



# **HOT MIX ASPHALT GRADATION ACCEPTANCE REVIEW OF QC/QA DATA 2000 THROUGH 2005**

**Eric Chavez, Pavement Design Unit**

**February 2007**

**COLORADO DEPARTMENT OF TRANSPORTATION  
RESEARCH BRANCH**

The contents of this report reflect the views of the author(s), who is(are) responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views of the Colorado Department of Transportation or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

**Technical Report Documentation Page**

1. Report No. CDOT-2007-4	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle HOT MIX ASPHALT GRADATION ACCEPTANCE REVIEW OF QC/QA DATA 2000 THROUGH 2005		5. Report Date February 2007	
		6. Performing Organization Code	
7. Author(s) Eric Chavez		8. Performing Organization Report No. CDOT-2007-4	
9. Performing Organization Name and Address Colorado Department of Transportation 4201 E. Arkansas Ave. Denver, Colorado 80222		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address Colorado Department of Transportation - Research 4201 E. Arkansas Ave. Denver, CO 80222		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplementary Notes Prepared in cooperation with the US Department of Transportation, Federal Highway Administration			
16. Abstract <p>This report analyzes the Quality Control/Quality Assurance (QC/QA) data for hot mix asphalt using gradation acceptance awarded in the years 2000 through 2005. 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>Improvements can be measured in the hot mix asphalt results from 2001 through 2005. The overall results when reviewing the Calculated Pay Factor Composite calculations show an improvement of 0.7% over the five years. The quality levels for each of the individual elements have all increased. Asphalt content has a calculated improvement of 2.36% in quality levels over the five-year time period. The overall quality level for this element is 91.53%. Mat density showed an improvement of 1.71% in quality levels over the five-year time period. This element has consistently had the best reported quality levels. The average quality level over the last five years for this element is 93.28%. The gradation element showed more improvement than either asphalt content or mat density. The quality levels for this element improved by 3.53% over the last five years. However, this element has had reported quality levels that were lower than those reported in the asphalt content and mat density elements. The five-year average quality level for this element is 87.80%. Joint density has been a testing requirement since in 2003. This element has shown very good improvement over the three-year time period. The quality levels have improved by a calculated amount of 7.66% in three years. The three-year average quality level for this element is 86.06%. The pay factors for each of the elements have also increased. The results for 2005 show the highest pay factors in each of the elements for any year. On average, incentive payments of 3.1%, 3.4%, &amp; 1.9% were paid on the asphalt content, mat density, and gradation elements respectively in 2005. The pay factor for joint density has shown good improvement in the three years. The pay factor in 2005 was just slightly under the neutral mark of 1.0. Approximately half of the projects received an incentive on this element in 2005. Improvements can also be seen when evaluating the data by grading. Both grading S and SX have shown improvements in all of the test elements.</p>			
17. Keywords Quality Control/Quality Assurance (QC/QA), quality levels, percent within limits, standard deviation, Incentive/Disincentive Payments (I/DP), percent asphalt, gradation, mat density, joint density		18. Distribution Statement No restrictions. This document is available to the public through the National Technical Information Service Springfield, VA 22161	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 138	22. Price



# **Hot Mix Asphalt Gradation Acceptance Review of QC/QA Data 2000 Through 2005**

by

Eric Chavez

Report No. CDOT-2007-4

Prepared by  
Colorado Department of Transportation  
Research Branch

Sponsored by the  
Colorado Department of Transportation  
In Cooperation with the  
U.S. Department of Transportation  
Federal Highway Administration

February 2007

Colorado Department of Transportation  
Research Branch  
4201 E. Arkansas Ave.  
Denver, CO 80222  
(303) 757-9266



## **TABLE OF CONTENTS**

<b>1.0 INTRODUCTION AND COMMENTS .....</b>	<b>1</b>
<b>2.0 SPECIFICATIONS .....</b>	<b>2</b>
<b>3.0 CALCULATIONS AND DEFINITIONS.....</b>	<b>3</b>
<b>4.0 CDOT ENGINEERING REGIONS .....</b>	<b>8</b>
<b>5.0 DESCRIPTION OF REPORTS .....</b>	<b>9</b>
<b>6.0 DATA FOR THE YEARS 1991 TO 1997 .....</b>	<b>12</b>
<b>7.0 DISCUSSION OF DATA .....</b>	<b>12</b>
<b>7.1 Projects Evaluated.....</b>	<b>12</b>
<b>7.2 Calculated Pay Factor Composite .....</b>	<b>14</b>
<b>7.3 Calculated Pay Factor Composite by Grading .....</b>	<b>20</b>
<b>7.4 Incentive/Disincentive Payments .....</b>	<b>24</b>
<b>7.5 Recap of Data by Test Element - 1991 to 2005 .....</b>	<b>26</b>
<b>7.6 Review of Element Quality Levels 2001 to 2005.....</b>	<b>33</b>
<b>7.7 Test Element Quality Levels, Gradings S &amp; SX, 2000 to 2005.....</b>	<b>37</b>
<b>7.8 Recap Reports 2000 to 2005 Data.....</b>	<b>45</b>
<b>7.9 Reports for 2005 .....</b>	<b>45</b>
<b>8.0 SUMMARY .....</b>	<b>45</b>
<b>9.0 UPDATES AND CONTACT .....</b>	<b>47</b>
<b>REFERENCES .....</b>	<b>47</b>
<b>URLs .....</b>	<b>48</b>
<b>Appendix A</b> Recap Reports for Project Data 2000 to 2005	
<b>Appendix B</b> Reports for 2005 Projects	

## LIST OF FIGURES

1. CDOT Engineering Regions.....	8
2. Calculated Pay Factor Composite by Year.....	17
3. Calculated Pay Factor Composite by Year with Trendline .....	17
4. Calculated Pay Factor Composite by Region/Year, Reg. 1 & 2 .....	18
5. Calculated Pay Factor Composite by Region/Year, Reg. 3 & 4 .....	18
6. Calculated Pay Factor Composite by Region/Year, Reg. 5 & 6 .....	19
7. Calculated Pay Factor Composite by Region 2001 to 2005.....	19
8. Calculated Pay Factor Composite by Year Gradings S & SX.....	23
9. Calculated Pay Factor Composite by Year S & SX with Trendlines .....	23
10. Percent Asphalt Quality Levels .....	29
11. Percent Asphalt Pay Factors.....	29
12. Mat Density Quality Levels.....	30
13. Mat Density Pay Factors .....	30
14. Gradation Quality Levels .....	31
15. Gradation Pay Factors .....	31
16. Joint Density Quality Levels .....	32
17. Joint Density Pay Factors.....	32
18. Quality Levels by Test Element by Year.....	36
19. Element Quality Levels with Trendlines .....	36
20. Element Pay Factors with Trendlines.....	37
21. Percent Asphalt Quality Levels – Gradings S & SX .....	41
22. Percent Asphalt Quality Levels – Gradings S & SX with Trendlines ....	41
23. Mat Density Quality Levels – Gradings S & SX.....	42
24. Mat Density Quality Levels – Gradings S & SX with Trendlines.....	42
25. Gradation Quality Levels – Gradings S & SX.....	43
26. Gradation Quality Levels – Gradings S & SX with Trendlines .....	43
27. Joint Density Quality Levels – Gradings S & SX .....	44
28. Joint Density Quality Levels – Gradings S & SX with Trendlines .....	44



## LIST OF TABLES

1. “W” Factors for Various Elements .....	2
2. Projects Evaluated by Bid Date .....	13
3. Projects Evaluated by Start Date .....	13
4. Calculated Pay Factor Composite by Year/Region .....	15
5. Calculated Pay Factor Composite by Year and Grading.....	21
6. Incentive/Disincentive Payments – Recap by Year.....	25
7. Recap of Yearly Data by Test Element.....	27
8. Test Element – Five-Year Averages .....	33
9. Review of Test Elements - Gradings S & SX .....	39

## 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

### **2005 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. Mat Density – Process Information by Grading.....	Appendix B
11. Gradation – Process Information by Grading.....	Appendix B
12. Gradation Standard Deviation Information by Grading .....	Appendix B
13. 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 mix asphalt (HMA) 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 HMA 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 annual analysis of the QC/QA data for hot mix asphalt paving projects using gradation acceptance and covers the years 1991 through 2005. Detailed analysis is given for the years 2000 through 2005. Recap reports showing different data groupings are also presented for the years 2000 through 2005. Detailed reports for the projects with a start date of 2005 are included in this report and can be found in Appendix B. Reports evaluating the percent asphalt, mat density, gradation, & joint density elements are detailed by grading & region. Charts comparing the quality level and pay factor information for the years 1991 to 1997 and 2000 to 2005 are displayed for the percent asphalt, mat density, gradation, & mat density elements. The previous reports in this series are available from the CDOT Library.

The major data grouping used in this report is by start date, the date the paving began, and not bid date, date on which the project was awarded to contract. On numerous projects the paving began in the following year after the project was awarded to contract. This data grouping more accurately groups the projects according to the time of their construction.

## 2.0 SPECIFICATIONS

*Specifications* – [Subsection 105.05, Conformity to the Contract of Hot Mix Asphalt.](#)

Subsection 105.05 governs the QC/QA calculations. Prior to the release of the 2005 Standard Specifications book the specification was a standard special provision titled *Revision of Sections 105 and 106, Quality of Hot Bituminous Pavement*. A major change to the specification was made with the release of the standard special provision 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 or have been modified since.

**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 December 20, 2002 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 P<sub>n</sub>, was modified to include additional equations for calculating P<sub>n</sub>. 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 specification for details on processes.

*Bid Date* – The date the project was awarded to contract.

*Calculated Pay Factor Composite (CPFC)* – The Calculated Pay Factor Composite is a way to evaluate the overall quality of the HMA used on the project. The CPFC represents the percentage increase or decrease to the unit price for hot mix asphalt 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:  $UP_n$  = Unit Price for the process.

$T_n$  = 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 [subsection 401.17, Compaction](#) 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 dollar amount of incentive or disincentive paid for a quantity of material within a test element, based on the calculated pay factor for the element. 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 [subsection 401.17, Compaction](#) 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* – Or Average, the sum of all test values divided by the number of tests.

*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 affects 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.

**Note:** There is not a direct correlation between pay factor and quality level. The calculations for pay factors are dependent on the number of tests and the calculated quality level for the process. The equations for pay factor change as the number of tests increases. Also, the maximum pay factor increases as the number of tests in the process increases. Larger runs of production, processes, have the potential to receive higher pay factors. Differences in the number of tests in two processes can result in a different pay factor being calculated even if the quality levels are the same. Please see Section 105.05, Conformity to the Contract of Hot Mix Asphalt for details on the calculations.

*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 calculated value the steeper the line, positive or negative.

*Start Date* – The date the HMA paving began on the project.

*Std. Dev. (Standard Deviation)* – Definition, see variance.

equation:  $s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$

Where:       $\sum$  = summation  
               $x_i$  = individual test value  
               $\bar{x}$  = mean  
               $n$  = number of samples

*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 calculated number the better. This is the second factor that affects the quality level calculations.

*Subaccount* – A unique five digit numeric identifier for a project.



*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.

*Variance* - A measure of the average distance between each of a set of data points and their mean value; equal to the sum of the squares of the deviation from the mean value.

The square root of the variance is the standard deviation.

$$\text{equation: } \sigma = SD^2 = \frac{\sum (x_i - \bar{x})^2}{n - 1}$$

Where:  $\Sigma$  = summation

$x_i$  = individual test value

$\bar{x}$  = mean

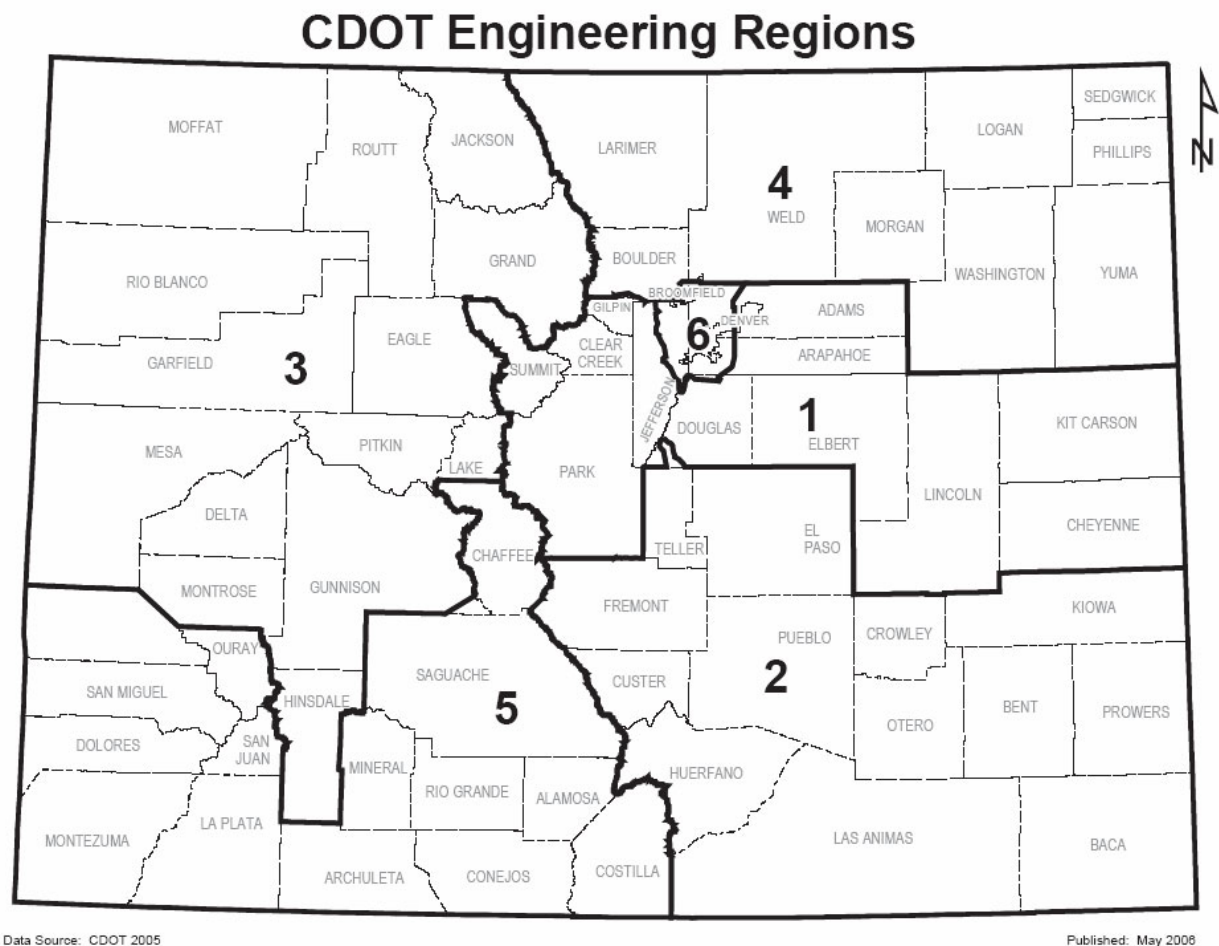
$n$  = number of samples

*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 CDOT ENGINEERING REGIONS

CDOT has established six Engineering Regions across the state in order to decentralize many of its design, construction, and maintenance project functions and maximize contact with local governments, industry, and the public. Regions 1, 2, & 4 divide the eastern half of the state. The geography for these regions includes high plains and rolling hills to the east and extends to the foothills and in some cases to the Continental Divide on the west. Regions 3 & 5 divide the western half of the state. Geographically this area is very mountainous with many valleys, canyons and high plateaus. Region 6 encompasses the Denver metro area which includes Interstates 25 and 70. An overview of the region boundaries is given in Figure 1.



**Figure 1. CDOT Engineering Regions**

## 5.0 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 start 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 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.

***Recap Reports by Grading/Year/Region 2000 through 2005: Asphalt Content, Mat Density, Gradation – Process Information, Gradation – Standard Deviation, and Joint Density, Reports 1 to 5 - Appendix A.*** For each of the test elements a report that recaps the information 2000 through 2005 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 HMA through the years and by each region. The information from these reports is used throughout the body of this report.

### **2005 REPORTS (PROJECTS WITH START DATES OF 2005), APPENDIX B**

***Project Listing by Region/Subaccount, Report 6.*** This report contains information for the projects included in the evaluation for 2005. The subaccount, project code, location,

region, supplier, bid date, start 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, Report 7.*** 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 supplementary reports if the data does not meet that report's individual criteria.

***Calculated Pay Factor Composite and I/DP by Region, Report 8.*** 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 HMA used on 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 HMA. 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.

***Asphalt Content – Process Information, Report 9.*** 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.

**Mat Density – Process Information, Report 10.** 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.

## **GRADATION REPORTS**

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

**Gradation – Process Information, Report 11.** 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 – Standard Deviation Information, Report 12.** For each process the standard deviation information for 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.

**Joint Density – Process Information, Report 13.** 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.

## **6.0 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.

## **7.0 DISCUSSION OF THE DATA**

### **7.1 Projects Evaluated**

Table 2 lists the number of projects and tons of material by bid date included in the evaluations. Table 3 lists the projects evaluated by start date, the date the paving began. The start date is used as the primary grouping of projects used in this report. A relatively small number of projects were 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. Additional project data will be added to the database as the Pavement Design Unit receives it. Voids acceptance projects are evaluated in a separate report.

**Table 2. Projects Evaluated by Bid Date**

			<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	77	2,255,916	<b>57</b>	<b>1,390,163</b>	12	778,263
2001	50	1,294,829	<b>44</b>	<b>1,094,123</b>	3	155,270
2002	71	1,972,361	<b>47</b>	<b>1,081,751</b>	21	826,936
2003	71	2,298,174	<b>45</b>	<b>1,214,572</b>	21	967,742
2004	82	2,538,088	<b>44</b>	<b>1,038,171</b>	30	1,249,343
2005	56	1,592,233	<b>22</b>	<b>344,631</b>	18	799,563

**Table 3. Project Evaluated by Start Date**

<b>Projects by Start Date</b>	<b>Gradation Acceptance</b>	
<b>Year</b>	<b>Projects</b>	<b>Tons</b>
2000	<b>39</b>	<b>1,082,726</b>
2001	<b>51</b>	<b>1,224,996</b>
2002	<b>39</b>	<b>998,413</b>
2003	<b>48</b>	<b>1,129,361</b>
2004	<b>47</b>	<b>1,319,615</b>
2005	<b>35</b>	<b>615,941</b>

## **7.2 Calculated Pay Factor Composite by Year and Region**

The Calculated Pay Factor Composite (CPFC) information for the years 2000 through 2005 is displayed in Table 4. The information is grouped by year and then by region. Calculations covering the five-year time period, 2001 through 2005, are given at the end of the table. 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 mix asphalt 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 HMA. A CPFC below 1.0 indicates that a disincentive was applied to the HMA. Figure 2 displays the overall CPFC, all gradings of HMA included, by year for the years 2001 through 2005. Figure 3 displays the same CPFC results and adds the calculated trendline. Improvements in the CPFC can be seen over the five-year time period. The rate of improvement is calculated at 0.007 over the five years. The average for each year is above the neutral mark of 1.0 showing that more incentive payments have been made than disincentive payments. The overall five-year average is 1.00772. Figures 4, 5, and 6 display the CPFC results for each of the regions by year. The number of projects included in the grouping is also displayed. Each of the regions is showing good results. However, decisive trends are hard to determine since many of the data groupings contain fewer than five projects. The overall results, 2001 through 2005, for each region are shown in Figure 7. All of the regions except Region 2 have an average CPFC above 1.0 showing that more incentive payments have been made than disincentives.



## Table 4. Calculated Pay Factor Composite by Year/Region

**Criteria:** Projects with Start Dates from 1/1/00 to 12/31/04.

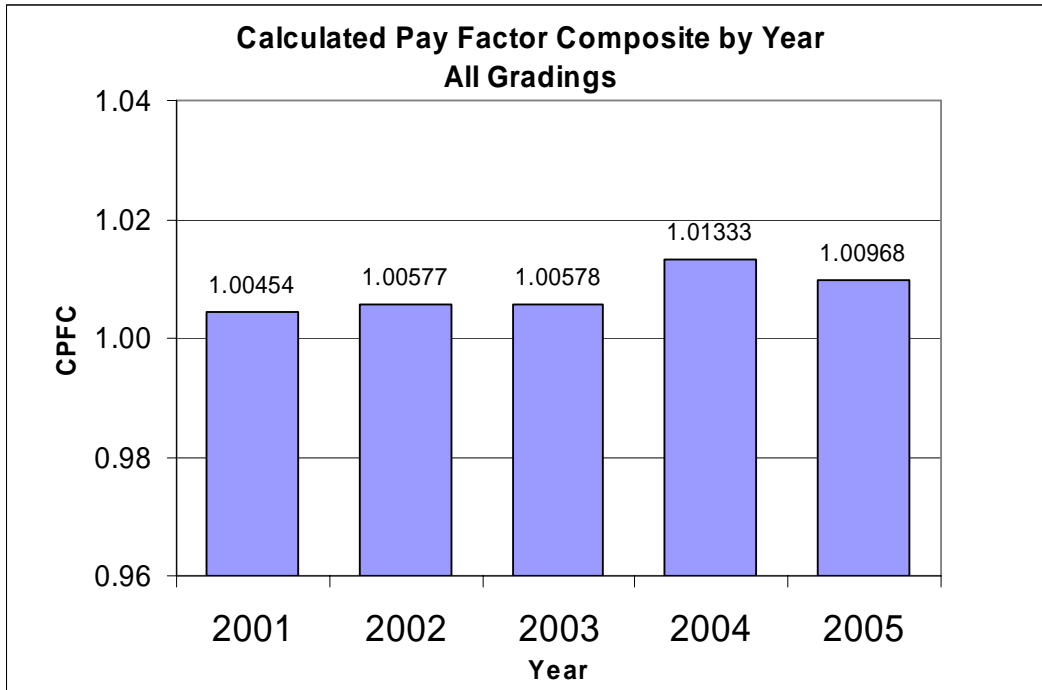
PFC is back calculated from the Project's I/DP

A Calculated Average Unit Price is used in the calculation

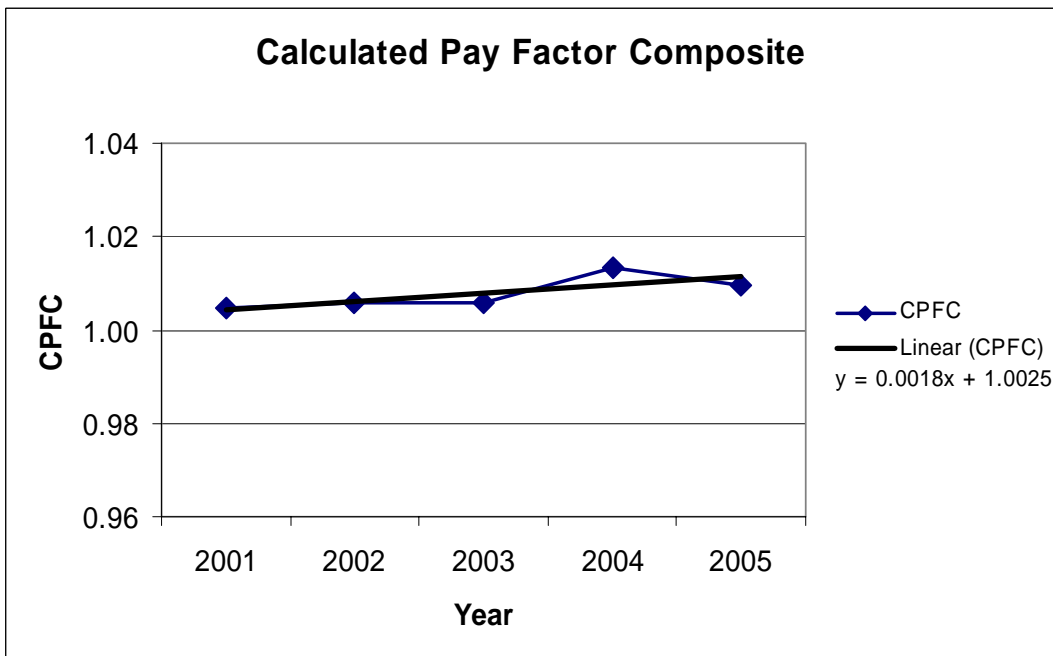
2000	Region	Projects	Tons	Calculated Pay Factor Composite		
				Average	Minimum	Maximum
	1	8	94,024	0.99614	0.91509	1.04477
	2	12	288,555	0.98610	0.81968	1.04209
	3	11	350,506	1.02231	0.99241	1.05149
	4					
	5	5	301,156	1.01319	0.97949	1.04060
	6	3	44,897	1.01702	0.97898	1.04014
	Totals	39	1,079,138	1.00423	0.81968	1.05149
2001	Region	Projects	Tons	Calculated Pay Factor Composite		
				Average	Minimum	Maximum
	1	8	233,967	1.01576	0.97436	1.04174
	2	10	195,009	0.96476	0.78941	1.02900
	3	15	409,723	1.01368	0.96192	1.04569
	4	3	57,020	1.01063	0.99692	1.03670
	5	5	81,393	1.00520	0.95729	1.03663
	6	10	182,481	1.01948	0.97634	1.05050
	Totals	51	1,159,593	1.00454	0.78941	1.05050
2002	Region	Projects	Tons	Calculated Pay Factor Composite		
				Average	Minimum	Maximum
	1	4	89,168	1.00338	0.99725	1.01661
	2	10	116,737	1.01621	0.93965	1.03800
	3	7	292,974	1.01557	0.99215	1.04191
	4	3	137,605	1.01714	1.00871	1.03345
	5	6	240,707	1.01818	0.97333	1.04596
	6	9	127,724	0.97557	0.83596	1.02577
	Totals	39	1,004,915	1.00577	0.83596	1.04596
2003	Region	Projects	Tons	Calculated Pay Factor Composite		
				Average	Minimum	Maximum
	1	10	334,053	1.01929	0.94635	1.04708
	2	12	169,250	0.98804	0.92137	1.0606
	3	11	344,452	1.01133	0.99468	1.03842
	4	4	120,496	1.02048	0.99607	1.04182
	5	8	146,408	0.99221	0.87280	1.03800
	6	3	60,267	1.02793	1.00765	1.04234
	Totals	48	1,174,926	1.00578	0.87280	1.04708

**Table 4. Continued**

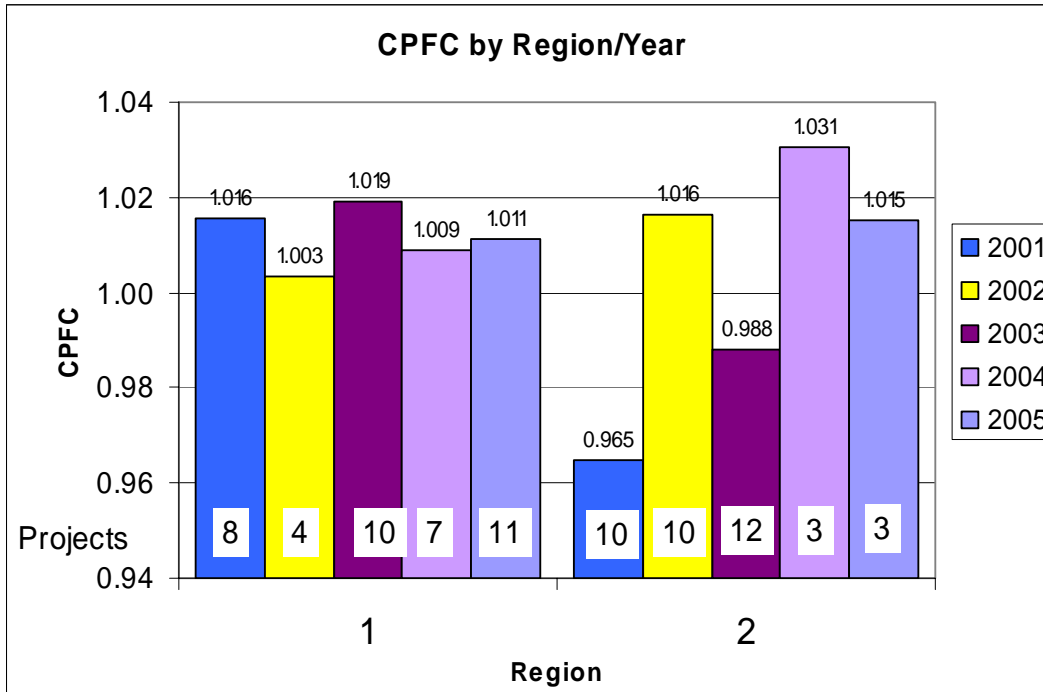
				<b>Calculated Pay Factor Composite</b>		
	<b>Region</b>	<b>Projects</b>	<b>Tons</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
<b>2004</b>	<b>1</b>	7	114,944	1.00890	0.97154	1.03357
	<b>2</b>	3	96,695	1.03073	1.02744	1.03253
	<b>3</b>	13	375,521	1.00947	0.97375	1.02916
	<b>4</b>	8	213,654	1.02640	1.00794	1.03976
	<b>5</b>	8	219,572	1.00294	0.96734	1.05423
	<b>6</b>	8	142,411	1.01427	0.97821	1.03225
	<b>Totals</b>	47	1,162,797	1.01333	0.96734	1.05423
				<b>Calculated Pay Factor Composite</b>		
	<b>Region</b>					
<b>2005</b>	<b>1</b>	11	230,100	1.01135	0.96991	1.04660
	<b>2</b>	3	27,844	1.01512	1.00968	1.02099
	<b>3</b>	7	93,614	1.00790	0.98141	1.02630
	<b>4</b>	3	10,595	0.95624	0.93142	1.00508
	<b>5</b>	5	142,901	1.02790	1.00692	1.03658
	<b>6</b>	6	86,345	1.01749	0.99214	1.04581
	<b>Totals</b>	35	591,399	1.00968	0.93142	1.04660
				<b>Calculated Pay Factor Composite</b>		
<b>5 Year Averages</b>	<b>Region</b>	<b>Projects</b>	<b>Tons</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
<b>2001 to 2005</b>	<b>1</b>	40	1,002,232	1.01299	0.94635	1.04708
	<b>2</b>	38	605,535	0.99483	0.78941	1.03800
	<b>3</b>	53	1,516,284	1.01165	0.96192	1.04569
	<b>4</b>	21	539,370	1.01167	0.93142	1.04182
	<b>5</b>	32	830,981	1.00737	0.87280	1.05423
	<b>6</b>	36	599,228	1.00772	0.83596	1.05050
	<b>Totals</b>	220	5,093,630	1.00772	0.78941	1.05423



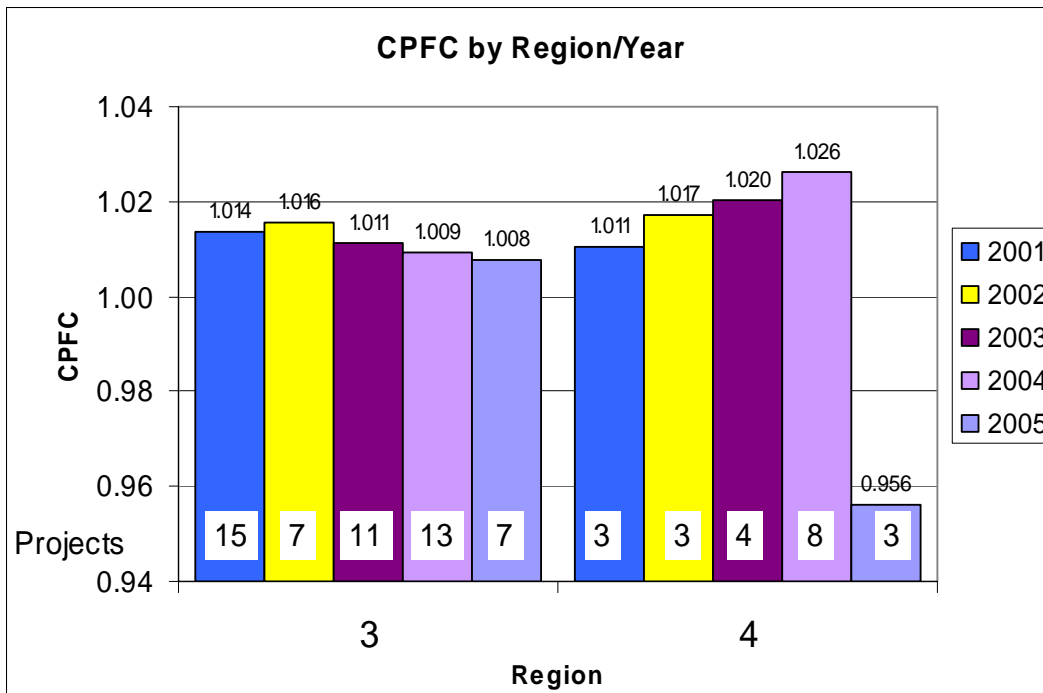
**Figure 2. Calculated Pay Factor Composite by Year**



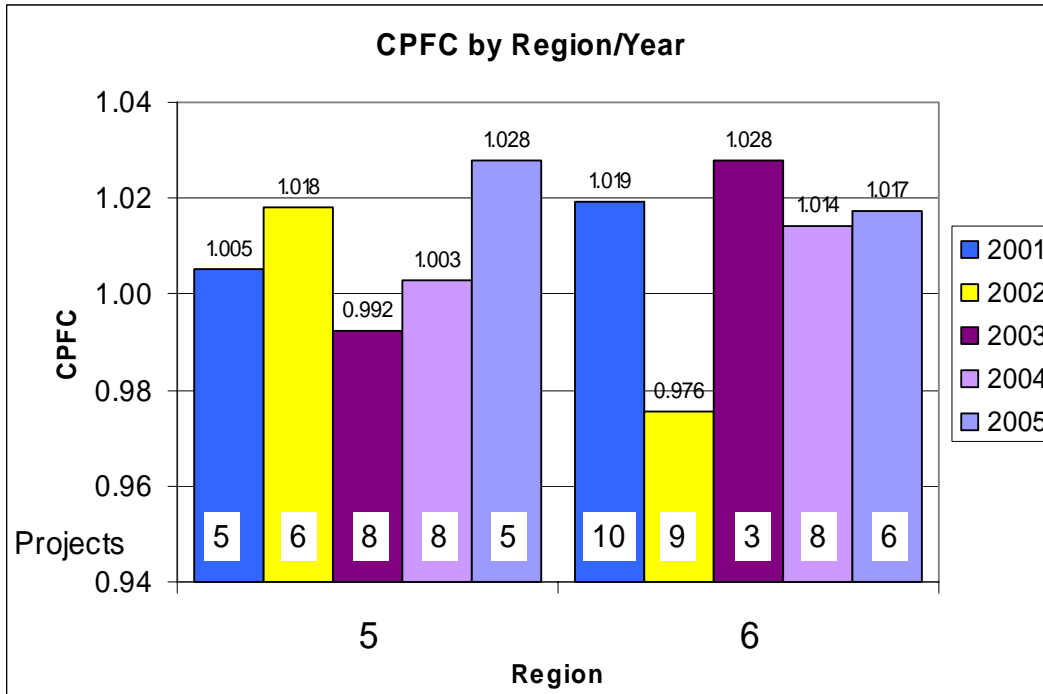
**Figure 3. Calculated Pay Factor Composite by Year with Trendline**



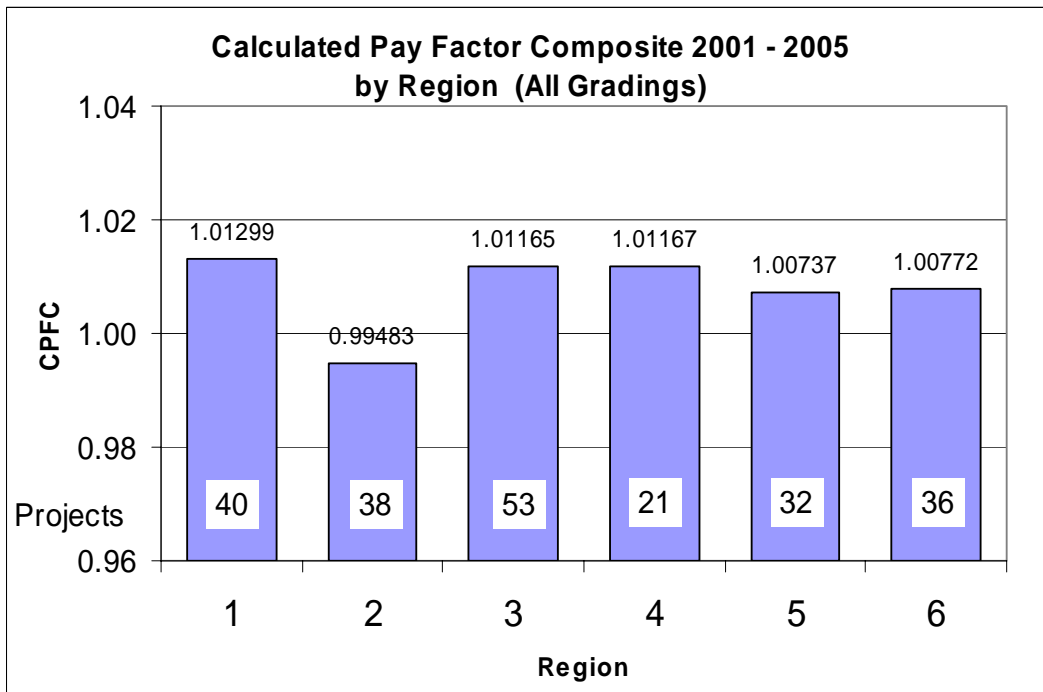
**Figure 4. Calculated Pay Factor Composite by Region/Year**



**Figure 5. Calculated Pay Factor Composite by Region/Year**



**Figure 6. Calculated Pay Factor Composite by Region/Year**



**Figure 7. Calculated Pay Factor Composite 2001 to 2005 by Region**

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

The Calculated Pay Factor Composite (CPFC) information by grading for the years 2000 through 2005 is displayed in Table 5. Calculations covering the five-year time period, 2001 through 2005, are given at the end of the table. 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 HMA. A CPFC below 1.0 indicates that a disincentive was applied to the pavement. Figure 8 displays the CPFC for gradings S and SX by year. Grading SX has better reported results than grading S in each of the years except 2004. The difference between the two gradings was less than 0.015 in three of the years. In 2002 the difference was 0.022. The difference in 2005 was 0.047 but there were only four reported projects that used grading S in that year which may be skewing the results. Over the five-year time period, 2002 through 2005, the difference in the averages of the two gradings is calculated at 0.012. The five-year average CPFC for grading S is 1.00092. For grading SX the average is 1.01248. Both averages are above the neutral mark of 1.0 indicating that on average more incentives are being paid than disincentives. Figure 9 displays the CPFC results by grading and the calculated trendlines. The trendline for grading SX is essentially flat with a calculated slope of 0.0005. The slope of the trendline for grading S is calculated to be negative. This calculation is highly influenced by the results for 2005 in which the CPFC was low. However, only four projects have been reported to date which used grading S in 2005. A comparison of the individual test elements by grading is presented in Section 7.6.

