

**APPENDIX 10**

**ADDITIONAL INFORMATION FOR ON-ROAD MOBILE  
EMISSIONS FOR THE PROPOSED DALLAS-FORT WORTH  
NONATTAINMENT AREA REASONABLE FURTHER  
PROGRESS STATE IMPLEMENTATION PLAN REVISION  
FOR THE 1997 EIGHT-HOUR OZONE STANDARD**

**ADDITIONAL INFORMATION FOR ON-ROAD MOBILE  
EMISSIONS FOR THE PROPOSED DALLAS-FORT WORTH  
NONATTAINMENT AREA REASONABLE FURTHER  
PROGRESS STATE IMPLEMENTATION PLAN REVISION FOR  
THE 1997 EIGHT-HOUR OZONE STANDARD**

This document, along with the simultaneously submitted appendix: *Dallas-Fort Worth Nonattainment Area Reasonable Further Progress Demonstration Calculations Spreadsheet with MOVES2010a*, provides additional technical detail concerning final values for Motor Vehicle Emission Simulator (MOVES) model-based on-road mobile emissions estimates for ozone precursors (nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC)) that became available after the Dallas-Fort Worth (DFW) Nonattainment Area Reasonable Further Progress (RFP) State Implementation Plan (SIP) Revision for the 1997 Eight-Hour Ozone Standard was proposed by the commissioners of the Texas Commission on Environmental Quality (TCEQ) on June 8, 2011. The final, SIP-quality MOVES values were developed using methods consistent with the United States Environmental Protection Agency (EPA) SIP inventory development guidance and consistent with the requirements of transportation conformity. Draft MOVES values used in the proposed SIP were the best available estimates and were provided for comment purposes. The TCEQ is taking comment on using MOVES-based on-road mobile emissions inventories to demonstrate reasonable further progress in meeting the 1997 eight-hour ozone standard in the DFW nonattainment area.

## **1 BACKGROUND**

The EPA officially released the MOVES2010 version of the model on March 2, 2010, as a replacement to MOBILE6.2 for SIP applications. A revised version named MOVES2010a was provided by the EPA on September 23, 2010<sup>1</sup>. During the period of time that the DFW RFP SIP revision was developed for proposal, it was not feasible to include SIP-quality MOVES2010a-based on-road mobile emissions inventories; however, the TCEQ was able to provide an RFP analysis using the MOBILE6.2-based on-road mobile emissions inventories that were originally developed for this DFW RFP SIP revision as well as an RFP analysis using approximate MOVES2010-based on-road mobile emissions inventories developed by the TCEQ. The proposed DFW RFP SIP revision discusses the possible use of the MOVES model for the adopted DFW RFP SIP revision.

## **2 MOVES ON-ROAD MOBILE RFP EMISSIONS INVENTORY DEVELOPMENT**

In June and July of 2011, the North Central Texas Council of Governments (NCTCOG) completed MOVES-based on-road mobile emissions inventories to be used for the current DFW RFP SIP and submitted them to the TCEQ. The methods used for the development of the final MOVES-based on-road mobile inventories are consistent with EPA inventory guidance and consistent with requirements of transportation conformity. Summaries of the inventory results are provided in Section 2.1: *MOVES-Based Emissions Inventory Summaries* of this document. The inventories developed for the DFW RFP SIP analysis include:

- 2002 RFP base year on-road mobile emission inventories for the DFW area based on vehicle miles traveled (VMT) estimates from the local travel demand model;
- 2002, 2008, 2011, and 2012 RFP adjusted base year on-road mobile emission inventories for the DFW area based on VMT estimates from the local travel demand model;

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<sup>1</sup> Page 8 of the policy guidance (<http://www.epa.gov/otaq/models/moves/420b09046.pdf>) released with the MOVES2010 version of the model states that “as required by Clean Air Act section 172(c)(3) and EPA’s regulation at 40 CFR 51.112(a), states must use the latest planning assumptions available at the time that the SIP is developed...”

- 2008, 2011, 2012, and 2013 RFP uncontrolled on-road mobile emission inventories for the DFW area based on VMT estimates from the local travel demand model; and
- 2008, 2011, 2012, and 2013 RFP post-control on-road mobile emission inventories for the DFW area based on VMT estimates from the local travel demand model.

The MOVES2010a-based on-road mobile emissions inventory projections submitted by NCTCOG were undertaken to allow the TCEQ to develop a final MOVES-based RFP analysis for the DFW nonattainment area. That analysis is presented in Tables 3-1: *Summary of the 2011 DFW RFP Demonstration with MOVES2010a (tons per day)* and 3-2: *Summary of the 2011 DFW RFP Demonstration with MOVES2010a (tons per day)* of this document.

## 2.1 MOVES-Based Emissions Inventory Summaries

The final MOVES-based on-road mobile emissions inventories were integrated into the existing total area inventories that include all major anthropogenic source categories. Tables 2-1: *Summary of the 2002 Base Year Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)*, 2-2: *Summary of the 2008 Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)*, 2-3: *Summary of the 2011 Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)*, and 2-4: *Summary of the 2012 Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)* present summaries of the base year, uncontrolled, and post-control emissions inventories used for the DFW RFP analysis. Emissions inventory estimates for point, area, and non-road mobile sources are the same as those presented to the commission on June 8, 2011. On-road mobile emissions inventory estimates, along with total uncontrolled and post-control emissions estimates, differ from those proposed on June 8, 2011, due to the completion of the final SIP-quality on-road mobile source inventory estimates based on the MOVES2010a model.

