

APPENDIX 1

**MOBILE6.2-BASED DALLAS-FORT WORTH
NONATTAINMENT AREA REASONABLE FURTHER
PROGRESS DEMONSTRATION CALCULATIONS
SPREADSHEET**

Appendix 1 - Sheet 1

Dallas-Fort Worth (DFW) Eight-Hour Ozone Nonattainment Area
 Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant
 MOBILE-Based Reasonable Further Progress (RFP) Demonstration Calculation Spreadsheet
 Table of Contents

Sheet Number	Sheet Name	Sheet Description
1	01 Table of Contents	Reasonable Further Progress Demonstration Calculation Spreadsheet - Table of Contents
2	02 Calc RFP DEM 2011	2012 RFP Demonstration Analysis
3	03 Calc 2012 RFP Contingency	2012 RFP Contingency Demonstration
4	04 Calc RFP DEM 2012	2012 RFP Demonstration Analysis
5	05 Calc 2013 RFP Contingency	2013 RFP Contingency Demonstration
6	06 Calc 2013 AD contingency	2013 Attainment Contingency Analysis
7	07 Calc 2011 RFP MVEB	Calculation of 2011 RFP Motor Vehicle Emissions Budgets
8	08 Calc 2012RFP MVEB	Calculation of 2012 RFP Motor Vehicle Emissions Budgets
9	09 Calc NonCred Red	Calculation of RFP Non-Creditable Reductions from Pre-1990 FMVCP
10	10 Calc Red for % Red	Calculate the Reductions to Meet the 3% Per Year And 3% Contingency Requirements
11	11 Calc Targets	Calculation of Post-2002 Target Levels of VOC and NOx Emissions
12	12 Enter % RFP Cont & Conf SM	Enter Percent Reductions from NOx and VOC for 3% RFP, 3% Contingency and Conformity Safety Margins
13	13 Enter Aircraft EI	Enter Aircraft EI, All Years, Controlled and Uncontrolled
14	14 Enter Area EI	Enter Area Source EI, All Years, Controlled and Uncontrolled
15	15 Enter Biogenics EI	Enter Biogenics EI, Only 2002 Base Year
16	16 Enter Drilling Rigs DE EI	Enter Oil and Gas Production, Drilling Rigs, Diesel Engines EI, All Years, Controlled and Uncontrolled
17	17 Enter GSE EI	Enter Ground Support Equipment EI, All Years, Controlled and Uncontrolled
18	18 Enter Locomotive EI	Enter Locomotive EI, All Years, Controlled and Uncontrolled
19	19 Enter NONROAD Categories EI	Enter NONROAD Model Categories EI, All Years, Controlled and Uncontrolled
20	20 Enter On-road EI	Enter On-road EI, All Years, Controlled and Uncontrolled
21	21 Enter ABY On-road EI	Enter Adjusted Base Year (ABY) On-road EI, All Years
22	22 Enter Point EI	Enter Point Source EI, All Years, Controlled and Uncontrolled
23	23 Enter Reductions 5 NDC 2008	Enter All Source Control Reductions for RFP Anlysis Year 2008 for 5 NDCs
24	24 Enter Reductions 4 EC 2008	Enter All Source Control Reductions for RFP Anlysis Year 2008 for 4 ECs
25	25 Enter Reductions 2011	Enter All Source Control Reductions for RFP Anlysis Year 2011
26	26 Enter Reductions 2012	Enter All Source Control Reductions for RFP Anlysis Year 2012
27	27 Enter Cont Reductions 2013	Enter All Source Control Reductions for RFP Contingency Year 2012 to 2013
28	28 Calc 5 NDC 2002 Base Year EI	Calculation of 5 NDCs 2002 RFP Base Year Emission Inventory
29	29 Calc 4 EC 2002 Base Year EI	Calculation of 4 ECs 2002 RFP Base Year Emission Inventory
30	30 Calc Uncontrolled 2008 EI	Calculation of Uncontrolled 2008 Forecasted RFP Emission Inventory
31	31 Calc Uncontrolled 2011 EI	Calculation of Uncontrolled 2011 Forecasted RFP Emission Inventory
32	32 Calc Uncontrolled 2012 EI	Calculation of Uncontrolled 2012 Forecasted RFP Emission Inventory
33	33 Calc ABY 5 NDC 2002	Calculation of 5 NDCs 2002 ABY RFP Emission Inventory
34	34 Calc ABY 4 EC 2002	Calculation of 5 ECs 2002 ABY RFP Emission Inventory
35	35 Calc ABY 5 NDC 2008	Calculation of 5 NDCs 2008 ABY RFP Emission Inventory
36	36 Calc ABY 4 EC 2008	Calculation of 4 ECs 2008 ABY RFP Emission Inventory
37	37 Calc ABY 2011	Calculation of 2011 ABY RFP Emission Inventory
38	38 Calc ABY 2012	Calculation of 2012 ABY RFP Emission Inventory
39	39 Calc Control 5 NDC 2008	Individual Quantification and Calculation of Total Creditable RFP Control Reductions for 5 NDCs for 2008
40	40 Calc Control 4 EC 2008	Individual Quantification and Calculation of Total Creditable RFP Control Reductions for 4 ECs for 2008
41	41 Control Total 2008 REF	Individual Q!uantification and Calculation of Total Creditable RFP Control Reductions for 2008: All DFW Counties
42	42 Calc Control 2011	Individual Quantification and Calculation of Total Creditable RFP Control Reductions for 2011
43	43 Calc Control 2012	Individual Quantification and Calculation of Total Creditable RFP Control Reductions for 2012
44	44 Calc Control 2013	Individual Quantification and Calculation of Total Creditable RFP Control Reductions for 2013 Contingency
45	45 EI summary Uncontrolled NOx	Summary Uncontrolled NOx EI by Major Source Categories
46	46 EI summary Controlled NOx	Summary Controlled NOx EI by Major Source Categories
47	47 EI summary Uncontrolled VOC	Summary Uncontrolled VOC EI by Major Source Categories
48	48 EI summary Controlled VOC	Summary Controlled VOC EI by Major Source Categories

