

APPENDIX 1

**DALLAS-FORT WORTH NONATTAINMENT AREA
REASONABLE FURTHER PROGRESS DEMONSTRATION
CALCULATIONS SPREADSHEET**

Appendix 1 - Sheet 1

Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Reasonable Further Progress Demonstration Calculation Spreadsheet

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Appendix 1 - Sheet 2

2011 RFP Demonstration Analysis
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

2011 RFP Demonstration Analysis: To determine if the 2011 RFP requirements are met, the 2011 target level of emissions is compared to the 2011 controlled forecast inventory. The 2011 forecast inventory includes growth between the 2002 base year and the 2011 milestone year. The controlled forecast inventory has been reduced by subtracting the RFP control reductions from 2002 to 2011. If the 2011 controlled forecasted RFP emissions inventory (EI) is less than the 2011 RFP target level of emissions, then the 2011 RFP requirement is satisfied.

Line #	Description	NO _x (tpd)	VOC (tpd)
Line 1	Uncontrolled emissions forecast with growth	1168.59	823.46
Line 2	Creditable RFP control reductions for newly designated counties (NDC) 2008	80.59	25.89
Line 3	Creditable RFP control reductions for existing counties (EC) 2008	408.21	202.96
Line 4	Creditable RFP control reductions 2008 to 2011	270.99	54.17
Line 5	Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3 minus Line 4)	408.81	540.45
Line 6	Amount of NO _x reduction substitution (see Sheet 3)	77.29	-72.86
Line 7	Controlled RFP forecast accounting for NO _x substitution (Line 5 plus Line 6)	486.09	467.59
Line 8	2011 RFP target level of emissions	496.07	467.65
Line 9	Excess (+) / Shortfall (-) (Line 8 minus Line 7)	9.98	0.06
Line 10	Is controlled RFP EI less than target level of emissions?	Yes	Yes

Notes:

- 1) To calculate the RFP controlled forecast for each milestone/attainment year, the total RFP creditable control strategy reductions to date (total RFP reductions from 2002 to the current RFP milestone year) are subtracted from the total uncontrolled RFP EI.
- 2) To calculate the final excess or shortfall of for each milestone/attainment year, the controlled RFP emissions forecast is subtracted from the RFP target level of emissions. The RFP target level of emissions for all milestone years is calculated on the "Calc Targets" page.
- 3) Excess emissions reductions (Line 9) may be used to provide a transportation conformity safety margin. The safety margin must be less than or equal to the excess emissions reductions.

Appendix 1 - Sheet 3

2011 RFP NO_x Substitution Analysis
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

The NO_x substitution calculation includes six steps. First, calculate the percent target reduction for both VOC and NO_x by comparing the base year and target inventories. Second, calculate the percent actual reduction by comparing the base year and the actual inventory. Third, compare the percent required reduction to the percent actual reduction. If the percent actual reduction is greater than the percent required, then there are surplus reductions. If the percent actual reduction is less than the percent target, then there is a shortfall of reductions. The difference between the percent actual and the percent target reduction (when there are surplus reductions) is the amount that is available for substitution. For the fourth step, determine the percent NO_x needed for substitution. The minimum base year VOC percentage needed is equal to the percent base year shortfall in VOC plus the smallest increment possible, or 0.01. The respective NO_x percent is calculated using the NO_x base year inventory. The percent base year NO_x transfer should not exceed the percent base year NO_x surplus. The percent NO_x available to transfer is based upon the base year because the base year is the basis for the required reduction calculations. Fifth, convert the percent base year NO_x to a percent target NO_x using the percent base year NO_x from step 5 and the relative values of the base year and target NO_x inventory. The percent NO_x transfer is derived from milestone year target values because those are the values modified by NO_x transfer. The percent NO_x transfer is a percentage of the milestone year target NO_x value that is added back into the NO_x inventory and a percentage of the milestone year target VOC that is subtracted from the VOC inventory. For the sixth step, calculate the resulting tons per day (tpd) associated with the percent NO_x transfer. For NO_x, multiply the NO_x percent transfer and the NO_x milestone year target value. For VOC, multiply the percent NO_x transfer (which is the same as the percentage of the milestone year target VOC that is subtracted from the VOC inventory) and the VOC milestone year target value. The NO_x transfer amount (in tpd) is added to the NO_x actual (in tpd) inventory in the RFP demonstration calculation, and the VOC transfer amount (in tpd) is subtracted from the VOC actual (in tpd) inventory.

Line #	Description	NO _x	VOC
Line 1	2002 base year emissions (tpd)	625.29	495.21
Line 2	2011 controlled RFP EI (tpd)	408.81	540.45
Line 3	Total actual reductions for 2002 to 2011 (Line 1 minus Line 2) (tpd)	216.48	-45.24
Line 4	Percent actual reductions for 2002 to 2011 (percent Line 3 is of Line 1) (%)	34.62	-9.14
Line 5	2011 target RFP EI (tpd)	496.07	467.65
Line 6	2011 total target reductions for 2002 to 2011 (Line 1 minus Line 5) (tpd)	129.22	27.56
Line 7	Percent target reductions for 2002 to 2011 (percent Line 6 is of Line 1) (%)	20.67	5.57
Line 8	Percent surplus or shortfall (percent actual minus percent target, Line 4 - Line 7) (%)	13.96	-14.70
Line 9	Percent surplus to transfer (NO _x percentage should be less than Line 8) (%)	12.36	14.71
Line 10	Convert the percent surplus to transfer to tons per day (tpd)	77.29	Only NO _x Value Needed
Line 11	Calculate what percentage Line 10 is of target (this is the percentage to transfer) (%)	15.58	15.58
Line 12	Tons equivalent to percent for transfer [Line 5 times (Line 10 divided by 100)] (tpd)	77.29	72.86
Line 13	NO _x substitution amount okay? (Check to assure NO _x substitution does not exceed maximum available: Sheet 02, Line 9 must be greater than zero.)	Okay to Substitute	Okay to Substitute

Notes:

Line 7: The percent target reduction includes the 15% required reductions from 2002 through 2008, the 3% required reductions for each year after 2008, and accounts for noncreditable reductions between 2002 and the RFP milestone year; therefore, the total percent reduction may not be exactly 15 plus 9.

Appendix 1 - Sheet 4

2012 Contingency Demonstration for RFP

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Contingency Element Description	NO_x	VOC
2012 adjusted base year (ABY) EI	630.46	481.97
Percent for 2012 contingency calculation (total of 3%)	3.00	0.00
2011 to 2012 required contingency reductions (ABY EI x (contingency percent))	18.91	0.00
Control reductions to meet contingency requirements		
Reserved reductions from 2011 RFP demonstration	18.91	0.00
Unspecified control 1	0.00	0.00
Unspecified control 2	0.00	0.00
Total contingency reductions	18.91	0.00
Contingency Excess (+) or Shortfall (-)	0.00	0.00
Are contingency reductions greater than required contingency reduction?	Yes	Yes

Note: The 2008 to 2009 contingency reductions are held in reserve for all RFP milestone years in this RFP demonstration.

Appendix 1 - Sheet 5

2012 RFP Demonstration Analysis

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

2012 RFP Demonstration Analysis: To determine if the 2012 RFP requirements are met, the 2012 target level of emissions is compared to the 2012 controlled forecast inventory. The 2012 forecast inventory includes growth between the 2002 base year and the 2012 milestone year. The controlled forecast inventory has been reduced by subtracting the RFP control reductions from 2002 to 2012. If the 2012 controlled forecasted RFP EI is less than the 2012 RFP target level of emissions the 2012 RFP requirement is satisfied.

Line #	Description	NO _x (tpd)	VOC (tpd)
Line 1	Uncontrolled emissions forecast with growth	1194.94	846.38
Line 2	Creditable RFP control reductions for 2008, 2011	759.79	283.01
Line 3	Creditable RFP control reductions 2011 to 2012	56.07	30.87
Line 4	Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3)	379.09	532.49
Line 5	Amount of creditable reductions reserved for 2011 milestone contingency	18.91	0.00
Line 6	Controlled RFP emission forecast with milestone contingency (Line 4 plus Line 5)	398.00	532.49
Line 7	Amount of NO _x reduction substitution (see Sheet 6)	61.86	-60.60
Line 8	Controlled RFP forecast without reductions reserved for contingency and accounting for NO _x substitution (Line 6 plus Line 7)	459.86	471.89
Line 9	2012 RFP target level of emissions	481.78	471.95
Line 10	Excess (+) / Shortfall (-) (Line 8 minus Line 7)	21.92	0.05
Line 11	Is controlled RFP EI less than target level of emissions?	Yes	Yes

Notes:

- 1) To calculate the RFP controlled forecast for each milestone/attainment year, the total RFP creditable control strategy reductions to date (total RFP reductions from 2002 to the current RFP milestone year) are subtracted from the total uncontrolled RFP EI.
- 2) To calculate the final excess or shortfall for each milestone/attainment year, the controlled RFP emissions forecast is subtracted from the RFP target level of emissions. The RFP target level of emissions for all milestone years is calculated on the "Calc Targets" page.
- 3) Excess emissions reductions (Line 9) may be used to provide a transportation conformity safety margin. The safety margin must be less than or equal to the excess emissions reductions.

