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Final Report

# **HOT BITUMINOUS PAVEMENT GRADATION ACCEPTANCE REVIEW OF QC/QA DATA 2000 THROUGH 2003**

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COLORADO DEPARTMENT OF TRANSPORTATION  
RESEARCH BRANCH

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| 16. Abstract<br><p>This report analyzes the Quality Control/Quality Assurance (QC/QA) data for hot bituminous pavements using gradation acceptance awarded in the years 2000 through 2003. Analysis of the overall project performance is accomplished by reviewing the Calculated Pay Factor Composite (CPFC) and Incentive/Disincentive Payments (I/DP) calculations. A detailed analysis of each of the test elements: mat density, percent asphalt, gradation, and joint density is also presented in tables, figures, and sub-reports. Various data groupings are used to evaluate the data including: year, region, &amp; grading.</p> <p>Continued improvements can be measured in the hot bituminous pavement in the years 2000 through 2003. When evaluating the overall results for the projects, by reviewing the Calculated Pay Factor Composite, there is a 0.006 improvement. Improvements in each of the test elements can also be measured. The mat density element has shown an improvement in quality levels of 2.06% over the four-year time period. Percent asphalt has increased by 2.70% and the gradation element has shown the best improvement measured at 4.15%. The mat density element has the best reported quality levels. Next best quality levels are in the percent asphalt element. The gradation element continues to rank last in quality levels but has seen the best improvement since 2000. Improvements can also be measured when evaluating the mixes by grading. Each of the elements has shown improvements in quality levels when evaluated by grading with the exception for grading S in the mat density element which shows a slight decrease in quality levels over the four-year time period. Overall grading SX has shown better test results as compared to grading S in each year when reviewing the Calculated Pay Factor Composite. The results for the joint density element after one year are about neutral. About the same number of projects are receiving incentive payments as are receiving disincentive payments on this element.</p> |  |                                                      |  |                                                                                                                                                                  |           |
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**Hot Bituminous Pavement Gradation Acceptance  
Review of QC/QA Data  
2000 Through 2003**

by

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## **TABLE OF CONTENTS**

|                                                                     |           |
|---------------------------------------------------------------------|-----------|
| <b>1.0 INTRODUCTION AND COMMENTS .....</b>                          | <b>1</b>  |
| <b>2.0 SPECIFICATIONS .....</b>                                     | <b>1</b>  |
| <b>3.0 CALCULATIONS AND DEFINITIONS.....</b>                        | <b>2</b>  |
| <b>4.0 DESCRIPTION OF REPORTS .....</b>                             | <b>6</b>  |
| <b>5.0 DATA FOR THE YEARS 1991 TO 1997 .....</b>                    | <b>11</b> |
| <b>6.0 DISCUSSION OF DATA .....</b>                                 | <b>11</b> |
| 6.1 Projects Evaluated.....                                         | 11        |
| 6.2 Calculated Pay Factor Composite .....                           | 12        |
| 6.3 Calculated Pay Factor Composite by Grading .....                | 18        |
| 6.4 Incentive/Disincentive Payments .....                           | 21        |
| 6.5 Recap of Data by Test Element - 1991 to 2003 .....              | 23        |
| 6.6 Review of Element Quality Levels 2000 to 2003.....              | 28        |
| 6.7 Test Element Quality Levels, Gratings S & SX, 2000 to 2003..... | 31        |
| 6.8 Joint Density Test Information .....                            | 36        |
| 6.9 Effect of Adding Joint Density Testing .....                    | 37        |
| 6.9.1 Effect of Adding Joint Density Testing, Grading S & SX ....   | 40        |
| 6.10 Recap Reports 2000 to 2003 Data.....                           | 43        |
| 6.11 Reports for 2003 .....                                         | 43        |
| <b>7.0 SUMMARY .....</b>                                            | <b>44</b> |
| <b>8.0 UPDATES AND CONTACT .....</b>                                | <b>44</b> |
| <b>REFERENCES .....</b>                                             | <b>45</b> |
| <b>Appendix A</b> Recap Reports for Project Data 2000 to 2003       |           |
| <b>Appendix B</b> Reports for 2003 Projects                         |           |
| <b>Appendix B</b> Joint Density Reports 2002 to 2003                |           |

## LIST OF FIGURES

|                                                                           |    |
|---------------------------------------------------------------------------|----|
| 1. Calculated Pay Factor Composite by Year.....                           | 15 |
| 2. Calculated Pay Factor Composite by Year with Trendline .....           | 16 |
| 3. Calculated Pay Factor Composite by Region/Year, Reg. 1-3.....          | 16 |
| 4. Calculated Pay Factor Composite by Region/Year, Reg. 4-6.....          | 17 |
| 5. Calculated Pay Factor Composite by Region 2000 to 2003.....            | 17 |
| 6. Calculated Pay Factor Composite by Year Grading S & SX .....           | 20 |
| 7. Calculated Pay Factor Composite by Year S & SX with Trend .....        | 20 |
| 8. Percent Asphalt Quality Levels .....                                   | 25 |
| 9. Percent Asphalt Pay Factors.....                                       | 25 |
| 10. Density Quality Levels.....                                           | 26 |
| 11. Density Pay Factors .....                                             | 26 |
| 12. Gradation Quality Levels .....                                        | 27 |
| 13. Gradation Pay Factors .....                                           | 27 |
| 14. Quality Levels by Test Element.....                                   | 29 |
| 15. Element Quality Levels with Trendline .....                           | 30 |
| 16. Percent Asphalt Quality Levels – Gradings S & SX .....                | 33 |
| 17. Percent Asphalt Quality Levels – Gradings S & SX with Trend.....      | 33 |
| 18. Density Quality Levels – Gradings S & SX.....                         | 34 |
| 19. Density Quality Levels – Gradings S & SX with Trendline.....          | 34 |
| 20. Gradation Quality Levels – Gradings S & SX.....                       | 35 |
| 21. Gradation Quality Levels – Gradings S & SX with Trendline.....        | 35 |
| 22. Percent Asphalt Quality Levels by Specification .....                 | 39 |
| 23. Mat Density Quality Levels by Specification.....                      | 39 |
| 24. Gradation Quality Levels by Specification .....                       | 40 |
| 25. Percent Asphalt Quality Levels by Specification, Grading S & SX ..... | 42 |
| 26. Mat Density Quality Levels by Specification, Grading S & SX.....      | 42 |
| 27. Gradation Quality Levels by Specification, Grading S & SX.....        | 43 |

## LIST OF TABLES

|                                                                     |    |
|---------------------------------------------------------------------|----|
| 1. “W” Factors for Various Elements .....                           | 2  |
| 2. Projects Evaluated .....                                         | 12 |
| 3. Calculated Pay Factor Composite by Year/Region .....             | 14 |
| 4. Calculated Pay Factor Composite by Year and Grading.....         | 19 |
| 5. Incentive/Disincentive Payments – Recap by Year.....             | 22 |
| 6. Recap of Yearly Data by Test Element .....                       | 24 |
| 7. Review of Test Elements - Gradings S & SX .....                  | 32 |
| 8. Joint Density Test Information - Grading S & SX .....            | 36 |
| 9. Comparison of Joint Density and Non Joint Density Projects ..... | 38 |
| 10. Comparison of Joint Density Projects – Grading S & SX .....     | 41 |

## LIST OF REPORTS

|                                                                    |            |
|--------------------------------------------------------------------|------------|
| 1. Asphalt Content – Recap by Grading/Year/Region.....             | Appendix A |
| 2. Mat Density – Recap by Grading/Year/Region .....                | Appendix A |
| 3. Gradation – Process Information by Grading/Year/Region .....    | Appendix A |
| 4. Gradation Standard Deviation Info. by Grading/Year/Region ..... | Appendix A |
| 5. Joint Density – Recap by Grading/Year/Region.....               | Appendix A |

### **2003 Project Data**

|                                                                |            |
|----------------------------------------------------------------|------------|
| 6. Project Listing by Region/Subaccount .....                  | Appendix B |
| 7. Project Data .....                                          | Appendix B |
| 8. Calculated Pay Factor Composite and I/DP by Region.....     | Appendix B |
| 9. Asphalt Content – Process Information by Grading .....      | Appendix B |
| 10. Asphalt Content – Recap by Region .....                    | Appendix B |
| 11. Mat Density – Process Information by Grading.....          | Appendix B |
| 12. Mat Density – Recap by Region .....                        | Appendix B |
| 13. Gradation – Process Information by Grading.....            | Appendix B |
| 14. Gradation – Process Information – Recap by Region .....    | Appendix B |
| 15. Gradation Standard Deviation Information by Grading .....  | Appendix B |
| 16. Gradation Standard Deviation Info. – Recap by Region ..... | Appendix B |
| 17. Project Listing – Joint Density .....                      | Appendix B |
| 18. Joint Density – Process Information by Grading .....       | Appendix B |



## **1.0 INTRODUCTION AND COMMENTS**

The Colorado Department of Transportation (CDOT) began Quality Control/Quality Assurance (QC/QA) construction for hot bituminous pavement (HBP) in 1992 with the implementation of a three-year pilot program which was essentially completed in 1994 (several projects were held over and completed in 1995).

In 1994 a revised and updated specification was written, designated as QPM 2. It was used on a few projects completed in 1995 and essentially all HBP projects completed in 1996 and 1997. Reports have been published for 1992 through 1996. These are available from the CDOT Library. The 1995 construction report contains summaries for both QPM 1 & 2.

This report continues the analysis of the QC/QA data for hot bituminous paving projects using gradation acceptance and covers the years 1991 through 2003. Detailed analysis is given for the years 2000 through 2003. Recap reports showing different data groupings are also presented for the years 2000 through 2003. Detailed reports for the projects awarded in 2003 are included in this report. Reports evaluating the percent asphalt, mat density, gradation, & joint density elements are detailed by grading & region are included. Charts comparing the quality level and pay factor information for the years 1991 to 1997 and 2000 to 2003 are displayed for the percent asphalt, mat density, & gradation elements. The previous report in this series titled *Hot Bituminous Pavement Gradation Acceptance Review of QC/QA Data 2000 to 2002* is available from the CDOT Library.

The general format and presentation of data in this report are similar to that used in previous QC&QA reports. Information on the background, development, philosophy and rationale involved can be found in the previous reports and is not repeated here.

## **2.0 SPECIFICATIONS**

*Specifications - Revision of Sections 105 and 106, Quality of Hot Bituminous Pavement.*

The Revision to Sections 105 & 106 governs the QC/QA calculations. A major change to the specification was made with the release of the specification dated December 20, 2002. Joint density testing was included in the calculation for Incentive/Disincentive Payments (I/DP) in this release. The joint density element now accounts for 15 percent of the total I/DP calculation. The weights associated with the other test elements were adjusted to account for the new testing element. Table 1 shows the old and new weights and test elements. No other changes were made in the specification that affected the calculations for quality level, pay factor, or I/DP at that time.

**Table 1. “W” Factors For Various Elements**

|                             | <b>W Factor</b>        |                    |                  |                      |
|-----------------------------|------------------------|--------------------|------------------|----------------------|
| <b>Specification</b>        | <b>Percent Asphalt</b> | <b>Mat Density</b> | <b>Gradation</b> | <b>Joint Density</b> |
| <b>10/4/01 &amp; Older</b>  | 30                     | 50                 | 20               |                      |
| <b>12/20/02 &amp; Newer</b> | 25                     | 45                 | 15               | 15                   |

Prior to the changes made with the release of the 12/20/02 specification the only other change made in calculations was a change to the calculation for pay factor in February of 1997 with the incorporation of Formula 1 into the calculation. At the same time Table 105-2, Formulas for Calculating PF Based on Pn, was modified to include additional equations for calculating Pn. The revision to sections 105 and 106 was released as a standard specification beginning in 1995. The calculation for quality levels has remained unchanged since the beginning. The specification has been revised numerous times over the years but the changes were in other areas and did not affect the QC/QA calculations. Use of CDOT's QC/QA computer program is a requirement of the specification. The computer program is based on this specification.

### **3.0 CALCULATIONS AND DEFINITIONS**

*Process Quantities* – Process quantities of material are used for all calculations in this report except for the calculation of the Calculated Pay Factor Composite. In general,

processes group like material or construction techniques together. As long as the material being evaluated remains unchanged it will be added to the current process. If a change to the material or the construction technique occurs then a new process will be created. Please see the Revision to Sections 105 & 106, Quality of Hot Bituminous Pavement for details on processes.

*Calculated Pay Factor Composite* – The Calculated Pay Factor Composite (CPFC) is a way to evaluate the overall performance of the project. The CPFC represents the percentage increase or decrease to the unit price for hot bituminous pavement paid on the project. Projects with a CPFC greater than 1.0 will have received an incentive payment. Projects with a CPFC less than 1.0 will have received a disincentive payment. The CPFC is back calculated from the project's Final Incentive/Disincentive Payment (I/DP). This calculation is used rather than an overall quality level calculation since a project can contain processes in which no quality level is calculated, processes with less than three tests. The calculation used here also addresses the problem which occurred in some of the reported projects in which the final element quantities were not equal. The main reason this calculation is used is to avoid the problems associated with averaging of the data. The calculation is as follows:

$$CPFC = (I/DP / ((UP_p) * (QR_p))) + 1$$

Where: CPFC = Calculated Pay Factor Composite.

I/DP = Incentive/Disincentive Payment for the project.

UP<sub>p</sub> = Calculated Unit Price for the project.

QR<sub>p</sub> = Quantity Represented Project, average of the tons reported in the percent asphalt and gradation elements.

$$UP_p = (\sum (UP_n * T_n)) / \sum T_n$$

Where: UP<sub>n</sub> = Unit Price for the process.

T<sub>n</sub> = Tons represented by the process, average of the tons reported in the percent asphalt and gradation elements.

**Note:** The quantities used in the calculation of average tons and average price are the

quantities reported in the percent asphalt and gradation elements. After a review of the project data it was determined that these quantities most accurately represented the actual produced quantity when the reported quantities were not equal in the test elements.

*CTS (Compaction Test Section)* – A compaction pavement test section used to establish the number of rollers and rolling pattern needed to achieve specified densities, see Revision of Section 401, Compaction Test Section for details.

*CTS Tons (Compaction test section tons)* – Tons of material accounted for in the mat density test element by the construction of compaction test sections within the project.

*CTS I/DP (Compaction test section Incentive/Disincentive Payment)* – The calculated I/DP for compaction test sections.

*I/DP (Incentive/Disincentive Payment)* - The amount of increase or decrease paid for a quantity of material within a test element, based on the calculated pay factor. The I/DP for a project is the summation of all calculated element I/DPs.

*Joint Density* – Density measurements taken on the longitudinal joint between paving passes, see Revision of Section 401, Plant Mix Pavements – General for details.

*Key Sieve* – In the gradation element, a quality level is calculated on each of the specification sieves. The lowest calculated QL is used to determine the PF for the gradation element. The sieve with the lowest QL has been labeled the Key Sieve in this report.

*Mean to TV* - The absolute value of the difference between the mean for the process and the target value for the test element. The lower the value the closer the mean for the process approaches the target value of the specification. This is one of the two factors that effects the quality level calculation. The other factor is the standard

deviation for the process.

*Pay Factor* - The amount of increase or decrease, displayed as a percentage, applied to the unit price of the pavement. Multiplied by the W Factor for the element to calculate I/DP for an element.

*PF 1.0 Tons (Pay factor 1.0 tons)* – Used in the mat density element to account for tons of material in which the pay factor is set to 1.0 by specification. Usually used on a project when the thickness of the mat being placed becomes too thin to be accurately tested.

*Quality Level* – Quality levels (Percent within limits) are calculated in accordance with Colorado Procedure 71. Quality level analysis is a statistical procedure for estimating the percent compliance to specification limits and is affected by shifts in the arithmetic mean and by the sample standard deviation. Analysis of both factors is essential whenever evaluating quality level results.

*Slope of the regression line*      equation: 
$$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

Slope shows both steepness and direction. With positive slope the line moves upward when going from left to right. With negative slope the line moves down when going from left to right. The higher the value the steeper the line.

*Std. Dev. (Standard Deviation)*      equation: 
$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

*Std. Dev. – V (Standard Deviation minus the V Factor)* - A comparison of the standard deviation for the process to the historical standard deviation for the element, the V Factor. Negative values indicate that the process has a smaller standard deviation than historically reported. The lower the number the better. The second factor that effects the quality level calculations.

*Trendline* equation:  $y = mx + b$

Where:  $m$  = slope of the line.

$b$  = y-intercept.

*TV (Target Value)* - The midpoint of the specification range.

*V (V Factor)* - One standard deviation for the test element based on historical data.

*W Factor* – The weight given the test element. Used in the calculation of I/DP's, see Table 1.

*Weighted Average* – The weighted average used in this report is based on tons of material represented.

## **4.0 DESCRIPTION OF REPORTS**

*Report Criteria* – At the beginning of each report the selection criteria are listed for the data contained in the report. The primary grouping of projects is by their bid date. Quality levels are not calculated on processes that contain less than three test results. Therefore, those processes are excluded from the reports that contain quality level calculations. Other justifications as to why a project or process is excluded from the report are detailed in the report criteria.

*Sample Size* – Not too many conclusions should be drawn when the number of observations, sample size, is small. Generally speaking, an evaluation of five or less samples is not considered very reliable. Always check the number of samples included in the evaluation when doing comparisons of the data. Most of the reports presented here will indicate the number of samples included in the various data groupings. Figures that appear in this report will have associated tables that give the number of samples included in the data groupings.

**Reports 1 to 5 - Recap Reports by Grading/Year/Region 2000 through 2003: Asphalt Content, Mat Density, Gradation – Process Information, Gradation – Standard Deviation, and Joint Density, Appendix A.** For each of the test elements a report that recaps the information 2000 through 2003 is presented. The information is grouped first by grading and then by year. Region information is displayed for each year. Information presented includes: processes, tons, and tests along with the weighted averages for price, quality level, pay factor, and standard deviation. These reports are very useful for tracking the performance of a grading of HBP through the years and by each region. The information from these reports is used throughout the body of this report.

## **2003 REPORTS, Appendix B**

***Project Listing by Region/Subaccount.*** This report contains information for the projects included in the evaluation for 2003. The subaccount, project code, location, region, supplier, bid date, total bid, and plan quantity are listed for each project. The report is grouped by region and sorted by project code. A region recap is displayed. A statewide recap is given at the end of the report.

***Project Data.*** The Project Data report displays all of the QC/QA data reported for each project. The projects are sorted by subaccount number. Each project's data is detailed by mix design and process number. The number of tests, quantity in tons, quality levels, pay factors, and Incentive/Disincentive Payment are given for each mix design and process. A summary for each project is also displayed and shows the CPFC. This report contains all of the project's data and is the best report to review when concerned about an individual project. All of a project's data may not be contained in other reports if the data does not meet that report's individual criteria.

***Calculated Pay Factor Composite and IIDP by Region.*** This report evaluates two key calculations for each project, the Calculated Pay Factor Composite (CPFC) and the

project Incentive/Disincentive Payment (I/DP). The CPFC gives an index of the overall quality of the project; see Calculations for details on the calculation of the CPFC. The I/DP is the incentive or disincentive amount the project received for the HBP. The report groups the projects by region and contains a region recap. A statewide recap of the information is given at the end of the report.

**Note:** There is not a direct correlation between Calculated Pay Factor Composite and Incentive/Disincentive Payment. The calculations for pay factors are dependent on the number of tests and the quantity of material associated with each process. Larger runs of production, processes, have the potential to receive higher pay factors. Therefore, producing uniform material has the benefit of being eligible for more incentive. Differences in the process quantity can result in a different calculation for pay factor even if the quality levels are the same. Please refer to the Revision to Sections 105 and 106 for details on the calculations.

## **ASPHALT CONTENT REPORTS**

***Asphalt Content – Process Information.*** Asphalt content information is detailed in this report. The information is grouped by grading and sorted by quality level. For each process the quality level, pay factor, target value, mean, and standard deviation are given. The mean to target value and standard deviation minus V factor calculations are important whenever evaluating the quality level for the process. A recap for each grading is calculated. A recap that combines the information for all of the gradings is given at the end of the report.

***Asphalt Content – Recap by Region.*** This report contains the same information as in the previous report except that the information is first grouped by grading and then by region. Only a recap of each region's results is presented. An average unit price is calculated for each region and grading. A statewide recap is given at the end of the report.

## MAT DENSITY REPORTS

**Mat Density – Process Information.** Mat density information is detailed in this report. The information is grouped by grading and sorted by quality level. For each process the quality level, pay factor, target value, mean, and standard deviation are given. The mean to target value and standard deviation minus V factor calculations are important whenever evaluating the quality level for the process. A recap for each grading is calculated. A recap that combines the information for all of the gradings is given at the end of the report.

**Mat Density – Recap by Region.** This report contains the same information as in the previous report except that the information is first grouped by grading and then by region. Only a recap of each region's results is displayed. An average unit price is calculated for each region and grading. A statewide recap is given at the end of the report.

## GRADATION REPORTS

The gradation element is covered in two sets of reports: *Gradation Process Information* and *Gradation Standard Deviation* reports. The second set of reports contains information on each of the specification sieves which is not detailed in the first set of reports.

**Gradation – Process Information.** Project information for the gradation element with the exception of standard deviation information is detailed in this report. The information is grouped by grading and sorted by quality level. The Key Sieve listed for each process is the specification sieve with the lowest calculated quality level. The lowest calculated quality level is the one used for the gradation element as a whole. A recap for each grading is calculated. A recap that combines the information for all of the gradings is given at the end of the report.

***Gradation – Recap by Region.*** This report contains the same information as in the previous report except that the information is first grouped by grading and then by region. Only a recap of each region's results is displayed. An average unit price is calculated for each region and grading. A statewide recap is given at the end of the report.

***Gradation – Standard Deviation Information.*** The standard deviation information for each of the specification sieves is detailed in this report. The information is grouped by grading and sorted by bid date. A recap for each grading is calculated. A recap that combines the information for all of the gradings is given at the end of the report.

***Gradation – Standard Deviation - Recap by Region.*** This report contains the same information as in the previous report except that the information is first grouped by grading and then by region. Only a recap of each region's results is displayed. A statewide recap is given at the end of the report.

## **JOINT DENSITY REPORTS**

Joint density testing became a testing requirement with the release of Revision to Sections 105 & 106 dated December 20, 2002. Only a few projects were released in 2002 which contained the joint density specification. All of the projects which contained the specification in the years 2002 and 2003 will be combined for this initial review of the specification.

***Project Listing – Joint Density Projects.*** This report lists all the projects that contained the joint density specification. The report is grouped by region and sorted by subaccount. The report also indicates on which projects the joint density testing requirement was waived by project personnel.

***Joint Density – Process Information by Grading.*** Joint density information is detailed in this report. The information is grouped by grading and sorted by quality

level. For each process the quality level, pay factor, target value, mean, and standard deviation are given. The mean to target value and standard deviation minus V factor calculations are important whenever evaluating the quality level for the process. A recap for each grading is calculated. A recap that combines the information for all of the gradings is given at the end of the report.

***Joint Density – Recap by Region.*** This report contains the same information as in the previous report except that the information is first grouped by grading and then by region. Only a recap of each region's results is displayed. An average unit price is calculated for each region and grading. A statewide recap is given at the end of the report.

## **5.0 DATA FOR THE YEARS 1991 TO 1997**

Data presented in this report for the years 1991 to 1997 was obtained from Report No. CDOT-DTD-R-98-4, Hot Bituminous Pavement QC&QA Projects Constructed in 1997 Under QPM 2 Specifications, Bud A. Brakey, P. E., May 1998. For information concerning this data please see the referenced report.

## **6.0 DISCUSSION OF THE DATA**

### **6.1 Projects Evaluated**

Table 2 displays the number of projects and tons of material by year included in the evaluations. A relatively small number of projects was evaluated in the years 1992, 1993, & 1997. This may account for the high results reported in these years. The data for the years 1998 & 1999 was not maintained by the Pavement Design Unit and is currently unavailable. For the years 2000 through 2002, twenty-three projects were added to the data base since the publication of the previous report, Report No. CDOT-DTD-R-2004-04, Hot Bituminous Pavement Gradation Acceptance Review of QC/QA Data 2000 to 2002, Eric Chavez, March 2004. The raw data from the newly added projects is not presented in this report. However, all calculations in this report reflect the

data contained in the current data base. The calculated values for the years 2000 through 2002 in this report may not match those in the previous report. None of the current values are significantly different than those in the previous report. Additional project data will be added to the database as the Pavement Design Unit receives it.

**Table 2. Projects Evaluated**

|             |                 |             | <b>Evaluated</b>            |                  |                         |             |
|-------------|-----------------|-------------|-----------------------------|------------------|-------------------------|-------------|
|             | <b>Awarded</b>  |             | <b>Gradation Acceptance</b> |                  | <b>Voids Acceptance</b> |             |
| <b>Year</b> | <b>Projects</b> | <b>Tons</b> | <b>Projects</b>             | <b>Tons</b>      | <b>Projects</b>         | <b>Tons</b> |
| 1991        |                 |             |                             | <b>2,000,000</b> |                         |             |
| 1992        |                 |             | <b>7</b>                    | <b>282,000</b>   |                         |             |
| 1993        |                 |             | <b>18</b>                   | <b>482,000</b>   |                         |             |
| 1994        |                 |             | <b>58</b>                   | <b>1,496,000</b> |                         |             |
| 1995        |                 |             | <b>40</b>                   | <b>1,104,000</b> |                         |             |
| 1996        |                 |             | <b>--</b>                   | <b>830,000</b>   |                         |             |
| 1997        |                 |             | <b>17</b>                   | <b>378,000</b>   |                         |             |
| 2000        | 78              | 2,258,407   | <b>49</b>                   | <b>1,167,563</b> | 10                      | 663,818     |
| 2001        | 54              | 1,321,609   | <b>39</b>                   | <b>870,442</b>   | 3                       | 155,270     |
| 2002        | 71              | 1,974,106   | <b>41</b>                   | <b>868,182</b>   | 20                      | 811,523     |
| 2003        | 74              | 2,327,464   | <b>28</b>                   | <b>734,770</b>   | 15                      | 569,645     |

## 6.2 Calculated Pay Factor Composite by Year and Region

The Calculated Pay Factor Composite (CPFC) information for the years 2000 through 2003 is displayed in Table 3. The information is sorted by year and then by region. Calculations covering the four-year time period are given at the end of the report. The weighted average is calculated for each of the data groupings. The maximum and minimum values are also displayed. The CPFC represents the percentage increase or decrease to the unit price for hot bituminous pavement paid on the projects, see the section Calculations and Definitions for details on the calculation of the CPFC. A CPFC above 1.0 indicates that an incentive payment was paid for the HBP. A CPFC below 1.0 indicates that a disincentive was applied to the pavement. Figure 1 displays the overall CPFC, all gradings of HBP included, by year for the years 2000 through 2003. Figure 2 displays the CPFC results and the calculated trendline. Improvements in the

CPFC can be seen over this time period. The rate of improvement is calculated at 0.006 over the four-year time period. The results in all but the first year are above the neutral mark of 1.0 showing that more incentive payments have been made than disincentive payments. Figures 3 and 4 display the CPFC results for each of the regions by year. An upward trend can be seen in most of the region's data. However, many of the data groupings contain three or fewer projects and are not large enough to make decisive conclusions. Each of the region's overall, 2000 through 2003, CPFC is shown in Figure 5. Regions 1, 3, and 4 have an average CPFC greater than 1%. Regions 5 and 6 are between 0 and 1% and Region 2 is slightly greater than 1% disincentive.

### Table 3. Calculated Pay Factor Composite by Year/Region

**Criteria:** Projects with Bid Dates from 1/1/00 to 12/31/03.

PFC is back calculated from the Project's I/DP

A Calculated Average Unit Price is used in the calculation

|      |               |          |           | Calculated Pay Factor Composite |         |         |
|------|---------------|----------|-----------|---------------------------------|---------|---------|
| 2000 | Region        | Projects | Tons      | Average                         | Minimum | Maximum |
|      | 1             | 10       | 172,057   | 1.00494                         | 0.91509 | 1.04477 |
|      | 2             | 14       | 307,681   | 0.97200                         | 0.78941 | 1.04209 |
|      | 3             | 13       | 404,329   | 1.01418                         | 0.96192 | 1.04569 |
|      | 4             | 2        | 29,167    | 0.99760                         | 0.99692 | 0.99828 |
|      | 5             | 2        | 50,891    | 1.01011                         | 1.00459 | 1.01563 |
|      | 6             | 8        | 108,417   | 1.00966                         | 0.97634 | 1.04014 |
|      | <b>Totals</b> | 49       | 1,072,542 | 0.99866                         | 0.78941 | 1.04569 |

|      |               |          |         | Calculated Pay Factor Composite |         |         |
|------|---------------|----------|---------|---------------------------------|---------|---------|
| 2001 | Region        | Projects | Tons    | Average                         | Minimum | Maximum |
|      | 1             | 5        | 162,498 | 1.01408                         | 0.99761 | 1.03692 |
|      | 2             | 13       | 234,140 | 0.99270                         | 0.93018 | 1.03508 |
|      | 3             | 12       | 286,042 | 1.01088                         | 0.97675 | 1.04384 |
|      | 4             | 1        | 27,853  | 1.03670                         | 1.03670 | 1.03670 |
|      | 5             | 3        | 88,053  | 1.00831                         | 0.95729 | 1.04596 |
|      | 6             | 5        | 101,580 | 1.02784                         | 1.01872 | 1.03753 |
|      | <b>Totals</b> | 39       | 900,166 | 1.00787                         | 0.93018 | 1.04596 |

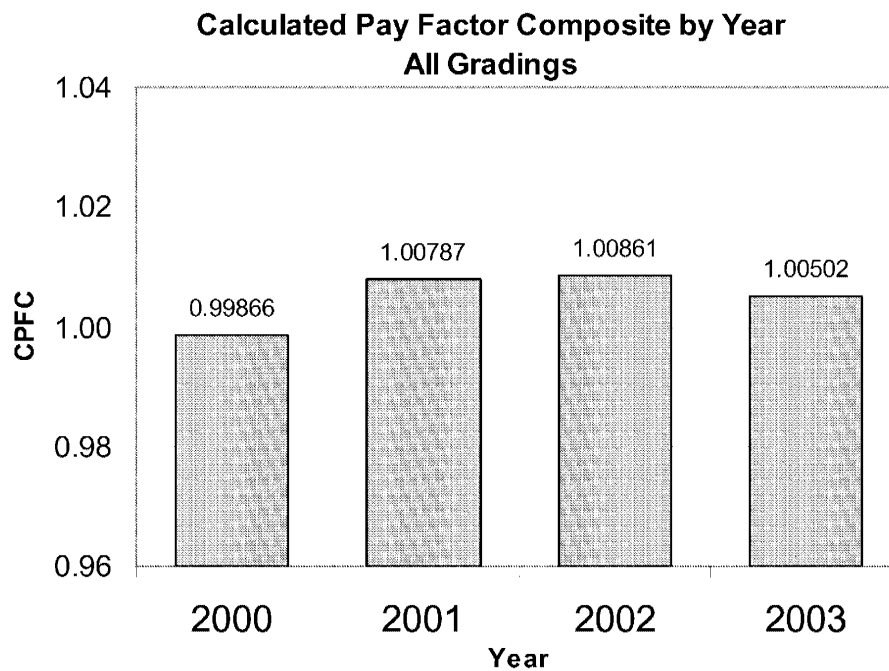
|      |               |          |         | Calculated Pay Factor Composite |         |         |
|------|---------------|----------|---------|---------------------------------|---------|---------|
| 2002 | Region        | Projects | Tons    | Average                         | Minimum | Maximum |
|      | 1             | 7        | 177,270 | 1.01805                         | 0.98954 | 1.04708 |
|      | 2             | 7        | 57,979  | 1.00779                         | 0.92137 | 1.03800 |
|      | 3             | 7        | 225,425 | 1.02298                         | 1.00525 | 1.04191 |
|      | 4             | 4        | 67,556  | 1.01589                         | 0.99607 | 1.03345 |
|      | 5             | 6        | 170,250 | 1.02447                         | 1.01341 | 1.03800 |
|      | 6             | 10       | 159,765 | 0.98008                         | 0.83596 | 1.03381 |
|      | <b>Totals</b> | 41       | 858,245 | 1.00861                         | 0.83596 | 1.04708 |

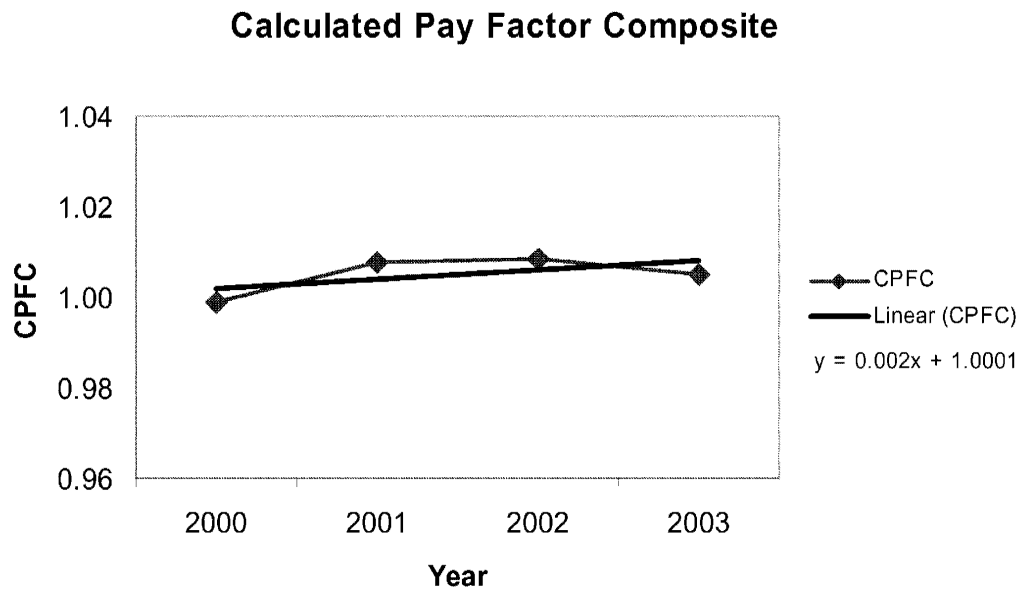
|      |               |          |         | Calculated Pay Factor Composite |         |         |
|------|---------------|----------|---------|---------------------------------|---------|---------|
| 2003 | Region        | Projects | Tons    | Average                         | Minimum | Maximum |
|      | 1             | 6        | 209,762 | 1.01329                         | 0.94635 | 1.04596 |
|      | 2             | 9        | 194,753 | 0.99591                         | 0.95356 | 1.03253 |
|      | 3             | 5        | 115,089 | 1.01424                         | 0.99696 | 1.02865 |
|      | 4             | 3        | 159,053 | 1.02871                         | 1.01927 | 1.04182 |
|      | 5             | 4        | 58,854  | 0.97445                         | 0.87280 | 0.01913 |
|      | 6             | 1        | 28,160  | 1.04234                         | 1.04234 | 1.04234 |
|      | <b>Totals</b> | 28       | 765,671 | 1.00502                         | 0.87280 | 1.04596 |

**Table 3. Continued**

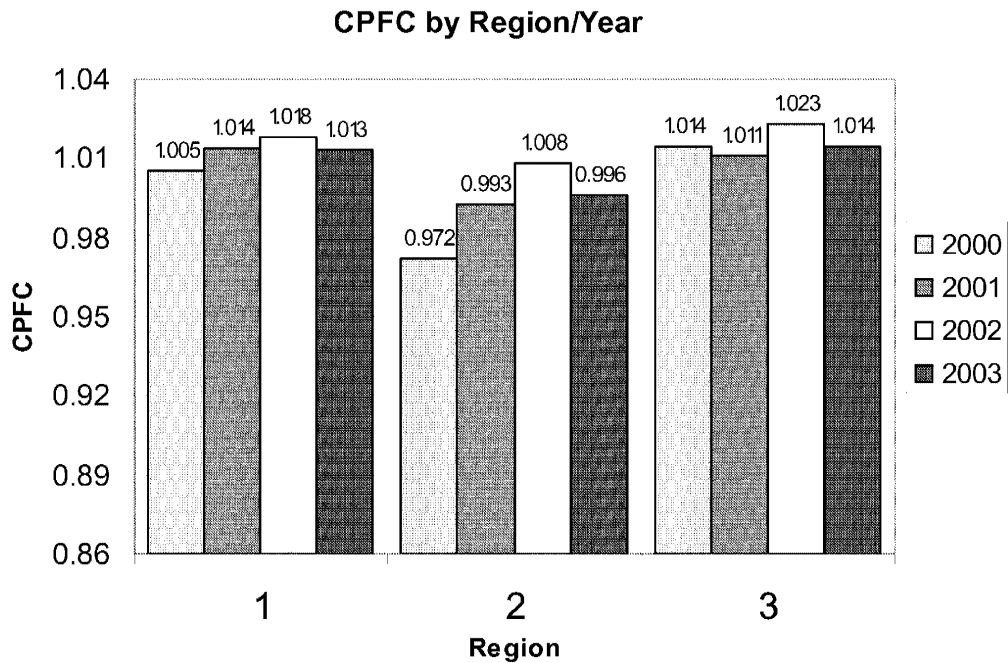
| 2000 to 2003 | Region        | Projects | Tons      | Calculated Pay Factor Composite |         |         |
|--------------|---------------|----------|-----------|---------------------------------|---------|---------|
|              |               |          |           | Average                         | Minimum | Maximum |
|              | 1             | 58       | 721,587   | 1.01164                         | 0.91509 | 1.04708 |
|              | 2             | 43       | 794,553   | 0.98909                         | 0.78941 | 1.04209 |
|              | 3             | 37       | 1,030,885 | 1.01478                         | 0.96192 | 1.04569 |
|              | 4             | 10       | 283,629   | 1.01816                         | 0.99607 | 1.04182 |
|              | 5             | 15       | 368,048   | 1.00598                         | 0.87280 | 1.04596 |
|              | 6             | 24       | 397,922   | 1.00249                         | 0.83596 | 1.04234 |
|              | <b>Totals</b> | 157      | 3,596,624 | 1.00468                         | 0.78941 | 1.04708 |



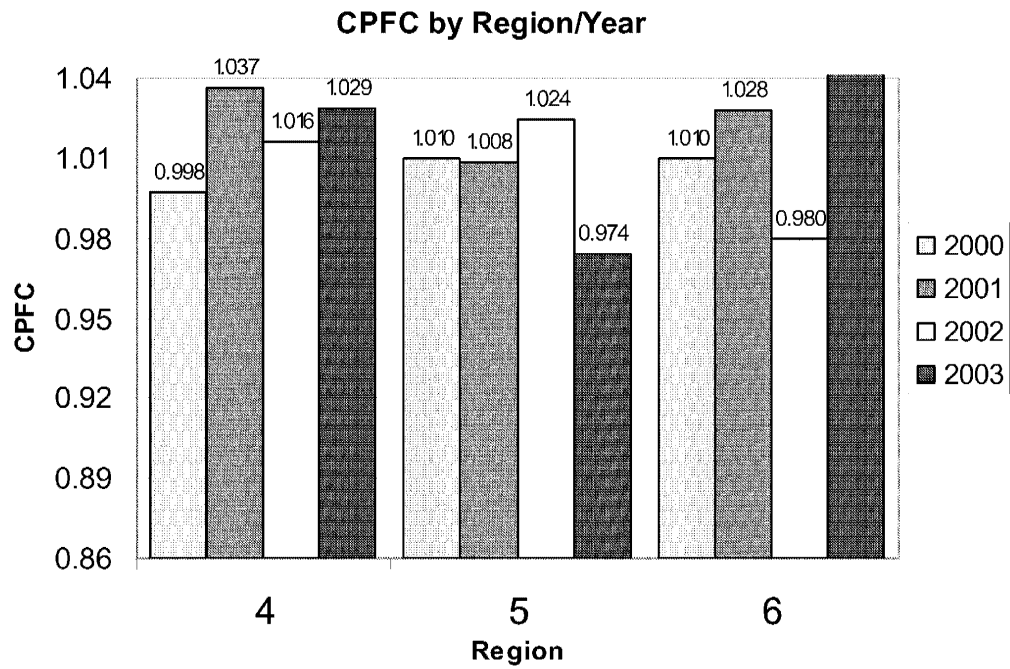
**Figure 1. Calculated Pay Factor Composite by Year**



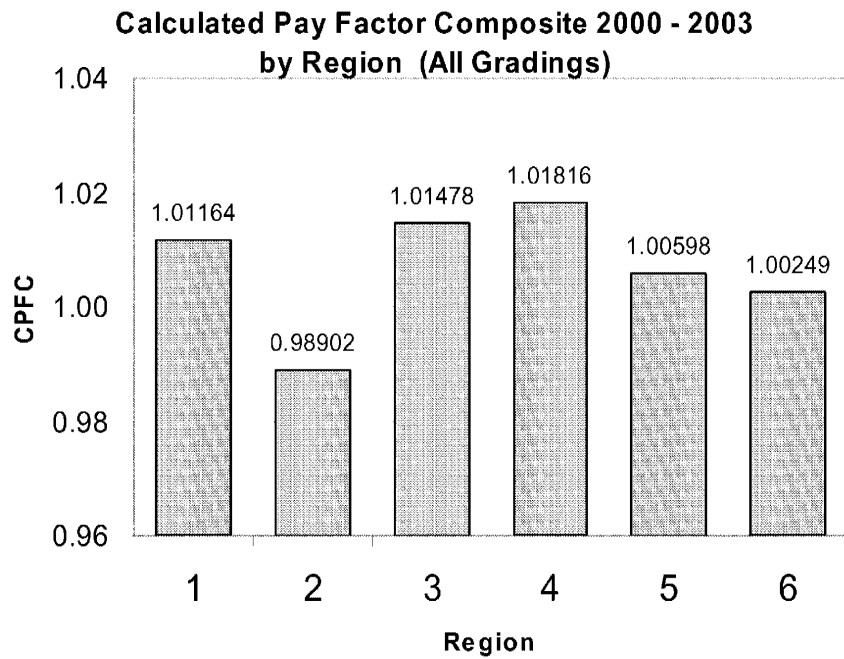
**Figure 2. Calculated Pay Factor Composite by Year with Trendline**



**Figure 3. Calculated Pay Factor Composite by Region/Year**



**Figure 4. Calculated Pay Factor Composite by Region/Year**



**Figure 5. Calculated Pay Factor Composite 2000 to 2003 by Region**

### **6.3 Calculated Pay Factor Composite by Grading**

The Calculated Pay Factor Composite (CPFC) information by grading for the years 2000 through 2003 is displayed in Table 4. Projects that contained more than one grading of mix were excluded from this evaluation to make the groupings and calculations less complicated. A CPFC above 1.0 indicates that an incentive payment was paid for the HBP. A CPFC below 1.0 indicates that a disincentive was applied to the pavement. Figure 6 displays the CPFC for each grading by year. Grading SX has outperformed S in each of the years, although the difference between the two is fairly small. The difference is 0.01 or less in three of the years. The difference in the two gradings over the four-year time period is calculated at 0.014. The overall CPFC for grading S is just under the neutral mark of 1.0. Grading SX has a CPFC of 1.012. Figure 7 displays the CPFC results by grading and the calculated trendlines. Improvements can be shown in grading SX calculated as an increase in the CPFC of 0.005 over the four years. Grading S has remained unchanged over the four years. The slope of the trendline is -0.0001 or essentially unchanged. A comparison of the individual test elements by grading is presented in Section 6.7.

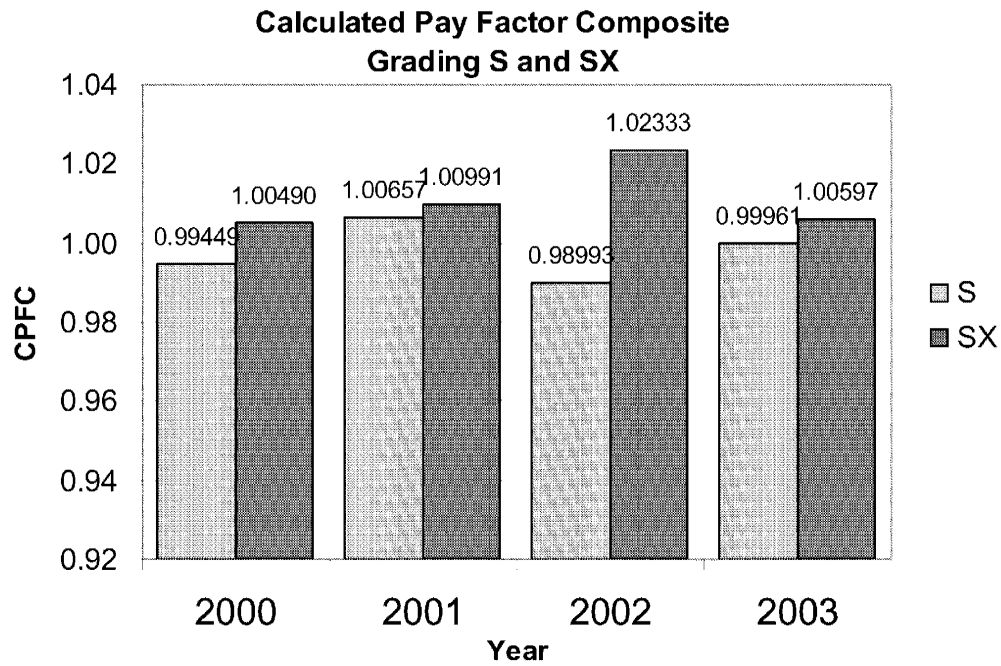
**Table 4. Calculated Pay Factor Composite by Year and Grading**

**Criteria:** Projects with Bid Dates from 1/1/00 to 12/31/03.

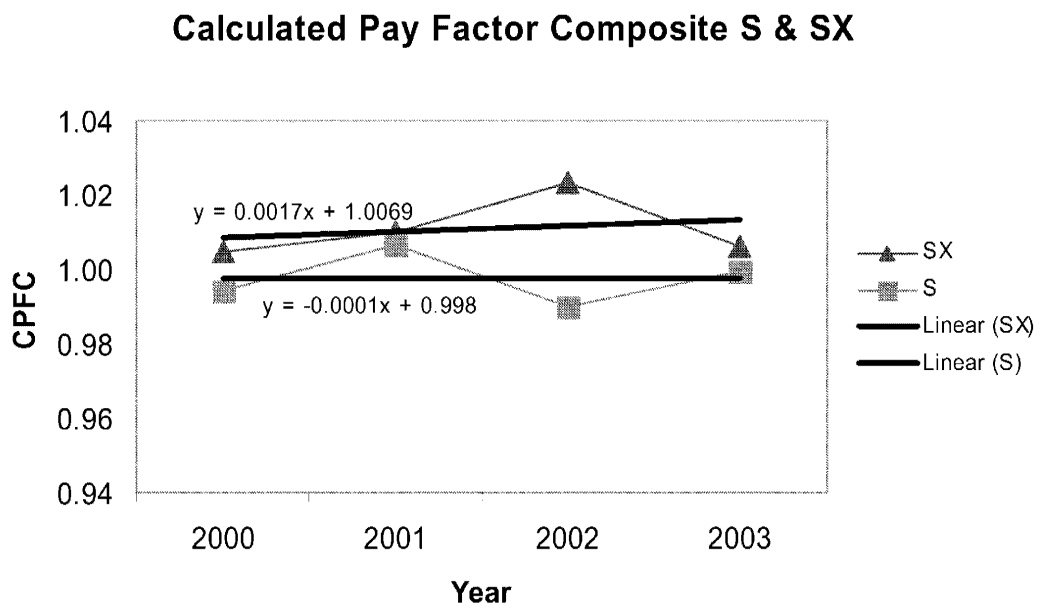
Projects that contain more than one grading are **EXCLUDED** from this Report

PFC is back calculated from the Project's I/DP.

|                     |                 |                  | <b>Calculated Pay Factor Composite</b> |                |                |
|---------------------|-----------------|------------------|----------------------------------------|----------------|----------------|
|                     | <b>Projects</b> | <b>Tons</b>      | <b>Average</b>                         | <b>Minimum</b> | <b>Maximum</b> |
| <b>2000</b>         |                 |                  |                                        |                |                |
| Grading S           | 30              | 582,015          | 0.99449                                | 0.78941        | 1.04477        |
| Grading SX          | 18              | 431,984          | 1.00490                                | 0.91509        | 1.04569        |
| <b>Totals 2000</b>  | <b>48</b>       | <b>1,013,999</b> | <b>0.99840</b>                         | <b>0.78941</b> | <b>1.04569</b> |
|                     |                 |                  | <b>Calculated Pay Factor Composite</b> |                |                |
|                     | <b>Projects</b> | <b>Tons</b>      | <b>Average</b>                         | <b>Minimum</b> | <b>Maximum</b> |
| <b>2001</b>         |                 |                  |                                        |                |                |
| Grading S           | 23              | 489,882          | 1.00657                                | 0.93018        | 1.03753        |
| Grading SX          | 14              | 347,042          | 1.00991                                | 0.95729        | 1.04596        |
| <b>Totals 2001</b>  | <b>37</b>       | <b>836,924</b>   | <b>1.00783</b>                         | <b>0.93018</b> | <b>1.04596</b> |
|                     |                 |                  | <b>Calculated Pay Factor Composite</b> |                |                |
|                     | <b>Projects</b> | <b>Tons</b>      | <b>Average</b>                         | <b>Minimum</b> | <b>Maximum</b> |
| <b>2002</b>         |                 |                  |                                        |                |                |
| Grading S           | 17              | 134,272          | 0.98993                                | 0.83596        | 1.04300        |
| Grading SMA         | 1               | 19,785           | 1.03381                                | 1.03381        | 1.03381        |
| Grading SX          | 19              | 567,225          | 1.02333                                | 0.99725        | 1.04708        |
| <b>Totals 2002</b>  | <b>37</b>       | <b>721,282</b>   | <b>1.00827</b>                         | <b>0.83596</b> | <b>1.04708</b> |
|                     |                 |                  | <b>Calculated Pay Factor Composite</b> |                |                |
|                     | <b>Projects</b> | <b>Tons</b>      | <b>Average</b>                         | <b>Minimum</b> | <b>Maximum</b> |
| <b>2003</b>         |                 |                  |                                        |                |                |
| Grading S           | 13              | 401,967          | 0.99961                                | 0.94635        | 1.04182        |
| Grading SMA         | 1               | 28,160           | 1.04234                                | 1.04234        | 1.04234        |
| Grading SX          | 12              | 268,375          | 1.00597                                | 0.87280        | 1.04596        |
| <b>Totals 2003</b>  | <b>26</b>       | <b>698,502</b>   | <b>1.00419</b>                         | <b>0.87280</b> | <b>1.04596</b> |
|                     |                 |                  | <b>Calculated Pay Factor Composite</b> |                |                |
|                     | <b>Projects</b> | <b>Tons</b>      | <b>Average</b>                         | <b>Minimum</b> | <b>Maximum</b> |
| <b>2000 to 2003</b> |                 |                  |                                        |                |                |
| Grading S           | 83              | 1,608,136        | 0.99771                                | 0.78941        | 1.04477        |
| Grading SMA         | 2               | 47,945           | 1.03808                                | 1.03381        | 1.04234        |
| Grading SX          | 63              | 1,614,626        | 1.01178                                | 0.87280        | 1.04708        |
| <b>Totals</b>       | <b>148</b>      | <b>3,270,707</b> | <b>1.00424</b>                         | <b>0.78941</b> | <b>1.04708</b> |



**Figure 6. Calculated Pay Factor Composite by Year, Grading S & SX**



**Figure 7. Calculated Pay Factor Composite, Grading S & SX with Trendlines**

#### **6.4 Incentive/Disincentive Payments**

A recap of the Incentive/Disincentive Payments (I/DP) for the years 2000 through 2003 is presented in Table 5. The total number of projects, the number that received incentives, and the number with disincentives are displayed for each year. The total tons of material evaluated are also displayed. I/DP information presented includes: the summation of all I/DPs, the maximum, minimum and average values are given for each year. The I/DP is the total dollar amount of incentive or disincentive the project received for the hot bituminous pavement and is directly related to the of tons of material. The size of the projects, tons of material, included in the evaluations can skew the results. Large projects have the potential to receive large I/DPs purely based on the tons of material multiplied by the pay factor. The projects with the largest I/DPs do not necessarily equate to the projects with the best quality levels. It is important to consider the dollar amounts being paid but a better way of evaluating the projects is to review the Calculated Pay Factor Composite (CPFC).