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 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, the 2011 RFP requirement is satisfied.

Line #	Description	NOx (tpd)	VOC (tpd)
Line 1	Uncontrolled emissions forecast with growth	899.32	802.20
Line 2	Creditable RFP control reductions for newly designated counties (NDC) 2008	56.82	21.22
Line 3	Creditable RFP control reductions for existing counties (EC) 2008	253.95	185.68
Line 4	Creditable RFP control reductions for 2008 to 2011	234.39	56.57
Line 5	Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3 minus Line 4)	354.16	538.73
Line 6	Amount of creditable reductions reserved for 2012 contingency	15.43	0.00
Line 7	Amount of NOx reduction substitution	39.32	-39.32
Line 8	Controlled RFP forecast without reductions reserved for contingency and accounting for NOx substitution (Line 5 plus Line 6 plus Line 7)	408.92	499.41
Line 9	2011 RFP target level of emissions	408.93	463.90
Line 10	Excess (+) / Shortfall (-) (Line 9 minus Line 8)	0.01	-35.52
Line 11	Is controlled RFP EI less than target level of emissions?	Yes	No

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

2012 Contingency Demonstration for RFP

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

Contingency Element Description	NOx	VOC
2012 adjusted base year (ABY) EI	514.47	473.32
Percent for 2012 contingency calculation (total of 3%)	3.00	0.00
2011 to 2012 required contingency reductions (ABY EI x (contingency percent))	15.43	0.00
Control reductions to meet contingency requirements		
Reductions reserved from 2011 and 2012 RFP demonstration	15.43	0.00
Unspecified control 1	0.00	0.00
Unspecified control 2	0.00	0.00
Total contingency reductions	15.43	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 4

2012 RFP Demonstration Analysis
DFW 8-Hour Ozone Nonattainment Area

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

2012 RFP Demonstration Analysis: To determine if the the 2012 RFP requirements are met the 2012 target level of emissions is compared to 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	NOx (tpd)	VOC (tpd)
Line 1	Uncontrolled emissions forecast with growth	911.58	821.96
Line 2	Creditable RFP control reductions for 2008, 2011	545.16	263.47
Line 3	Creditable RFP control reductions 2011 to 2012	42.14	41.38
Line 4	Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3)	324.28	517.11
Line 5	Amount of creditable reductions reserved for 2012 contingency	15.43	0.00
Line 6	Amount of NOx reduction substitution	53.87	-53.87
Line 7	Controlled RFP forecast without reductions reserved for contingency and accounting for NOx substitution (Line 4 plus Line 5 plus Line 6)	393.59	463.24
Line 8	2012 RFP target level of emissions	393.59	463.25
Line 9	Excess (+) / Shortfall (-) (Line 8 minus Line 7)	0.01	0.01
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 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 5) 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 5

2013 Contingency Demonstration for RFP

Summary 2013 Contingency for 2012 RFP

Contingency Element Description	NOx	VOC
2012 ABY EI	514.47	473.32
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	15.43	0.00
Control reductions to meet contingency requirements		
Excess reductions from 2012 RFP demonstration	0.01	0.01
Subtract 2012 RFP demonstration motor vehicle emissions budget (MVEB) safety margin from excess reductions from 2012 RFP demonstration	0.00	0.00
Federal on-road mobile new vehicle certification standards	17.66	11.89
Federal on-road reformulated gasoline (RFG)	9.63	0.69
State inspection and maintenance (I/M) and anti-tampering programs (ATP)	1.88	0.78
On-road Texas low emission diesel (TxLED)	0.00	0.00
Texas Emissions Reduction Program (TERP)	0.00	0.00
Local control measures (transportation control measures (TCM) and voluntary mobile emission reduction programs (VMEP))	0.00	0.00
Federal non-road mobile new vehicle certification standards	7.08	3.11
Non-road RFG	-0.01	0.08
Non-road TxLED	0.41	0.00
Federal locomotive standards	0.53	0.05
Federal marine standards	0.00	0.00
Total RFP demonstration contingency reductions	37.56	18.98
Contingency Excess (+) or Shortfall (-)	22.12	18.98