Appendix 1 - Sheet 6

2012 RFP NO_x Substitution Analysis

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

The NO_x substitution calculation includes six steps. First, calculate the percent target reduction for both VOC and NO_x by comparing the base year and target inventories. Second, calculate the percent actual reduction by comparing the base year and the actual inventory. Third, compare the percent required reduction to the percent actual reduction. If the percent actual reduction is greater than the percent required, then there are surplus reductions. If the percent actual reduction is less than the percent target, then there is a shortfall of reductions. The difference between the percent actual and the percent target reduction (when there are surplus reductions) is the amount that is available for substitution. For the fourth step, determine the percent NO_x needed for substitution. The minimum base year VOC percentage needed is equal to the percent base year shortfall in VOC plus the smallest increment possible, or 0.01. The respective NO_x percent is calculated using the NO_x base year inventory. The percent base year NO_x transfer should not exceed the percent base year NO_x surplus. The percent NO_x available to transfer is based upon the base year because the base year is the basis for the required reduction calculations. Fifth, convert the percent base year NO_x to a percent target NO_x using the percent base year NO_x from step 5 and the relative values of the base year and target NO_x inventory. The percent NO_x transfer is derived from milestone year target values because those are the values modified by NO_x transfer. The percent NO_x transfer is a percentage of the milestone year target NO_x value that is added back into the NO_x inventory and a percentage of the milestone year target VOC that is subtracted from the VOC inventory. For the sixth step, calculate the resulting tons per day (tpd) associated with the percent NO_x transfer. For NO_x, multiply the NO_x percent transfer and the NO_x milestone year target value. For VOC, multiply the percent NO_x transfer (which is the same as the percentage of the milestone year target VOC that is subtracted from the VOC inventory) and the VOC milestone year target value. The NO_x transfer amount (in tpd) is added to the NO_x actual (in tpd) inventory in the RFP demonstration calculation, and the VOC transfer amount (in tpd) is subtracted from the VOC actual (in tpd) inventory.

Line #	Description	NO _x	VOC
Line 1	2002 base year emissions (tpd)	625.29	495.21
Line 2	2012 controlled RFP EI (tpd)	398.00	532.49
Line 3	Total actual reductions for 2002 to 2012 (Line 1 minus Line 2) (tpd)	227.29	-37.29
Line 4	Percent actual reductions for 2002 to 2012 (percent Line 3 is of Line 1) (%)	36.35	-7.53
Line 5	2012 target RFP EI (tpd)	481.78	471.95
Line 6	2012 total target reductions for 2002 to 2012 (Line 1 minus Line 5) (tpd)	143.51	23.26
Line 7	Percent target reductions for 2002 to 2012 (percent Line 6 is of Line 1) (%)	22.95	4.70
Line 8	Percent surplus or shortfall (percent actual minus percent target, Line 4 minus Line 7) (%)	13.40	-12.23
Line 9	Percent surplus to transfer (NO _x percentage should be less than Line 8) (%)	9.89	12.24
Line 10	Convert the percent surplus to transfer to tons per day (tpd)	61.86	Only NO _x Value Needed
Line 11	Calculate what percentage Line 10 is of target (this is the percentage to transfer) (%)	12.84	12.84
Line 12	Tons equivalent to percent for transfer [Line 5 times (Line 10 divided by 100)] (tpd)	61.86	60.60
Line 13	NO _x substitution amount okay? (Check to assure NO _x substitution does not exceed maximum available: Sheet 05, Line 10 must be greater than zero)	Okay to Substitute	Okay to Substitute

Notes:

Line 7: The percent target reduction includes the 15% required reductions from 2002 through 2008, the 3% required reductions for each year after 2008, and accounts for noncreditable reductions between 2002 and the RFP milestone year; therefore, the total percent reduction may not be exactly 15 plus 9 plus 3.

Appendix 1 - Sheet 7

2013 Contingency Demonstration for RFP
DFW Eight-Hour Ozone Nonattainment Area
Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Summary 2013 Contingency for 2012 RFP

Contingency Element Description	NO_x	VOC
2012 ABY EI	630.46	481.97
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	18.91	0.00
Control reductions to meet contingency requirements		
Excess reductions from 2012 RFP demonstration	21.92	0.05
Subtract 2012 RFP demonstration motor vehicle emissions budget (MVEB) safety margin from excess reductions from 2012 RFP demonstration	-17.76	0.00
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	33.22	10.01
Federal non-road mobile new vehicle certification standards	7.45	5.48
Non-road RFG	-0.01	0.08
Non-road TxLED	0.41	0.00
Federal locomotive standards	0.53	0.05
Total RFP demonstration contingency reductions	45.75	15.67
Contingency Excess (+) or Shortfall (-)	26.84	15.67

If changes are made to the enter reductions page, please assure the control reduction summary values above are consistent with the table below. The enter reductions page allows for the control reduction for a row to change. The table above adds particular rows from below.

Contingency Element Description	NO_x	VOC
2012 ABY EI	630.46	481.97
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	18.91	0.00
Control reductions to meet contingency requirements		
Excess reductions from 2012 RFP demonstration	21.92	0.05
Subtract 2012 MVEB safety margin from excess reductions from 2012 RFP demonstration	-17.76	0.00
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	33.22	10.01
Tier I and II locomotive NOX standards	0.53	0.05
Small non-road spark ignition (SI) engines (Phase I)	-0.06	0.55
Heavy duty non-road engines	0.74	0.22
Tiers 2 and 3 non-road diesel engines	2.16	0.32
Small non-road SI engines (Phase II)	0.07	0.72
Large non-road SI & recreational marine	2.42	1.18
Non-road TxLED	0.41	0.00
Non-road RFG	-0.01	0.08
Tier 4	1.75	0.12
Diesel recreational marine	0.00	0.00
Small SI (Phase III)	0.37	2.37
Chapter 117 NOX area source engine controls	0.00	0.00
Drilling rig low emission diesel	0.00	0.00
Non-road and Locomotive TERP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
Total 2013 RFP contingency reductions	45.75	15.67
Contingency Excess (+) or Shortfall (-)	26.84	15.67
Are contingency reductions greater than required contingency reduction?	Yes	Yes

Appendix 1 - Sheet 8
2013 Contingency Demonstration for 2012 Attainment

Summary 2013 Contingency for 2012 Attainment Demonstration

Contingency Element Description	NO _x	VOC
2012 ABY EI	630.46	481.97
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	18.91	0.00
Control reductions to meet contingency requirements		
Excess reductions from 2012 attainment demonstration	0.00	0.00
Subtract 2012 attainment demonstration motor vehicle emissions budget (MVEB) safety margin from excess reductions from 2012 attainment demonstration	0.00	0.00
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	33.22	10.01
Federal Non-road Mobile New Vehicle Certification Standards	7.45	5.48
Non-road RFG	-0.01	0.08
Non-road TxLED	0.41	0.00
Federal locomotive standards	0.53	0.05
Total attainment demonstration contingency reductions	41.60	15.62
Contingency Excess (+) or Shortfall (-)	22.69	15.62

If changes are made to the enter reductions page please assure the control reduction summary values above are consistent with the table below. The enter reductions page allows for the control reduction for a row to change. The table above adds particular rows from below.

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Contingency Element Description	NO _x	VOC
2012 ABY EI	630.46	481.97
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	18.91	0.00
Control reductions to meet contingency requirements		
Excess reductions from 2012 attainment demonstration	0.00	0.00
Subtract 2012 attainment demonstration MVEB safety margin from excess reductions from 2012 attainment demonstration	0.00	0.00
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	33.22	10.01
Tier I and II locomotive NOX standards	0.53	0.05
Small non-road spark ignition (SI) engines (Phase I)	-0.06	0.55
Heavy duty non-road engines	0.74	0.22
Tiers 2 and 3 non-road diesel engines	2.16	0.32
Small non-road SI engines (Phase II)	0.07	0.72
Large non-road SI & recreational marine	2.42	1.18
Non-road TxLED	0.41	0.00
Non-road RFG	-0.01	0.08
Tier 4	1.75	0.12
Diesel recreational marine	0.00	0.00
Small SI (Phase III)	0.37	2.37
Chapter 117 NOX area source engine controls	0.00	0.00
Drilling rig low emission diesel	0.00	0.00
Non-road and Locomotive TERP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
This row not used for current RFP	0.00	0.00
Total attainment demonstration contingency reductions	41.60	15.62
Contingency Excess (+) or Shortfall (-)	22.69	15.62

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Appendix 1 - Sheet 09

Calculations: 2011 RFP MVEBs

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x (tons per day)

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Summary 2011 MVEB

Description	NO _x	VOC
Uncontrolled on-road mobile source emission inventory	707.87	293.76
Total on-road mobile source RFP control reductions	510.82	204.22
On-road mobile controlled inventory	197.05	89.54
Transportation conformity safety margin	0.00	0.00
Excess emissions reduction for 2012	9.98	0.06
Is excess emissions enough for safety margin?	yes	yes
MVEB with safety margin	197.05	89.54

Note: If safety margin is > than excess emission reductions modify percent safety margin input on the "Enter % for RFP Cont & Conf SM" page.

Creditable Reductions Control Strategy	Control Used for RFP Demonstration?	On-road Mobile Source Control?	Total 2002 - 2011 'On-road Mobile NO _x Emissions Reductions (tpd)	Total 2002 - 2011 'On-road Mobile VOC Emissions Reductions (tpd)
Chapter 117 NOX controls	Yes	No	0	0
Coating / printing rules	Yes	No	0	0
Portable fuel containers	Yes	No	0	0
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	Yes	Yes	510.82	204.22
Tier I and II locomotive NOX standards	Yes	No	0	0
Small non-road spark ignition (SI) engines (Phase I)	Yes	No	0	0
Heavy duty non-road engines	Yes	No	0	0
Tiers 2 and 3 non-road diesel engines	Yes	No	0	0
Small non-road SI engines (Phase II)	Yes	No	0	0
Large non-road SI & recreational marine	Yes	No	0	0
Non-road TxLED	Yes	No	0	0
Non-road RFG	Yes	No	0	0
Tier 4	Yes	No	0	0
Diesel recreational marine	Yes	No	0	0
Small SI (Phase III)	Yes	No	0	0
Chapter 117 NOX area source engine controls	Yes	No	0	0
Drilling rig low emission diesel	Yes	No	0	0
Non-road and Locomotive TERP	Yes	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
Total On-road Mobile Source RFP Control Reductions			510.82	204.22

Appendix 1 - Sheet 10

Calculations: 2012 RFP MVEBs

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x (tons per day)

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Summary 2012 MVEB

Description	NO_x	VOC
Uncontrolled on-road mobile source emission inventory	728.83	301.33
Total on-road mobile source RFP control reductions	551.21	219.13
On-road mobile controlled inventory	177.63	82.20
Transportation conformity safety margin	17.76	0.00
Excess emissions reduction for 2012	21.92	0.05
Is excess emissions enough for safety margin?	yes	yes
MVEB with Safety Margin	195.39	82.20

Note: If safety margin is > than excess emission reductions modify percent safety margin input on the "Enter % for RFP Cont & Conf SM" page.