**Table 5. Calculated Pay Factor Composite by Year and Grading**

**Criteria:** Projects with Bid Dates from 1/1/00 to 12/31/05.

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

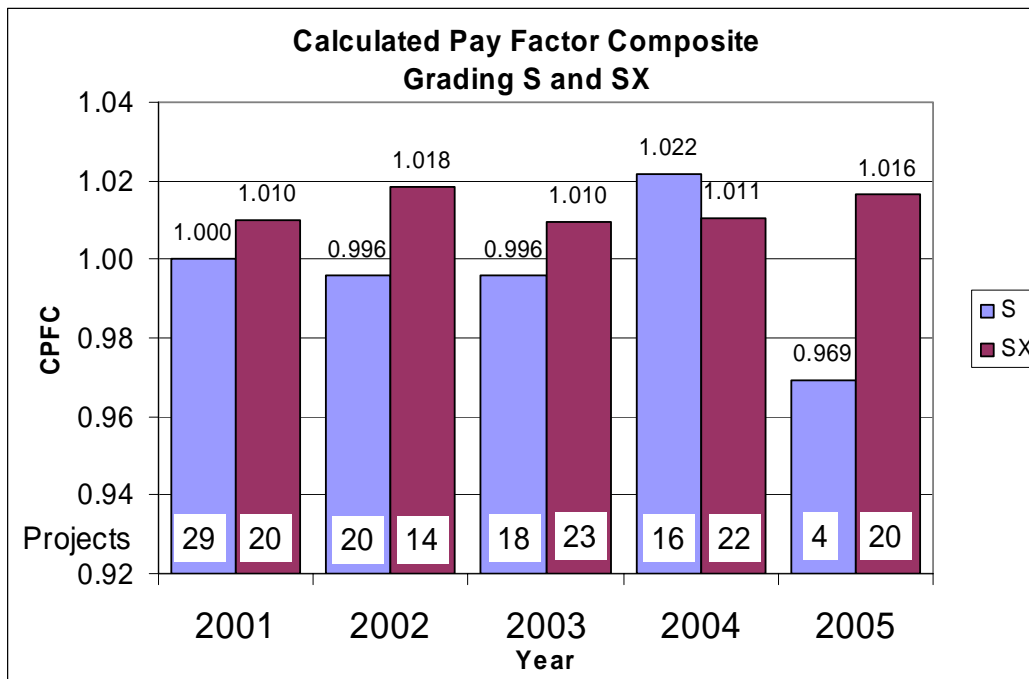
CPFC is back calculated from the Project's I/DP.

			Calculated Pay Factor Composite		
2000	Projects	Tons	Average	Minimum	Maximum
Grading S	21	416,222	0.99774	0.81968	1.04477
Grading SX	18	662,916	1.01179	0.91509	1.05149
<b>Totals 2000</b>	<b>39</b>	<b>1,079,138</b>	<b>1.00423</b>	<b>0.81968</b>	<b>1.05149</b>
			Calculated Pay Factor Composite		
2001	Projects	Tons	Average	Minimum	Maximum
Grading S	29	644,424	1.00021	0.78941	1.05050
Grading SX	20	429,573	1.00986	0.95729	1.04569
<b>Totals 2001</b>	<b>49</b>	<b>1,073,997</b>	<b>1.00415</b>	<b>0.78941</b>	<b>1.05050</b>
			Calculated Pay Factor Composite		
2002	Projects	Tons	Average	Minimum	Maximum
Grading S	20	260,132	0.99613	0.83596	1.03800
Grading SX	14	485,153	1.01837	0.97333	1.04596
<b>Totals 2002</b>	<b>34</b>	<b>745,285</b>	<b>1.00529</b>	<b>0.83596</b>	<b>1.04596</b>
			Calculated Pay Factor Composite		
2003	Projects	Tons	Average	Minimum	Maximum
Grading S	18	345,507	0.99594	0.92137	1.04300
Grading SMA	3	99,152	1.02361	0.99468	1.04234
Grading SX	23	529,947	1.00957	0.87280	1.04708
<b>Totals 2003</b>	<b>44</b>	<b>974,606</b>	<b>1.00495</b>	<b>0.87280</b>	<b>1.04708</b>
			Calculated Pay Factor Composite		
2004	Projects	Tons	Average	Minimum	Maximum
Grading S	16	380,469	1.02173	0.97821	1.03976
Grading SMA	2	24,945	1.00603	1.00101	1.01106
Grading SX	22	535,210	1.01061	0.97375	1.05423
<b>Totals 2004</b>	<b>40</b>	<b>940,624</b>	<b>1.01483</b>	<b>0.97375</b>	<b>1.05423</b>

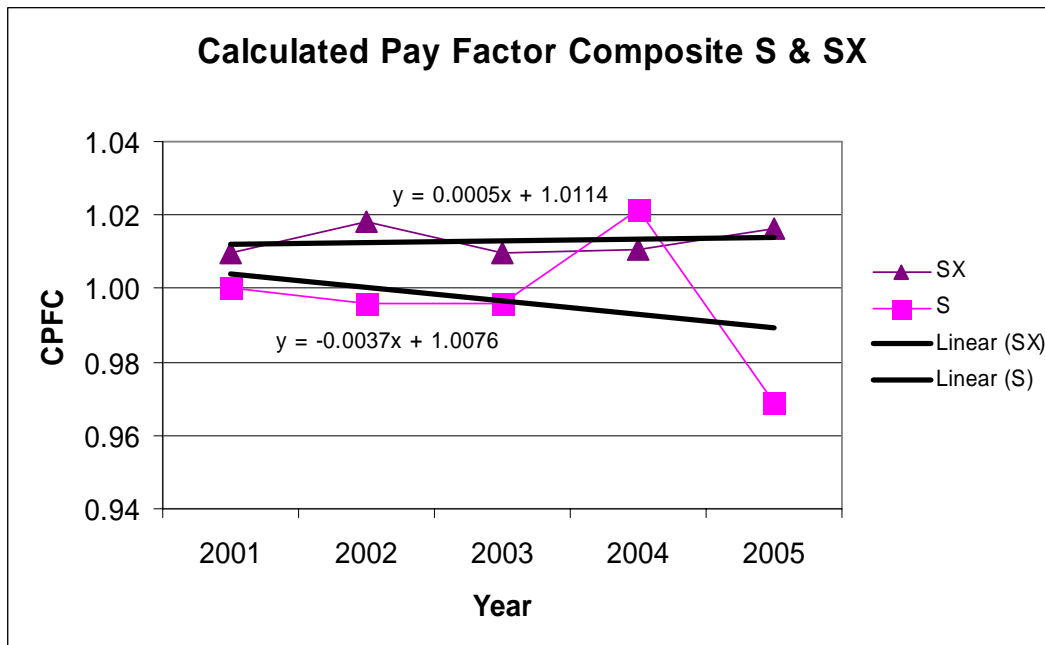
**Table 5. Continued**

			<b>Calculated Pay Factor Composite</b>		
<b>2005</b>	<b>Projects</b>	<b>Tons</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Grading S</b>	4	14,879	0.96912	0.93142	1.00776
<b>Grading SMA</b>	4	59,446	1.02185	1.00968	1.04581
<b>Grading SX</b>	20	359,875	1.01637	0.97195	1.04660
<b>Totals 2005</b>	28	434,200	1.01040	0.93142	1.04660
<b>5 Year Average</b>			<b>Calculated Pay Factor Composite</b>		
<b>2001 to 2005</b>	<b>Projects</b>	<b>Tons</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Grading S</b>	87	1,645,411	1.00092	0.78941	1.05050
<b>Grading SMA</b>	9	183,543	1.01892	0.99468	1.04581
<b>Grading SX</b>	99	2,339,758	1.01248	0.87280	1.05423
<b>Totals</b>	195	4,168,712	1.00762	0.78941	1.05423





**Figure 8. Calculated Pay Factor Composite by Year, Gradings S & SX**



**Figure 9. Calculated Pay Factor Composite, Gradings S & SX with Trendlines**

#### **7.4 Incentive/Disincentive Payments**

A recap of the Incentive/Disincentive Payments (I/DP) for the years 2000 through 2005 is presented in Table 6. 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 mix asphalt and is directly related to the tons of material used. 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 calculation of tons of material multiplied by the pay factor. The projects with the largest I/DPs do not necessarily correlate to the projects with the best reported quality levels. It is important to consider the dollar amounts being paid but a better way of evaluating the HMA is to review the Calculated Pay Factor Composite (CPFC) and the element quality levels. The calculations for the five-year period, 2001 through 2005, are shown at the end of the table. The percentage of projects receiving disincentive payments is calculated for each year and for the last five-year time period. Over the last 5 years 28% of the projects have received some amount of disincentive payment. The majority, 72%, of the projects received an incentive for the HMA.

**Table 6. Incentive/Disincentive Payments – Recap by Year**

2000	Number of Projects	39	36%	Incentive/Disincentive Payment	
	Positive I/DPs	25		Sum of I/DPs	\$577,496.61
	Negative I/DPs	14		Minimum	(\$46,207.36)
	Total Tons	1,079,138		Maximum	\$146,425.34
				Average I/DP	\$14,807.61
2001	Number of Projects	51	31%	Incentive/Disincentive Payment	
	Positive I/DPs	35		Sum of I/DPs	\$503,338.44
	Negative I/DPs	16		Minimum	(\$161,120.55)
	Total Tons	1,159,593		Maximum	\$110,449.67
				Average I/DP	\$9,869.38
2002	Number of Projects	39	28%	Incentive/Disincentive Payment	
	Positive I/DPs	28		Sum of I/DPs	\$582,328.81
	Negative I/DPs	11		Minimum	(\$30,824.74)
	Total Tons	1,004,915		Maximum	\$98,417.44
				Average I/DP	\$14,931.51
2003	Number of Projects	48	31%	Incentive/Disincentive Payment	
	Positive I/DPs	33		Sum of I/DPs	\$818,103.20
	Negative I/DPs	15		Minimum	(\$39,746.99)
	Total Tons	1,174,926		Maximum	\$110,997.34
				Average I/DP	\$17,043.82
2004	Number of Projects	47	21%	Incentive/Disincentive Payment	
	Positive I/DPs	37		Sum of I/DPs	\$711,632.55
	Negative I/DPs	10		Minimum	(\$31,863.90)
	Total Tons	1,162,797		Maximum	\$98,369.22
				Average I/DP	\$15,141.12
2005	Number of Projects	35	29%	Incentive/Disincentive Payment	
	Positive I/DPs	25		Sum of I/DPs	\$499,473.81
	Negative I/DPs	10		Minimum	(\$13,695.39)
	Total Tons	591,399		Maximum	\$94,832.11
				Average I/DP	\$14,270.68
5 Year Average				Incentive/Disincentive Payment	
2001 to 2005	Number of Projects	220	28%	Sum of I/DPs	\$3,114,876.81
	Positive I/DPs	158		Minimum	(\$161,120.55)
	Negative I/DPs	62		Maximum	\$110,997.34
	Total Tons	5,093,630		Average I/DP	\$14,158.53

## **7.5 Recap of Data by Test Element 1991 to 2005**

The overall results, all gradings included, for each of the test elements for the years 1991 to 1997 and 2000 to 2005 are listed in Table 7; joint density testing is included for the years 2003 to 2005. The quality level and pay factor for each element are shown in the table. The standard deviation is displayed for the percent asphalt, mat density, and joint density elements. The standard deviation information for the gradation element is contained in Report 4 in Appendix A and Report 12 in Appendix 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 2005 is presented in Section 7.6.

**Table 7. 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	39	1,058,258	92.215	1.02361	0.148
2001	51	1,143,454	90.963	1.01641	0.152
2002	39	974,127	90.255	1.01376	0.155
2003	48	1,160,215	92.568	1.02926	0.148
2004	47	1,129,308	91.142	1.02079	0.155
2005	35	580,850	93.471	1.03107	0.140

**Mat 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	39	979,817	92.385	1.01756	0.964	93.58
2001	51	1,044,450	92.236	1.02174	0.967	93.73
2002	39	904,445	93.833	1.03062	0.933	93.88
2003	48	1,063,868	93.158	1.02644	0.937	93.86
2004	47	1,002,537	93.329	1.02910	0.931	93.83
2005	35	448,211	94.623	1.03387	0.932	94.05

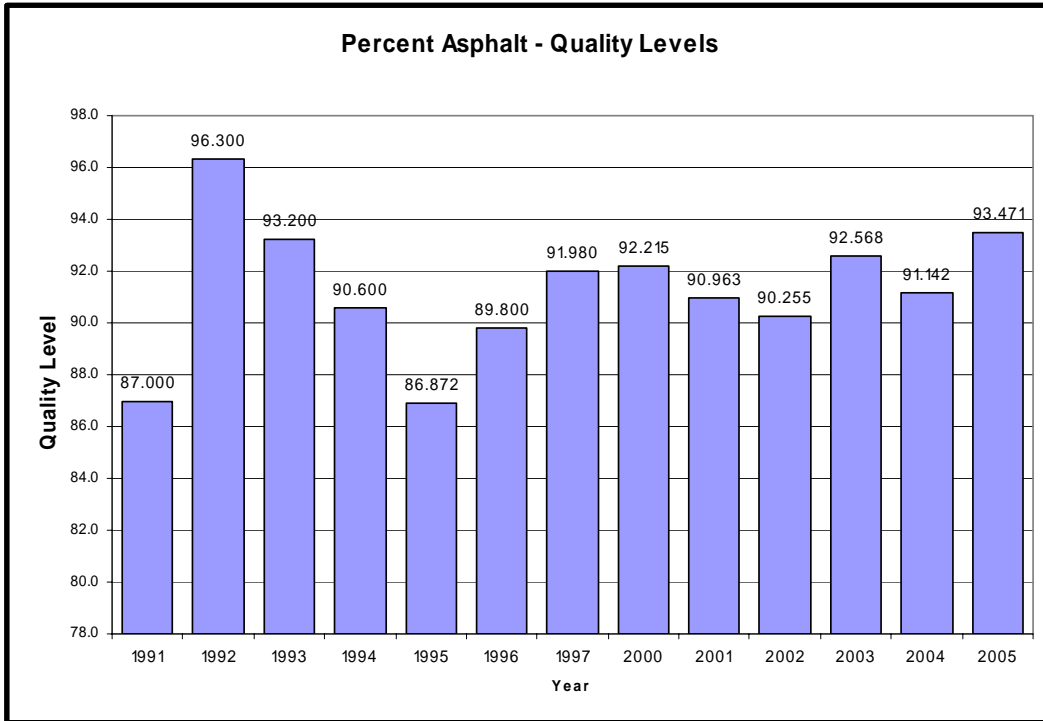
**Table 7. Continued**

**Gradation**

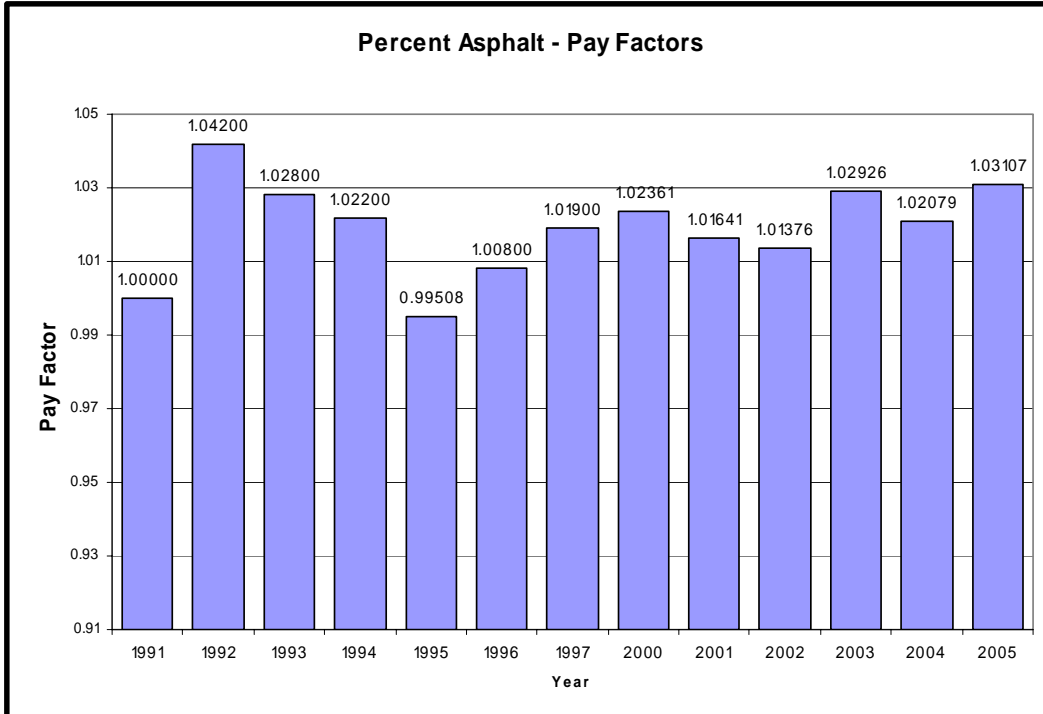
<b>Year</b>	<b>Projects</b>	<b>Tons</b>	<b>Quality Level</b>	<b>Pay Factor</b>
<b>1991</b>		2,000,000	85.700	0.98900
<b>1992</b>	7	282,000	90.000	1.01400
<b>1993</b>	18	482,000	88.800	1.01000
<b>1994</b>	58	1,496,000	88.300	1.01400
<b>1995</b>	40	1,104,000	87.771	1.00757
<b>1996</b>	--	830,000	89.600	1.01200
<b>1997</b>	17	378,000	82.556	0.98100
<b>2000</b>	39	1,037,532	87.901	1.00860
<b>2001</b>	51	1,058,577	85.508	1.00345
<b>2002</b>	39	903,389	87.037	1.00805
<b>2003</b>	48	1,096,990	88.728	1.01626
<b>2004</b>	47	1,088,206	89.191	1.01792
<b>2005</b>	35	551,044	88.849	1.01859

**Joint Density**

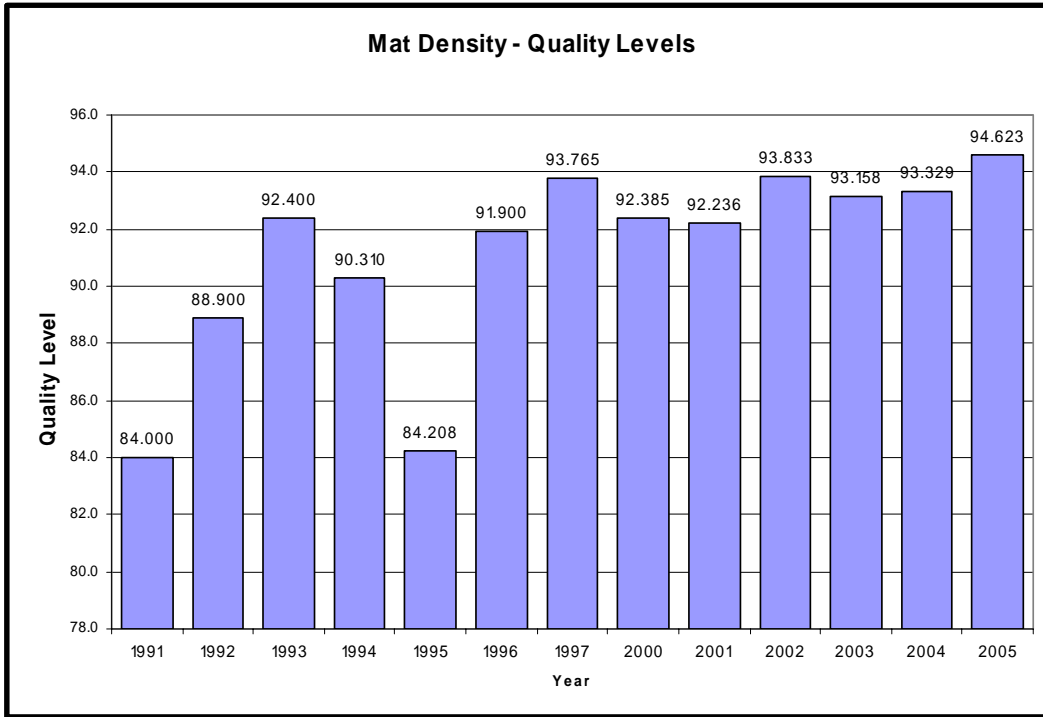
<b>Year</b>	<b>Projects</b>	<b>Tons</b>	<b>Quality Level</b>	<b>Pay Factor</b>	<b>Std Dev</b>	<b>Mean</b>
<b>2003</b>	48	492,691	84.015	0.97885	1.689	89.926
<b>2004</b>	47	865,905	85.668	0.98819	1.676	90.052
<b>2005</b>	35	440,122	89.124	0.99807	1.616	90.478



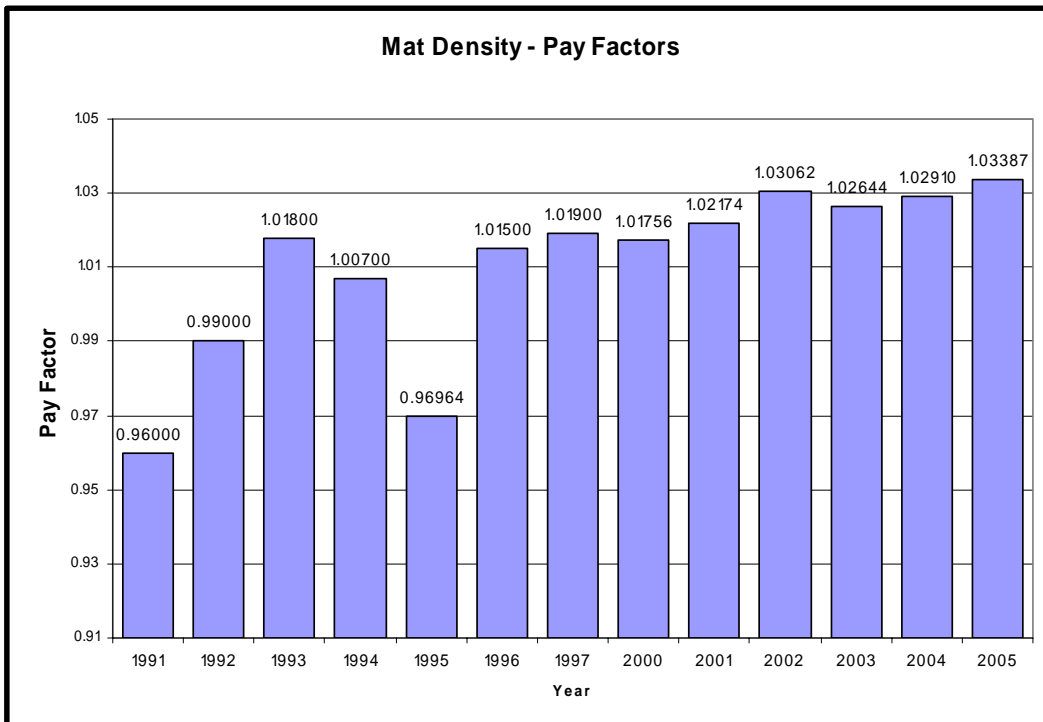
**Figure 10. Percent Asphalt Quality Levels**



**Figure 11. Percent Asphalt Pay Factors**

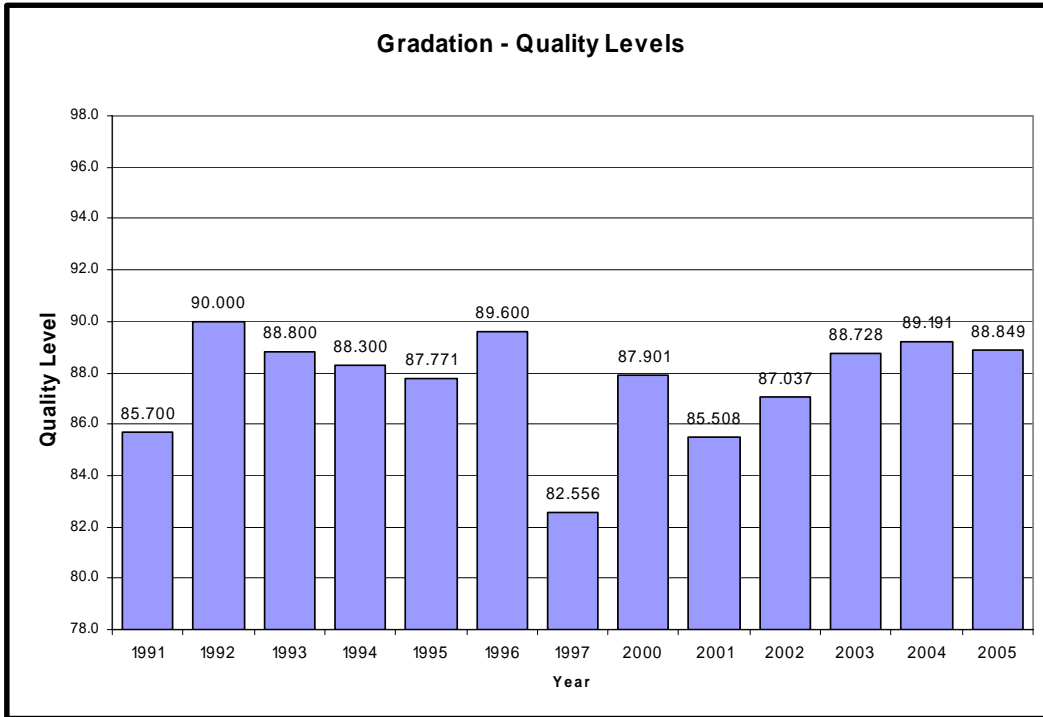


**Figure 12. Density Quality Levels**

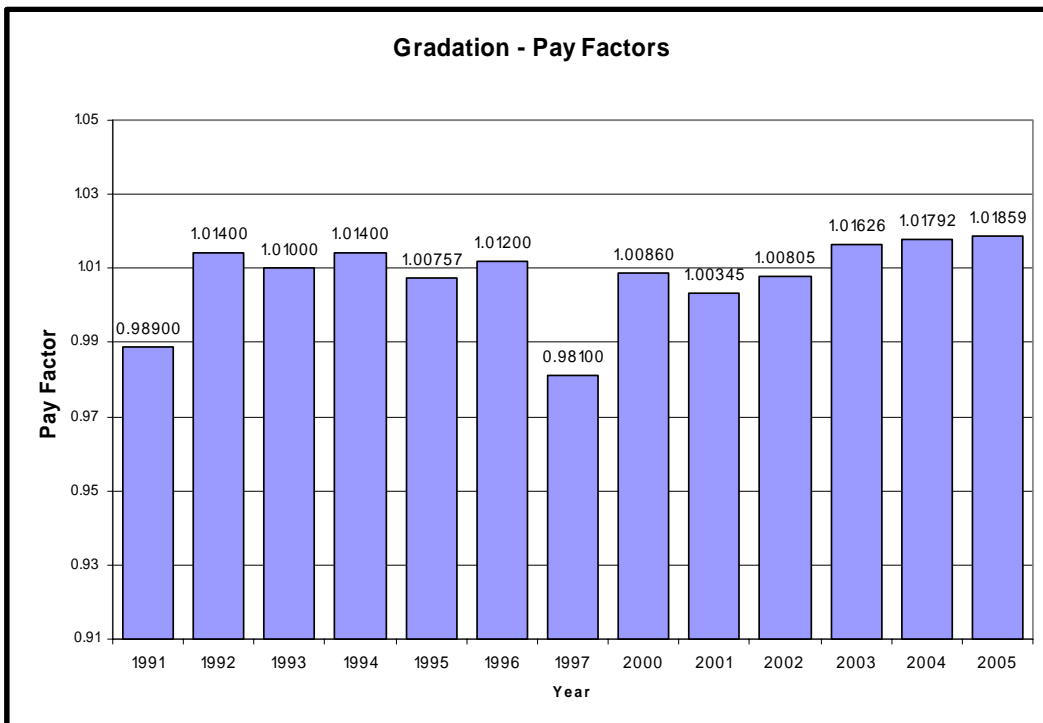


**Figure 13. Density Pay Factors**

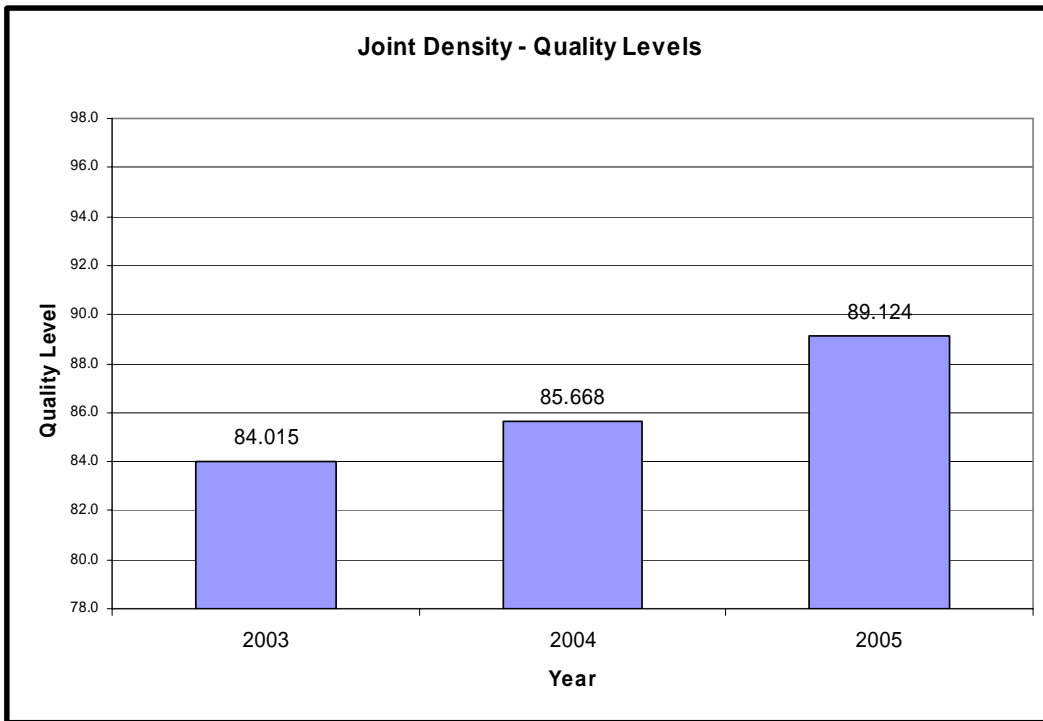




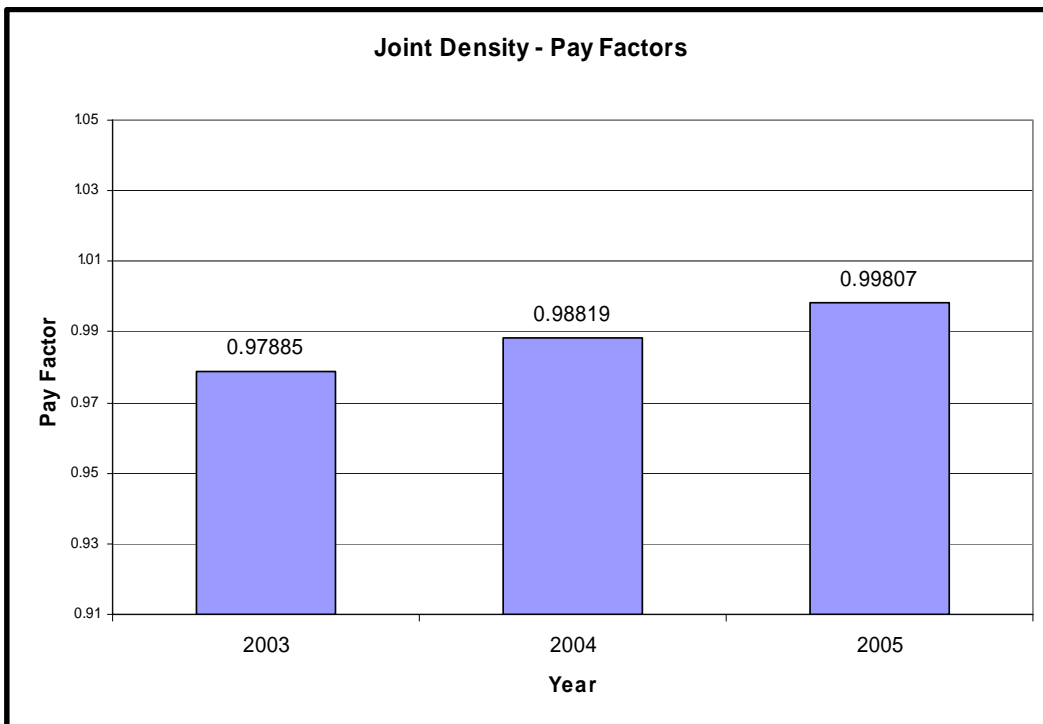
**Figure 14. Gradation Quality Levels**



**Figure 15. Gradation Pay Factors**



**Figure 16. Joint Density Quality Levels**



**Figure 17. Joint Density Pay Factors**

## 7.6 Review of Test Element Quality Levels 2001 through 2005

The test element quality levels for the years 2001 through 2005 are displayed in Figure 18, data from Table 7. The ranking of the test elements, lowest to highest, by quality level is the same in each year. Overall the mat density element has the highest quality levels. Asphalt content is second and gradation is ranked third. The joint density element has the lowest reported quality levels in the years that it has been tested, 2003 through 2005. 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 October 10, 2001 and 45% mat density, 25% asphalt content, 15% gradation, & 15% joint density after December 12, 2002, see Table 1. There appears to be a direct correlation between the importance given the element, its weight, and the quality level results. The overall weighted 5-year average quality level for each of the test elements, 2001 through 2005, is displayed in Table 8.