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 reductions 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	NOx	VOC
2012 ABY EI	514.47	473.32
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	15.43	0.00
Control reductions to meet contingency requirements		
Excess reductions from 2012 RFP demonstration	0.01	0.01
Subtract 2012 MVEB safety margin from excess reductions from 2012 RFP demonstration	0.00	0.00
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	1.49	8.13
Federal reformulated gasoline (RFG)	9.63	0.69
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	0.46	0.42
National Low Emission Vehicle (NLEV) Program	-1.32	-0.79
Expand I/M	1.42	0.36
Tier 2 FMVCP	10.50	4.47
2007 Heavy duty diesel FMVCP	6.99	0.08
On-road Texas low emission diesel (TxLED)	0.00	0.00
Texas Emission Reduction Program (TERP)	0.00	0.00
Voluntary Mobile Emission Reduction Program (VMEP)	0.00	0.00
Transportation control measure (TCM)	0.00	0.00
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
Tier 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 non-road SI engines (Phase III)	0.37	2.37
Total 2013 RFP Contingency Reductions	37.56	18.98
Contingency Excess (+) or Shortfall (-)	22.12	18.98
Are contingency reductions greater than required contingency reduction?	Yes	Yes

Appendix 1 - Sheet 6

2013 Contingency Demonstration for 2012 Attainment

Summary 2013 Contingency for 2012 Attainment Demonstration

Contingency Element Description	NOx	VOC
2012 ABY EI	514.47	473.32
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	15.43	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 on-road mobile new vehicle certification standards	17.66	11.89
Federal on-road reformulated gasoline (RFG)	9.63	0.69
State inspection and maintenance (I/M) and anti-tampering programs (ATP)	1.88	0.78
On-road Texas low emission diesel (TxLED)	0.00	0.00
Texas Emissions Reduction Program (TERP)	0.00	0.00
Local Control Measures (TCM, VMEP)	0.00	0.00
Federal non-road mobile new vehicle certification standards	7.08	3.11
Non-road RFG	-0.01	0.08
Non-road TxLED	0.41	0.00
Federal locomotive standards	0.53	0.05
Federal marine standards	0.00	0.00
Total attainment demonstration contingency reductions	37.55	18.97
Contingency Excess (+) or Shortfall (-)	22.12	18.97

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 reductions 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	NOx	VOC
2012 ABY EI	514.47	473.32
Percent for contingency calculation (total of 3%)	3.00	0.00
2012 to 2013 required contingency reductions (ABY EI x (contingency percent))	15.43	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
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	1.49	8.13
Federal reformulated gasoline (RFG)	9.63	0.69
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	0.46	0.42
National Low Emission Vehicle (NLEV) Program	-1.32	-0.79
Expand I/M	1.42	0.36
Tier 2 FMVCP	10.50	4.47
2007 Heavy duty diesel FMVCP	6.99	0.08
On-road Texas low emission diesel (TxLED)	0.00	0.00
Texas Emission Reduction Program (TERP)	0.00	0.00
Voluntary Mobile Emission Reduction Program (VMEP)	0.00	0.00
Transportation control measure (TCM)	0.00	0.00
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
Tier 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 non-road SI engines (Phase III)	0.37	2.37
Total attainment demonstration contingency reductions	37.55	18.97
Contingency Excess (+) or Shortfall (-)	22.12	18.97

[Return to Table of Contents](#)

Appendix 1 - Sheet 7

Calculations: 2011 RFP MVEBs
DFW Nonattainment Area Eight-hour Ozone Season VOC and NOx [tons per day]

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

Summary 2011 MVEB

Description	NOx	VOC
Uncontrolled on-road mobile source EI	438.60	273.23
Total on-road mobile source RFP control reductions	296.19	184.68
On-road mobile controlled inventory	142.41	88.55
Transportation conformity safety margin	0.00	0.00
Excess emissions reduction for 2012	0.01	-35.52
Is excess emissions enough for safety margin?	yes	no
MVEB with safety margin	142.41	check safety margin

Note: If safety margin is > than excess emission reductions, then 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 NOx 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
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	Yes	Yes	82.62	86.2
Federal reformulated gasoline (RFG)	Yes	Yes	73.77	38.1
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	Yes	Yes	19.89	20.96
National Low Emission Vehicle (NLEV) Program	Yes	Yes	10.13	6.67
Expand I/M	Yes	Yes	10.04	6.09
Tier 2 FMVCP	Yes	Yes	69.32	26.21
2007 Heavy duty diesel FMVCP	Yes	Yes	25.69	0.45
On-road Texas low emission diesel (TxLED)	Yes	Yes	4.73	0
Texas Emission Reduction Program (TERP)	No	Yes	0	0
Voluntary Mobile Emission Reduction Program (VMEP)	No	Yes	0	0
Transportation control measure (TCM)	No	Yes	0	0
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
Tier 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 non-road SI engines (Phase III)	Yes	No	0	0
Total on-road mobile source RFP control reductions			296.19	184.68

Appendix 1 - Sheet 8

Calculations: 2012 RFP MVEBs
DFW Nonattainment Area Eight-hour Ozone Season VOC and NOx [Tons Per Day]
Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Summary 2012 MVEB

Description	NOx	VOC
Uncontrolled on-road mobile source emission inventory	445.47	276.91
Total on-road mobile source RFP control reductions	322.65	195.74
On-road mobile controlled inventory	122.82	81.17
Transportation conformity safety margin	0.00	0.00
Excess emissions reduction for 2012	0.01	0.01
Is excess emissions enough for safety margin?	yes	yes
MVEB with safety margin	122.82	81.17