**Table 5. Incentive/Disincentive Payments – Recap by Year**

|                    |           |                                       |                |
|--------------------|-----------|---------------------------------------|----------------|
| <b>2000</b>        |           | <b>Incentive/Disincentive Payment</b> |                |
| Number of Projects | 49        | Sum I/DP's                            | \$187,269.36   |
| Positive I/DPs     | 29        | Maximum                               | \$77,150.01    |
| Negative I/DPs     | 20        | Minimum                               | (\$161,120.55) |
| Total Tons         | 1,072,542 | Average I/DP                          | \$3,821.82     |
| <b>2001</b>        |           | <b>Incentive/Disincentive Payment</b> |                |
| Number of Projects | 39        | Sum I/DP's                            | \$632,387.82   |
| Positive I/DPs     | 28        | Maximum                               | \$110,449.67   |
| Negative I/DPs     | 11        | Minimum                               | (\$47,508.28)  |
| Total Tons         | 900,166   | Average I/DP                          | \$16,215.07    |
| <b>2002</b>        |           | <b>Incentive/Disincentive Payment</b> |                |
| Number of Projects | 41        | Sum I/DP's                            | \$654,232.47   |
| Positive I/DPs     | 32        | Maximum                               | \$74,852.29    |
| Negative I/DPs     | 9         | Minimum                               | (\$30,824.74)  |
| Total Tons         | 858,245   | Average I/DP                          | \$15,956.89    |
| <b>2003</b>        |           | <b>Incentive/Disincentive Payment</b> |                |
| Number of Projects | 28        | Sum I/DP's                            | \$594,079.78   |
| Positive I/DPs     | 19        | Maximum                               | \$110,997.34   |
| Negative I/DPs     | 9         | Minimum                               | (\$39,746.99)  |
| Total Tons         | 765,671   | Average I/DP                          | \$21,217.14    |

## **6.5 Recap of Data 1991 to 2003 - Percent Asphalt, Mat Density, & Gradation**

The overall results, all gradings included, for each of the test elements for the years 1991 to 1997 and 2000 to 2003 are listed in Table 6. The quality level and pay factor for each element are shown. The standard deviation is displayed for the percent asphalt and mat density elements. The standard deviation information for the gradation element is contained in Reports 4 and 15 in Appendices A and B. A relatively small number of projects were evaluated in the years 1991, 1992, & 1996. This may account for some of the high quality levels reported in these years. Also, projects prior to 1995 were constructed under either the pilot specification or a project specification. In 1995 the revision to sections 105 and 106 was released as a standard specification to be used on all projects. A more detailed review of the test elements for the years 2000 through 2003 is presented in Section 6.6.

**Table 6. Recap of Yearly Data by Test Element**

Criteria: Processes with less than 3 tests are EXCLUDED from this Table.

**Percent Asphalt**

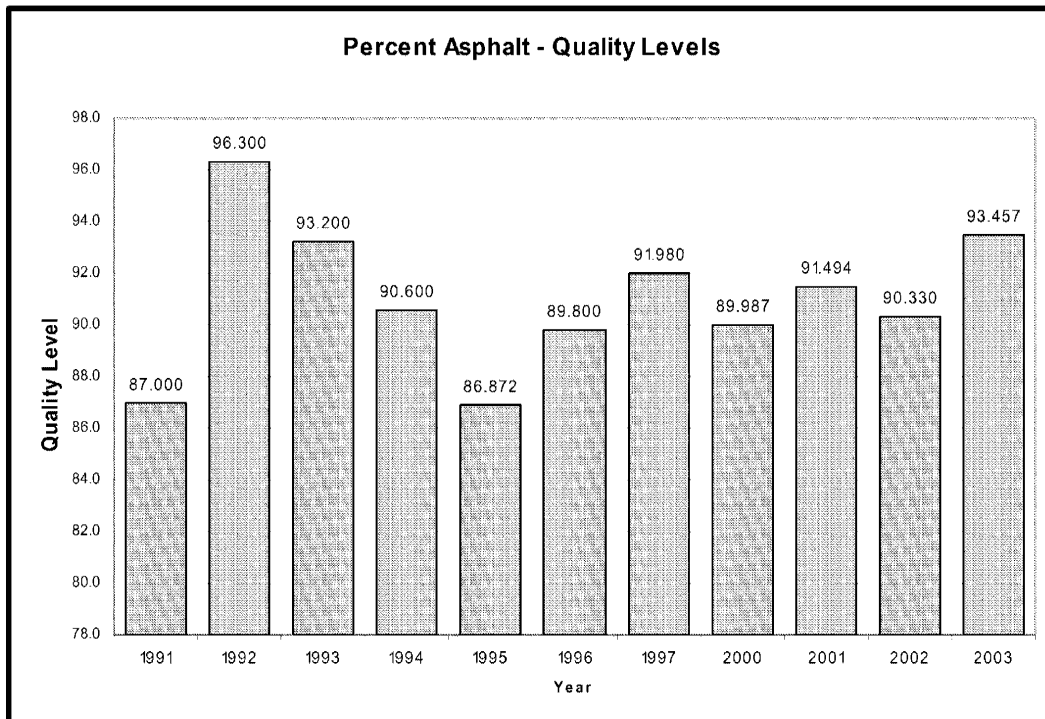
| Year | Projects | Tons      | Quality Level | Pay Factor | Std Dev |
|------|----------|-----------|---------------|------------|---------|
| 1991 |          | 2,000,000 | 87.000        | 1.00000    | 0.180   |
| 1992 | 7        | 282,000   | 96.300        | 1.04200    | 0.140   |
| 1993 | 18       | 482,000   | 93.200        | 1.02800    | 0.150   |
| 1994 | 58       | 1,496,000 | 90.600        | 1.02200    | 0.150   |
| 1995 | 40       | 1,104,000 | 86.872        | 0.99508    | 0.173   |
| 1996 | --       | 830,000   | 89.800        | 1.00800    | 0.160   |
| 1997 | 17       | 378,000   | 91.980        | 1.01900    | 0.150   |
| 2000 | 49       | 1,046,041 | 89.987        | 1.01244    | 0.154   |
| 2001 | 39       | 878,831   | 91.494        | 1.02095    | 0.150   |
| 2002 | 41       | 850,686   | 90.330        | 1.01385    | 0.161   |
| 2003 | 28       | 756,873   | 93.457        | 1.03304    | 0.143   |

**Density**

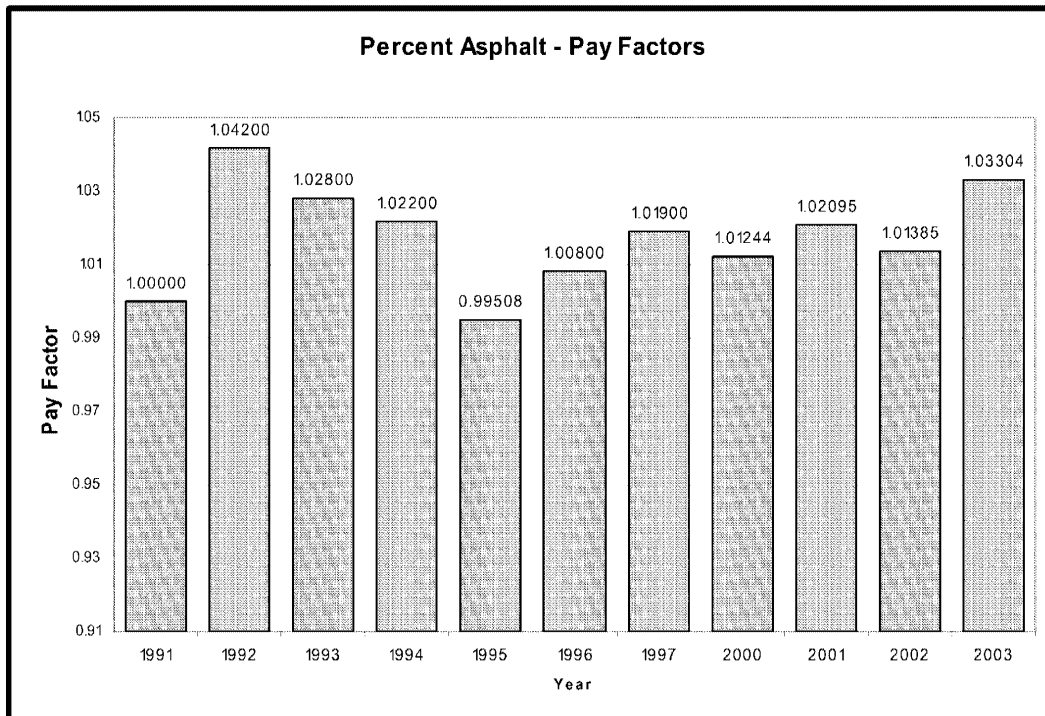
| Year | Projects | Tons      | Quality Level | Pay Factor | Std Dev | Mean   |
|------|----------|-----------|---------------|------------|---------|--------|
| 1991 |          | 900,000   | 84.000        | 0.96000    | 1.050   |        |
| 1992 | 7        | 282,000   | 88.900        | 0.99000    | 1.000   |        |
| 1993 | 18       | 482,000   | 92.400        | 1.01800    | 0.960   |        |
| 1994 | 58       | 1,400,000 | 90.310        | 1.00700    | 0.958   |        |
| 1995 | 40       | 1,071,000 | 84.208        | 0.96964    | 1.096   |        |
| 1996 | --       | 830,000   | 91.900        | 1.01500    | 0.910   |        |
| 1997 | 17       | 343,000   | 93.765        | 1.01900    | 0.910   |        |
| 2000 | 49       | 978,154   | 91.377        | 1.01397    | 0.955   | 93.520 |
| 2001 | 39       | 814,765   | 93.538        | 1.02988    | 0.958   | 93.790 |
| 2002 | 41       | 787,902   | 94.450        | 1.03348    | 0.893   | 93.820 |
| 2003 | 28       | 676,480   | 93.282        | 1.02995    | 0.928   | 93.810 |

**Gradation**

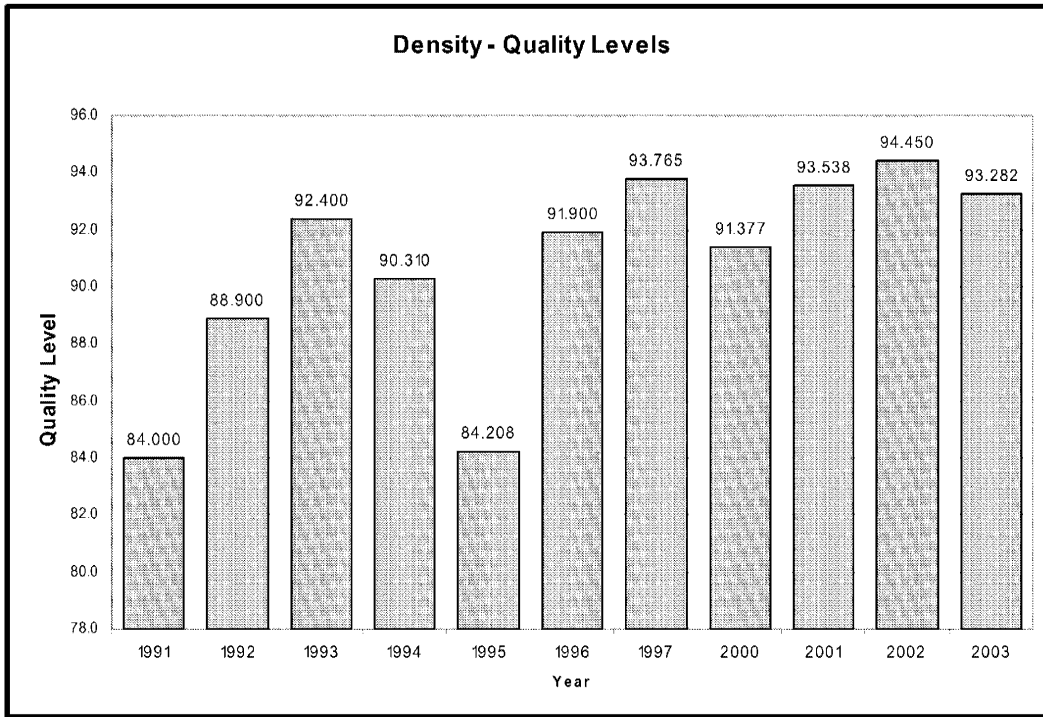
| Year | Projects | Tons      | Quality Level | Pay Factor |
|------|----------|-----------|---------------|------------|
| 1991 |          | 2,000,000 | 85.700        | 0.98900    |
| 1992 | 7        | 282,000   | 90.000        | 1.01400    |
| 1993 | 18       | 482,000   | 88.800        | 1.01000    |
| 1994 | 58       | 1,496,000 | 88.300        | 1.01400    |
| 1995 | 40       | 1,104,000 | 87.771        | 1.00757    |
| 1996 | --       | 830,000   | 89.600        | 1.01200    |
| 1997 | 17       | 378,000   | 82.556        | 0.98100    |
| 2000 | 49       | 998,015   | 84.941        | 0.99959    |
| 2001 | 39       | 822,245   | 85.692        | 1.00274    |
| 2002 | 41       | 791,892   | 88.950        | 1.01484    |
| 2003 | 28       | 743,939   | 88.411        | 1.01577    |



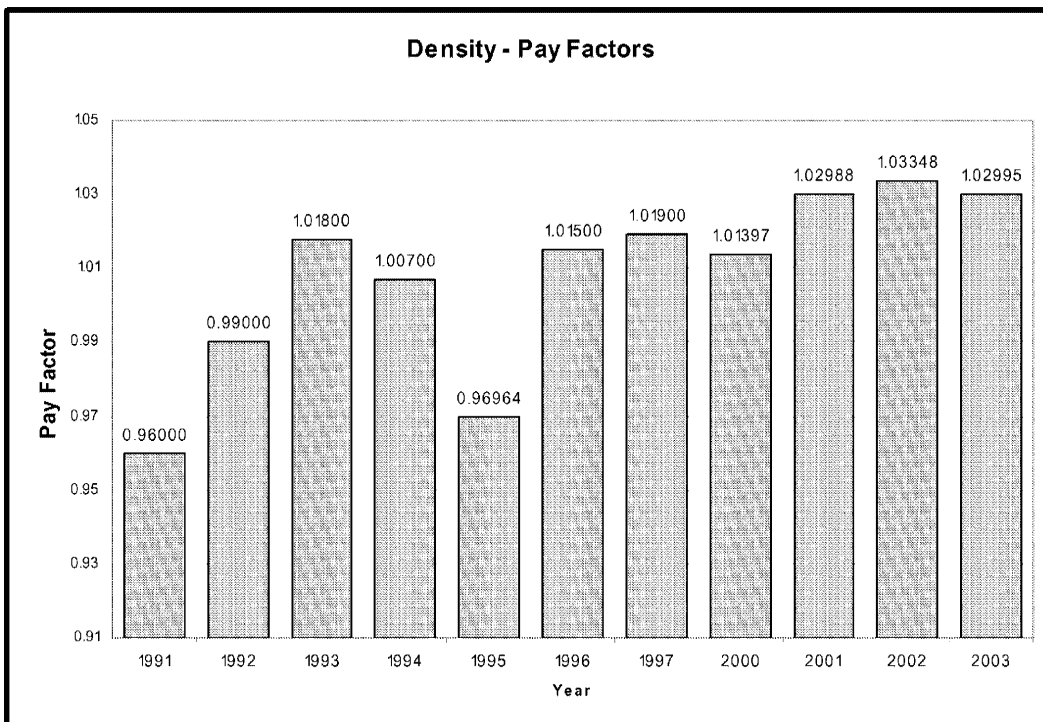
**Figure 8. Percent Asphalt Quality Levels**



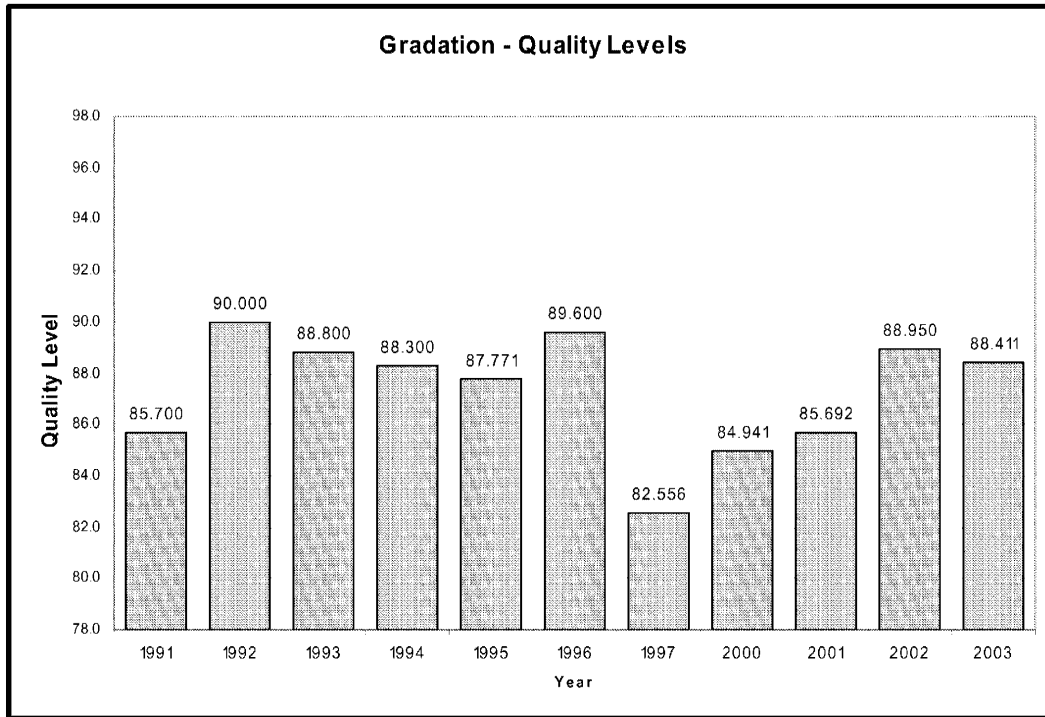
**Figure 9. Percent Asphalt Pay Factors**



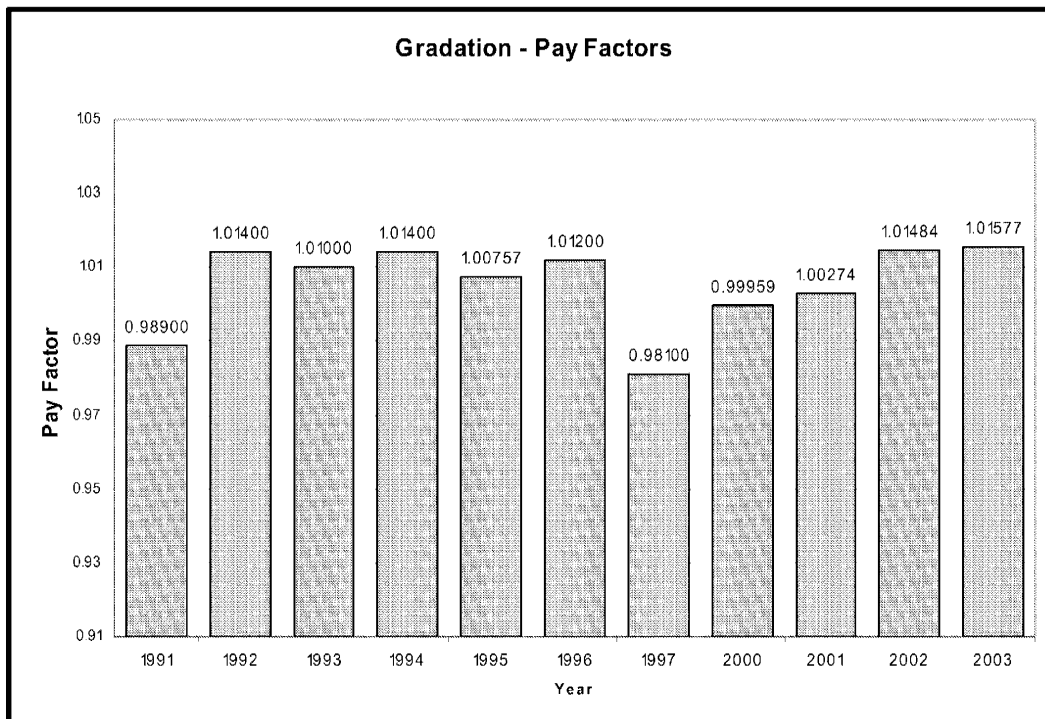
**Figure 10. Density Quality Levels**



**Figure 11. Density Pay Factors**



**Figure 12. Gradation Quality Levels**



**Figure 13. Gradation Pay Factors**

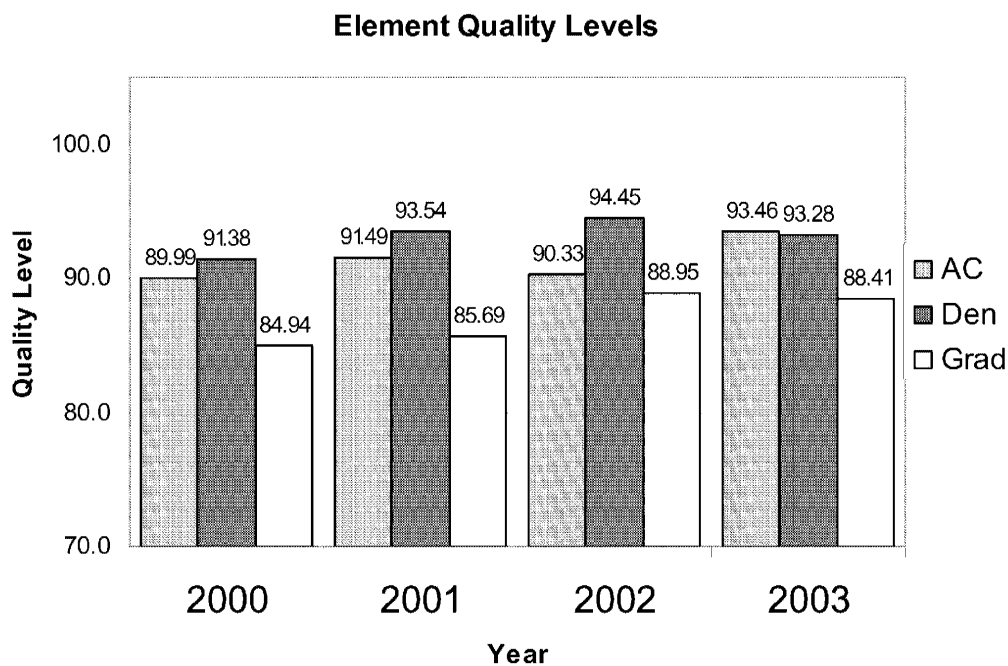
## **6.6 Review of Test Element Quality Levels 2000 through 2003**

The test element quality levels for the years 2000 through 2003 are displayed in Figure 14, data from Table 6. The ranking of the test elements, lowest to highest, by quality level is the same in each year except for 2003 in which asphalt content and mat density are reversed. The weighted average quality level for each of the test elements for the years 2000 through 2003 is as follows: mat density 93.056, asphalt content 91.188, and gradation 86.840, data from reports 1, 2, & 3 in Appendix A. Overall the mat density element has the highest quality levels. Asphalt content is second and gradation is ranked third. The ranking of the elements by quality level places them in the same order as the weight, W factor, that is given to the element: 50% mat density, 30% asphalt content, & 20% gradation prior to 10/4/01 and 45% mat density, 25% asphalt content, 15% gradation, & 15% joint density after 12/20/02. There appears to be a direct correlation between the importance given the element, its weight, and the quality level results.

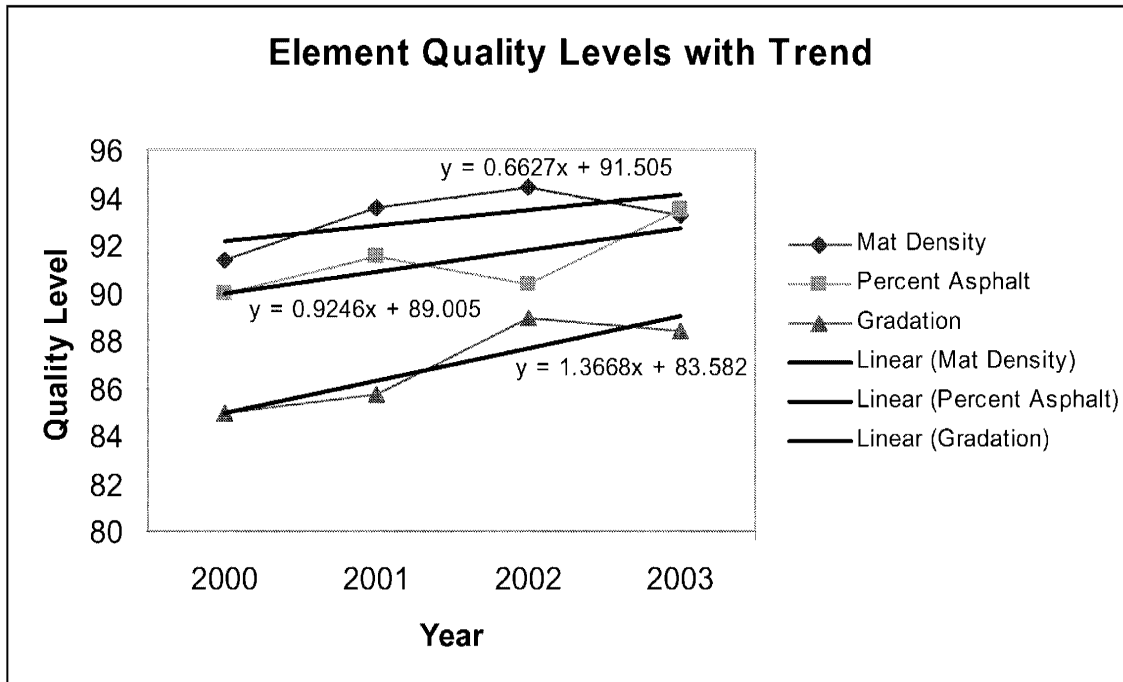
The quality level information showing the calculated trendlines for each of the elements is presented in Figure 15. Figure 15 shows three key attributes of the test element quality levels. First is to see if the quality levels are improving, upward sloping trendlines left to right and positive values in the slope calculations. Improvements can be measured in each of the elements. Second is to see how the elements rank in terms of quality level. Mat density has the highest quality levels followed by asphalt content and then by gradation. Third is to review the range of quality levels reported for each of the elements. None of the trendlines cross each other and are distinctly gapped. The difference between the mat density and asphalt content elements is at least 1.45 percent. The difference between the asphalt content and gradation elements is at least 3.65 percent.

The mat density element has shown improvements over the four-year time period. The quality levels have increased by a calculated amount of 1.99 over this time period. The mean values for this element continue to move towards the target value of the

specification, 94 percent compaction. Producing material close to the target value of the specification increases the probability that the material will be in specification. This element has always shown good results having a pay factor consistently above the 1.0 mark. The average quality level over the last four years is slightly over 93.06%. The percent asphalt element has also shown improvement with a calculated increase in the quality level of 2.77 over the four years. The average quality level over the four years is 91.19%. The gradation element has shown the most improvement in the four years calculated at an increase of 4.10. However, this element consistently ranks below the others in terms of quality levels. The average quality level over the four-year time period is 86.84%.



**Figure 14. Quality Levels by Test Element**



**Figure 15. Element Quality Levels with Trendline**

## **6.7 Test Element Quality Levels For Gradings S & SX 2000 through 2003**

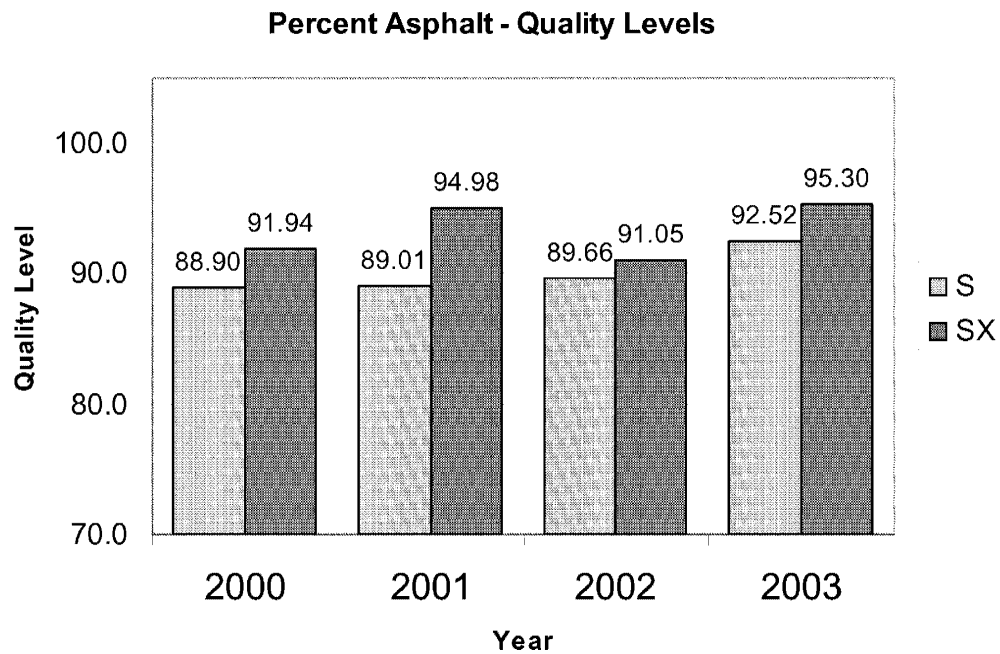
Information for the percent asphalt, mat density, and gradation test elements for gradings S and SX by year is detailed in Table 7. Figure 16 presents the percent asphalt quality level information by year. Grading SX has higher quality levels in each of the years. Figure 17 shows the quality level information and the calculated trendlines. Improvements can be seen in the results for both gradings, upward sloping lines left to right and positive values in the slope calculations. Grading SX has a calculated improvement of 1.85 in the four years. Grading S shows a better improvement of 3.46 in the four years. The mat density results are presented in Figures 18 & 19. The results for grading S are better than SX in the first two years. The results are reversed in the last two years. Grading SX shows a calculated increase in quality levels of 4.67 over the four-year time period. Grading S shows a slight decline in quality levels of -0.39 over the same time period. The results for the gradation element are presented in Figures 20 & 21. Both gradings have shown improvements in the four-year time period. Grading SX has improved in quality levels by 3.80 and grading S has shown an improvement of 3.28. The results in the gradation element for gradings S & SX are closer than those in the percent asphalt or mat density elements.

**Table 7. Review of Test Elements – Gradings S & SX****Criteria:** Processes with less than 3 tests are EXCLUDED from this Table.

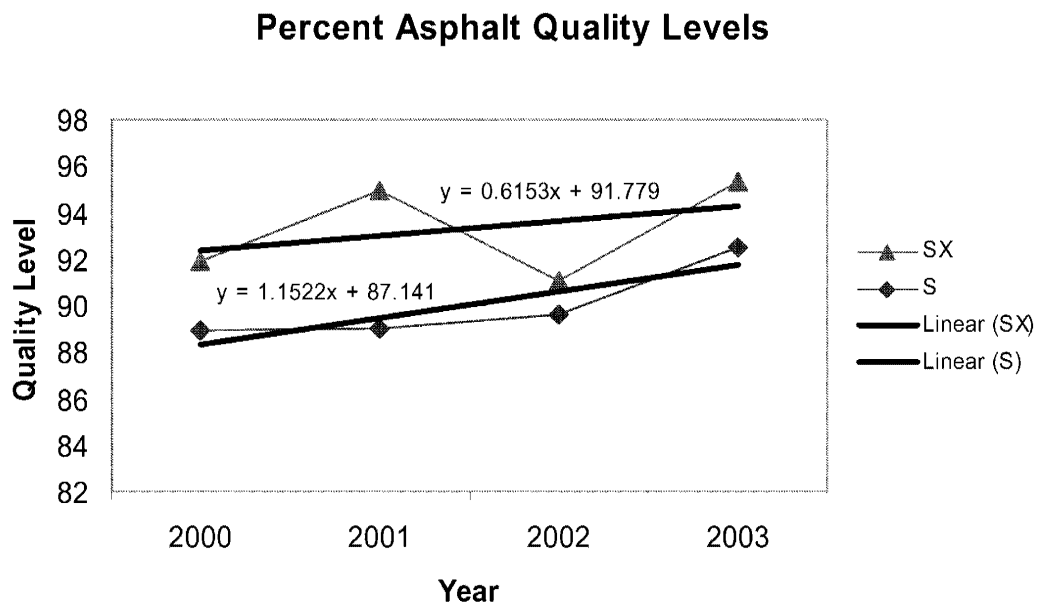
| <b>Percent Asphalt</b> |             |                  |              |             | <b>Quality Level</b> | <b>Pay Factor</b> |
|------------------------|-------------|------------------|--------------|-------------|----------------------|-------------------|
| <b>Grading</b>         | <b>Year</b> | <b>Processes</b> | <b>Tests</b> | <b>Tons</b> |                      |                   |
| <b>S</b>               | 2000        | 44               | 589          | 567,924     | 88.896               | 1.00684           |
|                        | 2001        | 42               | 526          | 488,936     | 89.012               | 1.01127           |
|                        | 2002        | 27               | 171          | 159,073     | 89.656               | 1.01120           |
|                        | 2003        | 24               | 452          | 436,489     | 92.522               | 1.03022           |
| <b>SX</b>              | 2000        | 40               | 528          | 461,084     | 91.940               | 1.02182           |
|                        | 2001        | 34               | 388          | 366,960     | 94.981               | 1.03460           |
|                        | 2002        | 34               | 606          | 588,134     | 91.045               | 1.01588           |
|                        | 2003        | 21               | 289          | 275,659     | 95.303               | 1.03804           |

| <b>Mat Density</b> |             |                  |              |             | <b>Quality Level</b> | <b>Pay Factor</b> |
|--------------------|-------------|------------------|--------------|-------------|----------------------|-------------------|
| <b>Grading</b>     | <b>Year</b> | <b>Processes</b> | <b>Tests</b> | <b>Tons</b> |                      |                   |
| <b>S</b>           | 2000        | 46               | 1090         | 532,949     | 91.980               | 1.01801           |
|                    | 2001        | 47               | 1007         | 495,515     | 94.181               | 1.03370           |
|                    | 2002        | 29               | 331          | 156,787     | 92.893               | 1.02434           |
|                    | 2003        | 28               | 814          | 398,639     | 91.975               | 1.02289           |
| <b>SX</b>          | 2000        | 38               | 860          | 428,172     | 90.643               | 1.00840           |
|                    | 2001        | 26               | 605          | 294,465     | 92.362               | 1.02291           |
|                    | 2002        | 33               | 1082         | 528,636     | 95.589               | 1.03966           |
|                    | 2003        | 21               | 492          | 232,898     | 94.760               | 1.03914           |

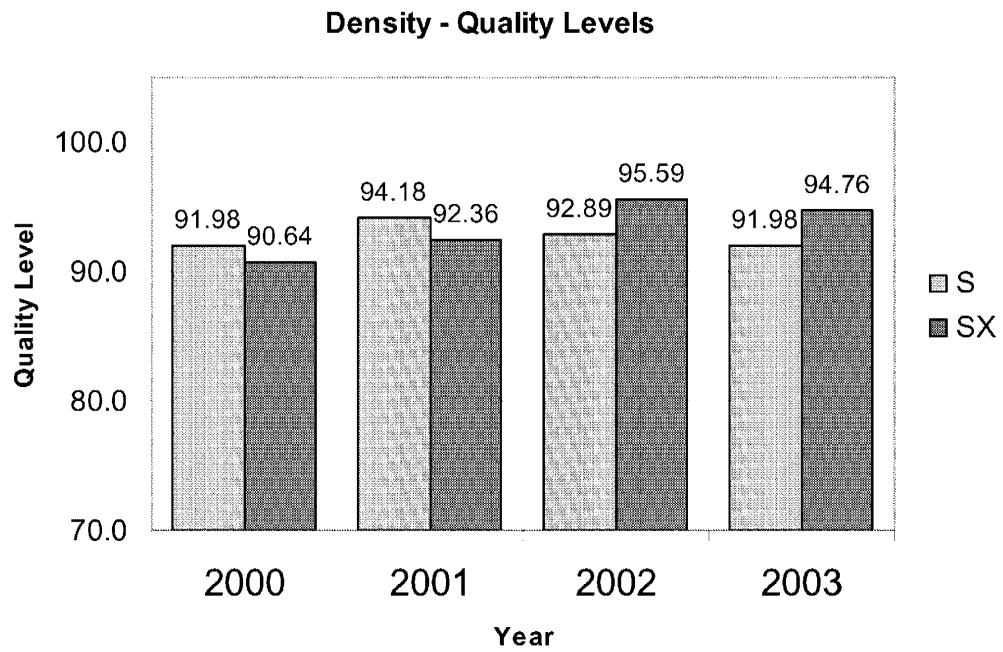
| <b>Gradation</b> |             |                  |              |             | <b>Quality Level</b> | <b>Pay Factor</b> |
|------------------|-------------|------------------|--------------|-------------|----------------------|-------------------|
| <b>Grading</b>   | <b>Year</b> | <b>Processes</b> | <b>Tests</b> | <b>Tons</b> |                      |                   |
| <b>S</b>         | 2000        | 39               | 295          | 551,210     | 85.831               | 1.00355           |
|                  | 2001        | 33               | 238          | 461,397     | 84.753               | 0.99775           |
|                  | 2002        | 14               | 70           | 121,139     | 85.964               | 0.98983           |
|                  | 2003        | 22               | 232          | 432,222     | 89.071               | 1.01751           |
| <b>SX</b>        | 2000        | 32               | 252          | 435,730     | 84.044               | 0.99527           |
|                  | 2001        | 27               | 195          | 341,039     | 87.383               | 1.01032           |
|                  | 2002        | 29               | 300          | 568,276     | 89.810               | 1.02027           |
|                  | 2003        | 19               | 153          | 266,565     | 87.453               | 1.01102           |



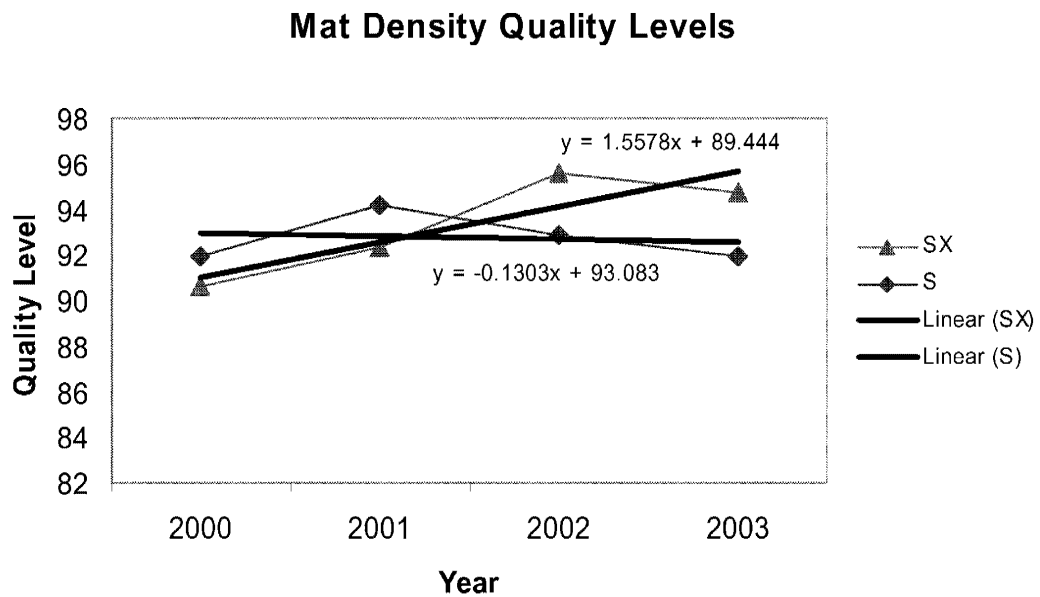
**Figure 16. Percent Asphalt Quality Levels – Gradings S & SX**



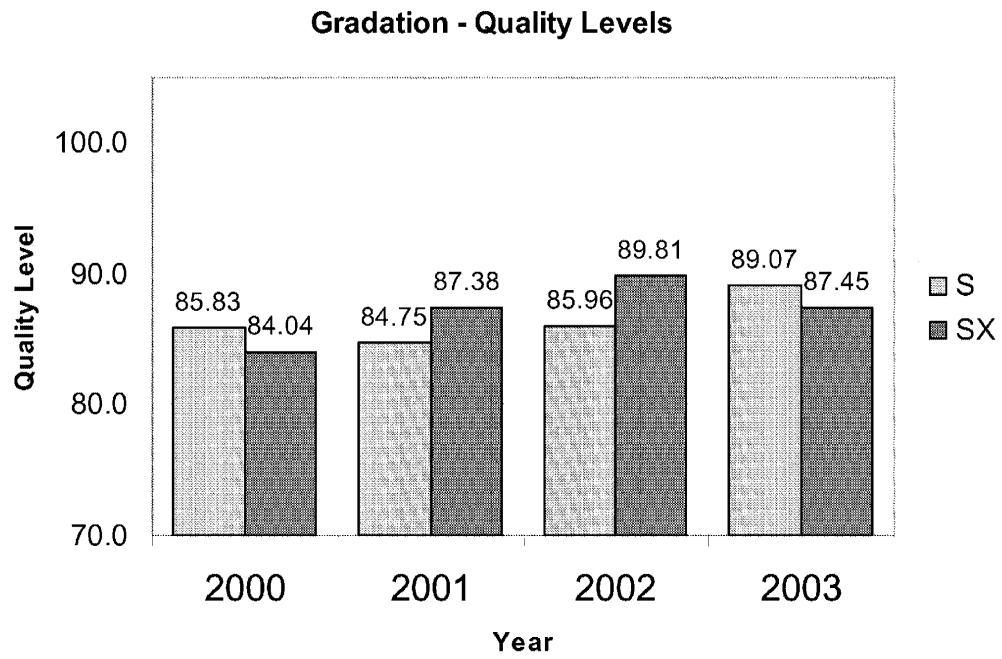
**Figure 17. Percent Asphalt Quality Levels – Gradings S & SX with Trendlines**



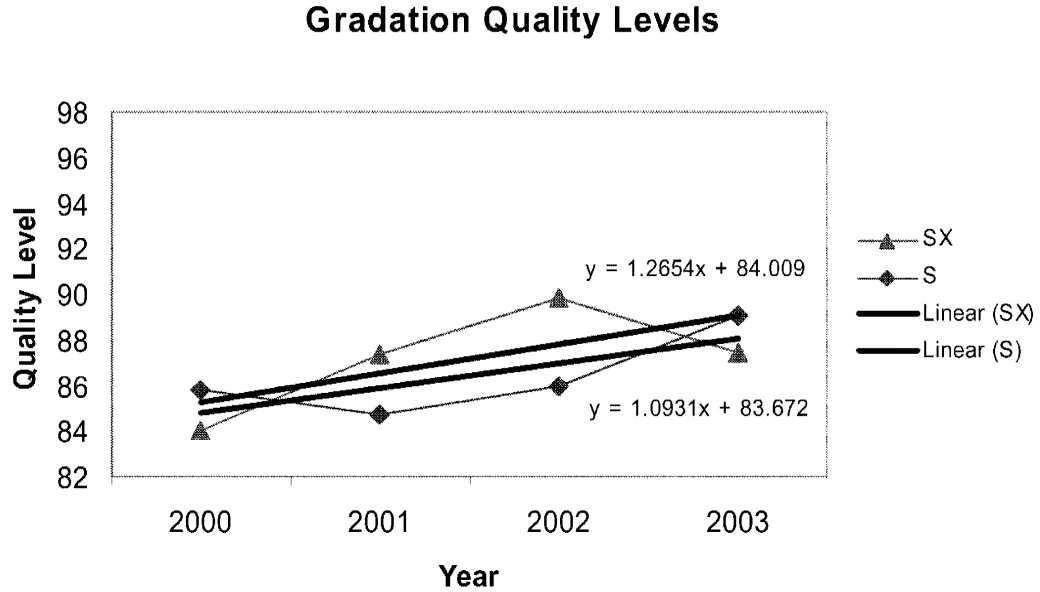
**Figure 18. Density Quality Levels – Gradings S & SX**



**Figure 19. Density Quality Levels – Gradings S & SX with Trendlines**



**Figure 20. Gradation Quality Levels – Gratings S & SX**



**Figure 21. Gradation Quality Levels – Gratings S & SX with Trendlines**

## 6.8 Joint Density Test Information

Joint density testing was incorporated into the calculations for Incentive/Disincentive Payment (I/DP) with the release of the revision to sections 105 and 106 dated December 20, 2002. Twenty-nine projects have been returned which contained the joint density specification. Testing was waived on five of these projects. The results are displayed in Table 8.