Creditable Reductions Control Strategy	Control Used for RFP Demonstration?	On-road Mobile Source Control?	Total 2002 - 2012 'On-road Mobile NO_x Emissions Reductions (tpd)	Total 2002 - 2012 'On-road Mobile VOC Emissions Reductions (tpd)
Chapter 117 NOX controls	Yes	No	0	0
Coating / printing rules	Yes	No	0	0
Portable fuel containers	Yes	No	0	0
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	Yes	Yes	551.21	219.13
Tier I and II locomotive NOX standards	Yes	No	0	0
Small non-road spark ignition (SI) engines (Phase I)	Yes	No	0	0
Heavy duty non-road engines	Yes	No	0	0
Tiers 2 and 3 non-road diesel engines	Yes	No	0	0
Small non-road SI engines (Phase II)	Yes	No	0	0
Large non-road SI & recreational marine	Yes	No	0	0
Non-road TxLED	Yes	No	0	0
Non-road RFG	Yes	No	0	0
Tier 4	Yes	No	0	0
Diesel recreational marine	Yes	No	0	0
Small SI (Phase III)	Yes	No	0	0
Chapter 117 NOX area source engine controls	Yes	No	0	0
Drilling rig low emission diesel	Yes	No	0	0
Non-road and Locomotive TERP	Yes	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
This row not used for current RFP	No	No	0	0
Total On-road Mobile Source RFP Control Reductions			551.21	219.13

Appendix 1 - Sheet 11

RFP Non-creditable Reductions Calculations
 DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
 Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Calculation of Non-creditable NO_x and VOC Reductions

RFP Analysis Year	On-Road Mobile ABY EI NO_x	On-Road Mobile ABY EI VOC	Non-Creditable Fleet Turn Over Reductions NO_x	Non-Creditable Fleet Turn Over Reductions VOC	Non-Creditable Reduction Description
2002, 5 NDC	77.93	27.32	N/A	N/A	
2002, 4EC	431.52	197.28	N/A	N/A	
2008, 5 NDC	76.61	25.09	1.32	2.23	Pre-1990 Federal Clean Air Act (FCAA) fleet turnover reduction 2002-2008 for five newly designated eight-hour counties
2008, 4 EC	434.61	188.62	-3.09	8.66	Pre-1990 FCAA fleet turnover reduction (2002-2008) for four previously designated one-hour counties
2008 Total	511.22	213.71	-1.77	10.89	
2011	510.00	207.07	1.22	6.64	Pre-1990 CAA fleet turnover reduction 2008-2011
2012	514.62	211.37	-4.62	-4.30	Pre-1990 CAA fleet turnover reduction 2011-2012

Notes:

1) Non-creditable fleet turnover corrections: The reductions due to the pre-1990 FMVCP for on-road mobile sources are not creditable toward the RFP requirements. The non-creditable reductions for each RFP milestone year are the difference between the on-road mobile ABY EI for each RFP milestone year and the on-road mobile 2002 RFP ABY EI. Since the pre-1990 FMVCP fleet turnover corrections are cumulative in the MOVES model, the noncreditable reductions from previous milestone years must be subtracted from the current milestone year to obtain the non-creditable reductions between milestone years. The FMVCP non-creditable reductions are used to calculate the target value for each RFP milestone year.

2) ABY inventories: The on-road mobile ABY inventories for each milestone/attainment year are calculated using 2002 vehicle miles traveled (VMT) and MOVES emission factors for each RFP analysis year with only the effects of pre-1990 FCAA controls turned on. The pre-1990 FCAA controls include the 1992 Reid Vapor Pressure control and the pre-1990 on-road mobile source FMVCP controls.

Appendix 1 - Sheet 12

Quantify the Reductions to Meet the 3% per Year and Contingency Requirements

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

3% per year reductions: The FCAA mandates that a 3% per year VOC reduction, net of growth, occur between 2002 and the attainment year. The reductions must be demonstrated for the six-year period from 2002 to 2008, and every three years after 2008 (2011) until the attainment year, 2012. The five DFW counties added to the nonattainment area under the eight-hour standard (newly designated counties (NDC)) must demonstrate an initial 15% reduction of VOC between 2002 and 2008. NO_x may be substituted for VOC for the four DFW counties designated nonattainment under both the one-hour and eight-hour standards (existing counties (EC)) between 2002 and 2008. After 2008, NO_x reductions may be substituted for VOC reductions for all DFW eight-hour nonattainment counties. An additional 3% reduction must be demonstrated as a contingency measure for the one-year period following the attainment year, 2013. The division of the percent reductions between VOC and NO_x are entered in the data entry sheet with tab name "Enter % for RFP Cont & Conf SM."

Calculation of Required 15% VOC Reductions and 3% per Year NO_x and VOC Reductions

RFP Analysis Year	Total Percent Reduction Requirement	Percent NO _x	Percent VOC	RFP ABY EI NO _x (tpd)	RFP ABY EI VOC (tpd)	Required Reductions NO _x (tpd)	Required Reductions VOC (tpd)
2002	N/A	N/A	N/A	486.53	426.13	N/A	N/A
2008, 5 NDC	15.0	N/A	15.0	137.44	66.85	N/A	10.03
2008, 4 EC	15.0	15.0	0.0	489.62	417.47	73.44	0.00
2011	9.0	9.0	0.0	625.84	477.67	56.33	0.00
2012	3.0	3.0	0.0	630.46	481.97	18.91	0.00
2013 Contingency	3.0	3.0	0.0	630.46	481.97	18.91	0.00

Notes:

1) The ABY EI is the base year (BY) emissions minus the non-creditable on-road mobile reductions. It is calculated by adding the BY EI for point, area and non-road to the ABY for on-road. When the ABY EI is multiplied by the required percent reduction, the result is the reductions required.

2) On-road mobile ABY inventories: The on-road mobile ABY inventories for each milestone/attainment year are calculated using 2002 VMT and MOVES emission factors for each RFP analysis year with only the effects of pre-1990 FCAA controls turned on. The pre-1990 FCAA controls include the 1992 Reid Vapor Pressure control and the pre-1990 on-road mobile source FMVCP controls. The on-road mobile ABY EI is equal to the on-road mobile BY EI minus the non-creditable FMVCP reductions.

Appendix 1 - Sheet 13

Target Calculations: 2008, 2011 and 2012 RFP Target Level of NO_x and VOC Emissions

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall,
Tarrant

Post-2002 target level of NO_x emissions: The NO_x target level is calculated by subtracting the reductions necessary to meet the combined 3% per year combined NO_x and VOC reduction requirement and the non-creditable fleet (FMVCP/RVP) reductions from the previous milestone/attainment year target level.

RFP Post-2002 Target Level of NO_x Emissions				
RFP Milestone Year	Previous Target	FMVCP Non-creditable Reduction	Post-2002 Percent Reduction Requirement NO_x (tpd)	NO_x Target (tpd)
2002 Base Year, 5 NDC	N/A	N/A	N/A	138.76
2002 Base Year, 4 EC	N/A	N/A	N/A	486.53
2008, 5 NDC	138.76	1.32	N/A	137.44
2008 4 EC	486.53	-3.09	73.44	416.18
2008 Total	N/A	N/A	N/A	553.62
2011	553.62	1.22	56.33	496.07
2012	496.07	-4.62	18.91	481.78

Post-2002 target level of VOC emissions: The VOC target level is calculated by subtracting the reductions necessary to meet the combined 3% per year combined NO_x and VOC reduction requirement and the non-creditable fleet (FMVCP/RVP) reductions from the previous milestone/attainment year target level.

'RFP Post-2002 Target Level of VOC Emissions				
RFP Milestone Year	Previous Target	FMVCP Non-creditable Reduction	Post-2002 Percent Reduction Requirement VOC (tpd)	VOC Target (tpd)
2002 Base Year, 5 NDC	N/A	N/A	N/A	69.08
2002 Base Year, 4 EC	N/A	N/A	N/A	426.13
2008, 5 NDC	69.08	2.23	10.03	56.82
2008 4 EC	426.13	8.66	0.00	417.47
2008 Total	N/A	N/A	N/A	474.29
2011	474.29	6.64	0.00	467.65
2012	467.65	-4.30	0.00	471.95

Appendix 1 - Sheet 14

Enter RFP NO_x and VOC Percentage Reductions, Contingency Percents and Safety Margin

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

A 15% reduction is required for DFW for the period between the 2002 base year and 2008, with an additional 3% per year until the attainment year. The reduction is required to be demonstrated six years after the base year, 2008, every 3 years after that year, 2011, and the 2012 attainment year. The total reduction for 2008 includes an initial 15% reduction (VOC only) for the NDC and an initial 15% reduction (NO_x may be substituted for VOC) for the EC. The total reduction for 2011 is 9% (3% times 3). The reduction required for 2012 is 3% (3% times 1). What percentage of NO_x and VOC reductions will be used to demonstrate RFP for 2008, 2011, and 2012? The analyst only needs to input the NO_x percent. The VOC percent will be calculated automatically based upon the total required and the percent from NO_x.