Note: If safety margin is > than excess emission reductions, then 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 NOx 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
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	Yes	Yes	82.64	96.98
Federal reformulated gasoline (RFG)	Yes	Yes	82.29	37.8
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	Yes	Yes	19.73	17.86
National Low Emission Vehicle (NLEV) Program	Yes	Yes	8.88	5.95
Expand I/M	Yes	Yes	11.19	6.28
Tier 2 FMVCP	Yes	Yes	79.52	30.37
2007 Heavy duty diesel FMVCP	Yes	Yes	33.88	0.5
On-road Texas low emission diesel (TxLED)	Yes	Yes	4.52	0
Texas Emission Reduction Program (TERP)	No	Yes	0	0
Voluntary Mobile Emission Reduction Program (VMEP)	No	Yes	0	0
Transportation control measure (TCM)	No	Yes	0	0
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
Tier 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 non-road SI engines (Phase III)	Yes	No	0	0
Total On-road Mobile Source RFP Control Reductions			322.65	195.74

RFP Non-creditable Reductions Calculations
DFW Nonattainment Area Eight-Hour Ozone 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	67.06	24.65	N/A	N/A	
2002, 4 EC	312.35	181.41	N/A	N/A	
2008, 5 NDC	53.47	21.06	13.59	3.59	Pre-1990 Federal Clean Air Act (FCAA) fleet turnover reduction 2002-2008 for five newly designated eight-hour counties
2008, 4 EC	264.13	159.58	48.22	21.83	Pre-1990 FCAA fleet turnover reduction (2002-2008) for four previously designated one-hour counties
2011	315.51	179.45	2.09	1.19	Pre-1990 FCAA fleet turnover reduction (2008-2011)
2012	315.61	178.80	-0.10	0.65	Pre-1990 FCAA 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 MOBILE6 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 travelled (VMT) and MOBILE6 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 10

**Quantify the Reductions to Meet the 3% per Year and Contingency Requirements
DFW 8-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. NOx 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, NOx 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 NOx 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 NOx	Percent VOC	RFP ABY EI NOx (tpd)	RFP ABY EI VOC (tpd)	Required Reductions NOx (tpd)	Required Reductions VOC (tpd)
2002	N/A	N/A	N/A	442.56	429.84	N/A	N/A
2008, 5 NDC	15.0	N/A	15.0	122.12	67.15	N/A	10.07
2008, 4 EC	15.0	15.0	0.0	394.34	408.01	59.15	0.00
2011	9.0	9.0	0.0	514.37	473.97	46.29	0.00
2012	3.0	3.0	0.0	514.47	473.32	15.43	0.00
2013 Contingency	3.0	3.0	0.0	514.47	473.32	15.43	0.00

Notes:

1) The ABY EI is the base year (BY) emissions minus the non-credible on-road mobile reductions. It is calculated by adding the BY EI for point, area and non-raod 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 MOBILE6 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 RVP control and the pre-1990 on-road mobile source FMVCP controls. The on-raod mobile ABY EI is equal to the on-road mobile BY EI minus the non-creditable FMVCP reductions.

Appendix 1 - Sheet 11

Target Calculations: 2008, 2011 and 2012 RFP Target Level of NOx 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 NOx emissions: The NOx target level is calculated by subtracting the reductions necessary to meet the combined 3% per year combined NOx 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 NOx Emissions				
RFP Milestone Year	Previous Target	FMVCP Non-Creditable Reduction	Post-2002 Percent Reduction Requirement NOx (tpd)	NOx Target (tpd)
2002 BY, 5 NDC	N/A	N/A	N/A	135.71
2002 BY, 4 EC	N/A	N/A	N/A	442.56
2008, 5 NDC	135.71	13.59	N/A	122.12
2008 4 EC	442.56	48.22	59.15	335.19
2008 Total	N/A	N/A	N/A	457.31
2011	457.31	2.09	46.29	408.93
2012	408.93	-0.10	15.43	393.59

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 NOx 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	70.74
2002 Base Year, 4 EC	N/A	N/A	N/A	429.84
2008, 5 NDC	70.74	3.59	10.07	57.08
2008 4 EC	429.84	21.83	0.00	408.01
2008 Total	N/A	N/A	N/A	465.09
2011	465.09	1.19	0.00	463.90
2012	463.90	0.65	0.00	463.25

Appendix 1 - Sheet 12

**Enter RFP NOx 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 attainment year 2012. The total reduction for 2008 includes an initial 15% reduction (VOC only) for the NDC and an initial 15% reduction (NOx 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 NOx and VOC reductions will be used to demonstrate RFP for 2008, 2011, and 2012? The analyst only needs to input the NOx percent. The VOC percent will be calculated automatically based upon the total required and the percent from NOx.

RFP NOx and VOC Percent Reductions for Milestone and Attainment Years

RFP Milestone Year	NOx %	VOC %	Total Percent
2008, 5 NDC	N/A	15	15
2008, 4 EC	15	0	15
2011	9	0	9
2012	3	0	3

A 3 Percent 2011 to 2012 and 2012 to 2013 Contingency Measures Reduction is Required. Input only the percent of the reductions that will be from NOx. The VOC value will be calculated automatically as 3 minus the NOx percent. For 2012 to 2013 a 3% contingency is also required for the attainment demonstration.