**Table 2-1: Summary of the 2002 Base Year Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)**

| Emissions Inventory Source         | Uncontrolled NO <sub>x</sub> | Post-Control NO <sub>x</sub> | Uncontrolled VOC | Post-Control VOC |
|------------------------------------|------------------------------|------------------------------|------------------|------------------|
| Point Sources                      | 79.24                        | 79.24                        | 26.43            | 26.43            |
| Area Sources                       | 38.63                        | 38.63                        | 247.03           | 247.03           |
| Non-Road Mobile Sources            | 167.62                       | 153.41                       | 114.48           | 82.05            |
| MOVES-Based On-Road Mobile Sources | 509.45                       | 354.01                       | 224.60           | 139.70           |
| Total of All Sources               | 794.94                       | 625.29                       | 612.54           | 495.21           |

Note: 2002 and 2008 NO<sub>x</sub> and VOC emissions are given for the total nine-county DFW nonattainment area. See appendix submitted with this summary document for emissions separated between the four original and five additional counties of the DFW 1997 eight-hour ozone standard nonattainment area.

**Table 2-2: Summary of the 2008 Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)**

| Emissions Inventory Source         | Uncontrolled NO <sub>x</sub> | Post-Control NO <sub>x</sub> | Uncontrolled VOC | Post-Control VOC |
|------------------------------------|------------------------------|------------------------------|------------------|------------------|
| Point Sources                      | 85.14                        | 49.21                        | 31.34            | 31.19            |
| Area Sources                       | 150.39                       | 150.39                       | 323.59           | 320.44           |
| Non-Road Mobile Sources            | 186.67                       | 130.29                       | 130.73           | 62.80            |
| MOVES-Based On-Road Mobile Sources | 632.28                       | 235.30                       | 262.06           | 104.67           |
| Total of All Sources               | 1054.48                      | 565.18                       | 747.72           | 519.10           |

Note: 2002 and 2008 NO<sub>x</sub> and VOC emissions are given for the total nine-county DFW nonattainment area. See appendix submitted with this summary document for emissions separated between the four original and five additional counties of the DFW 1997 eight-hour ozone standard nonattainment area.

**Table 2-3: Summary of the 2011 Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)**

| Emissions Inventory Source         | Uncontrolled NO <sub>x</sub> | Post-Control NO <sub>x</sub> | Uncontrolled VOC | Post-Control VOC |
|------------------------------------|------------------------------|------------------------------|------------------|------------------|
| Point Sources                      | 105.86                       | 62.79                        | 39.89            | 39.73            |
| Area Sources                       | 168.66                       | 40.56                        | 351.90           | 346.64           |
| Non-Road Mobile Sources            | 186.20                       | 111.43                       | 137.18           | 51.98            |
| MOVES-Based On-Road Mobile Sources | 707.87                       | 197.05                       | 293.76           | 89.54            |
| Total of All Sources               | 1168.59                      | 411.84                       | 822.73           | 527.88           |

**Table 2-4: Summary of the 2012 Ozone Season Weekday NO<sub>x</sub> and VOC Emissions for the DFW RFP with MOVES2010a (tons per day)**

| Emissions Inventory Source         | Uncontrolled NO <sub>x</sub> | Post-Control NO <sub>x</sub> | Uncontrolled VOC | Post-Control VOC |
|------------------------------------|------------------------------|------------------------------|------------------|------------------|
| Point Sources                      | 102.10                       | 58.87                        | 40.74            | 40.58            |
| Area Sources                       | 175.61                       | 41.34                        | 362.95           | 341.78           |
| Non-Road Mobile Sources            | 188.40                       | 104.23                       | 141.36           | 49.84            |
| MOVES-Based On-Road Mobile Sources | 728.83                       | 177.63                       | 301.33           | 82.20            |
| Total of All Sources               | 1194.94                      | 382.07                       | 846.38           | 514.40           |

### 3 MOVES-BASED RFP ANALYSIS

The DFW RFP analyses were recalculated using the final MOVES-based on-road mobile emissions inventory values. Tables 3-1: *Summary of the 2011 DFW RFP Demonstration with MOVES2010a (tons per day)* and 3-2: *Summary of the 2012 DFW RFP Demonstration with MOVES2010a (tons per day)* illustrate a draft final MOVES2010a-based analysis of reasonable further progress for the DFW nonattainment area toward meeting the 1997 eight-hour ozone standard. According to this draft final analysis, the 2011 post-control inventory projection is short of meeting the milestone year target, but the 2012 milestone is met. The proposed DFW RFP SIP revision stated that the TCEQ would consider applying additional emissions reductions earned through the Texas Emission

Reduction Plan to address any milestone year shortfall. The TCEQ is considering using those reductions at adoption in order to successfully demonstrate RFP for 2011.