**Table 8. Test Element – Five-Year Averages**

	<b>Processes</b>	<b>Tons</b>	<b>Tests</b>	<b>Quality Level</b>	<b>Pay Factor</b>
<b>Asphalt Content</b>	425	4,987,954	5,276	91.531	1.02158
<b>Mat Density</b>	422	4,503,511	9,282	93.277	1.02759
<b>Gradation</b>	336	4,698,206	2,559	87.799	1.01245
<b>Joint Density ①</b>	105	1,798,718	1,294	86.061	0.98805

① Three-year average

The quality level information showing the calculated trendlines for each of the elements is presented in Figure 19. Figure 19 shows three key attributes of the test element quality levels. The 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. The second attribute is to see how the elements

rank against each other in terms of quality level, lowest to highest. Mat density has the highest quality levels followed by asphalt content and then by gradation. Joint density has been tested for three years and has the lowest reported quality levels. The third attribute is to review the range of quality levels reported for each of the elements. No trendline for an element crosses other element's trendlines. The results are distinctly gapped at this time, meaning there is a separation in the results of an element when compared to the results of the other elements. The elements are always ranked in the same order by quality level with some amount of difference between them and the next element.

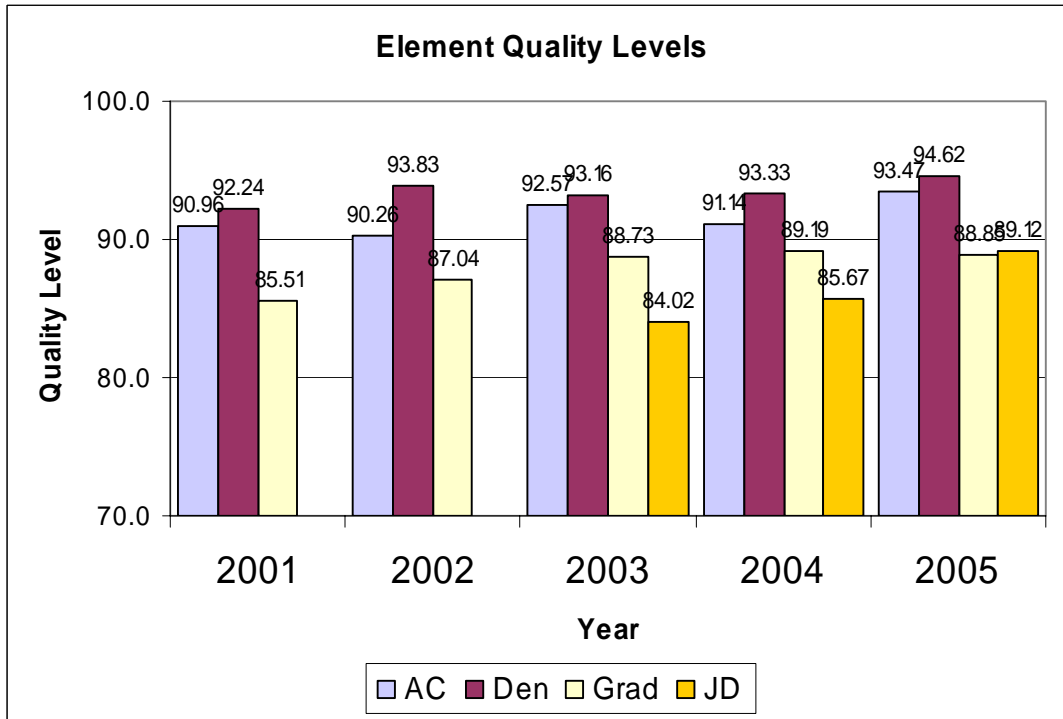
Improvements can be measured in each of the elements. The mat density element has shown improvements over the five-year time period. The quality levels have increased by a calculated amount of 1.71% over this time period. This element has consistently had the best reported quality levels. The average quality level over the last five years is 93.277%. The mean values for this element continue to move towards the target value of the specification, 94.0 percent compaction. The mean for 2005 is 94.05%. 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 five-year average pay factor for this element is 1.02759.

Joint density testing has been a requirement since in 2003. This element has shown the most improvements over the last three years. The quality levels have increased by a calculated amount of 7.66% in three years. The mean values have continued to increase each year. Moving away from the lower specification limit increases the probability that the material will be in specification limits. The three-year average pay factor for this element is 0.98805. The average for 2005 is 0.99807. Just slightly more projects have received disincentive payments than incentives payments on this element. Currently the element pay factor is about neutral, 1.0. This element currently has the lowest reported quality levels of any of the elements but has seen the most improvement of any of the elements.

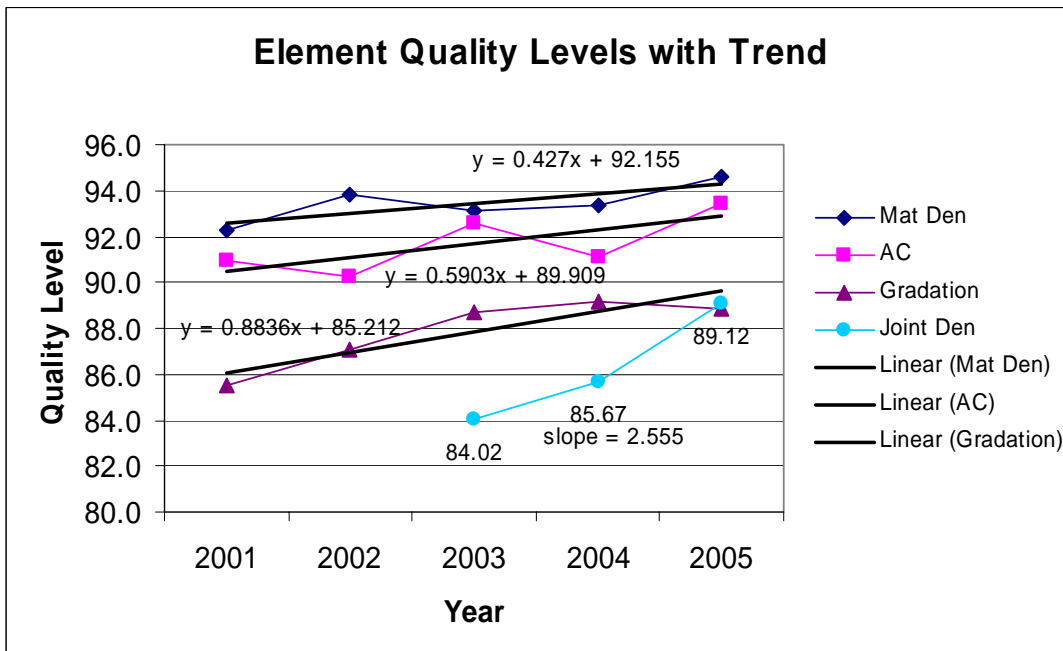
The gradation element showed the second best improvements over the last five years. The quality levels have improved by a calculated amount of 3.53% over five years. The average quality level over the five-year time period is 87.799%. This element ranks third best in reported quality levels but has seen the second best improvements. The five-year average pay factor for this element is 1.01245%. On average projects are receiving a greater than 1% incentive on this element.

The asphalt content element showed a calculated improvement of 2.36% in quality levels over the five-year time period. This was the third best rate of improvement but this element has the second best reported quality levels. The average quality level over the five-year time period is 91.531%. The five-year average pay factor is 1.02158. On average projects are receiving a greater than 2% incentive on this element.

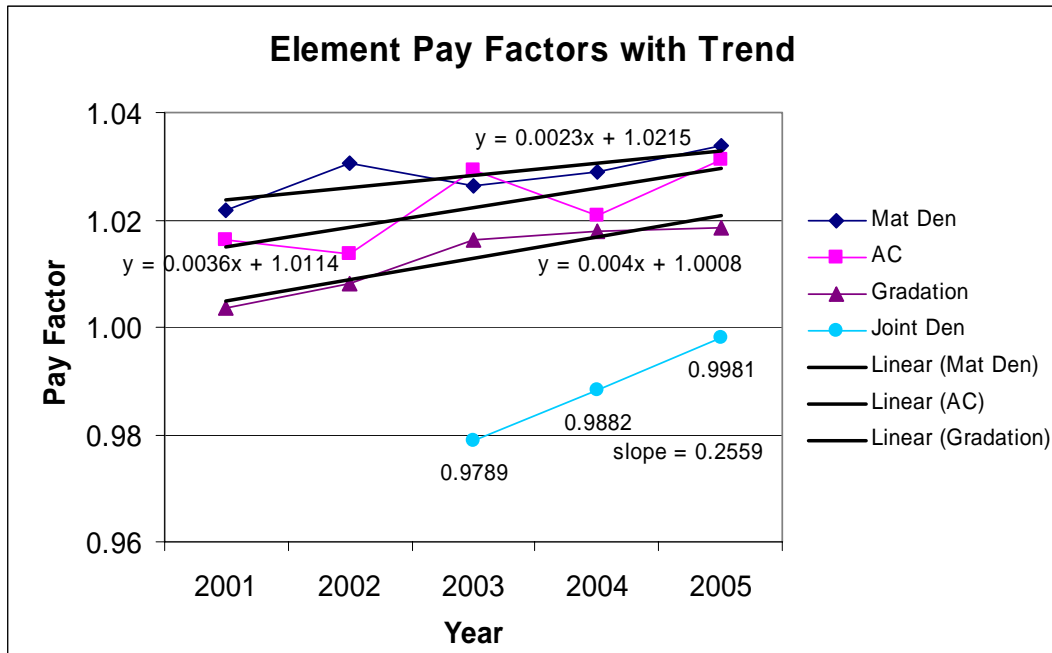
The calculated trendlines for these elements show that the elements are starting to come together in terms of quality levels. The highest reported quality levels are in the mat density element. This element has seen the smallest rate of improvement over the last five years, slope calculated at 0.427. Asphalt content and gradation have slopes calculated at 0.590 and 0.884 respectively. These element's quality levels are moving upwards at a faster rate than that of mat density. Joint density has been tested for three years. Its rate of improvement is calculated at 2.555. This element shows the fastest rate of improvement of any of the elements. If the current trends continue the quality levels for each element will continue to come together. The elements with the lower reported quality levels will continue to improve to that of the best performing element, mat density.



**Figure 18. Quality Levels by Test Element by Year**



**Figure 19. Element Quality Levels with Trendlines**



**Figure 20. Element Pay Factors with Trendlines**

### 7.7 Test Element Quality Levels for Gradings S & SX 2000 Through 2005

Information for the test elements by grading, S and SX, by year is detailed in Table 9. Figure 21 presents the percent asphalt quality level information. Grading SX showed higher quality levels in three of the years. In 2003 the reported quality levels were about equal and in 2004 grading S had higher reported quality levels. The difference between the reported quality levels was less than 5.0% in four of the years. It was less than 1.3% in two of the years. There is a 10 percent difference in the quality levels reported in 2005, the highest difference of any of the years. Only nine projects have been evaluated that used grading S in 2005. This may account for some of the differences reported for this year. The difference between the quality levels of the two gradings is within reasonable levels. Figure 22 shows the percent asphalt quality level information and the calculated trendlines. Grading SX has shown consistent results around 92.6 percent. A slight improvement can be measured over the five years. The slope for the trendline is 0.0038. The results for grading S have had more variation. The calculated slope is negative which would indicate decreasing quality levels but that calculation is highly influenced by the low results in 2005. Excluding 2005 the slope of the trendline

would be positive. Overall the quality levels for each of the gradings is at a high level being close to or above 90%.

The mat density results are presented in Figures 23 & 24. Improvements can be measured in the results for both of the gradings. Both gradings have positive slopes showing increasing quality levels. Grading S has a calculated increase in quality levels of 2.07% over the five-year time period. Grading SX has a slightly better increase of 2.86% over the same time period. The reported quality levels are at very good levels. All quality levels are above 91.5% except for one in this element. The difference between the two gradings is fairly similar in each year. The greatest difference is just over 3% in two of the years. This element shows consistent results at high quality levels.

The results for the gradation element are presented in Figures 25 & 26. Improvement can be measured in both gradings. Grading SX has shown an improvement in quality levels of 1.92% over the five-year time period. Grading S has shown a much better improvement of 6.33% over five years. The difference between the reported quality levels in each year is 3% or less in four of the five years. 2005 has the greatest difference in quality levels at 3.99%. This element has shown more improvement than either percent asphalt or mat density over the last five years. However, the reported quality levels are lower than those of the other two elements. If the current trend continues, the gap between the quality levels reported for the gradation element and those of the asphalt content and mat density elements will continue to decrease.

Joint density testing has been a requirement since 2003. The results for the years 2003 through 2005 are included in Table 8 and presented in Figures 27 and 28. After three years, improvements can be measured in both gradings. The quality levels for grading SX have increased by 0.71%. The quality levels for grading S have increased by 8.21%. The rate of improvement for this new test element has been good over its first three years. The rate of improvement has been higher than any of the other elements. As more projects are constructed continued improvements should be seen in this element.



**Table 9. Review of Test Elements – Gradings S & SX**

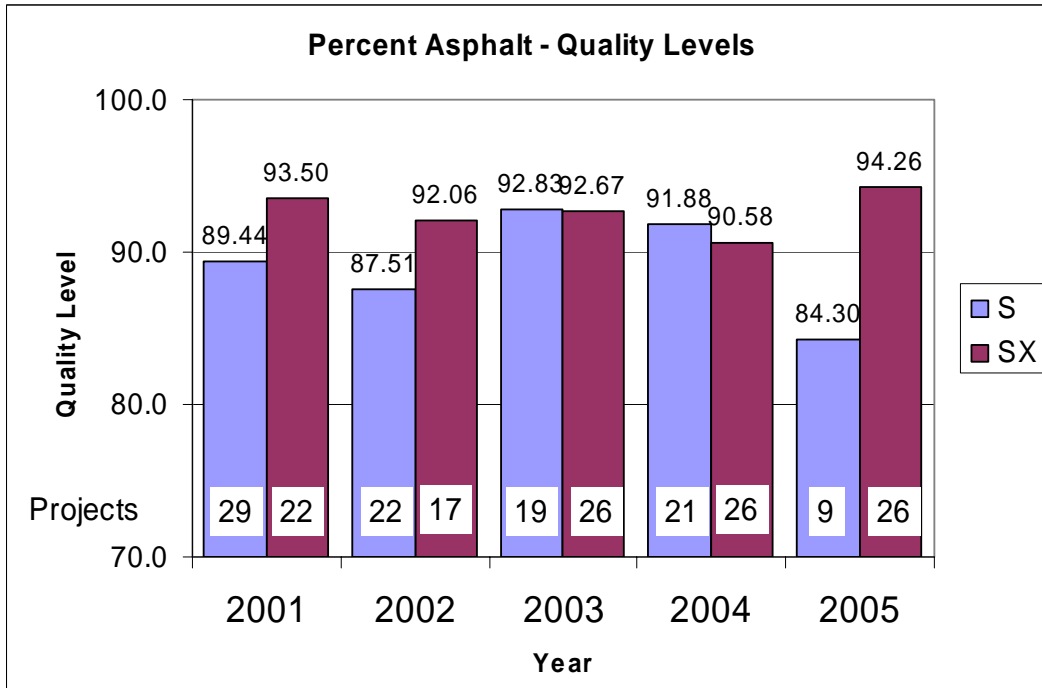
Criteria: Processes with less than 3 tests are EXCLUDED from this Table.

Percent Asphalt						Quality Level	Pay Factor
Grading	Year	Projects	Processes	Tests	Tons		
<b>S</b>	2000	21	30	422	407,624	89.358	1.01195
	2001	29	53	677	635,216	89.438	1.00958
	2002	22	37	290	276,108	87.507	1.00494
	2003	19	30	394	380,029	92.829	1.03135
	2004	21	44	466	432,373	91.878	1.02337
	2005	9	8	69	58,657	84.304	0.99707
<b>SX</b>	2000	18	39	671	650,634	94.005	1.03092
	2001	22	45	561	488,079	93.500	1.02772
	2002	17	35	592	580,819	92.055	1.01950
	2003	26	51	633	607,211	92.672	1.02779
	2004	26	45	612	580,793	90.583	1.01797
	2005	26	36	438	414,220	94.255	1.03388

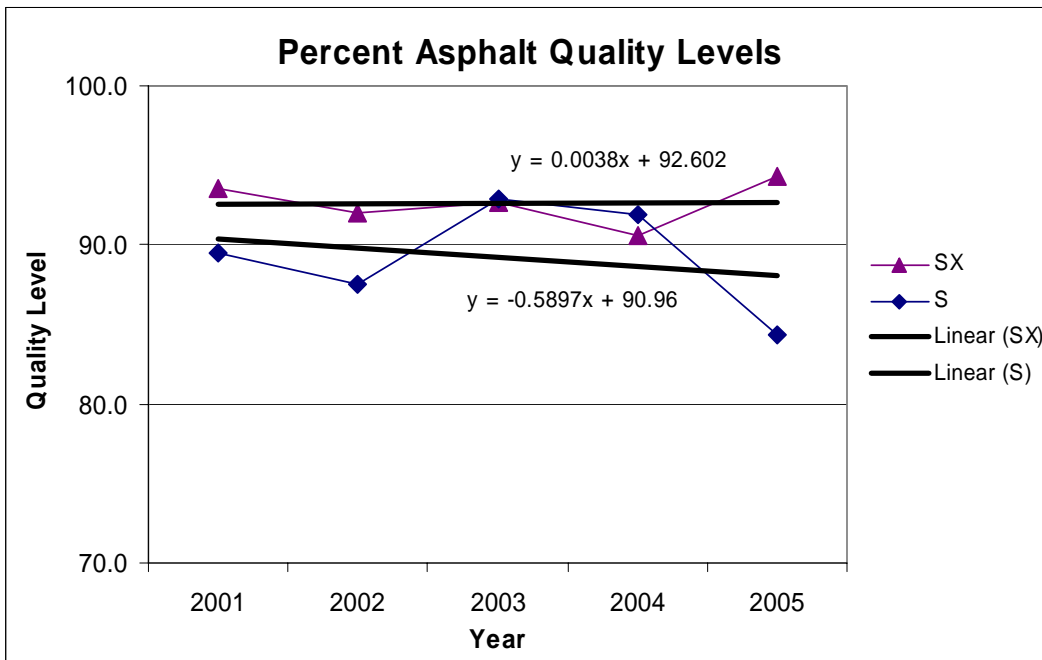
Mat Density						Quality Level	Pay Factor
Grading	Year	Projects	Processes	Tests	Tons		
<b>S</b>	2000	21	32	796	393,932	91.945	1.01636
	2001	29	54	1257	613,326	93.520	1.03022
	2002	22	45	604	291,086	92.910	1.02753
	2003	19	33	698	340,178	91.704	1.01987
	2004	21	44	832	387,248	92.984	1.02805
	2005	9	12	133	52,350	96.068	1.03834
<b>SX</b>	2000	18	36	1194	585,885	92.681	1.01837
	2001	22	37	835	414,091	90.386	1.00896
	2002	17	32	1035	513,004	95.088	1.03705
	2003	26	52	1143	551,281	94.945	1.03629
	2004	26	41	1058	511,312	93.947	1.03255
	2005	26	33	739	362,104	94.531	1.03399

**Table 9. Continued**

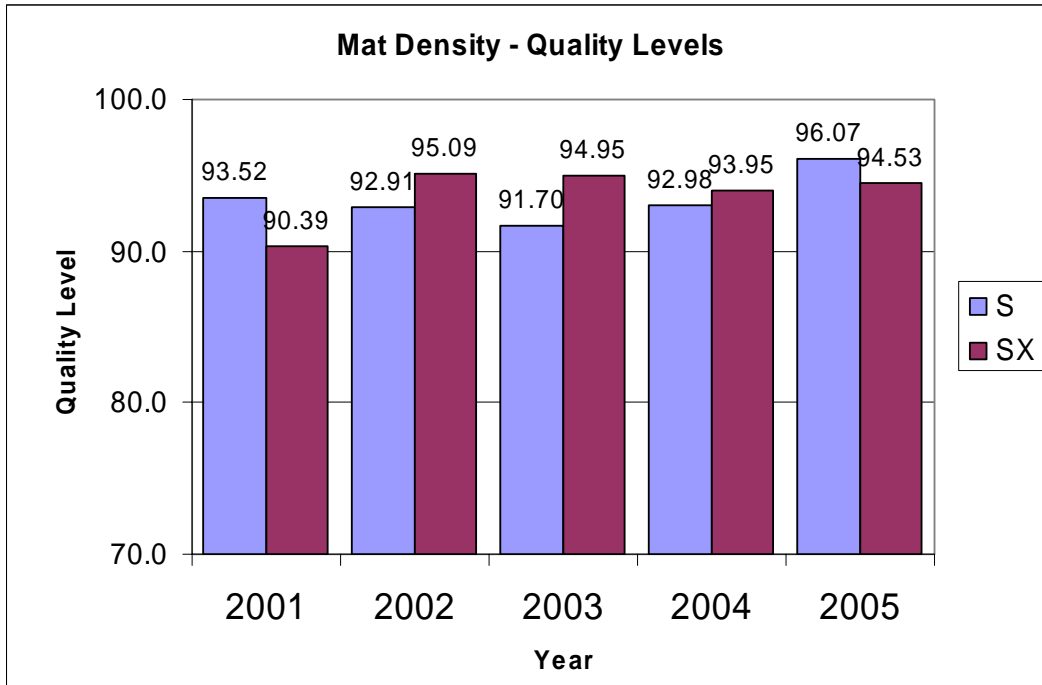
<b>Gradation</b>							
<b>Grading</b>	<b>Year</b>	<b>Projects</b>	<b>Processes</b>	<b>Tests</b>	<b>Tons</b>	<b>Quality Level</b>	<b>Pay Factor</b>
<b>S</b>	2000	21	28	217	405,991	83.922	0.98876
	2001	29	41	306	590,329	85.034	1.00231
	2002	22	24	131	236,555	87.526	1.00358
	2003	19	22	188	357,681	86.503	1.00890
	2004	21	41	242	426,418	89.377	1.02044
	2005	9	7	33	22,075	92.022	1.02831
<b>SX</b>	2000	18	34	331	631,541	90.459	1.02136
	2001	22	36	275	457,173	86.352	1.00567
	2002	17	28	290	549,706	87.724	1.01295
	2003	26	42	320	575,036	89.545	1.01810
	2004	26	34	293	548,146	89.164	1.01585
	2005	26	25	208	384,996	88.035	1.01483
<b>Joint Density</b>							
<b>Grading</b>	<b>Year</b>	<b>Projects</b>	<b>Processes</b>	<b>Tests</b>	<b>Tons</b>	<b>Quality Level</b>	<b>Pay Factor</b>
<b>S</b>	2003	9	11	106	193,073	77.700	0.94446
	2004	17	22	234	337,713	87.527	0.99648
	2005	9	6	52	59,510	85.911	0.97658
<b>SX</b>	2003	13	11	197	248,411	87.709	1.00115
	2004	25	27	327	489,562	83.417	0.97772
	2005	22	20	252	328,003	89.137	0.99964



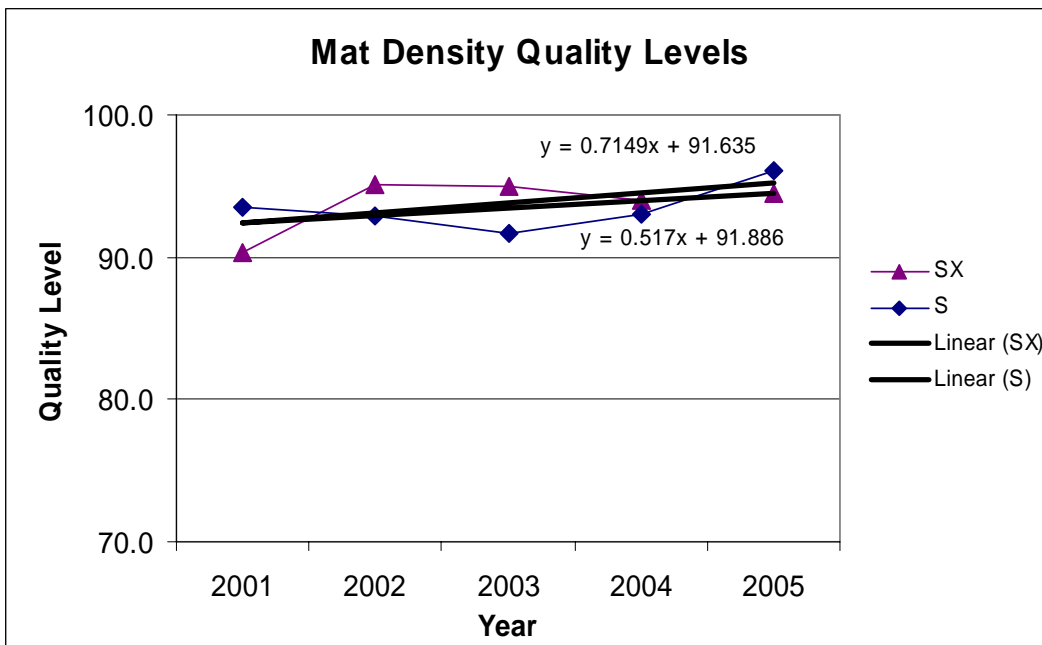
**Figure 21. Percent Asphalt Quality Levels – Gradings S & SX**



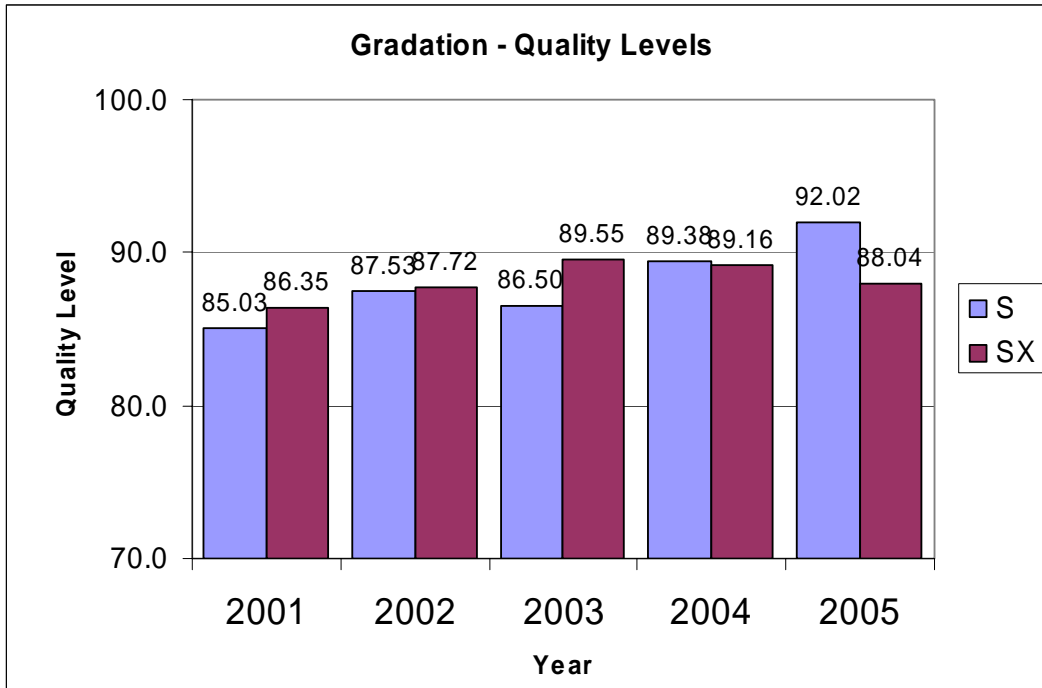
**Figure 22. Percent Asphalt Quality Levels – Gradings S & SX with Trendlines**



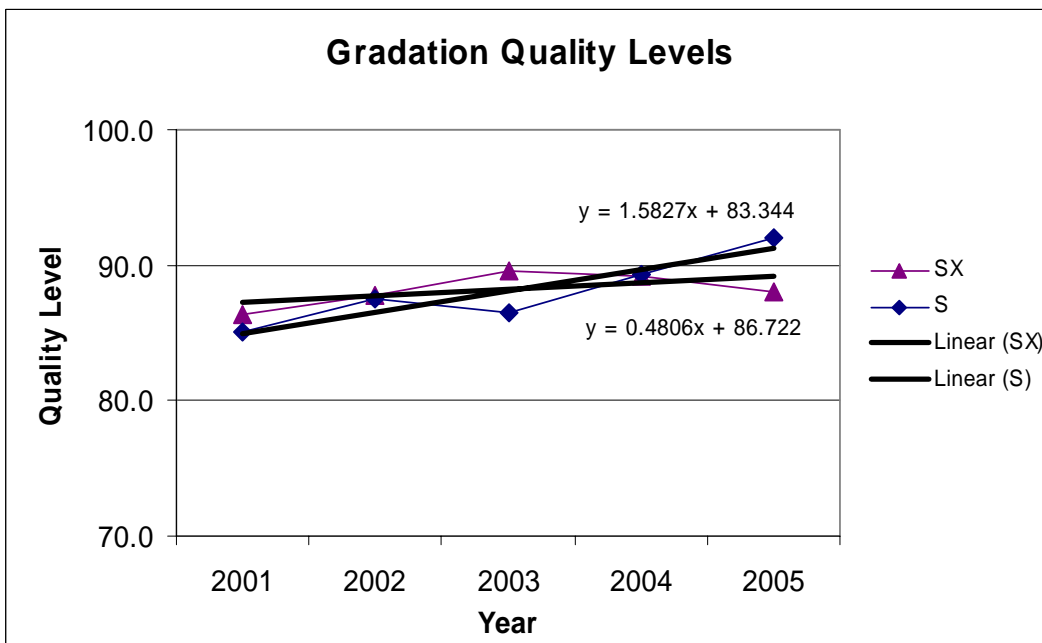
**Figure 23. Mat Density Quality Levels – Gradings S & SX**



**Figure 24. Mat Density Quality Levels – Gradings S & SX with Trendlines**



**Figure 25. Gradation Quality Levels – Gradings S & SX**



**Figure 26. Gradation Quality Levels – Gradings S & SX with Trendlines**

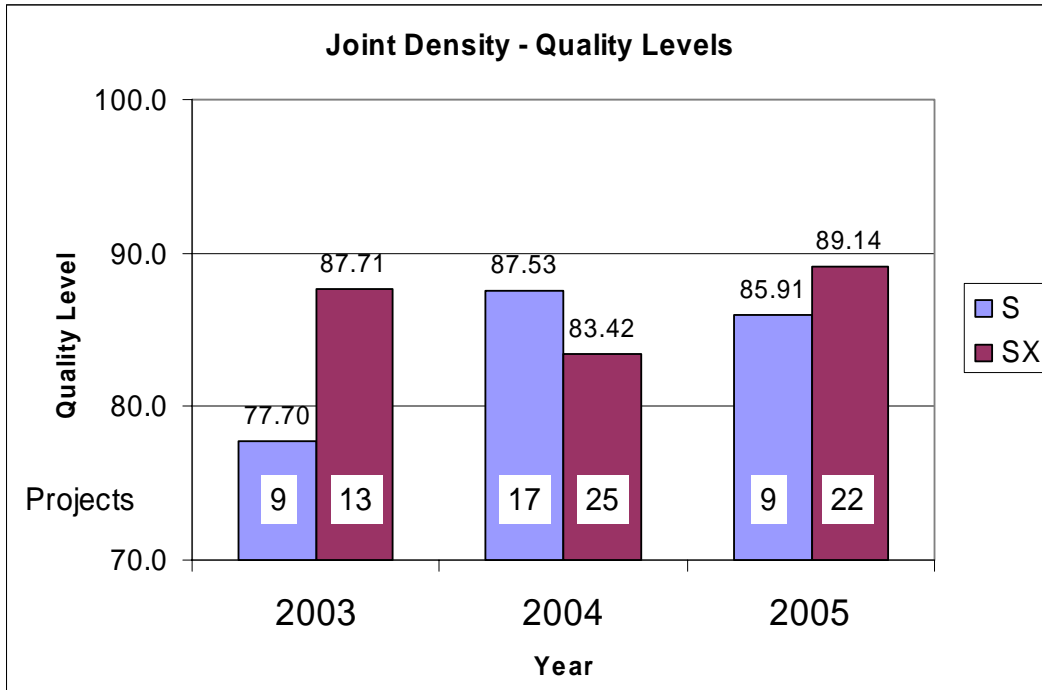


Figure 27. Joint Density Quality Levels – Gradings S & SX

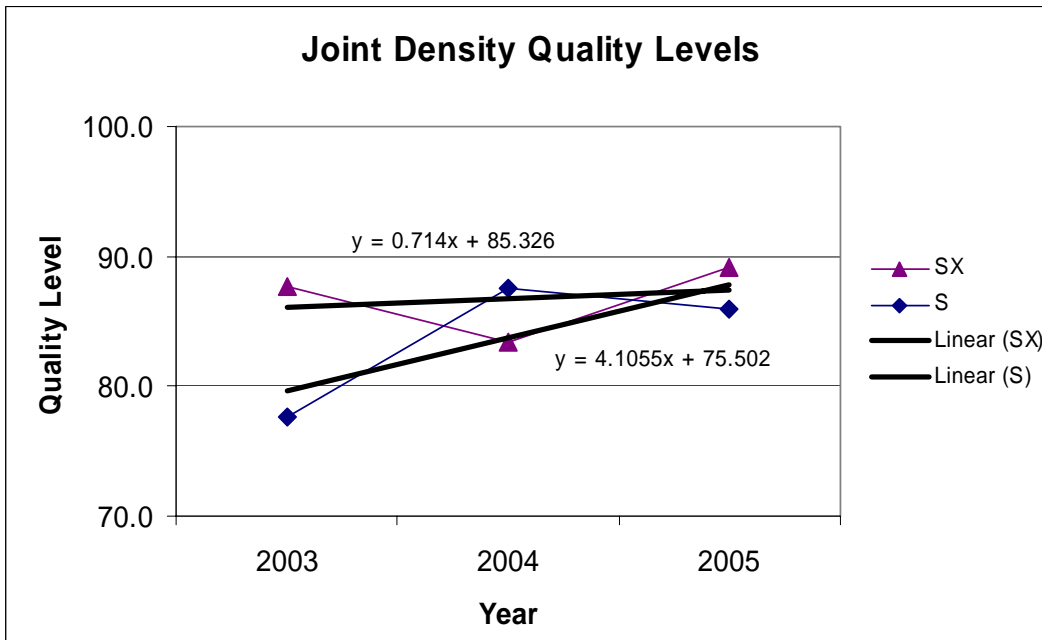


Figure 28. Joint Density Quality Levels – Gradings S & SX with Trendlines

## **7.8 Recap Reports, 2000 to 2005 Data**

Additional reports on 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 2005 is given in which the data is grouped by grading, year, and then region. The standard deviation information for the gradation element is detailed in a separate report, Report 4.