RFP NO_x and VOC Percent Reductions for Milestone and Attainment Years			
RFP Milestone Year	NO _x %	VOC %	Total Percent
2008, 5 New 8 Hour Counties	N/A	15	15
2008, 4 Existing 1 Hour Counties	15	0	15
2011	9	0	9
2012	3	0	3

3% 2011 to 2012 and 2012 to 2013 contingency measures reductions are required. Input only the percent of the reductions that will be from NO_x. The VOC value will be calculated automatically as 3 minus the NO_x percent. For 2012 to 2013 a 3% contingency is also required for the attainment demonstration.

'RFP and Attainment Demonstration NO_x and VOC Percent Reductions for 2012 and 2013 Contingency			
Contingency Year	NO _x %	VOC %	Total Percent
RFP 2012 Milestone Contingency	3	0	3
RFP 2012 to 2013	3	0	3
AD 2012 to 2013	3	0	3

If there are excess RFP control reductions, a transportation conformity safety margin is allowed. The safety margin amount must be less than or equal to the excess reductions. Entering a percent safety margin below will update the MVEB calculation to include the percent safety margin entered. The amount of the safety margin will automatically be checked to verify it is less than the excess emissions. If not, then a "check safety margin" will appear in the MVEB calculation box.

RFP Milestone Year	Conformity Safety Margin NO _x %	Conformity Safety Margin VOC %
2008	0	0
2011	0	0
2012	10	0

Enter the percent of the NO_x milestone year target that will be transferred to VOC. Only the NO_x percent is entered. The VOC percent is automatically equal to the NO_x percent transfer. These vales are used on Sheets 03 and 06 in the NO_x transfer calculations.

RFP Milestone Year	Percent of NO _x Reductions to Transfer to Percent VOC Reductions	Percent of VOC Reductions Transferred from Percent NO _x Reductions
2011	15.58	15.58
2012	12.84	12.84

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Appendix 1 - Sheet 15

Enter Aircraft Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	0.000	0.000	0.000	0.0	0.000	0.000	0.000	0.0
2002 4 EC	8.310	8.310	0.000	0.0	5.581	5.581	0.000	0.0
2008 5 NDC	0.000	0.000	0.000	0.0	0.000	0.000	0.000	0.0
2008 4 EC	8.312	8.312	0.000	0.0	4.444	4.444	0.000	0.0
2011 9 County Total	7.302	7.302	0.000	0.0	3.733	3.733	0.000	0.0
2012 9 County Total	7.510	7.510	0.000	0.0	5.268	5.268	0.000	0.0

Appendix 1 - Sheet 16

Data Entry Sheet 1 of 6: Enter Area Source Emissions Inventory

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	3.29	3.29	0.000	0.0	32.58	32.58	0.000	0.0
2002 4 EC	35.34	35.34	0.000	0.0	214.45	214.45	0.000	0.0
2008 5 NDC	73.12	73.12	0.000	0.0	68.17	66.76	1.410	2.1
2008 4 EC	77.27	77.27	0.000	0.0	255.42	253.68	1.740	0.7
2011 9 County Total	168.66	40.56	128.100	76.0	352.63	346.64	5.990	1.7
2012 9 County Total	175.61	41.34	134.270	76.5	362.95	356.15	6.800	1.9

Appendix 1 - Sheet 17

Data Entry Sheet 1 of 6: Enter Biogenic Emissions Inventory
 DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	274.10	N/A	N/A	N/A	11.14	N/A	N/A	N/A
2002 4 EC	169.22	N/A	N/A	N/A	9.38	N/A	N/A	N/A

Appendix 1 - Sheet 18

Enter Oil and Gas Production, Drilling Rigs, Diesel Engines Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	4.25	4.25	0.000	0.0	0.32	0.32	0.000	0.0
2002 4 EC	4.58	4.58	0.000	0.0	0.34	0.34	0.000	0.0
2008 5 NDC	10.81	10.14	0.670	6.2	0.59	0.59	0.000	0.0
2008 4 EC	11.61	10.89	0.720	6.2	0.63	0.63	0.000	0.0
2011 9 County Total	18.78	17.62	1.164	6.2	0.86	0.86	0.000	0.0
2012 9 County Total	17.41	16.33	1.079	6.2	0.78	0.78	0.000	0.0

Appendix 1 - Sheet 19

Enter Ground Support Equipment (GSE) Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	0.000	0.000	0.000	0.0	0.000	0.000	0.000	0.0
2002 4 EC	2.603	2.603	0.000	0.0	0.807	0.807	0.000	0.0
2008 5 NDC	0.000	0.000	0.000	0.0	0.000	0.000	0.000	0.0
2008 4 EC	1.554	1.554	0.000	0.0	0.834	0.834	0.000	0.0
2011 9 County Total	0.933	0.933	0.000	0.0	0.292	0.292	0.000	0.0
2012 9 County Total	0.854	0.854	0.000	0.0	0.270	0.270	0.000	0.0

Appendix 1 - Sheet 20

Data Entry Sheet 1 of 6: Enter Locomotive Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	4.996	4.602	0.394	7.9	0.222	0.222	0.000	0.0
2002 4 EC	27.654	25.540	2.114	7.6	1.289	1.288	0.001	0.0
2008 5 NDC	4.307	2.974	1.333	31.0	0.191	0.175	0.016	8.6
2008 4 EC	23.840	17.058	6.782	28.4	1.111	1.014	0.097	8.8
2011 9 County Total	27.089	17.835	9.254	34.2	1.255	1.079	0.176	14.0
2012 9 County Total	27.470	15.972	11.499	41.9	1.272	0.954	0.318	25.0

Appendix 1 - Sheet 21

Data Entry Sheet 1 of 6: Enter NONROAD Categories Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	23.020	19.840	3.180	13.8	11.210	8.280	2.930	26.1
2002 4 EC	92.210	83.690	8.520	9.2	94.710	65.210	29.500	31.1
2008 5 NDC	24.140	13.780	10.360	42.9	12.930	6.650	6.280	48.6
2008 4 EC	102.100	65.580	36.520	35.8	110.000	48.470	61.530	55.9
2011 9 County Total	132.096	67.746	64.350	48.7	131.041	46.011	85.030	64.9
2012 9 County Total	135.159	63.569	71.590	53.0	133.765	42.565	91.200	68.2

Appendix 1 - Sheet 22

Data Entry Sheet 1 of 6: Enter On-road Mobile Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	77.931	62.106	15.825	20.3	27.321	20.008	7.313	26.8
2002 4 EC	431.519	291.901	139.618	32.4	197.282	119.688	77.594	39.3
2008 5 NDC	102.455	40.532	61.923	60.4	32.926	13.771	19.155	58.2
2008 4 EC	529.821	194.764	335.057	63.2	229.137	90.897	138.240	60.3
2011 9 County Total	707.873	197.054	510.818	72.2	293.756	89.536	204.221	69.5
2012 9 County Total	728.834	177.625	551.208	75.6	301.330	82.204	219.125	72.7

Appendix 1 - Sheet 23

Data Entry Sheet 1 of 6: Enter ABY On-Road Mobile Emissions Inventory

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson,
Kaufman, Parker, Rockwall, Tarrant

RFP Analysis Year	ABY NO_x (tpd)	ABY VOC (tpd)
2002, 5 NDC	77.93	27.32
2002, 4EC	431.52	197.28
2002 9 County Total	509.45	224.60
2008, 5 NDC	76.61	25.09
2008, 4 EC	434.61	188.62
2008 9 County Total	511.22	213.71
2011 9 County total	510.00	207.07
2012 9 County Total	514.62	211.37

Appendix 1 - Sheet 24

Data Entry Sheet 1 of 6: Enter Point Source Emissions Inventory
DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

'RFP Analysis Year	Uncontrolled NO _x (tpd)	Controlled NO _x (tpd)	Total Reduction NO _x (tpd)	Percent Reduction	Uncontrolled VOC (tpd)	Controlled VOC (tpd)	Total Reduction VOC (tpd)	Percent Reduction
2002 5 NDC	44.67	44.67	0.00	0.0	7.67	7.67	0.00	0.0
2002 4 EC	34.57	34.57	0.00	0.0	18.76	18.76	0.00	0.0
2008 5 NDC	45.44	38.78	6.66	14.7	12.32	12.17	0.15	1.2
2008 4 EC	39.70	10.43	29.27	73.7	19.02	19.02	0.00	0.0
2011 9 County Total	105.86	62.79	43.07	40.7	39.89	39.73	0.16	0.4
2012 9 County Total	102.10	58.87	43.23	42.3	40.74	40.58	0.16	0.4

Appendix 1 - Sheet 25

Enter 2008 Control Measure Reductions
 DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
 Five Newly Designated Nonattainment Counties: Ellis, Johnson, Kaufman, Parker, Rockwall

RFP Control Strategy Description	Source Category	Total 2002 to 2008 NO_x Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for 2008 RFP calculations? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NO _x controls	Point	6.66	0.00	Yes	No
Coating / printing rules	Point	0.00	0.15	Yes	No
Portable fuel containers	Area	0.00	0.12	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)					
Tier I and II locomotive NO _x standards	OR	61.92	19.16	Yes	Yes
Small non-road spark ignition (SI) engines (Phase I)	NR	1.33	0.02	Yes	No
Heavy duty non-road engines	NR	-0.02	2.05	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	4.67	1.13	Yes	No
Small non-road SI engines (Phase II)	NR	2.93	0.35	Yes	No
Large non-road SI & recreational marine	NR	0.12	1.84	Yes	No
Non-road TxLED	NR	1.61	1.03	Yes	No
Non-road RFG	NR	1.26	0.00	Yes	No
Tier 4	NR	0.00	0.00	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.00	0.04	Yes	No
Chapter 117 NO _x area source engine controls	UK	0.00	0.00	Yes	No
Drilling rig low emission diesel	UK	0.00	0.00	Yes	No
Non-road and Locomotive TERP	NR	0.11	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total		80.59	25.89		

Notes:

- 1) 5 NDC means the five newly designated counties and indicates values are for the five counties in the DFW ozone nonattainment area that were newly designated under the eight-hour ozone standard. Includes: Ellis, Johnson, Kaufman, Parker, and Rockwall Counties.
- 2) 4 EC means the four existing nonattainment counties and indicates values are for the four counties that had an existing designation under the one-hour ozone standard and were also designated under the eight-hour ozone standard. Includes: Collin, Dallas, Denton, and Tarrant Counties.
- 3) 9 County Total means the values include all nine DFW area nonattainment counties designated under the eight-hour ozone standard.
- 4) Unspecified control rows were created only to allow for planners to easily add controls for alternative scenario analyses.