**Table 3-1: Summary of the 2011 DFW RFP Demonstration with MOVES2010a (tons per day)**

| Line #         | Description  | NO <sub>x</sub> | VOC    |
|----------------|--|-----------------|--------|
| Line 1         | Uncontrolled emissions forecast with growth  | 1168.59         | 822.73 |
| Line 2         | Creditable RFP control reductions for NDC* 2008  | 80.59           | 25.90  |
| Line 3         | Creditable RFP control reductions for EC* 2008   | 408.21          | 202.98 |
| Line 4         | Creditable RFP control reductions 2008 to 2011   | 270.99          | 53.94  |
| Line 5         | Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3 minus Line 4)  | 408.81          | 539.92 |
| Line 6         | Amount of creditable reductions reserved for milestone year 2011 contingency   | 18.91           | 0.00   |
| Line 7         | Amount of NO <sub>x</sub> reduction substitution   | 68.34           | -68.34 |
| Line 8         | Controlled RFP forecast without reductions reserved for contingency and accounting for NO <sub>x</sub> substitution (Line 5 plus Line 6 plus Line 7) | 496.06          | 471.58 |
| Line 9         | 2011 RFP target level of emissions   | 496.07          | 467.65 |
| Line 10        | Excess (+) / Shortfall (-) (Line 9 minus Line 8)   | 0.01            | -3.93  |
| <b>Line 11</b> | <b>Is controlled RFP emissions inventory less than target level of emissions?</b>  | Yes             | No     |

\* The five new counties (NDC) are the counties added to the DFW nonattainment area under the 1997 eight-hour ozone standard (Ellis, Johnson, Kaufman, Parker, and Rockwall Counties). The four existing counties (EC) are those designated nonattainment under the one-hour and eight-hour ozone standards (Collin, Dallas, Denton, and Tarrant Counties).

**Table 3-2: Summary of the 2012 DFW RFP Demonstration with MOVES2010a (tons per day)**

| Line #         | Description  | NO <sub>x</sub> | VOC    |
|----------------|--|-----------------|--------|
| Line 1         | Uncontrolled emissions forecast with growth  | 1194.94         | 846.38 |
| Line 2         | Creditable RFP control reductions for 2008 to 2011   | 759.79          | 282.81 |
| Line 3         | Creditable RFP control reductions 2011 to 2012   | 56.07           | 45.42  |
| Line 4         | Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3)   | 379.09          | 518.14 |
| Line 5         | Amount of creditable reductions reserved for milestone year 2011 contingency   | 18.91           | 0.00   |
| Line 6         | Amount of NO <sub>x</sub> reduction substitution   | 46.21           | -46.21 |
| Line 7         | Controlled RFP forecast without reductions reserved for contingency and accounting for NO <sub>x</sub> substitution (Line 4 plus Line 5 plus Line 6) | 444.21          | 471.93 |
| Line 8         | 2012 RFP target level of emissions   | 481.78          | 471.95 |
| Line 9         | Excess (+) / Shortfall (-) (Line 8 minus Line 7)   | 37.57           | 0.01   |
| <b>Line 10</b> | <b>Is Controlled RFP emissions inventory Less Than Target Level of Emissions?</b>  | Yes             | Yes    |

#### **4 MOVES-BASED MOTOR VEHICLE EMISSIONS BUDGETS**

Since the MOVES2010a emissions estimates have very recently been developed, they are still undergoing a quality assurance review process and are subject to change if any errors are detected. If the TCEQ elects to use the MOVES2010a figures for the DFW RFP SIP revision, the 2011 RFP motor vehicle emissions budget (MVEB) for adoption would be 197.05 NO<sub>x</sub> tons per day (tpd) and 89.54 VOC tpd. The 2012 RFP MVEB for adoption would be 177.63 NO<sub>x</sub> tpd and 82.20 VOC tpd.

#### **5 SUMMARY**

The TCEQ is taking comment on using on-road mobile emissions inventories based on the MOVES2010a model for the current DFW RFP SIP revision for the 1997 eight-hour ozone standard. MOVES2010a is the latest available version of the MOVES model. The use of MOVES2010a increases NO<sub>x</sub> and VOC emissions in the base and milestone year emissions inventories compared to the MOBILE6.2 on-road estimates. While the final MOVES-based emissions inventories are different from the preliminary MOVES-based emissions inventories presented at proposal, the percent change between uncontrolled and post-control inventories is similar. With the MOVES2010a model, the current DFW RFP SIP revision successfully demonstrates reasonable further progress toward meeting the 1997 eight-hour ozone standard for milestone year 2012.

For detailed calculations of the MOVES2010a-based RFP analysis, please refer to the attachment to this summary document: *Draft Dallas-Fort Worth Nonattainment Area Reasonable Further Progress Demonstration Calculations Spreadsheet with MOVES2010a*.

**ATTACHMENT TO APPENDIX 10**

**DRAFT DALLAS-FORT WORTH NONATTAINMENT AREA  
REASONABLE FURTHER PROGRESS DEMONSTRATION  
CALCULATIONS SPREADSHEET WITH MOVES2010A**

Supplement Appendix - 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  | NOx (tpd)  | VOC (tpd) |
|---------|--|------------|-----------|
| Line 1  | Uncontrolled emissions forecast with growth  | 1168.59    | 822.73    |
| Line 2  | Creditable RFP control reductions for newly designated counties (NDC) 2008   | 80.59      | 25.90     |
| Line 3  | Creditable RFP control reductions for existing counties (EC) 2008  | 408.21     | 202.98    |
| Line 4  | Creditable RFP control reductions 2008 to 2011   | 270.99     | 53.94     |
| Line 5  | Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3 minus Line 4)  | 408.81     | 539.92    |
| Line 6  | Amount of creditable reductions reserved for 2012 contingency  | 18.91      | 0.00      |
| Line 7  | Amount of NOx reduction substitution   | 68.34      | -68.34    |
| Line 8  | Controlled RFP forecast without reductions reserved for contingency and accounting for NOx substitution (Line 5 plus Line 6 plus Line 7) | 496.06     | 471.58    |
| Line 9  | 2011 RFP target level of emissions   | 496.07     | 467.65    |
| Line 10 | Excess (+) / Shortfall (-) (Line 9 minus Line 8)   | 0.01       | -3.93     |
| Line 11 | <b>Is controlled RFP EI less than target level of emissions?</b>   | <b>Yes</b> | <b>No</b> |

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.