**Table 8. Joint Density Test Information – Gradings S & SX**

Criteria: Processes with less than 3 tests are EXCLUDED from this Table.

| Grading       | Processes | Tests | Tons    | Joint Density |            | Mean   | Std. Dev. |
|---------------|-----------|-------|---------|---------------|------------|--------|-----------|
|               |           |       |         | Quality Level | Pay Factor |        |           |
| <b>S</b>      | 17        | 192   | 326,915 | 83.873        | 0.97655    | 89.714 | 1.456     |
| <b>SX</b>     | 12        | 205   | 263,820 | 88.316        | 1.00491    | 90.158 | 1.653     |
| <b>Totals</b> | 29        | 397   | 590,735 | 85.857        | 0.98921    | 89.912 | 1.544     |

The overall average pay factor for joint density after one year is just slightly under the neutral amount of 1.0. Approximately half of the projects received an incentive payment for joint density element. The quality level results for grading SX are 4.5% higher than those of grading S. Overall grading SX received an incentive amount of less than 0.5%. For grading S the average disincentive amount was 2.3%

## **6.9 Effect of Adding Joint Density Testing on the Other Test Elements**

Joint Density testing was added to the calculations for Incentive/Disincentive Payment (I/DP) with the release of the revision to sections 105 and 106 dated December 20, 2002. There was a concern that adding a new test element would have an effect on the quality levels of the other test elements. The following analysis was completed. No projects prior to 2002 contained the joint density specification. These projects were grouped by year. Projects which included joint density testing were separated out from the rest of the projects. Only one project from 2002 has been evaluated which included the joint density calculation. For that reason all projects which contained the joint density specification were grouped together. The remaining projects from 2002 through 2003 which did not contain the specification were grouped together. The result was four data groupings: 2000 projects, 2001 projects, 2002 & 2003 projects without the joint density specification, and 2002 & 2003 projects which contained the joint density specification. Most of the projects which contained the joint density specification were constructed in 2003. The quality levels and pay factors for each of the groupings were calculated for the percent asphalt, mat density, and gradation elements. The results are displayed in Table 9. Figures 22 to 24 graphically present the quality level information.

Adding joint density testing did not adversely affected the other test elements when evaluating the results to previous years or to projects constructed during the same time period in which joint density testing was not a requirement. The quality levels for the joint density projects were at least equal to those of the other projects and in quite a few cases exceeded those of the other projects.

**Table 9. Comparison of Joint Density and Non Joint Density Projects**

Criteria: Processes with less than 3 tests are EXCLUDED from this Table.

**Percent Asphalt**

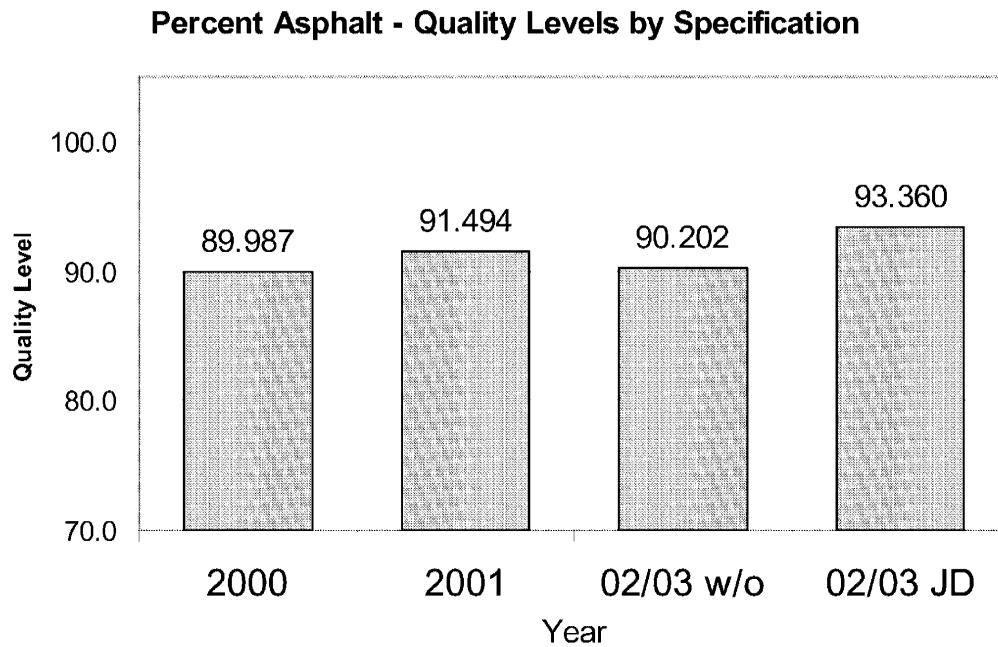
| Projects     | Processes | Tests | Tons      | Quality Level | Pay Factor |
|--------------|-----------|-------|-----------|---------------|------------|
| 2000         | 86        | 1134  | 1,046,041 | 89.987        | 1.01244    |
| 2001         | 79        | 936   | 878,831   | 91.494        | 1.02095    |
| 02/03 w/o JD | 69        | 823   | 792,958   | 90.202        | 1.01289    |
| 02/03 w/ JD  | 48        | 845   | 814,601   | 93.360        | 1.03262    |

**Density**

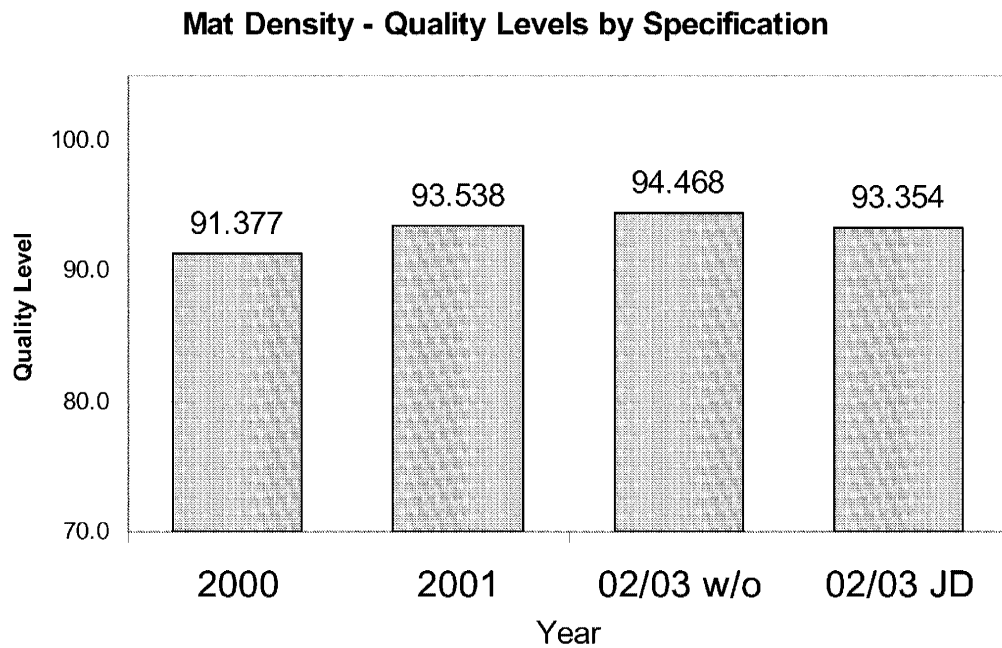
| Projects     | Processes | Tests | Tons    | Quality Level | Pay Factor |
|--------------|-----------|-------|---------|---------------|------------|
| 2000         | 86        | 1,984 | 978,154 | 91.377        | 1.01397    |
| 2001         | 77        | 1,663 | 814,765 | 93.538        | 1.02988    |
| 02/03 w/o JD | 70        | 1,506 | 731,466 | 94.468        | 1.03433    |
| 02/03 w/ JD  | 52        | 1,510 | 732,916 | 93.354        | 1.02937    |

**Gradation**

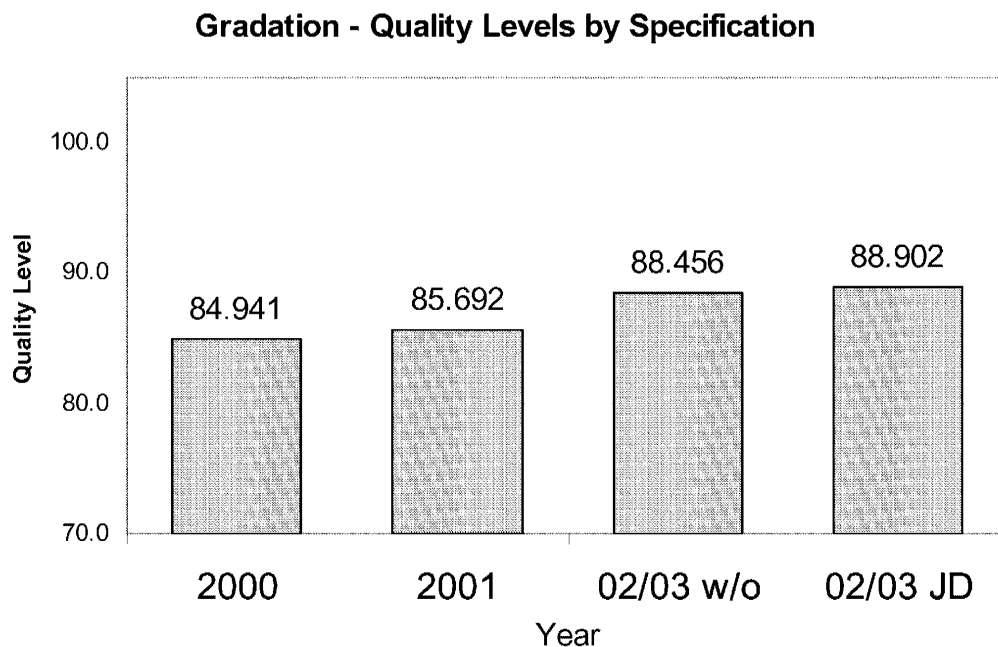
| Projects     | Processes | Tests | Tons    | Quality Level | Pay Factor |
|--------------|-----------|-------|---------|---------------|------------|
| 2000         | 72        | 554   | 998,015 | 84.941        | 0.99959    |
| 2001         | 62        | 444   | 822,245 | 85.692        | 1.00274    |
| 02/03 w/o JD | 51        | 397   | 734,546 | 88.456        | 1.01361    |
| 02/03 w/ JD  | 44        | 432   | 801,285 | 88.902        | 1.01683    |



**Figure 22. Percent Asphalt Quality Levels by Specification**



**Figure 23. Mat Density Quality Levels by Specification**



**Figure 24. Gradation Quality Levels by Specification**

#### **6.9.1 Effect of Adding Joint Density Testing, Gradings S & SX**

The previous evaluation was continued, this time grouping the results into gradings S and SX. Calculations for quality level and pay factor were completed for the percent asphalt, mat density, and gradation elements. The results are displayed in Table 10. Figures 25 to 27 graphically present the quality level information. Adding joint density testing did not adversely affected the results of the other test elements when evaluating the information by grading. The quality levels by grading for the joint density projects were at least equal to those of the other projects and in quite a few cases exceeded those of the other projects.

**Table 10. Comparison of Joint Density and Non Joint Density Projects  
Gradings S & SX**

**Criteria:** Processes with less than 3 tests are EXCLUDED from this Table.

**Percent Asphalt**

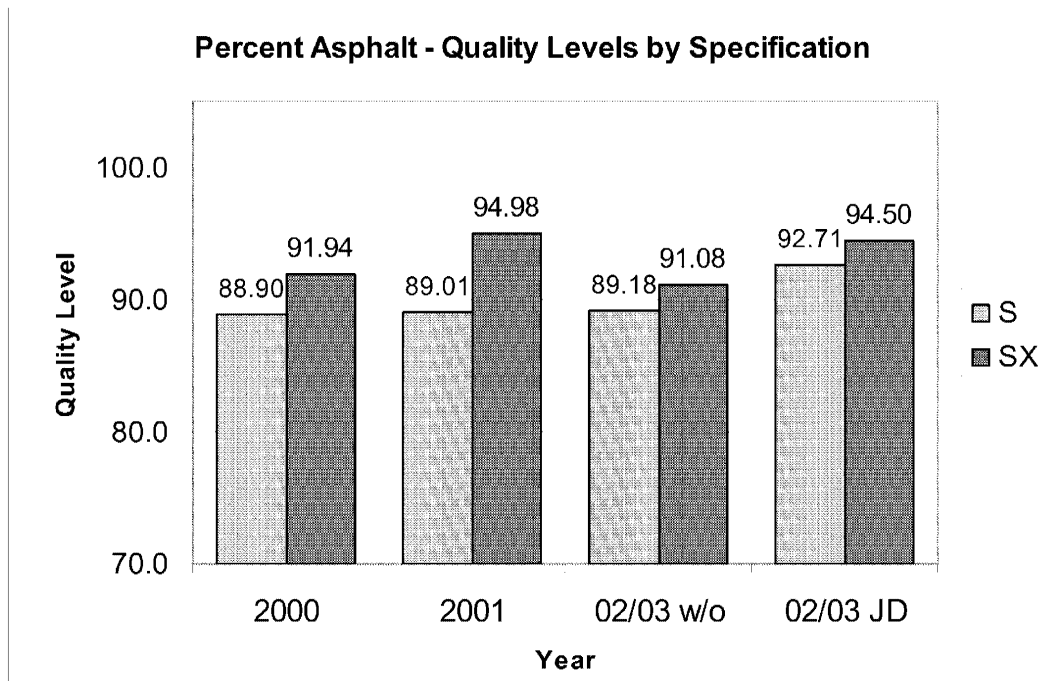
| Grading   | Projects            | Proc. | Tests | Tons    | Quality Level | Pay Factor |
|-----------|---------------------|-------|-------|---------|---------------|------------|
| <b>S</b>  | 2000                | 44    | 589   | 567,924 | 88.896        | 1.00684    |
|           | 2001                | 42    | 526   | 488,936 | 89.012        | 1.01127    |
|           | 02/03 <b>w/o JD</b> | 28    | 175   | 160,472 | 89.182        | 1.00868    |
|           | 02/03 <b>w/ JD</b>  | 23    | 448   | 435,090 | 92.706        | 1.03121    |
| <b>SX</b> | 2000                | 40    | 528   | 461,084 | 91.940        | 1.02182    |
|           | 2001                | 34    | 388   | 366,960 | 94.981        | 1.03460    |
|           | 02/03 <b>w/o JD</b> | 33    | 547   | 529,007 | 91.078        | 1.01544    |
|           | 02/03 <b>w/ JD</b>  | 22    | 348   | 334,786 | 94.499        | 1.03483    |

**Mat Density**

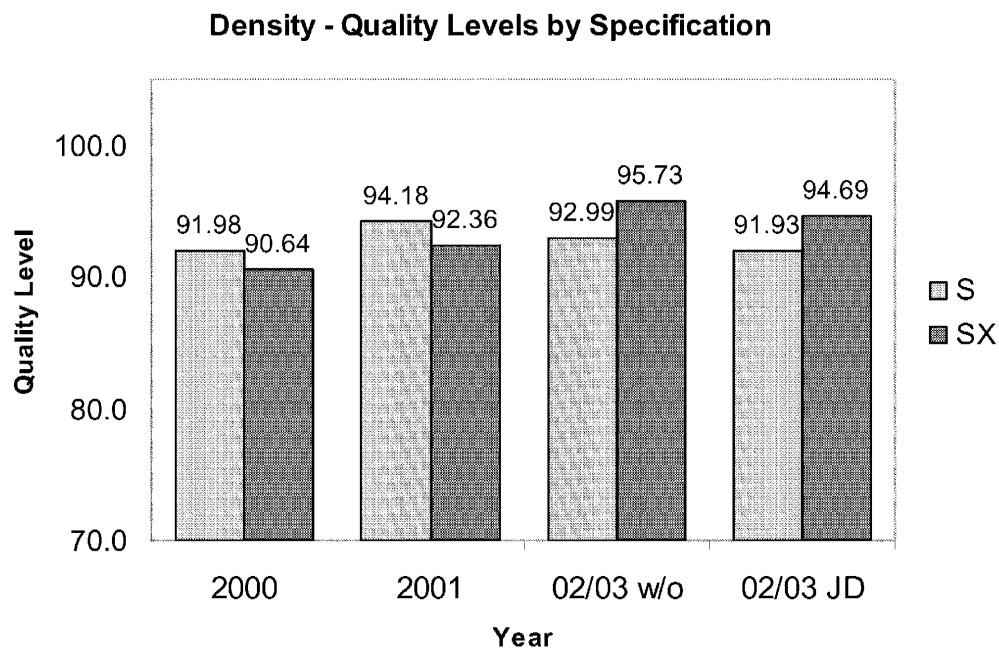
| Grading   | Projects            | Proc. | Tests | Tons    | Quality Level | Pay Factor |
|-----------|---------------------|-------|-------|---------|---------------|------------|
| <b>S</b>  | 2000                | 46    | 1090  | 532949  | 91.980        | 1.01801    |
|           | 2001                | 47    | 1007  | 495515  | 94.181        | 1.03370    |
|           | 02/03 <b>w/o JD</b> | 30    | 337   | 158,978 | 92.991        | 1.02449    |
|           | 02/03 <b>w/ JD</b>  | 27    | 808   | 396,448 | 91.931        | 1.02282    |
| <b>SX</b> | 2000                | 38    | 860   | 428172  | 90.643        | 1.00840    |
|           | 2001                | 26    | 605   | 294465  | 92.362        | 1.02291    |
|           | 02/03 <b>w/o JD</b> | 32    | 963   | 470,009 | 95.734        | 1.04175    |
|           | 02/03 <b>w/ JD</b>  | 22    | 611   | 291,525 | 94.694        | 1.03588    |

**Gradation**

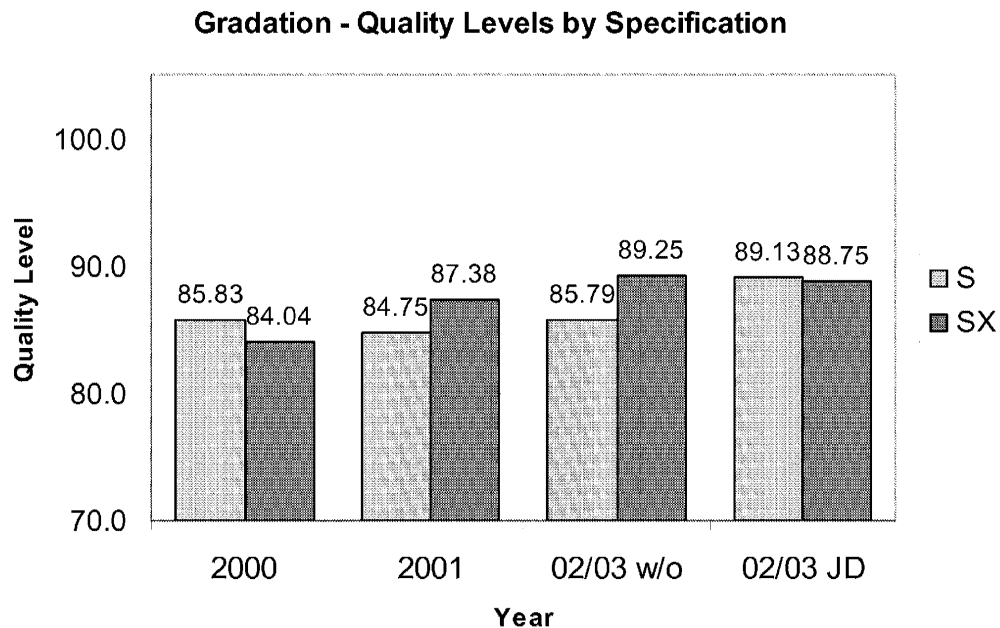
| Grading   | Projects            | Proc. | Tests | Tons    | Quality Level | Pay Factor |
|-----------|---------------------|-------|-------|---------|---------------|------------|
| <b>S</b>  | 2000                | 39    | 295   | 551210  | 85.831        | 1.00355    |
|           | 2001                | 33    | 238   | 461397  | 84.753        | 0.99775    |
|           | 02/03 <b>w/o JD</b> | 15    | 75    | 122,920 | 85.785        | 0.98968    |
|           | 02/03 <b>w/ JD</b>  | 21    | 227   | 430,441 | 89.134        | 1.01767    |
| <b>SX</b> | 2000                | 32    | 252   | 435730  | 84.044        | 0.99527    |
|           | 2001                | 27    | 195   | 341039  | 87.383        | 1.01032    |
|           | 02/03 <b>w/o JD</b> | 28    | 270   | 509,149 | 89.252        | 1.01924    |
|           | 02/03 <b>w/ JD</b>  | 20    | 183   | 325,692 | 88.754        | 1.01430    |



**Figure 25. Percent Asphalt Quality Levels by Specification – Gradings S & SX**



**Figure 26. Mat Density Quality Levels by Specification – Gradings S & SX**



**Figure 27. Gradation Quality Levels by Specification – Gradings S & SX**

#### **6.10 Recap Reports, 2000 to 2003 Data**

Additional reports of the information contained in this report are presented in Appendix A. A recap report for each of the test elements for the years 2000 through 2003 is given in which the data is grouped by grading and then by year. The region's results are also given for each year. The standard deviation information for the gradation element is detailed in a separate report.

#### **6.11 Reports for 2003**

Appendix B contains a series of detailed reports for the year 2003. A project listing is generated for the year showing the projects evaluated. The Project Data report contains all of the test data for each project broken out by mix design and process number. This is the best report to review when concerned about any single project. The Calculated Pay Factor Composite and Incentive/Disincentive Payment information by region is contained in one report. There are detailed reports for each of the test elements and recap reports that show different sortings of the same data. These reports detail the calculations that are used throughout this report for the year 2003.

## **7.0 SUMMARY**

Continued improvements can be measured in the hot bituminous pavement in the years 2000 through 2003. When evaluating the overall results for the projects, by reviewing the Calculated Pay Factor Composite, there is a 0.006 improvement. Improvements in each of the test elements can also be measured. The mat density element has shown an improvement in quality levels of 1.99% over the four-year time period. Percent asphalt has increased by 2.77% and the gradation element has shown the best improvements measured at 4.10%. When ranking the elements by quality levels we find that the ranking is the same as the importance given the element, the W factor. The mat density element has the best quality levels. Next best quality levels are in the percent asphalt element. The gradation element continues to rank last in quality levels but has seen the best improvement since 2000. Improvements can also be measured when evaluating the mixes by grading. Each of the elements has shown improvements in quality levels when evaluated by grading with the exception for grading S in the mat density element which shows a slight decrease in quality levels over the four-year time period. Overall grading SX has shown better test results as compared to grading S in each year when reviewing the Calculated Pay Factor Composite. The results for the joint density element after one year are about neutral. About the same number of projects are receiving incentive payments as are receiving disincentive payments on this element. It is expected that the results for this element will increase as more projects are constructed with this specification. The addition of the joint density element had no adverse effect on the other elements. The element quality levels in projects with the joint density specification were at least as good as those without the specification and in many cases exceeded the results.

## **8.0 UPDATES AND CONTACT**

The QC database will be updated as additional project data is received. Project data that was received after the cut-off date was not able to be included in this report. If you have any questions concerning this report please contact Eric Chavez at 303 757-9308, [Eric.Chavez@dot.state.co.us](mailto:Eric.Chavez@dot.state.co.us). If you find any errors in the project data please report them to Eric Chavez.

## REFERENCES

1. Revisions of the Standard Specifications, Sections 105, Control of Work and 106, Control of Material; to be used with the 1992 Pilot Projects, by the Staff Materials Branch, CDOT, March 1992. (QPM 1)
2. Revision of Sections 105 and 106, Quality of Hot Bituminous Pavement, April 25, 1995 (Reissued with minor editorial changes, March 7, 1996). CDOT, 4201 East Arkansas Avenue, Denver, CO 80222. (QPM 2)
3. HBP QA/QC Pilot Projects Construction in 1992, Interim Report. Report No. CDOT-DTD-R-93-14, by Bud A. Brakey, Colorado Department of Transportation, 4201 East Arkansas Avenue, Denver, CO 80222.
4. HBP QA/QC Pilot Projects Construction in 1993, Second Interim Report, by Bud A. Brakey, Colorado Department of Transportation, 4201 East Arkansas Avenue, Denver, CO 80222.
5. Hot Bituminous Pavement QC/QA Projects Constructed in 1994 and Summary of the 1992-1994 QC/QA Pilot Program, Final Report, June 1995, by Bud A. Brakey,
6. HBP QC&QA Projects Constructed in 1995 Under QPM 1 and QPM 2 Specifications, (1996 fourth annual report by Bud A Brakey, Colorado Department of Transportation, 4201 East Arkansas Avenue, Denver, CO 80222.), Report No. CDOT-R-96-9.
7. HBP QC&QA Projects Constructed in 1996 Under QPM 2 Specifications, (May 1997, fifth annual report by Bud A. Brakey, Colorado Department of Transportation, 4201 East Arkansas Avenue, Denver, CO 80222), Report No. CDOT-DTD-R-97-9.
- 8 HBP QC&QA Projects Constructed in 1997 Under QPM 2 Specifications, (sixth annual report, May 1998, Bud A Brakey, Colorado Department of Transportation, 4201 East Arkansas Ave, Denver, CO 80222), Report No. CDOT-DTD-R-98-4.
- 9 Hot Bituminous Pavement Gradation Acceptance Review of QC/QA Data 2000 to 2002, (March 2004, Eric Chavez, Colorado Department of Transportation, 4201 East Arkansas Ave, Denver, CO 80222), Report No. CDOT-DTD-R-2004-04.



## **Appendix A**

### **Recap Reports for Project Data 2000 through 2003**

|          |                                                                  |        |
|----------|------------------------------------------------------------------|--------|
| Report 1 | Asphalt Content – Recap by Grading/Year/Region.....              | A - 1  |
| Report 2 | Mat Density – Recap by Grading/Year/Region .....                 | A - 5  |
| Report 3 | Gradation Process Information, Recap by Grading/Year/Region..... | A - 8  |
| Report 4 | Gradation Standard Deviation, Recap by Grading/Year/Region ..... | A - 11 |
| Report 5 | Joint Density – Recap by Grading/Year/Region.....                | A - 14 |



## ***Asphalt Content - Recap by Grading/Year/Region***

Criteria: Projects with Bid Dates from 1/1/00 to 12/31/03.

Processes with less than 3 tests not included.

| <b><i>Grading: F</i></b>                | <b>Processes</b> | <b>Tons</b> | <b>Tests</b> | <b>Price</b> | <b>Weighted Average:</b> |                   |                 |
|-----------------------------------------|------------------|-------------|--------------|--------------|--------------------------|-------------------|-----------------|
|                                         |                  |             |              |              | <b>Quality Level</b>     | <b>Pay Factor</b> | <b>St. Dev.</b> |
| <b>2001</b>                             |                  |             |              |              |                          |                   |                 |
| <b><i>Region: 3</i></b>                 | 1                | 3,126       | 3            | \$37.26      | 100.000                  | 1.02500           | 0.046           |
| <b><i>Totals 2001</i></b>               | 1                | 3,126       | 3            | \$37.26      | 100.000                  | 1.02500           | 0.046           |
| <b><i>Grand Totals - Grading: F</i></b> | 1                | 3,126       | 3            | \$37.26      | 100.000                  | 1.02500           | 0.046           |

*Asphalt Content - Recap by Grading/Year/Region*

| Grading: S                | Processes | Tons      | Tests | Weighted Average: |               |            |          |
|---------------------------|-----------|-----------|-------|-------------------|---------------|------------|----------|
|                           |           |           |       | Price             | Quality Level | Pay Factor | St. Dev. |
| 2000                      |           |           |       |                   |               |            |          |
| Region: 1                 | 7         | 136,178   | 137   | \$37.14           | 94.049        | 1.02860    | 0.132    |
| Region: 2                 | 22        | 296,380   | 311   | \$38.19           | 86.480        | 0.99302    | 0.170    |
| Region: 4                 | 4         | 27,949    | 29    | \$52.24           | 87.685        | 1.01892    | 0.168    |
| Region: 6                 | 11        | 107,417   | 112   | \$44.65           | 89.344        | 1.01423    | 0.146    |
| Totals 2000               | 44        | 567,924   | 589   | \$39.85           | 88.896        | 1.00684    | 0.156    |
| 2001                      |           |           |       |                   |               |            |          |
| Region: 1                 | 13        | 134,407   | 164   | \$50.85           | 93.126        | 1.03133    | 0.145    |
| Region: 2                 | 19        | 227,615   | 231   | \$36.81           | 85.446        | 0.99192    | 0.184    |
| Region: 4                 | 2         | 26,162    | 28    | \$30.14           | 91.139        | 1.02668    | 0.169    |
| Region: 6                 | 8         | 100,752   | 103   | \$38.52           | 91.028        | 1.02424    | 0.157    |
| Totals 2001               | 42        | 488,936   | 526   | \$40.67           | 89.012        | 1.01127    | 0.167    |
| 2002                      |           |           |       |                   |               |            |          |
| Region: 1                 | 4         | 15,440    | 17    | \$45.99           | 89.857        | 1.00805    | 0.107    |
| Region: 2                 | 9         | 57,979    | 60    | \$36.89           | 96.264        | 1.03486    | 0.149    |
| Region: 4                 | 7         | 22,556    | 28    | \$38.11           | 82.877        | 0.98221    | 0.174    |
| Region: 6                 | 7         | 63,098    | 66    | \$39.75           | 85.957        | 1.00059    | 0.177    |
| Totals 2002               | 27        | 159,073   | 171   | \$39.08           | 89.656        | 1.01120    | 0.160    |
| 2003                      |           |           |       |                   |               |            |          |
| Region: 1                 | 3         | 89,496    | 92    | \$36.40           | 95.975        | 1.04611    | 0.136    |
| Region: 2                 | 16        | 193,753   | 199   | \$37.46           | 88.622        | 1.01457    | 0.166    |
| Region: 4                 | 5         | 153,240   | 161   | \$36.85           | 95.437        | 1.04073    | 0.142    |
| Totals 2003               | 24        | 436,489   | 452   | \$37.03           | 92.522        | 1.03022    | 0.151    |
| Grand Totals - Grading: S | 137       | 1,652,422 | 1738  | \$39.27           | 89.961        | 1.01475    | 0.158    |

*Asphalt Content - Recap by Grading/Year/Region*

| <i>Grading: SG</i>                | Processes | Tons   | Tests | Weighted Average: |               |            |          |
|-----------------------------------|-----------|--------|-------|-------------------|---------------|------------|----------|
|                                   |           |        |       | Price             | Quality Level | Pay Factor | St. Dev. |
| <b>2001</b>                       |           |        |       |                   |               |            |          |
| <i>Region: 1</i>                  | 2         | 19,809 | 19    | \$35.08           | 86.818        | 1.00611    | 0.170    |
| <i>Totals 2001</i>                | 2         | 19,809 | 19    | \$35.08           | 86.818        | 1.00611    | 0.170    |
| <b>2003</b>                       |           |        |       |                   |               |            |          |
| <i>Region: 1</i>                  | 1         | 11,470 | 15    | \$36.50           | 82.776        | 0.98518    | 0.120    |
| <i>Region: 4</i>                  | 1         | 5,813  | 7     | \$29.35           | 85.433        | 1.01756    | 0.199    |
| <i>Totals 2003</i>                | 2         | 17,283 | 22    | \$34.10           | 83.670        | 0.99607    | 0.147    |
| <i>Grand Totals - Grading: SG</i> | 4         | 37,092 | 41    | \$34.62           | 85.351        | 1.00143    | 0.159    |

| <i>Grading: SMA</i>                | Processes | Tons    | Tests | Weighted Average: |               |            |          |
|------------------------------------|-----------|---------|-------|-------------------|---------------|------------|----------|
|                                    |           |         |       | Price             | Quality Level | Pay Factor | St. Dev. |
| <b>2000</b>                        |           |         |       |                   |               |            |          |
| <i>Region: 3</i>                   | 2         | 17,033  | 17    | \$48.36           | 73.488        | 0.94554    | 0.191    |
| <i>Totals 2000</i>                 | 2         | 17,033  | 17    | \$48.36           | 73.488        | 0.94554    | 0.191    |
| <b>2002</b>                        |           |         |       |                   |               |            |          |
| <i>Region: 1</i>                   | 2         | 31,814  | 32    | \$48.70           | 90.569        | 1.02191    | 0.167    |
| <i>Region: 6</i>                   | 6         | 71,665  | 69    | \$47.76           | 85.856        | 0.99954    | 0.161    |
| <i>Totals 2002</i>                 | 8         | 103,479 | 101   | \$48.05           | 87.305        | 1.00642    | 0.163    |
| <b>2003</b>                        |           |         |       |                   |               |            |          |
| <i>Region: 6</i>                   | 1         | 27,442  | 27    | \$49.50           | 95.937        | 1.05107    | 0.135    |
| <i>Totals 2003</i>                 | 1         | 27,442  | 27    | \$49.50           | 95.937        | 1.05107    | 0.135    |
| <i>Grand Totals - Grading: SMA</i> | 11        | 147,954 | 145   | \$48.35           | 87.315        | 1.00769    | 0.161    |

*Asphalt Content - Recap by Grading/Year/Region*

| <i>Grading: SX</i>                | Processes | Tons      | Tests | Weighted Average: |               |            |          |
|-----------------------------------|-----------|-----------|-------|-------------------|---------------|------------|----------|
|                                   |           |           |       | Price             | Quality Level | Pay Factor | St. Dev. |
| <b>2000</b>                       |           |           |       |                   |               |            |          |
| <i>Region: 1</i>                  | 5         | 33,307    | 37    | \$37.98           | 81.630        | 0.98725    | 0.217    |
| <i>Region: 3</i>                  | 32        | 376,886   | 439   | \$43.68           | 92.484        | 1.02312    | 0.147    |
| <i>Region: 5</i>                  | 3         | 50,891    | 52    | \$42.13           | 94.661        | 1.03486    | 0.135    |
| <i>Totals 2000</i>                | 40        | 461,084   | 528   | \$43.09           | 91.940        | 1.02182    | 0.151    |
| <b>2001</b>                       |           |           |       |                   |               |            |          |
| <i>Region: 3</i>                  | 29        | 278,907   | 297   | \$37.85           | 93.822        | 1.02985    | 0.136    |
| <i>Region: 5</i>                  | 5         | 88,053    | 91    | \$38.81           | 98.653        | 1.04964    | 0.101    |
| <i>Totals 2001</i>                | 34        | 366,960   | 388   | \$38.08           | 94.981        | 1.03460    | 0.127    |
| <b>2002</b>                       |           |           |       |                   |               |            |          |
| <i>Region: 1</i>                  | 6         | 130,016   | 134   | \$35.64           | 85.352        | 0.98556    | 0.188    |
| <i>Region: 3</i>                  | 15        | 221,697   | 229   | \$35.96           | 93.865        | 1.02865    | 0.140    |
| <i>Region: 4</i>                  | 1         | 45,000    | 45    | \$39.00           | 94.111        | 1.03472    | 0.159    |
| <i>Region: 5</i>                  | 9         | 170,250   | 173   | \$36.87           | 91.151        | 1.01780    | 0.164    |
| <i>Region: 6</i>                  | 3         | 21,171    | 25    | \$41.52           | 89.093        | 1.01289    | 0.180    |
| <i>Totals 2002</i>                | 34        | 588,134   | 606   | \$36.59           | 91.045        | 1.01588    | 0.161    |
| <b>2003</b>                       |           |           |       |                   |               |            |          |
| <i>Region: 1</i>                  | 5         | 106,767   | 113   | \$42.44           | 96.696        | 1.04709    | 0.137    |
| <i>Region: 3</i>                  | 11        | 115,089   | 115   | \$39.10           | 96.126        | 1.03994    | 0.114    |
| <i>Region: 5</i>                  | 5         | 53,803    | 61    | \$57.52           | 90.779        | 1.01600    | 0.151    |
| <i>Totals 2003</i>                | 21        | 275,659   | 289   | \$43.99           | 95.303        | 1.03804    | 0.130    |
| <i>Grand Totals - Grading: SX</i> | 129       | 1,691,837 | 1811  | \$39.89           | 92.836        | 1.02517    | 0.146    |

*Statewide Totals All Gradings*

|  | Processes | Tons      | Tests | Weighted Average: |               |            |          |
|--|-----------|-----------|-------|-------------------|---------------|------------|----------|
|  |           |           |       | Price             | Quality Level | Pay Factor | St. Dev. |
|  | 282       | 3,532,431 | 3738  | \$39.90           | 91.188        | 1.01931    | 0.152    |

## Mat Density - Recap by Grading/Year/Region

Criteria: Projects with Bid Dates from 1/1/00 to 12/31/03.

Processes with less than 3 tests not included.

| Grading: S          | Processes | Total<br>Tons | Tests | Weighted Average |                  |               |          |       |
|---------------------|-----------|---------------|-------|------------------|------------------|---------------|----------|-------|
|                     |           |               |       | Price            | Quality<br>Level | Pay<br>Factor | St. Dev. | Mean  |
| 2000                |           |               |       |                  |                  |               |          |       |
| Region: 1           | 7         | 133,350       | 270   | \$37.03          | 95.483           | 1.03787       | 0.893    | 93.67 |
| Region: 2           | 26        | 287,891       | 591   | \$38.47          | 90.740           | 1.00788       | 0.983    | 93.44 |
| Region: 4           | 2         | 3,791         | 10    | \$56.73          | 91.843           | 1.03339       | 0.848    | 93.10 |
| Region: 6           | 11        | 107,917       | 219   | \$44.54          | 90.967           | 1.01998       | 0.918    | 93.34 |
| Totals: 2000        |           |               |       |                  |                  |               |          |       |
|                     | 46        | 532,949       | 1,090 | \$39.47          | 91.980           | 1.01801       | 0.946    | 93.47 |
| 2001                |           |               |       |                  |                  |               |          |       |
| Region: 1           | 15        | 135,130       | 278   | \$50.72          | 92.996           | 1.02639       | 0.982    | 93.79 |
| Region: 2           | 21        | 232,780       | 469   | \$37.03          | 93.646           | 1.03091       | 0.927    | 93.79 |
| Region: 4           | 3         | 27,853        | 58    | \$30.10          | 97.883           | 1.05078       | 0.854    | 93.86 |
| Region: 6           | 8         | 99,752        | 202   | \$38.42          | 96.001           | 1.04534       | 0.871    | 93.83 |
| Totals: 2001        |           |               |       |                  |                  |               |          |       |
|                     | 47        | 495,515       | 1,007 | \$40.66          | 94.181           | 1.03370       | 0.927    | 93.80 |
| 2002                |           |               |       |                  |                  |               |          |       |
| Region: 1           | 4         | 15,440        | 33    | \$45.99          | 93.709           | 1.03178       | 1.007    | 93.99 |
| Region: 2           | 9         | 52,978        | 109   | \$37.31          | 93.365           | 1.02772       | 0.991    | 93.71 |
| Region: 4           | 7         | 22,556        | 52    | \$38.11          | 98.405           | 1.03762       | 0.691    | 93.84 |
| Region: 6           | 9         | 65,813        | 137   | \$39.73          | 90.434           | 1.01533       | 0.768    | 93.11 |
| Totals: 2002        |           |               |       |                  |                  |               |          |       |
|                     | 29        | 156,787       | 331   | \$39.30          | 92.893           | 1.02434       | 0.856    | 93.50 |
| 2003                |           |               |       |                  |                  |               |          |       |
| Region: 1           | 3         | 72,610        | 152   | \$36.68          | 92.200           | 1.01429       | 1.042    | 93.57 |
| Region: 2           | 20        | 185,753       | 377   | \$37.41          | 90.145           | 1.01625       | 0.982    | 93.53 |
| Region: 4           | 5         | 140,276       | 285   | \$37.17          | 94.283           | 1.03614       | 0.920    | 93.60 |
| Totals: 2003        |           |               |       |                  |                  |               |          |       |
|                     | 28        | 398,639       | 814   | \$37.19          | 91.975           | 1.02289       | 0.971    | 93.56 |
| Grand Totals Grad S |           |               |       |                  |                  |               |          |       |
|                     | 150       | 1,583,890     | 3,242 | \$39.25          | 92.758           | 1.02477       | 0.937    | 93.60 |

| Grading: SG          | Processes | Total<br>Tons | Tests | Weighted Average |                  |               |          |       |
|----------------------|-----------|---------------|-------|------------------|------------------|---------------|----------|-------|
|                      |           |               |       | Price            | Quality<br>Level | Pay<br>Factor | St. Dev. | Mean  |
| 2001                 |           |               |       |                  |                  |               |          |       |
| Region: 1            | 4         | 24,785        | 51    | \$35.08          | 94.640           | 1.03646       | 0.836    | 93.94 |
| Totals: 2001         | 4         | 24,785        | 51    | \$35.08          | 94.640           | 1.03646       | 0.836    | 93.94 |
| 2003                 |           |               |       |                  |                  |               |          |       |
| Region: 1            | 1         | 10,970        | 24    | \$36.50          | 90.491           | 1.01920       | 0.785    | 93.02 |
| Region: 4            | 1         | 5,813         | 12    | \$29.35          | 99.553           | 1.04500       | 0.705    | 93.60 |
| Totals: 2003         | 2         | 16,783        | 36    | \$34.02          | 93.630           | 1.02814       | 0.757    | 93.22 |
| Grand Totals Grad SG | 6         | 41,568        | 87    | \$34.65          | 94.232           | 1.03310       | 0.804    | 93.65 |

| Grading: SMA          | Processes | Total<br>Tons | Tests | Weighted Average |                  |               |          |       |
|-----------------------|-----------|---------------|-------|------------------|------------------|---------------|----------|-------|
|                       |           |               |       | Price            | Quality<br>Level | Pay<br>Factor | St. Dev. | Mean  |
| 2000                  |           |               |       |                  |                  |               |          |       |
| Region: 3             | 2         | 17,033        | 34    | \$48.36          | 90.952           | 1.02727       | 1.020    | 95.15 |
| Totals: 2000          | 2         | 17,033        | 34    | \$48.36          | 90.952           | 1.02727       | 1.020    | 95.15 |
| 2002                  |           |               |       |                  |                  |               |          |       |
| Region: 1             | 2         | 31,814        | 63    | \$48.70          | 84.429           | 0.96768       | 1.352    | 94.62 |
| Region: 6             | 6         | 70,665        | 143   | \$47.73          | 93.896           | 1.03715       | 1.000    | 94.87 |
| Totals: 2002          | 8         | 102,479       | 206   | \$48.03          | 90.957           | 1.01558       | 1.109    | 94.80 |
| 2003                  |           |               |       |                  |                  |               |          |       |
| Region: 6             | 1         | 28,160        | 55    | \$49.50          | 99.342           | 1.05500       | 0.646    | 95.43 |
| Totals: 2003          | 1         | 28,160        | 55    | \$49.50          | 99.342           | 1.05500       | 0.646    | 95.43 |
| Grand Totals Grad SMA | 11        | 147,672       | 295   | \$48.35          | 92.555           | 1.02444       | 1.011    | 94.96 |

| Grading: SX          | Processes | Total<br>Tons | Tests | Weighted Average |                  |               |          |       |
|----------------------|-----------|---------------|-------|------------------|------------------|---------------|----------|-------|
|                      |           |               |       | Price            | Quality<br>Level | Pay<br>Factor | St. Dev. | Mean  |
| 2000                 |           |               |       |                  |                  |               |          |       |
| Region: 1            | 5         | 35,221        | 75    | \$37.70          | 86.242           | 0.99943       | 1.227    | 93.55 |
| Region: 3            | 30        | 344,463       | 687   | \$44.49          | 91.161           | 1.01053       | 0.955    | 93.57 |
| Region: 5            | 3         | 48,488        | 98    | \$42.09          | 90.163           | 0.99982       | 0.829    | 93.11 |
| Totals: 2000         | 38        | 428,172       | 860   | \$43.66          | 90.643           | 1.00840       | 0.963    | 93.52 |
| 2001                 |           |               |       |                  |                  |               |          |       |
| Region: 3            | 21        | 206,912       | 427   | \$38.24          | 93.586           | 1.03136       | 1.002    | 93.85 |
| Region: 5            | 5         | 87,553        | 178   | \$38.83          | 89.469           | 1.00295       | 1.062    | 93.56 |
| Totals: 2001         | 26        | 294,465       | 605   | \$38.42          | 92.362           | 1.02291       | 1.020    | 93.76 |
| 2002                 |           |               |       |                  |                  |               |          |       |
| Region: 1            | 6         | 130,016       | 263   | \$35.64          | 97.814           | 1.05282       | 0.781    | 93.81 |
| Region: 3            | 16        | 198,144       | 409   | \$37.19          | 95.607           | 1.04151       | 0.871    | 93.81 |
| Region: 4            | 1         | 44,000        | 89    | \$39.00          | 95.087           | 1.03680       | 0.837    | 93.38 |
| Region: 5            | 7         | 135,305       | 275   | \$37.12          | 94.948           | 1.03093       | 0.939    | 93.76 |
| Region: 6            | 3         | 21,171        | 46    | \$41.52          | 86.894           | 1.00324       | 0.828    | 93.02 |
| Totals: 2002         | 33        | 528,636       | 1,082 | \$37.12          | 95.589           | 1.03966       | 0.862    | 93.73 |
| 2003                 |           |               |       |                  |                  |               |          |       |
| Region: 1            | 7         | 107,296       | 230   | \$42.34          | 96.301           | 1.04793       | 0.813    | 93.89 |
| Region: 3            | 8         | 85,842        | 180   | \$39.55          | 93.264           | 1.03122       | 0.999    | 94.33 |
| Region: 5            | 6         | 39,760        | 82    | \$63.09          | 93.832           | 1.03254       | 0.922    | 94.03 |
| Totals: 2003         | 21        | 232,898       | 492   | \$44.86          | 94.760           | 1.03914       | 0.900    | 94.08 |
| Grand Totals Grad SX | 118       | 1,484,171     | 3,039 | \$40.48          | 93.392           | 1.02724       | 0.928    | 93.73 |

**Statewide Totals All Gradings**

| Processes | Total<br>Tons | Tests | Weighted Average |                  |               |          |       |
|-----------|---------------|-------|------------------|------------------|---------------|----------|-------|
|           |               |       | Price            | Quality<br>Level | Pay<br>Factor | St. Dev. | Mean  |
| 285       | 3,257,301     | 6,663 | \$40.16          | 93.056           | 1.02599       | 0.935    | 93.72 |

## Gradation - Process Information - Recap by Grading/Year/Region

Criteria: Projects with Bid Dates from 1/1/00 to 12/31/03.