Appendix 1 - Sheet 26

Enter 2008 Control Measure Reductions
 DFW Nonattainment Area Eight-hour Ozone Season VOC and NO_x
 Four Existing Nonattainment Counties: Collin, Dallas, Denton, Ellis, Tarrant

RFP Control Strategy Description	Source Category	Total 2002 to 2008 NO _x Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for 2008 RFP calculations? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	29.27	0.00	Yes	No
Coating / printing rules	Point	0.00	0.00	Yes	No
Portable fuel containers	Area	0.00	1.74	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	OR	335.06	138.24	Yes	Yes
Tier 1 and II locomotive NOX standards	NR	6.78	0.10	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-2.60	26.02	Yes	No
Heavy duty non-road engines	NR	12.84	3.45	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	9.80	2.95	Yes	No
Small non-road SI engines (Phase II)	NR	1.54	20.83	Yes	No
Large non-road SI & recreational marine	NR	11.31	5.35	Yes	No
Non-road TxLED	NR	4.38	0.00	Yes	No
Non-road RFG	NR	-0.71	3.87	Yes	No
Tier 4	NR	0.00	0.00	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.00	0.41	Yes	No
Chapter 117 NOX area source engine controls	UK	0.00	0.00	Yes	No
Drilling rig low emission diesel	UK	0.00	0.00	Yes	No
Non-road and Locomotive TERP	NR	0.54	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total		408.21	202.96		

Notes:

- 1) 5 NDC means the five newly designated counties and indicates values are for the five counties in the DFW ozone nonattainment area that were newly designated under the eight-hour ozone standard. Includes: Ellis, Johnson, Kaufman, Parker, and Rockwall Counties.
- 2) 4 EC means the four existing nonattainment counties and indicates values are for the four counties that had an existing designation under the one-hour ozone standard and were also designated under the eight-hour ozone standard. Includes: Collin, Dallas, Denton, and Tarrant Counties.
- 3) 9 County Total means the values include all nine DFW area nonattainment counties designated under the eight-hour ozone standard.
- 4) Unspecified control rows were created only to allow for planners to easily add controls for alternative scenario analyses.

Appendix 1 - Sheet 27

Enter 2011 Control Measure Reductions
 DFW Nonattainment Area Eight-hour Ozone Season VOC and NO_x
 Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

RFP Control Strategy Description	Source Category	Total 2002 to 2011 NO _x Emissions Reductions (tpd)	Total 2002 to 2011 VOC Emissions Reductions (tpd)	Use this control for 2011 RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	43.07	0.00	Yes	No
Coating / printing rules	Point	0.00	0.16	Yes	No
Portable fuel containers	Area	0.00	3.95	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	OR	510.82	204.22	Yes	Yes
Tier I and II locomotive NOX standards	NR	9.25	0.18	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-3.11	29.63	Yes	No
Heavy duty non-road engines	NR	19.49	5.30	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	20.00	4.36	Yes	No
Small non-road SI engines (Phase II)	NR	2.09	27.42	Yes	No
Large non-road SI & recreational marine	NR	19.99	0.47	Yes	No
Non-road TxLED	NR	5.79	0.00	Yes	No
Non-road RFG	NR	-0.82	4.36	Yes	No
Tier 4	NR	0.59	0.05	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.42	2.91	Yes	No
Chapter 117 NOX area source engine controls	UK	128.14	0.00	Yes	No
Drilling rig low emission diesel	UK	1.16	0.00	Yes	No
Non-road and Locomotive TERP	NR	2.91	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total		759.79	283.01		

Note: Unspecified control rows were created only to allow for planners to easily add controls for alternative scenario analyses.

Appendix 1 - Sheet 28

Enter 2012 Control Measure Reductions

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

RFP Control Strategy Description	Source Category	Total 2002 to 2012 NO _x Emissions Reductions (tpd)	Total 2002 to 2012 VOC Emissions Reductions (tpd)	Use this control for 2012 RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	43.22	0.00	Yes	No
Coating / printing rules	Point	0.00	0.16	Yes	No
Portable fuel containers	Area	0.00	4.69	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)					
Tier I and II locomotive NOX standards	OR	551.21	219.13	Yes	Yes
Small non-road spark ignition (SI) engines (Phase I)	NR	11.50	0.32	Yes	No
Heavy duty non-road engines	NR	-3.17	30.17	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	20.31	5.53	Yes	No
Small non-road SI engines (Phase II)	NR	22.34	4.70	Yes	No
Large non-road SI & recreational marine	NR	2.16	28.27	Yes	No
Non-road TxLED	NR	22.49	10.76	Yes	No
Non-road RFG	NR	5.77	0.00	Yes	No
Tier 4	NR	-0.82	4.47	Yes	No
Diesel recreational marine	NR	1.80	0.15	Yes	No
Small SI (Phase III)	NR	0.00	0.00	Yes	No
Chapter 117 NOX area source engine controls	UK	0.79	5.54	Yes	No
Drilling rig low emission diesel	UK	134.27	0.00	Yes	No
Non-road and Locomotive TERP	UK	1.08	0.00	Yes	No
This row not used for current RFP	NR	2.91	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total		815.86	313.89		

Note: Unspecified control rows were created only to allow for planners to easily add controls for alternative scenario analyses.

Appendix 1 - Sheet 29

Enter 2013 Contingency Measure Control Measure Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

RFP Control Strategy Description	Source Category	Total 2002 to 2013 NO _x Emissions Reductions (tpd)	Total 2002 to 2013 VOC Emissions Reductions (tpd)	Use this control for 2013 RFP contingency? (Yes or No)
Chapter 117 NOX controls	Point	0.00	0.00	No
Coating / printing rules	Point	0.00	0.00	No
Portable fuel containers	Area	0.00	4.78	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	OR	584.43	229.13	Yes
Tier I and II locomotive NOX standards	NR	12.03	0.37	Yes
Small non-road spark ignition (SI) engines (Phase I)	NR	-3.23	30.72	Yes
Heavy duty non-road engines	NR	21.05	5.75	Yes
Tiers 2 and 3 non-road diesel engines	NR	24.50	5.02	Yes
Small non-road SI engines (Phase II)	NR	2.23	28.99	Yes
Large non-road SI & recreational marine	NR	24.91	11.94	Yes
Non-road TxLED	NR	6.18	0.00	Yes
Non-road RFG	NR	-0.83	4.55	Yes
Tier 4	NR	3.55	0.27	Yes
Diesel recreational marine	NR	0.00	0.00	Yes
Small SI (Phase III)	NR	1.16	7.91	Yes
Chapter 117 NOX area source engine controls	UK	140.09	0.00	No
Drilling rig low emission diesel	UK	0.00	0.00	No
Non-road and Locomotive TERP	NR	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
This row not used for current RFP	UK	0.00	0.00	No
Total		816.07	329.43	

Note: Unspecified control rows were created only to allow for planners to easily add controls for alternative scenario analyses.

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Appendix 1 - Sheet 30

Calculate NDC 2002 RFP Base Year Emissions Inventory
 ('Add emissions from outside the nonattainment area that are to be included in RFP analysis.')

DFW Eight-Hour Ozone Nonattainment Area

Five Newly Designated Nonattainment Counties: Ellis, Johnson, Kaufman, Parker, Rockwall

The NDC 2002 Base Year Inventory	NO_x (tons/day)	VOC (tons/day)
Point Source NDC 2002 EI	44.67	7.67
Area Source NDC 2002 EI	3.29	32.58
On-Road Mobile NDC 2002 EI	62.11	20.01
Non-Road Mobile NDC 2002 EI	28.69	8.82
Biogenic NDC 2002 EI	274.10	11.14
Total NDC 2002 Base Year Inventory	412.86	80.22
The NDC 2002 RFP Base Year Inventory Out of Area Adjustments	NO_x (tons/day)	VOC (tons/day)
What is the total amount of biogenic emissions from sources in the area in tons/day for NDC 2002 to be subtracted?	274.10	11.14
What is the total amount of point source emissions from outside the nonattainment to be included/excluded for NDC 2002?	0.00	0.00
What is the total amount of area source emissions from outside the nonattainment to be included/excluded for NDC 2002?	0.00	0.00
What is the total amount of on-road source emissions from outside the nonattainment to be included/excluded for NDC 2002?	0.00	0.00
What is the total amount of non-road source emissions from outside the nonattainment to be included/excluded for NDC 2002?	0.00	0.00
Total NDC 2002 RFP Base Year Adjustments	274.10	11.14
Description	NO_x (tons/day)	VOC (tons/day)
Total NDC 2002 RFP Base Year Inventory with Adjustments	138.76	69.08

Notes:

- 1) Biogenic emissions are part of the 2002 BY inventory but are not included in the RFP calculations. One step in the RFP calculations is to subtract all biogenic emissions from the BY inventory.
- 2) Input lines allow for input of emissions from outside the subject counties to be included in the calculation of the RFP BY emissions. Emission reductions from the included sources can then be used to meet RFP requirements.
- 3) Values in lines should be input as positive values for emissions from outside the area that need to be included in the calculations and as negative values for emissions which need to be excluded from the RFP calculations.
- 4) 5 NDC means the five newly designated counties and indicates values are for the five counties in the DFW ozone nonattainment area that were newly designated under the eight-hour ozone standard. Includes: Ellis, Johnson, Kaufman, Parker, and Rockwall Counties.