**Supplement Appendix - Sheet 3**

**2012 Contingency Demonstration for RFP**

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

| <b>Contingency Element Description</b>   | <b>NOx</b>   | <b>VOC</b>  |
|--|--------------|-------------|
| 2012 adjusted base year (ABY) EI   | 630.46       | 481.97      |
| Percent for 2012 contingency calculation (total of 3%)                               | 3.00         | 0.00        |
| <b>2011 to 2012 required contingency reductions (ABY EI x (contingency percent))</b> | <b>18.91</b> | <b>0.00</b> |
| 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        |
| <b>Total contingency reductions</b>  | <b>18.91</b> | <b>0.00</b> |
| <b>Contingency Excess (+) or Shortfall (-)</b>                                       | <b>0.00</b>  | <b>0.00</b> |
| <b>Are contingency reductions greater than required contingency reduction?</b>       | <b>Yes</b>   | <b>Yes</b>  |

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

Supplement Appendix - Sheet 4

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 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  | 1194.94    | 846.38     |
| Line 2         | Creditable RFP control reductions for 2008, 2011   | 759.79     | 282.81     |
| Line 3         | Creditable RFP control reductions 2011 to 2012   | 56.07      | 45.42      |
| Line 4         | Controlled RFP emissions forecast (Line 1 minus Line 2 minus Line 3)   | 379.09     | 518.14     |
| Line 5         | Amount of creditable reductions reserved for 2012 contingency  | 18.91      | 0.00       |
| Line 6         | Amount of NOx reduction substitution   | 46.21      | -46.21     |
| Line 7         | Controlled RFP forecast without reductions reserved for contingency and accounting for NOx substitution (Line 4 plus Line 5 plus Line 6) | 444.21     | 471.93     |
| Line 8         | 2012 RFP target level of emissions   | 481.78     | 471.95     |
| Line 9         | Excess (+) / Shortfall (-) (Line 8 minus Line 7)   | 37.57      | 0.01       |
| <b>Line 10</b> | <b>Is controlled RFP EI less than target level of emissions?</b>   | <b>Yes</b> | <b>Yes</b> |

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.

Supplement Appendix - Sheet 5

2013 Contingency Demonstration for RFP

Summary 2013 Contingency for 2012 RFP

| Contingency Element Description  | NOx          | VOC          |
|--|--------------|--------------|
| 2012 ABY EI  | 630.46       | 481.97       |
| Percent for contingency calculation (total of 3%)  | 3.00         | 0.00         |
| <b>2012 to 2013 required contingency reductions (ABY EI x (contingency percent))</b>   | <b>18.91</b> | <b>0.00</b>  |
| Control reductions to meet contingency requirements  |              |              |
| Excess reductions from 2012 RFP demonstration  | 37.57        | 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   | 33.22        | 10.01        |
| Federal on-road reformulated gasoline (RFG)  | 0.00         | 0.00         |
| State inspection and maintenance (I/M) and anti-tampering programs (ATP)   | 0.00         | 0.00         |
| On-road Texas low emission diesel (TxLED)  | 0.00         | 0.00         |
| Texas Emission 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  | 7.45         | 5.48         |
| 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         |
| <b>Total RFP demonstration contingency reductions</b>  | <b>79.17</b> | <b>15.63</b> |
| <b>Contingency Excess (+) or Shortfall (-)</b>   | <b>60.25</b> | <b>15.63</b> |

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

| Contingency Element Description   | NOx          | VOC          |
|---|--------------|--------------|
| 2012 ABY EI   | 630.46       | 481.97       |
| Percent for contingency calculation (total of 3%)   | 3.00         | 0.00         |
| <b>2012 to 2013 required contingency reductions (ABY EI x (contingency percent))</b>                                    | <b>18.91</b> | <b>0.00</b>  |
| Control reductions to meet contingency requirements   |              |              |
| Excess reductions from 2012 RFP demonstration   | 37.57        | 0.01         |
| Subtract 2012 MVEB safety margin from excess reductions from 2012 RFP demonstration                                     | 0.00         | 0.00         |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | 33.22        | 10.01        |
| Unspecified Control   | 0.00         | 0.00         |
| Texas Emission Reduction Program (TERP)   | 0.00         | 0.00         |
| Voluntary mobile emissions reduction program (VMEP)   | 0.00         | 0.00         |
| Transportation control measures (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         |
| 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         |
| <b>Total 2013 RFP contingency reductions</b>  | <b>79.17</b> | <b>15.63</b> |
| <b>Contingency Excess (+) or Shortfall (-)</b>  | <b>60.25</b> | <b>15.63</b> |
| <b>Are contingency reductions greater than required contingency reduction?</b>  | <b>Yes</b>   | <b>Yes</b>   |

