Collector	7,952	2,902,342	29	1.0259
179	Stafford	9	Rural Local System	149,270	54,483,604	25	1.0370
179	Stafford	11	Urban Principal Arterial - Interstate	2,248,057	820,540,900	55	1.0249
179	Stafford	14	Urban Principal Arterial - Other	295,411	107,825,126	39	1.0249
179	Stafford	16	Urban Minor Arterial	600,027	219,009,965	43	1.0347
179	Stafford	17	Urban Collector	516,221	188,420,735	20	1.0259
179	Stafford	19	Urban Local System	228,611	83,442,994	12.9	1.0370
630	Fredericksburg	2	Rural Principal Arterial - Other	12,507	4,565,189	47	1.0150
630	Fredericksburg	11	Urban Principal Arterial - Interstate	391,926	143,053,111	63	1.0269
630	Fredericksburg	14	Urban Principal Arterial - Other	308,555	112,622,592	42	1.0167
630	Fredericksburg	16	Urban Minor Arterial	115,202	42,048,811	39	1.0029
630	Fredericksburg	17	Urban Collector	74,745	27,281,748	20	1.0086
630	Fredericksburg	19	Urban Local System	90,171	32,912,348	12.9	1.0690

*Table 18: 2004 Mobile Source Activity Data*

FIPS	Jurisdiction Name	Secondary DVMT	Primary DVMT	Interstate DVMT	Daily VMT	Annual VMT
177	Spotsylvania	911,755	1,044,439	1,181,692	3,137,886	1,145,328,390
179	Stafford	882,610	885,771	2,015,863	3,784,244	1,381,249,060
630	Fredericksburg	167,563	358,995	415,537	942,095	343,864,675

Vehicle count data obtained from VDOT’s Traffic Monitoring System was used to apportion the VMT by vehicle type for each roadway type and jurisdiction as required by MOVES. The relative proportion of each vehicle type on each roadway was applied to future VMT projections. The FHWA vehicle types were converted to the appropriate MOVES vehicle types based on the mapping scheme provided in Table 19.

*Table 19: Vehicle Mapping*

FHWA Vehicle Type		MOVES Vehicle Class		MOVES Vehicle Type	
1	Motorcycles	10	Motorcycles	11	Motorcycle
2	Passenger Cars	20	Passenger Cars	21	Passenger Car
3	Two Axle, 4 Tire Single Unit Vehicles	30	Other 2-axle / 4-tire Vehicles	31	Passenger Truck
				32	Light Commercial Truck
4	Buses	40	Buses	41	Intercity Bus
				42	Transit Bus
				43	School Bus
5	Two Axle, 6 Tire Single Unit Trucks	50	Single Unit Trucks	51	Refuse Truck
6	Three Axle Single Unit Trucks			52	Single Unit Short-haul Truck
7	Four or More Axle Single Unit Trucks			53	Single Unit Long-haul Truck
				54	Motor Home
8	Four Axle or Fewer Single Trailers	60	Combination Trucks	61	Combination Short-haul Truck
9	Five Axle Single Trailers				
10	Six or More Axle Single Trailers				
11	Five Axle or Fewer Multi-Trailers				
12	Six Axle Multi-Trailers				
13	Seven or More Axle Multi-Trailers			62	Combination Long-haul Truck

VDOT also provided adjustment factors to properly account for the variation in VMT that occurs during the ozone season. The seasonal weekday and weekend factors are provided by MOVES road type functional classes. The monthly adjustment factor is only provided for July as MOVES allows the modeling of an average July weekday to represent an average ozone season weekday. The adjustment factors are presented in Table 20.

*Table 20: Mobile Source Adjustment Factors*

ROADTYPE	WEEKDAY	WEEKEND
Rural Restricted Access	0.67054	0.32946
Rural Unrestricted Access	0.73696	0.26304
Urban Restricted Access	0.70202	0.29798
Urban Unrestricted Access	0.74654	0.25346
Monthly (July)	0.08858	

The Virginia Department of Motor Vehicles (DMV) provided registration data as of July 1, 2005 and July 1, 2008, for Fredericksburg City, Spotsylvania County, and Stafford County. The 1997 ozone NAAQS Fredericksburg maintenance plan uses 2002 vehicle registration data for all analysis years. This revision uses updated vehicle registration data. The 2008 registration

data is used to create the vehicle age distribution input for both the 2009 and 2015 analysis years. The 2005 registration data is the basis for the 2004 vehicle age distribution input.

Vehicle population is a new input requirement of MOVES2010a. The registration data for calendar years 2005 and 2008, provided by DMV, is also used to prepare this input. The 2005 registration data is the basis for the 2004 vehicle population input. For future year projected vehicle populations, the VMT growth rates provided by VDOT are compounded annually and used to calculate vehicle populations for 2009 and 2015.

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2004	51177	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00040
2004	51177	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00026
2004	51177	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00001
2004	51177	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00001
2004	51177	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2004	51177	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00058
2004	51177	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00024
2004	51177	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2004	51177	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00028
2004	51177	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2004	51177	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2004	51177	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2004	51177	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00001
2004	51177	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00002
2004	51177	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00007
2004	51177	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00051
2004	51177	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00014
2004	51177	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00031
2004	51177	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00009
2004	51177	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00040
2004	51177	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2004	51177	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2004	51177	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2004	51177	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2004	51177	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00001
2004	51177	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00008
2004	51177	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2004	51177	2260006035		Commercial Equipment	2 Stroke	0.00000
2004	51177	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00012
2004	51177	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00030
2004	51177	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00281
2004	51177	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00188
2004	51177	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00034
2004	51177	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00039
2004	51177	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51177	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00049
2004	51177	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00065
2004	51177	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00101
2004	51177	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00040
2004	51177	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00002
2004	51177	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00119
2004	51177	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00041
2004	51177	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00194
2004	51177	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00087
2004	51177	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00020

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2004	51177	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00013
2004	51177	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00035
2004	51177	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00085
2004	51177	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00061
2004	51177	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00092
2004	51177	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00014
2004	51177	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00031
2004	51177	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00049
2004	51177	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00201
2004	51177	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00034
2004	51177	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00031
2004	51177	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00003
2004	51177	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00001
2004	51177	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00019
2004	51177	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00428
2004	51177	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00228
2004	51177	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00036
2004	51177	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00117
2004	51177	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00002
2004	51177	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00005
2004	51177	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00005
2004	51177	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00344
2004	51177	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2004	51177	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2004	51177	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00101
2004	51177	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00027
2004	51177	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00034
2004	51177	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00013
2004	51177	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01383
2004	51177	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00373
2004	51177	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00125
2004	51177	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.01351
2004	51177	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00042
2004	51177	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00035
2004	51177	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00001
2004	51177	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00011
2004	51177	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2004	51177	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00008
2004	51177	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00001
2004	51177	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00014
2004	51177	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00014
2004	51177	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00013
2004	51177	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00016
2004	51177	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00021
2004	51177	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00706
2004	51177	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00206

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51177	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00140
2004	51177	2265006025	Welders	Commercial Equipment	4 Stroke	0.00247
2004	51177	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00302
2004	51177	2265006035		Commercial Equipment	4 Stroke	0.00014
2004	51177	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00035
2004	51177	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2004	51177	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2004	51177	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2004	51177	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00015
2004	51177	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00030
2004	51177	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00048
2004	51177	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00008
2004	51177	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00005
2004	51177	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00091
2004	51177	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00032
2004	51177	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00080
2004	51177	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00033
2004	51177	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00005
2004	51177	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00059
2004	51177	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00143
2004	51177	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00015
2004	51177	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00122
2004	51177	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00050
2004	51177	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00103
2004	51177	2267003020	Forklifts	Industrial Equipment	LPG	0.09325
2004	51177	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00068
2004	51177	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00021
2004	51177	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00006
2004	51177	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00040
2004	51177	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00138
2004	51177	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2004	51177	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2004	51177	2267006005	Generator Sets	Commercial Equipment	LPG	0.00481
2004	51177	2267006010	Pumps	Commercial Equipment	LPG	0.00109
2004	51177	2267006015	Air Compressors	Commercial Equipment	LPG	0.00130
2004	51177	2267006025	Welders	Commercial Equipment	LPG	0.00164
2004	51177	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00002
2004	51177	2267006035		Commercial Equipment	LPG	0.00002
2004	51177	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2004	51177	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00002
2004	51177	2268003020	Forklifts	Industrial Equipment	CNG	0.00673
2004	51177	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00001
2004	51177	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00001
2004	51177	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00003
2004	51177	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00003
2004	51177	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51177	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00016
2004	51177	2268006005	Generator Sets	Commercial Equipment	CNG	0.00153
2004	51177	2268006010	Pumps	Commercial Equipment	CNG	0.00008
2004	51177	2268006015	Air Compressors	Commercial Equipment	CNG	0.00011
2004	51177	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00139
2004	51177	2268006035		Commercial Equipment	CNG	0.00000
2004	51177	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2004	51177	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00155
2004	51177	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.02399
2004	51177	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00005
2004	51177	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00084
2004	51177	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.06024
2004	51177	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.06940
2004	51177	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00384
2004	51177	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00263
2004	51177	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00735
2004	51177	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.02868
2004	51177	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.03415
2004	51177	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.23492
2004	51177	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00193
2004	51177	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00129
2004	51177	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.06524
2004	51177	2270002048	Graders	Construction and Mining Equipment	Diesel	0.05926
2004	51177	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.22751
2004	51177	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.01157
2004	51177	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.07870
2004	51177	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.29488
2004	51177	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.18357
2004	51177	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.25658
2004	51177	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.11999
2004	51177	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.03162
2004	51177	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00039
2004	51177	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.03061
2004	51177	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00107
2004	51177	2270003020	Forklifts	Industrial Equipment	Diesel	0.01117
2004	51177	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00572
2004	51177	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00659
2004	51177	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00031
2004	51177	2270003060	AC/Refrigeration	Industrial Equipment	Diesel	0.03952
2004	51177	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00741
2004	51177	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2004	51177	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2004	51177	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00694
2004	51177	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00149
2004	51177	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01053
2004	51177	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00102