## **7.9 Reports for 2005**

Appendix B contains a series of detailed reports for projects with start dates in 2005. A project listing is generated for the year showing the projects evaluated. The Project Data report, Report 7, 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 Report 8. There are also detailed reports for each of the test elements. These reports detail the calculations that are used throughout this report for the year 2005.

## **8.0 SUMMARY**

Continued improvements can be measured in the hot mix asphalt in the years 2001 through 2005. When evaluating the overall results for the projects, by reviewing the Calculated Pay Factor Composite, there is a 0.007 improvement over the last five years. The quality levels for each of the individual elements have all increased. Asphalt content has a calculated improvement of 2.36% in quality levels over the five-year time period. The overall quality level for this element is 91.53%. Mat density showed an improvement of 1.71% in quality levels over the five-year time period. This element has consistently had the best reported quality levels. The average quality level over the last five years for this element is 93.28%. The gradation element showed more improvement than asphalt content and mat density. The quality levels for this element improved by 3.53% over the last five years. However, this element has had reported quality levels that were lower than those reported in the asphalt content and mat density elements. The five-year average quality level for this element is 87.80%. Joint density has been a testing requirement since in 2003. This element has shown very good

improvement over the three-year time period. The quality levels have improved by a calculated amount of 7.66% in three years. The three-year average quality level for this element is 86.06%.

The pay factors for each of the elements have also increased. The results for 2005 show the highest pay factors in each of the elements for any year. On average, incentive payments of 3.1%, 3.4%, & 1.9% were paid on the asphalt content, mat density, and gradation elements respectively in 2005. The pay factor for joint density has shown good improvement in the three years. The pay factor in 2005 was just slightly under the neutral mark of 1.0. Approximately half of the projects received an incentive on this element in 2005. The other half received some amount of disincentive.

When ranking the elements by quality levels we find that the ranking is the same as the importance given the element, the element weight (W factor). Mat density has shown the highest quality levels. This element has the highest weight at 0.45. Asphalt content has the next best reported quality levels. It has the second highest weight at 0.25. The gradation and joint density elements both have a weight of 0.15. These elements have the third and fourth best quality level results. Currently there is a correlation between the weight given the element and reported quality levels.

When evaluating the data by grading, S and SX, improvements can be measured in all of the elements for both gradings. The only exception to this is in the calculation for percent asphalt for grading S. The results in 2005 were low compared to the previous years. The data for 2005 only contained nine projects though. This may have something to do with the low results. As more projects are received these results may increase. Excluding the results for 2005 this element would have had a positive slope. Grading SX showed an improvement calculated at 0.015% over five years in the percent asphalt element. Gradings S and SX improved by 2.068% and 2.860% respectively in the mat density element over five years. Grading S improved by 6.331% in the gradation element. Grading SX improved by 1.922%. Both gradings improved in the joint density element. Grading S improved by 8.211%; grading SX by 0.714%.



## 9.0 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 303 398-6565, [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.

10 Hot Bituminous Pavement Gradation Acceptance Review of QC/QA Data 2000 through 2003, (April 2005, Eric Chavez, Colorado Department of Transportation, 4201 East Arkansas Ave, Denver, CO 80222), Report No. CDOT-DTD-R-2005-7.

11 Hot Mix Asphalt Gradation Acceptance Review of QC/QA Data 2000 through 2004, (November 2005, Eric Chavez, Colorado Department of Transportation, 4201 East Arkansas Ave, Denver, CO 80222), Report No. CDOT-DTD-R-2005-18.

## URLs

CDOT Library: <http://www.dot.state.co.us/Publications/Library.htm>

CDOT 2005 Construction Specification Book: [\*Subsection 105.05, Conformity to the Contract of Hot Mix Asphalt.\*](#)

CDOT Application Software: <http://www.dot.state.co.us/ecsu/Products.asp>

## **Appendix A**

### Recap Reports for Project Data 2000 Through 2005

Report 1	Asphalt Content – Recap by Grading/Year/Region	A - 1
Report 2	Mat Density – Recap by Grading/Year/Region	A - 7
Report 3	Gradation Process Information, Recap by Grading/Year/Region	A - 12
Report 4	Gradation Standard Deviation, Recap by Grading/Year/Region	A - 18
Report 5	Joint Density – Recap by Grading/Year/Region	A - 24



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

**Criteria:** Projects with Bid Dates from 1/1/2000 to 12/31/2005.

Processes with less than 3 tests not included.

Grading: F	Processes	Tons	Tests	Weighted Average:			
				Price	Quality Level	Pay Factor	St. Dev.
2001							
Region: 3	1	3,126	3	\$37.26	100.000	1.02500	0.046
Totals 2001	1	3,126	3	\$37.26	100.000	1.02500	0.046
Grand Totals - Grading: F	1	3,126	3	\$37.26	100.000	1.02500	0.046
Grading: Fines	Processes	Tons	Tests	Weighted Average:			
				Price	Quality Level	Pay Factor	St. Dev.
2002							
Region: 5	1	22,223	23	\$25.00	97.926	1.05000	0.082
Totals 2002	1	22,223	23	\$25.00	97.926	1.05000	0.082
Grand Totals - Grading: Fines	1	22,223	23	\$25.00	97.926	1.05000	0.082

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

<i>Grading: S</i>	Processes	Tons	Tests	Weighted Average:			
				Price	Quality Level	Pay Factor	St. Dev.
<b>2000</b>							
<i>Region: 1</i>	7	82,198	82	\$40.03	89.312	1.01027	0.148
<i>Region: 2</i>	18	281,529	292	\$37.95	88.780	1.00910	0.173
<i>Region: 6</i>	5	43,897	48	\$45.03	93.147	1.03340	0.133
<i>Totals 2000</i>	30	407,624	422	\$39.13	89.358	1.01195	0.164
<b>2001</b>							
<i>Region: 1</i>	14	209,914	239	\$44.76	94.994	1.03839	0.137
<i>Region: 2</i>	19	189,538	198	\$35.98	82.208	0.96495	0.190
<i>Region: 4</i>	6	54,111	57	\$41.55	89.355	1.02267	0.168
<i>Region: 6</i>	14	181,653	183	\$40.50	90.588	1.01893	0.150
<i>Totals 2001</i>	53	635,216	677	\$40.65	89.438	1.00958	0.159
<b>2002</b>							
<i>Region: 1</i>	5	15,938	18	\$41.30	86.517	0.99528	0.111
<i>Region: 2</i>	13	111,408	114	\$38.55	89.442	1.01467	0.150
<i>Region: 4</i>	11	83,886	90	\$37.93	85.924	0.99671	0.186
<i>Region: 6</i>	8	64,876	68	\$39.41	86.473	1.00123	0.180
<i>Totals 2002</i>	37	276,108	290	\$38.72	87.507	1.00494	0.166
<b>2003</b>							
<i>Region: 1</i>	4	97,096	100	\$37.11	95.983	1.04563	0.137
<i>Region: 2</i>	20	168,250	176	\$36.11	88.626	1.01363	0.163
<i>Region: 4</i>	6	114,683	118	\$37.52	96.325	1.04526	0.131
<i>Totals 2003</i>	30	380,029	394	\$36.79	92.829	1.03135	0.146
<b>2004</b>							
<i>Region: 1</i>	3	14,843	23	\$33.86	81.142	0.97039	0.141
<i>Region: 2</i>	3	80,197	80	\$38.24	92.494	1.02650	0.147
<i>Region: 4</i>	22	209,825	227	\$34.68	92.994	1.02699	0.146
<i>Region: 5</i>	1	13,468	14	\$31.35	86.556	1.00612	0.198
<i>Region: 6</i>	15	114,040	122	\$35.02	91.417	1.02345	0.152
<i>Totals 2004</i>	44	432,373	466	\$35.30	91.878	1.02337	0.149

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

**2005**

<i>Region: 1</i>	3	30,116	36	\$49.41	91.183	1.03119	0.160
<i>Region: 2</i>	1	5,107	7	\$46.00	68.795	0.93057	0.291
<i>Region: 4</i>	2	7,296	9	\$39.34	51.507	0.83556	0.174
<i>Region: 6</i>	2	16,138	17	\$39.90	91.201	1.02746	0.157
<i>Totals 2005</i>	8	58,657	69	\$45.25	84.304	0.99707	0.172

<i>Grand Totals - Grading: S</i>	202	2,190,007	2318	\$38.52	90.112	1.01560	0.157
----------------------------------	-----	-----------	------	---------	--------	---------	-------

**Weighted Average:**

*Grading: SG*

	Processes	Tons	Tests	Price	Quality Level	Pay Factor	St. Dev.
--	-----------	------	-------	-------	---------------	------------	----------

**2002**

<i>Region: 1</i>	2	19,809	19	\$35.08	86.818	1.00611	0.170
<i>Totals 2002</i>	2	19,809	19	\$35.08	86.818	1.00611	0.170

**2003**

<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

**2004**

<i>Region: 1</i>	1	4,427	6	\$37.00	76.037	0.98030	0.259
<i>Totals 2004</i>	1	4,427	6	\$37.00	76.037	0.98030	0.259

<i>Grand Totals - Grading: SG</i>	5	41,519	47	\$34.87	84.358	0.99918	0.170
-----------------------------------	---	--------	----	---------	--------	---------	-------

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

<i>Grading: SMA</i>	Processes	Tons	Tests	Weighted Average:			
				Price	Quality Level	Pay Factor	St. Dev.
<b>2001</b>							
<i>Region: 3</i>	2	17,033	17	\$48.36	73.488	0.94554	0.191
<i>Totals 2001</i>	2	17,033	17	\$48.36	73.488	0.94554	0.191
<b>2002</b>							
<i>Region: 3</i>	1	25,000	25	\$44.79	86.188	0.99091	0.192
<i>Region: 6</i>	4	50,168	50	\$49.11	84.534	0.99417	0.150
<i>Totals 2002</i>	5	75,168	75	\$47.67	85.084	0.99309	0.164
<b>2003</b>							
<i>Region: 1</i>	2	31,814	32	\$48.70	90.569	1.02191	0.167
<i>Region: 3</i>	6	76,651	77	\$44.44	93.262	1.03802	0.140
<i>Region: 6</i>	2	47,227	43	\$46.57	92.605	1.03426	0.161
<i>Totals 2003</i>	10	155,692	152	\$45.96	92.512	1.03359	0.152
<b>2004</b>							
<i>Region: 1</i>	4	53,856	56	\$47.98	90.798	1.02878	0.141
<i>Region: 3</i>	2	30,297	31	\$47.70	95.948	1.04294	0.128
<i>Region: 6</i>	2	27,562	29	\$42.68	89.198	1.00639	0.160
<i>Totals 2004</i>	8	111,715	116	\$46.60	91.800	1.02710	0.142
<b>2005</b>							
<i>Region: 1</i>	1	17,500	18	\$61.80	92.462	1.03343	0.157
<i>Region: 2</i>	2	17,737	19	\$55.24	94.035	1.03166	0.134
<i>Region: 3</i>	1	18,965	19	\$56.09	93.200	1.03706	0.130
<i>Region: 6</i>	5	53,771	55	\$50.98	97.665	1.04341	0.115
<i>Totals 2005</i>	9	107,973	111	\$54.33	95.441	1.03875	0.128
<b>Grand Totals - Grading: SMA</b>	34	467,581	471	\$48.41	91.131	1.02351	0.147



*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>	2	11,254	14	\$42.78	78.552	0.98619	0.227
<i>Region: 3</i>	26	341,018	356	\$38.80	95.014	1.03576	0.131
<i>Region: 5</i>	11	298,362	301	\$37.83	93.435	1.02707	0.144
<i>Totals 2000</i>	39	650,634	671	\$38.43	94.005	1.03092	0.139
<b>2001</b>							
<i>Region: 1</i>	3	22,053	23	\$35.53	83.201	0.98779	0.212
<i>Region: 3</i>	34	384,633	452	\$41.93	93.493	1.02781	0.143
<i>Region: 5</i>	8	81,393	86	\$49.29	96.324	1.03810	0.121
<i>Totals 2001</i>	45	488,079	561	\$42.87	93.500	1.02772	0.142
<b>2002</b>							
<i>Region: 1</i>	2	45,139	46	\$45.02	78.416	0.93912	0.206
<i>Region: 3</i>	21	263,347	271	\$33.29	92.423	1.02434	0.150
<i>Region: 4</i>	1	45,000	45	\$39.00	94.111	1.03472	0.159
<i>Region: 5</i>	10	218,484	221	\$36.18	93.684	1.02631	0.139
<i>Region: 6</i>	1	8,849	9	\$52.00	99.994	1.04000	0.109
<i>Totals 2002</i>	35	580,819	592	\$36.02	92.055	1.01950	0.151
<b>2003</b>							
<i>Region: 1</i>	9	191,644	201	\$37.22	93.306	1.03078	0.155
<i>Region: 3</i>	29	261,888	269	\$42.26	93.094	1.02850	0.133
<i>Region: 5</i>	11	141,357	147	\$42.44	92.023	1.02540	0.158
<i>Region: 6</i>	2	12,322	16	\$34.00	81.265	0.99342	0.231
<i>Totals 2003</i>	51	607,211	633	\$40.54	92.672	1.02779	0.148
<b>2004</b>							
<i>Region: 1</i>	5	39,845	46	\$39.39	89.581	1.01472	0.138
<i>Region: 2</i>	2	16,498	17	\$40.00	97.327	1.04136	0.149
<i>Region: 3</i>	26	329,142	342	\$39.24	90.692	1.01705	0.163
<i>Region: 5</i>	12	195,308	207	\$42.85	90.034	1.01821	0.163
<i>Totals 2004</i>	45	580,793	612	\$40.49	90.583	1.01797	0.161

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

---

**2005**

<i>Region: 1</i>	11	177,924	191	\$43.09	93.983	1.03358	0.134
<i>Region: 2</i>	1	5,000	5	\$46.00	86.921	1.03000	0.208
<i>Region: 3</i>	10	71,959	78	\$44.03	89.399	1.01008	0.157
<i>Region: 5</i>	10	142,901	148	\$37.36	97.389	1.04706	0.132
<i>Region: 6</i>	4	16,436	16	\$39.48	93.451	1.02785	0.131
<i>Totals 2005</i>	36	414,220	438	\$41.17	94.255	1.03388	0.138

---

<i>Grand Totals - Grading: SX</i>	251	3,321,756	3507	\$39.75	92.779	1.02598	0.147
-----------------------------------	-----	-----------	------	---------	--------	---------	-------

---

*Totals All Gradings*

---

**Weighted Average:**

<b>Processes</b>	<b>Tons</b>	<b>Tests</b>	<b>Price</b>	<b>Quality Level</b>	<b>Pay Factor</b>	<b>St. Dev.</b>
494	6,046,212	6369	\$39.88	91.650	1.02194	0.150

---

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

**Criteria:** Projects with Start Dates from 1/1/2000 to 12/31/2005.

Processes with less than 3 tests not included.

Grading: S	Processes	Total Tons	Tests	Weighted Average				
				Price	Quality Level	Pay Factor	St. Dev.	Mean
2000								
Region: 1	7	80,270	160	\$39.94	94.360	1.03320	0.912	93.71
Region: 2	20	268,765	545	\$38.27	90.658	1.00684	0.983	93.41
Region: 6	5	44,897	91	\$44.70	95.329	1.04330	0.844	93.59
Totals: 2000								
	32	393,932	796	\$39.34	91.945	1.01636	0.953	93.50
2001								
Region: 1	15	207,716	425	\$44.79	93.456	1.02922	0.972	93.69
Region: 2	20	193,813	400	\$36.00	92.947	1.02676	0.942	93.80
Region: 4	5	31,644	68	\$33.29	97.159	1.04870	0.854	93.77
Region: 6	14	180,153	364	\$40.45	93.571	1.03184	0.886	93.63
Totals: 2001								
	54	613,326	1,257	\$40.15	93.520	1.03022	0.931	93.71
2002								
Region: 1	6	17,459	36	\$40.86	94.691	1.02743	0.872	93.85
Region: 2	16	116,073	235	\$38.92	94.316	1.03563	0.910	93.81
Region: 4	13	89,963	191	\$38.04	92.696	1.02604	1.002	93.90
Region: 6	10	67,591	142	\$39.41	90.322	1.01562	0.796	93.12
Totals: 2002								
	45	291,086	604	\$38.88	92.910	1.02753	0.910	93.68
2003								
Region: 1	4	80,210	169	\$37.51	92.884	1.01767	1.020	93.62
Region: 2	23	158,249	325	\$36.23	88.015	1.00540	1.072	93.41
Region: 4	6	101,719	204	\$38.05	96.512	1.04411	0.810	93.66
Totals: 2003								
	33	340,178	698	\$37.08	91.704	1.01987	0.981	93.53

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

**2004**

<i>Region: 1</i>	3	13,343	32	\$34.07	92.742	1.02000	0.876	93.30
<i>Region: 2</i>	4	77,697	155	\$38.05	94.468	1.03693	0.815	93.72
<i>Region: 4</i>	22	181,981	379	\$35.38	93.426	1.02924	0.936	93.80
<i>Region: 5</i>	1	1,687	4	\$31.35	54.540	0.88623	1.652	92.22
<i>Region: 6</i>	14	112,540	262	\$35.10	91.850	1.02309	0.832	93.52

<i>Totals: 2004</i>	44	387,248	832	\$35.77	92.984	1.02805	0.883	93.68
---------------------	----	---------	-----	---------	--------	---------	-------	-------

**2005**

<i>Region: 1</i>	3	22,284	52	\$47.34	99.471	1.04795	0.698	93.77
<i>Region: 2</i>	1	4,607	12	\$46.00	96.156	1.04500	1.040	94.11
<i>Region: 4</i>	6	9,821	33	\$45.67	89.253	1.01425	0.917	94.27
<i>Region: 6</i>	2	15,638	36	\$39.58	95.471	1.03780	0.765	93.59

<i>Totals: 2005</i>	12	52,350	133	\$44.59	96.068	1.03834	0.789	93.84
---------------------	----	--------	-----	---------	--------	---------	-------	-------

<b>Grand Totals Grad S</b>	220	2,078,120	4,320	\$38.61	92.803	1.02532	0.928	93.63
----------------------------	-----	-----------	-------	---------	--------	---------	-------	-------

Grading: SG	Processes	Total Tons	Tests	Weighted Average				
				Price	Quality Level	Pay Factor	St. Dev.	Mean
2002								
Region: 1	4	24,785	51	\$35.08	94.640	1.03646	0.836	93.94
Totals: 2002	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
2004								
Region: 1	1	4,427	9	\$37.00	93.978	1.04000	0.982	93.46
Totals: 2004	1	4,427	9	\$37.00	93.978	1.04000	0.982	93.46
Grand Totals Grad SG	7	45,995	96	\$34.88	94.207	1.03376	0.822	93.63

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

Grading: SMA	Processes	Total Tons	Tests	Weighted Average				
				Price	Quality Level	Pay Factor	St. Dev.	Mean
2001								
Region: 3	2	17,033	34	\$48.36	90.952	1.02727	1.020	95.15
Totals: 2001	2	17,033	34	\$48.36	90.952	1.02727	1.020	95.15
2002								
Region: 3	2	26,402	54	\$44.79	80.326	0.92749	1.420	94.41
Region: 6	4	49,168	99	\$49.11	93.035	1.03421	1.040	95.03
Totals: 2002	6	75,570	153	\$47.60	88.595	0.99692	1.173	94.81
2003								
Region: 1	2	31,814	63	\$48.70	84.429	0.96768	1.352	94.62
Region: 3	7	75,867	157	\$44.55	87.347	0.99309	1.193	94.54
Region: 6	2	47,945	95	\$46.61	97.760	1.05090	0.783	95.14
Totals: 2003	11	155,626	315	\$46.03	89.958	1.00570	1.099	94.74
2004								
Region: 1	3	41,691	84	\$44.76	89.894	1.00518	1.077	95.45
Region: 3	2	30,297	62	\$47.70	93.239	1.02865	0.919	94.67
Region: 6	2	27,562	55	\$42.68	91.910	1.01479	1.109	94.77
Totals: 2004	7	99,550	201	\$45.08	91.470	1.01498	1.038	95.03
2005								
Region: 1	1	20,500	41	\$61.80	88.997	0.99982	1.175	94.54
Region: 2	2	17,737	36	\$55.24	90.106	1.02043	1.087	94.49
Region: 6	3	35,520	72	\$48.19	98.935	1.05245	0.738	94.70
Totals: 2005	6	73,757	149	\$53.67	94.050	1.03012	0.943	94.61
Grand Totals Grad SMA	32	421,536	852	\$47.52	90.827	1.01146	1.067	94.81

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

Grading: SX	Processes	Total Tons	Tests	Weighted Average				
				Price	Quality Level	Pay Factor	St. Dev.	Mean
2000								
Region: 1	2	11,168	26	\$42.79	72.132	0.92013	1.643	93.32
Region: 3	22	288,612	592	\$40.04	94.349	1.02999	0.900	93.61
Region: 5	12	286,105	576	\$37.78	91.801	1.01048	1.017	93.67
Totals: 2000	36	585,885	1,194	\$38.99	92.681	1.01837	0.971	93.63
2001								
Region: 1	3	24,053	49	\$35.33	92.793	1.03625	1.034	93.66
Region: 3	26	309,645	620	\$43.12	91.337	1.01413	1.023	93.78
Region: 5	8	80,393	166	\$49.39	86.002	0.98088	1.001	93.37
Totals: 2001	37	414,091	835	\$43.88	90.386	1.00896	1.019	93.69
2002								
Region: 1	2	45,139	91	\$45.02	98.739	1.05500	0.743	93.73
Region: 3	21	237,328	482	\$33.64	95.793	1.04332	0.884	94.00
Region: 4	1	44,000	89	\$39.00	95.087	1.03680	0.837	93.38
Region: 5	7	177,688	355	\$36.44	93.736	1.02656	1.037	93.87
Region: 6	1	8,849	18	\$52.00	84.732	0.98922	0.596	92.61
Totals: 2002	32	513,004	1,035	\$36.39	95.088	1.03705	0.915	93.85
2003								
Region: 1	11	192,173	402	\$37.18	96.752	1.04958	0.808	93.88
Region: 3	29	231,643	477	\$43.02	94.057	1.03000	0.895	93.89
Region: 5	10	115,143	236	\$42.27	94.409	1.02921	0.904	93.69
Region: 6	2	12,322	28	\$34.00	88.446	1.01331	0.995	93.31
Totals: 2003	52	551,281	1,143	\$40.63	94.945	1.03629	0.869	93.83

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

<b>2004</b>								
<i>Region: 1</i>	5	40,818	91	\$39.34	94.588	1.03516	0.942	93.89
<i>Region: 2</i>	3	15,498	31	\$40.00	90.843	1.02109	0.977	93.77
<i>Region: 3</i>	22	280,658	578	\$39.39	94.694	1.03887	0.935	93.75
<i>Region: 5</i>	11	174,338	358	\$42.12	92.870	1.02278	0.964	93.64
<i>Totals: 2004</i>	41	511,312	1,058	\$40.33	93.947	1.03255	0.946	93.72
<b>2005</b>								
<i>Region: 1</i>	13	173,836	365	\$43.09	95.066	1.03461	0.919	93.79
<i>Region: 2</i>	1	4,500	7	\$46.00	100.000	1.03500	0.600	93.66
<i>Region: 3</i>	8	52,471	109	\$42.84	92.283	1.03235	1.110	94.24
<i>Region: 5</i>	8	120,535	237	\$37.85	94.456	1.03362	0.941	94.10
<i>Region: 6</i>	3	10,762	21	\$35.78	95.388	1.03576	0.917	94.01
<i>Totals: 2005</i>	33	362,104	739	\$41.13	94.531	1.03399	0.950	93.97
<b>Grand Totals Grad SX</b>	231	2,937,677	6,004	\$40.03	93.651	1.02806	0.942	93.77

**Statewide Totals All Gradings**

Processes	Total Tons	Tests	Weighted Average				
			Price	Quality Level	Pay Factor	St. Dev.	Mean
490	5,483,328	11,272	\$40.02	93.117	1.02580	0.945	93.80

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

**Criteria:** Projects with Start Dates from 1/1/2000 to 12/31/2005.

Processes with less than 3 tests not included.

<i>Grading: Fines</i>						Quality Level		
						Avg.	High	Low
<b>2002</b>								
<i>Region 5</i>	1	22,223	12	\$25.00	0.92535	72.245	72.245	72.245
<i>Totals: 2002</i>	1	22,223	12	\$25.00	0.92535	72.245	72.245	72.245
<i>Grand Totals: Fine</i>	1	22,223	12	\$25.00	0.92535	72.245	72.245	72.245



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

**Grading: S**

S

	Processes	Tons	Tests	Price	Pay Factor	Quality Level		
						Avg.	High	Low
2000								
Region 1	7	80,770	42	\$39.97	0.95499	76.028	96.476	10.615
Region 2	16	280,324	149	\$37.98	0.99292	85.418	95.217	0.000
Region 6	5	44,897	26	\$44.70	1.02349	88.789	100.000	84.907
Totals: 2000	28	405,991	217	\$39.12	0.98876	83.922	100.000	0.000
2001								
Region 1	13	209,339	107	\$44.84	1.00594	86.874	98.803	0.000
Region 2	10	158,639	83	\$35.90	0.98838	81.748	100.000	54.873
Region 4	5	43,841	25	\$38.63	0.98499	76.572	90.404	50.000
Region 6	13	178,510	91	\$40.36	1.01469	87.875	100.000	67.817
Totals: 2001	41	590,329	306	\$40.62	1.00231	85.034	100.000	0.000
2002								
Region 1	2	7,659	6	\$43.54	1.01023	87.000	100.000	66.667
Region 2	10	102,140	53	\$37.96	1.01332	88.519	100.000	68.231
Region 4	7	73,641	40	\$38.38	1.02795	92.467	100.000	75.249
Region 6	5	53,115	32	\$39.34	0.95012	78.843	98.319	35.200
Totals: 2002	24	236,555	131	\$38.58	1.00358	87.526	100.000	35.200
2003								
Region 1	4	97,478	53	\$37.13	1.00552	87.709	90.825	73.663
Region 2	15	154,268	80	\$35.59	0.99205	80.654	100.000	54.428
Region 4	3	105,935	55	\$37.71	1.03655	93.912	98.550	72.699
Totals: 2003	22	357,681	188	\$36.64	1.00890	86.503	100.000	54.428
2004								
Region 1	3	14,843	10	\$33.86	1.02735	100.000	100.000	100.000
Region 2	3	80,197	41	\$38.24	1.02073	90.928	99.521	77.777
Region 4	21	208,000	125	\$34.68	1.02477	91.264	100.000	66.667
Region 5	1	13,468	7	\$31.35	1.03500	93.648	93.648	93.648
Region 6	13	109,910	59	\$35.12	1.00932	82.717	100.000	54.428
Totals: 2004	41	426,418	242	\$35.33	1.02044	89.377	100.000	54.428

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

**Grading: S**

ing: S						Quality Level		
						Avg.	High	Low
Processes	Tons	Tests	Price	Pay Factor				
2005								
Region 1	2	26,534	15	\$48.79	1.04177	98.618	100.000	98.352
Region 2	1	5,107	3	\$46.00	1.02500	100.000	100.000	100.000
Region 4	2	7,296	6	\$39.34	0.99594	68.717	68.717	68.717
Region 6	2	16,138	9	\$39.90	1.02186	89.189	100.000	82.331
Totals: 2005	7	55,075	33	\$44.68	1.02831	92.022	100.000	68.717
Grand Totals: S	163	2,072,049	1117	\$38.43	1.00536	86.434	100.000	0.000

**Grading: SG**

ing: SG

	Processes	Tons	Tests	Price	Pay Factor	Quality Level		
						Avg.	High	Low
2002								
Region 1	2	19,809	11	\$35.08	0.98848	78.450	86.107	50.000
Totals: 2002	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
2004								
Region 1	1	4,427	3	\$37.00	0.93009	56.052	56.052	56.052
Totals: 2004	1	4,427	3	\$37.00	0.93009	56.052	56.052	56.052
Grand Totals: SG	5	41,519	23	\$34.87	0.99322	76.978	87.942	50.000

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

**Grading: SMA**

ing: SMA						Quality Level		
						Avg.	High	Low
ProcessesTonsTestsPricePay Factor								
2001								
Region 3	1	11,075	7	\$48.53	0.97274	75.968	75.968	75.968
Totals: 2001	1	11,075	7	\$48.53	0.97274	75.968	75.968	75.968
2002								
Region 3	1	25,928	13	\$44.79	1.01424	87.824	87.824	87.824
Region 6	4	49,168	24	\$49.11	1.01684	86.731	100.000	69.443
Totals: 2002	5	75,096	37	\$47.62	1.01594	87.108	100.000	69.443
2003								
Region 1	2	31,812	16	\$48.70	0.99783	86.898	100.000	82.115
Region 3	3	67,524	35	\$43.78	1.03398	93.576	100.000	88.177
Region 6	2	47,654	22	\$46.59	1.03691	92.854	93.841	92.154
Totals: 2003	7	146,990	73	\$45.76	1.02711	91.897	100.000	82.115
2004								
Region 1	4	51,356	28	\$48.15	1.01310	89.400	100.000	40.679
Region 3	2	30,297	16	\$47.70	1.03287	91.248	91.753	89.620
Region 6	2	27,562	16	\$42.68	1.02690	89.544	91.509	59.866
Totals: 2004	8	109,215	60	\$46.64	1.02207	89.949	100.000	40.679
2005								
Region 1	1	20,500	11	\$61.80	1.04056	93.251	93.251	93.251
Region 2	2	17,737	10	\$55.24	1.00996	80.500	80.761	80.143
Region 3	1	18,965	9	\$56.09	1.04000	95.861	95.861	95.861
Region 6	5	53,771	31	\$50.98	1.02249	90.030	100.000	74.855
Totals: 2005	9	110,973	61	\$54.53	1.02682	90.098	100.000	74.855
Grand Totals: SMA	30	453,349	238	\$48.49	1.02264	89.805	100.000	40.679

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

Grading: SX

SX

	Processes	Tons	Tests	Price	Pay Factor	Quality Level		
						Avg.	High	Low
2000								
Region 1	1	7,032	4	\$43.00	1.03000	100.000	100.000	100.000
Region 3	23	330,765	177	\$38.81	1.00730	86.705	100.000	36.518
Region 5	10	293,744	150	\$37.86	1.03700	94.458	99.768	41.559
Totals: 2000	34	631,541	331	\$38.41	1.02136	90.459	100.000	36.518
2001								
Region 1	2	21,497	11	\$33.20	0.91526	68.445	89.389	37.090
Region 3	28	365,155	225	\$41.71	1.01178	88.076	100.000	34.490
Region 5	6	70,521	39	\$48.69	1.00162	82.880	96.284	56.623
Totals: 2001	36	457,173	275	\$42.39	1.00567	86.352	100.000	34.490
2002								
Region 1	2	45,139	23	\$45.02	0.99039	82.689	83.949	81.324
Region 3	16	243,467	133	\$33.59	1.00768	86.131	100.000	46.341
Region 4	1	44,000	22	\$39.00	1.02580	91.415	91.415	91.415
Region 5	8	208,251	108	\$35.79	1.02055	89.377	98.350	58.043
Region 6	1	8,849	4	\$52.00	1.03000	100.000	100.000	100.000
Totals: 2002	28	549,706	290	\$36.09	1.01295	87.724	100.000	46.341
2003								
Region 1	9	191,643	100	\$37.22	1.02189	90.321	100.000	77.281
Region 3	23	239,182	143	\$42.39	1.01330	88.259	100.000	50.000
Region 5	9	136,643	72	\$41.59	1.02086	90.989	100.000	65.983
Region 6	1	7,568	5	\$34.00	1.02414	84.441	84.441	84.441
Totals: 2003	42	575,036	320	\$40.37	1.01810	89.545	100.000	50.000
2004								
Region 1	5	41,818	27	\$39.25	1.03085	94.983	100.000	78.535
Region 2	1	14,498	8	\$40.00	1.04000	94.472	94.472	94.472
Region 3	18	301,739	158	\$39.17	1.00398	86.540	100.000	47.724
Region 5	10	190,091	100	\$42.33	1.02954	91.642	100.000	70.293
Totals: 2004	34	548,146	293	\$40.29	1.01585	89.164	100.000	47.724

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

**Grading: SX**

ing: SX

	Processes	Tons	Tests	Price	Pay Factor	Quality Level		
						Avg.	High	Low
2005								
Region 1	8	173,000	94	\$42.90	1.02092	89.514	98.260	68.257
Region 2	1	5,000	3	\$46.00	1.02500	100.000	100.000	100.000
Region 3	7	63,957	36	\$42.16	0.96490	73.887	89.106	39.094
Region 5	8	137,865	72	\$37.55	1.03057	93.000	100.000	62.338
Region 6	1	5,174	3	\$47.75	0.99946	69.585	69.585	69.585
Totals: 2005	25	384,996	208	\$40.96	1.01483	88.035	100.000	39.094
Grand Totals: SX	199	3,146,598	1717	\$39.58	1.01526	88.695	100.000	34.490

**Statewide Totals All Gradings**

Processes	Tons	Tests	Price	Pay Factor	Quality Level		
					Avg.	High	Low
398	5,735,738	3107	\$39.78	1.01176	87.817	100.000	0.000

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

**Criteria:** Projects with Start Dates from 1/1/2000 to 12/31/2005.

Processes with less than 3 tests not included.