Appendix 1 - Sheet 31

Calculate 2002 RFP Base Year Emissions Inventory
(Add emissions from outside the nonattainment area that are to be included in the RFP analysis.)

DFW Eight-Hour Ozone Nonattainment Area
Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant

The EC 2002 Base Year Inventory	NO_x (tons/day)	VOC (tons/day)
Point Source EC 2002 EI	34.57	18.76
Area Source EC 2002 EI	35.34	214.45
On-road mobile EC 2002 EI	291.90	119.69
Non-road mobile EC 2002 EI	124.72	73.23
Biogenic EC 2002 EI	169.22	9.38
Total EC 2002 Base Year Inventory	655.75	435.51
The EC 2002 RFP Base Year Inventory Out of Area Adjustments	NO_x (tons/day)	VOC (tons/day)
What is the total amount of biogenic emissions from sources in the area in tons/day for EC 2002 to be subtracted?	169.22	9.38
What is the total amount of point source emissions from outside the nonattainment to be included/excluded for EC 2002?	0.00	0.00
What is the total amount of area source emissions from outside the nonattainment to be included/excluded for EC 2002?	0.00	0.00
What is the total amount of on-road source emissions from outside the nonattainment to be included/excluded for EC 2002?	0.00	0.00
What is the total amount of non-road source emissions from outside the nonattainment to be included/excluded for EC 2002?	0.00	0.00
Total EC 2002 RFP Base Year Adjustments	169.22	9.38
Description	NO_x (tons/day)	VOC (tons/day)
Total EC 2002 RFP Base Year Inventory with Adjustments	486.53	426.13

Notes:

- 1) Biogenic emissions are part of the 2002 BY Inventory but are not included in the RFP calculations. One step in the RFP calculations is to subtract all biogenic emissions from the BY inventory.
- 2) Input lines allow for input of emissions from outside the subject counties to be included in the calculation of the RFP BY emissions. Emission reductions from the included sources can then be used to meet RFP requirements.
- 3) Values in lines should be input as positive values for emissions from outside the area that need to be included in the calculations and as negative values for emissions which need to be excluded from the RFP calculations.
- 4) 4 EC means the four existing nonattainment counties and indicates values are for the four counties that had an existing designation under the one-hour ozone standard and were also designated under the eight-hour ozone standard. Includes: Collin, Dallas, Denton, and Tarrant Counties.

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Appendix 9 - Sheet 32

2008 Forecasted Uncontrolled Emissions Inventory with Pre-2002 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker,
Rockwall, Tarrant

Uncontrolled EI with pre-2002 controls: These calculations sum the total uncontrolled NO_x and VOC emissions (tpd) for the 2008 RFP milestone year. The totals for each source category used in these calculations were entered on enter EI sheets.

Forecasted 2008 Uncontrolled Emissions Inventory with Pre-2002 Controls		
Emissions Description	NO _x (tpd)	VOC (tpd)
Point Source	85.140	31.340
Area Source	150.390	323.590
On-Road Mobile Source	632.276	262.063
Non-Road Mobile Source	186.672	130.726
Nine County Total	1054.478	747.718

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2011 Forecasted Uncontrolled Emissions Inventory with Pre-2002 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker,
Rockwall, Tarrant

Uncontrolled EI with pre-2002 controls: These calculations add up to the total uncontrolled NO_x and VOC emissions (tpd) for the 2011 RFP milestone year. The totals for each source category used in these calculations were entered on enter EI sheets.

Forecasted 2011 Uncontrolled Emissions Inventory with Pre-2002 Controls		
Emissions Description	NO _x (tpd)	VOC (tpd)
Point Source	105.860	39.890
Area Source	168.660	352.630
On-Road Mobile Source	707.873	293.756
Non-Road Mobile Source	186.201	137.184
Total	1168.594	823.461

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Appendix 1 - Sheet 34

2012 Forecasted Uncontrolled Emissions Inventory with Pre-2002 Controls
DFW Nonattainment Area Eight-hour Ozone Season VOC and NO_x
Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker,
Rockwall, Tarrant

Uncontrolled EI with pre-2002 controls: These calculations add up to the total uncontrolled NO_x and VOC emissions (tpd) for the 2012 RFP milestone year. The totals for each source category used in these calculations were entered on enter EI sheets.

Forecasted 2012 Uncontrolled Emissions Inventory with Pre-2002 Controls		
Emissions Description	NO _x (tpd)	VOC (tpd)
Point Source	102.100	40.740
Area Source	175.610	362.950
On-Road Mobile Source	728.834	301.330
Non-Road Mobile Source	188.401	141.358
Total	1194.945	846.378

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Appendix 1 - Sheet 35

Calculations: NDC 2002 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Five Newly Designated Nonattainment Counties: Ellis, Johnson, Kaufman, Parker, Rockwall

ABY EI with pre-1990 controls: These calculations add up to the total ABY NO_x and VOC emissions (tpd) for the 2002 RFP BY. The totals for each source category used in these calculations were entered on enter EI sheets. For on-road mobile sources, there are separate data entry sheets for the ABY inventory for each milestone year. For all other source categories, the 2002 ABY is equal to the BY because there are no non-creditable controls for point, area or non-road sources after 2002.

NDC 2002 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls		
Emissions Description	NO_x (tpd)	VOC (tpd)
Point Source NDC 2002 BY EI	44.67	7.67
Area Source NDC 2002 BY EI	3.29	32.58
On-Road Mobile Source NDC 2002 ABY EI	62.11	20.01
Non-Road Mobile Source NDC 2002 BY EI	28.69	8.82
Total NDC 2002 RFP Adjusted Base Year Emissions Inventory	138.76	69.08

Note: The ABY EIs for all source categories except on-road mobile are identical to the BY EI. For on-road mobile, the ABY EI is calculated using 2002 VMT and emission factors that account only for the effects of pre-1990 FCAA controls. Since there is fleet turnover from Tier 0 vehicles between 1990 and 2002, the ABY EI for 2008 is less than the ABY for 2002.

Appendix 9 - Sheet 36

Calculations: EC 2002 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
 DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
 Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant

ABY EI with pre-1990 controls: These calculations add up to the total ABY NO_x and VOC emissions (tpd) for the 2002 RFP BY. The totals for each source category used in these calculations were entered on enter EI sheets. For on-road mobile sources, there are separate data entry sheets for the ABY inventory for each milestone year. For all other source categories, the 2002 ABY is equal to the BY because there are no non-creditable controls for point, area or non-road sources after 2002.

EC 2002 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls		
Emissions Description	NO_x (tpd)	VOC (tpd)
Point Source 2002 BY EI	34.57	18.76
Area Source 2002 BY EI	35.34	214.45
On-Road Mobile Source 2002 ABY EI	291.90	119.69
Non-Road Mobile Source 2002 BY EI	124.72	73.23
Total 2002 RFP Adjusted Base Year Emissions Inventory	486.53	426.13

Note: The ABY EI for all source categories except on-road mobile are identical to the BY EI. For on-road mobile, the ABY EI is calculated using 2002 VMT and emission factors that account only for the effects of pre-1990 FCAA controls. Since there is fleet turnover from Tier 0 vehicles between 1990 and 2002, the ABY EI for 2008 is less than the ABY for 2002.

Appendix 1 - Sheet 37

Calculations: NDC 2008 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Five Newly Designated Nonattainment Counties: Ellis, Johnson, Kaufman, Parker, Rockwall

ABY EI with pre-1990 controls: These calculations add up to the total ABY NO_x and VOC emissions (tpd) for the 2002 RFP BY. The totals for each source category used in these calculations were entered on enter EI sheets. For on-road mobile sources, there are separate data entry sheets for the ABY inventory for each milestone year. For all other source categories, the 2002 ABY is equal to the BY because there are no non-creditable controls for point, area or non-road sources after 2002.

NDC 2008 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls		
Emissions Description	NO_x (tpd)	VOC (tpd)
Point Source 2002 BY EI	44.67	7.67
Area Source 2002 BY EI	3.29	32.58
On-Road Mobile Source 2008 ABY EI	60.78	17.78
Non-Road Mobile Source 2002 BY EI	28.69	8.82
Total 2008 RFP Adjusted Base Year Emissions Inventory	137.44	66.85

Note: The ABY EI for all source categories except on-road mobile are identical to the BY EI. For on-road mobile, the ABY EI is calculated using 2002 VMT and emission factors that account only for the effects of pre-1990 FCAA controls. Since there is fleet turnover from Tier 0 vehicles between 2002 and 2008, the ABY EI for 2008 is less than the ABY for 2002.

Appendix 1 - Sheet 38

Calculations: EC 2008 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant

ABY EI with pre-1990 controls: These calculations add up to the total ABY NO_x and VOC emissions (tpd) for the 2002 RFP BY. The totals for each source category used in these calculations were entered on enter EI sheets. For on-road mobile sources, there are separate data entry sheets for the ABY inventory for each milestone year. For all other source categories, the 2002 ABY is equal to the BY because there are no non-creditable controls for point, area or non-road sources after 2002.

EC 2008 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls		
Emissions Description	NO_x (tpd)	VOC (tpd)
Point Source 2002 BY EI	34.57	18.76
Area Source 2002 BY EI	35.34	214.45
On-Road Mobile Source 2008 ABY EI	294.99	111.03
Non-Road Mobile Source 2002 BY EI	124.72	73.23
Total 2002 RFP Adjusted Base Year Emissions Inventory	489.62	417.47

Note: The ABY EI for all source categories except on-road mobile are identical to the BY EI. For on-road mobile, the ABY EI is calculated using 2002 VMT and emission factors that account only for the effects of pre-1990 FCAA controls. Since there is fleet turnover from Tier 0 vehicles between 2002 and 2008, the ABY EI for 2008 is less than the ABY for 2002.