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd	
2004	51177	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00003	
2004	51177	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000	
2004	51177	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.11470	
2004	51177	2270005020	Combines	Agricultural Equipment	Diesel	0.01179	
2004	51177	2270005025	Balers	Agricultural Equipment	Diesel	0.00005	
2004	51177	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001	
2004	51177	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00085	
2004	51177	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000	
2004	51177	2270005045	Swathers	Agricultural Equipment	Diesel	0.00083	
2004	51177	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00242	
2004	51177	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00153	
2004	51177	2270006005	Generator Sets	Commercial Equipment	Diesel	0.02043	
2004	51177	2270006010	Pumps	Commercial Equipment	Diesel	0.00486	
2004	51177	2270006015	Air Compressors	Commercial Equipment	Diesel	0.01214	
2004	51177	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000	
2004	51177	2270006025	Welders	Commercial Equipment	Diesel	0.00597	
2004	51177	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00068	
2004	51177	2270006035		Commercial Equipment	Diesel	0.00052	
2004	51177	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000	
2004	51177	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.02177	
2004	51177	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00002	
2004	51177	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000	
2004	51177	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000	
2004	51177	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00583	
2004	51177	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00201	
2004	51177	2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	0.00646	
2004	51177	2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.00933	
2004	51177	2282020010	Outboards	Pleasure Craft	Diesel	0.00006	
2004	51177	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00393	
2004	51177	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00005	
2004	51177	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001	
			<b>Spotsylvania County NONROAD2008a 2004 NO<sub>x</sub> Emissions, OSTPD:</b>				<b>2.35927</b>
2004	51179	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00028	
2004	51179	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00039	
2004	51179	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00001	
2004	51179	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00001	
2004	51179	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000	
2004	51179	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00089	
2004	51179	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00016	
2004	51179	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000	
2004	51179	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00020	
2004	51179	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000	
2004	51179	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000	
2004	51179	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000	
2004	51179	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00001	

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2004	51179	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00005
2004	51179	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00009
2004	51179	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00119
2004	51179	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00018
2004	51179	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00072
2004	51179	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00011
2004	51179	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00095
2004	51179	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2004	51179	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2004	51179	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2004	51179	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2004	51179	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00001
2004	51179	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00007
2004	51179	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2004	51179	2260006035		Commercial Equipment	2 Stroke	0.00000
2004	51179	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00007
2004	51179	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00019
2004	51179	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00174
2004	51179	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00156
2004	51179	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00021
2004	51179	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00053
2004	51179	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51179	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00068
2004	51179	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00090
2004	51179	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00139
2004	51179	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00055
2004	51179	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00003
2004	51179	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00164
2004	51179	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00056
2004	51179	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00267
2004	51179	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00119
2004	51179	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00028
2004	51179	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00018
2004	51179	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00048
2004	51179	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00116
2004	51179	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00084
2004	51179	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00126
2004	51179	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00019
2004	51179	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00042
2004	51179	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00024
2004	51179	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00100
2004	51179	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00017
2004	51179	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00016
2004	51179	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00002
2004	51179	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00002
2004	51179	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00010

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2004	51179	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00499
2004	51179	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00478
2004	51179	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00042
2004	51179	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00245
2004	51179	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00003
2004	51179	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00011
2004	51179	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00005
2004	51179	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00721
2004	51179	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2004	51179	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2004	51179	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00118
2004	51179	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00057
2004	51179	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00070
2004	51179	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00028
2004	51179	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01614
2004	51179	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00781
2004	51179	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00262
2004	51179	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.02830
2004	51179	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00049
2004	51179	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00074
2004	51179	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00001
2004	51179	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00007
2004	51179	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2004	51179	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00005
2004	51179	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00001
2004	51179	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00009
2004	51179	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00009
2004	51179	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00009
2004	51179	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00010
2004	51179	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00014
2004	51179	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00580
2004	51179	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00169
2004	51179	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00116
2004	51179	2265006025	Welders	Commercial Equipment	4 Stroke	0.00203
2004	51179	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00249
2004	51179	2265006035		Commercial Equipment	4 Stroke	0.00012
2004	51179	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00018
2004	51179	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2004	51179	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2004	51179	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2004	51179	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00007
2004	51179	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00033
2004	51179	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00054
2004	51179	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00009
2004	51179	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00006
2004	51179	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00101

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51179	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00035
2004	51179	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00089
2004	51179	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00036
2004	51179	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00006
2004	51179	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00065
2004	51179	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00158
2004	51179	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00017
2004	51179	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00135
2004	51179	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00055
2004	51179	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00041
2004	51179	2267003020	Forklifts	Industrial Equipment	LPG	0.03751
2004	51179	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00028
2004	51179	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00009
2004	51179	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00002
2004	51179	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00016
2004	51179	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00233
2004	51179	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2004	51179	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2004	51179	2267006005	Generator Sets	Commercial Equipment	LPG	0.00318
2004	51179	2267006010	Pumps	Commercial Equipment	LPG	0.00072
2004	51179	2267006015	Air Compressors	Commercial Equipment	LPG	0.00086
2004	51179	2267006025	Welders	Commercial Equipment	LPG	0.00109
2004	51179	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2004	51179	2267006035		Commercial Equipment	LPG	0.00001
2004	51179	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2004	51179	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00002
2004	51179	2268003020	Forklifts	Industrial Equipment	CNG	0.00271
2004	51179	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2004	51179	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2004	51179	2268003060	AC/Refrigeration	Industrial Equipment	CNG	0.00003
2004	51179	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00001
2004	51179	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2004	51179	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00009
2004	51179	2268006005	Generator Sets	Commercial Equipment	CNG	0.00101
2004	51179	2268006010	Pumps	Commercial Equipment	CNG	0.00005
2004	51179	2268006015	Air Compressors	Commercial Equipment	CNG	0.00007
2004	51179	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00092
2004	51179	2268006035		Commercial Equipment	CNG	0.00000
2004	51179	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2004	51179	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00078
2004	51179	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.02660
2004	51179	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00006
2004	51179	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00093
2004	51179	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.06677
2004	51179	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.07693
2004	51179	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00426

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2004	51179	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00291
2004	51179	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00815
2004	51179	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.03179
2004	51179	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.03785
2004	51179	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.26041
2004	51179	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00213
2004	51179	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00143
2004	51179	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.07232
2004	51179	2270002048	Graders	Construction and Mining Equipment	Diesel	0.06569
2004	51179	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.25220
2004	51179	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.01283
2004	51179	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.08724
2004	51179	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.32688
2004	51179	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.20349
2004	51179	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.28443
2004	51179	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.13301
2004	51179	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.03505
2004	51179	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00043
2004	51179	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.03393
2004	51179	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00043
2004	51179	2270003020	Forklifts	Industrial Equipment	Diesel	0.00449
2004	51179	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00230
2004	51179	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00265
2004	51179	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00012
2004	51179	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.04018
2004	51179	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00298
2004	51179	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2004	51179	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2004	51179	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.01172
2004	51179	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00251
2004	51179	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01777
2004	51179	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00171
2004	51179	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00005
2004	51179	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2004	51179	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.06092
2004	51179	2270005020	Combines	Agricultural Equipment	Diesel	0.00626
2004	51179	2270005025	Balers	Agricultural Equipment	Diesel	0.00003
2004	51179	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001
2004	51179	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00045
2004	51179	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2004	51179	2270005045	Swathers	Agricultural Equipment	Diesel	0.00044
2004	51179	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00128
2004	51179	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00082
2004	51179	2270006005	Generator Sets	Commercial Equipment	Diesel	0.01354
2004	51179	2270006010	Pumps	Commercial Equipment	Diesel	0.00322
2004	51179	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00805

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51179	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2004	51179	2270006025	Welders	Commercial Equipment	Diesel	0.00396
2004	51179	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00045
2004	51179	2270006035		Commercial Equipment	Diesel	0.00034
2004	51179	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2004	51179	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00887
2004	51179	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2004	51179	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2004	51179	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2004	51179	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00621
2004	51179	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00214
2004	51179	2282010005	Inboard/Sternrive	Pleasure Craft	4 Stroke	0.00775
2004	51179	2282020005	Inboard/Sternrive	Pleasure Craft	Diesel	0.00902
2004	51179	2282020010	Outboards	Pleasure Craft	Diesel	0.00004
2004	51179	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00720
2004	51179	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00012
2004	51179	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00002
			<b>Stafford County NONROAD2008a 2004 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>2.43500</b>
2004	51630	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00000
2004	51630	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00000
2004	51630	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00000
2004	51630	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2004	51630	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2004	51630	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00000
2004	51630	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2004	51630	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00000
2004	51630	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00000
2004	51630	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2004	51630	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2004	51630	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2004	51630	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2004	51630	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00001
2004	51630	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00002
2004	51630	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00023
2004	51630	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00003
2004	51630	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00014
2004	51630	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00002
2004	51630	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00018
2004	51630	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2004	51630	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2004	51630	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2004	51630	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2004	51630	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00000
2004	51630	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00003
2004	51630	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51630	2260006035		Commercial Equipment	2 Stroke	0.00000
2004	51630	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00000
2004	51630	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00000
2004	51630	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00000
2004	51630	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00000
2004	51630	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00000
2004	51630	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2004	51630	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00030
2004	51630	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00124
2004	51630	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00021
2004	51630	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00019
2004	51630	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00002
2004	51630	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00000
2004	51630	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00012
2004	51630	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00103
2004	51630	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00103
2004	51630	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00009
2004	51630	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00053
2004	51630	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2004	51630	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00002
2004	51630	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2004	51630	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00156
2004	51630	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2004	51630	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2004	51630	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00024
2004	51630	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00012
2004	51630	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00015
2004	51630	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00006

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2004	51630	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.00332
2004	51630	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00169
2004	51630	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00057
2004	51630	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.00612
2004	51630	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00010
2004	51630	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00016
2004	51630	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00000
2004	51630	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00300
2004	51630	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00088
2004	51630	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00060
2004	51630	2265006025	Welders	Commercial Equipment	4 Stroke	0.00105
2004	51630	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00128
2004	51630	2265006035		Commercial Equipment	4 Stroke	0.00006
2004	51630	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00000
2004	51630	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2004	51630	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2004	51630	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2004	51630	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00000
2004	51630	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00000
2004	51630	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00063
2004	51630	2267003020	Forklifts	Industrial Equipment	LPG	0.05750
2004	51630	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00042
2004	51630	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00013
2004	51630	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00003