Supplement Appendix - Sheet 6

2013 Contingency Demonstration for 2012 Attainment

Summary 2013 Contingency for 2012 Attainment Demonstration

| Contingency Element Description  | NOx          | VOC          |
|--|--------------|--------------|
| 2012 ABY EI  | 630.46       | 481.97       |
| Percent for contingency calculation (total of 3%)  | 3.00         | 0.00         |
| <b>2012 to 2013 required contingency reductions (ABY EI x (contingency percent))</b>   | <b>18.91</b> | <b>0.00</b>  |
| 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   | 33.22        | 10.01        |
| Federal on-road reformulated gasoline (RFG)  | 0.00         | 0.00         |
| State inspection and maintenance (I/M) and anti-tampering programs (ATP)   | 0.00         | 0.00         |
| On-road Texas low emission diesel (TxLED)  | 0.00         | 0.00         |
| Texas Emission Reduction Program (TERP)  | 0.00         | 0.00         |
| Local control measures (transportation control measures (TCM) and voluntary mobile emission reduction program (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         |
| <b>Total attainment demonstration contingency reductions</b>   | <b>41.60</b> | <b>15.62</b> |
| <b>Contingency Excess (+) or Shortfall (-)</b>   | <b>22.69</b> | <b>15.62</b> |

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   | NOx          | VOC          |
|---|--------------|--------------|
| 2012 ABY EI   | 630.46       | 481.97       |
| Percent for contingency calculation (total of 3%)   | 3.00         | 0.00         |
| <b>2012 to 2013 required contingency reductions (ABY EI x (contingency percent))</b>                                    | <b>18.91</b> | <b>0.00</b>  |
| 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), and reformulated gasoline (RFG), TxLED | 33.22        | 10.01        |
| Unspecified Control   | 0.00         | 0.00         |
| Texas Emission Reduction Program (TERP)   | 0.00         | 0.00         |
| Voluntary mobile emissions reduction program (VMEP)   | 0.00         | 0.00         |
| Transportation control measures (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         |
| 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         |
| <b>Total attainment demonstration contingency reductions</b>  | <b>41.60</b> | <b>15.62</b> |
| <b>Contingency Excess (+) or Shortfall (-)</b>  | <b>22.69</b> | <b>15.62</b> |

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Supplement Appendix - Sheet 07

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 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                   | 0.01          | -3.93        |
| Is excess emissions enough for safety margin?         | yes           | no           |
| <b>MVEB with safety margin</b>                        | <b>197.05</b> | <b>89.54</b> |

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 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   |
| Federal Motor Vehicle Control Program (FMVCP), inspection and m | Yes                                 | Yes                            | 510.818175  | 204.2205614   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Texas Emission Reduction Program (TERP)                         | No                                  | Yes                            | 0   | 0   |
| Voluntary mobile emissions reduction program (VMEP)             | No                                  | Yes                            | 0   | 0   |
| Transportation control measures (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   |
| 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   |
| Total On-road Mobile Source RFP Control Reductions              |                                     |                                | 510.818175  | 204.2205614   |

Supplement Appendix - Sheet 08

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 | 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               | 0.00          | 0.00         |
| Excess emissions reduction for 2012                   | 37.57         | 0.01         |
| Is excess emissions enough for safety margin?         | yes           | yes          |
| <b>MVEB with Safety Margin</b>                        | <b>177.63</b> | <b>82.20</b> |

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 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   |
| Federal Motor Vehicle Control Program (FMVCP), inspection and m | Yes                                 | Yes                            | 551.2084323   | 219.1252911   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Unspecified Control   | No                                  | No                             | 0   | 0   |
| Texas Emission Reduction Program (TERP)                         | No                                  | Yes                            | 0   | 0   |
| Voluntary mobile emissions reduction program (VMEP)             | No                                  | Yes                            | 0   | 0   |
| Transportation control measures (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   |
| 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   |
| <b>Total On-road Mobile Source RFP Control Reductions</b>       |                                     |                                | <b>551.2084323</b>  | <b>219.1252911</b>  |

Supplement Appendix - Sheet 09

RFP Non-creditable Reductions Calculations  
 DFW Nonattainment Area Eight-Hour Ozone Season VOC and NO<sub>x</sub>  
 Nine Nonattainment Counties: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant

**Calculation of Non-creditable NO<sub>x</sub> and VOC Reductions**

| RFP Analysis Year | On-Road Mobile ABY EI NO <sub>x</sub> | On-Road Mobile ABY EI VOC | Non-Creditable Fleet Turn Over Reductions NO <sub>x</sub> | 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.

**Supplement Appendix - Sheet 10**

**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. 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<sub>x</sub> and VOC Reductions**

| RFP Analysis Year | Total Percent Reduction Requirement | Percent NO <sub>x</sub> | Percent VOC | RFP ABY EI NO <sub>x</sub> (tpd) | RFP ABY EI VOC (tpd) | Required Reductions NO <sub>x</sub> (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.