				Weighted Average							
				Price	3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
<b>2002</b>											
<i>Region 5</i>	1	22,223	12	\$25.00				2.400	1.400	1.500	0.430
<i>Totals: 2002</i>	1	22,223	12	\$25.00				2.400	1.400	1.500	0.430
<i>Grand Totals Fines</i>	1	22,223	12	\$25.00				2.400	1.400	1.500	0.430

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

**Grading: S**

ing: S

	Processes	Tons	Tests	Weighted Average							
				Price	3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
2000											
Region 1	7	80,770	42	\$39.97	1.038	2.173	2.105	2.319	2.532	1.767	0.666
Region 2	16	280,324	149	\$37.98	1.598	2.516	2.608	2.573	2.240	1.485	0.620
Region 6	5	44,897	26	\$44.70	1.241	2.509	2.491	2.282	2.200	1.161	0.378
Totals: 2000	28	405,991	217	\$39.12	1.439	2.447	2.495	2.490	2.294	1.506	0.602
2001											
Region 1	13	209,339	107	\$44.84	1.167	2.252	2.556	2.426	2.221	1.465	0.576
Region 2	10	158,639	83	\$35.90	1.232	2.244	2.543	2.560	2.414	1.694	0.761
Region 4	5	43,841	25	\$38.63		2.167	2.978	2.789	2.387	1.088	0.404
Region 6	13	178,510	91	\$40.36	1.117	2.525	2.577	2.443	2.466	1.556	0.666
Totals: 2001	41	590,329	306	\$40.62	1.169	2.324	2.590	2.494	2.359	1.526	0.640
2002											
Region 1	2	7,659	6	\$43.54	0.756	1.380	1.500	1.383	1.671	1.515	0.360
Region 2	10	102,140	53	\$37.96	1.052	2.865	2.930	2.619	2.376	1.309	0.683
Region 4	7	73,641	40	\$38.38	0.899	1.921	2.196	1.943	1.684	1.094	0.500
Region 6	5	53,115	32	\$39.34	0.945	2.726	2.740	2.700	2.228	1.438	0.436
Totals: 2002	24	236,555	131	\$38.58	0.970	2.492	2.613	2.387	2.104	1.277	0.560
2003											
Region 1	4	97,478	53	\$37.13	1.138	2.313	2.514	2.586	2.251	1.301	0.597
Region 2	15	154,268	80	\$35.59	1.029	2.233	2.525	2.406	2.234	1.559	0.668
Region 4	3	105,935	55	\$37.71	0.327	1.899	2.509	1.984	1.512	1.121	0.479
Totals: 2003	22	357,681	188	\$36.64	0.880	2.156	2.517	2.330	2.025	1.359	0.593
2004											
Region 1	3	14,843	10	\$33.86	0.905	2.366	1.192	1.240	0.717	1.368	0.697
Region 2	3	80,197	41	\$38.24	0.300	1.845	2.616	2.696	2.482	1.581	0.660
Region 4	21	208,000	125	\$34.68	0.530	1.823	2.062	1.890	1.754	1.058	0.596
Region 5	1	13,468	7	\$31.35			1.700	2.600	3.000	1.700	0.550
Region 6	13	109,910	59	\$35.12	0.712	2.267	2.395	2.763	2.591	1.571	0.585
Totals: 2004	41	426,418	242	\$35.33	0.597	1.965	2.210	2.267	2.110	1.320	0.607

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

**2005**

<i>Region 1</i>	2	26,534	15	\$48.79		1.900	1.252	1.881	2.097	1.248	0.645
<i>Region 2</i>	1	5,107	3	\$46.00		1.000	1.200	1.700	2.100	0.600	0.120
<i>Region 4</i>	2	7,296	6	\$39.34	1.200	2.413	3.107	2.075	2.569	1.137	0.114
<i>Region 6</i>	2	16,138	9	\$39.90	1.733	2.288	1.921	2.106	1.461	1.033	0.322
<b>Totals: 2005</b>	7	55,075	33	\$44.68	1.667	2.006	1.689	1.956	1.973	1.110	0.431

<b>Grand Totals S</b>	163	2,072,049	1117	\$38.43	1.082	2.258	2.459	2.392	2.198	1.411	0.603
-----------------------	-----	-----------	------	---------	-------	-------	-------	-------	-------	-------	-------

**Grading: SG**

**Weighted Average**

	Processes	Tons	Tests	Price	3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
<b>2002</b>											
<i>Region 1</i>	2	19,809	11	\$35.08		4.233	3.497	2.506	2.600	1.627	0.933
<b>Totals: 2002</b>	2	19,809	11	\$35.08		4.233	3.497	2.506	2.600	1.627	0.933
<b>2003</b>											
<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
<b>Totals: 2003</b>	2	17,283	9	\$34.10		2.806	3.203	3.336	2.274	1.235	1.234
<b>2004</b>											
<i>Region 1</i>	1	4,427	3	\$37.00		4.000	3.600	3.600	5.100	3.100	0.550
<b>Totals: 2004</b>	1	4,427	3	\$37.00		4.000	3.600	3.600	5.100	3.100	0.550
<b>Grand Totals SG</b>	5	41,519	23	\$34.87		3.614	3.385	2.968	2.731	1.621	1.017



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

**Grading: SMA**

ing: SMA				Weighted Average							
				Processes	Tons	Tests	Price	3/4"	1/2"	3/8"	No. 4
2001											
Region 3	1	11,075	7	\$48.53			1.100	2.100	1.700	1.000	0.800
Totals: 2001	1	11,075	7	\$48.53			1.100	2.100	1.700	1.000	0.800
2002											
Region 3	1	25,928	13	\$44.79			3.700	3.100	1.500	1.200	0.460
Region 6	4	49,168	24	\$49.11		1.823	2.052	2.399	1.645	0.920	0.789
Totals: 2002	5	75,096	37	\$47.62		1.823	2.621	2.641	1.595	1.016	0.675
2003											
Region 1	2	31,812	16	\$48.70		2.865	3.206	2.240	1.693	0.947	0.630
Region 3	3	67,524	35	\$43.78			2.416	1.737	1.572	1.030	0.525
Region 6	2	47,654	22	\$46.59		2.519	3.268	2.249	1.700	1.291	0.632
Totals: 2003	7	146,990	73	\$45.76		2.657	2.863	2.012	1.640	1.096	0.582
2004											
Region 1	4	51,356	28	\$48.15		1.782	2.687	1.277	1.517	0.801	0.646
Region 3	2	30,297	16	\$47.70			2.205	1.900	1.824	0.924	0.397
Region 6	2	27,562	16	\$42.68		1.625	3.237	2.881	2.206	1.294	0.550
Totals: 2004	8	109,215	60	\$46.64		1.717	2.692	1.855	1.776	0.960	0.553
2005											
Region 1	1	20,500	11	\$61.80		3.400	2.700	0.900	1.300	1.100	0.630
Region 2	2	17,737	10	\$55.24		3.600	3.565	0.831	1.020	0.847	0.776
Region 3	1	18,965	9	\$56.09			0.900	1.500	1.100	0.700	0.330
Region 6	5	53,771	31	\$50.98	2.600	2.438	2.255	2.181	1.748	1.293	0.620
Totals: 2005	9	110,973	61	\$54.53	2.600	2.861	2.315	1.612	1.438	1.085	0.597
nd Totals SMA											
	30	453,349	238	\$48.49	2.600	2.314	2.605	1.983	1.617	1.045	0.600

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

**Grading: SX**

ing: SX

	Processes	Tons	Tests	Weighted Average							
				Price	3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
2000											
Region 1	1	7,032	4	\$43.00		1.500	0.500	1.400	1.700	1.000	0.590
Region 3	23	330,765	177	\$38.81		0.951	1.925	2.394	2.083	1.238	0.557
Region 5	10	293,744	150	\$37.86		1.279	1.944	2.227	1.971	1.193	0.527
Totals: 2000	34	631,541	331	\$38.41		1.111	1.918	2.305	2.026	1.214	0.543
2001											
Region 1	2	21,497	11	\$33.20		1.720	2.980	2.640	2.559	1.760	0.918
Region 3	28	365,155	225	\$41.71		1.042	1.847	2.340	2.100	1.356	0.566
Region 5	6	70,521	39	\$48.69		1.164	2.307	2.589	1.839	1.120	0.627
Totals: 2001	36	457,173	275	\$42.39		1.093	1.971	2.393	2.081	1.338	0.592
2002											
Region 1	2	45,139	23	\$45.02		1.192	2.236	3.016	3.696	1.904	0.525
Region 3	16	243,467	133	\$33.59		1.034	1.961	2.591	2.204	1.351	0.606
Region 4	1	44,000	22	\$39.00		0.800	1.700	2.900	2.400	1.400	0.730
Region 5	8	208,251	108	\$35.79		1.411	2.531	2.369	2.278	1.442	0.491
Region 6	1	8,849	4	\$52.00			1.000	0.600	1.700	1.000	0.240
Totals: 2002	28	549,706	290	\$36.09		1.180	2.163	2.534	2.362	1.429	0.560
2003											
Region 1	9	191,643	100	\$37.22		1.146	2.036	2.398	2.252	1.595	0.523
Region 3	23	239,182	143	\$42.39		1.342	1.993	2.319	2.002	1.318	0.612
Region 5	9	136,643	72	\$41.59		1.256	1.714	2.303	2.292	1.489	0.773
Region 6	1	7,568	5	\$34.00		1.300	1.800	2.100	3.100	1.600	1.190
Totals: 2003	42	575,036	320	\$40.37		1.257	1.938	2.339	2.169	1.455	0.628
2004											
Region 1	5	41,818	27	\$39.25		0.527	1.496	2.004	1.910	1.305	0.452
Region 2	1	14,498	8	\$40.00		1.100	1.800	2.300	1.700	1.200	0.240
Region 3	18	301,739	158	\$39.17		1.151	1.909	2.247	2.083	1.218	0.513
Region 5	10	190,091	100	\$42.33		1.272	2.211	2.385	2.189	1.524	0.671
Totals: 2004	34	548,146	293	\$40.29		1.185	1.980	2.278	2.096	1.330	0.556

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

**2005**

<b>Region 1</b>	8	173,000	94	\$42.90	0.659	2.005	2.439	2.369	1.274	0.551
<b>Region 2</b>	1	5,000	3	\$46.00	0.600	0.600	1.000	1.000	1.200	0.530
<b>Region 3</b>	7	63,957	36	\$42.16	1.300	2.032	2.686	1.962	1.179	0.480
<b>Region 5</b>	8	137,865	72	\$37.55	1.250	2.059	1.922	1.655	1.178	0.532
<b>Region 6</b>	1	5,174	3	\$47.75	0.600	2.300	4.200	3.800	2.600	1.250

<b>Totals: 2005</b>	25	384,996	208	\$40.96	0.976	2.014	2.300	2.047	1.241	0.541
---------------------	----	---------	-----	---------	-------	-------	-------	-------	-------	-------

<b>Grand Totals SX</b>	199	3,146,598	1717	\$39.58	1.142	1.995	2.359	2.134	1.337	0.571
------------------------	-----	-----------	------	---------	-------	-------	-------	-------	-------	-------

**Statewide Totals All Gradings**

Processes	Tons	Tests	Price	Weighted Average						
				3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
398	5,735,738	3107	\$39.78		1.645	2.213	2.345	2.118	1.344	0.587

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

**Criteria:** Projects with Start Dates from 1/1/2000 to 12/31/2005.

Processes with less than 3 tests not included.

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

### Grading: S

S

				Weighted Average				
	Processes	Tons	Tests	Price	Quality Level	Pay Factor	Std Dev	Mean
2003								
Region: 2	9	105,442	67	\$36.72	73.218	0.91883	1.632	89.401
Region: 4	2	87,631	39	\$38.01	83.092	0.97530	1.657	89.603
Totals: 2003								
	11	193,073	106	\$37.31	77.700	0.94446	1.643	89.493
2004								
Region: 1	2	14,343	13	\$33.61	59.174	0.86867	2.333	88.529
Region: 2	3	80,197	56	\$38.24	91.977	1.01393	1.375	90.114
Region: 4	10	156,941	100	\$34.28	91.868	1.02487	1.504	90.295
Region: 6	7	86,232	65	\$34.33	80.204	0.94983	2.025	90.177
Totals: 2003								
	22	337,713	234	\$35.20	87.527	0.99648	1.642	90.147
2005								
Region: 1	1	22,250	25	\$45.90	96.395	1.05000	1.248	90.190
Region: 2	1	10,107	5	\$46.00	95.053	1.03000	1.885	93.280
Region: 4	2	5,252	7	\$39.28	95.506	1.02783	1.576	90.557
Region: 6	2	21,901	15	\$38.22	68.740	0.86506	1.819	89.074
Totals: 2004								
	6	59,510	52	\$42.51	85.911	0.97658	1.595	90.336
Grading: S								
	39	590,296	392	\$36.63	84.150	0.97746	1.638	89.952

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

Grading: SMA				Weighted Average				
				Processes	Tons	Tests	Price	Quality Level
2003								
Region: 3	1	51,207	59	\$50.55	89.906	1.00036	2.135	90.790
Totals: 2003	1	51,207	59	\$50.55	89.906	1.00036	2.135	90.790
2004								
Region: 1	1	12,780	12	\$42.25	97.092	1.04500	1.672	90.980
Region: 6	1	25,850	15	\$40.95	98.364	1.05000	0.751	89.500
Totals: 2004	2	38,630	27	\$41.38	97.943	1.04835	1.056	89.990
2005								
Region: 2	2	17,737	19	\$53.69	80.726	0.96082	1.487	89.267
Region: 6	3	34,872	21	\$48.16	98.757	1.03890	0.905	90.268
Totals: 2003	5	52,609	40	\$50.02	92.678	1.01257	1.101	89.931
Grand Totals Grading: SMA								
	8	142,446	126	\$47.87	93.109	1.01788	1.460	90.256

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

**Grading: SX**

				Weighted Average				
	Processes	Tons	Tests	Price	Quality Level	Pay Factor	Std Dev	Mean
<b>2003</b>								
<i>Region: 1</i>	5	98,915	56	\$41.28	89.999	1.02318	1.630	90.230
<i>Region: 3</i>	2	45,203	38	\$38.32	80.920	0.95327	1.820	89.744
<i>Region: 5</i>	4	104,293	103	\$37.95	88.479	1.00100	1.552	90.093
<b>Totals: 2002</b>	11	248,411	197	\$39.35	87.709	1.00115	1.632	90.084
<b>2004</b>								
<i>Region: 1</i>	5	39,572	30	\$39.36	70.143	0.92042	1.720	89.032
<i>Region: 2</i>	1	16,498	13	\$40.00	98.407	1.04500	1.615	91.200
<i>Region: 3</i>	13	248,628	156	\$39.02	83.082	0.98080	1.889	90.013
<i>Region: 5</i>	8	184,864	128	\$39.49	85.372	0.97984	1.577	90.061
<b>Totals: 2003</b>	27	489,562	327	\$39.25	83.417	0.97772	1.748	89.992
<b>2005</b>								
<i>Region: 1</i>	7	145,739	130	\$43.87	90.133	1.00411	1.617	90.332
<i>Region: 3</i>	6	57,521	46	\$41.07	95.288	1.02407	1.406	90.967
<i>Region: 5</i>	6	120,547	72	\$36.19	85.689	0.98343	1.939	90.778
<i>Region: 6</i>	1	4,196	4	\$39.35	69.316	0.97543	1.941	89.130
<b>Totals: 2004</b>	20	328,003	252	\$40.50	89.137	0.99964	1.703	90.592
<b>Grand Totals Grading: SX</b>	58	1,065,976	776	\$39.66	86.177	0.98992	1.707	90.198

**Statewide Totals All Gradings** 1/1/2000 to 12/31/20

				Weighted Average				
	Processes	Tons	Tests	Price	Quality Level	Pay Factor	Std Dev	Mean
	105	1,798,718	1,294	\$39.31	86.061	0.98805	1.665	90.122

## **Appendix B**

### **Reports for 2005 Projects**

Report 6	Project Listing by Region/Subaccount.....	B - 1
Report 7	Project Data .....	B - 3
Report 8	Calculated Pay Factor Composite and I/DP by Region .....	B - 33
Report 9	Asphalt Content – Process Information .....	B - 37
Report 10	Mat Density - Process Information .....	B - 40
Report 11	Gradation - Process Information .....	B - 43
Report 12	Gradation – Standard Deviation Information .....	B - 46
Report 13	Joint Density Process Information .....	B - 48





## Project Listing by Region/Subaccount - Gradation Acceptance

Projects with Start Dates from 1/1/2005 to 12/31/2005.

### Region: 1

<i>Subacct.</i>	<i>Project Code</i>	<i>Location</i>	<i>Supplier</i>	<i>Bid Date</i>	<i>Start Date:</i>	<i>Total Bid</i>	<i>Plan Quant.</i>
12418	NH 0403-035	Berthoud Falls West	13	01/29/04	8/10/2005	\$15,581,590.13	44,252
13216	STA 0091-016	SH-9 Park Ave in Breckenri	70	08/12/04	8/24/2005	\$5,191,229.81	10,635
13496	BR 0243-063	G-22 East of Limon	14	07/15/04	5/18/2005	\$1,033,650.00	3,890
13506	NH 0404-039	Idaho Springs Drainage	14	02/17/05	10/24/2005	\$2,856,297.60	4,597
13855	STA 072A-028	SH 72 Coal Creek Canyon	13	01/06/05	6/7/2005	\$2,352,913.40	37,861
14819	IM 0702-246	Frisco Onramp	70	02/17/05	7/25/2005	\$845,714.28	2,678
14849	IM 0703-287	I-70 Bakerville East	45	12/23/04	5/17/2005	\$4,972,207.50	53,814
14850	NH 2854-104	US 285 Kenosha Pass	17	12/23/04	6/9/2005	\$2,163,997.50	32,974
14950	IM 0252-374	I-25 Resurfacing	49	02/24/05	8/11/2005	\$2,712,022.25	36,412
15019	STA 0243-069	Limon Resurface SH 24G	14	12/02/04	5/24/2005	\$1,416,858.00	11,123
15161	STA 0831-098	Inverness	49	08/04/05	9/30/2005	\$442,405.30	4,148

*Number of Projects* 11

*Total Plan Quantity* 242,384

### Region: 2

<i>Subacct.</i>	<i>Project Code</i>	<i>Location</i>	<i>Supplier</i>	<i>Bid Date</i>	<i>Start Date:</i>	<i>Total Bid</i>	<i>Plan Quant.</i>
14468	STU M240-080	Powers Blvd SB	49	11/13/03	7/16/2005	\$1,798,406.62	7,377
14469	STU M240-081	Powers Blvd/SH 83	44	06/18/04	8/31/2005	\$10,221,497.65	9,830
14552	IM 0251-167	Pinon Rest Area	45	09/23/04	4/12/2005	\$4,459,369.25	7,891

*Number of Projects* 3

*Total Plan Quantity* 25,098

### Region: 3

<i>Subacct.</i>	<i>Project Code</i>	<i>Location</i>	<i>Supplier</i>	<i>Bid Date</i>	<i>Start Date:</i>	<i>Total Bid</i>	<i>Plan Quant.</i>
12966	STA 0131-041	Gun Club Road South	32	07/01/04	8/18/2005	\$2,675,014.35	15,963
13472	NH 0502-053	Cimarron - West	32	04/15/04	6/29/2005	\$3,840,371.95	24,315
14979	CC 0702-249	Exit 114 Interchange	16	03/31/05	8/3/2005	\$2,912,372.55	4,101
15027	STA 0131-047	Rifle & Rio Blanco	77	03/03/05	5/13/2005	\$2,815,815.20	24,024
15033	STA 141A-028	32 Road Grand Junction	12	03/03/05	7/28/2005	\$1,059,492.20	7,317
15035	NH 0502-057	Pine Creek Hwy 50	17	02/03/05	9/6/2005	\$1,023,605.46	14,551
15070	STA 340A-011	SH 340 & 20 3/4	12	08/11/05	11/9/2005	\$674,019.75	2,512

*Number of Projects* 7

*Total Plan Quantity* 92,783

## Project Listing

### Region: 4

<i>Subacct.</i>	<i>Project Code</i>	<i>Location</i>	<i>Supplier</i>	<i>Bid Date</i>	<i>Start Date:</i>	<i>Total Bid</i>	<i>Plan Quant.</i>
11723	BR 0063-013	Pawnee Cr. E/O Atwood	60	06/17/04	4/2/2005	\$2,069,143.37	3,211
12810	BR 0062-013	US 6: Kiowa Creek	41	04/21/05	11/1/2005	\$1,577,525.55	2,402
15200	STA 0661-007	SH 66 E of Hwy 287	19	03/31/05	6/9/2005	\$304,540.13	4,747

*Number of Projects* 3

*Total Plan Quantity* 10,360

### Region: 5

<i>Subacct.</i>	<i>Project Code</i>	<i>Location</i>	<i>Supplier</i>	<i>Bid Date</i>	<i>Start Date:</i>	<i>Total Bid</i>	<i>Plan Quant.</i>
12797	NH 2852-010	US 285 and CR G Saguach	17	04/29/04	5/17/2005	\$1,342,079.19	4,548
13923	BR 151A-007	Los Pinos River in	16	01/20/05	8/1/2005	\$3,170,919.61	6,676
14507	NH 1603-021	Ft. Garland East US 160	79	04/14/05	7/12/2005	\$2,342,259.14	41,984
14671	NH 1602-100	Grandview 4 Lane	56	06/16/04	8/11/2005	\$7,337,591.20	44,490
14914	STA 145A-036	SH 145 Placerville	77	01/06/05	8/3/2005	\$3,737,519.60	43,451

*Number of Projects* 5

*Total Plan Quantity* 141,149

### Region: 6

<i>Subacct.</i>	<i>Project Code</i>	<i>Location</i>	<i>Supplier</i>	<i>Bid Date</i>	<i>Start Date:</i>	<i>Total Bid</i>	<i>Plan Quant.</i>
6045	MTCE 06-045	I-76	37	10/07/04	5/10/2005	\$1,060,713.10	15,939
6046	MTCE 06-046	I-70 & C-470	13	08/19/04	5/16/2005	\$1,055,255.14	14,475
14482	IMD 0252-364	I-25 Broadway Viaduct Pha	37	07/29/04	7/18/2005	\$21,876,939.55	9,154
14612	NH 0853-054	US 85: 136th to CR	10	12/23/04	8/2/2005	\$2,017,379.82	30,068
14621	STA 008A-005	SH 8: SH74 to C-470	10	02/03/05	8/25/2005	\$387,890.95	3,311
14637	NH 2854-101	US 285, Federal to Lafayette	45	02/03/05	7/6/2005	\$3,305,627.05	31,220

*Number of Projects* 6

*Total Plan Quantity* 104,167

**Totals:** Projects with Start Dates from 1/1/2005 to 12/31/2005.

*Number of Projects* 35

*Total Plan Quantity* 615,941

## Project Data

Projects with Start Dates from 1/1/05 to 12/31/05.

Subaccount: 6045

MTCE 06-045

I-76

Region: 6

Supplier: 37

Bid Date: 10/07/04

Start Date: 5/10/2005

Mix Design No: 176505			Process No: 1		Grading: S		(100) PG 76-28		Price Per Ton: \$33.50					
			Quality	Pay				Mean		Std. Dev.		Other		
Tests			Tons	Level	Factor	I/DP	TV	Mean	to TV	Std. Dev.	V	- V	CTS	
AC	10	9,874	97.440	1.04500	\$3,721.26	5.100	4.998	0.102	0.111	0.200	-0.089	Tons	0	
Density	24	9,874	92.871	1.03360	\$5,001.44	94.000	93.188	0.812	0.820	1.100	-0.280	I/DP	\$0.00	
Gradation	5	9,874	82.331	1.01670	<u>\$828.44</u>	Key Sieve: No. 30						PF 1.0		
					I/DP:	\$9,551.14							Tons	0

Mix Design No: 147097			Process No: 1		Grading: SX (100) PG 76-28			Price Per Ton: \$33.50					
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	3	3,362	84.645	1.02500	\$703.92	5.500	5.343	0.157	0.140	0.200	-0.060	Tons	500
Density	7	2,862	94.880	1.03500	\$1,510.06	94.000	94.443	0.443	1.031	1.100	-0.069	I/DP	\$263.81
Gradation	2	3,362			\$0.00	Key Sieve:						PF 1.0	
				I/DP:	\$2,477.79							Tons	0

Mix Design No: 147097-1			Process No: 1		Grading: SX		(100)	PG 76-28		Price Per Ton: \$33.50				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
												CTS		
AC	3	3,704	100.000	1.02500	\$775.52	5.500	5.583	0.083	0.071	0.200	-0.129	Tons	0	
Density	6	3,704	100.000	1.03500	\$1,954.32	94.000	94.367	0.367	0.671	1.100	-0.429	I/DP	\$0.00	
Gradation	1	3,704			\$0.00	Key Sieve:						PF 1.0		
				I/DP:	\$2,729.84							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	\$33.50	1	12	15,637	56.218	0.80099	(\$15,637.64)	92.000	88.330	3.670	2.070	1.600	0.470
S	\$33.50	2	1	1,303		0.45313	(\$3,580.67)	92.000				1.600	
							(\$19,218.31)						

### Project Totals: 6045

	Tons	I/DP
Asphalt Content	16,940	\$5,200.70
Mat Density	16,940	\$8,729.63
Gradation	16,940	\$828.44
Joint Density	16,940	(\$19,218.31)
Total I/DP:		(\$4,459.54)
		CPFC: 0.99214

Comments: One JD test > 2xV out.

# Project Data

Subaccount: 6046 MTCE 06-046 I-70 & C-470 Region: 6 Supplier: 13  
 Bid Date: 08/19/04 Start Date: 5/16/2005

Mix Design No: 147085		Process No: 1		Grading: SMA (100) PG 76-28				Price Per Ton: \$56.00				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
AC	14	14,475	99.006	1.04500	\$9,119.25	6.300	6.246	0.054	0.117	0.200	-0.083	CTS Tons 0
Density		0			\$0.00	94.000				1.100		I/DP \$0.00
Gradation	9	14,475	97.443	1.04000	\$4,863.60	Key Sieve: No. 4						PF 1.0 Tons 14,475
					I/DP:	\$13,982.85						

## 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
SMA	\$56.00	1	1	14,475			\$0.00	92.000				1.600	
							\$0.00						

## Project Totals: 6046

	Tons	I/DP
Asphalt Content	14,475	\$9,119.25
Mat Density	14,475	\$0.00
Gradation	14,475	\$4,863.60
Joint Density	14,475	\$0.00
Total I/DP:		\$13,982.85
		CPFC: 1.01725

Comments: Pay factor set to 1.0 for mat density and joint density.

*Project Data*

Subaccount: 11723 BR 0063-013 Pawnee Cr. E/O Atwood Region: 4 Supplier: 60  
 Bid Date: 06/17/04 Start Date: 4/2/2005

Mix Design No: 161562B			Process No: 1		Grading: S (75)		PG 64-22		Price Per Ton: \$50.00					
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
AC	2	952		0.88125	(\$1,413.13)	5.200				0.200		CTS Tons	0	
Density	5	952	88.367	1.03000	\$642.60	94.000	94.820	0.820	1.011	1.100	-0.089	I/DP	\$0.00	
Gradation	1	952		0.86111	(\$991.67)	Key Sieve:					PF 1.0 Tons	0		
				I/DP:	(\$1,762.20)									

Mix Design No: 161562T			Process No: 1		Grading: S (75)		PG 64-28		Price Per Ton: \$76.00				
Tests		Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	1	685		1.00000	\$0.00	5.100				0.200		CTS Tons	0
Density	3	411	36.334	0.77337	(\$3,185.59)	94.000	91.200	2.800	1.664	1.100	0.564	I/DP	\$0.00
Gradation	1	685		0.86111	(\$1,084.58)	Key Sieve:					PF 1.0 Tons	0	
				I/DP:	(\$4,270.17)								

Mix Design No: 161562T		Process No: 2		Grading: S (75)		PG 64-28		Price Per Ton: \$76.00				
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	2	274	0.35227	(\$6,069.70)	94.000				1.100		I/DP	\$0.00
Gradation				\$0.00	Key Sieve:						PF 1.0 Tons	0
				I/DP:	(\$6,069.70)							

Mix Design No: 165905B			Process No: 1		Grading: S (75)		PG 64-22		Price Per Ton: \$50.00				
			Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
Tests	Tons											CTS Tons	
AC	1	921		0.93750	(\$719.53)	5.300				0.200			0
Density	5	921	77.544	0.99758	(\$50.17)	94.000	92.920	1.080	1.148	1.100	0.048	I/DP	\$0.00
Gradation	1	921		1.00000	\$0.00	Key Sieve:						PF 1.0 Tons	0
				I/DP:	(\$769.70)								

Mix Design No: 165905T			Process No: 1		Grading: S (75)		PG 64-28		Price Per Ton: \$76.00					
			Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
Tests Tons												CTS Tons	0	
AC 1 741				0.88750	(\$1,583.89)	5.500				0.200				
Density 5 741			100.000	1.03000	\$760.27	94.000	93.940	0.060	0.416	1.100	-0.684	I/DP	\$0.00	
Gradation 1 741				1.00000	\$0.00	Key Sieve:						PF 1.0 Tons	0	
				I/DP:	(\$823.62)									

**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	\$50.00	1	1	1,873		1.00000	\$0.00	92.000				1.600	
S	\$76.00	2	1	1,426		1.00000	\$0.00	92.000				1.600	
							\$0.00						

## *Project Data*

---

*Project Totals: 11723*

	<b>Tons</b>	<b>I/DP</b>	
<b>Asphalt Content</b>	3,299	(\$3,716.55)	
<b>Mat Density</b>	3,299	(\$7,902.59)	
<b>Gradation</b>	3,299	(\$2,076.25)	
<b>Joint Density</b>	3,299	\$0.00	
	<b>Total I/DP:</b>	(\$13,695.39)	<b>CPFC: 0.93221</b>

**Comments:** 2V out tests

**Project Data**

**Subaccount: 12418      NH 0403-035      Berthoud Falls West      Region: 1      Supplier: 13**  
**Bid Date: 01/29/04      Start Date: 8/10/2005**

<b>Mix Design No:</b> 153271		<b>Process No:</b> 1		<b>Grading:</b> S (75)		PG 58-28		<b>Price Per Ton:</b> \$44.83					
	<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>Std. Dev. - V</b>	<b>Other</b>	
												<b>CTS</b>	
<b>AC</b>	27	22,250	98.062	1.05000	\$12,469.28	5.500	5.486	0.014	0.134	0.200	-0.066	<b>Tons</b>	1000
<b>Density</b>	23	11,500	99.002	1.05000	\$11,600.63	94.000	93.591	0.409	0.720	1.100	-0.380	<b>I/DP</b>	\$542.59
<b>Gradation</b>	12	22,250	98.352	1.04500	\$6,733.41	<b>Key Sieve:</b> No. 4						<b>PF 1.0</b>	
					<b>I/DP:</b>	<b>\$31,345.91</b>						<b>Tons</b>	0

<b>Mix Design No:</b> 153271		<b>Process No:</b> 2		<b>Grading:</b> S (75)		PG 58-28		<b>Price Per Ton:</b> \$44.83					
	<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>Std. Dev. - V</b>	<b>Other</b>	
												<b>CTS</b>	
<b>AC</b>					\$0.00					0.200		<b>Tons</b>	1000
<b>Density</b>	24	8,500	99.965	1.05000	\$8,574.38	94.000	94.124	0.124	0.653	1.100	-0.447	<b>I/DP</b>	\$706.12
<b>Gradation</b>					\$0.00	<b>Key Sieve:</b>						<b>PF 1.0</b>	
					<b>I/DP:</b>	<b>\$9,280.50</b>						<b>Tons</b>	500

<b>Mix Design No:</b> 153270		<b>Process No:</b> 1		<b>Grading:</b> SX (75)		PG 58-34		<b>Price Per Ton:</b> \$50.61					
	<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>Std. Dev. - V</b>	<b>Other</b>	
												<b>CTS</b>	
<b>AC</b>	1	312			\$0.00	5.700				0.200		<b>Tons</b>	500
<b>Density</b>	25	12,000	98.425	1.05000	\$13,664.94	94.000	93.656	0.344	0.796	1.100	-0.304	<b>I/DP</b>	\$382.73
<b>Gradation</b>	1	312		0.82143	(\$422.96)	<b>Key Sieve:</b>						<b>PF 1.0</b>	
					<b>I/DP:</b>	<b>\$13,624.71</b>						<b>Tons</b>	0

<b>Mix Design No:</b> 153270		<b>Process No:</b> 2		<b>Grading:</b> SX (75)		PG 58-34		<b>Price Per Ton:</b> \$50.61					
	<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>Std. Dev. - V</b>	<b>Other</b>	
												<b>CTS</b>	
<b>AC</b>	28	25,410	94.982	1.04569	\$14,689.28	5.700	5.615	0.085	0.133	0.200	-0.067	<b>Tons</b>	500
<b>Density</b>	29	12,722	99.523	1.05500	\$15,935.83	94.000	93.454	0.546	0.595	1.100	-0.505	<b>I/DP</b>	\$398.56
<b>Gradation</b>	13	25,410	98.260	1.04500	\$8,680.66	<b>Key Sieve:</b> No. 8						<b>PF 1.0</b>	
					<b>I/DP:</b>	<b>\$39,704.33</b>						<b>Tons</b>	0

**Joint Density**

<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	\$51.82	1	20	25,722	81.602	0.96607	(\$6,782.90)	92.000	89.870	2.130	2.061	1.600	0.461
S	\$45.90	2	25	22,250	96.395	1.05000	\$7,659.56	92.000	90.190	1.810	1.248	1.600	-0.352
							<b>\$876.66</b>						

**Project Totals: 12418**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	47,972	\$27,158.56
<b>Mat Density</b>	48,222	\$51,805.78
<b>Gradation</b>	47,972	\$14,991.11
<b>Joint Density</b>	47,972	\$876.66
<b>Total I/DP:</b>		<b>\$94,832.11</b>
		<b>CPFC: 1.04124</b>

**Comments:**

**Project Data**

**Subaccount:** 12797      **NH 2852-010**      **US 285 and CR G Saguach**      **Region:5**      **Supplier:17**  
**Bid Date:** 04/29/04      **Start Date:** 5/17/2005

Mix Design No: 12797SX1			Process No: 1		Grading: SX (75)		PG 58-34		Price Per Ton: \$60.00				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	5	4,260	98.941	1.03000	\$1,917.00	5.600	5.504	0.096	0.122	0.200	-0.078	Tons	500
Density	8	3,760	99.926	1.04000	\$4,060.80	94.000	94.600	0.600	0.619	1.100	-0.481	I/DP	(\$353.55)
Gradation	3	4,260	83.333	1.02500	\$958.50	Key Sieve: 3/8					PF 1.0		
				I/DP:	\$6,582.75						Tons	0	

**Joint Density**

<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	\$60.00	1	2	4,260			\$0.00	92.000				1.600	
							\$0.00						

**Project Totals: 12797**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	4,260	\$1,917.00
<b>Mat Density</b>	4,260	\$3,707.25
<b>Gradation</b>	4,260	\$958.50
<b>Joint Density</b>	4,260	\$0.00
<b>Total I/DP:</b>	<b>\$6,582.75</b>	<b>CPFC: 1.02575</b>