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51630	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00025
2004	51630	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00063
2004	51630	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2004	51630	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2004	51630	2267006005	Generator Sets	Commercial Equipment	LPG	0.00204
2004	51630	2267006010	Pumps	Commercial Equipment	LPG	0.00046
2004	51630	2267006015	Air Compressors	Commercial Equipment	LPG	0.00055
2004	51630	2267006025	Welders	Commercial Equipment	LPG	0.00070
2004	51630	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2004	51630	2267006035		Commercial Equipment	LPG	0.00001
2004	51630	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2004	51630	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00000
2004	51630	2268003020	Forklifts	Industrial Equipment	CNG	0.00415
2004	51630	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2004	51630	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2004	51630	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00001
2004	51630	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00002
2004	51630	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2004	51630	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00000
2004	51630	2268006005	Generator Sets	Commercial Equipment	CNG	0.00065
2004	51630	2268006010	Pumps	Commercial Equipment	CNG	0.00003
2004	51630	2268006015	Air Compressors	Commercial Equipment	CNG	0.00004
2004	51630	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00059
2004	51630	2268006035		Commercial Equipment	CNG	0.00000
2004	51630	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2004	51630	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00000
2004	51630	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002048	Graders	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2004	51630	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00066
2004	51630	2270003020	Forklifts	Industrial Equipment	Diesel	0.00689
2004	51630	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00353
2004	51630	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00406
2004	51630	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00019
2004	51630	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.00771
2004	51630	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00457
2004	51630	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2004	51630	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2004	51630	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00315
2004	51630	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00067
2004	51630	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.00477
2004	51630	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00046
2004	51630	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00001
2004	51630	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005020	Combines	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005025	Balers	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005045	Swathers	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00000
2004	51630	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00000
2004	51630	2270006005	Generator Sets	Commercial Equipment	Diesel	0.00868
2004	51630	2270006010	Pumps	Commercial Equipment	Diesel	0.00207
2004	51630	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00516
2004	51630	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2004	51630	2270006025	Welders	Commercial Equipment	Diesel	0.00254
2004	51630	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00029
2004	51630	2270006035		Commercial Equipment	Diesel	0.00022
2004	51630	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2004	51630	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00000
2004	51630	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2004	51630	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2004	51630	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2004	51630	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00000
2004	51630	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00000
2004	51630	2282010005	Inboard/Sternrive	Pleasure Craft	4 Stroke	0.00000
2004	51630	2282020005	Inboard/Sternrive	Pleasure Craft	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd	
2004	51630	2282020010	Outboards	Pleasure Craft	Diesel	0.00000	
2004	51630	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00473	
2004	51630	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00006	
2004	51630	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001	
			<b>Fredericksburg City NONROAD2008a 2004 NO<sub>x</sub> Emissions, OSTPD:</b>				<b>0.15576</b>
			<b>Fredericksburg Area NONROAD2008a 2004 NO<sub>x</sub> Emissions, OSTPD, Total:</b>				<b>4.95003</b>
2007	51177	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00034	
2007	51177	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00017	
2007	51177	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00001	
2007	51177	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00001	
2007	51177	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000	
2007	51177	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00035	
2007	51177	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00031	
2007	51177	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000	
2007	51177	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00042	
2007	51177	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000	
2007	51177	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000	
2007	51177	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000	
2007	51177	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00001	
2007	51177	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00004	
2007	51177	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00011	
2007	51177	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00035	
2007	51177	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00022	
2007	51177	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00041	
2007	51177	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00014	
2007	51177	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00041	
2007	51177	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000	
2007	51177	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000	
2007	51177	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000	
2007	51177	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000	
2007	51177	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00002	
2007	51177	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00011	
2007	51177	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000	
2007	51177	2260006035		Commercial Equipment	2 Stroke	0.00000	
2007	51177	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00008	
2007	51177	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00035	
2007	51177	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00330	
2007	51177	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00177	
2007	51177	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00035	
2007	51177	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00032	
2007	51177	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000	
2007	51177	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00045	
2007	51177	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00051	
2007	51177	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00089	
2007	51177	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00035	
2007	51177	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00002	

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51177	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00098
2007	51177	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00038
2007	51177	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00159
2007	51177	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00081
2007	51177	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00017
2007	51177	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00011
2007	51177	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00028
2007	51177	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00061
2007	51177	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00052
2007	51177	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00076
2007	51177	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00013
2007	51177	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00027
2007	51177	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00037
2007	51177	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00130
2007	51177	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00019
2007	51177	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00022
2007	51177	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00002
2007	51177	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00001
2007	51177	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00009
2007	51177	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00449
2007	51177	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00229
2007	51177	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00038
2007	51177	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00121
2007	51177	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00002
2007	51177	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00005
2007	51177	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00005
2007	51177	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00300
2007	51177	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2007	51177	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2007	51177	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00092
2007	51177	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00025
2007	51177	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00033
2007	51177	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00014
2007	51177	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01243
2007	51177	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00338
2007	51177	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00096
2007	51177	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.01122
2007	51177	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00044
2007	51177	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00037
2007	51177	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00001
2007	51177	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00008
2007	51177	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2007	51177	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00008
2007	51177	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00001
2007	51177	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00013
2007	51177	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00015

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2007	51177	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00012
2007	51177	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00015
2007	51177	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00014
2007	51177	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00683
2007	51177	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00193
2007	51177	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00123
2007	51177	2265006025	Welders	Commercial Equipment	4 Stroke	0.00226
2007	51177	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00289
2007	51177	2265006035		Commercial Equipment	4 Stroke	0.00013
2007	51177	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00037
2007	51177	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2007	51177	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2007	51177	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2007	51177	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00013
2007	51177	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00023
2007	51177	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00031
2007	51177	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00007
2007	51177	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00004
2007	51177	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00071
2007	51177	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00029
2007	51177	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00042
2007	51177	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00029
2007	51177	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00005
2007	51177	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00048
2007	51177	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00107
2007	51177	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00010
2007	51177	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00103
2007	51177	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00044
2007	51177	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00091
2007	51177	2267003020	Forklifts	Industrial Equipment	LPG	0.07090
2007	51177	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00043
2007	51177	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00015
2007	51177	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00005
2007	51177	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00022
2007	51177	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00098
2007	51177	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2007	51177	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2007	51177	2267006005	Generator Sets	Commercial Equipment	LPG	0.00462
2007	51177	2267006010	Pumps	Commercial Equipment	LPG	0.00096
2007	51177	2267006015	Air Compressors	Commercial Equipment	LPG	0.00107
2007	51177	2267006025	Welders	Commercial Equipment	LPG	0.00141
2007	51177	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00002
2007	51177	2267006035		Commercial Equipment	LPG	0.00001
2007	51177	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2007	51177	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00002
2007	51177	2268003020	Forklifts	Industrial Equipment	CNG	0.00508

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2007	51177	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00001
2007	51177	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2007	51177	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00002
2007	51177	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00002
2007	51177	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2007	51177	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00005
2007	51177	2268006005	Generator Sets	Commercial Equipment	CNG	0.00144
2007	51177	2268006010	Pumps	Commercial Equipment	CNG	0.00007
2007	51177	2268006015	Air Compressors	Commercial Equipment	CNG	0.00009
2007	51177	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00043
2007	51177	2268006035		Commercial Equipment	CNG	0.00000
2007	51177	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2007	51177	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00156
2007	51177	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.02202
2007	51177	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00005
2007	51177	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00077
2007	51177	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.05608
2007	51177	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.06288
2007	51177	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00357
2007	51177	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00250
2007	51177	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00697
2007	51177	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.02776
2007	51177	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.03289
2007	51177	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.21254
2007	51177	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00187
2007	51177	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00126
2007	51177	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.05926
2007	51177	2270002048	Graders	Construction and Mining Equipment	Diesel	0.05335
2007	51177	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.20560
2007	51177	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.01077
2007	51177	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.07545
2007	51177	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.27195
2007	51177	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.17808
2007	51177	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.23475
2007	51177	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.12014
2007	51177	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.02966
2007	51177	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00039
2007	51177	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.02849
2007	51177	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00106
2007	51177	2270003020	Forklifts	Industrial Equipment	Diesel	0.01060
2007	51177	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00536
2007	51177	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00611
2007	51177	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00030
2007	51177	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.03940
2007	51177	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00669
2007	51177	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51177	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2007	51177	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00716
2007	51177	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00147
2007	51177	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01096
2007	51177	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00103
2007	51177	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00003
2007	51177	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2007	51177	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.10838
2007	51177	2270005020	Combines	Agricultural Equipment	Diesel	0.01124
2007	51177	2270005025	Balers	Agricultural Equipment	Diesel	0.00005
2007	51177	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001
2007	51177	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00084
2007	51177	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2007	51177	2270005045	Swathers	Agricultural Equipment	Diesel	0.00081
2007	51177	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00228
2007	51177	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00147
2007	51177	2270006005	Generator Sets	Commercial Equipment	Diesel	0.02083
2007	51177	2270006010	Pumps	Commercial Equipment	Diesel	0.00496
2007	51177	2270006015	Air Compressors	Commercial Equipment	Diesel	0.01212
2007	51177	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2007	51177	2270006025	Welders	Commercial Equipment	Diesel	0.00618
2007	51177	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00069
2007	51177	2270006035		Commercial Equipment	Diesel	0.00052
2007	51177	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2007	51177	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.01747
2007	51177	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00002
2007	51177	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2007	51177	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2007	51177	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00747
2007	51177	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00272
2007	51177	2282010005	Inboard/Stern drive	Pleasure Craft	4 Stroke	0.00700
2007	51177	2282020005	Inboard/Stern drive	Pleasure Craft	Diesel	0.00969
2007	51177	2282020010	Outboards	Pleasure Craft	Diesel	0.00006
2007	51177	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00387
2007	51177	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00004
2007	51177	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Spotsylvania County NONROAD2008a 2007 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>2.18320</b>
2007	51179	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00028
2007	51179	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00031
2007	51179	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00002
2007	51179	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00002
2007	51179	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2007	51179	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00064
2007	51179	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00026
2007	51179	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51179	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00034
2007	51179	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2007	51179	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2007	51179	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2007	51179	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00002
2007	51179	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00010
2007	51179	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00017
2007	51179	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00096
2007	51179	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00034
2007	51179	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00114
2007	51179	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00021
2007	51179	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00113
2007	51179	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2007	51179	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2007	51179	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2007	51179	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2007	51179	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00002
2007	51179	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00012
2007	51179	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2007	51179	2260006035		Commercial Equipment	2 Stroke	0.00000
2007	51179	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00005
2007	51179	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00024
2007	51179	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00229
2007	51179	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00163
2007	51179	2265001060	Speciality Vehicles/Carts	Recreational Equipment	4 Stroke	0.00024
2007	51179	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00049
2007	51179	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2007	51179	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00069
2007	51179	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00078
2007	51179	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00136
2007	51179	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00054
2007	51179	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00003
2007	51179	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00151
2007	51179	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00058
2007	51179	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00244
2007	51179	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00125
2007	51179	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00027
2007	51179	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00018
2007	51179	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00042
2007	51179	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00094
2007	51179	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00080
2007	51179	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00116
2007	51179	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00020
2007	51179	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00041
2007	51179	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00021
2007	51179	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00073