**Supplement Appendix - 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.

| <b>RFP Post-2002 Target Level of NOx Emissions</b> |                        |                                       |  |                         |
|--|------------------------|---------------------------------------|--|-------------------------|
| <b>RFP Milestone Year</b>                          | <b>Previous Target</b> | <b>FMVCP Non-creditable Reduction</b> | <b>Post-2002 Percent Reduction Requirement NOx (tpd)</b> | <b>NOx Target (tpd)</b> |
| 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 NOx and VOC reduction requirement and the non-creditable fleet (FMVCP/RVP) reductions from the previous milestone/attainment year target level.

| <b>RFP Post-2002 Target Level of VOC Emissions</b> |                        |                                       |  |                         |
|--|------------------------|---------------------------------------|--|-------------------------|
| <b>RFP Milestone Year</b>                          | <b>Previous Target</b> | <b>FMVCP Non-creditable Reduction</b> | <b>Post-2002 Percent Reduction Requirement VOC (tpd)</b> | <b>VOC Target (tpd)</b> |
| 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                  |

**Supplement Appendix - 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 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 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 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 NOx % | Conformity Safety Margin VOC % |
|--------------------|--------------------------------|--------------------------------|
| 2008               | 0                              | 0                              |
| 2011               | 0                              | 0                              |
| 2012               | 0                              | 0                              |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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               |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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               |

Supplement Appendix - Sheet 15

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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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               |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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               |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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               |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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              |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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              |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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              |

**Supplement Appendix - 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**

| <b>RFP Analysis Year</b> | <b>ABY NO<sub>x</sub> (tpd)</b> | <b>ABY VOC (tpd)</b> |
|--------------------------|---------------------------------|----------------------|
| 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               |

Supplement Appendix - 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 <sub>x</sub> (tpd) | Controlled NO <sub>x</sub> (tpd) | Total Reduction NO <sub>x</sub> (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               |

Supplement Appendix - Sheet 23

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

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           | 6.66  | 0.00  | Yes   | No   |
| Coating / printing rules   | Point           | 0.00  | 0.15  | Yes   | No   |
| Portable fuel containers and maintenance (I/M), and reformulated gasoline (RFG), TxLED | Area            | 0.00  | 0.13  | Yes   | No   |
| Unspecified Control  | OR              | 61.92   | 19.16   | Yes   | Yes  |
| Unspecified Control  | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No  | No   |
| Texas Emission Reduction Program (TERP)  | OR              | 0.00  | 0.00  | No  | Yes  |
| Voluntary mobile emissions reduction program (VMEP)                                    | OR              | 0.00  | 0.00  | No  | Yes  |
| Transportation control measures (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   |
| 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   |
| 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  |                 | 80.59   | 25.90   |   |  |

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.

Supplement Appendix - 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   |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR              | 335.06  | 138.24  | Yes   | Yes  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No  | No   |
| Texas Emission Reduction Program (TERP)   | OR              | 0.00  | 0.00  | No  | Yes  |
| Voluntary mobile emissions reduction program (VMEP)   | OR              | 0.00  | 0.00  | No  | Yes  |
| Transportation control measures (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   |
| 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   |
| 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   |                 | 408.21  | 202.98  |   |  |

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.

Supplement Appendix - 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 and maintenance (I/M), and reformulated gasoline (RFG), TxLED | Area            | 0.00  | 3.75  | Yes  | No   |
| Unspecified Control  | OR              | 510.82  | 204.22  | Yes  | Yes  |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   | No   |
| Texas Emission Reduction Program (TERP)  | OR              | 17.61   | 0.00  | No   | Yes  |
| Voluntary mobile emissions reduction program (VMEP)                                    | OR              | 0.00  | 0.00  | No   | Yes  |
| Transportation control measures (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   |
| 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   |
| 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  |                 | 777.40  | 282.81  |  |  |

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

Supplement Appendix - 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   |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR              | 551.21  | 219.13  | Yes  | Yes  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No   |
| Texas Emission Reduction Program (TERP)   | OR              | 17.10   | 0.00  | No   | Yes  |
| Voluntary mobile emissions reduction program (VMEP)   | OR              | 0.00  | 0.00  | No   | Yes  |
| Transportation control measures (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   |
| Tiers 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 SI (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   |                 | 832.96  | 341.04  |  |  |

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

**Supplement Appendix - 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 and maintenance (I/M), and reformulated gasoline (RFG), TxLED | Area            | 0.00  | 2.71  | No   |
| Unspecified Control  | OR              | 584.43  | 229.13  | Yes  |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   |
| Unspecified Control  | OR              | 0.00  | 0.00  | No   |
| Texas Emission Reduction Program (TERP)  | OR              | 0.00  | 0.00  | No   |
| Voluntary mobile emissions reduction program (VMEP)                                    | OR              | 0.00  | 0.00  | No   |
| Transportation control measures (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  |
| 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              | 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   |
| <b>Total</b>   |                 | <b>681.80</b>                                     | <b>327.36</b>                                     |  |

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

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**Supplement Appendix - 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**

| <b>The NDC 2002 Base Year Inventory</b>   | <b>NOx (tons/day)</b> | <b>VOC (tons/day)</b> |
|---|-----------------------|-----------------------|
| 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                 |
| <b>Total NDC 2002 Base Year Inventory</b> | <b>412.86</b>         | <b>80.22</b>          |

| <b>The NDC 2002 RFP Base Year Inventory Out of Area Adjustments</b>  | <b>NOx (tons/day)</b> | <b>VOC (tons/day)</b> |
|--|-----------------------|-----------------------|
| 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                  |
| <b>Total NDC 2002 RFP Base Year Adjustments</b>  | <b>274.10</b>         | <b>11.14</b>          |

| <b>Description</b>   | <b>NOx (tons/day)</b> | <b>VOC (tons/day)</b> |
|--|-----------------------|-----------------------|
| <b>Total NDC 2002 RFP Base Year Inventory with Adjustments</b> | <b>138.76</b>         | <b>69.08</b>          |

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.