Processes with less than 3 tests not included.

| Grading: S      | Processes | Tons      | Tests | Price   | Pay Factor | Quality Level |         |        |
|-----------------|-----------|-----------|-------|---------|------------|---------------|---------|--------|
|                 |           |           |       |         |            | Avg.          | High    | Low    |
| 2000            |           |           |       |         |            |               |         |        |
| Region 1        | 7         | 134,750   | 69    | \$37.08 | 1.01972    | 87.882        | 96.476  | 66.667 |
| Region 2        | 18        | 288,364   | 155   | \$38.24 | 0.99336    | 85.545        | 100.000 | 0.000  |
| Region 4        | 3         | 19,679    | 12    | \$48.99 | 0.94015    | 64.554        | 70.061  | 50.000 |
| Region 6        | 11        | 108,417   | 59    | \$44.51 | 1.02203    | 87.903        | 100.000 | 67.817 |
| Totals: 2000    | 39        | 551,210   | 295   | \$39.57 | 1.00355    | 85.831        | 100.000 | 0.000  |
| 2001            |           |           |       |         |            |               |         |        |
| Region 1        | 11        | 130,406   | 68    | \$51.38 | 0.99110    | 85.240        | 100.000 | 0.000  |
| Region 2        | 13        | 207,829   | 105   | \$36.45 | 0.99536    | 83.447        | 100.000 | 54.873 |
| Region 4        | 2         | 24,162    | 13    | \$30.19 | 1.02151    | 86.361        | 90.404  | 81.305 |
| Region 6        | 7         | 99,000    | 52    | \$38.56 | 1.00571    | 86.461        | 100.000 | 68.717 |
| Totals: 2001    | 33        | 461,397   | 238   | \$40.80 | 0.99775    | 84.753        | 100.000 | 0.000  |
| 2002            |           |           |       |         |            |               |         |        |
| Region 1        | 2         | 10,587    | 7     | \$48.15 | 1.01790    | 84.009        | 90.825  | 66.667 |
| Region 2        | 5         | 46,086    | 24    | \$35.06 | 1.02391    | 93.628        | 100.000 | 83.042 |
| Region 4        | 2         | 10,377    | 7     | \$41.43 | 1.00443    | 83.320        | 100.000 | 72.699 |
| Region 6        | 5         | 54,089    | 32    | \$39.86 | 0.95249    | 80.323        | 100.000 | 35.200 |
| Totals: 2002    | 14        | 121,139   | 70    | \$38.89 | 0.98983    | 85.964        | 100.000 | 35.200 |
| 2003            |           |           |       |         |            |               |         |        |
| Region 1        | 3         | 89,878    | 49    | \$36.42 | 1.00345    | 87.445        | 90.695  | 73.663 |
| Region 2        | 14        | 189,104   | 99    | \$37.44 | 1.00707    | 85.273        | 100.000 | 54.428 |
| Region 4        | 5         | 153,240   | 84    | \$36.85 | 1.03865    | 94.711        | 98.651  | 89.233 |
| Totals: 2003    | 22        | 432,222   | 232   | \$37.02 | 1.01751    | 89.071        | 100.000 | 54.428 |
| Grand Totals: S | 108       | 1,565,968 | 835   | \$39.18 | 1.00463    | 86.418        | 100.000 | 0.000  |

**Grading: SG**

ing: SG

|                  | Processes | Tons   | Tests | Price   | Pay Factor | Quality Level |        |        |
|------------------|-----------|--------|-------|---------|------------|---------------|--------|--------|
|                  |           |        |       |         |            | Avg.          | High   | Low    |
| 2001             |           |        |       |         |            |               |        |        |
| Region 1         | 2         | 19,809 | 11    | \$35.08 | 0.98848    | 78.450        | 86.107 | 50.000 |
| Totals: 2001     | 2         | 19,809 | 11    | \$35.08 | 0.98848    | 78.450        | 86.107 | 50.000 |
| 2003             |           |        |       |         |            |               |        |        |
| Region 1         | 1         | 11,470 | 6     | \$36.50 | 1.02977    | 87.942        | 87.942 | 87.942 |
| Region 4         | 1         | 5,813  | 3     | \$29.35 | 0.98531    | 66.265        | 66.265 | 66.265 |
| Totals: 2003     | 2         | 17,283 | 9     | \$34.10 | 1.01482    | 80.651        | 87.942 | 66.265 |
| Grand Totals: SG | 4         | 37,092 | 20    | \$34.62 | 1.00075    | 79.475        | 87.942 | 50.000 |

**Grading: SMA**

ing: SMA

|                  | Processes | Tons    | Tests | Price   | Pay Factor | Quality Level |         |        |
|------------------|-----------|---------|-------|---------|------------|---------------|---------|--------|
|                  |           |         |       |         |            | Avg.          | High    | Low    |
| 2000             |           |         |       |         |            |               |         |        |
| Region 3         | 1         | 11,075  | 7     | \$48.53 | 0.97274    | 75.968        | 75.968  | 75.968 |
| Totals: 2000     | 1         | 11,075  | 7     | \$48.53 | 0.97274    | 75.968        | 75.968  | 75.968 |
| 2002             |           |         |       |         |            |               |         |        |
| Region 1         | 2         | 31,812  | 16    | \$48.70 | 0.99783    | 86.898        | 100.000 | 82.115 |
| Region 6         | 6         | 70,665  | 36    | \$47.73 | 1.02177    | 88.071        | 100.000 | 59.866 |
| Totals: 2002     | 8         | 102,477 | 52    | \$48.03 | 1.01434    | 87.707        | 100.000 | 59.866 |
| 2003             |           |         |       |         |            |               |         |        |
| Region 6         | 1         | 27,869  | 13    | \$49.50 | 1.03471    | 92.154        | 92.154  | 92.154 |
| Totals: 2003     | 1         | 27,869  | 13    | \$49.50 | 1.03471    | 92.154        | 92.154  | 92.154 |
| Grand Totals: SM | 10        | 141,421 | 72    | \$48.36 | 1.01510    | 87.664        | 100.000 | 59.866 |

**Grading: SX**

ing: SX

|                  | Processes | Tons      | Tests | Price   | Pay Factor | Quality Level |         |        |
|------------------|-----------|-----------|-------|---------|------------|---------------|---------|--------|
|                  |           |           |       |         |            | Avg.          | High    | Low    |
| 2000             |           |           |       |         |            |               |         |        |
| Region 1         | 3         | 28,529    | 15    | \$35.62 | 0.94354    | 76.223        | 100.000 | 37.090 |
| Region 3         | 26        | 356,310   | 210   | \$43.83 | 0.99569    | 83.835        | 100.000 | 36.518 |
| Region 5         | 3         | 50,891    | 27    | \$42.13 | 1.02130    | 89.890        | 98.457  | 41.559 |
| Totals: 2000     | 32        | 435,730   | 252   | \$43.09 | 0.99527    | 84.044        | 100.000 | 36.518 |
| 2001             |           |           |       |         |            |               |         |        |
| Region 3         | 23        | 258,452   | 152   | \$37.84 | 1.01409    | 88.481        | 100.000 | 34.490 |
| Region 5         | 4         | 82,587    | 43    | \$38.58 | 0.99852    | 83.947        | 90.832  | 56.623 |
| Totals: 2001     | 27        | 341,039   | 195   | \$38.02 | 1.01032    | 87.383        | 100.000 | 34.490 |
| 2002             |           |           |       |         |            |               |         |        |
| Region 1         | 6         | 130,015   | 68    | \$35.64 | 1.01207    | 87.161        | 91.574  | 81.324 |
| Region 3         | 14        | 218,494   | 118   | \$36.02 | 1.01494    | 88.251        | 100.000 | 47.478 |
| Region 4         | 1         | 44,000    | 22    | \$39.00 | 1.02580    | 91.415        | 91.415  | 91.415 |
| Region 5         | 6         | 159,350   | 83    | \$36.09 | 1.03201    | 93.356        | 100.000 | 58.043 |
| Region 6         | 2         | 16,417    | 9     | \$43.70 | 1.02730    | 92.828        | 100.000 | 84.441 |
| Totals: 2002     | 29        | 568,276   | 300   | \$36.41 | 1.02027    | 89.810        | 100.000 | 47.478 |
| 2003             |           |           |       |         |            |               |         |        |
| Region 1         | 5         | 106,767   | 55    | \$42.44 | 1.02053    | 90.943        | 100.000 | 77.281 |
| Region 3         | 9         | 105,995   | 69    | \$38.86 | 1.00402    | 85.619        | 100.000 | 69.868 |
| Region 5         | 5         | 53,803    | 29    | \$57.52 | 1.00592    | 84.142        | 92.970  | 65.983 |
| Totals: 2003     | 19        | 266,565   | 153   | \$44.06 | 1.01102    | 87.453        | 100.000 | 65.983 |
| Grand Totals: SX | 107       | 1,611,610 | 900   | \$39.82 | 1.00987    | 87.348        | 100.000 | 34.490 |

**Statewide Totals All Gradings**

| Processes | Tons      | Tests | Price   | Pay Factor | Quality Level |         |       |
|-----------|-----------|-------|---------|------------|---------------|---------|-------|
|           |           |       |         |            | Avg.          | High    | Low   |
| 229       | 3,356,091 | 1827  | \$39.82 | 1.00755    | 86.840        | 100.000 | 0.000 |

## Gradation - Standard Deviation - Recap by Grading/Year/Region

Criteria: Projects with Bid Dates from 1/1/2000 to 12/31/2003.

Processes with less than 3 tests not included.

### Grading: S

ling: S

|              |           |           |       | Weighted Average |       |       |       |       |       |        |         |
|--------------|-----------|-----------|-------|------------------|-------|-------|-------|-------|-------|--------|---------|
|              | Processes | Tons      | Tests | Price            | 3/4"  | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 2000         |           |           |       |                  |       |       |       |       |       |        |         |
| Region 1     | 7         | 134,750   | 69    | \$37.08          | 1.133 | 2.326 | 2.531 | 2.567 | 2.504 | 1.705  | 0.644   |
| Region 2     | 18        | 288,364   | 155   | \$38.24          | 1.025 | 2.494 | 2.624 | 2.553 | 2.217 | 1.486  | 0.625   |
| Region 4     | 3         | 19,679    | 12    | \$48.99          | 0.000 | 2.726 | 3.729 | 3.034 | 2.274 | 0.896  | 0.314   |
| Region 6     | 11        | 108,417   | 59    | \$44.51          | 1.222 | 2.380 | 2.610 | 2.386 | 2.339 | 1.435  | 0.452   |
| Totals: 2000 | 39        | 551,210   | 295   | \$39.57          | 1.054 | 2.439 | 2.638 | 2.541 | 2.313 | 1.508  | 0.585   |
| 2001         |           |           |       |                  |       |       |       |       |       |        |         |
| Region 1     | 11        | 130,406   | 68    | \$51.38          | 1.132 | 2.014 | 2.391 | 2.340 | 2.082 | 1.278  | 0.473   |
| Region 2     | 13        | 207,829   | 105   | \$36.45          | 1.002 | 2.589 | 2.709 | 2.622 | 2.519 | 1.642  | 0.751   |
| Region 4     | 2         | 24,162    | 13    | \$30.19          | 0.000 | 1.711 | 2.367 | 2.589 | 2.478 | 1.245  | 0.478   |
| Region 6     | 7         | 99,000    | 52    | \$38.56          | 0.711 | 2.705 | 2.637 | 2.563 | 2.453 | 1.465  | 0.818   |
| Totals: 2001 | 33        | 461,397   | 238   | \$40.80          | 0.924 | 2.405 | 2.586 | 2.528 | 2.379 | 1.480  | 0.673   |
| 2002         |           |           |       |                  |       |       |       |       |       |        |         |
| Region 1     | 2         | 10,587    | 7     | \$48.15          | 2.005 | 3.605 | 2.864 | 2.420 | 2.292 | 0.744  | 0.288   |
| Region 2     | 5         | 46,086    | 24    | \$35.06          | 0.433 | 1.876 | 1.878 | 1.634 | 1.456 | 0.888  | 0.667   |
| Region 4     | 2         | 10,377    | 7     | \$41.43          | 0.367 | 2.650 | 2.478 | 2.678 | 1.622 | 1.078  | 0.375   |
| Region 6     | 5         | 54,089    | 32    | \$39.86          | 0.275 | 2.619 | 2.610 | 2.683 | 2.162 | 1.412  | 0.446   |
| Totals: 2002 | 14        | 121,139   | 70    | \$38.89          | 0.494 | 2.425 | 2.342 | 2.260 | 1.859 | 1.126  | 0.510   |
| 2003         |           |           |       |                  |       |       |       |       |       |        |         |
| Region 1     | 3         | 89,878    | 49    | \$36.42          | 1.031 | 2.171 | 2.440 | 2.559 | 2.204 | 1.343  | 0.626   |
| Region 2     | 14        | 189,104   | 99    | \$37.44          | 0.210 | 1.771 | 2.406 | 2.666 | 2.467 | 1.693  | 0.656   |
| Region 4     | 5         | 153,240   | 84    | \$36.85          | 0.209 | 1.930 | 2.452 | 2.092 | 1.703 | 1.147  | 0.548   |
| Totals: 2003 | 22        | 432,222   | 232   | \$37.02          | 0.396 | 1.910 | 2.430 | 2.440 | 2.142 | 1.427  | 0.612   |
| nd Totals S  | 108       | 1,565,968 | 835   | \$39.18          | 0.800 | 2.282 | 2.542 | 2.488 | 2.250 | 1.448  | 0.612   |

**Grading: SG**

ing: SG

|                 | Processes | Tons   | Tests | Price   | Weighted Average |       |       |       |       |        |         |
|-----------------|-----------|--------|-------|---------|------------------|-------|-------|-------|-------|--------|---------|
|                 |           |        |       |         | 3/4"             | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 2001            |           |        |       |         |                  |       |       |       |       |        |         |
| Region 1        | 2         | 19,809 | 11    | \$35.08 |                  | 4.233 | 3.497 | 2.506 | 2.600 | 1.627  | 0.933   |
| Totals: 2001    | 2         | 19,809 | 11    | \$35.08 |                  | 4.233 | 3.497 | 2.506 | 2.600 | 1.627  | 0.933   |
| 2003            |           |        |       |         |                  |       |       |       |       |        |         |
| Region 1        | 1         | 11,470 | 6     | \$36.50 |                  | 2.100 | 2.900 | 3.000 | 1.400 | 1.000  | 1.170   |
| Region 4        | 1         | 5,813  | 3     | \$29.35 |                  | 4.200 | 3.800 | 4.000 | 4.000 | 1.700  | 1.360   |
| Totals: 2003    | 2         | 17,283 | 9     | \$34.10 |                  | 2.806 | 3.203 | 3.336 | 2.274 | 1.235  | 1.234   |
| Grand Totals SG | 4         | 37,092 | 20    | \$34.62 |                  | 3.568 | 3.360 | 2.893 | 2.448 | 1.445  | 1.073   |

**Grading: SMA**

| Grading: SMA     | Weighted Average |         |       |         |      |       |       |       |       |        |         |
|------------------|------------------|---------|-------|---------|------|-------|-------|-------|-------|--------|---------|
|                  | Processes        | Tons    | Tests | Price   | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 2000             |                  |         |       |         |      |       |       |       |       |        |         |
| Region 3         | 1                | 11,075  | 7     | \$48.53 |      | 0.000 | 1.100 | 2.100 | 1.700 | 1.000  | 0.800   |
| Totals: 2000     | 1                | 11,075  | 7     | \$48.53 |      | 0.000 | 1.100 | 2.100 | 1.700 | 1.000  | 0.800   |
| 2002             |                  |         |       |         |      |       |       |       |       |        |         |
| Region 1         | 2                | 31,812  | 16    | \$48.70 |      | 2.865 | 3.206 | 2.240 | 1.693 | 0.947  | 0.630   |
| Region 6         | 6                | 70,665  | 36    | \$47.73 |      | 1.793 | 2.304 | 2.460 | 1.713 | 1.145  | 0.792   |
| Totals: 2002     | 8                | 102,477 | 52    | \$48.03 |      | 2.126 | 2.584 | 2.391 | 1.707 | 1.083  | 0.742   |
| 2003             |                  |         |       |         |      |       |       |       |       |        |         |
| Region 6         | 1                | 27,869  | 13    | \$49.50 |      | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |
| Totals: 2003     | 1                | 27,869  | 13    | \$49.50 |      | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |
| Grand Totals SMA | 10               | 141,421 | 72    | \$48.36 |      | 2.151 | 2.668 | 2.292 | 1.705 | 1.060  | 0.693   |

**Grading: SX**

| Region: SX      | Weighted Average |           |       |         |      |       |       |       |       |        |         |
|-----------------|------------------|-----------|-------|---------|------|-------|-------|-------|-------|--------|---------|
|                 | Processes        | Tons      | Tests | Price   | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 2000            |                  |           |       |         |      |       |       |       |       |        |         |
| Region 1        | 3                | 28,529    | 15    | \$35.62 |      | 1.666 | 2.368 | 2.334 | 2.348 | 1.573  | 0.837   |
| Region 3        | 26               | 356,310   | 210   | \$43.83 |      | 0.766 | 1.734 | 2.361 | 2.198 | 1.400  | 0.594   |
| Region 5        | 3                | 50,891    | 27    | \$42.13 |      | 0.747 | 1.470 | 2.356 | 2.043 | 1.316  | 0.379   |
| Totals: 2000    | 32               | 435,730   | 252   | \$43.09 |      | 0.823 | 1.745 | 2.359 | 2.190 | 1.402  | 0.585   |
| 2001            |                  |           |       |         |      |       |       |       |       |        |         |
| Region 3        | 23               | 258,452   | 152   | \$37.84 |      | 1.275 | 2.082 | 2.364 | 1.948 | 1.234  | 0.536   |
| Region 5        | 4                | 82,587    | 43    | \$38.58 |      | 1.484 | 2.483 | 2.095 | 1.472 | 0.965  | 0.581   |
| Totals: 2001    | 27               | 341,039   | 195   | \$38.02 |      | 1.326 | 2.179 | 2.299 | 1.833 | 1.169  | 0.547   |
| 2002            |                  |           |       |         |      |       |       |       |       |        |         |
| Region 1        | 6                | 130,015   | 68    | \$35.64 |      | 1.057 | 2.009 | 2.422 | 2.631 | 1.593  | 0.459   |
| Region 3        | 14               | 218,494   | 118   | \$36.02 |      | 0.754 | 1.789 | 2.251 | 2.210 | 1.306  | 0.580   |
| Region 4        | 1                | 44,000    | 22    | \$39.00 |      | 0.800 | 1.700 | 2.900 | 2.400 | 1.400  | 0.730   |
| Region 5        | 6                | 159,350   | 83    | \$36.09 |      | 1.269 | 2.385 | 2.407 | 2.299 | 1.368  | 0.438   |
| Region 6        | 2                | 16,417    | 9     | \$43.70 |      | 0.599 | 1.369 | 1.291 | 2.345 | 1.277  | 0.678   |
| Totals: 2002    | 29               | 568,276   | 300   | \$36.41 |      | 0.967 | 1.988 | 2.356 | 2.350 | 1.396  | 0.527   |
| 2003            |                  |           |       |         |      |       |       |       |       |        |         |
| Region 1        | 5                | 106,767   | 55    | \$42.44 |      | 1.209 | 2.153 | 2.629 | 2.401 | 1.728  | 0.601   |
| Region 3        | 9                | 105,995   | 69    | \$38.86 |      | 1.702 | 2.604 | 2.695 | 2.108 | 1.307  | 0.668   |
| Region 5        | 5                | 53,803    | 29    | \$57.52 |      | 0.296 | 0.978 | 2.287 | 2.649 | 1.788  | 1.127   |
| Totals: 2003    | 19               | 266,565   | 153   | \$44.06 |      | 1.331 | 2.095 | 2.587 | 2.335 | 1.573  | 0.733   |
| Grand Totals SX | 107              | 1,611,610 | 900   | \$39.82 |      | 1.059 | 1.980 | 2.383 | 2.195 | 1.379  | 0.581   |

**Statewide Totals All Gradings**

| <i>All Gradings</i> |           |       | Weighted Average |      |       |       |       |       |        |         |
|---------------------|-----------|-------|------------------|------|-------|-------|-------|-------|--------|---------|
| Processes           | Tons      | Tests | Price            | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 229                 | 3,356,091 | 1827  | \$39.82          |      | 1.709 | 2.287 | 2.434 | 2.203 | 1.398  | 0.606   |

## Joint Density - Recap by Grading/Year/Region

Criteria: Projects with Bid Dates from 1/1/2000 to 12/31/2003.

Processes with less than 3 tests not included.

Weighted average used for: Price, Pay Factor, St. Dev., Mean, and Quality Level

| <i>Grading: S</i>        |    |         |     |         |         |       |        |        | Quality Level |        |     |
|--------------------------|----|---------|-----|---------|---------|-------|--------|--------|---------------|--------|-----|
|                          |    |         |     |         |         |       |        |        | Avg.          | High   | Low |
| 2003                     |    |         |     |         |         |       |        |        |               |        |     |
| <i>Region 2</i>          | 12 | 185,639 | 123 | \$37.38 | 0.95992 | 1.521 | 89.709 | 81.322 | 100.000       | 25.665 |     |
| <i>Region 4</i>          | 5  | 141,276 | 69  | \$37.14 | 0.99840 | 1.369 | 89.721 | 87.224 | 100.000       | 80.089 |     |
| <i>Totals: 2003</i>      | 17 | 326,915 | 192 | \$37.28 | 0.97655 | 1.456 | 89.714 | 83.873 | 100.000       | 25.665 |     |
| <i>Totals Grading: S</i> | 17 | 326,915 | 192 | \$37.28 | 0.97655 | 1.456 | 89.714 | 83.873 | 100.000       | 25.665 |     |

| <i>Grading: SX</i>        |    |         |     |         |         |       |        |        | Quality Level |        |     |
|---------------------------|----|---------|-----|---------|---------|-------|--------|--------|---------------|--------|-----|
|                           |    |         |     |         |         |       |        |        | Avg.          | High   | Low |
| 2002                      |    |         |     |         |         |       |        |        |               |        |     |
| <i>Region 5</i>           | 2  | 64,455  | 75  | \$35.59 | 1.02468 | 1.547 | 90.561 | 93.951 | 100.000       | 93.382 |     |
| <i>Totals: 2002</i>       | 2  | 64,455  | 75  | \$35.59 | 1.02468 | 1.547 | 90.561 | 93.951 | 100.000       | 93.382 |     |
| 2003                      |    |         |     |         |         |       |        |        |               |        |     |
| <i>Region 1</i>           | 5  | 98,915  | 56  | \$41.28 | 1.02318 | 1.630 | 90.230 | 89.999 | 93.520        | 61.448 |     |
| <i>Region 3</i>           | 3  | 60,498  | 47  | \$38.95 | 0.97520 | 1.885 | 90.130 | 84.505 | 95.100        | 71.417 |     |
| <i>Region 5</i>           | 2  | 39,952  | 27  | \$63.47 | 0.97279 | 1.528 | 89.372 | 80.830 | 85.653        | 72.877 |     |
| <i>Totals: 2003</i>       | 10 | 199,365 | 130 | \$45.02 | 0.99852 | 1.687 | 90.028 | 86.494 | 95.100        | 61.448 |     |
| <i>Totals Grading: SX</i> | 12 | 263,820 | 205 | \$42.72 | 1.00491 | 1.653 | 90.158 | 88.316 | 100.000       | 61.448 |     |

### Joint Density Totals, All Gradings 1/1/2000 to 12/31/20

|           |         |       |         |            |         |        |  | Quality Level |         |        |
|-----------|---------|-------|---------|------------|---------|--------|--|---------------|---------|--------|
| Processes | Tons    | Tests | Price   | Pay Factor | Std Dev | Mean   |  | Avg.          | High    | Low    |
| 29        | 590,735 | 397   | \$39.71 | 0.98921    | 1.544   | 89.912 |  | 85.857        | 100.000 | 25.665 |

## **Appendix B**

### **Reports for 2003 Projects**

|           |                                                          |        |
|-----------|----------------------------------------------------------|--------|
| Report 6  | Project Listing by Region/Subaccount .....               | B - 1  |
| Report 7  | Project Data .....                                       | B - 3  |
| Report 7  | Calculated Pay Factor Composite and I/DP by Region ..... | B - 33 |
| Report 8  | Asphalt Content – Process Information .....              | B - 36 |
| Report 9  | Asphalt Content – Recap by Grading/Region .....          | B - 39 |
| Report 11 | Mat Density - Process Information .....                  | B - 40 |
| Report 12 | Mat Density - Recap by Grading/Region .....              | B - 43 |
| Report 13 | Gradation - Process Information .....                    | B - 44 |
| Report 14 | Gradation – Recap by Grading/Region .....                | B - 47 |
| Report 15 | Gradation – Standard Deviation Information .....         | B - 48 |
| Report 16 | Gradation – Std. Dev. Recap by Grading/Region .....      | B - 51 |

### **Joint Density Reports 2000 to 2003**

|           |                                             |        |
|-----------|---------------------------------------------|--------|
| Report 17 | Joint Density Project Listing .....         | B - 52 |
| Report 18 | Joint Density Process Information .....     | B - 54 |
| Report 19 | Joint Density Recap by Grading/Region ..... | B - 56 |



## ***Project Listing by Region/Subaccount - Gradation Acceptance***

Projects with Bid Dates from 1/1/2003 to 12/31/2003.

### ***Region: 1***

| <i>Subacct.</i> | <i>Project Code</i> | <i>Location</i>    | <i>Supplier</i> | <i>Bid Date</i> | <i>Total Bid</i> | <i>Plan Quant.</i> |
|-----------------|---------------------|--------------------|-----------------|-----------------|------------------|--------------------|
| 13897           | NH 0852-088         | SH 85 - Sedalia    | 37              | 02/27/03        | \$4,573,000.00   | 18,192             |
| 13972           | STA 0061-074        | Keystone/Loveland  | 13              | 02/20/03        | \$2,253,896.04   | 31,908             |
| 14227           | SHE 0061-076        | Cleer Creek Canyon | 19              | 01/30/03        | \$189,281.47     | 3,028              |
| 14275           | STA 0362-026        | SH 36 Byers to Ara | 19              | 03/13/03        | \$3,264,288.25   | 53,313             |
| 14305           | IM 0702-241         | West Vail Pass Res | 11              | 01/09/03        | \$4,530,047.77   | 59,309             |
| 14353           | NH 2854-099         | US 285 Parkview-Ke | 41              | 05/01/03        | \$737,038.13     | 5,388              |

***Number of Projects*** 6

***Total Plan Quantity*** 171,138

### ***Region: 2***

| <i>Subacct.</i> | <i>Project Code</i> | <i>Location</i>        | <i>Supplier</i> | <i>Bid Date</i> | <i>Total Bid</i> | <i>Plan Quant.</i> |
|-----------------|---------------------|------------------------|-----------------|-----------------|------------------|--------------------|
| 12833           | NH 1603-016         | West of Walsenburg     | 53              | 07/24/03        | \$1,834,141.75   | 19,652             |
| 13094           | BR 1151-012         | Little Fountain Creek  | 45              | 03/27/03        | \$3,113,158.74   | 18,785             |
| 13547           | NH 0505-037         | US 50 Bridges          | 32              | 03/06/03        | \$3,829,474.01   | 21,910             |
| 14199           | STA 012A-038        | SH 12 e/o Segundo      | 53              | 01/30/03        | \$953,785.40     | 18,000             |
| 14204           | STA 078A-004        | SH 78 Midway to Beulah | 19              | 02/20/03        | \$232,313.45     | 3,381              |
| 14206           | NH 1603-019         | Lathrop to Walsenburg  | 53              | 02/13/03        | \$537,084.53     | 10,060             |
| 14208           | NH 0242-039         | Manitou & Lake George  | 49              | 12/18/03        | \$4,015,672.69   | 62,414             |
| 14304           | STA 083A-031        | SH 83 North PPCC       | 45              | 06/19/03        | \$1,765,662.60   | 22,591             |
| 14397           | NH 0851-006         | SH 85 Phase III        | 45              | 05/22/03        | \$4,083,941.20   | 21,663             |

***Number of Projects*** 9

***Total Plan Quantity*** 198,456

### ***Region: 3***

| <i>Subacct.</i> | <i>Project Code</i> | <i>Location</i>    | <i>Supplier</i> | <i>Bid Date</i> | <i>Total Bid</i> | <i>Plan Quant.</i> |
|-----------------|---------------------|--------------------|-----------------|-----------------|------------------|--------------------|
| 13333           | STA 340A-007        | Redlands Parkway   | 12              | 08/07/03        | \$874,474.10     | 3,853              |
| 13868           | STA 114A-007        | Cochetopa Hwy 114  | 12              | 01/16/03        | \$1,641,143.20   | 37,071             |
| 14216           | STA R300-108        | Meeker and Rangely | 12              | 03/27/03        | \$1,641,848.97   | 28,494             |
| 14217           | STA 092A-016        | Delta East hwy 92  | 16              | 02/06/03        | \$1,924,272.62   | 25,522             |
| 14439           | STA 131A-030        | Wolcott North      | 11              | 05/08/03        | \$1,960,680.57   | 36,296             |

***Number of Projects*** 5

***Total Plan Quantity*** 131,236

**Project Listing**

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**Region: 4**

| <i>Subacct.</i> | <i>Project Code</i> | <i>Location</i>          | <i>Supplier</i> | <i>Bid Date</i> | <i>Total Bid</i> | <i>Plan Quant.</i> |
|-----------------|---------------------|--------------------------|-----------------|-----------------|------------------|--------------------|
| 13987           | STA 1381-005        | Proctor East and West    | 19              | 02/20/03        | \$3,910,262.52   | 64,236             |
| 14301           | NH 2873-126         | US 287 Ted's Place North | 40              | 02/27/03        | \$1,950,044.40   | 34,448             |
| 14461           | STA 059A-028        | SH 59 N of Haxtun        | 60              | 06/19/03        | \$2,549,141.55   | 52,159             |

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**Number of Projects** 3

**Total Plan Quantity** 150,843

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**Region: 5**

| <i>Subacct.</i> | <i>Project Code</i> | <i>Location</i>   | <i>Supplier</i> | <i>Bid Date</i> | <i>Total Bid</i> | <i>Plan Quant.</i> |
|-----------------|---------------------|-------------------|-----------------|-----------------|------------------|--------------------|
| 13922           | BR 114A-008         | Saguache Creek    | 18              | 05/29/03        | \$902,579.53     | 2,129              |
| 13969           | NH 1602-090         | Lonesome Dove     | 45              | 12/04/03        | \$14,496,678.07  | 15,116             |
| 13998           | NH 2852-014         | Ponch Pass to Pon | 11              | 03/06/03        | \$2,333,589.64   | 38,175             |
| 14320           | NH 1603-020         | US 160 & SH 17    | 18              | 04/03/03        | \$233,474.50     | 1,273              |

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**Number of Projects** 4

**Total Plan Quantity** 56,693

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**Region: 6**

| <i>Subacct.</i> | <i>Project Code</i> | <i>Location</i>    | <i>Supplier</i> | <i>Bid Date</i> | <i>Total Bid</i> | <i>Plan Quant.</i> |
|-----------------|---------------------|--------------------|-----------------|-----------------|------------------|--------------------|
| 14236           | STA 0881-014        | SH 88 I-25 to SH 8 | 10              | 06/05/03        | \$2,932,605.22   | 26,404             |

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**Number of Projects** 1

**Total Plan Quantity** 26,404

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**Totals:** Projects with Bid Dates from 1/1/2003 to 12/31/2003.

**Number of Projects** 28

**Total Plan Quantity** 734,770

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**Project Data**

Projects with Bid Dates from 1/1/03 to 12/31/03.

**Subaccount: 12833****NH 1603-016****West of Walsenburg****Region: 2****Supplier: 53**

|                      |    |        |               |         |                           |                |                        |       |           |       |           |        |          |  |
|----------------------|----|--------|---------------|---------|---------------------------|----------------|------------------------|-------|-----------|-------|-----------|--------|----------|--|
| Mix Design No: 12833 |    |        | Process No: 1 |         | Grading: S (100) PG 64-28 |                | Price Per Ton: \$46.00 |       |           |       |           |        |          |  |
|                      |    |        | Quality       | Pay     |                           |                |                        | Mean  |           |       | Std. Dev. | Other  |          |  |
| Tests Tons           |    |        | Level         | Factor  | I/DP                      | TV             | Mean                   | to TV | Std. Dev. | V     | - V       | CTS    |          |  |
| AC                   | 19 | 18,997 | 96.716        | 1.05000 | \$10,923.28               | 5.600          | 5.694                  | 0.094 | 0.116     | 0.200 | -0.084    | Tons   | 500      |  |
| Density              | 1  | 500    |               | 1.00000 | \$0.00                    | 94.000         |                        |       |           | 1.100 |           | I/DP   | \$362.25 |  |
| Gradation            | 10 | 18,997 | 77.777        | 0.96727 | (\$4,290.22)              | Key Sieve: 3/8 |                        |       |           |       |           | PF 1.0 |          |  |
|                      |    |        |               | I/DP:   | \$6,995.31                |                |                        |       |           |       |           | Tons   | 0        |  |

|                      |  |       |               |               |            |            |                |        |                        |           |       |               |             |          |  |
|----------------------|--|-------|---------------|---------------|------------|------------|----------------|--------|------------------------|-----------|-------|---------------|-------------|----------|--|
| Mix Design No: 12833 |  |       | Process No: 2 |               | Grading: S |            | (100) PG 64-28 |        | Price Per Ton: \$46.00 |           |       |               |             |          |  |
|                      |  | Tests | Tons          | Quality Level | Pay Factor | I/DP       | TV             | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |          |  |
| AC                   |  |       |               |               |            | \$0.00     |                |        |                        |           | 0.200 |               | CTS Tons    | 500      |  |
| Density              |  | 15    | 7,500         | 93.032        | 1.03729    | \$5,789.29 | 94.000         | 93.173 | 0.827                  | 0.811     | 1.100 | -0.289        | I/DP        | \$294.61 |  |
| Gradation            |  |       |               |               |            | \$0.00     | Key Sieve:     |        |                        |           |       |               | PF 1.0 Tons | 0        |  |
|                      |  |       |               |               | I/DP:      | \$6,083.90 |                |        |                        |           |       |               |             |          |  |

|                      |  |       |               |               |                           |            |                        |        |            |           |       |               |             |          |  |
|----------------------|--|-------|---------------|---------------|---------------------------|------------|------------------------|--------|------------|-----------|-------|---------------|-------------|----------|--|
| Mix Design No: 12833 |  |       | Process No: 3 |               | Grading: S (100) PG 64-28 |            | Price Per Ton: \$46.00 |        |            |           |       |               |             |          |  |
|                      |  | Tests | Tons          | Quality Level | Pay Factor                | I/DP       | TV                     | Mean   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | Other       |          |  |
| AC                   |  |       |               |               |                           | \$0.00     |                        |        |            |           | 0.200 |               | CTS Tons    | 500      |  |
| Density              |  | 19    | 9,497         | 94.287        | 1.04289                   | \$8,431.17 | 94.000                 | 93.132 | 0.868      | 0.732     | 1.100 | -0.368        | I/DP        | \$362.25 |  |
| Gradation            |  |       |               |               |                           | \$0.00     | Key Sieve:             |        |            |           |       |               | PF 1.0 Tons | 0        |  |
|                      |  |       |               |               | I/DP:                     | \$8,793.42 |                        |        |            |           |       |               |             |          |  |

| Joint Density |         |          |       |        |               |            |            |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP       | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| S             | \$46.00 | 1        | 16    | 18,997 | 96.944        | 1.05000    | \$6,553.97 | 92,000 | 90.530 | 1.470      | 1.412   | 1.600 | -0.188      |
|               |         |          |       |        |               |            | \$6,553.97 |        |        |            |         |       |             |

**Project Totals: 12833**

|                 | Tons   | I/DP          |
|-----------------|--------|---------------|
| Asphalt Content | 18,997 | \$10,923.28   |
| Mat Density     | 18,997 | \$15,239.57   |
| Gradation       | 18,997 | (\$4,290.22)  |
| Joint Density   | 18,997 | \$6,553.97    |
| Total I/DP:     |        | \$27,407.49   |
|                 |        | CPFC: 1.03253 |

Comments:

**Project Data**

| Subaccount: 13094      |    |        | BR 1151-012   |         | Little Fountain Creek  |                  |        | Region: 2              |           | Supplier: 45 |           |        |        |  |
|------------------------|----|--------|---------------|---------|------------------------|------------------|--------|------------------------|-----------|--------------|-----------|--------|--------|--|
| Mix Design No: 13094B1 |    |        | Process No: 1 |         | Grading: S    ()    PG |                  |        | Price Per Ton: \$35.88 |           |              |           |        |        |  |
|                        |    |        | Quality       | Pay     |                        |                  |        | Mean                   |           |              | Std. Dev. | Other  |        |  |
| Tests    Tons          |    |        | Level         | Factor  | I/DP                   | TV               | Mean   | to TV                  | Std. Dev. | V            | - V       | CTS    |        |  |
| AC                     | 14 | 13,846 | 76.007        | 0.94330 | (\$7,041.83)           | 5.300            | 5.218  | 0.082                  | 0.244     | 0.200        | 0.044     | Tons   | 0      |  |
| Density                | 28 | 13,846 | 86.972        | 0.99375 | (\$1,397.99)           | 94.000           | 93.982 | 0.018                  | 1.338     | 1.100        | 0.238     | I/DP   | \$0.00 |  |
| Gradation              | 7  | 13,846 | 82.477        | 1.00488 | \$363.96               | Key Sieve: No. 8 |        |                        |           |              |           | PF 1.0 |        |  |
|                        |    |        |               |         | I/DP:                  | (\$8,075.86)     |        |                        |           |              |           | Tons   | 0      |  |

| Mix Design No: 13094T |   |       | Process No: 1 |            | Grading: S |                  | () PG  |            | Price Per Ton: \$39.69 |       |               |        |            |   |
|-----------------------|---|-------|---------------|------------|------------|------------------|--------|------------|------------------------|-------|---------------|--------|------------|---|
| Tests                 |   | Tons  | Quality Level | Pay Factor | I/DP       | TV               | Mean   | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other  |            |   |
|                       |   |       |               |            |            |                  |        |            |                        |       |               | CTS    |            |   |
| AC                    | 7 | 7,019 | 99.227        | 1.03500    | \$2,437.61 | 5.300            | 5.340  | 0.040      | 0.135                  | 0.200 | -0.065        | Tons   | 500        |   |
| Density               | 4 | 2,000 | 100.000       | 1.03000    | \$1,071.63 | 94.000           | 93.375 | 0.625      | 0.386                  | 1.100 | -0.714        | I/DP   | (\$552.69) |   |
| Gradation             | 4 | 7,019 | 78.050        | 1.01306    | \$545.71   | Key Sieve: No. 4 |        |            |                        |       |               | PF 1.0 |            |   |
|                       |   |       |               |            | I/DP:      | \$3,502.26       |        |            |                        |       |               |        | Tons       | 0 |

|                       |   |       |               |            |            |            |        |            |           |       |                        |        |          |     |  |
|-----------------------|---|-------|---------------|------------|------------|------------|--------|------------|-----------|-------|------------------------|--------|----------|-----|--|
| Mix Design No: 13094T |   |       | Process No: 2 |            | Grading: S |            | ()     |            | PG        |       | Price Per Ton: \$39.69 |        |          |     |  |
| Tests                 |   | Tons  | Quality Level | Pay Factor | I/DP       | TV         | Mean   | Mean to TV | Std. Dev. | V     | Std. Dev. - V          | Other  |          |     |  |
| AC                    |   |       |               |            | \$0.00     |            |        |            |           | 0.200 |                        | CTS    | Tons     | 500 |  |
| Density               | 9 | 4,019 | 99.796        | 1.04000    | \$2,871.25 | 94.000     | 93.578 | 0.422      | 0.700     | 1.100 | -0.400                 | I/DP   | \$312.56 |     |  |
| Gradation             |   |       |               |            | \$0.00     | Key Sieve: |        |            |           |       |                        | PF 1.0 |          |     |  |
|                       |   |       |               |            | I/DP:      | \$3,183.81 |        |            |           |       |                        |        | Tons     | 0   |  |

|                      |              |                 |              |             |                      |                   |                     |           |             |                   |                |          |                    |
|----------------------|--------------|-----------------|--------------|-------------|----------------------|-------------------|---------------------|-----------|-------------|-------------------|----------------|----------|--------------------|
| <b>Joint Density</b> |              |                 |              |             |                      |                   |                     |           |             |                   |                |          |                    |
| <b>Grad.</b>         | <b>Price</b> | <b>Proc. No</b> | <b>Tests</b> | <b>Tons</b> | <b>Quality Level</b> | <b>Pay Factor</b> | <b>I/DP</b>         | <b>TV</b> | <b>Mean</b> | <b>Mean to TV</b> | <b>Std Dev</b> | <b>V</b> | <b>St Dev. - V</b> |
| S                    | \$35.88      | 1               | 11           | 15,709      | 77.627               | 0.96319           | (\$3,112.47)        | 92.000    | 89.960      | 2.040             | 2.525          | 1.600    | 0.925              |
| S                    | \$35.88      | 2               | 1            | 1,875       |                      | 0.40625           | (\$5,991.68)        | 92.000    |             |                   |                | 1.600    |                    |
| S                    | \$35.88      | 3               | 4            | 3,281       | 100.000              | 1.03000           | \$529.75            | 92.000    | 91.900      | 0.100             | 1.180          | 1.600    | -0.420             |
|                      |              |                 |              |             |                      |                   | <b>(\$8,574.40)</b> |           |             |                   |                |          |                    |

|                              |  |  |  |             |                     |                      |  |  |  |  |  |  |  |
|------------------------------|--|--|--|-------------|---------------------|----------------------|--|--|--|--|--|--|--|
| <b>Project Totals: 13094</b> |  |  |  | <b>Tons</b> | <b>I/DP</b>         |                      |  |  |  |  |  |  |  |
| <b>Asphalt Content</b>       |  |  |  | 20,865      | (\$4,604.22)        |                      |  |  |  |  |  |  |  |
| <b>Mat Density</b>           |  |  |  | 20,865      | \$2,304.76          |                      |  |  |  |  |  |  |  |
| <b>Gradation</b>             |  |  |  | 20,865      | \$909.67            |                      |  |  |  |  |  |  |  |
| <b>Joint Density</b>         |  |  |  | 20,865      | (\$8,574.40)        |                      |  |  |  |  |  |  |  |
| <b>Total I/DP:</b>           |  |  |  |             | <b>(\$9,724.06)</b> | <b>CPFC: 0.98715</b> |  |  |  |  |  |  |  |

Comments: JD, 1 test 2 x V out.

**Project Data**

| Subaccount: 13333     |  | STA 340A-007 |               | Redlands Parkway |                |         | Region: 3  |            | Supplier: 12           |           |           |       |        |        |          |  |  |
|-----------------------|--|--------------|---------------|------------------|----------------|---------|------------|------------|------------------------|-----------|-----------|-------|--------|--------|----------|--|--|
| Mix Design No: 6422A2 |  |              | Process No: 1 |                  | Grading: SX () |         | PG         |            | Price Per Ton: \$45.38 |           |           |       |        |        |          |  |  |
|                       |  |              | Quality       | Pay              |                |         |            | Mean       |                        |           | Std. Dev. | Other |        |        |          |  |  |
| Tests                 |  |              | Tons          | Level            | Factor         | I/DP    | TV         | Mean       | to TV                  | Std. Dev. | V         | - V   | CTS    |        |          |  |  |
| AC                    |  |              | 4             | 3,390            | 93.764         | 1.03000 | \$1,153.89 | 5.600      | 5.725                  | 0.125     | 0.133     | 0.200 | -0.067 | Tons   | 500      |  |  |
| Density               |  |              | 6             | 2,890            | 88.972         | 1.03312 | \$1,954.65 | 94.000     | 93.983                 | 0.017     | 1.370     | 1.100 | 0.270  | I/DP   | \$357.40 |  |  |
| Gradation             |  |              | 2             | 3,390            |                |         |            | Key Sieve: |                        |           |           |       |        | PF 1.0 |          |  |  |
|                       |  |              |               |                  |                |         | \$0.00     |            |                        |           |           |       |        | Tons   | 0        |  |  |
|                       |  |              |               |                  |                | I/DP:   | \$3,465.94 |            |                        |           |           |       |        |        |          |  |  |

| <b>Joint Density</b> |              |                 |              |             |                      |                   |              |           |             |                   |                |          |                    |
|----------------------|--------------|-----------------|--------------|-------------|----------------------|-------------------|--------------|-----------|-------------|-------------------|----------------|----------|--------------------|
| <b>Grad.</b>         | <b>Price</b> | <b>Proc. No</b> | <b>Tests</b> | <b>Tons</b> | <b>Quality Level</b> | <b>Pay Factor</b> | <b>I/DP</b>  | <b>TV</b> | <b>Mean</b> | <b>Mean to TV</b> | <b>Std Dev</b> | <b>V</b> | <b>St Dev. - V</b> |
| SX                   | \$45.80      | 1               | 1            | 585         |                      | 0.62500           | (\$1,507.11) | 92.000    |             |                   |                | 1.600    |                    |
| SX                   | \$45.80      | 2               | 1            | 921         |                      |                   | \$0.00       | 92.000    |             |                   |                | 1.600    |                    |
| SX                   | \$45.80      | 3               | 1            | 1,884       |                      | 0.81250           | (\$2,426.83) | 92.000    |             |                   |                | 1.600    |                    |
|                      |              |                 |              |             |                      |                   | (\$3,933.94) |           |             |                   |                |          |                    |

|                              |  |  |  |             |                      |
|------------------------------|--|--|--|-------------|----------------------|
| <b>Project Totals: 13333</b> |  |  |  | <b>Tons</b> | <b>I/DP</b>          |
| <b>Asphalt Content</b>       |  |  |  | 3,390       | \$1,153.89           |
| <b>Mat Density</b>           |  |  |  | 3,390       | \$2,312.05           |
| <b>Gradation</b>             |  |  |  | 3,390       | \$0.00               |
| <b>Joint Density</b>         |  |  |  | 3,390       | (\$3,933.94)         |
| <b>Total I/DP:</b>           |  |  |  |             | (\$825.40)           |
|                              |  |  |  |             | <b>CPFC: 0.99696</b> |

**Comments:**

**Project Data**

| Subaccount: 13547       |         |          | NH 0505-037   |                 | US 50 Bridges    |                  |              | Region: 2              |           |            | Supplier: 32  |        |             |
|-------------------------|---------|----------|---------------|-----------------|------------------|------------------|--------------|------------------------|-----------|------------|---------------|--------|-------------|
| Mix Design No: 13547    |         |          | Process No: 1 |                 | Grading: S () PG |                  |              | Price Per Ton: \$40.00 |           |            |               |        |             |
|                         | Tests   | Tons     | Quality Level | Pay Factor      | I/DP             | TV               | Mean         | Mean to TV             | Std. Dev. | V          | Std. Dev. - V | Other  |             |
|                         |         |          |               |                 |                  |                  |              |                        |           |            |               | CTS    |             |
| AC                      | 3       | 2,500    | 49.640        | 0.88637         | (\$2,840.82)     | 5.000            | 5.303        | 0.303                  | 0.255     | 0.200      | 0.055         | Tons   | 0           |
| Density                 | 5       | 2,500    | 71.309        | 0.96802         | (\$1,439.14)     | 94.000           | 92.760       | 1.240                  | 1.244     | 1.100      | 0.144         | I/DP   | \$0.00      |
| Gradation               | 2       | 2,500    |               |                 | \$0.00           | Key Sieve:       |              |                        |           |            |               | PF 1.0 |             |
|                         |         |          |               | I/DP:           | (\$4,279.96)     |                  |              |                        |           |            |               | Tons   | 0           |
| Mix Design No: 13547A   |         |          | Process No: 1 |                 | Grading: S () PG |                  |              | Price Per Ton: \$40.00 |           |            |               |        |             |
|                         | Tests   | Tons     | Quality Level | Pay Factor      | I/DP             | TV               | Mean         | Mean to TV             | Std. Dev. | V          | Std. Dev. - V | Other  |             |
|                         |         |          |               |                 |                  |                  |              |                        |           |            |               | CTS    |             |
| AC                      | 15      | 14,414   | 94.188        | 1.04262         | \$6,143.08       | 5.300            | 5.251        | 0.049                  | 0.158     | 0.200      | -0.042        | Tons   | 0           |
| Density                 | 29      | 14,414   | 87.386        | 0.99582         | (\$1,083.56)     | 94.000           | 93.617       | 0.383                  | 1.265     | 1.100      | 0.165         | I/DP   | \$0.00      |
| Gradation               | 8       | 14,414   | 79.540        | 0.98443         | (\$1,346.87)     | Key Sieve: No. 4 |              |                        |           |            |               | PF 1.0 |             |
|                         |         |          |               | I/DP:           | \$3,712.65       |                  |              |                        |           |            |               | Tons   | 0           |
| Mix Design No: 13547DET |         |          | Process No: 1 |                 | Grading: S () PG |                  |              | Price Per Ton: \$40.00 |           |            |               |        |             |
|                         | Tests   | Tons     | Quality Level | Pay Factor      | I/DP             | TV               | Mean         | Mean to TV             | Std. Dev. | V          | Std. Dev. - V | Other  |             |
|                         |         |          |               |                 |                  |                  |              |                        |           |            |               | CTS    |             |
| AC                      | 5       | 4,699    | 73.104        | 0.97707         | (\$1,077.48)     | 5.600            | 5.708        | 0.108                  | 0.259     | 0.200      | 0.059         | Tons   | 0           |
| Density                 | 10      | 4,699    | 74.336        | 0.94672         | (\$4,506.17)     | 94.000           | 93.650       | 0.350                  | 1.741     | 1.100      | 0.641         | I/DP   | \$0.00      |
| Gradation               | 3       | 4,699    | 68.717        | 0.99594         | (\$114.51)       | Key Sieve: No. 8 |              |                        |           |            |               | PF 1.0 |             |
|                         |         |          |               | I/DP:           | (\$5,698.16)     |                  |              |                        |           |            |               | Tons   | 0           |
| Joint Density           |         |          |               |                 |                  |                  |              |                        |           |            |               |        |             |
| Grad.                   | Price   | Proc. No | Tests         | Tons            | Quality Level    | Pay Factor       | I/DP         | TV                     | Mean      | Mean to TV | Std Dev       | V      | St Dev. - V |
| S                       | \$40.00 | 1        | 14            | 21,613          | 83.363           | 0.98854          | (\$1,485.52) | 92.000                 | 89.900    | 2.100      | 1.955         | 1.600  | 0.355       |
|                         |         |          |               |                 |                  |                  | (\$1,485.52) |                        |           |            |               |        |             |
| Project Totals: 13547   |         |          |               |                 | Tons             | I/DP             |              |                        |           |            |               |        |             |
|                         |         |          |               | Asphalt Content | 21,613           | \$2,224.78       |              |                        |           |            |               |        |             |
|                         |         |          |               | Mat Density     | 21,613           | (\$7,028.87)     |              |                        |           |            |               |        |             |
|                         |         |          |               | Gradation       | 21,613           | (\$1,461.38)     |              |                        |           |            |               |        |             |
|                         |         |          |               | Joint Density   | 21,613           | (\$1,485.52)     |              |                        |           |            |               |        |             |
|                         |         |          |               | Total I/DP:     |                  | (\$7,750.99)     |              | CPFC: 0.99103          |           |            |               |        |             |
| Comments:               |         |          |               |                 |                  |                  |              |                        |           |            |               |        |             |