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51179	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00011
2007	51179	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00012
2007	51179	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00001
2007	51179	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00001
2007	51179	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00005
2007	51179	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00585
2007	51179	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00535
2007	51179	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00049
2007	51179	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00282
2007	51179	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00003
2007	51179	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00012
2007	51179	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00006
2007	51179	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00703
2007	51179	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2007	51179	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2007	51179	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00120
2007	51179	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00058
2007	51179	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00076
2007	51179	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00033
2007	51179	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01619
2007	51179	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00790
2007	51179	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00226
2007	51179	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.02625
2007	51179	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00058
2007	51179	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00087
2007	51179	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00001
2007	51179	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00006
2007	51179	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2007	51179	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00006
2007	51179	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00001
2007	51179	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00010
2007	51179	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00011
2007	51179	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00009
2007	51179	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00011
2007	51179	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00011
2007	51179	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00627
2007	51179	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00177
2007	51179	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00113
2007	51179	2265006025	Welders	Commercial Equipment	4 Stroke	0.00207
2007	51179	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00265
2007	51179	2265006035		Commercial Equipment	4 Stroke	0.00012
2007	51179	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00021
2007	51179	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2007	51179	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2007	51179	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2007	51179	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00007

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2007	51179	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00025
2007	51179	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00034
2007	51179	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00008
2007	51179	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00004
2007	51179	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00079
2007	51179	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00033
2007	51179	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00047
2007	51179	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00032
2007	51179	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00005
2007	51179	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00053
2007	51179	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00118
2007	51179	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00011
2007	51179	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00115
2007	51179	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00049
2007	51179	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00037
2007	51179	2267003020	Forklifts	Industrial Equipment	LPG	0.02852
2007	51179	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00017
2007	51179	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00006
2007	51179	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00002
2007	51179	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00009
2007	51179	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00165
2007	51179	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2007	51179	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2007	51179	2267006005	Generator Sets	Commercial Equipment	LPG	0.00306
2007	51179	2267006010	Pumps	Commercial Equipment	LPG	0.00064
2007	51179	2267006015	Air Compressors	Commercial Equipment	LPG	0.00071
2007	51179	2267006025	Welders	Commercial Equipment	LPG	0.00093
2007	51179	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2007	51179	2267006035		Commercial Equipment	LPG	0.00001
2007	51179	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2007	51179	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00002
2007	51179	2268003020	Forklifts	Industrial Equipment	CNG	0.00204
2007	51179	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2007	51179	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2007	51179	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00002
2007	51179	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00001
2007	51179	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2007	51179	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00003
2007	51179	2268006005	Generator Sets	Commercial Equipment	CNG	0.00095
2007	51179	2268006010	Pumps	Commercial Equipment	CNG	0.00005
2007	51179	2268006015	Air Compressors	Commercial Equipment	CNG	0.00006
2007	51179	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00029
2007	51179	2268006035		Commercial Equipment	CNG	0.00000
2007	51179	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2007	51179	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00078
2007	51179	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.02441

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51179	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00005
2007	51179	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00086
2007	51179	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.06216
2007	51179	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.06971
2007	51179	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00395
2007	51179	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00278
2007	51179	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00773
2007	51179	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.03077
2007	51179	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.03646
2007	51179	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.23561
2007	51179	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00208
2007	51179	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00140
2007	51179	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.06569
2007	51179	2270002048	Graders	Construction and Mining Equipment	Diesel	0.05914
2007	51179	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.22791
2007	51179	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.01194
2007	51179	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.08363
2007	51179	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.30146
2007	51179	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.19740
2007	51179	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.26022
2007	51179	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.13318
2007	51179	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.03288
2007	51179	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00043
2007	51179	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.03158
2007	51179	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00043
2007	51179	2270003020	Forklifts	Industrial Equipment	Diesel	0.00426
2007	51179	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00216
2007	51179	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00246
2007	51179	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00012
2007	51179	2270003060	AC/Refrigeration	Industrial Equipment	Diesel	0.04006
2007	51179	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00269
2007	51179	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2007	51179	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2007	51179	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.01208
2007	51179	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00248
2007	51179	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01849
2007	51179	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00173
2007	51179	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00005
2007	51179	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2007	51179	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.05757
2007	51179	2270005020	Combines	Agricultural Equipment	Diesel	0.00597
2007	51179	2270005025	Balers	Agricultural Equipment	Diesel	0.00003
2007	51179	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001
2007	51179	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00045
2007	51179	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2007	51179	2270005045	Swathers	Agricultural Equipment	Diesel	0.00043

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51179	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00121
2007	51179	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00078
2007	51179	2270006005	Generator Sets	Commercial Equipment	Diesel	0.01380
2007	51179	2270006010	Pumps	Commercial Equipment	Diesel	0.00328
2007	51179	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00803
2007	51179	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2007	51179	2270006025	Welders	Commercial Equipment	Diesel	0.00409
2007	51179	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00046
2007	51179	2270006035		Commercial Equipment	Diesel	0.00034
2007	51179	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2007	51179	2270007015	Forest Eq - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00712
2007	51179	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2007	51179	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2007	51179	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2007	51179	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00931
2007	51179	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00339
2007	51179	2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	0.00937
2007	51179	2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.00936
2007	51179	2282020010	Outboards	Pleasure Craft	Diesel	0.00004
2007	51179	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00710
2007	51179	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00011
2007	51179	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Stafford County NONROAD2008a 2007 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>2.27876</b>
2007	51630	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00000
2007	51630	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00000
2007	51630	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00000
2007	51630	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2007	51630	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2007	51630	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00000
2007	51630	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2007	51630	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00000
2007	51630	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00000
2007	51630	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2007	51630	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2007	51630	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2007	51630	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2007	51630	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00002
2007	51630	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00003
2007	51630	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00016
2007	51630	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00005
2007	51630	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00019
2007	51630	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00003
2007	51630	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00019
2007	51630	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2007	51630	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2007	51630	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2007	51630	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2007	51630	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00001
2007	51630	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00005
2007	51630	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2007	51630	2260006035		Commercial Equipment	2 Stroke	0.00000
2007	51630	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00000
2007	51630	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00000
2007	51630	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00000
2007	51630	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00000
2007	51630	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00000
2007	51630	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2007	51630	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00023
2007	51630	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00080
2007	51630	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00012
2007	51630	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00013
2007	51630	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00001
2007	51630	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00000
2007	51630	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00005
2007	51630	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00108
2007	51630	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00104
2007	51630	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00009
2007	51630	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00055
2007	51630	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2007	51630	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00002
2007	51630	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2007	51630	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00136
2007	51630	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2007	51630	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2007	51630	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00022
2007	51630	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00011
2007	51630	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00015
2007	51630	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00006
2007	51630	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.00299
2007	51630	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00153
2007	51630	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00044
2007	51630	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.00508
2007	51630	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00011
2007	51630	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00017
2007	51630	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00000
2007	51630	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00290
2007	51630	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00082
2007	51630	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00052
2007	51630	2265006025	Welders	Commercial Equipment	4 Stroke	0.00096
2007	51630	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00123
2007	51630	2265006035		Commercial Equipment	4 Stroke	0.00006
2007	51630	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00000
2007	51630	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2007	51630	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2007	51630	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2007	51630	2267001060	Speciality Vehicle Carts	Recreational Equipment	LPG	0.00000
2007	51630	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00000
2007	51630	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2007	51630	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00056
2007	51630	2267003020	Forklifts	Industrial Equipment	LPG	0.04373
2007	51630	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00027
2007	51630	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00009
2007	51630	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00003
2007	51630	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00013
2007	51630	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00044
2007	51630	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2007	51630	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2007	51630	2267006005	Generator Sets	Commercial Equipment	LPG	0.00196
2007	51630	2267006010	Pumps	Commercial Equipment	LPG	0.00041
2007	51630	2267006015	Air Compressors	Commercial Equipment	LPG	0.00046
2007	51630	2267006025	Welders	Commercial Equipment	LPG	0.00060
2007	51630	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2007	51630	2267006035		Commercial Equipment	LPG	0.00001
2007	51630	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2007	51630	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00000
2007	51630	2268003020	Forklifts	Industrial Equipment	CNG	0.00313
2007	51630	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2007	51630	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2007	51630	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00000
2007	51630	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00001
2007	51630	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2007	51630	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00000
2007	51630	2268006005	Generator Sets	Commercial Equipment	CNG	0.00061
2007	51630	2268006010	Pumps	Commercial Equipment	CNG	0.00003
2007	51630	2268006015	Air Compressors	Commercial Equipment	CNG	0.00004
2007	51630	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00018
2007	51630	2268006035		Commercial Equipment	CNG	0.00000
2007	51630	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2007	51630	2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	0.00000
2007	51630	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002048	Graders	Construction and Mining Equipment	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51630	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.00000
2007	51630	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00066
2007	51630	2270003020	Forklifts	Industrial Equipment	Diesel	0.00654
2007	51630	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00331
2007	51630	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00377
2007	51630	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00018
2007	51630	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.00769
2007	51630	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00412
2007	51630	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2007	51630	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2007	51630	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00324
2007	51630	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00067
2007	51630	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.00497
2007	51630	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00046
2007	51630	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00001
2007	51630	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005020	Combines	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005025	Balers	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005045	Swathers	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00000
2007	51630	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00000
2007	51630	2270006005	Generator Sets	Commercial Equipment	Diesel	0.00885
2007	51630	2270006010	Pumps	Commercial Equipment	Diesel	0.00211
2007	51630	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00515
2007	51630	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2007	51630	2270006025	Welders	Commercial Equipment	Diesel	0.00263
2007	51630	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00029
2007	51630	2270006035		Commercial Equipment	Diesel	0.00022
2007	51630	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2007	51630	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00000
2007	51630	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2007	51630	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2007	51630	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2007	51630	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00000
2007	51630	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00000
2007	51630	2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	0.00000
2007	51630	2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.00000
2007	51630	2282020010	Outboards	Pleasure Craft	Diesel	0.00000
2007	51630	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00467
2007	51630	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00005
2007	51630	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Fredericksburg City NONROAD2008A 2007 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>0.13588</b>
			<b>Fredericksburg Area NONROAD2008A 2007 NO<sub>x</sub> Emissions, OSTPD Total:</b>			<b>4.59784</b>
2009	51177	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00032
2009	51177	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00014
2009	51177	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00001
2009	51177	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00001
2009	51177	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2009	51177	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00036
2009	51177	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00039
2009	51177	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2009	51177	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00054
2009	51177	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2009	51177	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2009	51177	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2009	51177	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00001
2009	51177	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00004
2009	51177	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00013
2009	51177	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00035
2009	51177	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00025
2009	51177	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00043
2009	51177	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00016
2009	51177	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00040
2009	51177	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2009	51177	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2009	51177	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2009	51177	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2009	51177	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00002
2009	51177	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00012
2009	51177	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2009	51177	2260006035		Commercial Equipment	2 Stroke	0.00000
2009	51177	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00008
2009	51177	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00038
2009	51177	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00345
2009	51177	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00179
2009	51177	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00035
2009	51177	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00028
2009	51177	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51177	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00038
2009	51177	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00045
2009	51177	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00081
2009	51177	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00033
2009	51177	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00002
2009	51177	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00086
2009	51177	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00033
2009	51177	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00150
2009	51177	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00075
2009	51177	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00015
2009	51177	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00011
2009	51177	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00022
2009	51177	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00044
2009	51177	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00050
2009	51177	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00066
2009	51177	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00012
2009	51177	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00023
2009	51177	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00030
2009	51177	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00088
2009	51177	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00012
2009	51177	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00016
2009	51177	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00002
2009	51177	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00001
2009	51177	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00004
2009	51177	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00413
2009	51177	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00187
2009	51177	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00035
2009	51177	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00108
2009	51177	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00002
2009	51177	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00005
2009	51177	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00004
2009	51177	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00282
2009	51177	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2009	51177	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2009	51177	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00089
2009	51177	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00025
2009	51177	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00032
2009	51177	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00013
2009	51177	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01204
2009	51177	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00345
2009	51177	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00079
2009	51177	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.01056
2009	51177	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00043
2009	51177	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00036
2009	51177	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00001
2009	51177	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00006