**Supplement Appendix - Sheet 29**

**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**

| <b>The EC 2002 Base Year Inventory</b>   | <b>NOx (tons/day)</b> | <b>VOC (tons/day)</b> |
|--|-----------------------|-----------------------|
| 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                  |
| <b>Total EC 2002 Base Year Inventory</b> | <b>655.75</b>         | <b>435.51</b>         |

| <b>The EC 2002 RFP Base Year Inventory Out of Area Adjustments</b>  | <b>NOx (tons/day)</b> | <b>VOC (tons/day)</b> |
|---|-----------------------|-----------------------|
| 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                  |
| <b>Total EC 2002 RFP Base Year Adjustments</b>  | <b>169.22</b>         | <b>9.38</b>           |

| <b>Description</b>                                      | <b>NOx (tons/day)</b> | <b>VOC (tons/day)</b> |
|---|-----------------------|-----------------------|
| *Total EC 2002 RFP Base Year Inventory with Adjustments | <b>486.53</b>         | <b>426.13</b>         |

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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**Supplement Appendix - 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.

| <b>Forecasted 2008 Uncontrolled Emissions Inventory with Pre-2002 Controls</b> |           |           |
|--|-----------|-----------|
| Emissions Description  | NOx (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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**Supplement Appendix - 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.

| <b>Forecasted 2011 Uncontrolled Emissions Inventory with Pre-2002 Controls</b> |           |           |
|--|-----------|-----------|
| Emissions Description  | NOx (tpd) | VOC (tpd) |
| Point Source   | 105.860   | 39.890    |
| Area Source  | 168.660   | 351.900   |
| On-Road Mobile Source  | 707.873   | 293.756   |
| Non-Road Mobile Source   | 186.201   | 137.184   |
| Total  | 1168.594  | 822.731   |

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## Supplement Appendix - 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.

| <b>Forecasted 2012 Uncontrolled Emissions Inventory with Pre-2002 Controls</b> |           |           |
|--|-----------|-----------|
| Emissions Description  | NOx (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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**Supplement Appendix - 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.

| <b>NDC 2002 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls</b> |                  |                  |
|---|------------------|------------------|
| <b>Emissions Description</b>  | <b>NOx (tpd)</b> | <b>VOC (tpd)</b> |
| 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             |
| <b>Total NDC 2002 RFP Adjusted Base Year Emissions Inventory</b>                  | <b>138.76</b>    | <b>69.08</b>     |

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.

**Supplement Appendix - 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.

| <b>EC 2002 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls</b> |                  |                  |
|--|------------------|------------------|
| <b>Emissions Description</b>   | <b>NOx (tpd)</b> | <b>VOC (tpd)</b> |
| 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            |
| <b>Total 2002 RFP Adjusted Base Year Emissions Inventory</b>                     | <b>486.53</b>    | <b>426.13</b>    |

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.

**Supplement Appendix - 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.

| <b>NDC 2008 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls</b> |                  |                  |
|---|------------------|------------------|
| <b>Emissions Description</b>  | <b>NOx (tpd)</b> | <b>VOC (tpd)</b> |
| 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.

**Supplement Appendix - Sheet 36**

**Calculations: EC 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.

| <b>EC 2008 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls</b> |                  |                  |
|--|------------------|------------------|
| <b>Emissions Description</b>   | <b>NOx (tpd)</b> | <b>VOC (tpd)</b> |
| 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.

**Supplement Appendix - 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.

| <b>2011 RFP Adjusted Base Year Emissions Inventory with Pre-1990 Controls</b> |                  |                  |
|---|------------------|------------------|
| <b>Emissions Description</b>  | <b>NOx (tpd)</b> | <b>VOC (tpd)</b> |
| 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            |
| <b>Total 2011 RFP Adjusted Base Year Emissions Inventory</b>                  | <b>625.84</b>    | <b>477.67</b>    |

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.

Supplement Appendix - 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 |           |           |
|---|-----------|-----------|
| 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                             | 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.

**Supplement Appendix - 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.

| <b>RFP Control Strategy Description</b>   | <b>Source Category</b> | <b>Total 2002 to 2008 NOx Emissions Reductions (tpd)</b> | <b>Total 2002 to 2008 VOC Emissions Reductions (tpd)</b> | <b>Use this control for RFP demonstration?<br/>(Yes or No)</b> | <b>Is this an on-road mobile control that will change the MVFR?<br/>(Yes or No)</b> |
|---|------------------------|--|--|--|---|
| 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  |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR                     | 61.92  | 19.16  | Yes  | Yes   |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Texas Emission Reduction Program (TERP)   | OR                     | 0.00   | 0.00   | No   | Yes   |
| Voluntary mobile emissions reduction program (VMEP)   | OR                     | 0.00   | 0.00   | No   | Yes   |
| Transportation control measures (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  |
| 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  |
| 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  |
| <b>Total 2008 RFP Control Reductions</b>  |                        | <b>80.59</b>   | <b>25.90</b>   |  |   |

**Supplement Appendix - 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.

| <b>RFP Control Strategy Description</b>   | <b>Source Category</b> | <b>Total 2002 to 2008 NOx Emissions Reductions (tpd)</b> | <b>Total 2002 to 2008 VOC Emissions Reductions (tpd)</b> | <b>Use this control for RFP demonstration?<br/>(Yes or No)</b> | <b>Is this an on-road mobile control that will change the MVEB?<br/>(Yes or No)</b> |
|---|------------------------|--|--|--|---|
| 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  |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR                     | 335.06   | 138.24   | Yes  | Yes   |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Texas Emission Reduction Program (TERP)   | OR                     | 0.00   | 0.00   | No   | Yes   |
| Voluntary mobile emissions reduction program (VMEP)   | OR                     | 0.00   | 0.00   | No   | Yes   |
| Transportation control measures (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  |
| 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  |
| 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  |
| <b>Total 2008 RFP Control Reductions</b>  |                        | <b>408.21</b>  | <b>202.98</b>  |  |   |