**Comments:**

**Subaccount:** 12810      **BR 0062-013**      **US 6: Kiowa Creek**      **Region:4**      **Supplier:41**  
**Bid Date:** 04/21/05      **Start Date:** 11/1/2005

Mix Design No: 007A			Process No: 1		Grading: S (75)		PG 64-22		Price Per Ton: \$39.00				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	3	2,281	60.039	0.95375	(\$1,028.57)	5.400	5.157	0.243	0.158	0.200	-0.042	CTS Tons	0
Density	5	2,281	100.000	1.03000	\$1,200.95	94.000	94.320	0.320	0.589	1.100	-0.511	I/DP	\$0.00
Gradation	3	2,281	68.717	0.99594	(\$54.20)	Key Sieve: 3/8					PF 1.0 Tons	0	
				I/DP:	\$118.18								

**Joint Density**

<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	\$39.00	1	3	2,281	100.000	1.02500	\$333.60	92.000	91.700	0.300	1.900	1.600	0.300
							\$333.60						

**Project Totals: 12810**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	2,281	(\$1,028.57)
<b>Mat Density</b>	2,281	\$1,200.95
<b>Gradation</b>	2,281	(\$54.20)
<b>Joint Density</b>	2,281	\$333.60
<b>Total I/DP:</b>	<b>\$451.78</b>	<b>CPFC: 1.00508</b>

**Comments:**



**Project Data**

**Subaccount: 12966      STA 0131-041      Gun Club Road South      Region:3      Supplier:32**  
**Bid Date: 07/01/04      Start Date: 8/18/2005**

Mix Design No: WTIBOT58			Process No: 1		Grading: SX (75)		PG 58-28		Price Per Ton: \$36.68				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	4	3,646	76.051	1.00544	\$181.93	5.600	5.557	0.043	0.263	0.200	0.063	Tons	500
Density	6	3,146	80.935	1.00307	\$159.25	94.000	94.350	0.350	1.553	1.100	0.453	I/DP	\$288.86
Gradation	2	3,646		0.86607	(\$2,686.68)	Key Sieve:						PF 1.0	
				I/DP:	(\$2,056.64)							Tons	0

Mix Design No: WTIBOT58			Process No: 1		Grading: SX (75)		PG 58-28		Price Per Ton: \$36.75				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	5	5,559	100.000	1.03000	\$1,532.21	5.600	5.596	0.004	0.067	0.200	-0.133	Tons	0
Density	12	5,559	85.952	1.00645	\$592.89	94.000	93.992	0.008	1.394	1.100	0.294	I/DP	\$0.00
Gradation	3	5,559	62.338	0.96617	(\$1,036.64)	Key Sieve: 1/2						PF 1.0	
				I/DP:	\$1,088.46							Tons	0

Mix Design No: WTITOP62			Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$39.37				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	7	7,166	91.594	1.03500	\$2,468.57	5.600	5.466	0.134	0.125	0.200	-0.075	Tons	1000
Density	13	6,166	87.099	1.01058	\$1,155.98	94.000	93.892	0.108	1.351	1.100	0.251	I/DP	(\$1,117.60)
Gradation	4	7,166	56.623	0.90075	(\$4,200.14)	Key Sieve: 1/2						PF 1.0	
				I/DP:	(\$1,693.19)							Tons	0

**Joint Density**

<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	\$38.02	1	3	9,205	100.000	1.02500	\$1,312.40	92.000	90.130	1.870	0.569	1.600	-1.031
SX	\$41.33	2	3	7,166	100.000	1.02500	\$1,110.64	92.000	91.670	0.330	0.902	1.600	-0.698
							<b>\$2,423.04</b>						

**Project Totals: 12966**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	16,371	\$4,182.71
<b>Mat Density</b>	16,371	\$1,079.38
<b>Gradation</b>	16,371	(\$7,923.46)
<b>Joint Density</b>	16,371	<b>\$2,423.04</b>
<b>Total I/DP:</b>		<b>(\$238.33)</b>
		<b>CPFC: 0.99962</b>

**Comments:**

*Project Data*

Subaccount: 13216      STA 0091-016      SH-9 Park Ave in Breckenr      Region:1      Supplier: 70  
 Bid Date: 08/12/04      Start Date: 8/24/2005

Mix Design No: 161884		Process No: 1		Grading: SX (75)		PG 58-34		Price Per Ton: \$36.20					
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	14	11,102	99.690	1.04500	\$4,521.29	5.800	5.768	0.032	0.111	0.200	-0.089	Tons	0
Density	29	11,102	95.993	1.05088	\$9,201.07	94.000	94.628	0.628	0.799	1.100	-0.301	I/DP	\$0.00
Gradation	7	11,102	88.731	1.03029	\$1,825.71	Key Sieve: No. 4						PF 1.0	
					I/DP:	\$15,548.07						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	\$36.20	1	10	11,102	99.988	1.04500	\$2,712.77	92.000	91.220	0.780	1.242	1.600	-0.358
							\$2,712.77						

**Project Totals: 13216**

	Tons	I/DP
Asphalt Content	11,102	\$4,521.29
Mat Density	11,102	\$9,201.07
Gradation	11,102	\$1,825.71
Joint Density	11,102	\$2,712.77
Total I/DP:		\$18,260.84
		CPFC: 1.04544

Comments:

*Project Data*

Subaccount: 13472      NH 0502-053      Cimarron - West      Region: 3      Supplier: 32  
 Bid Date: 04/15/04      Start Date: 6/29/2005

Mix Design No: 112		Process No: 1		Grading: SX (75)		PG 58-28		Price Per Ton: \$35.08				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
AC	14	13,328	88.386	1.01563	\$1,826.99	5.900	5.992	0.092	0.172	0.200	-0.028	CTS Tons 500
Density	26	12,828	94.022	1.03994	\$8,087.44	94.000	94.412	0.412	1.005	1.100	-0.095	I/DP \$276.25
Gradation	7	13,328	62.314	0.88640	(\$7,967.02)	Key Sieve: 1/2						PF 1.0 Tons 0
					I/DP:	\$2,223.66						

Mix Design No: 113		Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$39.07				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
AC	11	10,848	95.903	1.04500	\$4,767.56	5.800	5.685	0.115	0.113	0.200	-0.087	CTS Tons 500
Density	21	10,348	97.761	1.05000	\$9,095.63	94.000	94.329	0.329	0.857	1.100	-0.243	I/DP \$265.99
Gradation	6	10,848	88.897	1.03288	\$2,089.87	Key Sieve: 1/2						PF 1.0 Tons 0
					I/DP:	\$16,219.05						

**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	\$35.47	1	1	620		1.00000	\$0.00	92.000				1.600	
SX	\$35.47	2	7	12,708	100.000	1.03500	\$2,366.45	92.000	91.110	0.890	0.891	1.600	-0.709
SX	\$40.41	3	8	10,848	99.541	1.04000	\$2,630.21	92.000	92.140	0.140	1.836	1.600	0.236
							\$4,996.66						

*Project Totals: 13472*

	Tons	I/DP
Asphalt Content	24,176	\$6,594.55
Mat Density	24,176	\$17,725.31
Gradation	24,176	(\$5,877.15)
Joint Density	24,176	\$4,996.66
Total I/DP:		\$23,439.37
		CPFC: 1.0263

Comments:

*Project Data*

**Subaccount: 13496      BR 0243-063      G-22 East of Limon      Region: 1      Supplier: 14**  
**Bid Date: 07/15/04      Start Date: 5/18/2005**

Mix Design No: 141713			Process No: 1		Grading: S (75)		PG 64-22		Price Per Ton: \$69.36				
Tests		Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	5	4,284	72.527	0.97421	(\$1,915.73)	5.900	5.752	0.148	0.235	0.200	0.035	CTS Tons	500
Density	2	1,000			\$0.00	94.000				1.100		I/DP	\$421.45
Gradation	3	4,284	100.000	1.02500	\$1,114.27	Key Sieve: All QLs100						PF 1.0 Tons	0
					I/DP:	(\$380.01)							

Mix Design No: 141713			Process No: 2		Grading: S (75)		PG 64-22		Price Per Ton: \$69.36					
			Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
Tests			Tons									CTS Tons	500	
AC					\$0.00					0.200				
Density			5	2,284	99.996	1.03000	\$2,138.65	94.000	93.340	0.660	0.750	1.100	-0.350	I/DP \$546.21
Gradation							\$0.00	Key Sieve:					PF 1.0 Tons	0
					I/DP:	\$2,684.86								

**Joint Density**

<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	\$65.00	1	1	4,284			\$0.00	92.000				1.600	
							\$0.00						

**Project Totals: 13496**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	4,284	(\$1,915.73)
<b>Mat Density</b>	4,284	\$3,106.31
<b>Gradation</b>	4,284	\$1,114.27
<b>Joint Density</b>	4,284	\$0.00
<b>Total I/DP:</b>		<b>\$2,304.85</b>
		<b>CPFC: 1.00776</b>

**Comments:**

*Project Data*

Subaccount: 13506      NH 0404-039      Idaho Springs Drainage      Region: 1      Supplier: 14  
 Bid Date: 02/17/05      Start Date: 10/24/200

Mix Design No: 132118		Process No: 1		Grading: S (75)		PG 58-28		Price Per Ton: \$54.00				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
AC	4	3,582	70.767	0.98247	(\$847.93)	6.000	6.155	0.155	0.233	0.200	0.033	CTS Tons 500
Density	1	500		1.00000	\$0.00	94.000				1.100		I/DP (\$982.55)
Gradation	2	3,582		1.00000	\$0.00	Key Sieve:						PF 1.0 Tons 0
					I/DP:	(\$1,830.48)						

Mix Design No: 132118		Process No: 2		Grading: S (75)		PG 58-28		Price Per Ton: \$54.00				
	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	1	500		1.00000	\$0.00	94.000				1.100		I/DP \$123.84
Gradation					\$0.00	Key Sieve:						PF 1.0 Tons 0
					I/DP:	\$123.84						

Mix Design No: 132118		Process No: 3		Grading: S (75)		PG 58-28		Price Per Ton: \$54.00				
	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	2	1,082		1.00000	\$0.00	94.000				1.100		I/DP (\$1,321.22)
Gradation					\$0.00	Key Sieve:						PF 1.0 Tons 0
					I/DP:	(\$1,321.22)						

Mix Design No: 132117		Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$65.00				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
AC	2	1,248		0.91875	(\$1,647.75)	6.100				0.200		CTS Tons 500
Density	4	748	100.000	1.03000	\$656.37	94.000	93.900	0.100	0.245	1.100	-0.855	I/DP \$511.87
Gradation	1	1,248		1.00000	\$0.00	Key Sieve:						PF 1.0 Tons 0
					I/DP:	(\$479.51)						

**Joint Density**

Grad.	Price	Proc. No	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std Dev	V	Std Dev. - V
S	\$54.00	1	2	3,582		1.00000	\$0.00	92.000				1.600	
SX	\$65.00	2	1	624		0.34375	(\$3,992.63)	92.000				1.600	
SX	\$65.00	3	1	624		0.87500	(\$760.50)	92.000				1.600	
							(\$4,753.13)						

**Project Totals: 13506**

	Tons	I/DP
Asphalt Content	4,830	(\$2,495.68)
Mat Density	4,830	(\$1,011.69)
Gradation	4,830	\$0.00
Joint Density	4,830	(\$4,753.13)
Total I/DP:		(\$8,260.50)
		CPFC: 0.96991

Comments:

**Project Data**

Subaccount: 13855 STA 072A-028 SH 72 Coal Creek Canyon Region:1 Supplier: 13  
 Bid Date: 01/06/05 Start Date: 6/7/2005

Mix Design No: 132110		Process No: 1		Grading: SX (75) PG 58-28		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	29	28,778	96.469	1.05374	\$14,112.34	5.600	5.587	0.013	0.146	0.200	-0.054	CTS Tons 500
Density	58	28,278	98.558	1.05500	\$25,545.64	94.000	93.728	0.272	0.790	1.100	-0.310	I/DP \$287.44
Gradation	15	28,778	87.047	1.00711	\$1,119.87	Key Sieve: No. 8						PF 1.0 Tons 0
					I/DP:	\$41,065.29						

**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	18	28,778	97.324	1.05000	\$7,877.98	92.000	90.200	1.800	1.188	1.600	-0.412
							\$7,877.98						

**Project Totals: 13855**

	Tons	I/DP
Asphalt Content	28,778	\$14,112.34
Mat Density	28,778	\$25,833.08
Gradation	28,778	\$1,119.87
Joint Density	28,778	\$7,877.98
Total I/DP:		\$48,943.27
		CPFC: 1.0466

Comments:

Subaccount: 13923 BR 151A-007 Los Pinos River in Region:5 Supplier: 16  
 Bid Date: 01/20/05 Start Date: 8/1/2005

Mix Design No: 1		Process No: 1		Grading: SX (75) PG 58-28		Price Per Ton: \$53.77						
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
AC	5	4,950	99.800	1.03000	\$1,996.26	6.400	6.326	0.074	0.128	0.200	-0.072	CTS Tons 0
Density	10	4,950	100.000	1.04500	\$5,389.91	94.000	94.030	0.030	0.652	1.100	-0.448	I/DP \$0.00
Gradation	3	4,950	100.000	1.02500	\$998.13	Key Sieve: All QLS100						PF 1.0 Tons 0
					I/DP:	\$8,384.30						

**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	\$53.77	1	3	4,950	100.000	1.02500	\$998.11	92.000	90.300	1.700	1.510	1.600	-0.090
							\$998.11						

**Project Totals: 13923**

	Tons	I/DP
Asphalt Content	4,950	\$1,996.26
Mat Density	4,950	\$5,389.91
Gradation	4,950	\$998.13
Joint Density	4,950	\$998.11
Total I/DP:		\$9,382.41
		CPFC: 1.03525

Comments: Received max incentive

**Project Data**

**Subaccount: 14468      STU M240-080      Powers Blvd SB      Region: 2      Supplier: 49**  
**Bid Date: 11/13/03      Start Date: 7/16/2005**

<b>Mix Design No:</b> 14463SMA		<b>Process No:</b> 1		<b>Grading:</b> SMA (100) PG 76-28				<b>Price Per Ton:</b> \$59.67				
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
<b>AC</b>	8	7,490	100.000	1.04000	\$4,469.28	6.400	6.385	0.015	0.068	0.200	-0.132	<b>Tons</b> 0
<b>Density</b>	15	7,490	82.284	0.97997	(\$4,028.03)	95.000	94.173	0.827	1.233	1.100	0.133	<b>I/DP</b> \$0.00
<b>Gradation</b>	4	7,490	80.143	1.02041	\$1,368.31	<b>Key Sieve: 1/2</b>						<b>PF 1.0</b>
					<b>I/DP:</b>	<b>\$1,809.56</b>						<b>Tons</b> 0

**Joint Density**

<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>
SMA	\$56.00	1	9	7,490	98.524	1.04000	\$2,516.64	92.000	89.770	2.230	0.923	1.600	-0.677
							<u>\$2,516.64</u>						

**Project Totals: 14468**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	7,490	\$4,469.28
<b>Mat Density</b>	7,490	(\$4,028.03)
<b>Gradation</b>	7,490	\$1,368.31
<b>Joint Density</b>	7,490	\$2,516.64
<b>Total I/DP:</b>		<u>\$4,326.20</u>
		<b>CPFC: 1.00968</b>

**Comments:** Actual PCN 14463. Tested gradation and voids.

**Subaccount: 14469      STU M240-081      Powers Blvd/SH 83      Region: 2      Supplier: 44**  
**Bid Date: 06/18/04      Start Date: 8/31/2005**

<b>Mix Design No:</b> 14464SMA		<b>Process No:</b> 1		<b>Grading:</b> SMA (100) PG 76-28				<b>Price Per Ton:</b> \$52.00				
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
<b>AC</b>	11	10,247	89.675	1.02556	\$3,404.97	7.000	6.943	0.057	0.183	0.200	-0.017	<b>Tons</b> 0
<b>Density</b>	21	10,247	95.824	1.05000	\$11,988.99	95.000	94.719	0.281	0.980	1.100	-0.120	<b>I/DP</b> \$0.00
<b>Gradation</b>	6	10,247	80.761	1.00232	\$185.19	<b>Key Sieve: No. 200</b>						<b>PF 1.0</b>
					<b>I/DP:</b>	<b>\$15,579.15</b>						<b>Tons</b> 0

**Joint Density**

<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>
SMA	\$52.00	1	10	10,247	67.716	0.90295	(\$7,757.16)	92.000	88.900	3.100	1.899	1.600	0.299
							<u>(\$7,757.16)</u>						

**Project Totals: 14469**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	10,247	\$3,404.97
<b>Mat Density</b>	10,247	\$11,988.99
<b>Gradation</b>	10,247	\$185.19
<b>Joint Density</b>	10,247	(\$7,757.16)
<b>Total I/DP:</b>		<u>\$7,821.99</u>
		<b>CPFC: 1.01468</b>

**Comments:** Actual PCN 14464. Tested Voids and Gradation.

**Project Data**

**Subaccount: 14482    IMD 0252-364    I-25 Broadway Viaduct Pha    Region: 6    Supplier: 37**  
**Bid Date: 07/29/04    Start Date: 7/18/2005**

Mix Design No: 176505			Process No: 1		Grading: S	(100)	PG 76-28		Price Per Ton: \$50.00						
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other			
AC	7	6,264	81.367	0.99981	(\$14.57)	5.100	5.051	0.049	0.230	0.200	0.030	CTS Tons	500		
Density	12	5,764	99.924	1.04500	\$5,836.05	94.000	94.283	0.283	0.670	1.100	-0.430	I/DP	\$393.75		
Gradation	4	6,264	100.000	1.03000	\$1,409.40	Key Sieve: All QLS100						PF 1.0 Tons	0		
				I/DP:	\$7,624.63										

Mix Design No: 176504			Process No: 1		Grading: SMA (100) PG 76-28		Price Per Ton: \$58.00							
		Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC		4	3,776	77.297	1.01026	\$561.79	6.400	6.635	0.235	0.079	0.200	-0.121	CTS Tons	0
Density			0			\$0.00	94.000				1.100		I/DP	\$0.00
Gradation		3	3,776	100.000	1.02500	\$821.28	Key Sieve: All QLS100						PF 1.0 Tons	3,776
						I/DP:	\$1,383.07							

Mix Design No: 176505			Process No: 1		Grading: SMA (100) PG 76-28		Price Per Ton: \$50.00							
			Quality	Pay				Mean			Std. Dev.	Other		
Tests Tons			Level	Factor	I/DP	TV	Mean	to TV	Std. Dev.	V	- V	CTS		
AC	9	8,286	99.985	1.04000	\$4,143.00	5.100	5.091	0.009	0.118	0.200	-0.082	Tons	0	
Density	17	8,286	98.674	1.05000	\$9,321.75	94.000	93.453	0.547	0.698	1.100	-0.402	I/DP	\$0.00	
Gradation	5	8,286	74.855	0.98548	(\$902.58)	Key Sieve: No. 30						PF 1.0		
					I/DP:	\$12,562.17							Tons	0

**Joint Density**

<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	\$50.00	1	3	6,264	100.000	1.02500	\$1,174.50	92.000	90.930	1.070	1.193	1.600	-0.407
SMA	\$50.00	2	4	7,638	94.326	1.03000	\$1,718.55	92.000	89.380	2.620	1.034	1.600	-0.566
SMA	\$50.00	3	1	648		0.23437	(\$3,720.96)	92.000				1.600	
SMA	\$50.00	4	1	3,776		1.00000	\$0.00	92.000				1.600	
							(\$827.91)						

**Project Totals: 14482**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	18,326	\$4,690.22
<b>Mat Density</b>	18,326	\$15,551.55
<b>Gradation</b>	18,326	\$1,328.10
<b>Joint Density</b>	18,326	(\$827.91)
<b>Total I/DP:</b>		<b>\$20,741.96</b>
		<b>CPFC: 1.02191</b>

**Comments:** Added quantity by CMO.



**Project Data**

**Subaccount: 14507    NH 1603-021    Ft. Garland East US 160    Region:5    Supplier: 79**  
**Bid Date: 04/14/05    Start Date: 7/12/2005**

Mix Design No: 14507 L2			Process No: 1		Grading: SX (75) PG 58-28		Price Per Ton: \$33.54						
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	12	11,464	97.582	1.04500	\$4,325.54	5.700	5.735	0.035	0.141	0.200	-0.059	CTS Tons	0
Density		0			\$0.00	94.000				1.100		I/DP	\$0.00
Gradation	6	11,464	94.461	1.03500	\$2,018.58	Key Sieve: 3/8						PF 1.0 Tons	11,464
				I/DP:	\$6,344.12								

Mix Design No: 14507Lev			Process No: 1		Grading: SX (75) PG 58-28		Price Per Ton: \$34.02							
		Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC		4	3,031	100.000	1.03000	\$773.31	5.900	5.905	0.005	0.133	0.200	-0.067	CTS Tons	0
Density			0			\$0.00	94.000				1.100		I/DP	\$0.00
Gradation		2	3,031			\$0.00	Key Sieve:						PF 1.0 Tons	3,031
					I/DP:	\$773.31								

Mix Design No: 14507SX1			Process No: 1		Grading: SX (75)		PG 58-34		Price Per Ton: \$36.82					
			Quality	Pay				Mean			Std. Dev.	Other		
Tests		Tons	Level	Factor	I/DP	TV	Mean	to TV	Std. Dev.	V	- V	CTS		
AC	34	33,549	98.433	1.05500	\$16,984.28	5.700	5.675	0.025	0.126	0.200	-0.074	Tons	500	
Density	67	33,049	96.809	1.05127	\$28,073.61	94.000	93.827	0.173	0.929	1.100	-0.171	I/DP	\$289.94	
Gradation	17	33,549	87.783	1.00864	\$1,601.47	Key Sieve: 3/8						PF 1.0		
					I/DP:	\$46,949.30							Tons	0

Mix Design No: Furn			Process No: 1		Grading: SX (75)		PG 58-34		Price Per Ton: \$29.50				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	3	2,005	100.000	1.02500	\$369.67	5.700	5.610	0.090	0.105	0.200	-0.095	CTS Tons	0
Density		0			\$0.00	94.000				1.100		I/DP	\$0.00
Gradation	2	2,005		0.95536	<div>(\$396.08)</div>	Key Sieve:						PF 1.0 Tons	2,005
				I/DP:	<div>(\$26.41)</div>								

**Joint Density**

<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	\$34.02	1	1	3,031			\$0.00	92.000				1.600	
SX	\$33.54	2	1	11,464			\$0.00	92.000				1.600	
SX	\$36.82	3	13	33,549	99.715	1.04500	\$8,338.10	92.000	92.780	0.780	1.349	1.600	-0.251
SX	\$29.50	4	1	2,005			\$0.00	92.000				1.600	
							<b>\$8,338.10</b>						

**Project Totals: 14507**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	50,049	\$22,452.80
<b>Mat Density</b>	50,049	\$28,363.55
<b>Gradation</b>	50,049	\$3,223.97
<b>Joint Density</b>	50,049	\$8,338.10
<b>Total I/DP:</b>		<b>\$62,378.42</b>
		<b>CPFC: 1.035</b>

**Comments:**

*Project Data*

**Subaccount: 14552      IM 0251-167      Pinon Rest Area      Region: 2      Supplier: 45**  
**Bid Date: 09/23/04      Start Date: 4/12/2005**

Mix Design No: 14552			Process No: 1		Grading: S (75)		PG 64-22		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		7	5,107	68.795	0.93057	(\$4,077.53)	5.300	5.350	0.050	0.291	0.200	0.091	CTS Tons	500
Density		12	4,607	96.156	1.04500	\$4,291.42	94.000	94.108	0.108	1.040	1.100	-0.060	I/DP	\$362.25
Gradation		3	5,107	100.000	1.02500	\$880.96	Key Sieve: All QLS100						PF 1.0 Tons	0
					I/DP:	\$1,457.10								

Mix Design No: 14552SX			Process No: 1		Grading: SX (75)		PG 64-22		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	5	5,000	86.921	1.03000	\$1,725.00	6.000	5.932	0.068	0.208	0.200	0.008	CTS Tons	500
Density	7	4,500	100.000	1.03500	\$3,260.25	94.000	93.657	0.343	0.600	1.100	-0.500	I/DP	\$362.25
Gradation	3	5,000	100.000	1.02500	\$862.50	Key Sieve: All QLS100						PF 1.0 Tons	0
					I/DP:	\$6,210.00							

**Joint Density**

<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	\$46.00	1	5	10,107	95.053	1.03000	\$2,092.15	92.000	93.280	1.280	1.885	1.600	0.285
							<u>\$2,092.15</u>						

**Project Totals: 14552**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	10,107	(\$2,352.53)
<b>Mat Density</b>	10,107	\$8,276.17
<b>Gradation</b>	10,107	\$1,743.46
<b>Joint Density</b>	10,107	<u>\$2,092.15</u>
<b>Total I/DP:</b>		<b>\$9,759.25</b>
		<b>CPFC: 1.02099</b>

**Comments:**

*Project Data*

**Subaccount: 14612      NH 0853-054      US 85: 136th to CR      Region: 6      Supplier: 10**  
**Bid Date: 12/23/04      Start Date: 8/2/2005**

<b>Mix Design No:</b> 176512		<b>Process No:</b> 1		<b>Grading:</b> SMA (100) PG 76-28		<b>Price Per Ton:</b> \$47.64						
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
<b>AC</b>	18	17,410	98.545	1.05000	\$10,367.66	6.100	6.141	0.041	0.125	0.200	-0.075	<b>Tons</b> 0
<b>Density</b>	35	17,410	98.535	1.05500	\$20,527.96	95.000	95.269	0.269	0.804	1.100	-0.296	<b>I/DP</b> \$0.00
<b>Gradation</b>	9	17,410	88.053	1.02075	\$2,581.42	<b>Key Sieve:</b> 3/8						<b>PF 1.0</b>
					<b>I/DP:</b>	<b>\$33,477.04</b>						<b>Tons</b> 0

<b>Mix Design No:</b> 176512-2		<b>Process No:</b> 1		<b>Grading:</b> SMA (100) PG 76-28		<b>Price Per Ton:</b> \$47.64						
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
<b>AC</b>	10	9,824	100.000	1.04500	\$5,265.17	6.100	6.102	0.002	0.106	0.200	-0.094	<b>Tons</b> 0
<b>Density</b>	20	9,824	99.863	1.05000	\$10,530.35	95.000	94.760	0.240	0.654	1.100	-0.446	<b>I/DP</b> \$0.00
<b>Gradation</b>	5	9,824	91.579	1.03000	\$2,106.07	<b>Key Sieve:</b> 3/8						<b>PF 1.0</b>
					<b>I/DP:</b>	<b>\$17,901.59</b>						<b>Tons</b> 0

**Joint Density**

<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>
SMA	\$47.64	1	11	17,410	100.000	1.04500	\$5,598.53	92.000	90.950	1.050	0.927	1.600	-0.673
SMA	\$47.64	2	6	9,824	100.000	1.03500	\$2,457.08	92.000	89.750	2.250	0.764	1.600	-0.836
							<b>\$8,055.61</b>						

**Project Totals: 14612**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	27,234	\$15,632.83
<b>Mat Density</b>	27,234	\$31,058.31
<b>Gradation</b>	27,234	\$4,687.49
<b>Joint Density</b>	27,234	\$8,055.61
<b>Total I/DP:</b>		<b>\$59,434.24</b>
		<b>CPFC: 1.04581</b>

**Comments:** With Fibers

**Project Data**

**Subaccount: 14621      STA 008A-005      SH 8: SH74 to C-470      Region: 6      Supplier: 10**  
**Bid Date: 02/03/05      Start Date: 8/25/2005**

<b>Mix Design No:</b> 176516		<b>Process No:</b> 1		<b>Grading:</b> SX (75)		PG 64-22		<b>Price Per Ton:</b> \$39.35					
	<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>Std. Dev. - V</b>	<b>Other</b>	
												<b>CTS</b>	
<b>AC</b>	5	4,196	100.000	1.03000	\$1,238.34	5.500	5.454	0.046	0.110	0.200	-0.090	<b>Tons</b>	0
<b>Density</b>	8	4,196	91.662	1.03695	\$2,745.31	94.000	93.412	0.588	1.056	1.100	-0.044	<b>I/DP</b>	\$0.00
<b>Gradation</b>	2	4,196		1.00000	\$0.00	<b>Key Sieve:</b>						<b>PF 1.0</b>	
					<b>I/DP:</b>	<b>\$3,983.65</b>						<b>Tons</b>	0

**Joint Density**

<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	\$39.35	1	4	4,196	69.316	0.97543	(\$608.43)	92.000	89.130	2.870	1.941	1.600	0.341
							(\$608.43)						

**Project Totals: 14621**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	4,196	\$1,238.34
<b>Mat Density</b>	4,196	\$2,745.31
<b>Gradation</b>	4,196	\$0.00
<b>Joint Density</b>	4,196	(\$608.43)
<b>Total I/DP:</b>		\$3,375.22
	<b>CPFC:</b>	1.02044

**Comments:**

**Subaccount: 14637      NH 2854-101      US 285, Federal to Lafayette      Region: 6      Supplier: 45**  
**Bid Date: 02/03/05      Start Date: 7/6/2005**

<b>Mix Design No:</b> 176515		<b>Process No:</b> 1		<b>Grading:</b> SX (100)		PG 64-22		<b>Price Per Ton:</b> \$47.75					
	<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>Std. Dev. - V</b>	<b>Other</b>	
												<b>CTS</b>	
<b>AC</b>	5	5,174	89.175	1.03000	\$1,852.94	5.600	5.678	0.078	0.185	0.200	-0.015	<b>Tons</b>	0
<b>Density</b>		0			\$0.00	94.000				1.100		<b>I/DP</b>	\$0.00
<b>Gradation</b>	3	5,174	69.585	0.99946	(\$20.11)	<b>Key Sieve:</b> No. 200						<b>PF 1.0</b>	
					<b>I/DP:</b>	<b>\$1,832.83</b>						<b>Tons</b>	5,174

**Joint Density**

<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	\$47.75	1	1	5,174		1.00000	\$0.00	92.000				1.600	
							\$0.00						

**Project Totals: 14637**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	5,174	\$1,852.94
<b>Mat Density</b>	5,174	\$0.00
<b>Gradation</b>	5,174	(\$20.11)
<b>Joint Density</b>	5,174	\$0.00
<b>Total I/DP:</b>		\$1,832.83
	<b>CPFC:</b>	1.00742

**Comments:** Gradation and Voids tested. See 14636 for Voids data.

**Project Data**

**Subaccount: 14671    NH 1602-100    Grandview 4 Lane    Region:5    Supplier:56**  
**Bid Date: 06/16/04    Start Date: 8/11/2005**

Mix Design No: 5828			Process No: 1		Grading: SX (75)		PG 58-28		Price Per Ton: \$32.92				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	27	26,835	94.213	1.04072	\$8,993.33	5.800	5.752	0.048	0.155	0.200	-0.045	Tons	500
Density	9	9,000	96.387	1.04000	\$5,332.65	94.000	94.444	0.444	0.934	1.100	-0.166	I/DP	\$235.24
Gradation	14	26,835	96.885	1.04500	\$5,962.57	Key Sieve: No. 200						PF 1.0	
				I/DP:	\$20,523.79							Tons	0

Mix Design No: 5828			Process No: 2		Grading: SX (75)		PG 58-28		Price Per Ton: \$32.92				
			Quality Level	Pay Factor								Other	
Tests		Tons			I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	CTS	
AC					\$0.00					0.200		Tons	500
Density	34	16,835	88.046	0.99687	(\$781.22)	94.000	94.765	0.765	1.041	1.100	-0.059	I/DP	\$259.23
Gradation					\$0.00	Key Sieve:						PF 1.0	
				I/DP:	(\$521.99)							Tons	0

Mix Design No: 6428			Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$37.05					
			Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
Tests			Tons									CTS		
AC	7	6,898	94.535	1.03500	\$2,235.95	5.800	5.683	0.117	0.123	0.200	-0.077	Tons	500	
Density	13	6,398	82.886	0.98807	(\$1,272.46)	94.000	93.977	0.023	1.488	1.100	0.388	I/DP	(\$268.95)	
Gradation	3	6,898	62.338	0.96617	(\$1,296.65)	Key Sieve: No. 4						PF 1.0		
					I/DP:	(\$602.11)							Tons	0

Mix Design No: 6428A			Process No: 1		Grading: SX (75) PG 64-28		Price Per Ton: \$36.14								
		Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
		AC	9	8,804	100.000	1.04000	\$3,181.99	5.400	5.346	0.054	0.087	0.200	-0.113	CTS Tons	0
		Density	20	8,804	77.496	0.94205	(\$8,297.91)	94.000	93.522	0.478	1.590	1.100	0.490	I/DP	\$0.00
		Gradation	5	8,804	100.000	1.03000	\$1,431.89	Key Sieve: All QLS100						PF 1.0 Tons	0
						I/DP:	(\$3,684.03)								

**Joint Density**

<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	\$30.94	1	3	4,637	65.851	0.98342	(\$356.75)	92.000	90.200	1.800	3.989	1.600	2.389
SX	\$30.94	2	15	20,604	90.978	1.02742	\$2,622.42	92.000	91.560	0.440	2.402	1.600	0.802
SX	\$36.14	3	14	15,702	70.221	0.90723	(\$7,896.52)	92.000	90.030	1.970	3.278	1.600	1.678
							(\$5,630.85)						

**Project Totals: 14671**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	42,537	\$14,411.27
<b>Mat Density</b>	42,537	(\$4,793.42)
<b>Gradation</b>	42,537	\$6,097.81
<b>Joint Density</b>	40,943	(\$5,630.85)
<b>Total I/DP:</b>		\$10,084.81
<b>CPFC:</b>	1.00692	

**Comments:** Joint density quantities

*Project Data*

Subaccount: 14819      IM 0702-246      Frisco Onramp      Region: 1      Supplier: 70  
 Bid Date: 02/17/05      Start Date: 7/25/2005

Mix Design No: 131592		Process No: 1		Grading: SX (75)		PG 58-28		Price Per Ton: \$44.54					
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	3	2,844	41.957	0.82479	(\$5,548.74)	6.200	5.853	0.347	0.162	0.200	-0.038	Tons	0
Density	6	2,844	92.317	1.03500	\$1,995.13	94.000	95.033	1.033	0.717	1.100	-0.383	I/DP	\$0.00
Gradation	2	2,844		1.00000	\$0.00	Key Sieve:						PF 1.0	
					I/DP: (\$3,553.61)							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	\$44.83	1	1	2,844		1.00000	\$0.00	92.000				1.600	
							\$0.00						

**Project Totals: 14819**

	Tons	I/DP
Asphalt Content	2,844	(\$5,548.74)
Mat Density	2,844	\$1,995.13
Gradation	2,844	\$0.00
Joint Density	2,844	\$0.00
<b>Total I/DP:</b>		<b>(\$3,553.61)</b>
		<b>CPFC: 0.97195</b>

Comments:

*Project Data*

**Subaccount: 14849**      **IM 0703-287**      **I-70 Bakerville East**      **Region: 1**      **Supplier: 45**  
**Bid Date: 12/23/04**      **Start Date: 5/17/2005**