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51177	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2009	51177	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00007
2009	51177	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00001
2009	51177	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00012
2009	51177	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00015
2009	51177	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00011
2009	51177	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00014
2009	51177	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00009
2009	51177	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00668
2009	51177	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00177
2009	51177	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00111
2009	51177	2265006025	Welders	Commercial Equipment	4 Stroke	0.00220
2009	51177	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00272
2009	51177	2265006035		Commercial Equipment	4 Stroke	0.00013
2009	51177	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00037
2009	51177	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2009	51177	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2009	51177	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2009	51177	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00012
2009	51177	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00017
2009	51177	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00021
2009	51177	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00006
2009	51177	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00003
2009	51177	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00055
2009	51177	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00027
2009	51177	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00024
2009	51177	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00025
2009	51177	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00004
2009	51177	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00039
2009	51177	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00078
2009	51177	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00007
2009	51177	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00088
2009	51177	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00039
2009	51177	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00081
2009	51177	2267003020	Forklifts	Industrial Equipment	LPG	0.05249
2009	51177	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00028
2009	51177	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00010
2009	51177	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00004
2009	51177	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00011
2009	51177	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00069
2009	51177	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2009	51177	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2009	51177	2267006005	Generator Sets	Commercial Equipment	LPG	0.00441
2009	51177	2267006010	Pumps	Commercial Equipment	LPG	0.00085
2009	51177	2267006015	Air Compressors	Commercial Equipment	LPG	0.00089
2009	51177	2267006025	Welders	Commercial Equipment	LPG	0.00118

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Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2009	51177	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00002
2009	51177	2267006035		Commercial Equipment	LPG	0.00001
2009	51177	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2009	51177	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00002
2009	51177	2268003020	Forklifts	Industrial Equipment	CNG	0.00376
2009	51177	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2009	51177	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2009	51177	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00001
2009	51177	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00001
2009	51177	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2009	51177	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00002
2009	51177	2268006005	Generator Sets	Commercial Equipment	CNG	0.00136
2009	51177	2268006010	Pumps	Commercial Equipment	CNG	0.00006
2009	51177	2268006015	Air Compressors	Commercial Equipment	CNG	0.00007
2009	51177	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00041
2009	51177	2268006035		Commercial Equipment	CNG	0.00000
2009	51177	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2009	51177	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00154
2009	51177	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.02048
2009	51177	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00005
2009	51177	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00073
2009	51177	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.05289
2009	51177	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.05772
2009	51177	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00333
2009	51177	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00240
2009	51177	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00669
2009	51177	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.02668
2009	51177	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.03154
2009	51177	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.19282
2009	51177	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00183
2009	51177	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00122
2009	51177	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.05472
2009	51177	2270002048	Graders	Construction and Mining Equipment	Diesel	0.04852
2009	51177	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.19040
2009	51177	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.01003
2009	51177	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.07115
2009	51177	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.25431
2009	51177	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.17187
2009	51177	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.21639
2009	51177	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.11742
2009	51177	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.02783
2009	51177	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00038
2009	51177	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.02688
2009	51177	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00103
2009	51177	2270003020	Forklifts	Industrial Equipment	Diesel	0.00956
2009	51177	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00496

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51177	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00564
2009	51177	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00028
2009	51177	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.03767
2009	51177	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00599
2009	51177	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2009	51177	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2009	51177	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00721
2009	51177	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00144
2009	51177	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01096
2009	51177	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00102
2009	51177	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00003
2009	51177	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2009	51177	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.10292
2009	51177	2270005020	Combines	Agricultural Equipment	Diesel	0.01076
2009	51177	2270005025	Balers	Agricultural Equipment	Diesel	0.00005
2009	51177	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001
2009	51177	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00082
2009	51177	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2009	51177	2270005045	Swathers	Agricultural Equipment	Diesel	0.00078
2009	51177	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00217
2009	51177	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00139
2009	51177	2270006005	Generator Sets	Commercial Equipment	Diesel	0.02072
2009	51177	2270006010	Pumps	Commercial Equipment	Diesel	0.00491
2009	51177	2270006015	Air Compressors	Commercial Equipment	Diesel	0.01164
2009	51177	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2009	51177	2270006025	Welders	Commercial Equipment	Diesel	0.00618
2009	51177	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00069
2009	51177	2270006035		Commercial Equipment	Diesel	0.00050
2009	51177	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2009	51177	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.01457
2009	51177	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00002
2009	51177	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51177	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2009	51177	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00854
2009	51177	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00316
2009	51177	2282010005	Inboard/Sternrive	Pleasure Craft	4 Stroke	0.00738
2009	51177	2282020005	Inboard/Sternrive	Pleasure Craft	Diesel	0.00976
2009	51177	2282020010	Outboards	Pleasure Craft	Diesel	0.00006
2009	51177	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00377
2009	51177	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00004
2009	51177	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Spotsylvania County NONROAD2008a 2009 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>2.03329</b>
2009	51179	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00027
2009	51179	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00025
2009	51179	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00002

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2009	51179	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00002
2009	51179	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2009	51179	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00032
2009	51179	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2009	51179	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00044
2009	51179	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00065
2009	51179	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2009	51179	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2009	51179	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2009	51179	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00002
2009	51179	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00012
2009	51179	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00020
2009	51179	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00096
2009	51179	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00039
2009	51179	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00118
2009	51179	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00025
2009	51179	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00110
2009	51179	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2009	51179	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2009	51179	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2009	51179	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2009	51179	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00002
2009	51179	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00013
2009	51179	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2009	51179	2260006035		Commercial Equipment	2 Stroke	0.00000
2009	51179	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00005
2009	51179	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00026
2009	51179	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00241
2009	51179	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00167
2009	51179	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00024
2009	51179	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00044
2009	51179	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2009	51179	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00060
2009	51179	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00069
2009	51179	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00125
2009	51179	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00052
2009	51179	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00002
2009	51179	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00134
2009	51179	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00051
2009	51179	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00231
2009	51179	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00115
2009	51179	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00023
2009	51179	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00017
2009	51179	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00034
2009	51179	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00068
2009	51179	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00078

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2009	51179	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00101
2009	51179	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00019
2009	51179	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00036
2009	51179	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00017
2009	51179	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00049
2009	51179	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00007
2009	51179	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00009
2009	51179	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00001
2009	51179	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00001
2009	51179	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00002
2009	51179	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00542
2009	51179	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00439
2009	51179	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00046
2009	51179	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00254
2009	51179	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00003
2009	51179	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00011
2009	51179	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00006
2009	51179	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00663
2009	51179	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2009	51179	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2009	51179	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00117
2009	51179	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00060
2009	51179	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00076
2009	51179	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00030
2009	51179	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01578
2009	51179	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00811
2009	51179	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00185
2009	51179	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.02486
2009	51179	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00056
2009	51179	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00084
2009	51179	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00001
2009	51179	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00005
2009	51179	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2009	51179	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00005
2009	51179	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00001
2009	51179	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00009
2009	51179	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00011
2009	51179	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00008
2009	51179	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00010
2009	51179	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00007
2009	51179	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00617
2009	51179	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00164
2009	51179	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00102
2009	51179	2265006025	Welders	Commercial Equipment	4 Stroke	0.00203
2009	51179	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00251
2009	51179	2265006035		Commercial Equipment	4 Stroke	0.00012