Appendix 1 - Sheet 39

Calculations: 2011 Adjusted Base Year Emissions Inventory with Pre-1990 Controls

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

ABY EI with pre-1990 controls: These calculations sum the total ABY NO_x and VOC emissions (tpd) for the 2002 RFP BY. The totals for each source category used in these calculations were entered on enter EI sheets. For on-road mobile sources, there are separate data entry sheets for the ABY inventory for each milestone year. For all other source categories, the 2002 ABY is equal to the BY because there are no non-creditable controls for point, area or non-road sources after 2002.

2011 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls		
Emissions Description	NO_x (tpd)	VOC (tpd)
Point Source 2002 BY EI	79.24	26.43
Area Source 2002 BY EI	38.63	247.03
On-road Mobile Source 2011 ABY EI	354.56	122.16
Non-road Mobile Source 2002 BY EI	153.41	82.05
Total 2011 RFP Adjusted Base Year Emissions Inventory	625.84	477.67

Note: The ABY EI for all source categories except on-road mobile are identical to the BY EI. For on-road mobile, the ABY EI is calculated using 2002 VMT and emission factors that account only for the effects of pre-1990 FCAA controls. Since there is fleet turnover from Tier 0 vehicles between 2008 and 2011, the ABY EI for 2011 is less than the ABY for 2008.

Appendix 1 - Sheet 40

Calculations: 2012 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

ABY EI with pre-1990 controls: These calculations sum the total ABY NO_x and VOC emissions (tpd) for the 2002 RFP BY. The totals for each source category used in these calculations were entered on enter EI sheets. For on-road mobile sources, there are separate data entry sheets for the ABY inventory for each milestone year. For all other source categories, the 2002 ABY is equal to the BY because there are no non-creditable controls for point, area or non-road sources after 2002.

2012 RFP Adjusted Base Year Emissions Inventory with pre-1990		
Emissions Description	NO_x (tpd)	VOC (tpd)
Point Source 2002 BY EI	79.24	26.43
Area Source 2002 BY EI	38.63	247.03
On-road Mobile Source 2012 ABY EI	359.18	126.46
Non-road Mobile Source 2002 BY EI	153.41	82.05
Total 2012 RFP Adjusted Base Year Emissions Inventory	630.46	481.97

Note: The ABY EI for all source categories except on-road mobile are identical to the BY EI. For on-road mobile, the ABY EI is calculated using 2002 VMT and emission factors that account only for the effects of pre-1990 FCAA controls. Since there is fleet turnover from Tier 0 vehicles between 2011 and 2012, the ABY EI for 2012 is less than the ABY for 2011.

Appendix 1 - Sheet 41

Calculations: NDC 2002-2008 Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
Five Newly Designated Nonattainment Counties: Ellis, Johnson, Kaufman, Parker, Rockwall

Explanation: The control strategy name, control reduction amount, status of inclusion of the control in the RFP calculations, and whether or not the control is for on-road mobile sources were all input in sheet "28 Enter Reductions 2008." The reduction is the reduction that is creditable from each control between 2002 and 2008. If the control has been turned off by inputting a "No" in the "Use this control for 2008 RFP demonstration?" column, the spreadsheet will put a zero in for the reduction for that control on this sheet, even if a positive value for the control was input into the Enter Reductions 2008 sheet. If it was intended to have a positive reduction for the control but there is a zero, go back to the Enter Reductions Sheet and change the No to a Yes indicating that the control will be used for the RFP demonstration.

RFP Control Strategy Description	Source Category	Total 2002 to 2008 NO _x Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	6.66	0.00	Yes	No
Coating / printing rules	Point	0.00	0.15	Yes	No
Portable fuel containers	Area	0.00	0.12	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)					
	OR	61.92	19.16	Yes	Yes
Tier I and II locomotive NOX standards	NR	1.33	0.02	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-0.02	2.05	Yes	No
Heavy duty non-road engines	NR	4.67	1.13	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	2.93	0.35	Yes	No
Small non-road SI engines (Phase II)	NR	0.12	1.84	Yes	No
Large non-road SI & recreational marine	NR	1.61	1.03	Yes	No
Non-road TxLED	NR	1.26	0.00	Yes	No
Non-road RFG	NR	0.00	0.00	Yes	No
Tier 4	NR	0.00	0.00	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.00	0.04	Yes	No
Chapter 117 NOX area source engine controls	UK	0.00	0.00	Yes	No
Drilling rig low emission diesel	UK	0.00	0.00	Yes	No
Non-road and Locomotive TERP	NR	0.11	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total 2008 RFP Control Reductions		80.59	25.89		

Appendix 1 - Sheet 42

Calculations: EC 2002-2008 Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x
Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant

Explanation: The control strategy name, control reduction amount, status of inclusion of the control in the RFP calculations, and whether or not the control is for on-road mobile sources were all input in sheet "28 Enter Reductions 2008." The reduction is the reduction that is creditable from each control between 2002 and 2008. If the control has been turned off by inputting a "No" in the "Use this control for 2008 RFP demonstration?" column, the spreadsheet will put a zero in for the reduction for that control on this sheet, even if a positive value for the control was input into the Enter Reductions 2008 sheet. If it was intended to have a positive reduction for the control but there is a zero, go back to the Enter Reductions Sheet and change the No to a Yes indicating that the control will be used for RFP demonstration.

RFP Control Strategy Description	Source Category	Total 2002 to 2008 NO _x Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	29.27	0.00	Yes	No
Coating / printing rules	Point	0.00	0.00	Yes	No
Portable fuel containers	Area	0.00	1.74	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)					
	OR	335.06	138.24	Yes	Yes
Tier I and II locomotive NOX standards	NR	6.78	0.10	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-2.60	26.02	Yes	No
Heavy duty non-road engines	NR	12.84	3.45	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	9.80	2.95	Yes	No
Small non-road SI engines (Phase II)	NR	1.54	20.83	Yes	No
Large non-road SI & recreational marine	NR	11.31	5.35	Yes	No
Non-road TxLED	NR	4.38	0.00	Yes	No
Non-road RFG	NR	-0.71	3.87	Yes	No
Tier 4	NR	0.00	0.00	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.00	0.41	Yes	No
Chapter 117 NOX area source engine controls	UK	0.00	0.00	Yes	No
Drilling rig low emission diesel	UK	0.00	0.00	Yes	No
Non-road and Locomotive TERP	NR	0.54	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total 2008 RFP Control Reductions		408.21	202.96		

Appendix 1 - Sheet 43

Calculations: Combined NDC and EC 2002-2008 Control Measures Reductions

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Explanation: The control strategy name, control reduction amount, status of inclusion of the control in the RFP calculations, and whether or not the control is for on-road mobile sources were all input in sheet "28 Enter Reductions 2008." The reduction is the reduction that is creditable from each control between 2002 and 2008. If the control has been turned off by inputting a "No" in the "Use this control for 2008 RFP demonstration?" column, the spreadsheet will put a zero in for the reduction for that control on this sheet, even if a positive value for the control was input into the Enter Reductions 2008 sheet. If it was intended to have a positive reduction for the control but there is a zero, go back to the Enter Reductions Sheet and change the No to a Yes indicating that the control will be used for RFP demonstration.

RFP Control Strategy Description	Source Category	Total 2002 to 2008 NO_x Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	35.93	0.00	Yes	No
Coating / printing rules	Point	0.00	0.15	Yes	No
Portable fuel containers	Area	0.00	1.86	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	OR	396.98	157.39	Yes	Yes
Tier I and II locomotive NOX standards	NR	8.11	0.12	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-2.62	28.07	Yes	No
Heavy duty non-road engines	NR	17.51	4.58	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	12.73	3.30	Yes	No
Small non-road SI engines (Phase II)	NR	1.66	22.67	Yes	No
Large non-road SI & recreational marine	NR	12.92	6.38	Yes	No
Non-road TxLED	NR	5.64	0.00	Yes	No
Non-road RFG	NR	-0.71	3.87	Yes	No
Tier 4	NR	0.00	0.00	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.00	0.45	Yes	No
Chapter 117 NOX area source engine controls	UK	0.00	0.00	Yes	No
Drilling rig low emission diesel	UK	0.00	0.00	Yes	No
Non-road and Locomotive TERP	NR	0.65	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total 2008 RFP Control Reductions		488.80	228.84		

Appendix 1 - Sheet 44

Calculations: 2008-2011 Control Measures Reductions

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Explanation: The control strategy name, control reduction amount, status of inclusion of the control in the RFP calculations, and whether or not the control is for on-road mobile sources were all input in sheet "28 Enter Reductions 2008." The reduction is the reduction that is creditable from each control between 2002 and 2008. If the control has been turned off by inputting a "No" in the "Use this control for 2008 RFP demonstration?" column, the spreadsheet will put a zero in for the reduction for that control on this sheet, even if a positive value for the control was input into the Enter Reductions 2008 sheet. If it was intended to have a positive reduction for the control but there is a zero, go back to the Enter Reductions Sheet and change the No to a Yes indicating that the control will be used for RFP demonstration.