***Project Data***

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***Subaccount: 13868***

***STA 114A-007***

***Cochetopa Hwy 114***

***Region: 3***

***Supplier: 12***

**Project Data**

| Mix Design No: 2-58-28 |      | Process No: 1 |            | Grading: SX () PG |              | Price Per Ton: \$36.15 |            |           |       |               |        |      | Other    |             |
|------------------------|------|---------------|------------|-------------------|--------------|------------------------|------------|-----------|-------|---------------|--------|------|----------|-------------|
| Tests                  | Tons | Quality Level | Pay Factor | I/DP              | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    | Tons | I/DP     | PF 1.0 Tons |
| AC                     | 7    | 5,854         | 100.000    | 1.03500           | \$1,851.94   | 6.700                  | 6.654      | 0.046     | 0.108 | 0.200         | -0.092 | 0    | \$0.00   | 5,854       |
| Density                |      | 0             |            |                   | \$0.00       | 94.000                 |            |           |       | 1.100         |        |      |          |             |
| Gradation              | 7    | 5,854         | 98.107     | 1.03500           | \$1,111.17   | Key Sieve: No. 8       |            |           |       |               |        |      |          |             |
|                        |      |               |            | I/DP:             | \$2,963.11   |                        |            |           |       |               |        |      |          |             |
| Mix Design No: 2-58-34 |      | Process No: 1 |            | Grading: SX () PG |              | Price Per Ton: \$39.95 |            |           |       |               |        |      | Other    |             |
| Tests                  | Tons | Quality Level | Pay Factor | I/DP              | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    | Tons | I/DP     | PF 1.0 Tons |
| AC                     | 7    | 7,241         | 87.940     | 1.02737           | \$1,979.19   | 6.700                  | 6.843      | 0.143     | 0.136 | 0.200         | -0.064 | 500  | \$314.59 |             |
| Density                | 14   | 6,741         | 98.570     | 1.04500           | \$5,453.04   | 94.000                 | 93.707     | 0.293     | 0.839 | 1.100         | -0.261 |      |          |             |
| Gradation              | 6    | 6,000         | 100.000    | 1.03500           | \$1,258.34   | Key Sieve: All QLS100  |            |           |       |               |        |      |          |             |
|                        |      |               |            | I/DP:             | \$9,005.16   |                        |            |           |       |               |        |      |          |             |
| Mix Design No: 2-58-34 |      | Process No: 2 |            | Grading: SX () PG |              | Price Per Ton: \$39.95 |            |           |       |               |        |      | Other    |             |
| Tests                  | Tons | Quality Level | Pay Factor | I/DP              | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    | Tons | I/DP     | PF 1.0 Tons |
| AC                     |      |               |            | \$0.00            |              |                        |            |           | 0.200 |               |        | 0    | \$0.00   |             |
| Density                |      | 0             |            | \$0.00            | 94.000       |                        |            |           | 1.100 |               |        |      |          |             |
| Gradation              | 1    | 1,241         | 0.46429    | (\$3,983.66)      | Key Sieve:   |                        |            |           |       |               |        |      |          |             |
|                        |      |               |            | I/DP:             | (\$3,983.66) |                        |            |           |       |               |        |      |          |             |
| Mix Design No: 3-58-34 |      | Process No: 1 |            | Grading: SX () PG |              | Price Per Ton: \$39.37 |            |           |       |               |        |      | Other    |             |
| Tests                  | Tons | Quality Level | Pay Factor | I/DP              | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    | Tons | I/DP     | PF 1.0 Tons |
| AC                     | 6    | 5,476         | 100.000    | 1.03500           | \$1,886.52   | 6.600                  | 6.628      | 0.028     | 0.059 | 0.200         | -0.141 | 0    | \$0.00   |             |
| Density                | 11   | 5,476         | 98.984     | 1.04500           | \$4,365.95   | 94.000                 | 94.327     | 0.327     | 0.811 | 1.100         | -0.289 |      |          |             |
| Gradation              | 6    | 5,475         | 82.768     | 1.01072           | \$346.62     | Key Sieve: No. 8       |            |           |       |               |        |      |          |             |
|                        |      |               |            | I/DP:             | \$6,599.09   |                        |            |           |       |               |        |      |          |             |
| Mix Design No: 4-58-34 |      | Process No: 1 |            | Grading: SX () PG |              | Price Per Ton: \$39.75 |            |           |       |               |        |      | Other    |             |
| Tests                  | Tons | Quality Level | Pay Factor | I/DP              | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    | Tons | I/DP     | PF 1.0 Tons |
| AC                     | 4    | 4,462         | 94.973     | 1.03000           | \$1,330.17   | 6.700                  | 6.743      | 0.043     | 0.191 | 0.200         | -0.009 | 500  | \$313.02 |             |
| Density                | 8    | 3,962         | 76.305     | 0.96717           | (\$2,326.50) | 94.000                 | 95.325     | 1.325     | 0.916 | 1.100         | -0.184 |      |          |             |
| Gradation              | 2    | 4,462         |            |                   | (\$1,187.65) | Key Sieve:             |            |           |       |               |        |      |          |             |
|                        |      |               |            | I/DP:             | (\$1,870.96) |                        |            |           |       |               |        |      |          |             |
| Mix Design No: 5-58-34 |      | Process No: 1 |            | Grading: SX () PG |              | Price Per Ton: \$39.29 |            |           |       |               |        |      | Other    |             |
| Tests                  | Tons | Quality Level | Pay Factor | I/DP              | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    | Tons | I/DP     | PF 1.0 Tons |
| AC                     | 8    | 7,775         | 99.068     | 1.04000           | \$3,055.09   | 6.500                  | 6.598      | 0.098     | 0.103 | 0.200         | -0.097 | 0    | \$0.00   |             |
| Density                | 16   | 7,775         | 91.133     | 1.02755           | \$3,787.56   | 94.000                 | 94.006     | 0.006     | 1.214 | 1.100         | 0.114  |      |          |             |
| Gradation              | 4    | 7,775         | 69.868     | 0.97815           | (\$1,001.50) | Key Sieve: No. 4       |            |           |       |               |        |      |          |             |
|                        |      |               |            | I/DP:             | \$5,841.15   |                        |            |           |       |               |        |      |          |             |

**Project Data**

| Mix Design No: 58-28 |       |       | Process No: 1 |            | Grading: SX ( ) |                  | PG    |            | Price Per Ton: \$36.01 |       |               |        |        |  |
|----------------------|-------|-------|---------------|------------|-----------------|------------------|-------|------------|------------------------|-------|---------------|--------|--------|--|
|                      | Tests | Tons  | Quality Level | Pay Factor | I/DP            | TV               | Mean  | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other  |        |  |
|                      |       |       |               |            |                 |                  |       |            |                        |       |               | CTS    |        |  |
| AC                   | 7     | 7,320 | 79.442        | 0.99062    | (\$618.12)      | 6.800            | 6.599 | 0.201      | 0.117                  | 0.200 | -0.083        | Tons   | 0      |  |
| Density              |       | 0     |               |            | \$0.00          | 94.000           |       |            |                        | 1.100 |               | I/DP   | \$0.00 |  |
| Gradation            | 6     | 7,320 | 80.870        | 1.00279    | \$110.29        | Key Sieve: No. 4 |       |            |                        |       |               | PF 1.0 |        |  |
|                      |       |       |               | I/DP:      | (\$507.83)      |                  |       |            |                        |       |               | Tons   | 7,320  |  |

**Project Totals: 13868**

|                 | Tons   | I/DP         |               |
|-----------------|--------|--------------|---------------|
| Asphalt Content | 38,128 | \$9,484.79   |               |
| Mat Density     | 38,128 | \$11,907.66  |               |
| Gradation       | 38,127 | (\$3,346.39) |               |
| Joint Density   |        |              |               |
| Total I/DP:     |        | \$17,418.45  | CPFC: 1.01234 |

**Comments:** Joint density testing waived per project.

**Project Data**

|                                                      |         |          |               |               |               |                    |              |               |           |            |                        |              |             |   |  |
|------------------------------------------------------|---------|----------|---------------|---------------|---------------|--------------------|--------------|---------------|-----------|------------|------------------------|--------------|-------------|---|--|
| Subaccount: 13897                                    |         |          | NH 0852-088   |               |               | SH 85 - Sedalia    |              |               | Region: 1 |            |                        | Supplier: 37 |             |   |  |
| Mix Design No: 153327-1                              |         |          |               | Process No: 1 |               | Grading: SG ( )    |              |               | PG        |            | Price Per Ton: \$36.50 |              |             |   |  |
| Tests                                                |         | Tons     | Quality Level | Pay Factor    | I/DP          | TV                 | Mean         | Mean to TV    | Std. Dev. | V          | Std. Dev. - V          | Other        |             |   |  |
| AC                                                   | 15      | 11,470   | 82.776        | 0.98518       | (\$1,551.21)  | 4.500              | 4.686        | 0.186         | 0.120     | 0.200      | -0.080                 | CTS Tons     | 500         |   |  |
| Density                                              | 24      | 10,970   | 90.491        | 1.01920       | \$3,459.53    | 94.000             | 93.021       | 0.979         | 0.785     | 1.100      | -0.315                 | I/DP         | \$20.01     |   |  |
| Gradation                                            | 6       | 11,470   | 87.942        | 1.02977       | \$1,869.61    | Key Sieve: No. 200 |              |               |           |            | PF 1.0 Tons            |              |             | 0 |  |
|                                                      |         |          |               |               | I/DP:         | \$3,797.94         |              |               |           |            |                        |              |             |   |  |
| Mix Design No: 153327-3                              |         |          |               | Process No: 1 |               | Grading: SX ( )    |              |               | PG        |            | Price Per Ton: \$38.00 |              |             |   |  |
| Tests                                                |         | Tons     | Quality Level | Pay Factor    | I/DP          | TV                 | Mean         | Mean to TV    | Std. Dev. | V          | Std. Dev. - V          | Other        |             |   |  |
| AC                                                   | 1       | 2,029    |               |               | \$0.00        |                    |              |               |           | 0.200      |                        | CTS Tons     | 0           |   |  |
| Density                                              | 3       | 2,029    | 100.000       | 1.02500       | \$867.40      | 94.000             | 94.000       | 0.000         | 0.346     | 1.100      | -0.754                 | I/DP         | \$0.00      |   |  |
| Gradation                                            | 1       | 2,029    |               |               | \$0.00        | Key Sieve:         |              |               |           |            | PF 1.0 Tons            |              |             | 0 |  |
|                                                      |         |          |               |               | I/DP:         | \$867.40           |              |               |           |            |                        |              |             |   |  |
| Mix Design No: 153327-4                              |         |          |               | Process No: 1 |               | Grading: SX ( )    |              |               | PG        |            | Price Per Ton: \$44.00 |              |             |   |  |
| Tests                                                |         | Tons     | Quality Level | Pay Factor    | I/DP          | TV                 | Mean         | Mean to TV    | Std. Dev. | V          | Std. Dev. - V          | Other        |             |   |  |
| AC                                                   | 16      | 12,335   | 97.104        | 1.04500       | \$6,105.82    | 5.600              | 5.611        | 0.011         | 0.149     | 0.200      | -0.051                 | CTS Tons     | 500         |   |  |
| Density                                              | 23      | 9,815    | 97.211        | 1.05000       | \$9,716.85    | 94.000             | 94.187       | 0.187         | 0.930     | 1.100      | -0.170                 | I/DP         | \$346.50    |   |  |
| Gradation                                            | 6       | 12,335   | 78.159        | 0.99058       | (\$766.93)    | Key Sieve: No. 4   |              |               |           |            | PF 1.0 Tons            |              |             | 0 |  |
|                                                      |         |          |               |               | I/DP:         | \$15,402.24        |              |               |           |            |                        |              |             |   |  |
| Mix Design No: 153327-4                              |         |          |               | Process No: 2 |               | Grading: SX ( )    |              |               | PG        |            | Price Per Ton: \$44.00 |              |             |   |  |
| Tests                                                |         | Tons     | Quality Level | Pay Factor    | I/DP          | TV                 | Mean         | Mean to TV    | Std. Dev. | V          | Std. Dev. - V          | Other        |             |   |  |
| AC                                                   |         |          |               |               | \$0.00        |                    |              |               |           | 0.200      |                        | CTS Tons     | 500         |   |  |
| Density                                              | 14      | 1,520    | 95.936        | 1.04500       | \$1,354.32    | 94.000             | 94.729       | 0.729         | 0.760     | 1.100      | -0.340                 | I/DP         | \$322.42    |   |  |
| Gradation                                            |         |          |               |               | \$0.00        | Key Sieve:         |              |               |           |            | PF 1.0 Tons            |              |             | 0 |  |
|                                                      |         |          |               |               | I/DP:         | \$1,676.74         |              |               |           |            |                        |              |             |   |  |
| Joint Density                                        |         |          |               |               |               |                    |              |               |           |            |                        |              |             |   |  |
| Grad.                                                | Price   | Proc. No | Tests         | Tons          | Quality Level | Pay Factor         | I/DP         | TV            | Mean      | Mean to TV | Std Dev                | V            | St Dev. - V |   |  |
| SX                                                   | \$36.50 | 1        | 6             | 5,940         | 82.617        | 1.01011            | \$328.64     | 92.000        | 90.700    | 1.300      | 2.784                  | 1.600        | 1.184       |   |  |
| SX                                                   | \$44.00 | 2        | 6             | 5,887         | 61.448        | 0.89254            | (\$4,175.32) | 92.000        | 90.230    | 1.770      | 4.245                  | 1.600        | 2.645       |   |  |
| SX                                                   | \$44.00 | 3        | 1             | 981           |               | 0.46875            | (\$3,439.63) | 92.000        |           |            |                        | 1.600        |             |   |  |
| SX                                                   | \$36.50 | 4        | 1             | 350           |               | 0.10937            | (\$1,706.67) | 92.000        |           |            |                        | 1.600        |             |   |  |
|                                                      |         |          |               |               |               |                    | (\$8,992.98) |               |           |            |                        |              |             |   |  |
| Project Totals: 13897                                |         |          |               |               | Tons          | I/DP               |              |               |           |            |                        |              |             |   |  |
| Asphalt Content                                      |         |          |               |               | 25,834        | \$4,554.61         |              |               |           |            |                        |              |             |   |  |
| Mat Density                                          |         |          |               |               | 25,834        | \$16,087.03        |              |               |           |            |                        |              |             |   |  |
| Gradation                                            |         |          |               |               | 25,834        | \$1,102.68         |              |               |           |            |                        |              |             |   |  |
| Joint Density                                        |         |          |               |               | 13,158        | (\$8,992.98)       |              |               |           |            |                        |              |             |   |  |
|                                                      |         |          |               |               | Total I/DP:   | \$12,062.41        |              | CPFC: 1.01228 |           |            |                        |              |             |   |  |
| Comments: JD two tests 2 x V out. JD final quantity. |         |          |               |               |               |                    |              |               |           |            |                        |              |             |   |  |

**Project Data**

| Subaccount: 13922       |         |          | BR 114A-008   |            | Saguache Creek     |               |               | Region: 5              |           | Supplier: 18 |               |             |             |
|-------------------------|---------|----------|---------------|------------|--------------------|---------------|---------------|------------------------|-----------|--------------|---------------|-------------|-------------|
| Mix Design No: 13922SX1 |         |          | Process No: 1 |            | Grading: SX ( ) PG |               |               | Price Per Ton: \$72.00 |           |              |               |             |             |
| Tests                   |         | Tons     | Quality Level | Pay Factor | I/DP               | TV            | Mean          | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other       |             |
| AC                      | 1       | 743      |               |            | \$0.00             | 7.700         |               |                        |           | 0.200        |               | CTS Tons    | 0           |
| Density                 | 2       | 743      |               |            | \$0.00             | 94.000        |               |                        |           | 1.100        |               | I/DP        | \$0.00      |
| Gradation               | 1       | 743      |               |            | \$0.00             | Key Sieve:    |               |                        |           |              |               | PF 1.0 Tons | 0           |
|                         |         |          |               | I/DP:      | \$0.00             |               |               |                        |           |              |               |             |             |
| Mix Design No: AC11-08  |         |          | Process No: 1 |            | Grading: SX ( ) PG |               |               | Price Per Ton: \$72.00 |           |              |               |             |             |
| Tests                   |         | Tons     | Quality Level | Pay Factor | I/DP               | TV            | Mean          | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other       |             |
| AC                      | 2       | 1,468    |               | 0.86250    | (\$3,633.30)       | 7.200         |               |                        |           | 0.200        |               | CTS Tons    | 0           |
| Density                 | 3       | 1,468    | 33.803        | 0.74847    | (\$11,963.35)      | 94.000        | 91.500        | 2.500                  | 0.889     | 1.100        | -0.211        | I/DP        | \$0.00      |
| Gradation               | 1       | 1,468    |               |            | \$0.00             | Key Sieve:    |               |                        |           |              |               | PF 1.0 Tons | 0           |
|                         |         |          |               | I/DP:      | (\$15,596.65)      |               |               |                        |           |              |               |             |             |
| Joint Density           |         |          |               |            |                    |               |               |                        |           |              |               |             |             |
| Grad.                   | Price   | Proc. No | Tests         | Tons       | Quality Level      | Pay Factor    | I/DP          | TV                     | Mean      | Mean to TV   | Std Dev       | V           | St Dev. - V |
| SX                      | \$72.00 | 1        | 1             | 743        |                    |               | \$0.00        | 92.000                 |           |              |               |             | 1.600       |
| SX                      | \$72.00 | 2        | 1             | 615        |                    |               | (\$622.69)    | 92.000                 |           |              |               |             | 1.600       |
| SX                      | \$72.00 | 3        | 1             | 853        |                    |               | (\$4,030.42)  | 92.000                 |           |              |               |             | 1.600       |
|                         |         |          |               |            |                    |               | (\$4,653.11)  |                        |           |              |               |             |             |
| Project Totals: 13922   |         |          |               |            | Tons               | I/DP          |               |                        |           |              |               |             |             |
|                         |         |          |               |            | Asphalt Content    | 2,211         | (\$3,633.30)  |                        |           |              |               |             |             |
|                         |         |          |               |            | Mat Density        | 2,211         | (\$11,963.35) |                        |           |              |               |             |             |
|                         |         |          |               |            | Gradation          | 2,211         | \$0.00        |                        |           |              |               |             |             |
|                         |         |          |               |            | Joint Density      | 2,211         | (\$4,653.11)  |                        |           |              |               |             |             |
|                         |         |          |               |            | Total I/DP:        | (\$20,249.76) | CPFC: 0.8728  |                        |           |              |               |             |             |

Comments:

**Project Data**

| Subaccount: 13969       |         |          | NH 1602-090   |               |               | Lonesome Dove             |                  |               | Region: 5              |            |         | Supplier: 45  |             |             |  |
|-------------------------|---------|----------|---------------|---------------|---------------|---------------------------|------------------|---------------|------------------------|------------|---------|---------------|-------------|-------------|--|
| Mix Design No: 13969SX2 |         |          | Process No: 1 |               |               | Grading: SX (75) PG 58-34 |                  |               | Price Per Ton: \$94.00 |            |         |               |             |             |  |
|                         |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV               | Mean          | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |             |  |
| AC                      |         | 21       | 15,082        | 84.719        | 0.98533       | (\$5,198.71)              | 6.900            | 6.832         | 0.068                  | 0.201      | 0.200   | 0.001         | CTS Tons    | 500         |  |
| Density                 |         | 16       | 8,000         | 90.869        | 1.02621       | \$8,868.38                | 94.000           | 93.862        | 0.138                  | 1.215      | 1.100   | 0.115         | I/DP        | \$3,164.28) |  |
| Gradation               |         | 8        | 15,082        | 92.970        | 1.04000       | \$8,506.25                | Key Sieve: No. 8 |               |                        |            |         |               | PF 1.0 Tons | 0           |  |
|                         |         |          |               |               | I/DP:         | \$9,011.64                |                  |               |                        |            |         |               |             |             |  |
| Mix Design No: 13969SX2 |         |          | Process No: 2 |               |               | Grading: SX (75) PG 58-34 |                  |               | Price Per Ton: \$94.00 |            |         |               |             |             |  |
|                         |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV               | Mean          | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |             |  |
| AC                      |         |          |               |               |               | \$0.00                    |                  |               |                        |            | 0.200   |               | CTS Tons    | 500         |  |
| Density                 |         | 12       | 5,582         | 94.880        | 1.04500       | \$10,625.34               | 94.000           | 93.933        | 0.067                  | 1.096      | 1.100   | -0.004        | I/DP        | \$15.49     |  |
| Gradation               |         |          |               |               |               | \$0.00                    | Key Sieve:       |               |                        |            |         |               | PF 1.0 Tons | 0           |  |
|                         |         |          |               |               | I/DP:         | \$10,640.83               |                  |               |                        |            |         |               |             |             |  |
| Mix Design No: 13969SX2 |         |          | Process No: 3 |               |               | Grading: SX (75) PG 58-34 |                  |               | Price Per Ton: \$94.00 |            |         |               |             |             |  |
|                         |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV               | Mean          | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |             |  |
| AC                      |         |          |               |               |               | \$0.00                    |                  |               |                        |            | 0.200   |               | CTS Tons    | 0           |  |
| Density                 |         | 1        | 500           |               | 0.45455       | (\$11,536.27)             | 94.000           |               |                        |            | 1.100   |               | I/DP        | \$0.00      |  |
| Gradation               |         |          |               |               |               | \$0.00                    | Key Sieve:       |               |                        |            |         |               | PF 1.0 Tons | 0           |  |
|                         |         |          |               |               | I/DP:         | (\$11,536.27)             |                  |               |                        |            |         |               |             |             |  |
| Joint Density           |         |          |               |               |               |                           |                  |               |                        |            |         |               |             |             |  |
| Grad.                   | Price   | Proc. No | Tests         | Tons          | Quality Level | Pay Factor                | I/DP             | TV            | Mean                   | Mean to TV | Std Dev | V             | St Dev. - V |             |  |
| SX                      | \$94.00 | 1        | 13            | 15,082        | 72.877        | 0.92582                   | (\$15,774.23)    | 92.000        | 88.930                 | 3.070      | 1.502   | 1.600         | -0.098      |             |  |
|                         |         |          |               |               |               |                           | (\$15,774.23)    |               |                        |            |         |               |             |             |  |
| Project Totals: 13969   |         |          |               |               |               | Tons                      | I/DP             |               |                        |            |         |               |             |             |  |
|                         |         |          |               |               |               | Asphalt Content           | 15,082           | (\$5,198.71)  |                        |            |         |               |             |             |  |
|                         |         |          |               |               |               | Mat Density               | 15,082           | \$4,808.66    |                        |            |         |               |             |             |  |
|                         |         |          |               |               |               | Gradation                 | 15,082           | \$8,506.25    |                        |            |         |               |             |             |  |
|                         |         |          |               |               |               | Joint Density             | 15,082           | (\$15,774.23) |                        |            |         |               |             |             |  |
|                         |         |          |               |               |               |                           | Total I/DP:      | (\$4,509.24)  | CPFC: 0.9946           |            |         |               |             |             |  |
| Comments:               |         |          |               |               |               |                           |                  |               |                        |            |         |               |             |             |  |

**Project Data**

**Subaccount: 13972      STA 0061-074      Keystone/Loveland      Region: 1      Supplier: 13**

| Mix Design No: 145985-1 |      | Process No: 1 |            | Grading: SX ( ) |             | PG               |            | Price Per Ton: \$42.00 |       |               |        |             |        |
|-------------------------|------|---------------|------------|-----------------|-------------|------------------|------------|------------------------|-------|---------------|--------|-------------|--------|
| Tests                   | Tons | Quality Level | Pay Factor | I/DP            | TV          | Mean             | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other  |             |        |
| AC                      | 26   | 25,918        | 96.417     | 1.05414         | \$14,732.62 | 6.400            | 6.363      | 0.037                  | 0.143 | 0.200         | -0.057 | CTS Tons    | 0      |
| Density                 | 52   | 25,918        | 94.816     | 1.03844         | \$18,830.39 | 94.000           | 94.410     | 0.410                  | 0.958 | 1.100         | -0.142 | I/DP        | \$0.00 |
| Gradation               | 13   | 25,918        | 99.378     | 1.04500         | \$7,347.26  | Key Sieve: No. 8 |            |                        |       |               |        | PF 1.0 Tons | 0      |
|                         |      |               |            | I/DP:           | \$40,910.27 |                  |            |                        |       |               |        |             |        |

| Mix Design No: 145985-2 |      | Process No: 1 |            | Grading: SX ( ) |            | PG                    |            | Price Per Ton: \$37.14 |       |               |        |             |        |
|-------------------------|------|---------------|------------|-----------------|------------|-----------------------|------------|------------------------|-------|---------------|--------|-------------|--------|
| Tests                   | Tons | Quality Level | Pay Factor | I/DP            | TV         | Mean                  | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other  |             |        |
| AC                      | 7    | 6,025         | 100.000    | 1.03500         | \$1,958.13 | 6.200                 | 5.944      | 0.256                  | 0.019 | 0.200         | -0.181 | CTS Tons    | 0      |
| Density                 | 13   | 6,025         | 88.323     | 1.01671         | \$1,683.14 | 94.000                | 94.977     | 0.977                  | 0.865 | 1.100         | -0.235 | I/DP        | \$0.00 |
| Gradation               | 4    | 6,025         | 100.000    | 1.03000         | \$1,007.04 | Key Sieve: All QLS100 |            |                        |       |               |        | PF 1.0 Tons | 0      |
|                         |      |               |            | I/DP:           | \$4,648.31 |                       |            |                        |       |               |        |             |        |

| Joint Density |         |          |       |        |               |            |            |        |        |            |         |       |             |  |
|---------------|---------|----------|-------|--------|---------------|------------|------------|--------|--------|------------|---------|-------|-------------|--|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP       | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |  |
| SX            | \$37.27 | 1        | 5     | 5,915  | 91.169        | 1.03000    | \$992.03   | 92.000 | 94.040 | 2.040      | 1.537   | 1.600 | -0.063      |  |
| SX            | \$41.04 | 2        | 18    | 24,012 | 90.154        | 1.02090    | \$3,089.33 | 92.000 | 90.960 | 1.040      | 2.241   | 1.600 | 0.641       |  |
|               |         |          |       |        |               |            | \$4,081.36 |        |        |            |         |       |             |  |

**Project Totals: 13972**

|                 | Tons        | I/DP          |
|-----------------|-------------|---------------|
| Asphalt Content | 31,943      | \$16,690.75   |
| Mat Density     | 31,943      | \$20,513.53   |
| Gradation       | 31,943      | \$8,354.30    |
| Joint Density   | 29,927      | \$4,081.36    |
| Total I/DP:     | \$49,639.94 | CPFC: 1.03783 |

Comments:

**Project Data**

**Subaccount: 13987      STA 1381-005      Proctor East and West      Region: 4      Supplier: 19**

| Mix Design No: 69803 |     |        | Process No: 1 |         | Grading: S         | ( )              | PG     | Price Per Ton: \$39.72 |           |           |        |        |        |  |
|----------------------|-----|--------|---------------|---------|--------------------|------------------|--------|------------------------|-----------|-----------|--------|--------|--------|--|
|                      |     |        | Quality       | Pay     |                    |                  |        | Mean                   |           | Std. Dev. |        | Other  |        |  |
| Tests    Tons        |     |        | Level         | Factor  | I/DP               | TV               | Mean   | to TV                  | Std. Dev. | V         | - V    | CTS    |        |  |
| AC                   | 65  | 64,073 | 97.680        | 1.05500 | \$34,993.47        | 5.300            | 5.273  | 0.027                  | 0.132     | 0.200     | -0.068 | Tons   | 0      |  |
| Density              | 128 | 64,073 | 98.025        | 1.05933 | \$67,944.95        | 94.000           | 93.835 | 0.165                  | 0.850     | 1.100     | -0.250 | I/DP   | \$0.00 |  |
| Gradation            | 33  | 64,073 | 93.440        | 1.03357 | <u>\$12,816.76</u> | Key Sieve: No. 8 |        |                        |           |           |        | PF 1.0 |        |  |
|                      |     |        |               |         |                    |                  |        |                        |           |           |        | Tons   | 0      |  |
|                      |     |        |               |         | I/DP:              | \$115,755.18     |        |                        |           |           |        |        |        |  |

| Joint Density |         |          |       |        |               |            |              |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|--------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP         | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| S             | \$39.72 | 1        | 27    | 64,073 | 84.196        | 0.97555    | (\$9,333.23) | 92.000 | 89.740 | 2.260      | 1.735   | 1.600 | 0.135       |
|               |         |          |       |        |               |            | (\$9,333.23) |        |        |            |         |       |             |

| Project Totals: 13987 |  |  |  |  | Tons         | I/DP          |
|-----------------------|--|--|--|--|--------------|---------------|
| Asphalt Content       |  |  |  |  | 64,073       | \$34,993.47   |
| Mat Density           |  |  |  |  | 64,073       | \$67,944.95   |
| Gradation             |  |  |  |  | 64,073       | \$12,816.76   |
| Joint Density         |  |  |  |  | 64,073       | (\$9,333.23)  |
| Total I/DP:           |  |  |  |  | \$106,421.95 | CPFC: 1.04182 |

Comments:

***Project Data***

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***Subaccount: 13998      NH 2852-014      Ponch Pass to Pon      Region: 5      Supplier: 11***

**Project Data**

| Mix Design No: 13998SF4 |       | Process No: 1 |               | Grading: SX ( ) |              | PG                 |        | Price Per Ton: \$43.86 |           |       |               |             |              |
|-------------------------|-------|---------------|---------------|-----------------|--------------|--------------------|--------|------------------------|-----------|-------|---------------|-------------|--------------|
|                         | Tests | Tons          | Quality Level | Pay Factor      | I/DP         | TV                 | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |              |
| AC                      | 11    | 10,359        | 88.860        | 1.02192         | \$2,489.80   | 8.300              | 8.279  | 0.021                  | 0.195     | 0.200 | -0.005        | CTS Tons    | 0            |
| Density                 |       | 0             |               |                 | \$0.00       | 94.000             |        |                        |           | 1.100 |               | I/DP        | \$0.00       |
| Gradation               | 6     | 10,359        | 65.983        | 0.92302         | (\$5,246.54) | Key Sieve: No. 200 |        |                        |           |       |               | PF 1.0 Tons | 10,359       |
|                         |       |               |               |                 | I/DP:        | (\$2,756.74)       |        |                        |           |       |               |             |              |
| Mix Design No: 13998SF4 |       | Process No: 1 |               | Grading: SX ( ) |              | PG                 |        | Price Per Ton: \$34.84 |           |       |               |             |              |
|                         | Tests | Tons          | Quality Level | Pay Factor      | I/DP         | TV                 | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |              |
| AC                      | 5     | 4,992         | 69.905        | 0.96064         | (\$1,711.26) | 8.300              | 8.180  | 0.120                  | 0.273     | 0.200 | 0.073         | CTS Tons    | 0            |
| Density                 |       | 0             |               |                 | \$0.00       | 94.000             |        |                        |           | 1.100 |               | I/DP        | \$0.00       |
| Gradation               | 3     | 4,992         | 85.472        | 1.02500         | \$652.18     | Key Sieve: No. 200 |        |                        |           |       |               | PF 1.0 Tons | 4,992        |
|                         |       |               |               |                 | I/DP:        | (\$1,059.08)       |        |                        |           |       |               |             |              |
| Mix Design No: 13998SX1 |       | Process No: 1 |               | Grading: SX ( ) |              | PG                 |        | Price Per Ton: \$44.27 |           |       |               |             |              |
|                         | Tests | Tons          | Quality Level | Pay Factor      | I/DP         | TV                 | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |              |
| AC                      | 1     | 500           |               |                 | \$0.00       | 8.300              |        |                        |           | 0.200 |               | CTS Tons    | 500          |
| Density                 |       | 0             |               |                 | \$0.00       | 94.000             |        |                        |           | 1.100 |               | I/DP        | \$8.47       |
| Gradation               | 1     | 500           |               |                 | \$0.00       | Key Sieve:         |        |                        |           |       |               | PF 1.0 Tons | 0            |
|                         |       |               |               |                 | I/DP:        | \$8.47             |        |                        |           |       |               |             |              |
| Mix Design No: 13998SX3 |       | Process No: 1 |               | Grading: SX ( ) |              | PG                 |        | Price Per Ton: \$44.72 |           |       |               |             |              |
|                         | Tests | Tons          | Quality Level | Pay Factor      | I/DP         | TV                 | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |              |
| AC                      | 1     | 500           |               |                 | \$0.00       | 8.700              |        |                        |           | 0.200 |               | CTS Tons    | 500          |
| Density                 |       | 0             |               |                 | \$0.00       | 94.000             |        |                        |           | 1.100 |               | I/DP        | (\$1,126.02) |
| Gradation               | 1     | 500           |               |                 | \$0.00       | Key Sieve:         |        |                        |           |       |               | PF 1.0 Tons | 0            |
|                         |       |               |               |                 | I/DP:        | (\$1,126.02)       |        |                        |           |       |               |             |              |
| Mix Design No: 13998SX3 |       | Process No: 1 |               | Grading: SX ( ) |              | PG                 |        | Price Per Ton: \$45.05 |           |       |               |             |              |
|                         | Tests | Tons          | Quality Level | Pay Factor      | I/DP         | TV                 | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |              |
| AC                      | 1     | 500           |               |                 | \$0.00       | 8.700              |        |                        |           | 0.200 |               | CTS Tons    | 500          |
| Density                 |       | 0             |               |                 | \$0.00       | 94.000             |        |                        |           | 1.100 |               | I/DP        | \$83.91      |
| Gradation               | 1     | 500           |               |                 | \$0.00       | Key Sieve:         |        |                        |           |       |               | PF 1.0 Tons | 0            |
|                         |       |               |               |                 | I/DP:        | \$83.91            |        |                        |           |       |               |             |              |
| Mix Design No: 13998SX3 |       | Process No: 1 |               | Grading: SX ( ) |              | PG                 |        | Price Per Ton: \$44.98 |           |       |               |             |              |
|                         | Tests | Tons          | Quality Level | Pay Factor      | I/DP         | TV                 | Mean   | Mean to TV             | Std. Dev. | V     | Std. Dev. - V | Other       |              |
| AC                      | 12    | 12,126        | 100.000       | 1.04500         | \$6,135.77   | 8.700              | 8.711  | 0.011                  | 0.093     | 0.200 | -0.107        | CTS Tons    | 0            |
| Density                 | 25    | 12,126        | 96.695        | 1.05000         | \$12,271.54  | 94.000             | 94.616 | 0.616                  | 0.772     | 1.100 | -0.328        | I/DP        | \$0.00       |
| Gradation               | 6     | 12,126        | 80.122        | 0.99952         | (\$39.25)    | Key Sieve: No. 200 |        |                        |           |       |               | PF 1.0 Tons | 0            |
|                         |       |               |               |                 | I/DP:        | \$18,368.06        |        |                        |           |       |               |             |              |

**Project Data**

| Mix Design No: 13998SX4 |      | Process No: 1 |            | Grading: SX () |             | PG                 |            | Price Per Ton: \$44.77 |       |               |        |             |        |
|-------------------------|------|---------------|------------|----------------|-------------|--------------------|------------|------------------------|-------|---------------|--------|-------------|--------|
| Tests                   | Tons | Quality Level | Pay Factor | I/DP           | TV          | Mean               | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other  |             |        |
| AC                      | 12   | 11,244        | 100.000    | 1.04500        | \$5,663.35  | 8.700              | 8.624      | 0.076                  | 0.054 | 0.200         | -0.146 | CTS Tons    | 0      |
| Density                 | 23   | 11,244        | 99.433     | 1.05000        | \$11,326.71 | 94.000             | 93.891     | 0.109                  | 0.772 | 1.100         | -0.328 | I/DP        | \$0.00 |
| Gradation               | 6    | 11,244        | 92.777     | 1.03500        | \$2,642.90  | Key Sieve: No. 200 |            |                        |       |               |        | PF 1.0 Tons | 0      |
|                         |      |               |            | I/DP:          | \$19,632.96 |                    |            |                        |       |               |        |             |        |

**Joint Density**

| Grad. | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP     | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
|-------|---------|----------|-------|--------|---------------|------------|----------|--------|--------|------------|---------|-------|-------------|
| SX    | \$44.95 | 1        | 14    | 24,870 | 85.653        | 1.00127    | \$213.75 | 92.000 | 89.640 | 2.360      | 1.544   | 1.600 | -0.056      |
| SX    | \$43.95 | 2        | 1     | 10,359 |               |            | \$0.00   | 92.000 |        |            |         | 1.600 |             |
| SX    | \$43.95 | 3        | 1     | 4,992  |               |            | \$0.00   | 92.000 |        |            |         | 1.600 |             |
|       |         |          |       |        |               |            | \$213.75 |        |        |            |         |       |             |

**Project Totals: 13998**

|                 | Tons   | I/DP          |
|-----------------|--------|---------------|
| Asphalt Content | 40,221 | \$12,577.66   |
| Mat Density     | 40,221 | \$22,564.61   |
| Gradation       | 40,221 | (\$1,990.71)  |
| Joint Density   | 40,221 | \$213.75      |
| Total I/DP:     |        | \$34,398.95   |
|                 |        | CPFC: 1.01913 |

Comments:

**Project Data**

| Subaccount: 14199     |         |          | STA 012A-038  |            | SH 12 e/o Segundo |                   |            | Region: 2              |           | Supplier: 53 |               |             |             |  |
|-----------------------|---------|----------|---------------|------------|-------------------|-------------------|------------|------------------------|-----------|--------------|---------------|-------------|-------------|--|
| Mix Design No: 246A   |         |          | Process No: 1 |            | Grading: S ( ) PG |                   |            | Price Per Ton: \$36.00 |           |              |               |             |             |  |
| Tests                 |         | Tons     | Quality Level | Pay Factor | I/DP              | TV                | Mean       | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other       |             |  |
|                       |         |          |               |            |                   |                   |            |                        |           |              |               | CTS Tons    |             |  |
| AC                    | 6       | 6,000    | 83.473        | 1.01354    | \$730.89          | 6.300             | 6.150      | 0.150                  | 0.152     | 0.200        | -0.048        |             | 0           |  |
| Density               | 12      | 6,000    | 85.195        | 1.00258    | \$250.49          | 94.000            | 93.092     | 0.908                  | 1.044     | 1.100        | -0.056        | I/DP        | \$0.00      |  |
| Gradation             | 3       | 6,000    | 54.428        | 0.91968    | (\$2,602.52)      | Key Sieve: 1/2    |            |                        |           |              |               | PF 1.0 Tons | 0           |  |
|                       |         |          |               |            | I/DP:             | (\$1,621.14)      |            |                        |           |              |               |             |             |  |
| Mix Design No: 252    |         |          | Process No: 1 |            | Grading: S ( ) PG |                   |            | Price Per Ton: \$36.00 |           |              |               |             |             |  |
| Tests                 |         | Tons     | Quality Level | Pay Factor | I/DP              | TV                | Mean       | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other       |             |  |
|                       |         |          |               |            |                   |                   |            |                        |           |              |               | CTS Tons    |             |  |
| AC                    | 11      | 10,090   | 75.492        | 0.95023    | (\$4,519.55)      | 6.150             | 5.946      | 0.204                  | 0.137     | 0.200        | -0.063        |             | 0           |  |
| Density               | 21      | 10,090   | 90.632        | 1.02172    | \$3,550.09        | 94.000            | 92.967     | 1.033                  | 0.740     | 1.100        | -0.360        | I/DP        | \$0.00      |  |
| Gradation             | 6       | 10,090   | 80.775        | 1.00238    | \$129.56          | Key Sieve: No. 30 |            |                        |           |              |               | PF 1.0 Tons | 0           |  |
|                       |         |          |               |            | I/DP:             | (\$839.90)        |            |                        |           |              |               |             |             |  |
| Joint Density         |         |          |               |            |                   |                   |            |                        |           |              |               |             |             |  |
| Grad.                 | Price   | Proc. No | Tests         | Tons       | Quality Level     | Pay Factor        | I/DP       | TV                     | Mean      | Mean to TV   | Std Dev       | V           | St Dev. - V |  |
| S                     | \$36.00 | 1        | 8             | 12,000     | 100.000           | 1.04000           | \$2,592.00 | 92.000                 | 90.460    | 1.540        | 0.961         | 1.600       | -0.639      |  |
|                       |         |          |               |            |                   |                   | \$2,592.00 |                        |           |              |               |             |             |  |
| Project Totals: 14199 |         |          |               |            | Tons              | I/DP              |            |                        |           |              |               |             |             |  |
| Asphalt Content       |         |          |               |            | 16,090            | (\$3,788.66)      |            |                        |           |              |               |             |             |  |
| Mat Density           |         |          |               |            | 16,090            | \$3,800.58        |            |                        |           |              |               |             |             |  |
| Gradation             |         |          |               |            | 16,090            | (\$2,472.96)      |            |                        |           |              |               |             |             |  |
| Joint Density         |         |          |               |            | 12,000            | \$2,592.00        |            |                        |           |              |               |             |             |  |
| Total I/DP:           |         |          |               |            | \$130.96          | CPFC: 1.00023     |            |                        |           |              |               |             |             |  |

Comments: Joint density final quantity.

**Project Data**

**Subaccount: 14204      STA 078A-004      SH 78 Midway to Beulah      Region: 2      Supplier: 19**

| Mix Design No: 250 |      | Process No: 1 |            | Grading: S    ()    PG |              | Price Per Ton: \$36.55 |            |           |       |               |        |      | Other  |  |
|--------------------|------|---------------|------------|------------------------|--------------|------------------------|------------|-----------|-------|---------------|--------|------|--------|--|
| Tests              | Tons | Quality Level | Pay Factor | I/DP                   | TV           | Mean                   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | CTS    |      | PF 1.0 |  |
| AC                 | 4    | 3,149         | 86.904     | 1.03000                | \$863.22     | 5.500                  | 5.338      | 0.162     | 0.124 | 0.200         | -0.076 | Tons | 0      |  |
| Density            | 7    | 3,149         | 70.479     | 0.94110                | (\$3,050.36) | 94.000                 | 92.829     | 1.171     | 1.465 | 1.100         | 0.365  | I/DP | \$0.00 |  |
| Gradation          | 2    | 3,149         |            |                        | \$0.00       | Key Sieve:             |            |           |       |               |        | Tons | 0      |  |
|                    |      |               |            | I/DP:                  | (\$2,187.14) |                        |            |           |       |               |        |      |        |  |

| Joint Density |         |          |       |       |               |            |        |        |      |            |         |       |             |
|---------------|---------|----------|-------|-------|---------------|------------|--------|--------|------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons  | Quality Level | Pay Factor | I/DP   | TV     | Mean | Mean to TV | Std Dev | V     | St Dev. - V |
| S             | \$36.55 | 1        | 2     | 3,149 |               |            | \$0.00 | 92.000 |      |            |         | 1.600 |             |
|               |         |          |       |       |               |            | \$0.00 |        |      |            |         |       |             |

| Project Totals: 14204 |  |  | Tons  | I/DP         |
|-----------------------|--|--|-------|--------------|
| Asphalt Content       |  |  | 3,149 | \$863.22     |
| Mat Density           |  |  | 3,149 | (\$3,050.36) |
| Gradation             |  |  | 3,149 | \$0.00       |
| Joint Density         |  |  | 3,149 | \$0.00       |
| Total I/DP:           |  |  |       | (\$2,187.14) |
|                       |  |  |       | CPFC: 0.981  |

Comments:

Project Data

| Subaccount: 14206                              |         |          | NH 1603-019   |            | Lathrop to Walsenburg |              |                    | Region: 2              |           | Supplier: 53 |               |                   |                 |  |
|------------------------------------------------|---------|----------|---------------|------------|-----------------------|--------------|--------------------|------------------------|-----------|--------------|---------------|-------------------|-----------------|--|
| Mix Design No: 14206                           |         |          | Process No: 1 |            | Grading: S ( ) PG     |              |                    | Price Per Ton: \$36.59 |           |              |               |                   |                 |  |
| Tests                                          |         | Tons     | Quality Level | Pay Factor | I/DP                  | TV           | Mean               | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other             |                 |  |
|                                                |         |          |               |            |                       |              |                    |                        |           |              |               | CTS Tons          |                 |  |
| AC                                             |         | 9        | 8,178         | 86.004     | 1.01177               | \$880.52     | 5.600              | 5.557                  | 0.043     | 0.207        | 0.200         | 0.007             | 500             |  |
| Density                                        |         | 8        | 3,500         | 92.673     | 1.03500               | \$2,017.02   | 94.000             | 94.100                 | 0.100     | 1.236        | 1.100         | 0.136             | I/DP (\$250.35) |  |
| Gradation                                      |         | 5        | 8,178         | 71.400     | 0.96849               | (\$1,414.33) | Key Sieve: No. 200 |                        |           |              |               | PF 1.0 Tons       | 0               |  |
|                                                |         |          |               |            | I/DP:                 | \$1,232.86   |                    |                        |           |              |               |                   |                 |  |
| Mix Design No: 14206                           |         |          | Process No: 2 |            | Grading: S ( ) PG     |              |                    | Price Per Ton: \$36.59 |           |              |               |                   |                 |  |
| Tests                                          |         | Tons     | Quality Level | Pay Factor | I/DP                  | TV           | Mean               | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other             |                 |  |
|                                                |         |          |               |            |                       |              |                    |                        |           |              |               | CTS Tons          |                 |  |
| AC                                             |         |          |               |            | \$0.00                |              |                    |                        |           | 0.200        |               | 500               |                 |  |
| Density                                        |         | 2        | 1,000         |            | \$0.00                | 94.000       |                    |                        |           | 1.100        |               | I/DP (\$6,512.94) |                 |  |
| Gradation                                      |         |          |               |            | \$0.00                | Key Sieve:   |                    |                        |           |              | PF 1.0 Tons   | 0                 |                 |  |
|                                                |         |          |               |            | I/DP:                 | (\$6,512.94) |                    |                        |           |              |               |                   |                 |  |
| Mix Design No: 14206                           |         |          | Process No: 3 |            | Grading: S ( ) PG     |              |                    | Price Per Ton: \$36.59 |           |              |               |                   |                 |  |
| Tests                                          |         | Tons     | Quality Level | Pay Factor | I/DP                  | TV           | Mean               | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other             |                 |  |
|                                                |         |          |               |            |                       |              |                    |                        |           |              |               | CTS Tons          |                 |  |
| AC                                             |         |          |               |            | \$0.00                |              |                    |                        |           | 0.200        |               | 500               |                 |  |
| Density                                        |         | 5        | 2,178         | 100.000    | 1.03000               | \$1,075.86   | 94.000             | 94.200                 | 0.200     | 0.663        | 1.100         | -0.437            | I/DP \$288.15   |  |
| Gradation                                      |         |          |               |            | \$0.00                | Key Sieve:   |                    |                        |           |              | PF 1.0 Tons   | 0                 |                 |  |
|                                                |         |          |               |            | I/DP:                 | \$1,364.01   |                    |                        |           |              |               |                   |                 |  |
| Joint Density                                  |         |          |               |            |                       |              |                    |                        |           |              |               |                   |                 |  |
| Grad.                                          | Price   | Proc. No | Tests         | Tons       | Quality Level         | Pay Factor   | I/DP               | TV                     | Mean      | Mean to TV   | Std Dev       | V                 | St Dev. - V     |  |
| S                                              | \$36.59 | 1        | 5             | 8,178      | 67.639                | 0.94816      | (\$2,326.88)       | 92.000                 | 89.060    | 2.940        | 2.110         | 1.600             | 0.510           |  |
|                                                |         |          |               |            |                       |              | (\$2,326.88)       |                        |           |              |               |                   |                 |  |
| Project Totals: 14206                          |         |          |               |            | Tons                  | I/DP         |                    |                        |           |              |               |                   |                 |  |
| Asphalt Content                                |         |          |               |            | 8,178                 | \$880.52     |                    |                        |           |              |               |                   |                 |  |
| Mat Density                                    |         |          |               |            | 8,178                 | (\$3,382.26) |                    |                        |           |              |               |                   |                 |  |
| Gradation                                      |         |          |               |            | 8,178                 | (\$1,414.33) |                    |                        |           |              |               |                   |                 |  |
| Joint Density                                  |         |          |               |            | 8,178                 | (\$2,326.88) |                    |                        |           |              |               |                   |                 |  |
| Total I/DP:                                    |         |          |               |            |                       | \$232.19     | CPFC: 0.97914      |                        |           |              |               |                   |                 |  |
| Comments: Calculations for CTS #2 are correct. |         |          |               |            |                       |              |                    |                        |           |              |               |                   |                 |  |

**Project Data**

**Subaccount: 14208      NH 0242-039      Manitou & Lake George      Region: 2      Supplier: 49**

|                       |  |       |               |               |                           |              |                        |        |            |           |       |               |             |        |
|-----------------------|--|-------|---------------|---------------|---------------------------|--------------|------------------------|--------|------------|-----------|-------|---------------|-------------|--------|
| Mix Design No: 14208A |  |       | Process No: 1 |               | Grading: S (100) PG 76-28 |              | Price Per Ton: \$34.82 |        |            |           |       |               |             |        |
|                       |  | Tests | Tons          | Quality Level | Pay Factor                | I/DP         | TV                     | Mean   | Mean to TV | Std. Dev. | V     | Std. Dev. - V | Other       |        |
| AC                    |  | 31    | 31,109        | 86.915        | 0.99117                   | (\$2,392.06) | 5.500                  | 5.384  | 0.116      | 0.162     | 0.200 | -0.038        | CTS Tons    | 0      |
| Density               |  | 62    | 31,109        | 94.273        | 1.03271                   | \$15,944.34  | 94.000                 | 94.526 | 0.526      | 0.927     | 1.100 | -0.173        | I/DP        | \$0.00 |
| Gradation             |  | 16    | 31,109        | 90.647        | 1.02507                   | \$4,072.87   | Key Sieve: No. 4       |        |            |           |       |               | PF 1.0 Tons | 0      |
|                       |  | I/DP: |               |               |                           | \$17,625.15  |                        |        |            |           |       |               |             |        |

| Mix Design No: 14208B |    |        | Process No: 1 |            | Grading: S (75)    |                  | PG 58-28 |            | Price Per Ton: \$36.87 |       |               |             |          |
|-----------------------|----|--------|---------------|------------|--------------------|------------------|----------|------------|------------------------|-------|---------------|-------------|----------|
| Tests                 |    | Tons   | Quality Level | Pay Factor | I/DP               | TV               | Mean     | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other       |          |
| AC                    | 30 | 30,091 | 95.596        | 1.04819    | \$13,365.49        | 5.800            | 5.777    | 0.023      | 0.151                  | 0.200 | -0.049        | CTS Tons    | 500      |
| Density               | 59 | 29,591 | 95.095        | 1.03936    | \$19,324.50        | 94.000           | 93.192   | 0.808      | 0.726                  | 1.100 | -0.374        | I/DP        | \$240.24 |
| Gradation             | 15 | 30,091 | 99.521        | 1.05000    | <u>\$8,320.91</u>  | Key Sieve: No. 4 |          |            |                        |       |               | PF 1.0 Tons | 0        |
|                       |    |        |               | I/DP:      | <u>\$41,251.14</u> |                  |          |            |                        |       |               |             |          |

| Joint Density |         |          |       |        |               |            |              |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|--------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP         | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| S             | \$34.82 | 1        | 26    | 31,109 | 82.113        | 0.96186    | (\$6,197.09) | 92.000 | 89.380 | 2.620      | 1.502   | 1.600 | -0.098      |
| S             | \$36.87 | 2        | 14    | 30,091 | 99.039        | 1.04500    | \$7,488.82   | 92.000 | 90.610 | 1.390      | 1.220   | 1.600 | -0.380      |
|               |         |          |       |        |               |            | \$1,291.73   |        |        |            |         |       |             |

**Project Totals: 14208**

|                 | Tons   | I/DP          |
|-----------------|--------|---------------|
| Asphalt Content | 61,200 | \$10,973.43   |
| Mat Density     | 61,200 | \$35,509.08   |
| Gradation       | 61,200 | \$12,393.78   |
| Joint Density   | 61,200 | \$1,291.73    |
| Total I/DP:     |        | \$59,927.78   |
|                 |        | CPFC: 1.02744 |

Comments:

**Project Data**

| Subaccount: 14216       |         |          |               | STA R300-108  |               | Meeker and Rangely |                    | Region: 3     |           | Supplier: 12           |               |             |             |          |
|-------------------------|---------|----------|---------------|---------------|---------------|--------------------|--------------------|---------------|-----------|------------------------|---------------|-------------|-------------|----------|
| Mix Design No: 102403B  |         |          |               | Process No: 1 |               | Grading: SX ( )    |                    | PG            |           | Price Per Ton: \$38.82 |               |             |             |          |
| Tests                   |         | Tons     | Quality Level | Pay Factor    | I/DP          | TV                 | Mean               | Mean to TV    | Std. Dev. | V                      | Std. Dev. - V | Other       |             |          |
| AC                      |         | 11       | 13,073        | 96.267        | 1.04500       | \$5,708.63         | 6.200              | 6.185         | 0.015     | 0.157                  | 0.200         | -0.043      | CTS Tons    | 0        |
| Density                 |         | 0        |               |               |               | \$0.00             | 94.000             |               |           |                        | 1.100         |             | I/DP        | \$0.00   |
| Gradation               |         | 7        | 13,073        | 97.340        | 1.03500       | \$2,664.03         | Key Sieve: No. 200 |               |           |                        |               | PF 1.0 Tons | 13,073      |          |
|                         |         |          |               |               | I/DP:         | \$8,372.66         |                    |               |           |                        |               |             |             |          |
| Mix Design No: 102403LW |         |          |               | Process No: 1 |               | Grading: SX ( )    |                    | PG            |           | Price Per Ton: \$41.41 |               |             |             |          |
| Tests                   |         | Tons     | Quality Level | Pay Factor    | I/DP          | TV                 | Mean               | Mean to TV    | Std. Dev. | V                      | Std. Dev. - V | Other       |             |          |
| AC                      |         | 22       | 21,873        | 98.871        | 1.05000       | \$11,321.20        | 6.200              | 6.121         | 0.079     | 0.102                  | 0.200         | -0.098      | CTS Tons    | 500      |
| Density                 |         | 48       | 21,373        | 94.015        | 1.03347       | \$13,328.78        | 94.000             | 94.631        | 0.631     | 0.882                  | 1.100         | -0.218      | I/DP        | \$326.08 |
| Gradation               |         | 13       | 21,873        | 89.217        | 1.02108       | \$2,863.28         | Key Sieve: No. 200 |               |           |                        |               | PF 1.0 Tons | 0           |          |
|                         |         |          |               |               | I/DP:         | \$27,839.34        |                    |               |           |                        |               |             |             |          |
| Joint Density           |         |          |               |               |               |                    |                    |               |           |                        |               |             |             |          |
| Grad.                   | Price   | Proc. No | Tests         | Tons          | Quality Level | Pay Factor         | I/DP               | TV            | Mean      | Mean to TV             | Std Dev       | V           | St Dev. - V |          |
| SX                      | \$37.72 | 1        | 1             | 13,073        |               |                    | \$0.00             | 92.000        |           |                        |               | 1.600       |             |          |
| SX                      | \$41.39 | 2        | 11            | 21,873        | 91.055        | 1.03154            | \$4,282.60         | 92.000        | 90.580    | 1.420                  | 1.959         | 1.600       | 0.359       |          |
|                         |         |          |               |               |               |                    | \$4,282.60         |               |           |                        |               |             |             |          |
| Project Totals: 14216   |         |          |               |               |               | Tons               | I/DP               |               |           |                        |               |             |             |          |
| Asphalt Content         |         |          |               |               |               | 34,946             | \$17,029.83        |               |           |                        |               |             |             |          |
| Mat Density             |         |          |               |               |               | 34,946             | \$13,654.86        |               |           |                        |               |             |             |          |
| Gradation               |         |          |               |               |               | 34,946             | \$5,527.31         |               |           |                        |               |             |             |          |
| Joint Density           |         |          |               |               |               | 34,946             | \$4,282.60         |               |           |                        |               |             |             |          |
| Total I/DP:             |         |          |               |               |               |                    | \$40,168.52        | CPFC: 1.02865 |           |                        |               |             |             |          |

Comments: Two locations.