Mix Design No: 157545			Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$44.78				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
	AC	4	1,720	100.000	1.03000	\$577.70	5.700	5.765	0.065	0.156	0.200	-0.044	CTS Tons 500
	Density	3	1,220	100.000	1.02500	\$614.65	94.000	94.400	0.400	0.458	1.100	-0.642	I/DP \$352.67
	Gradation	1	1,720		0.91071	(\$1,031.61)	Key Sieve:					PF 1.0 Tons 0	
					I/DP:	\$513.41							

Mix Design No: 157547			Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$44.85				
			Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
Tests Tons												CTS Tons	500
AC 48 47,288			99.706	1.05500	\$29,164.05	5.800	5.771	0.029	0.101	0.200	-0.099	I/DP	\$353.22
Density 94 46,788			95.448	1.03942	\$37,228.44	94.000	93.769	0.231	0.981	1.100	-0.119	PF 1.0 Tons	0
Gradation 24 47,288			94.151	1.04113	\$13,084.74	Key Sieve: No. 4							
			I/DP:	\$79,830.45									

**Joint Density**

<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	\$44.69	1	1	364		0.00000	(\$2,440.07)	92.000				1.600	
SX	\$44.69	2	42	47,287	83.579	0.95962	(\$12,801.13)	92.000	89.700	2.300	1.738	1.600	0.138
SX	\$44.69	3	1	364		0.28125	(\$1,753.80)	92.000				1.600	
SX	\$44.69	4	4	993	59.186	0.91774	(\$547.57)	92.000	88.780	3.220	2.812	1.600	1.212
							(\$17,542.57)						

**Project Totals: 14849**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	49,008	\$29,741.75
<b>Mat Density</b>	49,008	\$38,548.98
<b>Gradation</b>	49,008	\$12,053.13
<b>Joint Density</b>	49,008	(\$17,542.57)
<b>Total I/DP:</b>		<b>\$62,801.29</b>
		<b>CPFC: 1.02857</b>

**Comments:**

*Project Data*

**Subaccount: 14850      NH 2854-104      US 285 Kenosha Pass      Region: 1      Supplier: 17**  
**Bid Date: 12/23/04      Start Date: 6/9/2005**

<b>Mix Design No:</b> 141678		<b>Process No:</b> 1		<b>Grading:</b> SX (75) PG 58-28		<b>Price Per Ton:</b> \$37.70						
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
<b>AC</b>	33	33,000	90.549	1.01454	\$4,523.52	6.500	6.643	0.143	0.120	0.200	-0.080	<b>Tons</b> 0
<b>Density</b>	66	33,000	89.107	0.99178	(\$4,602.70)	94.000	93.795	0.205	1.238	1.100	0.138	<b>I/DP</b> \$0.00
<b>Gradation</b>	17	34,000	94.582	1.04442	\$8,540.78	<b>Key Sieve:</b> No. 4						<b>PF 1.0</b>
					<b>I/DP:</b>	<b>\$8,461.60</b>						<b>Tons</b> 0

**Joint Density**

<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	\$40.15	1	31	22,723	99.078	1.05500	\$7,526.71	92.000	92.090	0.090	1.611	1.600	0.011
							<u>\$7,526.71</u>						

**Project Totals: 14850**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	33,000	\$4,523.52
<b>Mat Density</b>	33,000	(\$4,602.70)
<b>Gradation</b>	34,000	\$8,540.78
<b>Joint Density</b>	22,723	\$7,526.71
<b>Total I/DP:</b>	\$15,988.31	<b>CPFC:</b> 1.01266

**Comments:** Final quantities not equal.

**Subaccount: 14914      STA 145A-036      SH 145 Placerville      Region: 5      Supplier: 77**  
**Bid Date: 01/06/05      Start Date: 8/3/2005**

<b>Mix Design No:</b> overlay		<b>Process No:</b> 1		<b>Grading:</b> SX (75) PG 58-28		<b>Price Per Ton:</b> \$38.38						
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
<b>AC</b>	42	41,105	97.705	1.05500	\$21,690.60	6.700	6.687	0.013	0.135	0.200	-0.065	<b>Tons</b> 1000
<b>Density</b>	76	37,739	99.441	1.06000	\$39,104.65	94.000	94.086	0.086	0.733	1.100	-0.367	<b>I/DP</b> (\$228.01)
<b>Gradation</b>	21	41,105	98.121	1.05000	\$11,831.24	<b>Key Sieve:</b> No. 200						<b>PF 1.0</b>
					<b>I/DP:</b>	<b>\$72,398.48</b>						<b>Tons</b> 2,366

**Joint Density**

<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	\$36.80	1	24	41,105	78.012	0.93523	(\$14,696.83)	92.000	89.160	2.840	1.497	1.600	-0.103
							<u>(\$14,696.83)</u>						

**Project Totals: 14914**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	41,105	\$21,690.60
<b>Mat Density</b>	41,105	\$38,876.64
<b>Gradation</b>	41,105	\$11,831.24
<b>Joint Density</b>	41,105	(\$14,696.83)
<b>Total I/DP:</b>	\$57,701.65	<b>CPFC:</b> 1.03658

**Comments:**



**Project Data**

**Subaccount: 14950      IM 0252-374      I-25 Resurfacing      Region: 1      Supplier: 49**  
**Bid Date: 02/24/05      Start Date: 8/11/2005**

Mix Design No: 08082005			Process No: 1		Grading: SMA (100)		PG 76-28		Price Per Ton: \$61.80					
Tests		Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
												CTS		
AC	18	17,500	92.462	1.03343	\$9,038.88	6.400	6.474	0.074	0.157	0.200	-0.043	Tons	0	
Density	41	20,500	88.997	0.99982	(\$101.74)	95.000	94.541	0.459	1.175	1.100	0.075	I/DP	\$0.00	
Gradation	11	20,500	93.251	1.04056	\$7,706.97	Key Sieve: 1/2						PF 1.0		
					I/DP:	\$16,644.11							Tons	0

Mix Design No: 08082005			Process No: 2		Grading: SMA (100) PG 76-28		Price Per Ton: \$61.80							
		Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
													CTS	
AC		1	1,000		0.35000	(\$10,042.50)	6.400				0.200		Tons	0
Density			0			\$0.00	94.000				1.100		I/DP	\$0.00
Gradation						\$0.00	Key Sieve:						PF 1.0	
					I/DP:	(\$10,042.50)							Tons	0

Mix Design No: 08082005			Process No: 3		Grading: SMA (100) PG 76-28		Price Per Ton: \$61.80							
		Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
													CTS	
AC		1	1,000		0.25000	(\$11,587.50)	6.400				0.200		Tons	0
Density			0			\$0.00	94.000				1.100		I/DP	\$0.00
Gradation						\$0.00	Key Sieve:						PF 1.0	
					I/DP:	(\$11,587.50)							Tons	0

Mix Design No: 08082005			Process No: 4		Grading: SMA (100) PG 76-28			Price Per Ton: \$61.80				
			Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other
Tests		Tons										CTS
AC	1	1,000		0.00000	(\$15,450.00)	6.400				0.200		Tons 0
Density		0			\$0.00	94.000				1.100		I/DP \$0.00
Gradation					\$0.00	Key Sieve:						PF 1.0
					I/DP:	(\$15,450.00)						Tons 0

Mix Design No: 158214			Process No: 1		Grading: SX (100) PG 58-28		Price Per Ton: \$43.51							
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other		
												CTS		
AC	17	14,500	91.382	1.02822	\$4,451.90	6.200	6.131	0.069	0.166	0.200	-0.034	Tons	0	
Density	29	14,500	95.281	1.04656	\$13,217.75	94.000	93.193	0.807	0.725	1.100	-0.375	I/DP	\$0.00	
Gradation	10	14,500	70.149	0.91969	(\$7,600.48)	Key Sieve: No. 4						PF 1.0		
				I/DP:	\$10,069.17								Tons	0

**Joint Density**

<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>
	\$1.00	1	4	35,000	100.000	1.03000	\$157.50	92.000	91.050	0.950	0.300	1.600	-1.300
							\$157.50						

**Project Data**

<b>Project Totals: 14950</b>			<b>Tons</b>	<b>I/DP</b>
	<b>Asphalt Content</b>		35,000	(\$23,589.22)
	<b>Mat Density</b>		35,000	\$13,116.01
	<b>Gradation</b>		35,000	\$106.49
	<b>Joint Density</b>		35,000	\$157.50
			<b>Total I/DP:</b>	(\$10,209.22) <b>CPFC: 0.99459</b>

**Comments:** Joint density price and quantity? Tests Excluded

**Subaccount: 14979      CC 0702-249      Exit 114 Interchange      Region: 3      Supplier: 16**  
**Bid Date: 03/31/05      Start Date: 8/3/2005**

Mix Design No: 102705			Process No: 1		Grading: SX (100) PG 76-28		Price Per Ton: \$89.00								
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other			
AC	4	3,030	100.000	1.03000	\$2,022.53	5.420	5.375	0.045	0.130	0.200	-0.070	CTS Tons	0		
Density	7	3,030	99.139	1.03500	\$4,247.30	94.000	94.414	0.414	0.830	1.100	-0.270	I/DP	\$0.00		
Gradation	2	3,030		1.00000	\$0.00	Key Sieve:						PF 1.0 Tons	0		
				I/DP:	\$6,269.83										

**Joint Density**

<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	\$89.00	1	1	3,030		1.00000	\$0.00	92.000				1.600	
							<b>\$0.00</b>						

<b>Project Totals: 14979</b>			<b>Tons</b>	<b>I/DP</b>
	<b>Asphalt Content</b>		3,030	\$2,022.53
	<b>Mat Density</b>		3,030	\$4,247.30
	<b>Gradation</b>		3,030	\$0.00
	<b>Joint Density</b>		3,030	\$0.00
			<b>Total I/DP:</b>	\$6,269.83 <b>CPFC: 1.02325</b>

**Comments:**

*Project Data*

**Subaccount: 15019      STA 0243-069      Limon Resurface SH 24G      Region: 1      Supplier: 14**  
**Bid Date: 12/02/04      Start Date: 5/24/2005**

Mix Design No: 141714			Process No: 1		Grading: SX (100) PG 64-28		Price Per Ton: \$59.00							
			Quality Level	Pay Factor				Mean			Std. Dev.	Other		
Tests Tons					I/DP	TV	Mean	to TV	Std. Dev.	V	- V	CTS		
AC	8	7,774	72.335	0.94412	(\$6,407.46)	6.300	6.232	0.068	0.269	0.200	0.069	Tons	500	
Density	15	7,274	88.358	1.01409	\$2,721.69	94.000	94.567	0.567	1.170	1.100	0.070	I/DP	\$108.83	
Gradation	4	7,774	68.257	0.97011	(\$2,056.22)	Key Sieve: 3/8						PF 1.0		
					I/DP:	(\$5,633.16)							Tons	0

Mix Design No: 141714-A			Process No: 1		Grading: SX (100) PG 64-28		Price Per Ton: \$59.00						
Tests		Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS Tons	
AC		3	1,360	100.000	1.02500	\$501.50	6.000	6.037	0.037	0.136	0.200	-0.064	0
Density		3	1,360	100.000	1.02500	\$902.70	94.000	93.767	0.233	1.484	1.100	0.384	I/DP \$0.00
Gradation		1	1,360			\$0.00	Key Sieve:					PF 1.0 Tons	0
					I/DP:	\$1,404.20							

**Joint Density**

<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	\$59.00	1	5	9,134	94.564	1.03000	\$2,425.08	92.000	90.040	1.960	1.436	1.600	-0.164
							\$2,425.08						

**Project Totals: 15019**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	9,134	(\$5,905.96)
<b>Mat Density</b>	9,134	\$3,733.22
<b>Gradation</b>	9,134	(\$2,056.22)
<b>Joint Density</b>	9,134	\$2,425.08
<b>Total I/DP:</b>		<b>(\$1,803.88)</b>
		<b>CPFC: 0.99665</b>

**Comments:**

**Project Data**

**Subaccount:** 15027      **STA** 0131-047      **Rifle & Rio Blanco**      **Region:** 3      **Supplier:** 77  
**Bid Date:** 03/03/05      **Start Date:** 5/13/2005

<b>Mix Design No:</b> UCSMA2		<b>Process No:</b> 1		<b>Grading:</b> SMA ( )		PG 76-28		<b>Price Per Ton:</b> \$56.09				
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
	<b>AC</b>	1	1,000	1.00000	\$0.00	7.000				0.200		<b>Tons</b> 0
	<b>Density</b>		0		\$0.00	94.000				1.100		<b>I/DP</b> \$0.00
	<b>Gradation</b>	1	1,000	1.00000	\$0.00	<b>Key Sieve:</b>						<b>PF 1.0</b>
				<b>I/DP:</b>	<b>\$0.00</b>							<b>Tons</b> 1,000

<b>Mix Design No:</b> UCSMA3		<b>Process No:</b> 1		<b>Grading:</b> SMA ( )		PG 76-28		<b>Price Per Ton:</b> \$56.09				
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
	<b>AC</b>	19	18,965	93.200	1.03706	\$9,855.47	7.000	6.890	0.110	0.130	0.200	<b>Tons</b> 0
	<b>Density</b>		0			\$0.00	94.000			1.100		<b>I/DP</b> \$0.00
	<b>Gradation</b>	9	18,965	95.861	1.04000	\$6,382.48	<b>Key Sieve:</b> No. 4					
				<b>I/DP:</b>	<b>\$16,237.95</b>							<b>PF 1.0</b>
												<b>Tons</b> 18,965

<b>Mix Design No:</b> WCTADD2		<b>Process No:</b> 1		<b>Grading:</b> SX (75)		PG 58-28		<b>Price Per Ton:</b> \$66.00				
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
	<b>AC</b>	2	1,190		0.99375	(\$122.72)	5.400			0.200		<b>Tons</b> 0
	<b>Density</b>		0			\$0.00	94.000			1.100		<b>I/DP</b> \$0.00
	<b>Gradation</b>		0			\$0.00	<b>Key Sieve:</b>					
				<b>I/DP:</b>	<b>(\$122.72)</b>							<b>PF 1.0</b>
												<b>Tons</b> 1,190

<b>Mix Design No:</b> WCTADD3		<b>Process No:</b> 1		<b>Grading:</b> SX (75)		PG 58-28		<b>Price Per Ton:</b> \$66.00				
	<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>Std. Dev. - V</b>	<b>Other</b>
												<b>CTS</b>
	<b>AC</b>	3	2,869	100.000	1.02500	\$1,183.46	5.400	5.377	0.023	0.221	0.200	<b>Tons</b> 0
	<b>Density</b>		0			\$0.00	94.000			1.100		<b>I/DP</b> \$0.00
	<b>Gradation</b>	3	4,059	39.094	0.79928	(\$8,065.84)	<b>Key Sieve:</b> No. 200					
				<b>I/DP:</b>	<b>(\$6,882.38)</b>							<b>PF 1.0</b>
												<b>Tons</b> 2,869

**Joint Density**

<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>
SMA	\$57.27	1	1	19,965		1.00000	\$0.00	92.000				1.600	
SX	\$68.00	2	1	4,059		1.00000	\$0.00	92.000				1.600	
							<b>\$0.00</b>						

**Project Totals: 15027**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	24,024	\$10,916.21
<b>Mat Density</b>	24,024	\$0.00
<b>Gradation</b>	24,024	(\$1,683.36)
<b>Joint Density</b>	24,024	\$0.00
<b>Total I/DP:</b>		<b>\$9,232.85</b>
<b>CPFC:</b>	1.00665	

**Comments:** Square yard project.

**Project Data**

**Subaccount: 15033      STA 141A-028      32 Road Grand Junction      Region:3      Supplier:12**  
**Bid Date: 03/03/05      Start Date: 7/28/2005**

<b>Mix Design No:</b> 76-28-1			<b>Process No:</b> 1		<b>Grading:</b> SX (75) PG 76-28			<b>Price Per Ton:</b> \$44.53				
	<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>Std. Dev. - V</b>	<b>Other</b>
	AC	1	500		\$0.00	5.700				0.200		<b>CTS Tons</b> 0
	Density		0		\$0.00	94.000				1.100		<b>I/DP</b> \$0.00
	Gradation	1	500		\$0.00	<b>Key Sieve:</b>						<b>PF 1.0 Tons</b> 500
					<b>I/DP:</b>	<b>\$0.00</b>						

Mix Design No: UC 76-28-			Process No: 1		Grading: SX (75)		PG 76-28		Price Per Ton: \$43.77				
Tests		Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	9	7,619	90.201	1.02954	\$2,462.43	5.500	5.426	0.074	0.175	0.200	-0.025	CTS Tons	0
Density	0				\$0.00	94.000						I/DP	\$0.00
Gradation	5	7,619	85.239	1.02679	\$1,340.30	Key Sieve: No. 30						PF 1.0 Tons	7,619
I/DP:					\$3,802.73								

**Joint Density**

<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	\$45.91	1	18	8,119	96.421	1.05000	\$2,795.57	92.000	90.830	1.170	1.627	1.600	0.027
							<u>\$2,795.57</u>						

**Project Totals: 15033**

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	8,119	\$2,462.43
<b>Mat Density</b>	8,119	\$0.00
<b>Gradation</b>	8,119	\$1,340.30
<b>Joint Density</b>	8,119	<u>\$2,795.57</u>
<b>Total I/DP:</b>		<b>\$6,598.30</b>
		<b>CPFC: 1.01855</b>

**Comments:** Furnish HBP, Heating & Repaving Treat.

**Project Data**

Subaccount: 15035    NH 0502-057    Pine Creek Hwy 50    Region:3    Supplier:17  
 Bid Date: 02/03/05    Start Date: 9/6/2005

Mix Design No: BTM1		Process No: 1		Grading: SX (75)		PG 58-34		Price Per Ton: \$46.65					
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	18	15,378	77.801	0.94415	(\$10,016.62)	5.900	5.758	0.142	0.198	0.200	-0.002	Tons	500
Density	18	8,878	94.908	1.04608	\$8,588.09	94.000	94.206	0.206	1.047	1.100	-0.053	I/DP	\$367.34
Gradation	8	15,378	89.106	1.02747	\$2,955.87	Key Sieve: No. 4						PF 1.0	
					I/DP:	\$1,894.68						Tons	6,000

**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	\$47.93	1	7	9,475	74.984	0.96737	(\$2,222.50)	92.000	89.830	2.170	2.611	1.600	1.011
SX	\$47.93	2	1	5,903		1.00000	\$0.00	92.000				1.600	
							(\$2,222.50)						

**Project Totals: 15035**

	Tons	I/DP
Asphalt Content	15,378	(\$10,016.62)
Mat Density	15,378	\$8,955.43
Gradation	15,378	\$2,955.87
Joint Density	15,378	(\$2,222.50)
Total I/DP:		(\$327.82)
		CPFC: 0.99954

Comments:

Subaccount: 15070    STA 340A-011    SH 340 & 20 3/4    Region:3    Supplier:12  
 Bid Date: 08/11/05    Start Date: 11/9/2005

Mix Design No: UC 64-28		Process No: 1		Grading: SX (75)		PG 64-28		Price Per Ton: \$58.52					
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
												CTS	
AC	3	2,516	100.000	1.02500	\$920.27	5.600	5.730	0.130	0.060	0.200	-0.140	Tons	0
Density	6	2,516	84.245	1.01654	\$1,096.04	94.000	94.217	0.217	1.481	1.100	0.381	I/DP	\$0.00
Gradation	2	2,516		1.00000	\$0.00	Key Sieve:						PF 1.0	
					I/DP:	\$2,016.31						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	\$57.58	1	2	2,516		0.78125	(\$4,753.59)	92.000				1.600	
							(\$4,753.59)						

**Project Totals: 15070**

	Tons	I/DP
Asphalt Content	2,516	\$920.27
Mat Density	2,516	\$1,096.04
Gradation	2,516	\$0.00
Joint Density	2,516	(\$4,753.59)
Total I/DP:		(\$2,737.28)
		CPFC: 0.98141

Comments:

*Project Data*

**Subaccount: 15161      STA 0831-098      Inverness      Region: 1      Supplier: 49**  
**Bid Date: 08/04/05      Start Date: 9/30/2005**

<b>Mix Design No:</b> 158214	<b>Process No:</b> 1	<b>Grading:</b> SX (75)	PG 58-28	<b>Price Per Ton:</b> \$46.00								
	<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>Std. Dev. - V</b>	<b>Other</b>		
<b>Tests</b>	<b>Tons</b>									<b>CTS</b>		
<b>AC</b>	4	4,148	98.291	1.03000	\$1,431.06	5.800	5.785	0.015	0.197	0.200	-0.003	<b>Tons</b> 0
<b>Density</b>	4	2,000	100.000	1.03000	\$1,242.00	94.000	92.900	1.100	0.432	1.100	-0.668	<b>I/DP</b> \$0.00
<b>Gradation</b>	4	4,148	68.257	0.97011	(\$855.40)	<b>Key Sieve:</b> No. 8					<b>PF 1.0</b>	
				<b>I/DP:</b>	<b>\$1,817.66</b>							<b>Tons</b> 2,148

*Project Totals: 15161*

	<b>Tons</b>	<b>I/DP</b>
<b>Asphalt Content</b>	4,148	\$1,431.06
<b>Mat Density</b>	4,148	\$1,242.00
<b>Gradation</b>	4,148	(\$855.40)
<b>Joint Density</b>		
<b>Total I/DP:</b>	<b>\$1,817.66</b>	<b>CPFC: 1.00953</b>

**Comments:**

**Project Data**

Subaccount: 15200      STA 0661-007      SH 66 E of Hwy 287      Region: 4      Supplier: 19  
 Bid Date: 03/31/05      Start Date: 6/9/2005

Mix Design No: 165051		Process No: 1		Grading: S		(100)	PG 64-28		Price Per Ton: \$39.50				
	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std. Dev.	V	Std. Dev. - V	Other	
AC	6	5,015	47.627	0.78181	(\$10,805.44)	5.500	5.188	0.312	0.181	0.200	-0.019	CTS Tons	0
Density	10	4,515	89.453	1.02572	\$2,064.08	94.000	94.730	0.730	1.030	1.100	-0.070	I/DP	\$0.00
Gradation	3	5,015	68.717	0.99594	(\$120.68)	Key Sieve: No. 8						PF 1.0 Tons	0
					I/DP:	(\$8,862.04)							

Mix Design No: 165051		Process No: 2		Grading: S		(100)	PG 64-28		Price Per Ton: \$39.50				
	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		0.40909	(\$5,251.71)	94.000				1.100		I/DP	\$0.00
Gradation					\$0.00	Key Sieve:						PF 1.0 Tons	0
					I/DP:	(\$5,251.71)							

**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	\$39.50	1	2	2,044			\$0.00	92.000				1.600	
S	\$39.50	2	4	2,971	92.056	1.03000	\$528.10	92.000	89.680	2.320	1.328	1.600	-0.272
							\$528.10						

**Project Totals: 15200**

	Tons	I/DP
Asphalt Content	5,015	(\$10,805.44)
Mat Density	5,015	(\$3,187.63)
Gradation	5,015	(\$120.68)
Joint Density	5,015	\$528.10
Total I/DP:		(\$13,585.65)

CPFC: 0.93142

Comments: One den. test > 2v out.

**Totals for all Projects** Projects with Bid Dates from 1/1/05 to 12/31/05.

Number of Projects	35	Tons:	I/DP:
Asphalt Content		591,399	\$149,288.64
Mat Density		591,649	\$312,047.24
Gradation		592,399	\$61,494.94
Joint Density		575,380	(\$23,357.00)
Total I/DP:			\$522,830.82



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

**Criteria:** Projects with Start Dates from 1/1/2005 to 12/31/2005.

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	Start Date	Project Code	Reg.	Grading	Total Tons	Average Price	CPFC	Project I/DP	Supplier
13855	01/06/05	06/07/05	STA 072A-02	1	SX	28,778	\$36.50	1.04660	\$48,943.27	13
13216	08/12/04	08/24/05	STA 0091-016	1	SX	11,102	\$36.20	1.04544	\$18,260.84	70
12418	01/29/04	08/10/05	NH 0403-035	1	S	47,972	\$47.93	1.04124	\$94,832.11	13
14849	12/23/04	05/17/05	IM 0703-287	1	SX	49,008	\$44.85	1.02857	\$62,801.29	45
14850	12/23/04	06/09/05	NH 2854-104	1	SX	33,000	\$37.70	1.01266	\$15,988.31	17
15161	08/04/05	09/30/05	STA 0831-098	1	SX	4,148	\$46.00	1.00953	\$1,817.66	49
13496	07/15/04	05/18/05	BR 0243-063	1	S	4,284	\$69.36	1.00776	\$2,304.85	14
15019	12/02/04	05/24/05	STA 0243-069	1	SX	9,134	\$59.00	0.99665	(\$1,803.88)	14
14950	02/24/05	08/11/05	IM 0252-374	1	SMA	35,000	\$54.22	0.99459	(\$10,209.22)	49
14819	02/17/05	07/25/05	IM 0702-246	1	SX	2,844	\$44.54	0.97195	(\$3,553.61)	70
13506	02/17/05	10/24/05	NH 0404-039	1	S	4,830	\$56.84	0.96991	(\$8,260.50)	14

### Region 1

**Number of Projects:** 11      **CPFC: Maximum:** 1.04660  
**Total Tons:** 230,100      **Minimum:** 0.96991  
**Average:** 1.01135

**Incentive/Disincentive Payments**      **Sum I/DPs:** \$221,121.12

**Positive I/DPs:** 7      **Maximum:** \$94,832.11

**Negative I/DPs:** 4      **Minimum:** (\$10,209.22)

**Average IDP:** \$20,101.92

### Region 2

Subacct.	Bid Date	Start Date	Project Code	Reg.	Grading	Total Tons	Average Price	CPFC	Project I/DP	Supplier
14552	09/23/04	04/12/05	IM 0251-167	2	S	10,107	\$46.00	1.02099	\$9,759.25	45
14469	06/18/04	08/31/05	STU M240-08	2	SMA	10,247	\$52.00	1.01468	\$7,821.99	44
14468	11/13/03	07/16/05	STU M240-08	2	SMA	7,490	\$59.67	1.00968	\$4,326.20	49

### Region 2

**Number of Projects:** 3      **CPFC: Maximum:** 1.02099  
**Total Tons:** 27,844      **Minimum:** 1.00968  
**Average:** 1.01512

**Incentive/Disincentive Payments**      **Sum I/DPs:** \$21,907.44

**Positive I/DPs:** 3      **Maximum:** \$9,759.25

**Negative I/DPs:** 0      **Minimum:** \$4,326.20

**Average IDP:** \$7,302.48

**Region 3**

Subacct.	Bid Date	Start Date	Project Code	Reg.	Grading	Total Tons	Average Price	CPFC	Project I/DP	Supplier
13472	04/15/04	06/29/05	NH 0502-053	3	SX	24,176	\$36.87	1.02630	\$23,439.37	32
14979	03/31/05	08/03/05	CC 0702-249	3	SX	3,030	\$89.00	1.02325	\$6,269.83	16
15033	03/03/05	07/28/05	STA 141A-02	3	SX	8,119	\$43.82	1.01855	\$6,598.30	12
15027	03/03/05	05/13/05	STA 0131-047	3	SMA	24,024	\$57.76	1.00665	\$9,232.85	77
12966	07/01/04	08/18/05	STA 0131-041	3	SX	16,371	\$37.88	0.99962	(\$238.33)	32
15035	02/03/05	09/06/05	NH 0502-057	3	SX	15,378	\$46.65	0.99954	(\$327.82)	17
15070	08/11/05	11/09/05	STA 340A-01	3	SX	2,516	\$58.52	0.98141	(\$2,737.28)	12

**Region 3**

**Number of Projects:** 7      **CPFC: Maximum:** 1.02630  
**Total Tons:** 93,614      **Minimum:** 0.98141  
**Average:** 1.00790

---

**Incentive/Disincentive Payments**      **Sum I/DPs:** \$42,236.92  
**Positive I/DPs:** 4      **Maximum:** \$23,439.37  
**Negative I/DPs:** 3      **Minimum:** (\$2,737.28)  
**Average IDP:** \$6,033.85

**Region 4**

Subacct.	Bid Date	Start Date	Project Code	Reg.	Grading	Total Tons	Average Price	CPFC	Project I/DP	Supplier
12810	04/21/05	11/01/05	BR 0062-013	4	S	2,281	\$39.00	1.00508	\$451.78	41
11723	06/17/04	04/02/05	BR 0063-013	4	S	3,299	\$61.24	0.93221	(\$13,695.39)	60
15200	03/31/05	06/09/05	STA 0661-007	4	S	5,015	\$39.50	0.93142	(\$13,585.66)	19

**Region 4**

**Number of Projects:** 3      **CPFC: Maximum:** 1.00508  
**Total Tons:** 10,595      **Minimum:** 0.93142  
**Average:** 0.95624

---

**Incentive/Disincentive Payments**      **Sum I/DPs:** (\$26,829.27)  
**Positive I/DPs:** 1      **Maximum:** \$451.78  
**Negative I/DPs:** 2      **Minimum:** (\$13,695.39)  
**Average IDP:** (\$8,943.09)

**Region 5**

Subacct.	Bid Date	Start Date	Project Code	Reg.	Grading	Total Tons	Average Price	CPFC	Project I/DP	Supplier
14914	01/06/05	08/03/05	STA 145A-03	5	SX	41,105	\$38.38	1.03658	\$57,701.65	77
13923	01/20/05	08/01/05	BR 151A-007	5	SX	4,950	\$53.77	1.03525	\$9,382.41	16
14507	04/14/05	07/12/05	NH 1603-021	5	SX	50,049	\$35.61	1.03500	\$62,378.42	79
12797	04/29/04	05/17/05	NH 2852-010	5	SX	4,260	\$60.00	1.02575	\$6,582.75	17
14671	06/16/04	08/11/05	NH 1602-100	5	SX	42,537	\$34.26	1.00692	\$10,084.81	56

**Region 5**

**Number of Projects:** 5      **CPFC: Maximum:** 1.03658  
**Total Tons:** 142,901      **Minimum:** 1.00692  
**Average:** 1.02790

---

<b>Incentive/Disincentive Payments</b>	<b>Sum I/DPs:</b>	\$146,130.04
<b>Positive I/DPs:</b>	<b>Maximum:</b>	\$62,378.42
<b>Negative I/DPs:</b>	<b>Minimum:</b>	\$6,582.75
	<b>Average IDP:</b>	\$29,226.01

---

**Region 6**

Subacct.	Bid Date	Start Date	Project Code	Reg.	Grading	Total Tons	Average Price	CPFC	Project I/DP	Supplier
14612	12/23/04	08/02/05	NH 0853-054	6	SMA	27,234	\$47.64	1.04581	\$59,434.24	10
14482	07/29/04	07/18/05	IMD 0252-364	6	S	18,326	\$51.65	1.02191	\$20,741.96	37
14621	02/03/05	08/25/05	STA 008A-00	6	SX	4,196	\$39.35	1.02044	\$3,375.22	10
6046	08/19/04	05/16/05	MTCE 06-046	6	SMA	14,475	\$56.00	1.01725	\$13,982.85	13
14637	02/03/05	07/06/05	NH 2854-101	6	SX	5,174	\$47.75	1.00742	\$1,832.83	45
6045	10/07/04	05/10/05	MTCE 06-045	6	S	16,940	\$33.50	0.99214	(\$4,459.54)	37

**Region 6**

**Number of Projects:** 6      **CPFC: Maximum:** 1.04581  
**Total Tons:** 86,345      **Minimum:** 0.99214  
**Average:** 1.01749

---

<b>Incentive/Disincentive Payments</b>	<b>Sum I/DPs:</b>	\$94,907.56
<b>Positive I/DPs:</b>	<b>Maximum:</b>	\$59,434.24
<b>Negative I/DPs:</b>	<b>Minimum:</b>	(\$4,459.54)
	<b>Average IDP:</b>	\$15,817.93

---

---

**Statewide Totals:** 1/1/2005 to 12/31/20

---

<b>Number of Projects:</b>	35	<b>CPFC Maximum:</b>	1.04660
<b>Total Tons:</b>	591,399	<b>Minimum:</b>	0.93142
		<b>Average:</b>	1.00968

---

<b>Incentive/Disincentive Payments</b>		<b>Sum I/DPs:</b>	\$499,473.81
<b>Positive I/DPs:</b>	25	<b>Maximum:</b>	\$94,832.11
<b>Negative I/DPs:</b>	10	<b>Minimum:</b>	(\$13,695.39)
		<b>Average IDP:</b>	\$14,270.68

# Asphalt Content - Process Information, Gradation Acceptance

Criteria: Projects with Start Dates from 1/1/2005 to 12/31/2005.

Processes with less than 3 tests not included.