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51179	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00021
2009	51179	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2009	51179	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2009	51179	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2009	51179	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00006
2009	51179	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00019
2009	51179	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00023
2009	51179	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00007
2009	51179	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00003
2009	51179	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00061
2009	51179	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00030
2009	51179	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00027
2009	51179	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00028
2009	51179	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00005
2009	51179	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00043
2009	51179	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00087
2009	51179	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00008
2009	51179	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00098
2009	51179	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00044
2009	51179	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00033
2009	51179	2267003020	Forklifts	Industrial Equipment	LPG	0.02112
2009	51179	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00011
2009	51179	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00004
2009	51179	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00002
2009	51179	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00005
2009	51179	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00116
2009	51179	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2009	51179	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2009	51179	2267006005	Generator Sets	Commercial Equipment	LPG	0.00292
2009	51179	2267006010	Pumps	Commercial Equipment	LPG	0.00056
2009	51179	2267006015	Air Compressors	Commercial Equipment	LPG	0.00059
2009	51179	2267006025	Welders	Commercial Equipment	LPG	0.00078
2009	51179	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2009	51179	2267006035		Commercial Equipment	LPG	0.00001
2009	51179	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2009	51179	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00002
2009	51179	2268003020	Forklifts	Industrial Equipment	CNG	0.00151
2009	51179	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2009	51179	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2009	51179	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00001
2009	51179	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00000
2009	51179	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2009	51179	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00001
2009	51179	2268006005	Generator Sets	Commercial Equipment	CNG	0.00090
2009	51179	2268006010	Pumps	Commercial Equipment	CNG	0.00004
2009	51179	2268006015	Air Compressors	Commercial Equipment	CNG	0.00005

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2009	51179	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00027
2009	51179	2268006035		Commercial Equipment	CNG	0.00000
2009	51179	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2009	51179	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00077
2009	51179	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.02270
2009	51179	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00005
2009	51179	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00080
2009	51179	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.05863
2009	51179	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.06398
2009	51179	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00369
2009	51179	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00266
2009	51179	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00741
2009	51179	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.02958
2009	51179	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.03497
2009	51179	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.21375
2009	51179	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00203
2009	51179	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00135
2009	51179	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.06066
2009	51179	2270002048	Graders	Construction and Mining Equipment	Diesel	0.05378
2009	51179	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.21106
2009	51179	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.01111
2009	51179	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.07887
2009	51179	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.28191
2009	51179	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.19052
2009	51179	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.23987
2009	51179	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.13016
2009	51179	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.03085
2009	51179	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00042
2009	51179	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.02980
2009	51179	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00042
2009	51179	2270003020	Forklifts	Industrial Equipment	Diesel	0.00385
2009	51179	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00200
2009	51179	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00227
2009	51179	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00011
2009	51179	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.03829
2009	51179	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00241
2009	51179	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2009	51179	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2009	51179	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.01217
2009	51179	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00243
2009	51179	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01850
2009	51179	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00172
2009	51179	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00005
2009	51179	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2009	51179	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.05467
2009	51179	2270005020	Combines	Agricultural Equipment	Diesel	0.00571

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51179	2270005025	Balers	Agricultural Equipment	Diesel	0.00003
2009	51179	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001
2009	51179	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00044
2009	51179	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2009	51179	2270005045	Swathers	Agricultural Equipment	Diesel	0.00042
2009	51179	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00115
2009	51179	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00074
2009	51179	2270006005	Generator Sets	Commercial Equipment	Diesel	0.01373
2009	51179	2270006010	Pumps	Commercial Equipment	Diesel	0.00325
2009	51179	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00771
2009	51179	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2009	51179	2270006025	Welders	Commercial Equipment	Diesel	0.00409
2009	51179	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00046
2009	51179	2270006035		Commercial Equipment	Diesel	0.00033
2009	51179	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2009	51179	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00594
2009	51179	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2009	51179	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51179	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2009	51179	2282005010	Outboard	Pleasure Craft	2 Stroke	0.01073
2009	51179	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00397
2009	51179	2282010005	Inboard/Stern drive	Pleasure Craft	4 Stroke	0.00994
2009	51179	2282020005	Inboard/Stern drive	Pleasure Craft	Diesel	0.00944
2009	51179	2282020010	Outboards	Pleasure Craft	Diesel	0.00004
2009	51179	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00691
2009	51179	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00011
2009	51179	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Spotsylvania County NONROAD2008a 2009 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>2.13400</b>
2009	51630	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00000
2009	51630	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00000
2009	51630	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00000
2009	51630	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00000
2009	51630	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2009	51630	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2009	51630	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00000
2009	51630	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2009	51630	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00000
2009	51630	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2009	51630	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2009	51630	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2009	51630	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2009	51630	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00002
2009	51630	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00003
2009	51630	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00016
2009	51630	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00006

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2009	51630	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00019
2009	51630	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00004
2009	51630	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00018
2009	51630	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2009	51630	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2009	51630	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2009	51630	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2009	51630	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00001
2009	51630	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00005
2009	51630	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2009	51630	2260006035		Commercial Equipment	2 Stroke	0.00000
2009	51630	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00000
2009	51630	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00000
2009	51630	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00000
2009	51630	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00000
2009	51630	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00000
2009	51630	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2009	51630	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00018
2009	51630	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00054
2009	51630	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00007
2009	51630	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00010
2009	51630	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00001
2009	51630	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00000
2009	51630	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00002
2009	51630	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00099
2009	51630	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00085
2009	51630	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00008
2009	51630	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00049

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2009	51630	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2009	51630	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00002
2009	51630	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2009	51630	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00128
2009	51630	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2009	51630	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2009	51630	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00021
2009	51630	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00011
2009	51630	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00015
2009	51630	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00006
2009	51630	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.00289
2009	51630	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00156
2009	51630	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00036
2009	51630	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.00479
2009	51630	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00010
2009	51630	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00016
2009	51630	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00000
2009	51630	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00284
2009	51630	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00075
2009	51630	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00047
2009	51630	2265006025	Welders	Commercial Equipment	4 Stroke	0.00093
2009	51630	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00116
2009	51630	2265006035		Commercial Equipment	4 Stroke	0.00006
2009	51630	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00000
2009	51630	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2009	51630	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2009	51630	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2009	51630	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00000
2009	51630	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2009	51630	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00000
2009	51630	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00050
2009	51630	2267003020	Forklifts	Industrial Equipment	LPG	0.03237
2009	51630	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00017
2009	51630	2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	0.00006
2009	51630	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00003
2009	51630	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00007
2009	51630	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00031
2009	51630	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2009	51630	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2009	51630	2267006005	Generator Sets	Commercial Equipment	LPG	0.00187
2009	51630	2267006010	Pumps	Commercial Equipment	LPG	0.00036
2009	51630	2267006015	Air Compressors	Commercial Equipment	LPG	0.00038
2009	51630	2267006025	Welders	Commercial Equipment	LPG	0.00050
2009	51630	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2009	51630	2267006035		Commercial Equipment	LPG	0.00000
2009	51630	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2009	51630	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00000
2009	51630	2268003020	Forklifts	Industrial Equipment	CNG	0.00232
2009	51630	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2009	51630	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2009	51630	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00000
2009	51630	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00001
2009	51630	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2009	51630	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00000
2009	51630	2268006005	Generator Sets	Commercial Equipment	CNG	0.00058
2009	51630	2268006010	Pumps	Commercial Equipment	CNG	0.00003
2009	51630	2268006015	Air Compressors	Commercial Equipment	CNG	0.00003
2009	51630	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00017
2009	51630	2268006035		Commercial Equipment	CNG	0.00000
2009	51630	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2009	51630	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00000
2009	51630	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51630	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002048	Graders	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00064
2009	51630	2270003020	Forklifts	Industrial Equipment	Diesel	0.00590
2009	51630	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00306
2009	51630	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00348
2009	51630	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00018
2009	51630	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.00735
2009	51630	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00369
2009	51630	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2009	51630	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2009	51630	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00327
2009	51630	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00065
2009	51630	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.00497
2009	51630	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00046
2009	51630	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00001
2009	51630	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005020	Combines	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005025	Balers	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005045	Swathers	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00000
2009	51630	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00000
2009	51630	2270006005	Generator Sets	Commercial Equipment	Diesel	0.00881
2009	51630	2270006010	Pumps	Commercial Equipment	Diesel	0.00209
2009	51630	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00495
2009	51630	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2009	51630	2270006025	Welders	Commercial Equipment	Diesel	0.00263
2009	51630	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00029
2009	51630	2270006035		Commercial Equipment	Diesel	0.00021

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2009	51630	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2009	51630	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00000
2009	51630	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2009	51630	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2009	51630	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2009	51630	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00000
2009	51630	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00000
2009	51630	2282010005	Inboard/Sternrive	Pleasure Craft	4 Stroke	0.00000
2009	51630	2282020005	Inboard/Sternrive	Pleasure Craft	Diesel	0.00000
2009	51630	2282020010	Outboards	Pleasure Craft	Diesel	0.00000
2009	51630	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00454
2009	51630	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00005
2009	51630	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Fredericksburg City NONROAD2008A 2009 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>0.11901</b>
			<b>Fredericksburg Area NONROAD2008A 2009 NO<sub>x</sub> Emissions, OSTPD, Total:</b>			<b>4.28630</b>
2015	51177	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00020
2015	51177	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00014
2015	51177	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00001
2015	51177	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00001
2015	51177	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2015	51177	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00036
2015	51177	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00056
2015	51177	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2015	51177	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00081
2015	51177	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2015	51177	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2015	51177	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2015	51177	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00001
2015	51177	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00005
2015	51177	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00015
2015	51177	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00039
2015	51177	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00029
2015	51177	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00047
2015	51177	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00018
2015	51177	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00044
2015	51177	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2015	51177	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2015	51177	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2015	51177	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2015	51177	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00002
2015	51177	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00013
2015	51177	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2015	51177	2260006035		Commercial Equipment	2 Stroke	0.00000
2015	51177	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00009
2015	51177	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00042