**Project Data**

| Subaccount: 14217      |    |        | STA 092A-016  |            | Delta East hwy 92  |                |        | Region: 3              |           | Supplier: 16 |               |             |          |  |
|------------------------|----|--------|---------------|------------|--------------------|----------------|--------|------------------------|-----------|--------------|---------------|-------------|----------|--|
| Mix Design No: 102703B |    |        | Process No: 1 |            | Grading: SX ( ) PG |                |        | Price Per Ton: \$36.28 |           |              |               |             |          |  |
| Tests                  |    | Tons   | Quality Level | Pay Factor | I/DP               | TV             | Mean   | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other       |          |  |
| AC                     | 23 | 23,330 | 99.996        | 1.05000    | \$10,581.34        | 6.000          | 6.056  | 0.056                  | 0.073     | 0.200        | -0.127        | CTS Tons    | 500      |  |
| Density                | 46 | 22,830 | 93.764        | 1.03210    | \$11,966.20        | 94.000         | 94.354 | 0.354                  | 1.027     | 1.100        | -0.073        | I/DP        | \$285.74 |  |
| Gradation              | 12 | 23,330 | 84.656        | 0.99978    | (\$27.98)          | Key Sieve: 1/2 |        |                        |           |              |               | PF 1.0 Tons | 0        |  |
|                        |    |        |               |            | I/DP:              | \$22,805.30    |        |                        |           |              |               |             |          |  |

| Joint Density |         |          |       |        |               |            |               |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|---------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP          | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| SX            | \$35.44 | 1        | 27    | 23,330 | 71.417        | 0.87989    | (\$14,895.96) | 92.000 | 88.960 | 3.040      | 1.690   | 1.600 | 0.090       |
|               |         |          |       |        |               |            | (\$14,895.96) |        |        |            |         |       |             |

|                              |  |  |  |        |               |               |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--------|---------------|---------------|--|--|--|--|--|--|--|
| <b>Project Totals: 14217</b> |  |  |  | Tons   | I/DP          |               |  |  |  |  |  |  |  |
| Asphalt Content              |  |  |  | 23,330 | \$10,581.34   |               |  |  |  |  |  |  |  |
| Mat Density                  |  |  |  | 23,330 | \$12,251.94   |               |  |  |  |  |  |  |  |
| Gradation                    |  |  |  | 23,330 | (\$27.98)     |               |  |  |  |  |  |  |  |
| Joint Density                |  |  |  | 23,330 | (\$14,895.96) |               |  |  |  |  |  |  |  |
| Total I/DP:                  |  |  |  |        | \$7,623.60    | CPFC: 1.00934 |  |  |  |  |  |  |  |

Comments:

| Subaccount: 14227     |  |       | SHE 0061-076  |               | Cleer Creek Canyon       |              | Region: 1              |        | Supplier: 19 |           |       |               |             |        |
|-----------------------|--|-------|---------------|---------------|--------------------------|--------------|------------------------|--------|--------------|-----------|-------|---------------|-------------|--------|
| Mix Design No: 153546 |  |       | Process No: 1 |               | Grading: S (75) PG 58-28 |              | Price Per Ton: \$40.54 |        |              |           |       |               |             |        |
|                       |  | Tests | Tons          | Quality Level | Pay Factor               | I/DP         | TV                     | Mean   | Mean to TV   | Std. Dev. | V     | Std. Dev. - V | Other       |        |
| AC                    |  | 4     | 1,399         | 35.361        | 0.72255                  | (\$4,720.70) | 5.600                  | 5.225  | 0.375        | 0.171     | 0.200 | -0.029        | CTS Tons    | 0      |
| Density               |  | 6     | 2,191         | 100.000       | 1.03500                  | \$1,554.40   | 94.000                 | 92.933 | 1.067        | 0.216     | 1.100 | -0.884        | I/DP        | \$0.00 |
| Gradation             |  | 5     | 1,781         | 73.663        | 0.97980                  | (\$291.69)   | Key Sieve: No. 4       |        |              |           |       |               | PF 1.0 Tons | 0      |
|                       |  |       |               |               | I/DP:                    | (\$3,457.99) |                        |        |              |           |       |               |             |        |

|                              |  |  |  |       |              |               |  |  |  |  |  |  |  |
|------------------------------|--|--|--|-------|--------------|---------------|--|--|--|--|--|--|--|
| <b>Project Totals: 14227</b> |  |  |  | Tons  | I/DP         |               |  |  |  |  |  |  |  |
| Asphalt Content              |  |  |  | 1,399 | (\$4,720.70) |               |  |  |  |  |  |  |  |
| Mat Density                  |  |  |  | 2,191 | \$1,554.40   |               |  |  |  |  |  |  |  |
| Gradation                    |  |  |  | 1,781 | (\$291.69)   |               |  |  |  |  |  |  |  |
| Joint Density                |  |  |  |       |              |               |  |  |  |  |  |  |  |
| Total I/DP:                  |  |  |  |       | (\$3,457.99) | CPFC: 0.94635 |  |  |  |  |  |  |  |

Comments: Final quantities not equal.

**Project Data**

| Subaccount: 14236                          |       |        | STA 0881-014  |            | SH 88 I-25 to SH 8 |                |        | Region: 6              |           | Supplier: 10 |               |        |        |
|--------------------------------------------|-------|--------|---------------|------------|--------------------|----------------|--------|------------------------|-----------|--------------|---------------|--------|--------|
| Mix Design No: 147033                      |       |        | Process No: 1 |            | Grading: SM ( ) PG |                |        | Price Per Ton: \$49.50 |           |              |               |        |        |
|                                            | Tests | Tons   | Quality Level | Pay Factor | I/DP               | TV             | Mean   | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other  |        |
|                                            |       |        |               |            |                    |                |        |                        |           |              |               | CTS    |        |
| AC                                         | 27    | 27,442 | 95.937        | 1.05107    | \$17,343.38        | 6.200          | 6.133  | 0.067                  | 0.135     | 0.200        | -0.065        | Tons   | 0      |
| Density                                    | 55    | 28,160 | 99.342        | 1.05500    | \$34,499.52        | 95.000         | 95.435 | 0.435                  | 0.646     | 1.100        | -0.454        | I/DP   | \$0.00 |
| Gradation                                  | 13    | 27,869 | 92.154        | 1.03471    | \$7,182.50         | Key Sieve: 3/8 |        |                        |           |              |               | PF 1.0 |        |
|                                            |       |        |               | I/DP:      | \$59,025.40        |                |        |                        |           |              |               | Tons   | 0      |
| Mix Design No: 147033                      |       |        | Process No: 2 |            | Grading: SM ( ) PG |                |        | Price Per Ton: \$49.50 |           |              |               |        |        |
|                                            | Tests | Tons   | Quality Level | Pay Factor | I/DP               | TV             | Mean   | Mean to TV             | Std. Dev. | V            | Std. Dev. - V | Other  |        |
|                                            |       |        |               |            |                    |                |        |                        |           |              |               | CTS    |        |
| AC                                         | 1     | 718    |               |            | \$0.00             | 6.200          |        |                        |           | 0.200        |               | Tons   | 0      |
| Density                                    |       | 0      |               |            | \$0.00             | 94.000         |        |                        |           | 1.100        |               | I/DP   | \$0.00 |
| Gradation                                  | 1     | 291    |               |            | \$0.00             | Key Sieve:     |        |                        |           |              |               | PF 1.0 |        |
|                                            |       |        |               | I/DP:      | \$0.00             |                |        |                        |           |              |               | Tons   | 0      |
| Project Totals: 14236                      |       |        |               |            | Tons               | I/DP           |        |                        |           |              |               |        |        |
| Asphalt Content                            |       |        |               |            | 28,160             | \$17,343.38    |        |                        |           |              |               |        |        |
| Mat Density                                |       |        |               |            | 28,160             | \$34,499.52    |        |                        |           |              |               |        |        |
| Gradation                                  |       |        |               |            | 28,160             | \$7,182.50     |        |                        |           |              |               |        |        |
| Joint Density                              |       |        |               |            |                    |                |        |                        |           |              |               |        |        |
| Total I/DP:                                |       |        |               |            | \$59,025.40        | CPFC: 1.04234  |        |                        |           |              |               |        |        |
| Comments: No joint density tests reported. |       |        |               |            |                    |                |        |                        |           |              |               |        |        |

**Project Data**

**Subaccount: 14275      STA 0362-026      SH 36 Byers to Ara      Region: 1      Supplier: 19**

| Mix Design No: 151027 |    |        | Process No: 1 |         | Grading: S   |                   | ()     |       | PG        |       | Price Per Ton: \$35.25 |        |          |        |  |
|-----------------------|----|--------|---------------|---------|--------------|-------------------|--------|-------|-----------|-------|------------------------|--------|----------|--------|--|
|                       |    |        | Quality       | Pay     |              |                   |        | Mean  |           |       | Std. Dev.              | Other  |          |        |  |
| Tests                 |    |        | Level         | Factor  | I/DP         | TV                | Mean   | to TV | Std. Dev. | V     | - V                    | CTS    |          |        |  |
| AC                    | 34 | 33,516 | 97.939        | 1.05500 | \$16,244.79  | 5.400             | 5.459  | 0.059 | 0.120     | 0.200 | -0.080                 | Tons   | 500      |        |  |
| Density               | 34 | 17,821 | 92.280        | 1.02555 | \$7,222.65   | 94.000            | 93.838 | 0.162 | 1.139     | 1.100 | 0.039                  | I/DP   | \$216.18 |        |  |
| Gradation             | 17 | 33,516 | 82.886        | 0.97967 | (\$3,603.64) | Key Sieve: No. 30 |        |       |           |       |                        | PF 1.0 |          |        |  |
|                       |    |        |               |         | I/DP:        | \$20,079.98       |        |       |           |       |                        |        | Tons     | 15,195 |  |

|                       |     |        |               |         |             |                  |        |       |           |       |                        |        |          |       |  |  |
|-----------------------|-----|--------|---------------|---------|-------------|------------------|--------|-------|-----------|-------|------------------------|--------|----------|-------|--|--|
| Mix Design No: 151029 |     |        | Process No: 1 |         | Grading: S  |                  | ( )    |       | PG        |       | Price Per Ton: \$37.00 |        |          |       |  |  |
|                       |     |        | Quality       | Pay     |             |                  |        |       | Mean      |       | Std. Dev.              | Other  |          |       |  |  |
| Tests    Tons         |     |        | Level         | Factor  | I/DP        | TV               | Mean   | to TV | Std. Dev. | V     | - V                    | CTS    |          |       |  |  |
| AC                    | 54  | 54,581 | 96.322        | 1.04895 | \$24,713.29 | 5.200            | 5.185  | 0.015 | 0.145     | 0.200 | -0.055                 | Tons   | 500      |       |  |  |
| Density               | 112 | 52,598 | 91.848        | 1.00961 | \$8,415.44  | 94.000           | 93.507 | 0.493 | 1.043     | 1.100 | -0.057                 | I/DP   | \$153.99 |       |  |  |
| Gradation             | 27  | 54,581 | 90.695        | 1.01882 | \$5,700.73  | Key Sieve: No. 8 |        |       |           |       |                        | PF 1.0 |          |       |  |  |
|                       |     |        |               |         | I/DP:       | \$38,983.45      |        |       |           |       |                        |        | Tons     | 1,483 |  |  |

**Project Totals: 14275**

|                 | Tons        | I/DP          |
|-----------------|-------------|---------------|
| Asphalt Content | 88,097      | \$40,958.08   |
| Mat Density     | 88,097      | \$16,008.26   |
| Gradation       | 88,097      | \$2,097.09    |
| Joint Density   |             |               |
| Total I/DP:     | \$58,693.26 | CPFC: 1.01845 |

Comments: No joint density tests reported.

**Project Data**

**Subaccount: 14301    NH 2873-126    US 287 Ted's Place North    Region: 4    Supplier: 40**

| Mix Design No: 138008 |    |        | Process No: 1 |         | Grading: S  |                  | ()     |       | PG    |           | Price Per Ton: \$33.35 |        |           |        |
|-----------------------|----|--------|---------------|---------|-------------|------------------|--------|-------|-------|-----------|------------------------|--------|-----------|--------|
|                       |    |        | Quality       | Pay     |             |                  |        | Mean  |       | Std. Dev. | Other                  |        |           |        |
| Tests                 |    |        | Tons          | Level   | Factor      | I/DP             | TV     | Mean  | to TV | Std. Dev. | V                      | - V    | CTS       |        |
| AC                    | 36 | 35,522 | 99.627        | 1.05500 | \$16,289.06 | 4.900            | 4.861  | 0.039 | 0.102 | 0.200     | -0.098                 | Tons   | 1000      |        |
| Density               | 45 | 22,558 | 89.918        | 1.00473 | \$1,601.81  | 94.000           | 93.030 | 0.970 | 0.810 | 1.100     | -0.290                 | I/DP   | 1,496.48) |        |
| Gradation             | 18 | 35,522 | 98.550        | 1.05000 | \$8,884.94  | Key Sieve: No. 4 |        |       |       |           |                        | PF 1.0 |           |        |
|                       |    |        |               |         | I/DP:       | \$25,279.33      |        |       |       |           |                        |        | Tons      | 11,964 |

| Mix Design No: 138007 |  |      | Process No: 1 |            | Grading: SG () |            | PG                 |            | Price Per Ton: \$29.35 |       |               |        |               |  |
|-----------------------|--|------|---------------|------------|----------------|------------|--------------------|------------|------------------------|-------|---------------|--------|---------------|--|
| Tests                 |  | Tons | Quality Level | Pay Factor | I/DP           | TV         | Mean               | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other  |               |  |
| AC                    |  | 7    | 5,813         | 85.433     | 1.01756        | \$748.95   | 4.100              | 4.184      | 0.084                  | 0.199 | 0.200         | -0.001 | CTS Tons 0    |  |
| Density               |  | 12   | 5,813         | 99.553     | 1.04500        | \$3,454.88 | 94.000             | 93.600     | 0.400                  | 0.705 | 1.100         | -0.395 | I/DP \$0.00   |  |
| Gradation             |  | 3    | 5,813         | 66.265     | 0.98531        | (\$375.82) | Key Sieve: No. 200 |            |                        |       |               |        | PF 1.0 Tons 0 |  |
|                       |  |      |               |            | I/DP:          | \$3,828.01 |                    |            |                        |       |               |        |               |  |

| Joint Density |         |          |       |        |               |            |              |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|--------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP         | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| S             | \$33.35 | 1        | 12    | 23,558 | 80.089        | 0.97461    | (\$2,992.53) | 92.000 | 89.230 | 2.770      | 1.445   | 1.600 | -0.155      |
|               |         |          |       |        |               |            | (\$2,992.53) |        |        |            |         |       |             |

| Project Totals: 14301 |  | Tons        | I/DP          |
|-----------------------|--|-------------|---------------|
| Asphalt Content       |  | 41,335      | \$17,038.01   |
| Mat Density           |  | 41,335      | \$3,560.21    |
| Gradation             |  | 41,335      | \$8,509.12    |
| Joint Density         |  | 23,558      | (\$2,992.53)  |
| Total I/DP:           |  | \$27,611.29 | CPFC: 1.01927 |

Comments: Joint density final quantity.

**Project Data**

| Subaccount: 14304     |    | STA 083A-031 |               | SH 83 North PPCC |                   | Region: 2        |                        | Supplier: 45 |           |       |               |          |          |
|-----------------------|----|--------------|---------------|------------------|-------------------|------------------|------------------------|--------------|-----------|-------|---------------|----------|----------|
| Mix Design No: 140304 |    |              | Process No: 1 |                  | Grading: S ( ) PG |                  | Price Per Ton: \$38.00 |              |           |       |               |          |          |
| Tests                 |    | Tons         | Quality Level | Pay Factor       | I/DP              | TV               | Mean                   | Mean to TV   | Std. Dev. | V     | Std. Dev. - V | Other    |          |
| AC                    | 20 | 19,397       | 95.448        | 1.04890          | \$9,010.57        | 5.500            | 5.460                  | 0.040        | 0.151     | 0.200 | -0.049        | CTS Tons | 500      |
| Density               | 38 | 18,897       | 92.591        | 1.02580          | \$8,336.57        | 94.000           | 93.221                 | 0.779        | 0.850     | 1.100 | -0.250        | I/DP     | \$299.25 |
| Gradation             | 10 | 19,397       | 82.042        | 0.99064          | (\$1,034.74)      | Key Sieve: No. 8 |                        |              |           |       | PF 1.0 Tons 0 |          |          |
|                       |    |              |               | I/DP:            | \$16,611.65       |                  |                        |              |           |       |               |          |          |

| Joint Density |         |          |       |        |               |            |              |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|--------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP         | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| S             | \$38.00 | 1        | 7     | 19,397 | 67.779        | 0.92403    | (\$8,399.55) | 92.000 | 88.760 | 3.240      | 1.558   | 1.600 | -0.042      |
|               |         |          |       |        |               |            | (\$8,399.55) |        |        |            |         |       |             |

| Project Totals: 14304 |  | Tons       | I/DP          |
|-----------------------|--|------------|---------------|
| Asphalt Content       |  | 19,397     | \$9,010.57    |
| Mat Density           |  | 19,397     | \$8,635.82    |
| Gradation             |  | 19,397     | (\$1,034.74)  |
| Joint Density         |  | 19,397     | (\$8,399.55)  |
| Total I/DP:           |  | \$7,912.85 | CPFC: 1.01114 |

Comments:

| Subaccount: 14305        |     |        | IM 0702-241   |            | West Vail Pass Res |                  | Region: 1 |            | Supplier: 11           |       |               |                 |  |
|--------------------------|-----|--------|---------------|------------|--------------------|------------------|-----------|------------|------------------------|-------|---------------|-----------------|--|
| Mix Design No: 138747Top |     |        | Process No: 1 |            | Grading: SX ()     |                  | PG        |            | Price Per Ton: \$42.25 |       |               |                 |  |
| Tests                    |     | Tons   | Quality Level | Pay Factor | I/DP               | TV               | Mean      | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other           |  |
|                          |     |        |               |            |                    |                  |           |            |                        |       |               | CTS             |  |
| AC                       | 58  | 57,161 | 96.079        | 1.04674    | \$28,219.15        | 5.900            | 5.888     | 0.012      | 0.147                  | 0.200 | -0.053        | Tons 500        |  |
| Density                  | 114 | 56,661 | 98.549        | 1.06000    | \$64,634.40        | 94.000           | 93.517    | 0.483      | 0.699                  | 1.100 | -0.401        | I/DP (\$879.53) |  |
| Gradation                | 29  | 57,161 | 90.196        | 1.01448    | \$5,243.73         | Key Sieve: No. 4 |           |            |                        |       |               | PF 1.0          |  |
|                          |     |        |               |            | I/DP:              | \$97,217.75      |           |            |                        |       |               | Tons 0          |  |

| Joint Density |         |          |       |        |               |            |             |        |        |            |         |       |             |
|---------------|---------|----------|-------|--------|---------------|------------|-------------|--------|--------|------------|---------|-------|-------------|
| Grad.         | Price   | Proc. No | Tests | Tons   | Quality Level | Pay Factor | I/DP        | TV     | Mean   | Mean to TV | Std Dev | V     | St Dev. - V |
| SX            | \$42.02 | 1        | 21    | 57,161 | 93.520        | 1.03825    | \$13,779.59 | 92.000 | 89.480 | 2.520      | 0.993   | 1.600 | -0.607      |
|               |         |          |       |        |               |            | \$13,779.59 |        |        |            |         |       |             |

| Project Totals: 14305 |  | Tons         | I/DP          |
|-----------------------|--|--------------|---------------|
| Asphalt Content       |  | 57,161       | \$28,219.15   |
| Mat Density           |  | 57,161       | \$63,754.87   |
| Gradation             |  | 57,161       | \$5,243.73    |
| Joint Density         |  | 57,161       | \$13,779.59   |
| Total I/DP:           |  | \$111,876.87 | CPFC: 1.04596 |

Comments:

**Project Data**

| Subaccount: 14320       |   |       | NH 1603-020   |            | US 160 & SH 17  |            | Region: 5 |            | Supplier: 18           |       |               |          |        |
|-------------------------|---|-------|---------------|------------|-----------------|------------|-----------|------------|------------------------|-------|---------------|----------|--------|
| Mix Design No: 14320SX1 |   |       | Process No: 1 |            | Grading: SX ( ) |            | PG        |            | Price Per Ton: \$57.50 |       |               |          |        |
| Tests                   |   | Tons  | Quality Level | Pay Factor | I/DP            | TV         | Mean      | Mean to TV | Std. Dev.              | V     | Std. Dev. - V | Other    |        |
| AC                      | 2 | 1,340 |               |            | \$0.00          | 5.600      |           |            |                        | 0.200 |               | CTS Tons | 0      |
| Density                 | 3 | 1,340 | 100.000       | 1.02500    | \$866.81        | 94.000     | 94.067    | 0.067      | 1.097                  | 1.100 | -0.003        | I/DP     | \$0.00 |
| Gradation               | 1 | 1,340 |               |            | \$0.00          | Key Sieve: |           |            |                        |       | PF 1.0 Tons   | 0        |        |
|                         |   |       |               |            | I/DP:           | \$866.81   |           |            |                        |       |               |          |        |

| Joint Density |         | Proc. No | Tests | Tons  | Quality Level | Pay Factor | I/DP   | TV     | Mean | Mean to TV | Std Dev | V | St Dev. - V |
|---------------|---------|----------|-------|-------|---------------|------------|--------|--------|------|------------|---------|---|-------------|
| Grad.         | Price   |          |       |       |               |            |        |        |      |            |         |   |             |
| SX            | \$57.50 | 1        | 2     | 1,340 |               |            | \$0.00 | 92.000 |      |            |         |   | 1.600       |
|               |         |          |       |       |               |            | \$0.00 |        |      |            |         |   |             |

| Project Totals: 14320 |  | Tons          | I/DP     |
|-----------------------|--|---------------|----------|
| Asphalt Content       |  | 1,340         | \$0.00   |
| Mat Density           |  | 1,340         | \$866.81 |
| Gradation             |  | 1,340         | \$0.00   |
| Joint Density         |  | 1,340         | \$0.00   |
| Total I/DP:           |  |               | \$866.81 |
|                       |  | CPFC: 1.01125 |          |

Comments:

| Subaccount: 14353       |  | NH 2854-099 |               | US 285 Parkview-Ke |                 | Region: 1  |                | Supplier: 41 |                        |       |               |             |          |        |
|-------------------------|--|-------------|---------------|--------------------|-----------------|------------|----------------|--------------|------------------------|-------|---------------|-------------|----------|--------|
| Mix Design No: 14353619 |  |             | Process No: 1 |                    | Grading: SX ( ) |            | PG             |              | Price Per Ton: \$49.00 |       |               |             |          |        |
| Tests                   |  | Tons        | Quality Level | Pay Factor         | I/DP            | TV         | Mean           | Mean to TV   | Std. Dev.              | V     | Std. Dev. - V | Other       |          |        |
| AC                      |  | 6           | 5,328         | 100.000            | 1.03500         | \$2,741.26 | 5.800          | 5.780        | 0.020                  | 0.105 | 0.200         | -0.095      | CTS Tons | 0      |
| Density                 |  | 11          | 5,328         | 85.654             | 1.00677         | \$884.26   | 94.000         | 93.355       | 0.645                  | 1.237 | 1.100         | 0.137       | I/DP     | \$0.00 |
| Gradation               |  | 3           | 5,328         | 77.281             | 1.02500         | \$1,305.36 | Key Sieve: 3/8 |              |                        |       |               | PF 1.0 Tons | 0        |        |
|                         |  |             |               |                    | I/DP:           | \$4,930.88 |                |              |                        |       |               |             |          |        |

| Project Totals: 14353 |  | Tons          | I/DP       |
|-----------------------|--|---------------|------------|
| Asphalt Content       |  | 5,328         | \$2,741.26 |
| Mat Density           |  | 5,328         | \$884.26   |
| Gradation             |  | 5,328         | \$1,305.36 |
| Joint Density         |  |               |            |
| Total I/DP:           |  |               | \$4,930.88 |
|                       |  | CPFC: 1.01889 |            |

Comments:

Project Data

| Subaccount: 14397      |         |          | NH 0851-006   |               |               | SH 85 Phase III           |                       |        | Region: 2              |            |         | Supplier: 45  |             |            |  |  |
|------------------------|---------|----------|---------------|---------------|---------------|---------------------------|-----------------------|--------|------------------------|------------|---------|---------------|-------------|------------|--|--|
| Mix Design No: 14397B  |         |          | Process No: 1 |               |               | Grading: S (100) PG 64-22 |                       |        | Price Per Ton: \$32.03 |            |         |               |             |            |  |  |
|                        |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV                    | Mean   | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |            |  |  |
| AC                     |         | 9        | 8,867         | 93.197        | 1.04000       | \$2,839.78                | 5.300                 | 5.288  | 0.012                  | 0.178      | 0.200   | -0.022        | CTS Tons    | 500        |  |  |
| Density                |         | 16       | 8,367         | 79.681        | 0.96161       | (\$4,629.11)              | 94.000                | 93.300 | 0.700                  | 1.418      | 1.100   | 0.318         | I/DP        | (\$971.66) |  |  |
| Gradation              |         | 4        | 8,867         | 100.000       | 1.03000       | \$1,277.90                | Key Sieve: All QLS100 |        |                        |            |         |               | PF 1.0 Tons | 0          |  |  |
|                        |         |          |               |               |               | I/DP:                     | (\$1,483.09)          |        |                        |            |         |               |             |            |  |  |
| Mix Design No: 14397B2 |         |          | Process No: 1 |               |               | Grading: S (100) PG 64-22 |                       |        | Price Per Ton: \$32.00 |            |         |               |             |            |  |  |
|                        |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV                    | Mean   | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |            |  |  |
| AC                     |         | 8        | 8,178         | 83.253        | 1.00255       | \$166.96                  | 5.300                 | 5.431  | 0.131                  | 0.173      | 0.200   | -0.027        | CTS Tons    | 500        |  |  |
| Density                |         | 5        | 2,500         | 77.520        | 0.99747       | (\$90.91)                 | 94.000                | 92.860 | 1.140                  | 1.074      | 1.100   | -0.026        | I/DP        | \$252.00   |  |  |
| Gradation              |         | 4        | 8,178         | 79.305        | 1.01755       | \$688.75                  | Key Sieve: No. 4      |        |                        |            |         |               | PF 1.0 Tons | 0          |  |  |
|                        |         |          |               |               |               | I/DP:                     | \$1,016.80            |        |                        |            |         |               |             |            |  |  |
| Mix Design No: 14397B2 |         |          | Process No: 2 |               |               | Grading: S (100) PG 64-22 |                       |        | Price Per Ton: \$32.00 |            |         |               |             |            |  |  |
|                        |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV                    | Mean   | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |            |  |  |
| AC                     |         |          |               |               |               | \$0.00                    |                       |        |                        |            | 0.200   |               | CTS Tons    | 500        |  |  |
| Density                |         | 10       | 4,678         | 82.641        | 0.99373       | (\$422.10)                | 94.000                | 92.720 | 1.280                  | 0.760      | 1.100   | -0.340        | I/DP        | \$101.06   |  |  |
| Gradation              |         |          |               |               |               | \$0.00                    | Key Sieve:            |        |                        |            |         |               | PF 1.0 Tons | 0          |  |  |
|                        |         |          |               |               |               | I/DP:                     | (\$321.04)            |        |                        |            |         |               |             |            |  |  |
| Mix Design No: 14397T1 |         |          | Process No: 1 |               |               | Grading: S (100) PG 64-28 |                       |        | Price Per Ton: \$38.00 |            |         |               |             |            |  |  |
|                        |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV                    | Mean   | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |            |  |  |
| AC                     |         | 8        | 7,219         | 80.445        | 0.98901       | (\$753.47)                | 5.300                 | 5.239  | 0.061                  | 0.230      | 0.200   | 0.030         | CTS Tons    | 1000       |  |  |
| Density                |         | 15       | 7,219         | 86.688        | 1.00516       | \$636.53                  | 94.000                | 93.500 | 0.500                  | 1.263      | 1.100   | 0.163         | I/DP        | (\$391.71) |  |  |
| Gradation              |         | 4        | 8,219         | 100.000       | 1.03000       | \$1,405.45                | Key Sieve: All QLS100 |        |                        |            |         |               | PF 1.0 Tons | 0          |  |  |
|                        |         |          |               |               |               | I/DP:                     | \$896.80              |        |                        |            |         |               |             |            |  |  |
| Mix Design No: 14397T1 |         |          | Process No: 2 |               |               | Grading: S (100) PG 64-28 |                       |        | Price Per Ton: \$38.00 |            |         |               |             |            |  |  |
|                        |         | Tests    | Tons          | Quality Level | Pay Factor    | I/DP                      | TV                    | Mean   | Mean to TV             | Std. Dev.  | V       | Std. Dev. - V | Other       |            |  |  |
| AC                     |         | 1        | 1,000         |               | 0.41250       | (\$5,581.25)              | 5.300                 |        |                        |            | 0.200   |               | CTS Tons    | 0          |  |  |
| Density                |         |          | 0             |               |               | \$0.00                    | 94.000                |        |                        |            | 1.100   |               | I/DP        | \$0.00     |  |  |
| Gradation              |         |          |               |               |               | \$0.00                    | Key Sieve:            |        |                        |            |         |               | PF 1.0 Tons | 0          |  |  |
|                        |         |          |               |               |               | I/DP:                     | (\$5,581.25)          |        |                        |            |         |               |             |            |  |  |
| Joint Density          |         |          |               |               |               |                           |                       |        |                        |            |         |               |             |            |  |  |
| Grad.                  | Price   | Proc. No | Tests         | Tons          | Quality Level | Pay Factor                | I/DP                  | TV     | Mean                   | Mean to TV | Std Dev | V             | St Dev. - V |            |  |  |
| S                      | \$32.00 | 1        | 5             | 8,867         | 34.082        | 0.68191                   | (\$13,538.46)         | 92.000 | 87.520                 | 4.480      | 1.062   | 1.600         | -0.538      |            |  |  |
| S                      | \$32.00 | 2        | 6             | 8,179         | 96.591        | 1.03500                   | \$1,374.07            | 92.000 | 90.270                 | 1.730      | 1.426   | 1.600         | -0.174      |            |  |  |
| S                      | \$38.00 | 3        | 7             | 8,218         | 25.665        | 0.52798                   | (\$22,110.82)         | 92.000 | 87.490                 | 4.510      | 0.756   | 1.600         | -0.844      |            |  |  |
|                        |         |          |               |               |               |                           | (\$34,275.21)         |        |                        |            |         |               |             |            |  |  |

# Project Data

|                              |                        |        |             |               |                      |
|------------------------------|------------------------|--------|-------------|---------------|----------------------|
| <b>Project Totals: 14397</b> |                        |        | <b>Tons</b> | <b>I/DP</b>   |                      |
|                              | <b>Asphalt Content</b> | 25,264 |             | (\$3,327.98)  |                      |
|                              | <b>Mat Density</b>     | 25,264 |             | (\$5,515.90)  |                      |
|                              | <b>Gradation</b>       | 25,264 |             | \$3,372.10    |                      |
|                              | <b>Joint Density</b>   | 25,264 |             | (\$34,275.21) |                      |
|                              | <b>Total I/DP:</b>     |        |             | (\$38,736.68) | <b>CPFC: 0.95356</b> |

Comments:

|                               |                      |                         |                  |                               |                          |
|-------------------------------|----------------------|-------------------------|------------------|-------------------------------|--------------------------|
| <b>Subaccount: 14439</b>      | <b>STA 131A-030</b>  | <b>Wolcott North</b>    | <b>Region: 3</b> | <b>Supplier: 11</b>           |                          |
| <b>Mix Design No: WCT6035</b> | <b>Process No: 1</b> | <b>Grading: SX (75)</b> | <b>PG 64-28</b>  | <b>Price Per Ton: \$40.76</b> |                          |
|                               | <b>Quality Level</b> | <b>Pay Factor</b>       | <b>I/DP</b>      | <b>TV</b>                     | <b>Mean</b>              |
|                               |                      |                         |                  |                               | <b>Mean to TV</b>        |
|                               |                      |                         |                  |                               | <b>Std. Dev.</b>         |
|                               |                      |                         |                  |                               | <b>Std. Dev. V</b>       |
|                               |                      |                         |                  |                               | <b>Other</b>             |
|                               |                      |                         |                  |                               | <b>CTS</b>               |
| <b>AC</b>                     | 16                   | 15,295                  | 94.533           | 1.04418                       | \$6,886.95               |
| <b>Density</b>                | 31                   | 14,795                  | 93.375           | 1.03397                       | \$9,218.61               |
| <b>Gradation</b>              | 8                    | 15,295                  | 72.803           | 0.94695                       | (\$4,961.50)             |
|                               |                      |                         |                  |                               | <b>Key Sieve: 3/8</b>    |
|                               |                      |                         |                  |                               | <b>I/DP: \$11,173.07</b> |
|                               |                      |                         |                  |                               | <b>PF 1.0</b>            |
|                               |                      |                         |                  |                               | <b>Tons 0</b>            |

|                      |              |                 |              |             |                      |                   |             |           |             |                   |                 |          |                    |
|----------------------|--------------|-----------------|--------------|-------------|----------------------|-------------------|-------------|-----------|-------------|-------------------|-----------------|----------|--------------------|
| <b>Joint Density</b> |              |                 |              |             |                      |                   |             |           |             |                   |                 |          |                    |
| <b>Grad.</b>         | <b>Price</b> | <b>Proc. No</b> | <b>Tests</b> | <b>Tons</b> | <b>Quality Level</b> | <b>Pay Factor</b> | <b>I/DP</b> | <b>TV</b> | <b>Mean</b> | <b>Mean to TV</b> | <b>Std Dev.</b> | <b>V</b> | <b>St Dev. - V</b> |
| SX                   | \$40.81      | 1               | 9            | 15,295      | 95.100               | 1.04000           | \$3,745.13  | 92.000    | 91.270      | 0.730             | 2.077           | 1.600    | 0.477              |
|                      |              |                 |              |             |                      |                   | \$3,745.13  |           |             |                   |                 |          |                    |

|                              |                        |        |             |              |                      |
|------------------------------|------------------------|--------|-------------|--------------|----------------------|
| <b>Project Totals: 14439</b> |                        |        | <b>Tons</b> | <b>I/DP</b>  |                      |
|                              | <b>Asphalt Content</b> | 15,295 |             | \$6,886.95   |                      |
|                              | <b>Mat Density</b>     | 15,295 |             | \$9,247.62   |                      |
|                              | <b>Gradation</b>       | 15,295 |             | (\$4,961.50) |                      |
|                              | <b>Joint Density</b>   | 15,295 |             | \$3,745.13   |                      |
|                              | <b>Total I/DP:</b>     |        |             | \$14,889.19  | <b>CPFC: 1.02393</b> |

Comments: Final Quantities

**Project Data**

| Subaccount: 14461      |         |          | STA 059A-028  |             |               | SH 59 N of Haxtun        |               |            | Region: 4              |            |               | Supplier: 60 |             |  |
|------------------------|---------|----------|---------------|-------------|---------------|--------------------------|---------------|------------|------------------------|------------|---------------|--------------|-------------|--|
| Mix Design No: 149855  |         |          | Process No: 1 |             |               | Grading: S (75) PG 58-28 |               |            | Price Per Ton: \$33.50 |            |               |              |             |  |
|                        |         |          | Quality Level | Pay Factor  | I/DP          | TV                       | Mean          | Mean to TV | Std. Dev.              | V          | Std. Dev. - V | Other        |             |  |
| Tests Tons             |         |          |               |             |               |                          |               |            |                        |            |               | CTS Tons     |             |  |
| AC 11 9,000            |         |          | 96.592        | 1.04500     | \$3,391.87    | 5.300                    | 5.204         | 0.096      | 0.119                  | 0.200      | -0.081        |              | 0           |  |
| Density 18 9,000       |         |          | 81.988        | 0.97199     | (\$3,799.83)  | 94.000                   | 93.317        | 0.683      | 1.338                  | 1.100      | 0.238         | I/DP \$0.00  |             |  |
| Gradation 6 9,000      |         |          | 98.651        | 1.03500     | \$1,582.87    | Key Sieve: No. 200       |               |            |                        |            |               | PF 1.0 Tons  | 0           |  |
|                        |         |          | I/DP:         | \$1,174.91  |               |                          |               |            |                        |            |               |              |             |  |
| Mix Design No: 149855A |         |          | Process No: 1 |             |               | Grading: S (75) PG 58-28 |               |            | Price Per Ton: \$33.50 |            |               |              |             |  |
|                        |         |          | Quality Level | Pay Factor  | I/DP          | TV                       | Mean          | Mean to TV | Std. Dev.              | V          | Std. Dev. - V | Other        |             |  |
| Tests Tons             |         |          |               |             |               |                          |               |            |                        |            |               | CTS Tons     |             |  |
| AC 18 18,013           |         |          | 87.291        | 1.00456     | \$688.31      | 5.200                    | 5.202         | 0.002      | 0.201                  | 0.200      | 0.001         |              | 0           |  |
| Density 36 18,013      |         |          | 89.818        | 1.00785     | \$2,131.11    | 94.000                   | 93.367        | 0.633      | 1.058                  | 1.100      | -0.042        | I/DP \$0.00  |             |  |
| Gradation 10 18,013    |         |          | 89.233        | 1.02478     | \$2,242.74    | Key Sieve: No. 4         |               |            |                        |            |               | PF 1.0 Tons  | 0           |  |
|                        |         |          | I/DP:         | \$5,062.16  |               |                          |               |            |                        |            |               |              |             |  |
| Mix Design No: 149856  |         |          | Process No: 1 |             |               | Grading: S (75) PG 64-28 |               |            | Price Per Ton: \$38.00 |            |               |              |             |  |
|                        |         |          | Quality Level | Pay Factor  | I/DP          | TV                       | Mean          | Mean to TV | Std. Dev.              | V          | Std. Dev. - V | Other        |             |  |
| Tests Tons             |         |          |               |             |               |                          |               |            |                        |            |               | CTS Tons     |             |  |
| AC 31 26,632           |         |          | 89.572        | 1.01039     | \$2,629.49    | 5.100                    | 5.128         | 0.028      | 0.185                  | 0.200      | -0.015        |              | 0           |  |
| Density 58 26,632      |         |          | 96.154        | 1.04775     | \$21,743.64   | 94.000                   | 93.752        | 0.248      | 0.949                  | 1.100      | -0.151        | I/DP \$0.00  |             |  |
| Gradation 17 26,632    |         |          | 95.022        | 1.04636     | \$7,037.69    | Key Sieve: No. 4         |               |            |                        |            |               | PF 1.0 Tons  | 0           |  |
|                        |         |          | I/DP:         | \$31,410.82 |               |                          |               |            |                        |            |               |              |             |  |
| Joint Density          |         |          |               |             |               |                          |               |            |                        |            |               |              |             |  |
| Grad.                  | Price   | Proc. No | Tests         | Tons        | Quality Level | Pay Factor               | I/DP          | TV         | Mean                   | Mean to TV | Std Dev       | V            | St Dev. - V |  |
| S                      | \$33.50 | 1        | 4             | 9,000       | 100.000       | 1.03000                  | \$1,356.75    | 92.000     | 92.330                 | 0.330      | 0.350         | 1.600        | -1.250      |  |
| S                      | \$38.00 | 2        | 16            | 26,632      | 92.135        | 1.03383                  | \$5,136.16    | 92.000     | 89.560                 | 2.440      | 1.128         | 1.600        | -0.472      |  |
| S                      | \$33.50 | 3        | 10            | 18,013      | 93.681        | 1.04259                  | \$3,855.07    | 92.000     | 89.230                 | 2.770      | 0.837         | 1.600        | -0.763      |  |
|                        |         |          |               |             |               |                          | \$10,347.98   |            |                        |            |               |              |             |  |
| Project Totals: 14461  |         |          |               |             | Tons          | I/DP                     |               |            |                        |            |               |              |             |  |
| Asphalt Content        |         |          |               |             | 53,645        | \$6,709.67               |               |            |                        |            |               |              |             |  |
| Mat Density            |         |          |               |             | 53,645        | \$20,074.92              |               |            |                        |            |               |              |             |  |
| Gradation              |         |          |               |             | 53,645        | \$10,863.30              |               |            |                        |            |               |              |             |  |
| Joint Density          |         |          |               |             | 53,645        | \$10,347.98              |               |            |                        |            |               |              |             |  |
|                        |         |          |               |             | Total I/DP:   | \$47,995.87              | CPFC: 1.02504 |            |                        |            |               |              |             |  |
| Comments:              |         |          |               |             |               |                          |               |            |                        |            |               |              |             |  |

***Project Data***

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***Totals for all Projects***    Projects with Bid Dates from 1/1/03 to 12/31/03.

| Number of Projects | 28 | Tons:              | I/DP:               |
|--------------------|----|--------------------|---------------------|
| Asphalt Content    |    | 765,671            | \$236,565.07        |
| Mat Density        |    | 766,463            | \$357,045.23        |
| Gradation          |    | 766,052            | \$66,892.05         |
| Joint Density      |    | 568,000            | (\$68,749.43)       |
|                    |    | <b>Total I/DP:</b> | <b>\$670,542.83</b> |

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## Calculated Pay Factor Composite and I/DP by Region

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

PFC is back calculated from the Project's I/DP.

A Calculated Average Unit Price is used in the calculation.