RFP and Attainment Demonstration NOx and VOC Percent Reductions for 2012 and 2013 Contingency

Contingency Year	NOx %	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 that it is less than the excess emissions. If not a "check safety margin" will appear in the MVEB calculation box.

RFP Milestone Year	Conformity Safety Margin NOx %	Conformity Safety Margin VOC %
2008	0	0
2011	0	0
2012	0	0

Appendix 1 - Sheet 13

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 14

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	351.90	346.64	5.260	1.5
2012 9 County Total	175.61	41.34	134.270	76.5	362.95	341.78	21.170	5.8

Appendix 1 - Sheet 15

Data Entry Sheet 1 of 6: Enter Biogenics 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 16

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 17

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 18

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 19

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 20

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	67.060	59.060	8.000	11.9	24.650	21.670	2.980	12.1
2002 4 EC	312.350	247.930	64.420	20.6	181.410	123.400	58.010	32.0
2008 5 NDC	75.320	37.170	38.150	50.7	27.790	13.310	14.480	52.1
2008 4 EC	338.540	157.750	180.790	53.4	209.070	88.130	120.940	57.8
2011 9 County Total	438.600	142.410	296.190	67.5	273.230	88.560	184.670	67.6
2012 9 County Total	445.470	122.820	322.650	72.4	276.910	81.170	195.740	70.7

Appendix 1 - Sheet 21

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	67.06	24.65
2002, 4 EC	312.35	181.41
2002 9 County Total	379.41	206.06
2008, 5 NDC	53.47	21.06
2008, 4 EC	264.13	159.58
2008 9 County Total	317.60	180.64
2011 9 County total	315.51	179.45
2012 9 County Total	315.61	178.80

Appendix 1 - Sheet 22

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 23

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

Explanation and direction:

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	0.13	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	19.77	6.55	Yes	Yes
Federal reformulated gasoline (RFG)	OR	0.06	0.20	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	0.00	0.00	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	-0.50	1.15	Yes	Yes
Expand I/M	OR	3.04	2.08	Yes	Yes
Tier 2 FMVCP	OR	11.72	4.47	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	2.44	0.03	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	1.62	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	Yes
Tier I and II locomotive NO _x 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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	0.11	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total		56.82	21.22		

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 24

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

Explanation and direction:

RFP Control Strategy Description	Source Category	Total 2002 to 2008 NOx 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	1.76	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	65.44	52.03	Yes	Yes
Federal reformulated gasoline (RFG)	OR	45.92	34.52	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	17.34	15.78	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	10.68	5.60	Yes	Yes
Expand I/M	OR	3.81	3.03	Yes	Yes
Tier 2 FMVCP	OR	26.65	9.87	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	6.45	0.11	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	4.51	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	0.54	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total		253.95	185.68		

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 25

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

Explanation and direction:

RFP Control Strategy Description	Source Category	Total 2002 to 2011 NOx 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
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	82.62	86.20	Yes	Yes
Federal reformulated gasoline (RFG)	OR	73.77	38.10	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	19.89	20.96	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	10.13	6.67	Yes	Yes
Expand I/M	OR	10.04	6.09	Yes	Yes
Tier 2 FMVCP	OR	69.32	26.21	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	25.69	0.45	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	4.73	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	17.61	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	2.91	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total		562.77	263.47		

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

Appendix 1 - Sheet 26

Enter 2012 Control Measure Reductions
 DFW Nonattainment Area Eight-hour Ozone Season VOC and NOx
 Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

Explanation and direction:

RFP Control Strategy Description	Source Category	Total 2002 to 2012 NOx 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	4.67	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	82.64	96.98	Yes	Yes
Federal reformulated gasoline (RFG)	OR	82.29	37.80	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	19.73	17.86	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	8.88	5.95	Yes	Yes
Expand I/M	OR	11.19	6.28	Yes	Yes
Tier 2 FMVCP	OR	79.52	30.37	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	33.88	0.50	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	4.52	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	17.10	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	Yes
Tier I and II locomotive NOx standards	NR	11.50	0.32	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-3.17	30.17	Yes	No
Heavy duty non-road engines	NR	20.31	5.53	Yes	No
Tier 2, and 3 non-road diesel engines	NR	22.34	4.70	Yes	No
Small non-road SI engines (Phase II)	NR	2.16	28.27	Yes	No
Large non-road SI & recreational marine	NR	22.49	10.76	Yes	No
Non-road TxLED	NR	5.77	0.00	Yes	No
Non-road RFG	NR	-0.82	4.47	Yes	No
Tier 4	NR	1.80	0.15	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small non-road SI engines (Phase III)	NR	0.79	5.54	Yes	No
Chapter 117 NOx area source engine controls	UK	134.27	0.00	Yes	No
Drilling Rig low emission diesel	UK	1.08	0.00	Yes	No
Storage tank rule 90 control / 25 limit	Area	0.00	12.80	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	14.37	Yes	No
Non-road TERP	NR	2.91	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total		604.40	317.65		

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

Appendix 1 - Sheet 27

**Enter 2013 Contingency Measure Control Measure Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx
Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant**

Explanation and direction:

RFP Control Strategy Description	Source Category	Total 2002 to 2013 NOx Emissions Reductions (tpd)	Total 2002 to 2013 VOC Emissions Reductions (tpd)	Use this control for 2013 RFP demonstration? (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	2.71	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	84.13	105.11	Yes
Federal reformulated gasoline (RFG)	OR	91.92	38.49	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	20.19	18.28	Yes
National Low Emission Vehicle (NLEV) Program	OR	7.56	5.16	Yes
Expand I/M	OR	12.61	6.64	Yes
Tier 2 FMVCP	OR	90.02	34.84	Yes
2007 Heavy duty diesel FMVCP	OR	40.87	0.58	Yes
On-road Texas low emission diesel (TxLED)	OR	4.43	0.00	No
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No
Transportation control measure (TCM)	OR	0.00	0.00	No
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
Tier 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 non-road SI engines (Phase III)	NR	1.16	7.91	Yes
Chapter 117 NOx area source engine controls	UK	5.82	0.00	No
Drilling Rig low emission diesel	UK	0.00	0.00	No
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	No
Non-road TERP	NR	0.00	0.00	No
Unspecified Control 6	UK	0.00	0.00	No
Unspecified Control 7	UK	0.00	0.00	No
Unspecified Control 8	UK	0.00	0.00	No
Unspecified Control 9	UK	0.00	0.00	No
Unspecified Control 10	UK	0.00	0.00	No
Total		449.10	307.33	

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

[Retrun to Table of Contents](#)

Appendix 1 - Sheet 28

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	NOx (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	59.06	21.67
Non-Road Mobile NDC 2002 EI	28.69	8.82
Biogenc NDC 2002 EI	274.10	11.14
Total NDC 2002 Base Year Inventory	409.82	81.88

The NDC 2002 RFP Base Year Inventory Out of Area Adjustments	NOx (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	NOx (tons/day)	VOC (tons/day)
'Total NDC 2002 RFP Base Year Inventory with Adjustments	135.71	70.74

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 29

**Calculate 2002 RFP Base Year Emission Inventory
Add Emissions from Outside the Nonattainment Area that are to be Included in RFP Analysis
Dallas-Fort Worth 8-Hour Ozone Nonattainment Area
Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant**

The EC 2002 Base Year Inventory	NOx (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	247.93	123.40
Non-road mobile EC 2002 EI	124.72	73.23
Biogenic EC 2002 EI	169.22	9.38
Total EC 2002 Base Year Inventory	611.78	439.22

The EC 2002 RFP Base Year Inventory Out of Area Adjustments	NOx (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	NOx (tons/day)	VOC (tons/day)
Total EC 2002 RFP Base Year Inventory with Adjustments	442.56	429.84

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.

[Retrun to Table of Contents](#)

Appendix 1 - Sheet 30

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

Uncontrolled EI with pre-2002 controls: These calculations sum the total uncontrolled NOx 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	NOx (tpd)	VOC (tpd)
Point Source	85.140	31.340
Area Source	150.390	323.590
On-Road Mobile Source	413.860	236.860
Non-Road Mobile Source	186.672	130.726
Nine County Total	836.062	722.516

[Retrun to Table of Contents](#)

Appendix 1 - Sheet 31

2011 Forecasted Uncontrolled Emissions Inventory with Pre-2002 Controls DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx

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 NOx 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	NOx (tpd)	VOC (tpd)
Point Source	105.860	39.890
Area Source	168.660	351.900
On-Road Mobile Source	438.600	273.230
Non-Road Mobile Source	186.201	137.184
Total	899.321	802.204

[Retrun to Table of Contents](#)

Appendix 1 - Sheet 32

2012 Forecasted Uncontrolled Emissions Inventory with Pre-2002 Controls DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx 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 NOx 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	NOx (tpd)	VOC (tpd)
Point Source	102.100	40.740
Area Source	175.610	362.950
On-Road Mobile Source	445.470	276.910
Non-Road Mobile Source	188.401	141.358
Total	911.581	821.958

[Retrun to Table of Contents](#)

Appendix 1 - Sheet 33

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

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

ABY EI with pre-1990 controls: These calculations add up to the total ABY NOx 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	NOx (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	59.06	21.67
Non-road Mobile Source NDC 2002 BY EI	28.69	8.82
Total NDC 2002 RFP Adjusted Base Year Emissions Inventory	135.71	70.74

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 1 - Sheet 34

**Calculations: EC 2002 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
DFW Nonattainment Area Eight-hour Ozone Season VOC and NOx**

Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant

ABY EI with pre-1990 controls: These calculations add up to the total ABY NOx 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	NOx (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	247.93	123.40
Non-Road Mobile Source 2002 BY EI	124.72	73.23
Total 2002 RFP Adjusted Base Year Emissions Inventory	442.56	429.84

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 35

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

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

ABY EI with pre-1990 controls: These calculations add up to the total ABY NOx 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	NOx (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	45.47	18.08
Non-Road Mobile Source 2002 BY EI	28.69	8.82
Total 2008 RFP Adjusted Base Year Emissions Inventory	122.12	67.15

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 36

**Calculations: Existing Counties 2008 Adjusted Base Year Emissions Inventory with Pre-1990 Controls
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx**

Four Existing Nonattainment Counties: Collin, Dallas, Denton, Tarrant

ABY EI with pre-1990 controls: These calculations add up to the total ABY NOx 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	NOx (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	199.71	101.57
Non-Road Mobile Source 2002 BY EI	124.72	73.23
Total 2002 RFP Adjusted Base Year Emissions Inventory	394.34	408.01

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 37

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

DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx

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

ABY EI with pre-1990 controls: These calculations sum the total ABY NOx 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	NOx (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	243.09	118.46
Non-road Mobile Source 2002 BY EI	153.41	82.05
Total 2011 RFP Adjusted Base Year Emissions Inventory	514.37	473.97

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 2008 and 2011, the ABY EI for 2011 is less than the ABY for 2008.