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51177	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00352
2015	51177	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00093
2015	51177	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00030
2015	51177	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00013
2015	51177	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51177	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00022
2015	51177	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00021
2015	51177	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00047
2015	51177	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00017
2015	51177	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00001
2015	51177	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00041
2015	51177	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00022
2015	51177	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00074
2015	51177	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00048
2015	51177	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00009
2015	51177	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00006
2015	51177	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00009
2015	51177	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00013
2015	51177	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00024
2015	51177	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00035
2015	51177	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00008
2015	51177	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00014
2015	51177	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00013
2015	51177	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00015
2015	51177	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00002
2015	51177	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00004
2015	51177	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00001
2015	51177	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00000
2015	51177	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00001
2015	51177	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00281
2015	51177	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00122
2015	51177	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00024
2015	51177	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00070
2015	51177	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2015	51177	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00003
2015	51177	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00003
2015	51177	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00140
2015	51177	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2015	51177	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2015	51177	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00059
2015	51177	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00014
2015	51177	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00024
2015	51177	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00008
2015	51177	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.00785
2015	51177	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00191
2015	51177	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00033

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51177	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.00596
2015	51177	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00031
2015	51177	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00026
2015	51177	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00000
2015	51177	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00002
2015	51177	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2015	51177	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00006
2015	51177	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00000
2015	51177	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00009
2015	51177	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00015
2015	51177	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00009
2015	51177	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00011
2015	51177	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00003
2015	51177	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00468
2015	51177	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00110
2015	51177	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00057
2015	51177	2265006025	Welders	Commercial Equipment	4 Stroke	0.00116
2015	51177	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00175
2015	51177	2265006035		Commercial Equipment	4 Stroke	0.00008
2015	51177	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00030
2015	51177	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2015	51177	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2015	51177	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2015	51177	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00009
2015	51177	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00007
2015	51177	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00007
2015	51177	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00004
2015	51177	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00001
2015	51177	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00022
2015	51177	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00021
2015	51177	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00009
2015	51177	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00015
2015	51177	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00002
2015	51177	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00016
2015	51177	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00023
2015	51177	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00002
2015	51177	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00049
2015	51177	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00025
2015	51177	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00052
2015	51177	2267003020	Forklifts	Industrial Equipment	LPG	0.01584
2015	51177	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00010
2015	51177	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00003
2015	51177	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00002
2015	51177	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00005
2015	51177	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00020
2015	51177	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2015	51177	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2015	51177	2267006005	Generator Sets	Commercial Equipment	LPG	0.00364
2015	51177	2267006010	Pumps	Commercial Equipment	LPG	0.00052
2015	51177	2267006015	Air Compressors	Commercial Equipment	LPG	0.00036
2015	51177	2267006025	Welders	Commercial Equipment	LPG	0.00049
2015	51177	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2015	51177	2267006035		Commercial Equipment	LPG	0.00000
2015	51177	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2015	51177	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00001
2015	51177	2268003020	Forklifts	Industrial Equipment	CNG	0.00114
2015	51177	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2015	51177	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2015	51177	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00001
2015	51177	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00000
2015	51177	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2015	51177	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00000
2015	51177	2268006005	Generator Sets	Commercial Equipment	CNG	0.00111
2015	51177	2268006010	Pumps	Commercial Equipment	CNG	0.00004
2015	51177	2268006015	Air Compressors	Commercial Equipment	CNG	0.00003
2015	51177	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00047
2015	51177	2268006035		Commercial Equipment	CNG	0.00000
2015	51177	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2015	51177	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00138
2015	51177	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.01316
2015	51177	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00004
2015	51177	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00065
2015	51177	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.03640
2015	51177	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.03658
2015	51177	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00242
2015	51177	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00194
2015	51177	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00632
2015	51177	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.02173
2015	51177	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.02570
2015	51177	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.10899
2015	51177	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00156
2015	51177	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00104
2015	51177	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.03542
2015	51177	2270002048	Graders	Construction and Mining Equipment	Diesel	0.02720
2015	51177	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.11941
2015	51177	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.00712
2015	51177	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.05034
2015	51177	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.17186
2015	51177	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.13654
2015	51177	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.13637
2015	51177	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.10381
2015	51177	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.02010

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51177	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00034
2015	51177	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.01971
2015	51177	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00092
2015	51177	2270003020	Forklifts	Industrial Equipment	Diesel	0.00531
2015	51177	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00307
2015	51177	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00384
2015	51177	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00023
2015	51177	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.03190
2015	51177	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00310
2015	51177	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2015	51177	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2015	51177	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00730
2015	51177	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00151
2015	51177	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.00974
2015	51177	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00084
2015	51177	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00003
2015	51177	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2015	51177	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.07915
2015	51177	2270005020	Combines	Agricultural Equipment	Diesel	0.00859
2015	51177	2270005025	Balers	Agricultural Equipment	Diesel	0.00005
2015	51177	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00001
2015	51177	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00069
2015	51177	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2015	51177	2270005045	Swathers	Agricultural Equipment	Diesel	0.00065
2015	51177	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00170
2015	51177	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00101
2015	51177	2270006005	Generator Sets	Commercial Equipment	Diesel	0.01885
2015	51177	2270006010	Pumps	Commercial Equipment	Diesel	0.00442
2015	51177	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00908
2015	51177	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2015	51177	2270006025	Welders	Commercial Equipment	Diesel	0.00584
2015	51177	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00063
2015	51177	2270006035		Commercial Equipment	Diesel	0.00041
2015	51177	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2015	51177	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00629
2015	51177	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00001
2015	51177	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51177	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2015	51177	2282005010	Outboard	Pleasure Craft	2 Stroke	0.01029
2015	51177	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00442
2015	51177	2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	0.00616
2015	51177	2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.00974
2015	51177	2282020010	Outboards	Pleasure Craft	Diesel	0.00005
2015	51177	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00314
2015	51177	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00002

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostdpd
2015	51177	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00000
<b>Spotsylvania County NONROAD2008a 2015 NO<sub>x</sub> Emissions, OSTPD:</b>						<b>1.40024</b>
2015	51179	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00016
2015	51179	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00025
2015	51179	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00002
2015	51179	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00002
2015	51179	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2015	51179	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00046
2015	51179	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2015	51179	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00067
2015	51179	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00066
2015	51179	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2015	51179	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2015	51179	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000
2015	51179	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00002
2015	51179	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00013
2015	51179	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00023
2015	51179	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00107
2015	51179	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00044
2015	51179	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00130
2015	51179	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00028
2015	51179	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00121
2015	51179	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2015	51179	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2015	51179	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2015	51179	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2015	51179	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00002
2015	51179	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00015
2015	51179	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2015	51179	2260006035		Commercial Equipment	2 Stroke	0.00000
2015	51179	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00006
2015	51179	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00029
2015	51179	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00245
2015	51179	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00087
2015	51179	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00021
2015	51179	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00020
2015	51179	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51179	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00034
2015	51179	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00032
2015	51179	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00072
2015	51179	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00027
2015	51179	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00001
2015	51179	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00063
2015	51179	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00034
2015	51179	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00114
2015	51179	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00075

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51179	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00013
2015	51179	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00009
2015	51179	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00013
2015	51179	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00020
2015	51179	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00037
2015	51179	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00055
2015	51179	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00013
2015	51179	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00022
2015	51179	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00008
2015	51179	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00009
2015	51179	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00001
2015	51179	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00002
2015	51179	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00000
2015	51179	2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00000
2015	51179	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00000
2015	51179	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00369
2015	51179	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00287
2015	51179	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00031
2015	51179	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00166
2015	51179	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00002
2015	51179	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00007
2015	51179	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00004
2015	51179	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00329
2015	51179	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2015	51179	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2015	51179	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00077
2015	51179	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00033
2015	51179	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00056
2015	51179	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00020
2015	51179	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.01028
2015	51179	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00448
2015	51179	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00078
2015	51179	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.01402
2015	51179	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00041
2015	51179	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00061
2015	51179	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00000
2015	51179	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00002
2015	51179	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2015	51179	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00004
2015	51179	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00000
2015	51179	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00007
2015	51179	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00011
2015	51179	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00007
2015	51179	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00008
2015	51179	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00002
2015	51179	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00432

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2015	51179	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00102
2015	51179	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00053
2015	51179	2265006025	Welders	Commercial Equipment	4 Stroke	0.00107
2015	51179	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00161
2015	51179	2265006035		Commercial Equipment	4 Stroke	0.00007
2015	51179	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00017
2015	51179	2265007015	Forest Eq - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2015	51179	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2015	51179	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2015	51179	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00005
2015	51179	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00008
2015	51179	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00007
2015	51179	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00004
2015	51179	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00001
2015	51179	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00024
2015	51179	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00024
2015	51179	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00010
2015	51179	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00017
2015	51179	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00003
2015	51179	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00017
2015	51179	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00025
2015	51179	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00002
2015	51179	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00055
2015	51179	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00028
2015	51179	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00021
2015	51179	2267003020	Forklifts	Industrial Equipment	LPG	0.00637
2015	51179	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00004
2015	51179	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00001
2015	51179	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00001
2015	51179	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00002
2015	51179	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00034
2015	51179	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2015	51179	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2015	51179	2267006005	Generator Sets	Commercial Equipment	LPG	0.00241
2015	51179	2267006010	Pumps	Commercial Equipment	LPG	0.00035
2015	51179	2267006015	Air Compressors	Commercial Equipment	LPG	0.00024
2015	51179	2267006025	Welders	Commercial Equipment	LPG	0.00033
2015	51179	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2015	51179	2267006035		Commercial Equipment	LPG	0.00000
2015	51179	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2015	51179	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00001
2015	51179	2268003020	Forklifts	Industrial Equipment	CNG	0.00046
2015	51179	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2015	51179	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2015	51179	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00001
2015	51179	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51179	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2015	51179	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00000
2015	51179	2268006005	Generator Sets	Commercial Equipment	CNG	0.00073
2015	51179	2268006010	Pumps	Commercial Equipment	CNG	0.00003
2015	51179	2268006015	Air Compressors	Commercial Equipment	CNG	0.00002
2015	51179	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00031
2015	51179	2268006035		Commercial Equipment	CNG	0.00000
2015	51179	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2015	51179	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00069
2015	51179	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.01459
2015	51179	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00004
2015	51179	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00072
2015	51179	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.04035
2015	51179	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.04055
2015	51179	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00269
2015	51179	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00215
2015	51179	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00701
2015	51179	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.02409
2015	51179	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.02849
2015	51179	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.12082
2015	51179	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00173
2015	51179	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00116
2015	51179	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.03926
2015	51179	2270002048	Graders	Construction and Mining Equipment	Diesel	0.03016
2015	51179	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.13237
2015	51179	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.00790
2015	51179	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.05581
2015	51179	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.19051
2015	51179	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.15136
2015	51179	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.15117
2015	51179	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.11507
2015	51179	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.02228
2015	51179	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00038
2015	51179	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.02184
2015	51179	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00037
2015	51179	2270003020	Forklifts	Industrial Equipment	Diesel	0.00213
2015	51179	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00123
2015	51179	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00155
2015	51179	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00009
2015	51179	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.03243
2015	51179	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00125
2015	51179	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2015	51179	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2015	51179	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.01231
2015	51179	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00255
2015	51179	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.01644

