

## Brian Lusher

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**From:** John\_Lague@URSCorp.com  
**Sent:** Monday, May 03, 2010 4:07 PM  
**To:** Brian Lusher  
**Cc:** peter.landreth@mirant.com  
**Subject:** Here is the startup NOx emission spreadsheet we talked about

Brian

This shows how we built the startup NOx emissions over the 30 minute period. Let me know if you have any questions about this. I will see you tomorrow in Sacramento.

Best Regards - jsl

*(See attached file: backup for startup emissions to BAAQMD.xls)*

John Lague  
Senior Air Quality Consultant  
URS Corporation  
1615 Murray Canyon Road, Suite 1000  
San Diego, California 92108  
Direct Line (619) 243-2823  
Fax: (619) 293-7920

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NOx 20.83 lb/hour cold temperature mass emission rate for 2.5 ppm NOx  
 75 lb/hour cold temperature mass emission rate for 9 ppm NOx (assumed by scaling based on ppm)

14 pounds is cumulative NOx emissions during first 11 minutes of startup (to reach 9 ppm)  
 12 pounds is cumulative NOx emissions during a 6 minute shutdown

Assume linear decrease in mass emissions of NOx during minutes 28-30 to reach 2.5 ppm

First startup	11 min		Em Rate @ start of minute (lb/hr)	Em Rate @ end of minute (lb/hr)	Avg rate during minute (lb/hr)	pounds during minute	Event total lb to end of minute
		Min 1-11	14 pounds starting up				14 pounds
	NO SCR	Min 12	75.00	75.00	75.00	1.25	15.25 pounds
		Min 13	75.00	75.00	75.00	1.25	16.50 pounds
		Min 14	75.00	75.00	75.00	1.25	17.75 pounds
		Min 15	75.00	75.00	75.00	1.25	19.00 pounds
		Min 16	75.00	75.00	75.00	1.25	20.25 pounds
		Min 17	75.00	75.00	75.00	1.25	21.50 pounds
		Min 18	75.00	75.00	75.00	1.25	22.75 pounds
		Min 19	75.00	75.00	75.00	1.25	24.00 pounds
		Min 20	75.00	75.00	75.00	1.25	25.25 pounds
		Min 21	75.00	75.00	75.00	1.25	26.50 pounds
		Min 22	75.00	75.00	75.00	1.25	27.75 pounds
		Min 23	75.00	75.00	75.00	1.25	29.00 pounds
		Min 24	75.00	75.00	75.00	1.25	30.25 pounds
		Min 25	75.00	75.00	75.00	1.25	31.50 pounds
		Min 26	75.00	75.00	75.00	1.25	32.75 pounds
		Min 27	75.00	75.00	75.00	1.25	34.00 pounds
		SCR kicks in	Min 28	75.00	56.94	65.97	1.10
	Min 29		56.94	38.89	47.92	0.80	35.90 pounds
	Min 30		38.89	20.83	29.86	0.50	36.40 pounds