Appendix 1 - Sheet 38

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

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

ABY EI with pre-1990 controls: These calculations sum the total ABY NOx 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 Controls		
Emissions Description	NOx (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	243.19	117.81
Non-road Mobile Source 2002 BY EI	153.41	82.05
Total 2012 RFP Adjusted Base Year Emissions Inventory	514.47	473.32

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 39

Calculations: NDC 2002-2008 Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx

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	Total 2002 to 2008	Use this control for	Is this an on-road
		NOx Emissions Reductions (tpd)	VOC Emissions Reductions (tpd)	RFP demonstration? (Yes or No)	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	0.13	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	19.77	6.55	Yes	Yes
Federal reformulated gasoline (RFG)	OR	0.06	0.20	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	0.00	0.00	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	-0.50	1.15	Yes	Yes
Expand I/M	OR	3.04	2.08	Yes	Yes
Tier 2 FMVCP	OR	11.72	4.47	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	2.44	0.03	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	1.62	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	0.11	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total 2008 RFP Control Reductions		56.82	21.22		

Appendix 1 - Sheet 40

Calculations: EC 2002-2008 Control Measures Reductions
 DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx
 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 NOx Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration?	Is this an on-road mobile control that will change the MVEB?
				(Yes or No)	(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	1.76	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	65.44	52.03	Yes	Yes
Federal reformulated gasoline (RFG)	OR	45.92	34.52	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	17.34	15.78	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	10.68	5.60	Yes	Yes
Expand I/M	OR	3.81	3.03	Yes	Yes
Tier 2 FMVCP	OR	26.65	9.87	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	6.45	0.11	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	4.51	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	0.54	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total 2008 RFP Control Reductions		253.95	185.68		

Appendix 1 - Sheet 41

Calculations: All Counties 2002-2008 Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx

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 NOx Emissions Reductions (tpd)	Total 2002 to 2008 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration?	Is this an on-road mobile control that will change the MVEB?
				(Yes or No)	(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	1.89	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	85.21	58.58	Yes	Yes
Federal reformulated gasoline (RFG)	OR	45.98	34.72	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	17.34	15.78	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	10.18	6.75	Yes	Yes
Expand I/M	OR	6.85	5.11	Yes	Yes
Tier 2 FMVCP	OR	38.37	14.34	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	8.89	0.14	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	6.13	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	0.65	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total 2008 RFP Control Reductions		310.77	206.90		

Appendix 1 - Sheet 42

Calculations: 2008-2011 Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx

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 NOx Emissions Reductions (tpd)	Total 2008 to 2011 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration?	Is this an on-road mobile control that will change the MVEB?
				(Yes or No)	(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	2.06	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	-2.59	27.62	Yes	Yes
Federal reformulated gasoline (RFG)	OR	27.79	3.38	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	2.55	5.18	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	-0.05	-0.08	Yes	Yes
Expand I/M	OR	3.19	0.98	Yes	Yes
Tier 2 FMVCP	OR	30.95	11.87	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	16.80	0.31	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	-1.40	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	Yes
Tier I and II locomotive NOx standards	NR	1.14	0.06	Yes	No
Small non-road spark ignition (SI) engines (Phase I)	NR	-0.49	1.56	Yes	No
Heavy duty non-road engines	NR	1.98	0.72	Yes	No
Tier 2, and 3 non-road diesel engines	NR	7.27	1.06	Yes	No
Small non-road SI engines (Phase II)	NR	0.43	4.75	Yes	No
Large non-road SI & recreational marine	NR	7.07	-5.91	Yes	No
Non-road TxLED	NR	0.15	0.00	Yes	No
Non-road RFG	NR	-0.11	0.49	Yes	No
Tier 4	NR	0.59	0.05	Yes	No
Diesel recreational marine	NR	0.00	0.00	Yes	No
Small non-road SI engines (Phase III)	NR	0.42	2.46	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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	Yes	No
Non-road TERP	NR	2.26	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total 2011 RFP Control Reductions		234.39	56.57		