### Region 1

| Subacct. | Bid Date | Project Code | Reg. | Grading | Total Tons | Average Price | Pay Factor Composite | Project I/DP | Supplier |
|----------|----------|--------------|------|---------|------------|---------------|----------------------|--------------|----------|
| 14305    | 01/09/03 | IM 0702-241  | 1    | SX      | 57,161     | \$42.25       | 1.04596              | \$110,997.34 | 11       |
| 13972    | 02/20/03 | STA 0061-074 | 1    | SX      | 31,943     | \$41.08       | 1.03783              | \$49,639.94  | 13       |
| 14353    | 05/01/03 | NH 2854-099  | 1    | SX      | 5,328      | \$49.00       | 1.01889              | \$4,930.88   | 41       |
| 14275    | 03/13/03 | STA 0362-026 | 1    | S       | 88,097     | \$36.33       | 1.01845              | \$59,063.43  | 19       |
| 13897    | 02/27/03 | NH 0852-088  | 1    | SG      | 25,834     | \$40.20       | 1.01228              | \$12,751.34  | 37       |
| 14227    | 01/30/03 | SHE 0061-07  | 1    | S       | 1,399      | \$40.54       | 0.94635              | (\$3,457.99) | 19       |

### Region 1

Number of Projects: 6 CPFC: Maximum: 1.04596  
 Total Tons: 209,762 Minimum: 0.94635  
 Average: 1.01329

Incentive/Disincentive Payments Sum I/DPs: \$233,924.94  
 Positive ID/Ps: 5 Maximum: \$110,997.34  
 Negative ID/Ps: 1 Minimum: (\$3,457.99)  
 Average IDP: \$38,987.49

### Region 2

| Subacct. | Bid Date | Project Code | Reg. | Grading | Total Tons | Average Price | Pay Factor Composite | Project I/DP  | Supplier |
|----------|----------|--------------|------|---------|------------|---------------|----------------------|---------------|----------|
| 12833    | 07/24/03 | NH 1603-016  | 2    | S       | 18,997     | \$46.00       | 1.03253              | \$28,426.60   | 53       |
| 14208    | 12/18/03 | NH 0242-039  | 2    | S       | 61,200     | \$35.83       | 1.02744              | \$60,168.02   | 49       |
| 14304    | 06/19/03 | STA 083A-03  | 2    | S       | 19,397     | \$38.00       | 1.01114              | \$8,212.10    | 45       |
| 14199    | 01/30/03 | STA 012A-03  | 2    | S       | 16,090     | \$36.00       | 1.00023              | \$130.96      | 53       |
| 13547    | 03/06/03 | NH 0505-037  | 2    | S       | 21,613     | \$40.00       | 0.99103              | (\$7,750.99)  | 32       |
| 13094    | 03/27/03 | BR 1151-012  | 2    | S       | 20,865     | \$37.16       | 0.98715              | (\$9,964.19)  | 45       |
| 14204    | 02/20/03 | STA 078A-00  | 2    | S       | 3,149      | \$36.55       | 0.98100              | (\$2,187.14)  | 19       |
| 14206    | 02/13/03 | NH 1603-019  | 2    | S       | 8,178      | \$36.59       | 0.97914              | (\$3,916.07)  | 53       |
| 14397    | 05/22/03 | NH 0851-006  | 2    | S       | 25,264     | \$33.96       | 0.95356              | (\$39,746.99) | 45       |

### Region 2

Number of Projects: 9 CPFC: Maximum: 1.03253  
 Total Tons: 194,753 Minimum: 0.95356  
 Average: 0.99591

Incentive/Disincentive Payments Sum I/DPs: \$33,372.30  
 Positive ID/Ps: 4 Maximum: \$60,168.02  
 Negative ID/Ps: 5 Minimum: (\$39,746.99)  
 Average IDP: \$3,708.03

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**Region 3**

| Subacct. | Bid Date | Project Code | Reg. | Grading | Total Tons | Average Price | Pay Factor Composite | Project I/DP | Supplier |
|----------|----------|--------------|------|---------|------------|---------------|----------------------|--------------|----------|
| 14216    | 03/27/03 | STA R300-10  | 3    | SX      | 34,946     | \$40.44       | 1.02865              | \$40,494.60  | 12       |
| 14439    | 05/08/03 | STA 131A-03  | 3    | SX      | 15,295     | \$40.76       | 1.02393              | \$14,918.20  | 11       |
| 13868    | 01/16/03 | STA 114A-00  | 3    | SX      | 38,128     | \$38.37       | 1.01234              | \$18,046.05  | 12       |
| 14217    | 02/06/03 | STA 092A-01  | 3    | SX      | 23,330     | \$36.28       | 1.00934              | \$7,909.34   | 16       |
| 13333    | 08/07/03 | STA 340A-00  | 3    | SX      | 3,390      | \$45.38       | 0.99696              | (\$468.00)   | 12       |

**Region 3**

Number of Projects: 5 CPFC: Maximum: 1.02865  
Total Tons: 115,089 Minimum: 0.99696  
Average: 1.01424

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|                                 |              |             |
|---------------------------------|--------------|-------------|
| Incentive/Disincentive Payments | Sum I/DPs:   | \$80,900.19 |
| Positive ID/Ps: 4               | Maximum:     | \$40,494.60 |
| Negative ID/Ps: 1               | Minimum:     | (\$468.00)  |
|                                 | Average IDP: | \$16,180.04 |

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**Region 4**

| Subacct. | Bid Date | Project Code | Reg. | Grading | Total Tons | Average Price | Pay Factor Composite | Project I/DP | Supplier |
|----------|----------|--------------|------|---------|------------|---------------|----------------------|--------------|----------|
| 13987    | 02/20/03 | STA 1381-005 | 4    | S       | 64,073     | \$39.72       | 1.04182              | \$106,421.95 | 19       |
| 14461    | 06/19/03 | STA 059A-02  | 4    | S       | 53,645     | \$35.73       | 1.02504              | \$47,995.87  | 60       |
| 14301    | 02/27/03 | NH 2873-126  | 4    | S       | 41,335     | \$32.79       | 1.01927              | \$26,114.81  | 40       |

**Region 4**

Number of Projects: 3 CPFC: Maximum: 1.04182  
Total Tons: 159,053 Minimum: 1.01927  
Average: 1.02871

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|                                 |              |              |
|---------------------------------|--------------|--------------|
| Incentive/Disincentive Payments | Sum I/DPs:   | \$180,532.63 |
| Positive ID/Ps: 3               | Maximum:     | \$106,421.95 |
| Negative ID/Ps: 0               | Minimum:     | \$26,114.81  |
|                                 | Average IDP: | \$60,177.54  |

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**Region 5**

| Subacct. | Bid Date | Project Code | Reg. | Grading | Total Tons | Average Price | Pay Factor Composite | Project I/DP  | Supplier |
|----------|----------|--------------|------|---------|------------|---------------|----------------------|---------------|----------|
| 13998    | 03/06/03 | NH 2852-014  | 5    | SX      | 40,221     | \$43.36       | 1.01913              | \$33,365.31   | 11       |
| 14320    | 04/03/03 | NH 1603-020  | 5    | SX      | 1,340      | \$57.50       | 1.01125              | \$866.81      | 18       |
| 13969    | 12/04/03 | NH 1602-090  | 5    | SX      | 15,082     | \$94.00       | 0.99460              | (\$7,658.03)  | 45       |
| 13922    | 05/29/03 | BR 114A-008  | 5    | SX      | 2,211      | \$72.00       | 0.87280              | (\$20,249.76) | 18       |

**Region 5**

Number of Projects: 4 CPFC: Maximum: 1.01913  
Total Tons: 58,854 Minimum: 0.87280  
Average: 0.97445

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|                                 |              |               |
|---------------------------------|--------------|---------------|
| Incentive/Disincentive Payments | Sum I/DPs:   | \$6,324.33    |
| Positive ID/Ps: 2               | Maximum:     | \$33,365.31   |
| Negative ID/Ps: 2               | Minimum:     | (\$20,249.76) |
|                                 | Average IDP: | \$1,581.08    |

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**Region 6**

| Subacct. | Bid Date | Project Code | Reg. | Grading | Total Tons | Average Price | Pay Factor Composite | Project I/DP | Supplier |
|----------|----------|--------------|------|---------|------------|---------------|----------------------|--------------|----------|
| 14236    | 06/05/03 | STA 0881-014 | 6    | SMA     | 28,160     | \$49.50       | 1.04234              | \$59,025.39  | 10       |

**Region 6**

Number of Projects: 1 CPFC: Maximum: 1.04234  
Total Tons: 28,160 Minimum: 1.04234  
Average: 1.04234

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|                                 |              |             |
|---------------------------------|--------------|-------------|
| Incentive/Disincentive Payments | Sum I/DPs:   | \$59,025.39 |
| Positive ID/Ps: 1               | Maximum:     | \$59,025.39 |
| Negative ID/Ps: 0               | Minimum:     | \$59,025.39 |
|                                 | Average IDP: | \$59,025.39 |

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**Statewide Totals:** 1/1/03 to 12/31/03.

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Number of Projects: 28 CPFC Maximum: 1.04596  
Total Tons: 765,671 Minimum: 0.87280  
Average: 1.00502

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|                                 |              |               |
|---------------------------------|--------------|---------------|
| Incentive/Disincentive Payments | Sum I/DPs:   | \$594,079.78  |
| Positive ID/Ps: 19              | Maximum:     | \$110,997.34  |
| Negative ID/Ps: 9               | Minimum:     | (\$39,746.99) |
|                                 | Average IDP: | \$21,217.14   |

## Asphalt Content - Process Information, Gradation Acceptance

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

Processes with less than 3 tests not included.

### Grading: S

| Subacct | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV    | Mean  | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|---------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|-------|-------|---------------|----------|-------|--------------|
| 14301   | 4    | 34448          | 138008        | \$33.35 | 1              | 35,522 | 36    | 99.627           | 1.05500       | 4.900 | 4.861 | 0.039         | 0.102    | 0.200 | -0.098       |
| 13094   | 2    | 18785          | 13094T        | \$39.69 | 1              | 7,019  | 7     | 99.227           | 1.03500       | 5.300 | 5.340 | 0.040         | 0.135    | 0.200 | -0.065       |
| 14275   | 1    | 53313          | 151027        | \$35.25 | 1              | 33,516 | 34    | 97.939           | 1.05500       | 5.400 | 5.459 | 0.059         | 0.120    | 0.200 | -0.080       |
| 13987   | 4    | 64236          | 69803         | \$39.72 | 1              | 64,073 | 65    | 97.680           | 1.05500       | 5.300 | 5.273 | 0.027         | 0.132    | 0.200 | -0.068       |
| 12833   | 2    | 19652          | 12833         | \$46.00 | 1              | 18,997 | 19    | 96.716           | 1.05000       | 5.600 | 5.694 | 0.094         | 0.116    | 0.200 | -0.084       |
| 14461   | 4    | 52159          | 149855        | \$33.50 | 1              | 9,000  | 11    | 96.592           | 1.04500       | 5.300 | 5.204 | 0.096         | 0.119    | 0.200 | -0.081       |
| 14275   | 1    | 53313          | 151029        | \$37.00 | 1              | 54,581 | 54    | 96.322           | 1.04895       | 5.200 | 5.185 | 0.015         | 0.145    | 0.200 | -0.055       |
| 14208   | 2    | 62414          | 14208B        | \$36.87 | 1              | 30,091 | 30    | 95.596           | 1.04819       | 5.800 | 5.777 | 0.023         | 0.151    | 0.200 | -0.049       |
| 14304   | 2    | 22591          | 140304        | \$38.00 | 1              | 19,397 | 20    | 95.448           | 1.04890       | 5.500 | 5.460 | 0.040         | 0.151    | 0.200 | -0.049       |
| 13547   | 2    | 21910          | 13547A        | \$40.00 | 1              | 14,414 | 15    | 94.188           | 1.04262       | 5.300 | 5.251 | 0.049         | 0.158    | 0.200 | -0.042       |
| 14397   | 2    | 21663          | 14397B        | \$32.03 | 1              | 8,867  | 9     | 93.197           | 1.04000       | 5.300 | 5.288 | 0.012         | 0.178    | 0.200 | -0.022       |
| 14461   | 4    | 52159          | 149856        | \$38.00 | 1              | 26,632 | 31    | 89.572           | 1.01039       | 5.100 | 5.128 | 0.028         | 0.185    | 0.200 | -0.015       |
| 14461   | 4    | 52159          | 149855A       | \$33.50 | 1              | 18,013 | 18    | 87.291           | 1.00456       | 5.200 | 5.202 | 0.002         | 0.201    | 0.200 | 0.001        |
| 14208   | 2    | 62414          | 14208A        | \$34.82 | 1              | 31,109 | 31    | 86.915           | 0.99117       | 5.500 | 5.384 | 0.116         | 0.162    | 0.200 | -0.038       |
| 14204   | 2    | 3381           | 250           | \$36.55 | 1              | 3,149  | 4     | 86.904           | 1.03000       | 5.500 | 5.338 | 0.162         | 0.124    | 0.200 | -0.076       |
| 14206   | 2    | 10060          | 14206         | \$36.59 | 1              | 8,178  | 9     | 86.004           | 1.01177       | 5.600 | 5.557 | 0.043         | 0.207    | 0.200 | 0.007        |
| 14199   | 2    | 18000          | 246A          | \$36.00 | 1              | 6,000  | 6     | 83.473           | 1.01354       | 6.300 | 6.150 | 0.150         | 0.152    | 0.200 | -0.048       |
| 14397   | 2    | 21663          | 14397B2       | \$32.00 | 1              | 8,178  | 8     | 83.253           | 1.00255       | 5.300 | 5.431 | 0.131         | 0.173    | 0.200 | -0.027       |
| 14397   | 2    | 21663          | 14397T1       | \$38.00 | 1              | 7,219  | 8     | 80.445           | 0.98901       | 5.300 | 5.239 | 0.061         | 0.230    | 0.200 | 0.030        |
| 13094   | 2    | 18785          | 13094B1       | \$35.88 | 1              | 13,846 | 14    | 76.007           | 0.94330       | 5.300 | 5.218 | 0.082         | 0.244    | 0.200 | 0.044        |
| 14199   | 2    | 18000          | 252           | \$36.00 | 1              | 10,090 | 11    | 75.492           | 0.95023       | 6.150 | 5.946 | 0.204         | 0.137    | 0.200 | -0.063       |
| 13547   | 2    | 21910          | 3547DET       | \$40.00 | 1              | 4,699  | 5     | 73.104           | 0.97707       | 5.600 | 5.708 | 0.108         | 0.259    | 0.200 | 0.059        |
| 13547   | 2    | 21910          | 13547         | \$40.00 | 1              | 2,500  | 3     | 49.640           | 0.88637       | 5.000 | 5.303 | 0.303         | 0.255    | 0.200 | 0.055        |
| 14227   | 1    | 3028           | 153546        | \$40.54 | 1              | 1,399  | 4     | 35.361           | 0.72255       | 5.600 | 5.225 | 0.375         | 0.171    | 0.200 | -0.029       |

### Totals Grading: S

| Rating: S   |         | Quality Level     | Pay Factor | Mean to TV | St. Dev. | V     | StDev - V |        |
|-------------|---------|-------------------|------------|------------|----------|-------|-----------|--------|
| Processes:  | 24      | Best:             | 99.627     | 1.05500    | 0.002    | 0.102 | 0.200     | -0.098 |
| Tests:      | 452     | Worst:            | 35.361     | 0.72255    | 0.375    | 0.259 | 0.200     | 0.059  |
| Total Tons: | 436,489 | Weighted Average: | 92.522     | 1.03022    | 0.054    | 0.151 | 0.200     | -0.049 |

*AC Process Information***Grading: SG**

| Subacct | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV    | Mean  | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|---------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|-------|-------|---------------|----------|-------|--------------|
| 14301   | 4    | 34448          | 138007        | \$29.35 | 1              | 5,813  | 7     | 85.433           | 1.01756       | 4.100 | 4.184 | 0.084         | 0.199    | 0.200 | -0.001       |
| 13897   | 1    | 18192          | 153327-1      | \$36.50 | 1              | 11,470 | 15    | 82.776           | 0.98518       | 4.500 | 4.686 | 0.186         | 0.120    | 0.200 | -0.080       |

**Totals Grading: SG**

|             |        |  |  |  |  |                   |  | Quality<br>Level | Pay<br>Factor |  |  | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|--------|--|--|--|--|-------------------|--|------------------|---------------|--|--|---------------|----------|-------|--------------|
| Processes:  | 2      |  |  |  |  | Best:             |  | 85.433           | 1.01756       |  |  | 0.084         | 0.120    | 0.200 | -0.080       |
| Tests:      | 22     |  |  |  |  | Worst:            |  | 82.776           | 0.98518       |  |  | 0.186         | 0.199    | 0.200 | -0.001       |
| Total Tons: | 17,283 |  |  |  |  | Weighted Average: |  | 83.670           | 0.99607       |  |  | 0.152         | 0.147    | 0.200 | -0.053       |

**Grading: SMA**

| Subacct | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV    | Mean  | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|---------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|-------|-------|---------------|----------|-------|--------------|
| 14236   | 6    | 26404          | 147033        | \$49.50 | 1              | 27,442 | 27    | 95.937           | 1.05107       | 6.200 | 6.133 | 0.067         | 0.135    | 0.200 | -0.065       |

**Totals Grading: SMA**

|             |        |  |  |  |  |                   |  | Quality<br>Level | Pay<br>Factor |  |  | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|--------|--|--|--|--|-------------------|--|------------------|---------------|--|--|---------------|----------|-------|--------------|
| Processes:  | 1      |  |  |  |  | Best:             |  | 95.937           | 1.05107       |  |  | 0.067         | 0.135    | 0.200 | -0.065       |
| Tests:      | 27     |  |  |  |  | Worst:            |  | 95.937           | 1.05107       |  |  | 0.067         | 0.135    | 0.200 | -0.065       |
| Total Tons: | 27,442 |  |  |  |  | Weighted Average: |  | 95.937           | 1.05107       |  |  | 0.067         | 0.135    | 0.200 | -0.065       |

# AC Process Information

## Grading: SX

| Subacct | Reg. | Plan Quant. | Mix Design | Price   | Process No. | Tons   | Tests | Quality Level | Pay Factor | TV    | Mean  | Mean to TV | St. Dev. | V     | StDev - V |
|---------|------|-------------|------------|---------|-------------|--------|-------|---------------|------------|-------|-------|------------|----------|-------|-----------|
| 13868   | 3    | 37071       | 2-58-28    | \$36.15 | 1           | 5,854  | 7     | 100.000       | 1.03500    | 6.700 | 6.654 | 0.046      | 0.108    | 0.200 | -0.092    |
| 13868   | 3    | 37071       | 3-58-34    | \$39.37 | 1           | 5,476  | 6     | 100.000       | 1.03500    | 6.600 | 6.628 | 0.028      | 0.059    | 0.200 | -0.141    |
| 13972   | 1    | 31908       | 145985-2   | \$37.14 | 1           | 6,025  | 7     | 100.000       | 1.03500    | 6.200 | 5.944 | 0.256      | 0.019    | 0.200 | -0.181    |
| 13998   | 5    | 38175       | 398SX3B    | \$44.98 | 1           | 12,126 | 12    | 100.000       | 1.04500    | 8.700 | 8.711 | 0.011      | 0.093    | 0.200 | -0.107    |
| 13998   | 5    | 38175       | 3998SX4    | \$44.77 | 1           | 11,244 | 12    | 100.000       | 1.04500    | 8.700 | 8.624 | 0.076      | 0.054    | 0.200 | -0.146    |
| 14353   | 1    | 5388        | 4353619    | \$49.00 | 1           | 5,328  | 6     | 100.000       | 1.03500    | 5.800 | 5.780 | 0.020      | 0.105    | 0.200 | -0.095    |
| 14217   | 3    | 25522       | 102703B    | \$36.28 | 1           | 23,330 | 23    | 99.996        | 1.05000    | 6.000 | 6.056 | 0.056      | 0.073    | 0.200 | -0.127    |
| 13868   | 3    | 37071       | 5-58-34    | \$39.29 | 1           | 7,775  | 8     | 99.068        | 1.04000    | 6.500 | 6.598 | 0.098      | 0.103    | 0.200 | -0.097    |
| 14216   | 3    | 28494       | 102403LW   | \$41.41 | 1           | 21,873 | 22    | 98.871        | 1.05000    | 6.200 | 6.121 | 0.079      | 0.102    | 0.200 | -0.098    |
| 13897   | 1    | 18192       | 153327-4   | \$44.00 | 1           | 12,335 | 16    | 97.104        | 1.04500    | 5.600 | 5.611 | 0.011      | 0.149    | 0.200 | -0.051    |
| 13972   | 1    | 31908       | 145985-1   | \$42.00 | 1           | 25,918 | 26    | 96.417        | 1.05414    | 6.400 | 6.363 | 0.037      | 0.143    | 0.200 | -0.057    |
| 14216   | 3    | 28494       | 102403B    | \$38.82 | 1           | 13,073 | 11    | 96.267        | 1.04500    | 6.200 | 6.185 | 0.015      | 0.157    | 0.200 | -0.043    |
| 14305   | 1    | 59309       | 8747Top    | \$42.25 | 1           | 57,161 | 58    | 96.079        | 1.04674    | 5.900 | 5.888 | 0.012      | 0.147    | 0.200 | -0.053    |
| 13868   | 3    | 37071       | 4-58-34    | \$39.75 | 1           | 4,462  | 4     | 94.973        | 1.03000    | 6.700 | 6.743 | 0.043      | 0.191    | 0.200 | -0.009    |
| 14439   | 3    | 36296       | 13503C-3   | \$40.76 | 1           | 15,295 | 16    | 94.533        | 1.04418    | 6.300 | 6.233 | 0.067      | 0.148    | 0.200 | -0.052    |
| 13333   | 3    | 3853        | 6422A2     | \$45.38 | 1           | 3,390  | 4     | 93.764        | 1.03000    | 5.600 | 5.725 | 0.125      | 0.133    | 0.200 | -0.067    |
| 13998   | 5    | 38175       | 3998SF4    | \$43.86 | 1           | 10,359 | 11    | 88.860        | 1.02192    | 8.300 | 8.279 | 0.021      | 0.195    | 0.200 | -0.005    |
| 13868   | 3    | 37071       | 2-58-34    | \$39.95 | 1           | 7,241  | 7     | 87.940        | 1.02737    | 6.700 | 6.843 | 0.143      | 0.136    | 0.200 | -0.064    |
| 13969   | 5    | 15116       | 3969SX2    | \$94.00 | 1           | 15,082 | 21    | 84.719        | 0.98533    | 6.900 | 6.832 | 0.068      | 0.201    | 0.200 | 0.001     |
| 13868   | 3    | 37071       | 58-28      | \$36.01 | 1           | 7,320  | 7     | 79.442        | 0.99062    | 6.800 | 6.599 | 0.201      | 0.117    | 0.200 | -0.083    |
| 13998   | 5    | 38175       | 398SF4A    | \$34.84 | 1           | 4,992  | 5     | 69.905        | 0.96064    | 8.300 | 8.180 | 0.120      | 0.273    | 0.200 | 0.073     |

## Totals Grading: SX

| ing: SX     |         | Quality Level     | Pay Factor | Mean to TV | St. Dev. | V     | StDev - V |        |
|-------------|---------|-------------------|------------|------------|----------|-------|-----------|--------|
| Processes:  | 21      | Best:             | 100.000    | 1.05414    | 0.011    | 0.019 | 0.200     | -0.181 |
| Tests:      | 289     | Worst:            | 69.905     | 0.96064    | 0.256    | 0.273 | 0.200     | 0.073  |
| Total Tons: | 275,659 | Weighted Average: | 95.303     | 1.03804    | 0.054    | 0.130 | 0.200     | -0.070 |

## Asphalt Content - Totals 1/1/03 to 12/31/03.

|             |         | Quality Level     | Pay Factor | Mean to TV | St. Dev. | V     | StDev - V |        |
|-------------|---------|-------------------|------------|------------|----------|-------|-----------|--------|
| Processes:  | 48      | Best:             | 100.000    | 1.05500    | 0.002    | 0.019 | 0.200     | -0.181 |
| Tests:      | 790     | Worst:            | 35.361     | 0.72255    | 0.375    | 0.273 | 0.200     | 0.073  |
| Total Tons: | 756,873 | Weighted Average: | 93.457     | 1.03304    | 0.057    | 0.143 | 0.200     | -0.057 |

## Asphalt Content - Recap by Grading/Region

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

Processes with less than 3 tests not included.

Weighted average used for: Price, Pay Factor, St. Dev., and Quality Level

| Grading: S | Processes | Tons    | Tests | Price   | Pay Factor | St. Dev. | Quality Level |        |        |
|------------|-----------|---------|-------|---------|------------|----------|---------------|--------|--------|
|            |           |         |       |         |            |          | Avg.          | High   | Low    |
| Region: 1  | 3         | 89,496  | 92    | \$36.40 | 1.04611    | 0.136    | 95.975        | 97.939 | 35.361 |
| Region: 2  | 16        | 193,753 | 199   | \$37.46 | 1.01457    | 0.166    | 88.622        | 99.227 | 49.640 |
| Region: 4  | 5         | 153,240 | 161   | \$36.85 | 1.04073    | 0.142    | 95.437        | 99.627 | 87.291 |
| Totals: S  | 24        | 436,489 | 452   | \$37.03 | 1.03022    | 0.151    | 92.522        | 99.627 | 35.361 |

| Grading: SG | Processes | Tons   | Tests | Price   | Pay Factor | St. Dev. | Quality Level |        |        |
|-------------|-----------|--------|-------|---------|------------|----------|---------------|--------|--------|
|             |           |        |       |         |            |          | Avg.          | High   | Low    |
| Region: 1   | 1         | 11,470 | 15    | \$36.50 | 0.98518    | 0.120    | 82.776        | 82.776 | 82.776 |
| Region: 4   | 1         | 5,813  | 7     | \$29.35 | 1.01756    | 0.199    | 85.433        | 85.433 | 85.433 |
| Totals: SG  | 2         | 17,283 | 22    | \$34.10 | 0.99607    | 0.147    | 83.670        | 85.433 | 82.776 |

| Grading: SMA | Processes | Tons   | Tests | Price   | Pay Factor | St. Dev. | Quality Level |        |        |
|--------------|-----------|--------|-------|---------|------------|----------|---------------|--------|--------|
|              |           |        |       |         |            |          | Avg.          | High   | Low    |
| Region: 6    | 1         | 27,442 | 27    | \$49.50 | 1.05107    | 0.135    | 95.937        | 95.937 | 95.937 |
| Totals: SMA  | 1         | 27,442 | 27    | \$49.50 | 1.05107    | 0.135    | 95.937        | 95.937 | 95.937 |

| Grading: SX | Processes | Tons    | Tests | Price   | Pay Factor | St. Dev. | Quality Level |         |        |
|-------------|-----------|---------|-------|---------|------------|----------|---------------|---------|--------|
|             |           |         |       |         |            |          | Avg.          | High    | Low    |
| Region: 1   | 5         | 106,767 | 113   | \$42.44 | 1.04709    | 0.137    | 96.696        | 100.000 | 96.079 |
| Region: 3   | 11        | 115,089 | 115   | \$39.10 | 1.03994    | 0.114    | 96.126        | 100.000 | 79.442 |
| Region: 5   | 5         | 53,803  | 61    | \$57.52 | 1.01600    | 0.151    | 90.779        | 100.000 | 69.905 |
| Totals: SX  | 21        | 275,659 | 289   | \$43.99 | 1.03804    | 0.130    | 95.303        | 100.000 | 69.905 |

| Statewide Totals | Processes | Tons    | Tests | Price   | Pay Factor | St. Dev. | Quality Level |         |        |
|------------------|-----------|---------|-------|---------|------------|----------|---------------|---------|--------|
|                  |           |         |       |         |            |          | Avg.          | High    | Low    |
|                  | 48        | 756,873 | 790   | \$39.95 | 1.03304    | 0.143    | 93.457        | 100.000 | 35.361 |

# Mat Density - Process Information, Gradation Acceptance

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

Processes with less than 3 tests not included.

## Grading: S

| Subacct. | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|----------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| 14227    | 1    | 3,028          | 153546        | \$40.54 | 1              | 2,191  | 6     | 100.000          | 1.03500       | 94.000 | 92.933 | 1.067         | 0.216    | 1.100 | -0.884       |
| 13094    | 2    | 18,785         | 13094T        | \$39.69 | 1              | 2,000  | 4     | 100.000          | 1.03000       | 94.000 | 93.375 | 0.625         | 0.386    | 1.100 | -0.714       |
| 14206    | 2    | 10,060         | 14206         | \$36.59 | 3              | 2,178  | 5     | 100.000          | 1.03000       | 94.000 | 94.200 | 0.200         | 0.663    | 1.100 | -0.437       |
| 13094    | 2    | 18,785         | 13094T        | \$39.69 | 2              | 4,019  | 9     | 99.796           | 1.04000       | 94.000 | 93.578 | 0.422         | 0.700    | 1.100 | -0.400       |
| 13987    | 4    | 64,236         | 69803         | \$39.72 | 1              | 64,073 | 128   | 98.025           | 1.05933       | 94.000 | 93.835 | 0.165         | 0.850    | 1.100 | -0.250       |
| 14461    | 4    | 52,159         | 149856        | \$38.00 | 1              | 26,632 | 58    | 96.154           | 1.04775       | 94.000 | 93.752 | 0.248         | 0.949    | 1.100 | -0.151       |
| 14208    | 2    | 62,414         | 14208B        | \$36.87 | 1              | 29,591 | 59    | 95.095           | 1.03936       | 94.000 | 93.192 | 0.808         | 0.726    | 1.100 | -0.374       |
| 12833    | 2    | 19,652         | 12833         | \$46.00 | 3              | 9,497  | 19    | 94.287           | 1.04289       | 94.000 | 93.132 | 0.868         | 0.732    | 1.100 | -0.368       |
| 14208    | 2    | 62,414         | 14208A        | \$34.82 | 1              | 31,109 | 62    | 94.273           | 1.03271       | 94.000 | 94.526 | 0.526         | 0.927    | 1.100 | -0.173       |
| 12833    | 2    | 19,652         | 12833         | \$46.00 | 2              | 7,500  | 15    | 93.032           | 1.03729       | 94.000 | 93.173 | 0.827         | 0.811    | 1.100 | -0.289       |
| 14206    | 2    | 10,060         | 14206         | \$36.59 | 1              | 3,500  | 8     | 92.673           | 1.03500       | 94.000 | 94.100 | 0.100         | 1.236    | 1.100 | 0.136        |
| 14304    | 2    | 22,591         | 140304        | \$38.00 | 1              | 18,897 | 38    | 92.591           | 1.02580       | 94.000 | 93.221 | 0.779         | 0.850    | 1.100 | -0.250       |
| 14275    | 1    | 53,313         | 151027        | \$35.25 | 1              | 17,821 | 34    | 92.280           | 1.02555       | 94.000 | 93.838 | 0.162         | 1.139    | 1.100 | 0.039        |
| 14275    | 1    | 53,313         | 151029        | \$37.00 | 1              | 52,598 | 112   | 91.848           | 1.00961       | 94.000 | 93.507 | 0.493         | 1.043    | 1.100 | -0.057       |
| 14199    | 2    | 18,000         | 252           | \$36.00 | 1              | 10,090 | 21    | 90.632           | 1.02172       | 94.000 | 92.967 | 1.033         | 0.740    | 1.100 | -0.360       |
| 14301    | 4    | 34,448         | 138008        | \$33.35 | 1              | 22,558 | 45    | 89.918           | 1.00473       | 94.000 | 93.030 | 0.970         | 0.810    | 1.100 | -0.290       |
| 14461    | 4    | 52,159         | 149855A       | \$33.50 | 1              | 18,013 | 36    | 89.818           | 1.00785       | 94.000 | 93.367 | 0.633         | 1.058    | 1.100 | -0.042       |
| 13547    | 2    | 21,910         | 13547A        | \$40.00 | 1              | 14,414 | 29    | 87.386           | 0.99582       | 94.000 | 93.617 | 0.383         | 1.265    | 1.100 | 0.165        |
| 13094    | 2    | 18,785         | 13094B1       | \$35.88 | 1              | 13,846 | 28    | 86.972           | 0.99375       | 94.000 | 93.982 | 0.018         | 1.338    | 1.100 | 0.238        |
| 14397    | 2    | 21,663         | 14397T1       | \$38.00 | 1              | 7,219  | 15    | 86.688           | 1.00516       | 94.000 | 93.500 | 0.500         | 1.263    | 1.100 | 0.163        |
| 14199    | 2    | 18,000         | 246A          | \$36.00 | 1              | 6,000  | 12    | 85.195           | 1.00258       | 94.000 | 93.092 | 0.908         | 1.044    | 1.100 | -0.056       |
| 14397    | 2    | 21,663         | 14397B2       | \$32.00 | 2              | 4,678  | 10    | 82.641           | 0.99373       | 94.000 | 92.720 | 1.280         | 0.760    | 1.100 | -0.340       |
| 14461    | 4    | 52,159         | 149855        | \$33.50 | 1              | 9,000  | 18    | 81.988           | 0.97199       | 94.000 | 93.317 | 0.683         | 1.338    | 1.100 | 0.238        |
| 14397    | 2    | 21,663         | 14397B        | \$32.03 | 1              | 8,367  | 16    | 79.681           | 0.96161       | 94.000 | 93.300 | 0.700         | 1.418    | 1.100 | 0.318        |
| 14397    | 2    | 21,663         | 14397B2       | \$32.00 | 1              | 2,500  | 5     | 77.520           | 0.99747       | 94.000 | 92.860 | 1.140         | 1.074    | 1.100 | -0.026       |
| 13547    | 2    | 21,910         | 547DET        | \$40.00 | 1              | 4,699  | 10    | 74.336           | 0.94672       | 94.000 | 93.650 | 0.350         | 1.741    | 1.100 | 0.641        |
| 13547    | 2    | 21,910         | 13547         | \$40.00 | 1              | 2,500  | 5     | 71.309           | 0.96802       | 94.000 | 92.760 | 1.240         | 1.244    | 1.100 | 0.144        |
| 14204    | 2    | 3,381          | 250           | \$36.55 | 1              | 3,149  | 7     | 70.479           | 0.94110       | 94.000 | 92.829 | 1.171         | 1.465    | 1.100 | 0.365        |

## Totals - Grading: S

|             |         |                   | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|---------|-------------------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| Processes:  | 28      | Best:             | 100.000          | 1.05933       |        |        | 0.018         | 0.216    | 1.100 | -0.884       |
| Tests:      | 814     | Worst:            | 70.479           | 0.94110       |        |        | 1.280         | 1.741    | 1.100 | 0.641        |
| Total Tons: | 398,639 | Weighted Average: | 91.975           | 1.02289       | 94.000 | 93.561 | 0.439         | 0.971    | 1.100 | -0.129       |

**Mat Density Process Information**

**Grading: SG**

| Subacct. | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|----------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| 14301    | 4    | 34,448         | 138007        | \$29.35 | 1              | 5,813  | 12    | 99.553           | 1.04500       | 94.000 | 93.600 | 0.400         | 0.705    | 1.100 | -0.395       |
| 13897    | 1    | 18,192         | 53327-1       | \$36.50 | 1              | 10,970 | 24    | 90.491           | 1.01920       | 94.000 | 93.021 | 0.979         | 0.785    | 1.100 | -0.315       |

**Totals - Grading: SG**

|             |        |    |  |  |  |  |                   | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|--------|----|--|--|--|--|-------------------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| Processes:  |        | 2  |  |  |  |  | Best:             | 99.553           | 1.04500       |        |        | 0.400         | 0.705    | 1.100 | -0.395       |
| Tests:      |        | 36 |  |  |  |  | Worst:            | 90.491           | 1.01920       |        |        | 0.979         | 0.785    | 1.100 | -0.315       |
| Total Tons: | 16,783 |    |  |  |  |  | Weighted Average: | 93.630           | 1.02814       | 94.000 | 93.222 | 0.778         | 0.757    | 1.100 | -0.343       |

**Grading: SMA**

| Subacct. | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|----------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| 14236    | 6    | 26,404         | 147033        | \$49.50 | 1              | 28,160 | 55    | 99.342           | 1.05500       | 95.000 | 95.435 | 0.435         | 0.646    | 1.100 | -0.454       |

**Totals - Grading: SMA**

|             |        |    |  |  |  |  |                   | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|--------|----|--|--|--|--|-------------------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| Processes:  |        | 1  |  |  |  |  | Best:             | 99.342           | 1.05500       |        |        | 0.435         | 0.646    | 1.100 | -0.454       |
| Tests:      |        | 55 |  |  |  |  | Worst:            | 99.342           | 1.05500       |        |        | 0.435         | 0.646    | 1.100 | -0.454       |
| Total Tons: | 28,160 |    |  |  |  |  | Weighted Average: | 99.342           | 1.05500       | 95.000 | 95.435 | -0.435        | 0.646    | 1.100 | -0.454       |

# Mat Density Process Information

## Grading: SX

| Subacct. | Reg. | Plan<br>Quant. | Mix<br>Design | Price   | Process<br>No. | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|----------|------|----------------|---------------|---------|----------------|--------|-------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| 13897    | 1    | 18,192         | 53327-3       | \$38.00 | 1              | 2,029  | 3     | 100.000          | 1.02500       | 94.000 | 94.000 | 0.000         | 0.346    | 1.100 | -0.754       |
| 14320    | 5    | 1,273          | .320SX1       | \$57.50 | 1              | 1,340  | 3     | 100.000          | 1.02500       | 94.000 | 94.067 | 0.067         | 1.097    | 1.100 | -0.003       |
| 13998    | 5    | 38,175         | .998SX4       | \$44.77 | 1              | 11,244 | 23    | 99.433           | 1.05000       | 94.000 | 93.891 | 0.109         | 0.772    | 1.100 | -0.328       |
| 13868    | 3    | 37,071         | 3-58-34       | \$39.37 | 1              | 5,476  | 11    | 98.984           | 1.04500       | 94.000 | 94.327 | 0.327         | 0.811    | 1.100 | -0.289       |
| 13868    | 3    | 37,071         | 2-58-34       | \$39.95 | 1              | 6,741  | 14    | 98.570           | 1.04500       | 94.000 | 93.707 | 0.293         | 0.839    | 1.100 | -0.261       |
| 14305    | 1    | 59,309         | 3747Top       | \$42.25 | 1              | 56,661 | 114   | 98.549           | 1.06000       | 94.000 | 93.517 | 0.483         | 0.699    | 1.100 | -0.401       |
| 13897    | 1    | 18,192         | 53327-4       | \$44.00 | 1              | 9,815  | 23    | 97.211           | 1.05000       | 94.000 | 94.187 | 0.187         | 0.930    | 1.100 | -0.170       |
| 13998    | 5    | 38,175         | 98SX3B        | \$44.98 | 1              | 12,126 | 25    | 96.695           | 1.05000       | 94.000 | 94.616 | 0.616         | 0.772    | 1.100 | -0.328       |
| 13897    | 1    | 18,192         | 53327-4       | \$44.00 | 2              | 1,520  | 14    | 95.936           | 1.04500       | 94.000 | 94.729 | 0.729         | 0.760    | 1.100 | -0.340       |
| 13969    | 5    | 15,116         | .969SX2       | \$94.00 | 2              | 5,582  | 12    | 94.880           | 1.04500       | 94.000 | 93.933 | 0.067         | 1.096    | 1.100 | -0.004       |
| 13972    | 1    | 31,908         | 45985-1       | \$42.00 | 1              | 25,918 | 52    | 94.816           | 1.03844       | 94.000 | 94.410 | 0.410         | 0.958    | 1.100 | -0.142       |
| 14216    | 3    | 28,494         | 2403LW        | \$41.41 | 1              | 21,373 | 48    | 94.015           | 1.03347       | 94.000 | 94.631 | 0.631         | 0.882    | 1.100 | -0.218       |
| 14217    | 3    | 25,522         | 102703B       | \$36.28 | 1              | 22,830 | 46    | 93.764           | 1.03210       | 94.000 | 94.354 | 0.354         | 1.027    | 1.100 | -0.073       |
| 14439    | 3    | 36,296         | 3503C-3       | \$40.76 | 1              | 14,795 | 31    | 93.375           | 1.03397       | 94.000 | 94.139 | 0.139         | 1.102    | 1.100 | 0.002        |
| 13868    | 3    | 37,071         | 5-58-34       | \$39.29 | 1              | 7,775  | 16    | 91.133           | 1.02755       | 94.000 | 94.006 | 0.006         | 1.214    | 1.100 | 0.114        |
| 13969    | 5    | 15,116         | .969SX2       | \$94.00 | 1              | 8,000  | 16    | 90.869           | 1.02621       | 94.000 | 93.862 | 0.138         | 1.215    | 1.100 | 0.115        |
| 13333    | 3    | 3,853          | 6422A2        | \$45.38 | 1              | 2,890  | 6     | 88.972           | 1.03312       | 94.000 | 93.983 | 0.017         | 1.370    | 1.100 | 0.270        |
| 13972    | 1    | 31,908         | 45985-2       | \$37.14 | 1              | 6,025  | 13    | 88.323           | 1.01671       | 94.000 | 94.977 | 0.977         | 0.865    | 1.100 | -0.235       |
| 14353    | 1    | 5,388          | 4353619       | \$49.00 | 1              | 5,328  | 11    | 85.654           | 1.00677       | 94.000 | 93.355 | 0.645         | 1.237    | 1.100 | 0.137        |
| 13868    | 3    | 37,071         | 4-58-34       | \$39.75 | 1              | 3,962  | 8     | 76.305           | 0.96717       | 94.000 | 95.325 | 1.325         | 0.916    | 1.100 | -0.184       |
| 13922    | 5    | 2,129          | AC11-08       | \$72.00 | 1              | 1,468  | 3     | 33.803           | 0.74847       | 94.000 | 91.500 | 2.500         | 0.889    | 1.100 | -0.211       |

## Totals - Grading: SX

|             |         |                   | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|---------|-------------------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| Processes:  | 21      | Best:             | 100.000          | 1.06000       |        |        | 0.000         | 0.346    | 1.100 | -0.754       |
| Tests:      | 492     | Worst:            | 33.803           | 0.74847       |        |        | 2.500         | 1.370    | 1.100 | 0.270        |
| Total Tons: | 232,898 | Weighted Average: | 94.760           | 1.03914       | 94.000 | 94.080 | -0.080        | 0.900    | 1.100 | -0.200       |

## Mat Density - Totals 1/1/03 to 12/31/0

|             |         |                   | Quality<br>Level | Pay<br>Factor | TV     | Mean   | Mean<br>to TV | St. Dev. | V     | StDev<br>- V |
|-------------|---------|-------------------|------------------|---------------|--------|--------|---------------|----------|-------|--------------|
| Processes:  | 52      | Best:             | 100.000          | 1.06000       |        |        | 0.000         | 0.216    | 1.100 | -0.884       |
| Tests:      | 1397    | Worst:            | 33.803           | 0.74847       |        |        | 2.500         | 1.741    | 1.100 | 0.641        |
| Total Tons: | 676,480 | Weighted Average: | 93.282           | 1.02995       | 94.042 | 93.809 | 0.233         | 0.928    | 1.100 | -0.172       |

## Mat Density - Recap by Grading/Region

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

Processes with less than 3 tests not included.

Weighted average used for: Price, Pay Factor, St. Dev., Mean, and Quality Level

### Grading: S

|                  | Processes | Total Tons | Tests | Price   | Pay Factor | St. Dev. | Mean   | Quality Level |         |        |
|------------------|-----------|------------|-------|---------|------------|----------|--------|---------------|---------|--------|
|                  |           |            |       |         |            |          |        | Avg.          | High    | Low    |
| <i>Region 1</i>  | 3         | 72,610     | 152   | \$36.68 | 1.01429    | 1.042    | 93.571 | 92.200        | 100.000 | 91.848 |
| <i>Region 2</i>  | 20        | 185,753    | 377   | \$37.41 | 1.01625    | 0.982    | 93.530 | 90.145        | 100.000 | 70.479 |
| <i>Region 4</i>  | 5         | 140,276    | 285   | \$37.17 | 1.03614    | 0.920    | 93.596 | 94.283        | 98.025  | 81.988 |
| <i>Totals: S</i> | 28        | 398,639    | 814   | \$37.19 | 1.02289    | 0.971    | 93.561 | 91.975        | 100.000 | 70.479 |

### Grading: SG

|                   | Processes | Total Tons | Tests | Price   | Pay Factor | St. Dev. | Mean   | Quality Level |        |        |
|-------------------|-----------|------------|-------|---------|------------|----------|--------|---------------|--------|--------|
|                   |           |            |       |         |            |          |        | Avg.          | High   | Low    |
| <i>Region 1</i>   | 1         | 10,970     | 24    | \$36.50 | 1.01920    | 0.785    | 93.021 | 90.491        | 90.491 | 90.491 |
| <i>Region 4</i>   | 1         | 5,813      | 12    | \$29.35 | 1.04500    | 0.705    | 93.600 | 99.553        | 99.553 | 99.553 |
| <i>Totals: SG</i> | 2         | 16,783     | 36    | \$34.02 | 1.02814    | 0.757    | 93.222 | 93.630        | 99.553 | 90.491 |

### Grading: SMA

|                    | Processes | Total Tons | Tests | Price   | Pay Factor | St. Dev. | Mean   | Quality Level |        |        |
|--------------------|-----------|------------|-------|---------|------------|----------|--------|---------------|--------|--------|
|                    |           |            |       |         |            |          |        | Avg.          | High   | Low    |
| <i>Region 6</i>    | 1         | 28,160     | 55    | \$49.50 | 1.05500    | 0.646    | 95.435 | 99.342        | 99.342 | 99.342 |
| <i>Totals: SMA</i> | 1         | 28,160     | 55    | \$49.50 | 1.05500    | 0.646    | 95.435 | 99.342        | 99.342 | 99.342 |

### Grading: SX

|                   | Processes | Total Tons | Tests | Price   | Pay Factor | St. Dev. | Mean   | Quality Level |         |        |
|-------------------|-----------|------------|-------|---------|------------|----------|--------|---------------|---------|--------|
|                   |           |            |       |         |            |          |        | Avg.          | High    | Low    |
| <i>Region 1</i>   | 7         | 107,296    | 230   | \$42.34 | 1.04793    | 0.813    | 93.894 | 96.301        | 100.000 | 85.654 |
| <i>Region 3</i>   | 8         | 85,842     | 180   | \$39.55 | 1.03122    | 0.999    | 94.334 | 93.264        | 98.984  | 76.305 |
| <i>Region 5</i>   | 6         | 39,760     | 82    | \$63.09 | 1.03254    | 0.922    | 94.030 | 93.832        | 100.000 | 33.803 |
| <i>Totals: SX</i> | 21        | 232,898    | 492   | \$44.86 | 1.03914    | 0.900    | 94.080 | 94.760        | 100.000 | 33.803 |

### Statewide Totals

| Processes | Total Tons | Tests | Price   | Pay Factor | St. Dev. | Mean   | Avg.   | High    | Low    |
|-----------|------------|-------|---------|------------|----------|--------|--------|---------|--------|
| 52        | 676,480    | 1,397 | \$40.26 | 1.02995    | 0.928    | 93.809 | 93.282 | 100.000 | 33.803 |

## Gradation - Process Information

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

Processes with less than 3 tests not included.