## Grading: S

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
12418	1	44252	153271	\$44.83	1	22,250	27	98.062	1.05000	5.500	5.486	0.014	0.134	0.200	-0.066
6045	6	15939	176505	\$33.50	1	9,874	10	97.440	1.04500	5.100	4.998	0.102	0.111	0.200	-0.089
14482	6	9154	176505	\$50.00	1	6,264	7	81.367	0.99981	5.100	5.051	0.049	0.230	0.200	0.030
13496	1	3890	141713	\$69.36	1	4,284	5	72.527	0.97421	5.900	5.752	0.148	0.235	0.200	0.035
13506	1	4597	132118	\$54.00	1	3,582	4	70.767	0.98247	6.000	6.155	0.155	0.233	0.200	0.033
14552	2	7891	14552	\$46.00	1	5,107	7	68.795	0.93057	5.300	5.350	0.050	0.291	0.200	0.091
12810	4	2402	007A	\$39.00	1	2,281	3	60.039	0.95375	5.400	5.157	0.243	0.158	0.200	-0.042
15200	4	4747	165051	\$39.50	1	5,015	6	47.627	0.78181	5.500	5.188	0.312	0.181	0.200	-0.019

## Totals Grading: S

	Processes:	Tests:	Total Tons:	Best:	Worst:	Weighted Average:	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
	8	69	58,657	98.062	47.627	84.304	1.05000	0.99707	0.014	0.111	0.200	-0.089
									0.312	0.291	0.200	0.091
									0.088	0.172	0.200	-0.028

## Grading: SMA

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
14468	2	7377	I63SMA1	\$59.67	1	7,490	8	100.000	1.04000	6.400	6.385	0.015	0.068	0.200	-0.132
14612	6	30068	176512-2	\$47.64	1	9,824	10	100.000	1.04500	6.100	6.102	0.002	0.106	0.200	-0.094
14482	6	9154	176505	\$50.00	1	8,286	9	99.985	1.04000	5.100	5.091	0.009	0.118	0.200	-0.082
6046	6	14475	147085	\$56.00	1	14,475	14	99.006	1.04500	6.300	6.246	0.054	0.117	0.200	-0.083
14612	6	30068	176512	\$47.64	1	17,410	18	98.545	1.05000	6.100	6.141	0.041	0.125	0.200	-0.075
15027	3	24024	UCSMA3	\$56.09	1	18,965	19	93.200	1.03706	7.000	6.890	0.110	0.130	0.200	-0.070
14950	1	36412	I8082005	\$61.80	1	17,500	18	92.462	1.03343	6.400	6.474	0.074	0.157	0.200	-0.043
14469	2	9830	I64SMA1	\$52.00	1	10,247	11	89.675	1.02556	7.000	6.943	0.057	0.183	0.200	-0.017
14482	6	9154	176504	\$58.00	1	3,776	4	77.297	1.01026	6.400	6.635	0.235	0.079	0.200	-0.121

## Totals Grading: SMA

	Processes:	Tests:	Total Tons:	Best:	Worst:	Weighted Average:	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
	9	111	107,973	100.000	77.297	95.441	1.05000	1.03875	0.002	0.068	0.200	-0.132
									0.235	0.183	0.200	-0.017
									0.061	0.128	0.200	-0.072

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
6045	6	15939	147097-1	\$33.50	1	3,704	3	100.000	1.02500	5.500	5.583	0.083	0.071	0.200	-0.129
12966	3	15963	OT58-282	\$36.75	1	5,559	5	100.000	1.03000	5.600	5.596	0.004	0.067	0.200	-0.133
14507	5	41984	Furn	\$29.50	1	2,005	3	100.000	1.02500	5.700	5.610	0.090	0.105	0.200	-0.095
14507	5	41984	4507Lev	\$34.02	1	3,031	4	100.000	1.03000	5.900	5.905	0.005	0.133	0.200	-0.067
14621	6	3311	176516	\$39.35	1	4,196	5	100.000	1.03000	5.500	5.454	0.046	0.110	0.200	-0.090
14671	5	44490	6428A	\$36.14	1	8,804	9	100.000	1.04000	5.400	5.346	0.054	0.087	0.200	-0.113
14849	1	53814	157545	\$44.78	1	1,720	4	100.000	1.03000	5.700	5.765	0.065	0.156	0.200	-0.044
14979	3	4101	102705	\$89.00	1	3,030	4	100.000	1.03000	5.420	5.375	0.045	0.130	0.200	-0.070
15019	1	11123	141714-A	\$59.00	1	1,360	3	100.000	1.02500	6.000	6.037	0.037	0.136	0.200	-0.064
15027	3	24024	CTADD3	\$66.00	1	2,869	3	100.000	1.02500	5.400	5.377	0.023	0.221	0.200	0.021
15070	3	2512	JC 64-28	\$58.52	1	2,516	3	100.000	1.02500	5.600	5.730	0.130	0.060	0.200	-0.140
13923	5	6676	1	\$53.77	1	4,950	5	99.800	1.03000	6.400	6.326	0.074	0.128	0.200	-0.072
14849	1	53814	157547	\$44.85	1	47,288	48	99.706	1.05500	5.800	5.771	0.029	0.101	0.200	-0.099
13216	1	10635	161884	\$36.20	1	11,102	14	99.690	1.04500	5.800	5.768	0.032	0.111	0.200	-0.089
12797	5	4548	2797SX1	\$60.00	1	4,260	5	98.941	1.03000	5.600	5.504	0.096	0.122	0.200	-0.078
14507	5	41984	4507SX1	\$36.82	1	33,549	34	98.433	1.05500	5.700	5.675	0.025	0.126	0.200	-0.074
15161	1	4148	158214	\$46.00	1	4,148	4	98.291	1.03000	5.800	5.785	0.015	0.197	0.200	-0.003
14914	5	43451	overlay	\$38.38	1	41,105	42	97.705	1.05500	6.700	6.687	0.013	0.135	0.200	-0.065
14507	5	41984	14507 L2	\$33.54	1	11,464	12	97.582	1.04500	5.700	5.735	0.035	0.141	0.200	-0.059
13855	1	37861	132110	\$36.50	1	28,778	29	96.469	1.05374	5.600	5.587	0.013	0.146	0.200	-0.054
13472	3	24315	113	\$39.07	1	10,848	11	95.903	1.04500	5.800	5.685	0.115	0.113	0.200	-0.087
12418	1	44252	153270	\$50.61	2	25,410	28	94.982	1.04569	5.700	5.615	0.085	0.133	0.200	-0.067
14671	5	44490	6428	\$37.05	1	6,898	7	94.535	1.03500	5.800	5.683	0.117	0.123	0.200	-0.077
14671	5	44490	5828	\$32.92	1	26,835	27	94.213	1.04072	5.800	5.752	0.048	0.155	0.200	-0.045
12966	3	15963	OP62281	\$39.37	1	7,166	7	91.594	1.03500	5.600	5.466	0.134	0.125	0.200	-0.075
14950	1	36412	158214	\$43.51	1	14,500	17	91.382	1.02822	6.200	6.131	0.069	0.166	0.200	-0.034
14850	1	32974	141678	\$37.70	1	33,000	33	90.549	1.01454	6.500	6.643	0.143	0.120	0.200	-0.080
15033	3	7317	OT76-28-2	\$43.77	1	7,619	9	90.201	1.02954	5.500	5.426	0.074	0.175	0.200	-0.025
14637	6	31220	176515	\$47.75	1	5,174	5	89.175	1.03000	5.600	5.678	0.078	0.185	0.200	-0.015
13472	3	24315	112	\$35.08	1	13,328	14	88.386	1.01563	5.900	5.992	0.092	0.172	0.200	-0.028
14552	2	7891	14552SX	\$46.00	1	5,000	5	86.921	1.03000	6.000	5.932	0.068	0.208	0.200	0.008
6045	6	15939	147097	\$33.50	1	3,362	3	84.645	1.02500	5.500	5.343	0.157	0.140	0.200	-0.060
15035	3	14551	BTM1	\$46.65	1	15,378	18	77.801	0.94415	5.900	5.758	0.142	0.198	0.200	-0.002
12966	3	15963	OT58-28	\$36.68	1	3,646	4	76.051	1.00544	5.600	5.557	0.043	0.263	0.200	0.063
15019	1	11123	141714	\$59.00	1	7,774	8	72.335	0.94412	6.300	6.232	0.068	0.269	0.200	0.069
14819	1	2678	131592	\$44.54	1	2,844	3	41.957	0.82479	6.200	5.853	0.347	0.162	0.200	-0.038

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
---------	------	----------------	---------------	-------	----------------	------	-------	------------------	---------------	----	------	---------------	----------	---	--------------

---

**Totals Grading: SX**

								Quality Level	Pay Factor			Mean to TV	St. Dev.	V	StDev - V
Processes:	36						Best:	100.000	1.05500			0.004	0.060	0.200	-0.140
Tests:	438						Worst:	41.957	0.82479			0.347	0.269	0.200	0.069
Total Tons:	414,220						Weighted Average:	94.255	1.03388			0.062	0.138	0.200	-0.062

---

**Asphalt Content - Totals** 1/1/2005 to 12/31/2005.

								Quality Level	Pay Factor			Mean to TV	St. Dev.	V	StDev - V
Processes:	53						Best:	100.000	1.05500			0.002	0.060	0.200	-0.140
Tests:	618						Worst:	41.957	0.78181			0.347	0.291	0.200	0.091
Total Tons:	580,850						Weighted Average:	93.471	1.03107			0.064	0.140	0.200	-0.060

## Mat Density - Process Information, Gradation Acceptance

**Criteria:** Projects with Start Dates from 1/1/2005 to 12/31/2005.

Processes with less than 3 tests not included.

### Grading: S

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
11723	4	3,211	165905T	\$76.00	1	741	5	100.000	1.03000	94.000	93.940	0.060	0.416	1.100	-0.684
12810	4	2,402	007A	\$39.00	1	2,281	5	100.000	1.03000	94.000	94.320	0.320	0.589	1.100	-0.511
13496	1	3,890	141713	\$69.36	2	2,284	5	99.996	1.03000	94.000	93.340	0.660	0.750	1.100	-0.350
12418	1	44,252	153271	\$44.83	2	8,500	24	99.965	1.05000	94.000	94.124	0.124	0.653	1.100	-0.447
14482	6	9,154	176505	\$50.00	1	5,764	12	99.924	1.04500	94.000	94.283	0.283	0.670	1.100	-0.430
12418	1	44,252	153271	\$44.83	1	11,500	23	99.002	1.05000	94.000	93.591	0.409	0.720	1.100	-0.380
14552	2	7,891	14552	\$46.00	1	4,607	12	96.156	1.04500	94.000	94.108	0.108	1.040	1.100	-0.060
6045	6	15,939	176505	\$33.50	1	9,874	24	92.871	1.03360	94.000	93.188	0.812	0.820	1.100	-0.280
15200	4	4,747	165051	\$39.50	1	4,515	10	89.453	1.02572	94.000	94.730	0.730	1.030	1.100	-0.070
11723	4	3,211	61562B	\$50.00	1	952	5	88.367	1.03000	94.000	94.820	0.820	1.011	1.100	-0.089
11723	4	3,211	165905B	\$50.00	1	921	5	77.544	0.99758	94.000	92.920	1.080	1.148	1.100	0.048
11723	4	3,211	161562T	\$76.00	1	411	3	36.334	0.77337	94.000	91.200	2.800	1.664	1.100	0.564

### Totals - Grading: S

	Processes:	Tests:	Total Tons:	Weighted Average:	Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
	12				Best: 100.000	1.05000			0.060	0.416	1.100	-0.684
		133			Worst: 36.334	0.77337			2.800	1.664	1.100	0.564
	52,350				96.068	1.03834	94.000	93.839	0.466	0.789	1.100	-0.311

### Grading: SMA

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
14612	6	30,068	76512-2	\$47.64	1	9,824	20	99.863	1.05000	95.000	94.760	0.240	0.654	1.100	-0.446
14482	6	9,154	176505	\$50.00	1	8,286	17	98.674	1.05000	94.000	93.453	0.547	0.698	1.100	-0.402
14612	6	30,068	176512	\$47.64	1	17,410	35	98.535	1.05500	95.000	95.269	0.269	0.804	1.100	-0.296
14469	2	9,830	34SMA1	\$52.00	1	10,247	21	95.824	1.05000	95.000	94.719	0.281	0.980	1.100	-0.120
14950	1	36,412	3082005	\$61.80	1	20,500	41	88.997	0.99982	95.000	94.541	0.459	1.175	1.100	0.075
14468	2	7,377	33SMA1	\$59.67	1	7,490	15	82.284	0.97997	95.000	94.173	0.827	1.233	1.100	0.133

### Totals - Grading: SMA

	Processes:	Tests:	Total Tons:	Weighted Average:	Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
	6				Best: 99.863	1.05500			0.240	0.654	1.100	-0.446
		149			Worst: 82.284	0.97997			0.827	1.233	1.100	0.133
	73,757				94.050	1.03012	94.888	94.607	0.408	0.943	1.100	-0.157



# Mat Density 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
13923	5	6,676	1	\$53.77	1	4,950	10	100.000	1.04500	94.000	94.030	0.030	0.652	1.100	-0.448
14552	2	7,891	4552SX	\$46.00	1	4,500	7	100.000	1.03500	94.000	93.657	0.343	0.600	1.100	-0.500
6045	6	15,939	47097-1	\$33.50	1	3,704	6	100.000	1.03500	94.000	94.367	0.367	0.671	1.100	-0.429
13506	1	4,597	132117	\$65.00	1	748	4	100.000	1.03000	94.000	93.900	0.100	0.245	1.100	-0.855
15161	1	4,148	158214	\$46.00	1	2,000	4	100.000	1.03000	94.000	92.900	1.100	0.432	1.100	-0.668
14849	1	53,814	157545	\$44.78	1	1,220	3	100.000	1.02500	94.000	94.400	0.400	0.458	1.100	-0.642
15019	1	11,123	41714-A	\$59.00	1	1,360	3	100.000	1.02500	94.000	93.767	0.233	1.484	1.100	0.384
12797	5	4,548	797SX1	\$60.00	1	3,760	8	99.926	1.04000	94.000	94.600	0.600	0.619	1.100	-0.481
12418	1	44,252	153270	\$50.61	2	12,722	29	99.523	1.05500	94.000	93.454	0.546	0.595	1.100	-0.505
14914	5	43,451	overlay	\$38.38	1	37,739	76	99.441	1.06000	94.000	94.086	0.086	0.733	1.100	-0.367
14979	3	4,101	102705	\$89.00	1	3,030	7	99.139	1.03500	94.000	94.414	0.414	0.830	1.100	-0.270
13855	1	37,861	132110	\$36.50	1	28,278	58	98.558	1.05500	94.000	93.728	0.272	0.790	1.100	-0.310
12418	1	44,252	153270	\$50.61	1	12,000	25	98.425	1.05000	94.000	93.656	0.344	0.796	1.100	-0.304
13472	3	24,315	113	\$39.07	1	10,348	21	97.761	1.05000	94.000	94.329	0.329	0.857	1.100	-0.243
14507	5	41,984	507SX1	\$36.82	1	33,049	67	96.809	1.05127	94.000	93.827	0.173	0.929	1.100	-0.171
14671	5	44,490	5828	\$32.92	1	9,000	9	96.387	1.04000	94.000	94.444	0.444	0.934	1.100	-0.166
13216	1	10,635	161884	\$36.20	1	11,102	29	95.993	1.05088	94.000	94.628	0.628	0.799	1.100	-0.301
14849	1	53,814	157547	\$44.85	1	46,788	94	95.448	1.03942	94.000	93.769	0.231	0.981	1.100	-0.119
14950	1	36,412	158214	\$43.51	1	14,500	29	95.281	1.04656	94.000	93.193	0.807	0.725	1.100	-0.375
15035	3	14,551	BTM1	\$46.65	1	8,878	18	94.908	1.04608	94.000	94.206	0.206	1.047	1.100	-0.053
6045	6	15,939	147097	\$33.50	1	2,862	7	94.880	1.03500	94.000	94.443	0.443	1.031	1.100	-0.069
13472	3	24,315	112	\$35.08	1	12,828	26	94.022	1.03994	94.000	94.412	0.412	1.005	1.100	-0.095
14819	1	2,678	131592	\$44.54	1	2,844	6	92.317	1.03500	94.000	95.033	1.033	0.717	1.100	-0.383
14621	6	3,311	176516	\$39.35	1	4,196	8	91.662	1.03695	94.000	93.412	0.588	1.056	1.100	-0.044
14850	1	32,974	141678	\$37.70	1	33,000	66	89.107	0.99178	94.000	93.795	0.205	1.238	1.100	0.138
15019	1	11,123	141714	\$59.00	1	7,274	15	88.358	1.01409	94.000	94.567	0.567	1.170	1.100	0.070
14671	5	44,490	5828	\$32.92	2	16,835	34	88.046	0.99687	94.000	94.765	0.765	1.041	1.100	-0.059
12966	3	15,963	IP62281	\$39.37	1	6,166	13	87.099	1.01058	94.000	93.892	0.108	1.351	1.100	0.251
12966	3	15,963	T58-282	\$36.75	1	5,559	12	85.952	1.00645	94.000	93.992	0.008	1.394	1.100	0.294
15070	3	2,512	C 64-28	\$58.52	1	2,516	6	84.245	1.01654	94.000	94.217	0.217	1.481	1.100	0.381
14671	5	44,490	6428	\$37.05	1	6,398	13	82.886	0.98807	94.000	93.977	0.023	1.488	1.100	0.388
12966	3	15,963	DT58-28	\$36.68	1	3,146	6	80.935	1.00307	94.000	94.350	0.350	1.553	1.100	0.453
14671	5	44,490	6428A	\$36.14	1	8,804	20	77.496	0.94205	94.000	93.522	0.478	1.590	1.100	0.490

## Totals - Grading: SX

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	33	Best:	100.000	1.06000			0.008	0.245	1.100	-0.855
Tests:	739	Worst:	77.496	0.94205			1.100	1.590	1.100	0.490
Total Tons:	362,104	Weighted Average:	94.531	1.03399	94.000	93.966	0.327	0.950	1.100	-0.150

*Mat Density Process Information*

---

*Mat Density - Totals*    1/1/2005 to 12/31/2005.

---

				Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
<b>Processes:</b>	51	<b>Best:</b>	100.000	1.06000				0.008	0.245	1.100	-0.855
<b>Tests:</b>	1021	<b>Worst:</b>	36.334	0.77337				2.800	1.664	1.100	0.564
<b>Total Tons:</b>	488,211	<b>Weighted Average:</b>	94.623	1.03387	94.134	94.049	0.354	0.932	1.100	-0.168	

## Gradation - Process Information

**Criteria:** Projects with Start Dates from 1/1/2005 to 12/31/2005.

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
14482	6	9154	\$50.00	176505	1	6,264	4	100.000	1.03000	All QLs100
14552	2	7891	\$46.00	14552	1	5,107	3	100.000	1.02500	All QLs100
13496	1	3890	\$69.36	141713	1	4,284	3	100.000	1.02500	All QLs100
12418	1	44252	\$44.83	153271	1	22,250	12	98.352	1.04500	No. 4
6045	6	15939	\$33.50	176505	1	9,874	5	82.331	1.01670	No. 30
15200	4	4747	\$39.50	165051	1	5,015	3	68.717	0.99594	No. 8
12810	4	2402	\$39.00	007A	1	2,281	3	68.717	0.99594	3/8

### Totals Grading: S

						Quality Level	Pay Factor	Key Sieve Count	
								1/2"	0
								3/8"	1
Processes	7			Best:	100.000	1.04500		No. 4	1
Tests	33			Worst:	68.717	0.99594		No. 8	1
								No. 30	1
Total Tons	55,075			Weighted Average:	92.022	1.02831		No. 200	0

### Grading: SMA

Subacct.	Reg.	Plan Quant.	Price	Mix Design	Process No.	Tons	Tests	Quality Level	Pay Factor	Key Sieve
14482	6	9154	\$58.00	176504	1	3,776	3	100.000	1.02500	All QLs100
6046	6	14475	\$56.00	147085	1	14,475	9	97.443	1.04000	No. 4
15027	3	24024	\$56.09	UCSMA3	1	18,965	9	95.861	1.04000	No. 4
14950	1	36412	\$61.80	18082005	1	20,500	11	93.251	1.04056	1/2
14612	6	30068	\$47.64	176512-2	1	9,824	5	91.579	1.03000	3/8
14612	6	30068	\$47.64	176512	1	17,410	9	88.053	1.02075	3/8
14469	2	9830	\$52.00	164SMA1	1	10,247	6	80.761	1.00232	No. 200
14468	2	7377	\$59.67	163SMA1	1	7,490	4	80.143	1.02041	1/2
14482	6	9154	\$50.00	176505	1	8,286	5	74.855	0.98548	No. 30

### Totals Grading: SMA

						Quality Level	Pay Factor	Key Sieve Count	
								1/2"	2
								3/8"	2
Processes	9			Best:	100.000	1.04056		No. 4	2
Tests	61			Worst:	74.855	0.98548		No. 8	0
								No. 30	1
Total Tons	110,973			Weighted Average:	90.098	1.02682		No. 200	1

*Gradation Process Information*

**Grading: SX**

Subacct.	Reg.	Plan Quant.	Price	Mix Design	Process No.	Tons	Tests	Quality Level	Pay Factor	Key Sieve
14671	5	44490	\$36.14	6428A	1	8,804	5	100.000	1.03000	All QLS100
14552	2	7891	\$46.00	14552SX	1	5,000	3	100.000	1.02500	All QLS100
13923	5	6676	\$53.77	1	1	4,950	3	100.000	1.02500	All QLS100
12418	1	44252	\$50.61	153270	2	25,410	13	98.260	1.04500	No. 8
14914	5	43451	\$38.38	overlay	1	41,105	21	98.121	1.05000	No. 200
14671	5	44490	\$32.92	5828	1	26,835	14	96.885	1.04500	No. 200
14850	1	32974	\$37.70	141678	1	34,000	17	94.582	1.04442	No. 4
14507	5	41984	\$33.54	14507 L2	1	11,464	6	94.461	1.03500	3/8
14849	1	53814	\$44.85	157547	1	47,288	24	94.151	1.04113	No. 4
15035	3	14551	\$46.65	BTM1	1	15,378	8	89.106	1.02747	No. 4
13472	3	24315	\$39.07	113	1	10,848	6	88.897	1.03288	1/2
13216	1	10635	\$36.20	161884	1	11,102	7	88.731	1.03029	No. 4
14507	5	41984	\$36.82	4507SX1	1	33,549	17	87.783	1.00864	3/8
13855	1	37861	\$36.50	132110	1	28,778	15	87.047	1.00711	No. 8
15033	3	7317	\$43.77	76-28-2	1	7,619	5	85.239	1.02679	No. 30
12797	5	4548	\$60.00	2797SX1	1	4,260	3	83.333	1.02500	3/8
14950	1	36412	\$43.51	158214	1	14,500	10	70.149	0.91969	No. 4
14637	6	31220	\$47.75	176515	1	5,174	3	69.585	0.99946	No. 200
15161	1	4148	\$46.00	158214	1	4,148	4	68.257	0.97011	No. 8
15019	1	11123	\$59.00	141714	1	7,774	4	68.257	0.97011	3/8
14671	5	44490	\$37.05	6428	1	6,898	3	62.338	0.96617	No. 4
12966	3	15963	\$36.75	DT58-282	1	5,559	3	62.338	0.96617	1/2
13472	3	24315	\$35.08	112	1	13,328	7	62.314	0.88640	1/2
12966	3	15963	\$39.37	DP62281	1	7,166	4	56.623	0.90075	1/2
15027	3	24024	\$66.00	CTADD3	1	4,059	3	39.094	0.79928	No. 200

**Totals Grading: SX**

				Quality Level	Pay Factor	Key Sieve Count	
						1/2"	4
						3/8"	4
Processes	25	Best:		100.000	1.05000	No. 4	6
Tests	208	Worst:		39.094	0.79928	No. 8	3
						No. 30	1
Total Tons	384,996	Weighted Average:		88.035	1.01483	No. 200	4

*Gradation Process Information*

---

**Gradation Totals** 1/1/2005 to 12/31/2005.

---

				Quality Level	Pay Factor	Key Sieve Count	
						1/2"	6
						3/8"	7
Processes	41	Best:		100.000	1.05000	No. 4	9
Tests	302	Worst:		39.094	0.79928	No. 8	4
						No. 30	3
Total Tons	551,044	Weighted Average:		88.849	1.01859	No. 200	5

## Grading - Standard Deviation Information

**Criteria:** Projects with Start Dates from 1/1/2005 to 12/31/2005.

Processes with less than 3 tests not included.

Standard Deviations of zero on 100% passing sieves not included in calculations.

### Grading S

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
14552	2	7,891	\$46.00	5,107	3	QLs100		1.000	1.200	1.700	2.100	0.600	0.120
6045	6	15,939	\$33.50	9,874	5	No. 30	1.500	1.900	1.300	2.300	1.500	0.800	0.190
13496	1	3,890	\$69.36	4,284	3	QLs100			1.000	2.300	2.600	1.500	0.100
15200	4	4,747	\$39.50	5,015	3	No. 8		2.100	1.700	1.200	2.100	1.200	0.120
14482	6	9,154	\$50.00	6,264	4	QLs100	2.100	2.900	2.900	1.800	1.400	1.400	0.530
12418	1	44,252	\$44.83	22,250	12	No. 4		1.900	1.300	1.800	2.000	1.200	0.750
12810	4	2,402	\$39.00	2,281	3	3/8	1.200	3.100	6.200	4.000	3.600	1.000	0.100

#### Totals Grading: S

							3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
Number of Processes:	7				Best:		1.200	1.000	1.000	1.200	1.400	0.600	0.100
Total Tons:	55,075				Worst:		2.100	3.100	6.200	4.000	3.600	1.500	0.750
					Weighted Average:		1.667	2.006	1.689	1.956	1.973	1.110	0.431
					Key Sieve Count			0	1	1	1	1	0

### Grading SMA

Grading SMA

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
15027	3	24,024	\$56.09	18,965	9	No. 4			0.900	1.500	1.100	0.700	0.330
6046	6	14,475	\$56.00	14,475	9	No. 4			1.600	1.500	0.900	0.700	0.620
14468	2	7,377	\$59.67	7,490	4	1/2		3.600	4.200	0.600	0.500	0.500	0.660
14482	6	9,154	\$58.00	3,776	3	QLs100		1.500	3.200	1.500	1.500	1.200	0.620
14482	6	9,154	\$50.00	8,286	5	No. 30	2.600	2.900	2.100	3.200	2.900	1.900	0.850
14612	6	30,068	\$47.64	17,410	9	3/8		2.500	2.700	2.400	2.100	1.400	0.500
14612	6	30,068	\$47.64	9,824	5	3/8		2.300	2.200	2.200	1.500	1.500	0.640
14950	1	36,412	\$61.80	20,500	11	1/2		3.400	2.700	0.900	1.300	1.100	0.630
14469	2	9,830	\$52.00	10,247	6	No. 200			3.100	1.000	1.400	1.100	0.860

#### Totals Grading: SMA

							3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
Number of Processes:	9				Best:		2.600	1.500	0.900	0.600	0.500	0.500	0.330
Total Tons:	110,973				Worst:		2.600	3.600	4.200	3.200	2.900	1.900	0.860
					Weighted Average:		2.600	2.861	2.315	1.612	1.438	1.085	0.597
					Key Sieve Count			2	2	2	0	1	1

---

**Grading SX**

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
14552	2	7,891	\$46.00	5,000	3	QLs100		0.600	0.600	1.000	1.000	1.200	0.530
15027	3	24,024	\$66.00	4,059	3	No. 200		2.600	4.500	5.500	4.200	2.100	0.950
12797	5	4,548	\$60.00	4,260	3	3/8			2.000	0.600	0.600	0.000	0.230
14849	1	53,814	\$44.85	47,288	24	No. 4		1.000	1.700	2.400	1.900	0.900	0.510
15019	1	11,123	\$59.00	7,774	4	3/8		0.500	1.800	0.800	1.300	0.800	0.460
13855	1	37,861	\$36.50	28,778	15	No. 8		0.700	2.600	3.000	3.300	1.900	0.690
14850	1	32,974	\$37.70	34,000	17	No. 4		0.500	2.200	2.400	2.600	1.200	0.460
13472	3	24,315	\$35.08	13,328	7	1/2		1.700	2.900	2.100	1.300	1.000	0.330
13472	3	24,315	\$39.07	10,848	6	1/2		1.700	2.500	1.800	1.500	0.900	0.400
14637	6	31,220	\$47.75	5,174	3	No. 200		0.600	2.300	4.200	3.800	2.600	1.250
14507	5	41,984	\$33.54	11,464	6	3/8		1.900	2.900	2.500	2.200	1.200	0.370
14507	5	41,984	\$36.82	33,549	17	3/8		1.600	2.200	2.000	1.800	1.400	0.530
15033	3	7,317	\$43.77	7,619	5	No. 30		0.400	1.300	1.800	1.900	1.500	0.720
13923	5	6,676	\$53.77	4,950	3	QLs100		1.000	1.500	1.200	0.600	0.600	0.520
14914	5	43,451	\$38.38	41,105	21	No. 200		0.900	2.400	1.900	1.900	1.300	0.600
12418	1	44,252	\$50.61	25,410	13	No. 8		0.400	1.400	2.000	2.300	1.500	0.570
14671	5	44,490	\$32.92	26,835	14	No. 200		1.300	1.900	2.200	1.800	1.400	0.710
14671	5	44,490	\$37.05	6,898	3	No. 4		0.600	0.600	1.500	0.001	0.600	0.320
14671	5	44,490	\$36.14	8,804	5	QLs100		1.200	0.800	1.500	1.200	0.400	0.210
14950	1	36,412	\$43.51	14,500	10	No. 4		0.500	1.600	2.800	2.500	1.500	0.690
12966	3	15,963	\$36.75	5,559	3	1/2		1.500	1.000	3.600	3.000	2.000	0.820
12966	3	15,963	\$39.37	7,166	4	1/2		1.300	0.600	3.300	1.800	0.600	0.350
13216	1	10,635	\$36.20	11,102	7	No. 4		0.500	2.700	3.300	2.200	1.100	0.390
15035	3	14,551	\$46.65	15,378	8	No. 4		0.700	1.700	2.900	2.000	1.100	0.360
15161	1	4,148	\$46.00	4,148	4	No. 8			3.400	1.500	1.800	1.000	0.780

**Totals Grading: SX**

			3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
Number of Processes:	25	Best:		0.400	0.600	0.600	0.001	0.000	0.210
Total Tons:	384,996	Worst:		2.600	4.500	5.500	4.200	2.600	1.250
		Weighted Average:		0.976	2.014	2.300	2.047	1.241	0.541
		Key Sieve Count		4	4	6	3	1	4

---

**Gradation Totals** 1/1/2005 to 12/31/2005.

			Standard Deviation						
			3/4"	1/2"	3/8"	No. 4	No. 8	No. 30	No. 200
Number of Processes:	41	Best:	1.200	0.400	0.600	0.600	0.001	0.000	0.100
Total Tons:	551,044	Worst:	2.600	3.600	6.200	5.500	4.200	2.600	1.250
		Weighted Average:	1.956	1.338	2.042	2.127	1.917	1.196	0.542
		Key Sieve Count		6	7	9	4	3	5

## Joint Density - Process Information, Gradation Acceptance

**Criteria:** Projects with Start Dates from 1/1/2005 to 12/31/2005.

Processes with less than 3 tests not included.

### Grading

Sub.	Reg.	Price	Proc. No	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	Std Dev	V	St Dev. - V
14950	1	\$1.00	1	35,000	4	100.000	1.03000	92.00	91.050	0.950	0.300	1.60	-1.300

### Totals Grading:

						Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	1				Best:	100.000	1.03000	92.00	91.050	0.950	0.300	1.60	-1.300
Tests:	4				Worst:	100.000	1.03000	92.00	91.050	0.950	0.300	1.60	-1.300
Total Tons:	35,000				Weighted Average:	100.000	1.03000	92.00	91.050	0.950	0.300	1.60	-1.300

### Grading S

Sub.	Reg.	Price	Proc. No	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	Std Dev	V	St Dev. - V
14482	6	\$50.00	1	6,264	3	100.000	1.02500	92.00	90.930	1.070	1.193	1.60	-0.407
12810	4	\$39.00	1	2,281	3	100.000	1.02500	92.00	91.700	0.300	1.900	1.60	0.300
12418	1	\$45.90	2	22,250	25	96.395	1.05000	92.00	90.190	1.810	1.248	1.60	-0.352
14552	2	\$46.00	1	10,107	5	95.053	1.03000	92.00	93.280	1.280	1.885	1.60	0.285
15200	4	\$39.50	2	2,971	4	92.056	1.03000	92.00	89.680	2.320	1.328	1.60	-0.272
6045	6	\$33.50	1	15,637	12	56.218	0.80099	92.00	88.330	3.670	2.070	1.60	0.470

### Totals Grading: S

						Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	6				Best:	100.000	1.05000	92.00	93.280	0.300	1.193	1.60	-0.407
Tests:	52				Worst:	56.218	0.80099	92.00	88.330	3.670	2.070	1.60	0.470
Total Tons:	59,510				Weighted Average:	85.911	0.97658	92.00	90.336	2.098	1.595	1.60	-0.005



*Joint Density - Process Information, Gradation Acceptance*

**Grading SMA**

Sub.	Reg.	Price	Proc. No	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	Std Dev	V	St Dev. - V
14612	6	\$47.64	1	17,410	11	100.000	1.04500	92.00	90.950	1.050	0.927	1.60	-0.673
14612	6	\$47.64	2	9,824	6	100.000	1.03500	92.00	89.750	2.250	0.764	1.60	-0.836
14468	2	\$56.00	1	7,490	9	98.524	1.04000	92.00	89.770	2.230	0.923	1.60	-0.677
14482	6	\$50.00	2	7,638	4	94.326	1.03000	92.00	89.380	2.620	1.034	1.60	-0.566
14469	2	\$52.00	1	10,247	10	67.716	0.90295	92.00	88.900	3.100	1.899	1.60	0.299

**Totals Grading: SMA**

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
<b>Processes:</b>	5	<b>Best:</b>	100.000	1.04500	92.00	90.950	1.050	0.764	1.60	-0.836
<b>Tests:</b>	40	<b>Worst:</b>	67.716	0.90295	92.00	88.900	3.100	1.899	1.60	0.299
<b>Total Tons:</b>	52,609	<b>Weighted Average:</b>	92.678	1.01257	92.00	89.931	2.069	1.101	1.60	-0.499

*Joint Density - Process Information, Gradation Acceptance*

**Grading SX**

Sub.	Reg.	Price	Proc. No	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	Std Dev	V	St Dev. - V
13472	3	\$35.47	2	12,708	7	100.000	1.03500	92.00	91.110	0.890	0.891	1.60	-0.709
12966	3	\$38.02	1	9,205	3	100.000	1.02500	92.00	90.130	1.870	0.569	1.60	-1.031
12966	3	\$41.33	2	7,166	3	100.000	1.02500	92.00	91.670	0.330	0.902	1.60	-0.698
13923	5	\$53.77	1	4,950	3	100.000	1.02500	92.00	90.300	1.700	1.510	1.60	-0.090
13216	1	\$36.20	1	11,102	10	99.988	1.04500	92.00	91.220	0.780	1.242	1.60	-0.358
14507	5	\$36.82	3	33,549	13	99.715	1.04500	92.00	92.780	0.780	1.349	1.60	-0.251
13472	3	\$40.41	3	10,848	8	99.541	1.04000	92.00	92.140	0.140	1.836	1.60	0.236
14850	1	\$40.15	1	22,723	31	99.078	1.05500	92.00	92.090	0.090	1.611	1.60	0.011
13855	1	\$36.50	1	28,778	18	97.324	1.05000	92.00	90.200	1.800	1.188	1.60	-0.412
15033	3	\$45.91	1	8,119	18	96.421	1.05000	92.00	90.830	1.170	1.627	1.60	0.027
15019	1	\$59.00	1	9,134	5	94.564	1.03000	92.00	90.040	1.960	1.436	1.60	-0.164
14671	5	\$30.94	2	20,604	15	90.978	1.02742	92.00	91.560	0.440	2.402	1.60	0.802
14849	1	\$44.69	2	47,287	42	83.579	0.95962	92.00	89.700	2.300	1.738	1.60	0.138
12418	1	\$51.82	1	25,722	20	81.602	0.96607	92.00	89.870	2.130	2.061	1.60	0.461
14914	5	\$36.80	1	41,105	24	78.012	0.93523	92.00	89.160	2.840	1.497	1.60	-0.103
15035	3	\$47.93	1	9,475	7	74.984	0.96737	92.00	89.830	2.170	2.611	1.60	1.011
14671	5	\$36.14	3	15,702	14	70.221	0.90723	92.00	90.030	1.970	3.278	1.60	1.678
14621	6	\$39.35	1	4,196	4	69.316	0.97543	92.00	89.130	2.870	1.941	1.60	0.341
14671	5	\$30.94	1	4,637	3	65.851	0.98342	92.00	90.200	1.800	3.989	1.60	2.389
14849	1	\$44.69	4	993	4	59.186	0.91774	92.00	88.780	3.220	2.812	1.60	1.212

**Totals Grading: SX**

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	20	Best:	100.000	1.05500	92.00	92.780	0.090	0.569	1.60	-1.031
Tests:	252	Worst:	59.186	0.90723	92.00	88.780	3.220	3.989	1.60	2.389
Total Tons:	328,003	Weighted Average:	89.137	0.99964	92.00	90.592	1.589	1.703	1.60	0.103

**Joint Density Totals**

1/1/2005 to 12/31/20

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	32	Best:	100.000	1.05500	92.00	93.280	0.090	0.300	1.60	-1.300
Tests:	348	Worst:	56.218	0.80099	92.00	88.330	3.670	3.989	1.60	2.389
Total Tons:	475,122	Weighted Average:	89.925	1.00042	92.00	90.520	1.659	1.519	1.60	-0.081