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51179	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00142
2015	51179	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00005
2015	51179	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2015	51179	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.04204
2015	51179	2270005020	Combines	Agricultural Equipment	Diesel	0.00456
2015	51179	2270005025	Balers	Agricultural Equipment	Diesel	0.00002
2015	51179	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00000
2015	51179	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00037
2015	51179	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2015	51179	2270005045	Swathers	Agricultural Equipment	Diesel	0.00035
2015	51179	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00090
2015	51179	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00053
2015	51179	2270006005	Generator Sets	Commercial Equipment	Diesel	0.01249
2015	51179	2270006010	Pumps	Commercial Equipment	Diesel	0.00293
2015	51179	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00601
2015	51179	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2015	51179	2270006025	Welders	Commercial Equipment	Diesel	0.00387
2015	51179	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00042
2015	51179	2270006035		Commercial Equipment	Diesel	0.00027
2015	51179	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2015	51179	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00257
2015	51179	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2015	51179	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51179	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2015	51179	2282005010	Outboard	Pleasure Craft	2 Stroke	0.01292
2015	51179	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00555
2015	51179	2282010005	Inboard/Stern Drive	Pleasure Craft	4 Stroke	0.00830
2015	51179	2282020005	Inboard/Stern Drive	Pleasure Craft	Diesel	0.00942
2015	51179	2282020010	Outboards	Pleasure Craft	Diesel	0.00004
2015	51179	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00575
2015	51179	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00006
2015	51179	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00001
			<b>Stafford County NONROAD2008a 2015 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>1.47990</b>
2015	51630	2260001030	Offroad Motorcycles/ATVs	Recreational Equipment	2 Stroke	0.00000
2015	51630	2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.00000
2015	51630	2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.00000
2015	51630	2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.00000
2015	51630	2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2015	51630	2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00000
2015	51630	2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	0.00000
2015	51630	2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.00000
2015	51630	2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.00000
2015	51630	2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00000
2015	51630	2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00000
2015	51630	2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2015	51630	2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2015	51630	2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00002
2015	51630	2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.00004
2015	51630	2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.00018
2015	51630	2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	0.00007
2015	51630	2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	0.00021
2015	51630	2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	0.00004
2015	51630	2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	0.00020
2015	51630	2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.00000
2015	51630	2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2015	51630	2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00000
2015	51630	2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00000
2015	51630	2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.00001
2015	51630	2260006010	Pumps	Commercial Equipment	2 Stroke	0.00006
2015	51630	2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00000
2015	51630	2260006035		Commercial Equipment	2 Stroke	0.00000
2015	51630	2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00000
2015	51630	2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.00000
2015	51630	2265001030	Offroad Motorcycles/ATVs	Recreational Equipment	4 Stroke	0.00000
2015	51630	2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.00000
2015	51630	2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.00000
2015	51630	2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.00000
2015	51630	2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.00008
2015	51630	2265003020	Forklifts	Industrial Equipment	4 Stroke	0.00009
2015	51630	2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.00002
2015	51630	2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.00003
2015	51630	2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00000
2015	51630	2265003060	AC/Refrigeration	Industrial Equipment	4 Stroke	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51630	2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00000
2015	51630	2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00068
2015	51630	2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00055
2015	51630	2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	0.00006
2015	51630	2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00032
2015	51630	2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2015	51630	2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.00001
2015	51630	2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.00001
2015	51630	2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	0.00063
2015	51630	2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00000
2015	51630	2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00000
2015	51630	2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	0.00014
2015	51630	2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00006
2015	51630	2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.00011
2015	51630	2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.00004
2015	51630	2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	0.00188
2015	51630	2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	0.00086
2015	51630	2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.00015
2015	51630	2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	0.00270
2015	51630	2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.00007
2015	51630	2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.00012
2015	51630	2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005020	Combines	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005025	Balers	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00000
2015	51630	2265006005	Generator Sets	Commercial Equipment	4 Stroke	0.00199
2015	51630	2265006010	Pumps	Commercial Equipment	4 Stroke	0.00047
2015	51630	2265006015	Air Compressors	Commercial Equipment	4 Stroke	0.00024
2015	51630	2265006025	Welders	Commercial Equipment	4 Stroke	0.00049
2015	51630	2265006030	Pressure Washers	Commercial Equipment	4 Stroke	0.00074
2015	51630	2265006035		Commercial Equipment	4 Stroke	0.00003
2015	51630	2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00000
2015	51630	2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00000
2015	51630	2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.00000
2015	51630	2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.00000
2015	51630	2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00000
2015	51630	2267002003	Pavers	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002015	Rollers	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> ostpd
2015	51630	2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002045	Cranes	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00000
2015	51630	2267003010	Aerial Lifts	Industrial Equipment	LPG	0.00032
2015	51630	2267003020	Forklifts	Industrial Equipment	LPG	0.00977
2015	51630	2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00006
2015	51630	2267003040	Other General Industrial Equip	Industrial Equipment	LPG	0.00002
2015	51630	2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00002
2015	51630	2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00003
2015	51630	2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.00009
2015	51630	2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00000
2015	51630	2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00000
2015	51630	2267006005	Generator Sets	Commercial Equipment	LPG	0.00155
2015	51630	2267006010	Pumps	Commercial Equipment	LPG	0.00022
2015	51630	2267006015	Air Compressors	Commercial Equipment	LPG	0.00015
2015	51630	2267006025	Welders	Commercial Equipment	LPG	0.00021
2015	51630	2267006030	Pressure Washers	Commercial Equipment	LPG	0.00001
2015	51630	2267006035		Commercial Equipment	LPG	0.00000
2015	51630	2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00000
2015	51630	2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00000
2015	51630	2268003020	Forklifts	Industrial Equipment	CNG	0.00070
2015	51630	2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00000
2015	51630	2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00000
2015	51630	2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00000
2015	51630	2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00000
2015	51630	2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00000
2015	51630	2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00000
2015	51630	2268006005	Generator Sets	Commercial Equipment	CNG	0.00047
2015	51630	2268006010	Pumps	Commercial Equipment	CNG	0.00002
2015	51630	2268006015	Air Compressors	Commercial Equipment	CNG	0.00001
2015	51630	2268006020	Gas Compressors	Commercial Equipment	CNG	0.00020
2015	51630	2268006035		Commercial Equipment	CNG	0.00000
2015	51630	2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00000
2015	51630	2270001060	Specialty Vehicle Carts	Recreational Equipment	Diesel	0.00000
2015	51630	2270002003	Pavers	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002015	Rollers	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.00000

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51630	2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002036	Excavators	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002045	Cranes	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002048	Graders	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.00057
2015	51630	2270003020	Forklifts	Industrial Equipment	Diesel	0.00327
2015	51630	2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.00189
2015	51630	2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.00237
2015	51630	2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.00014
2015	51630	2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.00623
2015	51630	2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.00191
2015	51630	2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00000
2015	51630	2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00000
2015	51630	2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.00331
2015	51630	2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.00068
2015	51630	2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.00441
2015	51630	2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.00038
2015	51630	2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00001
2015	51630	2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005020	Combines	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005025	Balers	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005035	Sprayers	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005045	Swathers	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00000
2015	51630	2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00000
2015	51630	2270006005	Generator Sets	Commercial Equipment	Diesel	0.00801
2015	51630	2270006010	Pumps	Commercial Equipment	Diesel	0.00188

**Appendix A: 2004, 2007, 2009, and 2015 NO<sub>x</sub> Ozone Season Tons per Day Emissions Results from NONROAD2008a by Jurisdiction and SCC**

Year	Area	SCC	Equipment	Classification	Engine Type	NO <sub>x</sub> , ostpd
2015	51630	2270006015	Air Compressors	Commercial Equipment	Diesel	0.00386
2015	51630	2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00000
2015	51630	2270006025	Welders	Commercial Equipment	Diesel	0.00248
2015	51630	2270006030	Pressure Washers	Commercial Equipment	Diesel	0.00027
2015	51630	2270006035		Commercial Equipment	Diesel	0.00017
2015	51630	2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00000
2015	51630	2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00000
2015	51630	2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.00000
2015	51630	2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00000
2015	51630	2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00000
2015	51630	2282005010	Outboard	Pleasure Craft	2 Stroke	0.00000
2015	51630	2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	0.00000
2015	51630	2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	0.00000
2015	51630	2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.00000
2015	51630	2282020010	Outboards	Pleasure Craft	Diesel	0.00000
2015	51630	2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00378
2015	51630	2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00003
2015	51630	2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00000
			<b>Fredericksburg City NONROAD2008a 2015 NO<sub>x</sub> Emissions, OSTPD:</b>			<b>0.07294</b>
			<b>Fredericksburg Area NONROAD2008a 2015 NO<sub>x</sub> Emissions, OSTPD, Total:</b>			<b>2.95307</b>