### Grading: S

| Subacct. | Reg. | Plan Quant. | Price   | Mix Design | Process No. | Tons   | Tests | Quality Level | Pay Factor | Key Sieve  |
|----------|------|-------------|---------|------------|-------------|--------|-------|---------------|------------|------------|
| 14397    | 2    | 21663       | \$38.00 | 14397T1    | 1           | 8,219  | 4     | 100.000       | 1.03000    | All QLS100 |
| 14397    | 2    | 21663       | \$32.03 | 14397B     | 1           | 8,867  | 4     | 100.000       | 1.03000    | All QLS100 |
| 14208    | 2    | 62414       | \$36.87 | 14208B     | 1           | 30,091 | 15    | 99.521        | 1.05000    | No. 4      |
| 14461    | 4    | 52159       | \$33.50 | 149855     | 1           | 9,000  | 6     | 98.651        | 1.03500    | No. 200    |
| 14301    | 4    | 34448       | \$33.35 | 138008     | 1           | 35,522 | 18    | 98.550        | 1.05000    | No. 4      |
| 14461    | 4    | 52159       | \$38.00 | 149856     | 1           | 26,632 | 17    | 95.022        | 1.04636    | No. 4      |
| 13987    | 4    | 64236       | \$39.72 | 69803      | 1           | 64,073 | 33    | 93.440        | 1.03357    | No. 8      |
| 14275    | 1    | 53313       | \$37.00 | 151029     | 1           | 54,581 | 27    | 90.695        | 1.01882    | No. 8      |
| 14208    | 2    | 62414       | \$34.82 | 14208A     | 1           | 31,109 | 16    | 90.647        | 1.02507    | No. 4      |
| 14461    | 4    | 52159       | \$33.50 | 149855A    | 1           | 18,013 | 10    | 89.233        | 1.02478    | No. 4      |
| 14275    | 1    | 53313       | \$35.25 | 151027     | 1           | 33,516 | 17    | 82.886        | 0.97967    | No. 30     |
| 13094    | 2    | 18785       | \$35.88 | 13094B1    | 1           | 13,846 | 7     | 82.477        | 1.00488    | No. 8      |
| 14304    | 2    | 22591       | \$38.00 | 140304     | 1           | 19,397 | 10    | 82.042        | 0.99064    | No. 8      |
| 14199    | 2    | 18000       | \$36.00 | 252        | 1           | 10,090 | 6     | 80.775        | 1.00238    | No. 30     |
| 13547    | 2    | 21910       | \$40.00 | 13547A     | 1           | 14,414 | 8     | 79.540        | 0.98443    | No. 4      |
| 14397    | 2    | 21663       | \$32.00 | 14397B2    | 1           | 8,178  | 4     | 79.305        | 1.01755    | No. 4      |
| 13094    | 2    | 18785       | \$39.69 | 13094T     | 1           | 7,019  | 4     | 78.050        | 1.01306    | No. 4      |
| 12833    | 2    | 19652       | \$46.00 | 12833      | 1           | 18,997 | 10    | 77.777        | 0.96727    | 3/8        |
| 14227    | 1    | 3028        | \$40.54 | 153546     | 1           | 1,781  | 5     | 73.663        | 0.97980    | No. 4      |
| 14206    | 2    | 10060       | \$36.59 | 14206      | 1           | 8,178  | 5     | 71.400        | 0.96849    | No. 200    |
| 13547    | 2    | 21910       | \$40.00 | 3547DET    | 1           | 4,699  | 3     | 68.717        | 0.99594    | No. 8      |
| 14199    | 2    | 18000       | \$36.00 | 246A       | 1           | 6,000  | 3     | 54.428        | 0.91968    | 1/2        |

### Totals Grading: S

|            |         |                   |  | Quality Level | Pay Factor | Key Sieve Count |   |
|------------|---------|-------------------|--|---------------|------------|-----------------|---|
|            |         |                   |  |               |            | 1/2"            | 1 |
|            |         |                   |  |               |            | 3/8"            | 1 |
| Processes  | 22      | Best:             |  | 100.000       | 1.05000    | No. 4           | 9 |
| Tests      | 232     | Worst:            |  | 54.428        | 0.91968    | No. 8           | 5 |
|            |         |                   |  |               |            | No. 30          | 2 |
| Total Tons | 432,222 | Weighted Average: |  | 89.071        | 1.01751    | No. 200         | 2 |

**Gradation Process Information**

**Grading: SG**

| Subacct. | Reg. | Plan Quant. | Price   | Mix Design | Process No. | Tons   | Tests | Quality Level | Pay Factor | Key Sieve |
|----------|------|-------------|---------|------------|-------------|--------|-------|---------------|------------|-----------|
| 13897    | 1    | 18192       | \$36.50 | 153327-1   | 1           | 11,470 | 6     | 87.942        | 1.02977    | No. 200   |
| 14301    | 4    | 34448       | \$29.35 | 138007     | 1           | 5,813  | 3     | 66.265        | 0.98531    | No. 200   |

**Totals Grading: SG**

SG

|            |        |                   |               |            | Key Sieve Count |   |
|------------|--------|-------------------|---------------|------------|-----------------|---|
|            |        |                   | Quality Level | Pay Factor | 1/2"            | 0 |
| Processes  | 2      | Best:             | 87.942        | 1.02977    | 3/8"            | 0 |
|            |        | Worst:            | 66.265        | 0.98531    | No. 4           | 0 |
| Tests      | 9      |                   |               |            | No. 8           | 0 |
|            |        |                   |               |            | No. 30          | 0 |
| Total Tons | 17,283 | Weighted Average: | 80.651        | 1.01482    | No. 200         | 2 |

|            |        |
|------------|--------|
| Processes  | 2      |
| Tests      | 9      |
| Total Tons | 17,283 |

|                   |        |         |
|-------------------|--------|---------|
| Best:             | 87.942 | 1.02977 |
| Worst:            | 66.265 | 0.98531 |
| Weighted Average: | 80.651 | 1.01482 |

**Grading: SMA**

| Subacct. | Reg. | Plan Quant. | Price   | Mix Design | Process No. | Tons   | Tests | Quality Level | Pay Factor | Key Sieve |
|----------|------|-------------|---------|------------|-------------|--------|-------|---------------|------------|-----------|
| 14236    | 6    | 26404       | \$49.50 | 147033     | 1           | 27,869 | 13    | 92.154        | 1.03471    | 3/8       |

**Totals Grading: SMA**

| <i>SMA</i> |        |                   |               |            | Key Sieve Count |   |
|------------|--------|-------------------|---------------|------------|-----------------|---|
|            |        |                   | Quality Level | Pay Factor | 1/2"            | 0 |
| Processes  | 1      | Best:             | 92.154        | 1.03471    | 3/8"            | 1 |
|            |        |                   |               |            | No. 4           | 0 |
| Tests      | 13     | Worst:            | 92.154        | 1.03471    | No. 8           | 0 |
|            |        |                   |               |            | No. 30          | 0 |
| Total Tons | 27,869 | Weighted Average: | 92.154        | 1.03471    | No. 200         | 0 |

|            |        |
|------------|--------|
| Processes  | 1      |
| Tests      | 13     |
| Total Tons | 27,869 |

|                   |        |         |
|-------------------|--------|---------|
| Best:             | 92.154 | 1.03471 |
| Worst:            | 92.154 | 1.03471 |
| Weighted Average: | 92.154 | 1.03471 |

**Gradation Process Information**

**Grading: SX**

| Subacct. | Reg. | Plan Quant. | Price   | Mix Design | Process No. | Tons   | Tests | Quality Level | Pay Factor | Key Sieve  |
|----------|------|-------------|---------|------------|-------------|--------|-------|---------------|------------|------------|
| 13868    | 3    | 37071       | \$39.95 | 2-58-34    | 1           | 6,000  | 6     | 100.000       | 1.03500    | All QLs100 |
| 13972    | 1    | 31908       | \$37.14 | 145985-2   | 1           | 6,025  | 4     | 100.000       | 1.03000    | All QLs100 |
| 13972    | 1    | 31908       | \$42.00 | 145985-1   | 1           | 25,918 | 13    | 99.378        | 1.04500    | No. 8      |
| 13868    | 3    | 37071       | \$36.15 | 2-58-28    | 1           | 5,854  | 7     | 98.107        | 1.03500    | No. 8      |
| 14216    | 3    | 28494       | \$38.82 | 102403B    | 1           | 13,073 | 7     | 97.340        | 1.03500    | No. 200    |
| 13969    | 5    | 15116       | \$94.00 | 3969SX2    | 1           | 15,082 | 8     | 92.970        | 1.04000    | No. 8      |
| 13998    | 5    | 38175       | \$44.77 | 3998SX4    | 1           | 11,244 | 6     | 92.777        | 1.03500    | No. 200    |
| 14305    | 1    | 59309       | \$42.25 | 18747Top   | 1           | 57,161 | 29    | 90.196        | 1.01448    | No. 4      |
| 14216    | 3    | 28494       | \$41.41 | 102403LW   | 1           | 21,873 | 13    | 89.217        | 1.02108    | No. 200    |
| 13998    | 5    | 38175       | \$34.84 | 998SF4A    | 1           | 4,992  | 3     | 85.472        | 1.02500    | No. 200    |
| 14217    | 3    | 25522       | \$36.28 | 102703B    | 1           | 23,330 | 12    | 84.656        | 0.99978    | 1/2        |
| 13868    | 3    | 37071       | \$39.37 | 3-58-34    | 1           | 5,475  | 6     | 82.768        | 1.01072    | No. 8      |
| 13868    | 3    | 37071       | \$36.01 | 58-28      | 1           | 7,320  | 6     | 80.870        | 1.00279    | No. 4      |
| 13998    | 5    | 38175       | \$44.98 | 998SX3B    | 1           | 12,126 | 6     | 80.122        | 0.99952    | No. 200    |
| 13897    | 1    | 18192       | \$44.00 | 153327-4   | 1           | 12,335 | 6     | 78.159        | 0.99058    | No. 4      |
| 14353    | 1    | 5388        | \$49.00 | 14353619   | 1           | 5,328  | 3     | 77.281        | 1.02500    | 3/8        |
| 14439    | 3    | 36296       | \$40.76 | 13503C-3   | 1           | 15,295 | 8     | 72.803        | 0.94695    | 3/8        |
| 13868    | 3    | 37071       | \$39.29 | 5-58-34    | 1           | 7,775  | 4     | 69.868        | 0.97815    | No. 4      |
| 13998    | 5    | 38175       | \$43.86 | 3998SF4    | 1           | 10,359 | 6     | 65.983        | 0.92302    | No. 200    |

**Totals Grading: SX**

|            |         |                   |         | Quality Level | Pay Factor | Key Sieve Count |   |
|------------|---------|-------------------|---------|---------------|------------|-----------------|---|
|            |         |                   |         |               |            | 1/2"            | 1 |
|            |         |                   |         |               |            | 3/8"            | 2 |
| Processes  | 19      | Best:             | 100.000 | 1.04500       |            | No. 4           | 4 |
| Tests      | 153     | Worst:            | 65.983  | 0.92302       |            | No. 8           | 4 |
|            |         |                   |         |               |            | No. 30          | 0 |
| Total Tons | 266,565 | Weighted Average: | 87.453  | 1.01102       |            | No. 200         | 6 |

**Gradation Totals 1/1/03 to 12/31/03**

|            |         |                   |         | Quality Level | Pay Factor | Key Sieve Count |    |
|------------|---------|-------------------|---------|---------------|------------|-----------------|----|
|            |         |                   |         |               |            | 1/2"            | 2  |
|            |         |                   |         |               |            | 3/8"            | 4  |
| Processes  | 44      | Best:             | 100.000 | 1.05000       |            | No. 4           | 13 |
| Tests      | 407     | Worst:            | 54.428  | 0.91968       |            | No. 8           | 9  |
|            |         |                   |         |               |            | No. 30          | 2  |
| Total Tons | 743,939 | Weighted Average: | 88.411  | 1.01577       |            | No. 200         | 10 |

## Gradation - Process Information - Recap by Grading/Region

Criteria: Projects with Bid Dates from 1/1/03 to 12/31/03.

Processes with less than 3 tests not included.

| <b>Grading: S</b> |           |         |       |         |            | Quality Level |         |        |
|-------------------|-----------|---------|-------|---------|------------|---------------|---------|--------|
|                   |           |         |       |         |            | Avg.          | High    | Low    |
|                   | Processes | Tons    | Tests | Price   | Pay Factor |               |         |        |
| <b>Region 4</b>   | 5         | 153,240 | 84    | \$36.85 | 1.03865    | 94.711        | 98.651  | 89.233 |
| <b>Region 2</b>   | 14        | 189,104 | 99    | \$37.44 | 1.00707    | 85.273        | 100.000 | 54.428 |
| <b>Region 1</b>   | 3         | 89,878  | 49    | \$36.42 | 1.00345    | 87.445        | 90.695  | 73.663 |
| <b>Totals: S</b>  | 22        | 432,222 | 232   | \$37.02 | 1.01751    | 89.071        | 100.000 | 54.428 |

| <b>Grading: SG</b> |           |        |       |         |            | Quality Level |        |        |
|--------------------|-----------|--------|-------|---------|------------|---------------|--------|--------|
|                    |           |        |       |         |            | Avg.          | High   | Low    |
|                    | Processes | Tons   | Tests | Price   | Pay Factor |               |        |        |
| <b>Region 4</b>    | 1         | 5,813  | 3     | \$29.35 | 0.98531    | 66.265        | 66.265 | 66.265 |
| <b>Region 1</b>    | 1         | 11,470 | 6     | \$36.50 | 1.02977    | 87.942        | 87.942 | 87.942 |
| <b>Totals: SG</b>  | 2         | 17,283 | 9     | \$34.10 | 1.01482    | 80.651        | 87.942 | 66.265 |

| <b>Grading: SMA</b> |           |        |       |         |            | Quality Level |        |        |
|---------------------|-----------|--------|-------|---------|------------|---------------|--------|--------|
|                     |           |        |       |         |            | Avg.          | High   | Low    |
|                     | Processes | Tons   | Tests | Price   | Pay Factor |               |        |        |
| <b>Region 6</b>     | 1         | 27,869 | 13    | \$49.50 | 1.03471    | 92.154        | 92.154 | 92.154 |
| <b>Totals: SMA</b>  | 1         | 27,869 | 13    | \$49.50 | 1.03471    | 92.154        | 92.154 | 92.154 |

| <b>Grading: SX</b> |           |         |       |         |            | Quality Level |         |        |
|--------------------|-----------|---------|-------|---------|------------|---------------|---------|--------|
|                    |           |         |       |         |            | Avg.          | High    | Low    |
|                    | Processes | Tons    | Tests | Price   | Pay Factor |               |         |        |
| <b>Region 5</b>    | 5         | 53,803  | 29    | \$57.52 | 1.00592    | 84.142        | 92.970  | 65.983 |
| <b>Region 3</b>    | 9         | 105,995 | 69    | \$38.86 | 1.00402    | 85.619        | 100.000 | 69.868 |
| <b>Region 1</b>    | 5         | 106,767 | 55    | \$42.44 | 1.02053    | 90.943        | 100.000 | 77.281 |
| <b>Totals: SX</b>  | 19        | 266,565 | 153   | \$44.06 | 1.01102    | 87.453        | 100.000 | 65.983 |

| <b>Statewide Totals</b> |           |         |       |         |            | Quality Level |         |        |
|-------------------------|-----------|---------|-------|---------|------------|---------------|---------|--------|
|                         |           |         |       |         |            | Avg.          | High    | Low    |
|                         | Processes | Tons    | Tests | Price   | Pay Factor |               |         |        |
|                         | 44        | 743,939 | 407   | \$39.94 | 1.01577    | 88.411        | 100.000 | 54.428 |

## Gradation - Standard Deviation Information

Criteria: Projects with Bid Dates from 1/1/2003 to 12/31/2003.

Processes with less than 3 tests not included.

### Grading S

| Subacct. | Reg. | Plan Quant. | Price   | Tons   | Tests | Key Sieve | Standard Deviation |       |       |       |       |        |         |
|----------|------|-------------|---------|--------|-------|-----------|--------------------|-------|-------|-------|-------|--------|---------|
|          |      |             |         |        |       |           | 3/4"               | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 14199    | 2    | 18,000      | \$36.00 | 6,000  | 3     | 1/2       | 0.000              | 2.100 | 2.100 | 3.100 | 2.100 | 1.200  | 0.360   |
| 14199    | 2    | 18,000      | \$36.00 | 10,090 | 6     | No. 30    | 0.000              | 1.200 | 1.000 | 2.100 | 1.900 | 3.100  | 1.200   |
| 14227    | 1    | 3,028       | \$40.54 | 1,781  | 5     | No. 4     | 0.700              | 1.900 | 3.700 | 4.100 | 2.900 | 1.600  | 1.220   |
| 14206    | 2    | 10,060      | \$36.59 | 8,178  | 5     | No. 200   | 0.000              | 0.500 | 0.700 | 1.100 | 1.500 | 1.300  | 0.390   |
| 13987    | 4    | 64,236      | \$39.72 | 64,073 | 33    | No. 8     | 0.300              | 1.900 | 2.400 | 1.900 | 1.500 | 1.200  | 0.490   |
| 14301    | 4    | 34,448      | \$33.35 | 35,522 | 18    | No. 4     |                    | 1.700 | 2.600 | 1.900 | 1.500 | 1.000  | 0.460   |
| 13547    | 2    | 21,910      | \$40.00 | 14,414 | 8     | No. 4     | 0.700              | 1.700 | 1.900 | 3.100 | 1.600 | 2.100  | 1.070   |
| 13547    | 2    | 21,910      | \$40.00 | 4,699  | 3     | No. 8     | 0.000              | 2.300 | 2.000 | 1.700 | 2.100 | 0.600  | 0.210   |
| 14275    | 1    | 53,313      | \$35.25 | 33,516 | 17    | No. 30    | 1.100              | 2.300 | 2.600 | 2.900 | 2.500 | 1.400  | 0.620   |
| 14275    | 1    | 53,313      | \$37.00 | 54,581 | 27    | No. 8     | 1.000              | 2.100 | 2.300 | 2.300 | 2.000 | 1.300  | 0.610   |
| 13094    | 2    | 18,785      | \$35.88 | 13,846 | 7     | No. 8     | 0.400              | 1.400 | 2.600 | 3.500 | 3.200 | 1.500  | 1.020   |
| 13094    | 2    | 18,785      | \$39.69 | 7,019  | 4     | No. 4     | 0.000              | 2.600 | 3.900 | 3.900 | 3.200 | 1.300  | 0.720   |
| 14397    | 2    | 21,663      | \$32.03 | 8,867  | 4     | QLs100    | 0.600              | 1.900 | 1.000 | 1.500 | 1.300 | 0.600  | 0.350   |
| 14397    | 2    | 21,663      | \$32.00 | 8,178  | 4     | No. 4     | 0.000              | 2.100 | 4.100 | 4.200 | 4.000 | 2.600  | 0.490   |
| 14397    | 2    | 21,663      | \$38.00 | 8,219  | 4     | QLs100    | 0.000              | 1.500 | 2.200 | 1.300 | 2.600 | 1.700  | 0.410   |
| 14304    | 2    | 22,591      | \$38.00 | 19,397 | 10    | No. 8     | 0.500              | 2.000 | 2.900 | 2.700 | 3.000 | 2.100  | 0.390   |
| 14461    | 4    | 52,159      | \$33.50 | 9,000  | 6     | No. 200   | 0.000              | 1.200 | 1.500 | 1.700 | 2.000 | 1.300  | 0.790   |
| 14461    | 4    | 52,159      | \$33.50 | 18,013 | 10    | No. 4     | 0.300              | 2.600 | 2.900 | 2.600 | 1.500 | 0.800  | 0.630   |
| 14461    | 4    | 52,159      | \$38.00 | 26,632 | 17    | No. 4     | 0.000              | 2.100 | 2.400 | 2.600 | 2.500 | 1.400  | 0.670   |
| 12833    | 2    | 19,652      | \$46.00 | 18,997 | 10    | 3/8       | 0.000              | 1.800 | 3.300 | 3.300 | 3.200 | 2.300  | 0.790   |
| 14208    | 2    | 62,414      | \$34.82 | 31,109 | 16    | No. 4     | 0.000              | 2.400 | 2.600 | 3.000 | 2.800 | 1.800  | 0.920   |
| 14208    | 2    | 62,414      | \$36.87 | 30,091 | 15    | No. 4     | 0.300              | 1.300 | 2.200 | 2.000 | 1.700 | 0.900  | 0.310   |

### Totals Grading: S

|                      |         |                   | 3/4"  | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
|----------------------|---------|-------------------|-------|-------|-------|-------|-------|--------|---------|
| Number of Processes: | 22      | Best:             | 0.000 | 0.500 | 0.700 | 1.100 | 1.300 | 0.600  | 0.210   |
| Total Tons:          | 432,222 | Worst:            | 1.100 | 2.600 | 4.100 | 4.200 | 4.000 | 3.100  | 1.220   |
|                      |         | Weighted Average: | 0.396 | 1.910 | 2.430 | 2.440 | 2.142 | 1.427  | 0.612   |
|                      |         | Key Sieve Count   |       | 1     | 1     | 9     | 5     | 2      | 2       |

**Grading SG**

| Subacct. | Reg. | Plan Quant. | Price   | Tons   | Tests | Key Sieve |      |       |       |       |       |        |         |
|----------|------|-------------|---------|--------|-------|-----------|------|-------|-------|-------|-------|--------|---------|
|          |      |             |         |        |       |           | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 13897    | 1    | 18,192      | \$36.50 | 11,470 | 6     | No. 200   |      | 2.100 | 2.900 | 3.000 | 1.400 | 1.000  | 1.170   |
| 14301    | 4    | 34,448      | \$29.35 | 5,813  | 3     | No. 200   |      | 4.200 | 3.800 | 4.000 | 4.000 | 1.700  | 1.360   |

**Totals Grading: SG**

|                      |        |  |  |  |  |                   | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
|----------------------|--------|--|--|--|--|-------------------|------|-------|-------|-------|-------|--------|---------|
| Number of Processes: | 2      |  |  |  |  | Best:             |      | 2.100 | 2.900 | 3.000 | 1.400 | 1.000  | 1.170   |
| Total Tons:          | 17,283 |  |  |  |  | Worst:            |      | 4.200 | 3.800 | 4.000 | 4.000 | 1.700  | 1.360   |
|                      |        |  |  |  |  | Weighted Average: |      | 2.806 | 3.203 | 3.336 | 2.274 | 1.235  | 1.234   |
|                      |        |  |  |  |  | Key Sieve Count   |      | 0     | 0     | 0     | 0     | 0      | 2       |

**Grading SMA**

| Subacct. | Reg. | Plan<br>Quant. | Price   | Tons   | Tests | Key<br>Sieve | Standard Deviation |       |       |       |       |        |         |
|----------|------|----------------|---------|--------|-------|--------------|--------------------|-------|-------|-------|-------|--------|---------|
|          |      |                |         |        |       |              | 3/4"               | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 14236    | 6    | 26,404         | \$49.50 | 27,869 | 13    | 3/8          |                    | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |

**Totals Grading: SMA**

|                      |        |  |  |  |  |                   | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
|----------------------|--------|--|--|--|--|-------------------|------|-------|-------|-------|-------|--------|---------|
| Number of Processes: | 1      |  |  |  |  | Best:             |      | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |
| Total Tons:          | 27,869 |  |  |  |  | Worst:            |      | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |
|                      |        |  |  |  |  | Weighted Average: |      | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |
|                      |        |  |  |  |  | Key Sieve Count   |      | 0     | 1     | 0     | 0     | 0      | 0       |

**Grading SX**

| Subacct. | Reg. | Plan<br>Quant. | Price   | Tons   | Tests | Key<br>Sieve |      |       |       |       |       |        |         |
|----------|------|----------------|---------|--------|-------|--------------|------|-------|-------|-------|-------|--------|---------|
|          |      |                |         |        |       |              | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 14305    | 1    | 59,309         | \$42.25 | 57,161 | 29    | No. 4        |      | 1.800 | 2.800 | 3.000 | 2.600 | 1.900  | 0.630   |
| 13868    | 3    | 37,071         | \$36.15 | 5,854  | 7     | No. 8        |      | 0.500 | 2.000 | 1.800 | 1.800 | 1.000  | 0.540   |
| 13868    | 3    | 37,071         | \$39.95 | 6,000  | 6     | QLs100       |      | 1.000 | 1.600 | 1.500 | 1.200 | 0.800  | 0.410   |
| 13868    | 3    | 37,071         | \$39.37 | 5,475  | 6     | No. 8        |      | 0.800 | 2.100 | 3.000 | 2.400 | 1.300  | 0.350   |
| 13868    | 3    | 37,071         | \$39.29 | 7,775  | 4     | No. 4        |      | 0.600 | 2.400 | 3.800 | 2.900 | 1.500  | 0.550   |
| 13868    | 3    | 37,071         | \$36.01 | 7,320  | 6     | No. 4        |      | 0.500 | 1.300 | 2.000 | 2.000 | 1.000  | 0.350   |
| 14217    | 3    | 25,522         | \$36.28 | 23,330 | 12    | 1/2          |      | 2.600 | 2.700 | 3.200 | 2.100 | 1.300  | 0.440   |
| 13972    | 1    | 31,908         | \$42.00 | 25,918 | 13    | No. 8        |      | 0.600 | 1.300 | 1.900 | 2.000 | 1.100  | 0.450   |
| 13972    | 1    | 31,908         | \$37.14 | 6,025  | 4     | QLs100       |      | 0.000 | 1.400 | 1.400 | 1.300 | 0.600  | 0.320   |
| 13897    | 1    | 18,192         | \$44.00 | 12,335 | 6     | No. 4        |      | 0.600 | 1.600 | 3.100 | 2.600 | 2.900  | 1.070   |
| 13998    | 5    | 38,175         | \$43.86 | 10,359 | 6     | No. 200      |      | 0.000 | 1.800 | 4.300 | 3.400 | 2.400  | 2.050   |
| 13998    | 5    | 38,175         | \$34.84 | 4,992  | 3     | No. 200      |      |       | 1.000 | 2.600 | 3.200 | 1.500  | 1.800   |
| 13998    | 5    | 38,175         | \$44.98 | 12,126 | 6     | No. 200      |      |       | 0.400 | 1.900 | 3.100 | 1.700  | 0.570   |
| 13998    | 5    | 38,175         | \$44.77 | 11,244 | 6     | No. 200      |      |       | 0.000 | 1.500 | 2.500 | 2.100  | 1.270   |
| 14216    | 3    | 28,494         | \$38.82 | 13,073 | 7     | No. 200      |      | 1.800 | 2.100 | 1.700 | 1.300 | 1.100  | 1.010   |
| 14216    | 3    | 28,494         | \$41.41 | 21,873 | 13    | No. 200      |      | 1.800 | 2.200 | 2.800 | 2.200 | 1.700  | 1.190   |
| 14353    | 1    | 5,388          | \$49.00 | 5,328  | 3     | 3/8          |      | 0.600 | 1.500 | 2.500 | 3.000 | 1.500  | 0.250   |
| 14439    | 3    | 36,296         | \$40.76 | 15,295 | 8     | 3/8          |      | 2.300 | 5.000 | 3.100 | 2.700 | 1.300  | 0.450   |
| 13969    | 5    | 15,116         | \$94.00 | 15,082 | 8     | No. 8        |      | 0.500 | 1.600 | 1.700 | 1.700 | 1.300  | 0.610   |

**Totals Grading: SX**

|                      |         |                   | 3/4" | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
|----------------------|---------|-------------------|------|-------|-------|-------|-------|--------|---------|
| Number of Processes: | 19      | Best:             |      | 0.000 | 0.000 | 1.400 | 1.200 | 0.600  | 0.250   |
| Total Tons:          | 266,565 | Worst:            |      | 2.600 | 5.000 | 4.300 | 3.400 | 2.900  | 2.050   |
|                      |         | Weighted Average: |      | 1.331 | 2.095 | 2.587 | 2.335 | 1.573  | 0.733   |
|                      |         | Key Sieve Count   |      | 1     | 2     | 4     | 4     | 0      | 6       |

**Gradation Totals** 1/1/2003 to 12/31/2003.

|                      |         |                   | Standard Deviation |       |       |       |       |        |         |
|----------------------|---------|-------------------|--------------------|-------|-------|-------|-------|--------|---------|
|                      |         |                   | 3/4"               | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| Number of Processes: | 44      | Best:             | 0.000              | 0.000 | 0.000 | 1.100 | 1.200 | 0.600  | 0.210   |
| Total Tons:          | 743,939 | Worst:            | 1.100              | 4.200 | 5.000 | 4.300 | 4.000 | 3.100  | 2.050   |
|                      |         | Weighted Average: | 0.396              | 1.785 | 2.372 | 2.497 | 2.197 | 1.459  | 0.664   |
|                      |         | Key Sieve Count   |                    | 2     | 4     | 13    | 9     | 2      | 10      |

## Gradation - Standard Deviation - Recap by Grading/Region

Criteria: Projects with Bid Dates from 1/1/2003 to 12/31/2003.

Processes with less than 3 tests not included.

### Grading: S

|                 | Processes | Tons    | Tests | Price   | Weighted Average |       |       |       |       |        |         |
|-----------------|-----------|---------|-------|---------|------------------|-------|-------|-------|-------|--------|---------|
|                 |           |         |       |         | 3/4"             | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| <i>Region 1</i> | 3         | 89,878  | 49    | \$36.42 | 1.031            | 2.171 | 2.440 | 2.559 | 2.204 | 1.343  | 0.626   |
| <i>Region 2</i> | 14        | 189,104 | 99    | \$37.44 | 0.210            | 1.771 | 2.406 | 2.666 | 2.467 | 1.693  | 0.656   |
| <i>Region 4</i> | 5         | 153,240 | 84    | \$36.85 | 0.209            | 1.930 | 2.452 | 2.092 | 1.703 | 1.147  | 0.548   |
| <i>Totals S</i> | 22        | 432,222 | 232   | \$37.02 | 0.396            | 1.910 | 2.430 | 2.440 | 2.142 | 1.427  | 0.612   |

### Grading: SG

|                  | Processes | Tons   | Tests | Price   | Weighted Average |       |       |       |       |        |         |
|------------------|-----------|--------|-------|---------|------------------|-------|-------|-------|-------|--------|---------|
|                  |           |        |       |         | 3/4"             | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| <i>Region 1</i>  | 1         | 11,470 | 6     | \$36.50 |                  | 2.100 | 2.900 | 3.000 | 1.400 | 1.000  | 1.170   |
| <i>Region 4</i>  | 1         | 5,813  | 3     | \$29.35 |                  | 4.200 | 3.800 | 4.000 | 4.000 | 1.700  | 1.360   |
| <i>Totals SG</i> | 2         | 17,283 | 9     | \$34.10 |                  | 2.806 | 3.203 | 3.336 | 2.274 | 1.235  | 1.234   |

### Grading: SMA

|                   | Processes | Tons   | Tests | Price   | Weighted Average |       |       |       |       |        |         |
|-------------------|-----------|--------|-------|---------|------------------|-------|-------|-------|-------|--------|---------|
|                   |           |        |       |         | 3/4"             | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| <i>Region 6</i>   | 1         | 27,869 | 13    | \$49.50 |                  | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |
| <i>Totals SMA</i> | 1         | 27,869 | 13    | \$49.50 |                  | 3.100 | 3.600 | 2.000 | 1.700 | 1.000  | 0.470   |

### Grading: SX

|                  | Processes | Tons    | Tests | Price   | Weighted Average |       |       |       |       |        |         |
|------------------|-----------|---------|-------|---------|------------------|-------|-------|-------|-------|--------|---------|
|                  |           |         |       |         | 3/4"             | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| <i>Region 1</i>  | 5         | 106,767 | 55    | \$42.44 |                  | 1.209 | 2.153 | 2.629 | 2.401 | 1.728  | 0.601   |
| <i>Region 3</i>  | 9         | 105,995 | 69    | \$38.86 |                  | 1.702 | 2.604 | 2.695 | 2.108 | 1.307  | 0.668   |
| <i>Region 5</i>  | 5         | 53,803  | 29    | \$57.52 |                  | 0.296 | 0.978 | 2.287 | 2.649 | 1.788  | 1.127   |
| <i>Totals SX</i> | 19        | 266,565 | 153   | \$44.06 |                  | 1.331 | 2.095 | 2.587 | 2.335 | 1.573  | 0.733   |

### Statewide Totals

| Processes | Tons    | Tests | Price   | Weighted Average |       |       |       |       |        |         |
|-----------|---------|-------|---------|------------------|-------|-------|-------|-------|--------|---------|
|           |         |       |         | 3/4"             | 1/2"  | 3/8"  | No. 4 | No. 8 | No. 30 | No. 200 |
| 44        | 743,939 | 407   | \$39.94 | 0.396            | 1.785 | 2.372 | 2.497 | 2.197 | 1.459  | 0.664   |

## Project Listing - Joint Density Projects, Gradation Acceptance

Projects with Bid Dates from 1/1/2002 to 12/31/2003.

### Region: 1

| Bid Date: | Subacct. | Project Code: | Location:          | Plan Quant: | JD Testing: |
|-----------|----------|---------------|--------------------|-------------|-------------|
| 02/27/03  | 13897    | NH 0852-088   | SH 85 - Sedalia    | 18,192      |             |
| 02/20/03  | 13972    | STA 0061-074  | Keystone/Loveland  | 31,908      |             |
| 01/30/03  | 14227    | SHE 0061-076  | Cleer Creek Canyon | 3,028       | No          |
| 03/13/03  | 14275    | STA 0362-026  | SH 36 Byers to Ara | 53,313      | No          |
| 01/09/03  | 14305    | IM 0702-241   | West Vail Pass Res | 59,309      |             |
| 05/01/03  | 14353    | NH 2854-099   | US 285 Parkview-Ke | 5,388       | No          |

|                |          |                 |          |               |          |                           |                |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|
| <b>Region:</b> | <b>1</b> | <b>Projects</b> | <b>6</b> | <b>Tested</b> | <b>3</b> | <b>Tested Quant. Plan</b> | <b>109,409</b> |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|

### Region: 2

| Bid Date: | Subacct. | Project Code: | Location:              | Plan Quant: | JD Testing: |
|-----------|----------|---------------|------------------------|-------------|-------------|
| 07/24/03  | 12833    | NH 1603-016   | West of Walsenburg     | 19,652      |             |
| 03/27/03  | 13094    | BR 1151-012   | Little Fountain Creek  | 18,785      |             |
| 03/06/03  | 13547    | NH 0505-037   | US 50 Bridges          | 21,910      |             |
| 01/30/03  | 14199    | STA 012A-038  | SH 12 e/o Segundo      | 18,000      |             |
| 02/20/03  | 14204    | STA 078A-004  | SH 78 Midway to Beulah | 3,381       |             |
| 02/13/03  | 14206    | NH 1603-019   | Lathrop to Walsenburg  | 10,060      |             |
| 12/18/03  | 14208    | NH 0242-039   | Manitou & Lake George  | 62,414      |             |
| 06/19/03  | 14304    | STA 083A-031  | SH 83 North PPCC       | 22,591      |             |
| 05/22/03  | 14397    | NH 0851-006   | SH 85 Phase III        | 21,663      |             |

|                |          |                 |          |               |          |                           |                |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|
| <b>Region:</b> | <b>2</b> | <b>Projects</b> | <b>9</b> | <b>Tested</b> | <b>9</b> | <b>Tested Quant. Plan</b> | <b>198,456</b> |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|

### Region: 3

| Bid Date: | Subacct. | Project Code: | Location:          | Plan Quant: | JD Testing: |
|-----------|----------|---------------|--------------------|-------------|-------------|
| 08/07/03  | 13333    | STA 340A-007  | Redlands Parkway   | 3,853       |             |
| 01/16/03  | 13868    | STA 114A-007  | Cochetopa Hwy 114  | 37,071      | No          |
| 03/27/03  | 14216    | STA R300-108  | Meeker and Rangely | 28,494      |             |
| 02/06/03  | 14217    | STA 092A-016  | Delta East hwy 92  | 25,522      |             |
| 05/08/03  | 14439    | STA 131A-030  | Wolcott North      | 36,296      |             |

|                |          |                 |          |               |          |                           |               |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|---------------|
| <b>Region:</b> | <b>3</b> | <b>Projects</b> | <b>5</b> | <b>Tested</b> | <b>4</b> | <b>Tested Quant. Plan</b> | <b>94,165</b> |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|---------------|

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**Region: 4**

| Bid Date: | Subacct. | Project Code: | Location:                | Plan Quant: | JD Testing: |
|-----------|----------|---------------|--------------------------|-------------|-------------|
| 02/20/03  | 13987    | STA 1381-005  | Proctor East and West    | 64,236      |             |
| 02/27/03  | 14301    | NH 2873-126   | US 287 Ted's Place North | 34,448      |             |
| 06/19/03  | 14461    | STA 059A-028  | SH 59 N of Haxtun        | 52,159      |             |

|                |          |                 |          |               |          |                           |                |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|
| <b>Region:</b> | <b>4</b> | <b>Projects</b> | <b>3</b> | <b>Tested</b> | <b>3</b> | <b>Tested Quant. Plan</b> | <b>150,843</b> |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|

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**Region: 5**

| Bid Date: | Subacct. | Project Code: | Location:         | Plan Quant: | JD Testing: |
|-----------|----------|---------------|-------------------|-------------|-------------|
| 05/29/03  | 13922    | BR 114A-008   | Saguache Creek    | 2,129       |             |
| 12/04/03  | 13969    | NH 1602-090   | Lonesome Dove     | 15,116      |             |
| 03/06/03  | 13998    | NH 2852-014   | Ponch Pass to Pon | 38,175      |             |
| 08/01/02  | 14134    | STA 0841-006  | Jct US 160/SH84   | 73,205      |             |
| 04/03/03  | 14320    | NH 1603-020   | US 160 & SH 17    | 1,273       |             |

|                |          |                 |          |               |          |                           |                |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|
| <b>Region:</b> | <b>5</b> | <b>Projects</b> | <b>5</b> | <b>Tested</b> | <b>5</b> | <b>Tested Quant. Plan</b> | <b>129,898</b> |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------------|

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**Region: 6**

| Bid Date: | Subacct. | Project Code: | Location:          | Plan Quant: | JD Testing: |
|-----------|----------|---------------|--------------------|-------------|-------------|
| 06/05/03  | 14236    | STA 0881-014  | SH 88 I-25 to SH 8 | 26,404      | No          |

|                |          |                 |          |               |          |                           |          |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------|
| <b>Region:</b> | <b>6</b> | <b>Projects</b> | <b>1</b> | <b>Tested</b> | <b>0</b> | <b>Tested Quant. Plan</b> | <b>0</b> |
|----------------|----------|-----------------|----------|---------------|----------|---------------------------|----------|

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**Totals**

|                 |           |               |           |                      |                |
|-----------------|-----------|---------------|-----------|----------------------|----------------|
| <b>Projects</b> | <b>29</b> | <b>Tested</b> | <b>24</b> | <b>Plan Quant.</b>   | <b>807,975</b> |
|                 |           |               |           | <b>Tested Quant.</b> | <b>682,771</b> |

## Joint Density - Process Information, Gradation Acceptance

Criteria: Projects with Bid Dates from 1/1/2002 to 12/31/2003.

Processes with less than 3 tests not included.

### Grading S

| Sub.  | Reg. | Price   | Proc.<br>No | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV    | Mean   | Mean<br>to TV | Std Dev | V    | St Dev.<br>- V |
|-------|------|---------|-------------|--------|-------|------------------|---------------|-------|--------|---------------|---------|------|----------------|
| 14199 | 2    | \$36.00 | 1           | 12,000 | 8     | 100.000          | 1.04000       | 92.00 | 90.460 | 1.540         | 0.961   | 1.60 | -0.639         |
| 14461 | 4    | \$33.50 | 1           | 9,000  | 4     | 100.000          | 1.03000       | 92.00 | 92.330 | 0.330         | 0.350   | 1.60 | -1.250         |
| 13094 | 2    | \$35.88 | 3           | 3,281  | 4     | 100.000          | 1.03000       | 92.00 | 91.900 | 0.100         | 1.180   | 1.60 | -0.420         |
| 14208 | 2    | \$36.87 | 2           | 30,091 | 14    | 99.039           | 1.04500       | 92.00 | 90.610 | 1.390         | 1.220   | 1.60 | -0.380         |
| 12833 | 2    | \$46.00 | 1           | 18,997 | 16    | 96.944           | 1.05000       | 92.00 | 90.530 | 1.470         | 1.412   | 1.60 | -0.188         |
| 14397 | 2    | \$32.00 | 2           | 8,179  | 6     | 96.591           | 1.03500       | 92.00 | 90.270 | 1.730         | 1.426   | 1.60 | -0.174         |
| 14461 | 4    | \$33.50 | 3           | 18,013 | 10    | 93.681           | 1.04259       | 92.00 | 89.230 | 2.770         | 0.837   | 1.60 | -0.763         |
| 14461 | 4    | \$38.00 | 2           | 26,632 | 16    | 92.135           | 1.03383       | 92.00 | 89.560 | 2.440         | 1.128   | 1.60 | -0.472         |
| 13987 | 4    | \$39.72 | 1           | 64,073 | 27    | 84.196           | 0.97555       | 92.00 | 89.740 | 2.260         | 1.735   | 1.60 | 0.135          |
| 13547 | 2    | \$40.00 | 1           | 21,613 | 14    | 83.363           | 0.98854       | 92.00 | 89.900 | 2.100         | 1.955   | 1.60 | 0.355          |
| 14208 | 2    | \$34.82 | 1           | 31,109 | 26    | 82.113           | 0.96186       | 92.00 | 89.380 | 2.620         | 1.502   | 1.60 | -0.098         |
| 14301 | 4    | \$33.35 | 1           | 23,558 | 12    | 80.089           | 0.97461       | 92.00 | 89.230 | 2.770         | 1.445   | 1.60 | -0.155         |
| 13094 | 2    | \$35.88 | 1           | 15,709 | 11    | 77.627           | 0.96319       | 92.00 | 89.960 | 2.040         | 2.525   | 1.60 | 0.925          |
| 14304 | 2    | \$38.00 | 1           | 19,397 | 7     | 67.779           | 0.92403       | 92.00 | 88.760 | 3.240         | 1.558   | 1.60 | -0.042         |
| 14206 | 2    | \$36.59 | 1           | 8,178  | 5     | 67.639           | 0.94816       | 92.00 | 89.060 | 2.940         | 2.110   | 1.60 | 0.510          |
| 14397 | 2    | \$32.00 | 1           | 8,867  | 5     | 34.082           | 0.68191       | 92.00 | 87.520 | 4.480         | 1.062   | 1.60 | -0.538         |
| 14397 | 2    | \$38.00 | 3           | 8,218  | 7     | 25.665           | 0.52798       | 92.00 | 87.490 | 4.510         | 0.756   | 1.60 | -0.844         |

### Totals Grading: S

|             |         |                   | Quality<br>Level | Pay<br>Factor | TV    | Mean   | Mean<br>to TV | St. Dev. | V    | StDev<br>- V |
|-------------|---------|-------------------|------------------|---------------|-------|--------|---------------|----------|------|--------------|
| Processes:  | 17      | Best:             | 100.000          | 1.05000       | 92.00 | 92.330 | 0.100         | 0.350    | 1.60 | -1.250       |
| Tests:      | 192     | Worst:            | 25.665           | 0.52798       | 92.00 | 87.490 | 4.510         | 2.525    | 1.60 | 0.925        |
| Total Tons: | 326,915 | Weighted Average: | 83.873           | 0.97655       | 92.00 | 89.714 | 2.304         | 1.456    | 1.60 | -0.144       |

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**Grading SX**

| Sub.  | Reg. | Price   | Proc.<br>No | Tons   | Tests | Quality<br>Level | Pay<br>Factor | TV    | Mean   | Mean<br>to TV | Std Dev | V    | St Dev.<br>- V |
|-------|------|---------|-------------|--------|-------|------------------|---------------|-------|--------|---------------|---------|------|----------------|
| 14134 | 5    | \$36.77 | 1           | 5,541  | 4     | 100.000          | 1.03000       | 92.00 | 92.700 | 0.700         | 1.249   | 1.60 | -0.351         |
| 14439 | 3    | \$40.81 | 1           | 15,295 | 9     | 95.100           | 1.04000       | 92.00 | 91.270 | 0.730         | 2.077   | 1.60 | 0.477          |
| 14305 | 1    | \$42.02 | 1           | 57,161 | 21    | 93.520           | 1.03825       | 92.00 | 89.480 | 2.520         | 0.993   | 1.60 | -0.607         |
| 14134 | 5    | \$35.48 | 2           | 58,914 | 71    | 93.382           | 1.02418       | 92.00 | 90.360 | 1.640         | 1.575   | 1.60 | -0.025         |
| 13972 | 1    | \$37.27 | 1           | 5,915  | 5     | 91.169           | 1.03000       | 92.00 | 94.040 | 2.040         | 1.537   | 1.60 | -0.063         |
| 14216 | 3    | \$41.39 | 2           | 21,873 | 11    | 91.055           | 1.03154       | 92.00 | 90.580 | 1.420         | 1.959   | 1.60 | 0.359          |
| 13972 | 1    | \$41.04 | 2           | 24,012 | 18    | 90.154           | 1.02090       | 92.00 | 90.960 | 1.040         | 2.241   | 1.60 | 0.641          |
| 13998 | 5    | \$44.95 | 1           | 24,870 | 14    | 85.653           | 1.00127       | 92.00 | 89.640 | 2.360         | 1.544   | 1.60 | -0.056         |
| 13897 | 1    | \$36.50 | 1           | 5,940  | 6     | 82.617           | 1.01011       | 92.00 | 90.700 | 1.300         | 2.784   | 1.60 | 1.184          |
| 13969 | 5    | \$94.00 | 1           | 15,082 | 13    | 72.877           | 0.92582       | 92.00 | 88.930 | 3.070         | 1.502   | 1.60 | -0.098         |
| 14217 | 3    | \$35.44 | 1           | 23,330 | 27    | 71.417           | 0.87989       | 92.00 | 88.960 | 3.040         | 1.690   | 1.60 | 0.090          |
| 13897 | 1    | \$44.00 | 2           | 5,887  | 6     | 61.448           | 0.89254       | 92.00 | 90.230 | 1.770         | 4.245   | 1.60 | 2.645          |

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**Totals Grading: SX**

|             |         |                   | Quality<br>Level | Pay<br>Factor | TV    | Mean   | Mean<br>to TV | St. Dev. | V    | StDev<br>- V |
|-------------|---------|-------------------|------------------|---------------|-------|--------|---------------|----------|------|--------------|
| Processes:  | 12      | Best:             | 100.000          | 1.04000       | 92.00 | 94.040 | 0.700         | 0.993    | 1.60 | -0.607       |
| Tests:      | 205     | Worst:            | 61.448           | 0.87989       | 92.00 | 88.930 | 3.070         | 4.245    | 1.60 | 2.645        |
| Total Tons: | 263,820 | Weighted Average: | 88.316           | 1.00491       | 92.00 | 90.158 | 1.963         | 1.653    | 1.60 | 0.053        |

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**Joint Density Totals**

1/1/2002 to 12/31/20

|             |         |                   | Quality<br>Level | Pay<br>Factor | TV    | Mean   | Mean<br>to TV | St. Dev. | V    | StDev<br>- V |
|-------------|---------|-------------------|------------------|---------------|-------|--------|---------------|----------|------|--------------|
| Processes:  | 29      | Best:             | 100.000          | 1.05000       | 92.00 | 94.040 | 0.100         | 0.350    | 1.60 | -1.250       |
| Tests:      | 397     | Worst:            | 25.665           | 0.52798       | 92.00 | 87.490 | 4.510         | 4.245    | 1.60 | 2.645        |
| Total Tons: | 590,735 | Weighted Average: | 85.857           | 0.98921       | 92.00 | 89.912 | 2.152         | 1.544    | 1.60 | -0.056       |

## Joint Density - Recap by Grading/Region

Criteria: Projects with Bid Dates from 1/1/2002 to 12/31/2003.

Processes with less than 3 tests not included.

Weighted average used for: Price, Pay Factor, St. Dev., Mean, and Quality Level

| <i>Grading S</i>         |      |         |       |            |         |       |        | <i>Quality Level</i> |         |        |
|--------------------------|------|---------|-------|------------|---------|-------|--------|----------------------|---------|--------|
|                          |      |         |       |            |         |       |        | Avg.                 | High    | Low    |
| Processes                | Tons | Tests   | Price | Pay Factor | Std Dev | Mean  |        |                      |         |        |
| <i>Region 2</i>          | 12   | 185,639 | 123   | \$37.38    | 0.95992 | 1.521 | 89.709 | 81.322               | 100.000 | 25.665 |
| <i>Region 4</i>          | 5    | 141,276 | 69    | \$37.14    | 0.99840 | 1.369 | 89.721 | 87.224               | 100.000 | 80.089 |
| <i>Totals Grading: S</i> | 17   | 326,915 | 192   | \$37.28    | 0.97655 | 1.456 | 89.714 | 83.873               | 100.000 | 25.665 |

| <i>Grading SX</i>         |      |         |       |            |         |       |        | <i>Quality Level</i> |         |        |
|---------------------------|------|---------|-------|------------|---------|-------|--------|----------------------|---------|--------|
|                           |      |         |       |            |         |       |        | Avg.                 | High    | Low    |
| Processes                 | Tons | Tests   | Price | Pay Factor | Std Dev | Mean  |        |                      |         |        |
| <i>Region 1</i>           | 5    | 98,915  | 56    | \$41.28    | 1.02318 | 1.630 | 90.230 | 89.999               | 93.520  | 61.448 |
| <i>Region 3</i>           | 3    | 60,498  | 47    | \$38.95    | 0.97520 | 1.885 | 90.130 | 84.505               | 95.100  | 71.417 |
| <i>Region 5</i>           | 4    | 104,407 | 102   | \$46.26    | 1.00482 | 1.540 | 90.106 | 88.930               | 100.000 | 72.877 |
| <i>Totals Grading: SX</i> | 12   | 263,820 | 205   | \$42.72    | 1.00491 | 1.653 | 90.158 | 88.316               | 100.000 | 61.448 |

| <i>Joint Density Totals</i> |         |       |         |            |         |        |  |                      |         |        |
|-----------------------------|---------|-------|---------|------------|---------|--------|--|----------------------|---------|--------|
| 1/1/2002 to 12/31/2003      |         |       |         |            |         |        |  |                      |         |        |
|                             |         |       |         |            |         |        |  | <i>Quality Level</i> |         |        |
|                             |         |       |         |            |         |        |  | Avg.                 | High    | Low    |
| Processes                   | Tons    | Tests | Price   | Pay Factor | Std Dev | Mean   |  |                      |         |        |
| 29                          | 590,735 | 397   | \$39.71 | 0.98921    | 1.544   | 89.912 |  | 85.857               | 100.000 | 25.665 |