**Supplement Appendix - Sheet 41**

**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.

| <b>RFP Control Strategy Description</b>   | <b>Source Category</b> | <b>Total 2002 to 2008 NOx Emissions Reductions (tpd)</b> | <b>Total 2002 to 2008 VOC Emissions Reductions (tpd)</b> | <b>Use this control for RFP demonstration?<br/>(Yes or No)</b> | <b>Is this an on-road mobile control that will change the MVEB?<br/>(Yes or No)</b> |
|---|------------------------|--|--|--|---|
| 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  |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR                     | 396.98   | 157.39   | Yes  | Yes   |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Unspecified Control   | OR                     | 0.00   | 0.00   | No   | No  |
| Texas Emission Reduction Program (TERP)   | OR                     | 0.00   | 0.00   | No   | Yes   |
| Voluntary mobile emissions reduction program (VMEP)   | OR                     | 0.00   | 0.00   | No   | Yes   |
| Transportation control measures (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  |
| 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  |
| 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  |
| <b>Total 2008 RFP Control Reductions</b>  |                        | <b>488.80</b>  | <b>228.87</b>  |  |   |

Supplement Appendix - 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  | 1.86  | Yes                                     | No   |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR              | 113.84  | 46.83   | Yes                                     | Yes  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No                                      | No   |
| Texas Emission Reduction Program (TERP)   | OR              | 0.00  | 0.00  | No                                      | Yes  |
| Voluntary mobile emissions reduction program (VMEP)   | OR              | 0.00  | 0.00  | No                                      | Yes  |
| Transportation control measures (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   |
| Tiers 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 SI (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   |                 | 270.99  | 53.94   |   |  |

Supplement Appendix - 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?<br>(Yes or No) | Is this an on-road mobile control that will change the MVEB?<br>(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  | 0.92  | Yes  | No  |
| Federal Motor Vehicle Control Program (FMVCP), inspection and maintenance (I/M), and reformulated gasoline (RFG), TxLED | OR              | 40.39   | 14.90   | Yes  | Yes   |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No  |
| Unspecified Control   | OR              | 0.00  | 0.00  | No   | No  |
| Texas Emission Reduction Program (TERP)   | OR              | 0.00  | 0.00  | No   | Yes   |
| Voluntary mobile emissions reduction program (VMEP)   | OR              | 0.00  | 0.00  | No   | Yes   |
| Transportation control measures (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  |
| 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  |
| 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  |                 | 56.07   | 45.42   |  |   |

**Supplement Appendix - 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.

| <b>RFP Control Strategy Description</b>   | <b>Source Category</b> | <b>Total 2012 to 2013 NOx Emissions Reductions (tpd)</b> | <b>Total 2012 to 2013 VOC Emissions Reductions (tpd)</b> | <b>Use this control for 2013 RFP contingency demonstration? (Yes or No)</b> |
|---|------------------------|--|--|---|
| 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), and reformulated gasoline (RFG), TxLED | OR                     | 33.219   | 10.009   | Yes   |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Unspecified Control   | OR                     | 0.000  | 0.000  | No  |
| Texas Emission Reduction Program (TERP)   | OR                     | 0.000  | 0.000  | No  |
| Voluntary mobile emissions reduction program (VMEP)   | OR                     | 0.000  | 0.000  | No  |
| Transportation control measures (TCM)   | OR                     | 0.000  | 0.000  | No  |
| 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  |
| Storage tank rule 90 control / 25 limit   | Area                   | 0.000  | 0.000  | No  |
| Storage tank rule 95 control / 25 limit   | Area                   | 0.000  | 0.000  | No  |
| Non-road TERP   | NR                     | 0.000  | 0.000  | No  |
| Unspecified Control 6   | UK                     | 0.000  | 0.000  | No  |
| Unspecified Control 7   | UK                     | 0.000  | 0.000  | No  |
| Unspecified Control 8   | UK                     | 0.000  | 0.000  | No  |
| Unspecified Control 9   | UK                     | 0.000  | 0.000  | No  |
| Unspecified Control 10  | UK                     | 0.000  | 0.000  | No  |
| <b>Total RFP Control Reductions</b>   |                        | <b>41.599</b>  | <b>15.619</b>  |   |

**Supplement Appendix - Sheet 45**

**Summary Sheet: Uncontrolled NO<sub>x</sub> Emissions Inventory  
DFW Eight-Hour Ozone Nonattainment Area**

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

**Uncontrolled NO<sub>x</sub> (tons per day)**

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

Supplement Appendix - Sheet 46

Summary Sheet: Controlled NO<sub>x</sub> Emissions Inventory  
DFW Eight-Hour Ozone Nonattainment Area

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

Controlled NO<sub>x</sub> (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 |

Supplement Appendix - Sheet 47

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         | 351.90       | 137.18                  | 293.76                 | 822.73 |
| 2012              | 40.74         | 362.95       | 141.36                  | 301.33                 | 846.38 |

Supplement Appendix - Sheet 48

Summary Sheet: Controlled VOC Emissions 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         | 341.78       | 49.84                   | 82.20                  | 514.40 |