Appendix 1 - Sheet 43

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

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 NOx Emissions Reductions (tpd)	Total 2011 to 2012 VOC Emissions Reductions (tpd)	Use this control for RFP demonstration?	Is this an on-road mobile control that will change the MVEB?
				(Yes or No)	(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	0.72	Yes	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	0.02	10.78	Yes	Yes
Federal reformulated gasoline (RFG)	OR	8.52	-0.30	Yes	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	-0.16	-3.10	Yes	Yes
National Low Emission Vehicle (NLEV) Program	OR	-1.25	-0.72	Yes	Yes
Expand I/M	OR	1.15	0.19	Yes	Yes
Tier 2 FMVCP	OR	10.20	4.16	Yes	Yes
2007 Heavy duty diesel FMVCP	OR	8.19	0.05	Yes	Yes
On-road Texas low emission diesel (TxLED)	OR	-0.21	0.00	Yes	Yes
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No	Yes
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No	Yes
Transportation control measure (TCM)	OR	0.00	0.00	No	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
Tier 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 non-road SI engines (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
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No	No
Storage tank rule 95 control / 25 limit	Area	0.00	14.37	Yes	No
Non-road TERP	NR	0.00	0.00	Yes	No
Unspecified Control 6	UK	0.00	0.00	No	No
Unspecified Control 7	UK	0.00	0.00	No	No
Unspecified Control 8	UK	0.00	0.00	No	No
Unspecified Control 9	UK	0.00	0.00	No	No
Unspecified Control 10	UK	0.00	0.00	No	No
Total RFP Control Reductions		42.14	41.38		

Appendix 1 - Sheet 44

Calculations: 2012-2013 Contingency Control Measures Reductions
DFW Nonattainment Area Eight-Hour Ozone Season VOC and NOx

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 NOx 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	0.00	0.00	No
Coating / printing rules	Point	0.00	0.00	No
Portable fuel containers	Area	0.00	0.00	No
Tier 1 Federal Motor Vehicle Control Program (FMVCP)	OR	1.49	8.13	Yes
Federal reformulated gasoline (RFG)	OR	9.63	0.69	Yes
Inspection and maintenance (I/M) and anti-tampering (ATP) in Dallas County	OR	0.46	0.42	Yes
National Low Emission Vehicle (NLEV) Program	OR	-1.32	-0.79	Yes
Expand I/M	OR	1.42	0.36	Yes
Tier 2 FMVCP	OR	10.50	4.47	Yes
2007 Heavy duty diesel FMVCP	OR	6.99	0.08	Yes
On-road Texas low emission diesel (TxLED)	OR	0.00	0.00	No
Texas Emission Reduction Program (TERP)	OR	0.00	0.00	No
Voluntary Mobile Emission Reduction Program (VMEP)	OR	0.00	0.00	No
Transportation control measure (TCM)	OR	0.00	0.00	No
Tier I and II locomotive NOx standards	NR	0.53	0.05	Yes
Small non-road spark ignition (SI) engines (Phase I)	NR	-0.06	0.55	Yes
Heavy duty non-road engines	NR	0.74	0.22	Yes
Tier 2, and 3 non-road diesel engines	NR	2.16	0.32	Yes
Small non-road SI engines (Phase II)	NR	0.07	0.72	Yes
Large non-road SI & recreational marine	NR	2.42	1.18	Yes
Non-road TxLED	NR	0.41	0.00	Yes
Non-road RFG	NR	-0.01	0.08	Yes
Tier 4	NR	1.75	0.12	Yes
Diesel recreational marine	NR	0.00	0.00	Yes
Small non-road SI engines (Phase III)	NR	0.37	2.37	Yes
Chapter 117 NOx area source engine controls	UK	0.00	0.00	No
Drilling Rig low emission diesel	UK	0.00	0.00	No
Storage tank rule 90 control / 25 limit	Area	0.00	0.00	No
Storage tank rule 95 control / 25 limit	Area	0.00	0.00	No
Non-road TERP	NR	0.00	0.00	No
Unspecified Control 6	UK	0.00	0.00	No
Unspecified Control 7	UK	0.00	0.00	No
Unspecified Control 8	UK	0.00	0.00	No
Unspecified Control 9	UK	0.00	0.00	No
Unspecified Control 10	UK	0.00	0.00	No
Total RFP Control Reductions		37.550	18.970	

Appendix 1 - Sheet 45

Summary Sheet: Uncontrolled NO_x Emission 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	67.06	147.29
2002 EC	34.57	35.34	135.35	312.35	517.61
2008 NDC	45.44	73.12	39.26	75.32	233.14
2008 EC	39.70	77.27	147.41	338.54	602.92
2011	105.86	168.66	186.20	438.60	899.32
2012	102.10	175.61	188.40	445.47	911.58

Appendix 1 - Sheet 46

Summary Sheet: Controlled NO_x Emission 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	59.06	135.71
2002 EC	34.57	35.34	124.72	247.93	442.56
2008 NDC	38.78	73.12	26.89	37.17	175.96
2008 EC	10.43	77.27	103.39	157.75	348.84
2011	62.79	40.56	111.43	142.41	357.19
2012	58.87	41.34	104.23	122.82	327.26

Appendix 1 - Sheet 47

Summary Sheet: Uncontrolled VOC Emission 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	24.65	76.65
2002 EC	18.76	214.45	102.73	181.41	517.35
2008 NDC	12.32	68.17	13.71	27.79	121.99
2008 EC	19.02	255.42	117.02	209.07	600.53
2008 Total	31.34	323.59	130.73	236.86	722.52
2011	39.89	351.90	137.18	273.23	802.20
2012	40.74	362.95	141.36	276.91	821.96

Appendix 1 - Sheet 48

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	21.67	70.74
2002 EC	18.76	214.45	73.23	123.40	429.84
2008 NDC	12.17	66.76	7.41	13.31	99.65
2008 EC	19.02	253.68	55.39	88.13	416.22
2011	39.73	346.64	51.98	88.56	526.91
2012	40.58	341.78	49.84	81.17	513.37