Creditable Reductions Control Strategy	Source Category	Total 2008 to 2011 NO _x Emissions Reductions (tpd)	Total 2008 to 2011 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	7.14	0.00	Yes	No
Coating / printing rules	Point	0.00	0.01	Yes	No
Portable fuel containers	Area	0.00	2.09	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)					
Tier 1 and II locomotive NOX standards	OR	113.84	46.83	Yes	Yes
Small non-road spark ignition (SI) engines (Phase I)	NR	1.14	0.06	Yes	No
Heavy duty non-road engines	NR	-0.49	1.56	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	1.98	0.72	Yes	No
Small non-road SI engines (Phase II)	NR	7.27	1.06	Yes	No
Large non-road SI & recreational marine	NR	0.43	4.75	Yes	No
Non-road TxLED	NR	7.07	-5.91	Yes	No
Non-road RFG	NR	0.15	0.00	Yes	No
Tier 4	NR	-0.11	0.49	Yes	No
Diesel recreational marine	NR	0.59	0.05	Yes	No
Small SI (Phase III)	NR	0.00	0.00	Yes	No
Chapter 117 NOX area source engine controls	UK	0.42	2.46	Yes	No
Drilling rig low emission diesel	UK	128.14	0.00	Yes	No
Non-road and Locomotive TERP	UK	1.16	0.00	Yes	No
This row not used for current RFP	UK	2.26	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total 2011 RFP Control Reductions		270.99	54.17		

Appendix 1 - Sheet 45

Calculations: 2002-2012 Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Explanation: The control strategy name, control reduction amount, status of inclusion of the control in the RFP calculations, and whether or not the control is for on-road mobile sources were all input in sheet "28 Enter Reductions 2008." The reduction is the reduction that is creditable from each control between 2002 and 2008. If the control has been turned off by inputting a "No" in the "Use this control for 2008 RFP demonstration?" column, the spreadsheet will put a zero in for the reduction for that control on this sheet, even if a positive value for the control was input into the Enter Reductions 2008 sheet. If it was intended to have a positive reduction for the control but there is a zero, go back to the Enter Reductions Sheet and change the No to a Yes indicating that the control will be used for RFP demonstration.

Creditable Reductions Control Strategy	Source Category	Total 2011 to 2012 NO_x Emissions Reductions (tpd)	Total 2011 to 2012 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration? (Yes or No)	Is this an on-road mobile control that will change the MVEB? (Yes or No)
Chapter 117 NOX controls	Point	0.15	0.00	Yes	No
Coating / printing rules	Point	0.00	0.00	Yes	No
Portable fuel containers	Area	0.00	0.74	Yes	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	OR	40.39	14.90	Yes	Yes
Tier I and II locomotive NOX standards	NR	2.25	0.14	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-0.06	0.54	Yes	No
Heavy duty non-road engines	NR	0.82	0.23	Yes	No
Tiers 2 and 3 non-road diesel engines	NR	2.34	0.34	Yes	No
Small non-road SI engines (Phase II)	NR	0.07	0.85	Yes	No
Large non-road SI & recreational marine	NR	2.50	10.29	Yes	No
Non-road TxLED	NR	-0.02	0.00	Yes	No
Non-road RFG	NR	0.00	0.11	Yes	No
Tier 4	NR	1.21	0.10	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small SI (Phase III)	NR	0.37	2.63	Yes	No
Chapter 117 NOX area source engine controls	UK	6.13	0.00	Yes	No
Drilling rig low emission diesel	UK	-0.08	0.00	Yes	No
Non-road and Locomotive TERP	NR	0.00	0.00	Yes	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
This row not used for current RFP	UK	0.00	0.00	No	No
Total RFP Control Reductions		56.07	30.87		

Appendix 1 - Sheet 46

Calculations: 2012-2013 Contingency Control Measures Reductions

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO_x

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Explanation: The control strategy name, control reduction amount, status of inclusion of the control in the RFP calculations, and whether or not the control is for on-road mobile sources were all input in sheet "28 Enter Reductions 2008." The reduction is the reduction that is creditable from each control between 2002 and 2008. If the control has been turned off by inputting a "No" in the "Use this control for 2008 RFP demonstration?" column, the spreadsheet will put a zero in for the reduction for that control on this sheet, even if a positive value for the control was input into the Enter Reductions 2008 sheet. If it was intended to have a positive reduction for the control but there is a zero, go back to the Enter Reductions Sheet and change the No to a Yes indicating that the control will be used for RFP demonstration.

RFP Control Strategy Description	Source Category	Total 2012 to 2013 NO_x Emissions Reductions (tpd)	Total 2012 to 2013 VOC Emissions Reductions (tpd)	Use this control for 2013 RFP contingency demonstration? (Yes or No)
Chapter 117 NOX controls	Point	0.000	0.000	No
Coating / printing rules	Point	0.000	0.000	No
Portable fuel containers	Area	0.000	0.000	No
Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), reformulated gasoline (RFG), and on-road TxLED (Note: This list of controls is the complete list for the 9 DFW counties. However, RFG is required, and all control reductions are modeled with RFG, only in the 4 core counties.)	OR	33.219	10.009	Yes
Tier I and II locomotive NOX standards	NR	0.530	0.050	Yes
Small non-road spark ignition (SI) engines (Phase I)	NR	-0.060	0.550	Yes
Heavy duty non-road engines	NR	0.740	0.220	Yes
Tiers 2 and 3 non-road diesel engines	NR	2.160	0.320	Yes
Small non-road SI engines (Phase II)	NR	0.070	0.720	Yes
Large non-road SI & recreational marine	NR	2.420	1.180	Yes
Non-road TxLED	NR	0.410	0.000	Yes
Non-road RFG	NR	-0.010	0.080	Yes
Tier 4	NR	1.750	0.120	Yes
Diesel recreational marine	NR	0.000	0.000	Yes
Small SI (Phase III)	NR	0.370	2.370	Yes
Chapter 117 NOX area source engine controls	UK	0.000	0.000	No
Drilling rig low emission diesel	UK	0.000	0.000	No
Non-road and Locomotive TERP	NR	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
This row not used for current RFP	UK	0.000	0.000	No
Total RFP Control Reductions		41.599	15.619	

Appendix 1 - Sheet 47

Summary Sheet: Uncontrolled NO_x Emissions Inventory

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall,
Tarrant

Uncontrolled NO_x (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 NDC	44.67	3.29	32.27	77.93	158.16
2002 EC	34.57	35.34	135.35	431.52	636.78
2008 NDC	45.44	73.12	39.26	102.45	260.27
2008 EC	39.70	77.27	147.41	529.82	794.21
2011	105.86	168.66	186.20	707.87	1168.59
2012	102.10	175.61	188.40	728.83	1194.94

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Uncontrolled NO_x (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 9 Counties	79.24	38.63	167.62	509.45	794.94
2008 9 Counties	85.14	150.39	186.67	632.28	1054.48
2011 9 Counties	105.86	168.66	186.20	707.87	1168.59
2012 9 Counties	102.10	175.61	188.40	728.83	1194.94

Note: The controlled inventory shown here includes all controls. The controlled RFP inventory may not include all controls and may therefore be a higher value than shown here.

Appendix 1 - Sheet 48

Summary Sheet: Controlled NO_x Emissions Inventory

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Controlled NO_x (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 NDC	44.67	3.29	28.69	62.11	138.76
2002 EC	34.57	35.34	124.72	291.90	486.53
2008 NDC	38.78	73.12	26.89	40.53	179.33
2008 EC	10.43	77.27	103.39	194.76	385.86
2011	62.79	40.56	111.43	197.05	411.84
2012	58.87	41.34	104.23	177.63	382.07

Note: The controlled inventory shown here includes all controls. The controlled RFP inventory may not include all controls and may therefore be a higher value than shown here.

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Controlled NO_x (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 9 Counties	79.24	38.63	153.41	354.01	625.29
2008 9 Counties	49.21	150.39	130.29	235.30	565.18
2011 9 Counties	62.79	40.56	111.43	197.05	411.84
2012 9 Counties	58.87	41.34	104.23	177.63	382.07

Note: The controlled inventory shown here includes all controls. The controlled RFP inventory may not include all controls and may therefore be a higher value than shown here.

Appendix 1 - Sheet 49

Summary Sheet: Uncontrolled VOC Emissions Inventory

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall,
Tarrant

Uncontrolled VOC (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 NDC	7.67	32.58	11.75	27.32	79.32
2002 EC	18.76	214.45	102.73	197.28	533.22
2002 Total	26.43	247.03	114.48	224.60	612.54
2008 NDC	12.32	68.17	13.71	32.93	127.12
2008 EC	19.02	255.42	117.02	229.14	620.60
2008 Total	31.34	323.59	130.73	262.06	747.72
2011	39.89	352.63	137.18	293.76	823.46
2012	40.74	362.95	141.36	301.33	846.38

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Uncontrolled VOC (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 9 Counties	26.43	247.03	114.48	224.60	612.54
2008 9 Counties	31.34	323.59	130.73	262.06	747.72
2011 9 Counties	39.89	352.63	137.18	293.76	823.46
2012 9 Counties	40.74	362.95	141.36	301.33	846.38

Note: The controlled inventory shown here includes all controls. The controlled RFP inventory may not include all controls and may therefore be a higher value than shown here.

Appendix 1 - Sheet 50

Summary Sheet: Controlled VOC Emission Inventory

DFW Eight-Hour Ozone Nonattainment Area

Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Controlled VOC (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile Sources	On-Road Mobile Sources	Total
2002 NDC	7.67	32.58	8.82	20.01	69.08
2002 EC	18.76	214.45	73.23	119.69	426.13
2002 Total	26.43	247.03	82.05	139.70	495.21
2008 NDC	12.17	66.76	7.41	13.77	100.11
2008 EC	19.02	253.68	55.39	90.90	418.99
2008 Total	31.19	320.44	62.80	104.67	519.10
2011	39.73	346.64	51.98	89.54	527.88
2012	40.58	356.15	49.84	82.20	528.77

Note: The controlled inventory shown here includes all controls. The controlled RFP inventory may not include all controls and may therefore be a higher value than shown here.

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Controlled VOC (tons per day)

RFP Analysis Year	Point Sources	Area Sources	Non-Road Mobile	On-Road Mobile	Total
2002 9 Counties	26.43	247.03	82.05	139.70	495.21
2008 9 Counties	31.19	320.44	62.80	104.67	519.10
2011 9 Counties	39.73	346.64	51.98	89.54	527.88
2012 9 Counties	40.58	356.15	49.84	82.20	528.77

Note: The controlled inventory shown here includes all controls. The controlled RFP inventory may not include all controls and may therefore be a higher value than shown here.