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HOT MIX ASPHALT VOIDS ACCEPTANCE REVIEW OF QC/QA DATA 2000 THROUGH 2004

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July 2006

COLORADO DEPARTMENT OF TRANSPORTATION
RESEARCH BRANCH

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16. Abstract

This report analyzes the Quality Control/Quality Assurance (QC/QA) data for hot mix asphalt using voids acceptance as the testing criteria for the years 2000 through 2004. Analysis of the overall quality of the HMA is accomplished by reviewing the Calculated Pay Factor Composite (CPFC) and Incentive/Disincentive Payments (I/DP). Analysis of each of the test elements: asphalt content, voids in mineral aggregate, air voids, mat density, and joint density is presented in tables, figures, and reports. Various data groupings are used to evaluate the data including: year, region, & grading.

The specification and the projects are performing reasonably well. Over the five-year time period more projects have received incentive payments than disincentive payments. The average pay over the five years is 1.00848. The quality levels in the individual elements are at reasonable levels. Over the five-year time period the VMA element has the best quality levels with an average of 95.00. Mat density has the next best results with an average of 92.89. Air voids and percent asphalt are third and fourth with average quality levels of 90.41 and 89.86. Joint density testing has been a requirement beginning in 2003. The pay factor for this element is just under 1.0 but is expected to increase as contractors gain experience in this area.

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Quality Control/Quality Assurance (QC/QA), quality levels, percent within limits, Incentive/Disincentive Payments (I/DP), voids acceptance, asphalt content, voids in mineral aggregates, air voids, mat density, joint density	No restrictions. This document is available to the public through the National Technical Information Service Springfield, VA 22161

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by

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Colorado Department of Transportation
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1.0 INTRODUCTION AND COMMENTS

The Colorado Department of Transportation (CDOT) began Quality Control/Quality Assurance (QC/QA) construction for hot bituminous pavement (HBP) in 1992 with the implementation of a three-year pilot program which was essentially completed in 1994 (several projects were held over and completed in 1995). Three test elements were included in the calculations for pay factors, percent asphalt, mat density, and aggregate gradation.

In 1993 CDOT announced their intent to adopt a QC/QA voids acceptance (VA) specification for HBP. Under Phase 1 of the VA pilot program nine VA pilot projects were completed by the end of 1996. Three additional projects were constructed in 1997.

In 1998 a series of VA projects were let to contract under Phase 2 of the pilot specification. Four test elements were included in the calculations for pay factors under Phase 2, percent asphalt, voids in mineral aggregate, air voids, and mat density. The specification was released as a standard special provision on July 21, 1999.

In December of 2002 joint density testing was added as the fifth element included in the calculation for Incentive/Disincentive Payment (I/DP). The weights of the original elements were adjusted to account for the new element.

This report analyzes the voids acceptance data for the years 2000 through 2004. Reports evaluating the asphalt content, voids in mineral aggregate, air voids, mat density, & joint density elements sorted by year & region are presented in this report. Recap reports of the same data sorted by grading are also presented. Charts comparing the quality level and pay factor information for the years 2000 through 2004 are displayed for the percent asphalt, voids in mineral aggregate, air voids, and mat density elements. The joint density test information for the years 2003 and 2004 is also presented. Detailed reports that show all the process data for the year 2004 are included in Appendix C.

A major change in the format of this report compared to the previous reports is that the major data grouping is now by start date, the date the paving began, instead of 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. The new data grouping more accurately groups the projects according to the time of their construction. The information presented in this report for the years 2000 through 2003 will not match that of previous reports since the grouping is different. Also, additional project data has been received and added to the data base for these years. Otherwise, the general format and presentation of data in this report is similar to that used in previous QC/QA reports. Information on the background, development, philosophy and rationale involved can be found in the previous reports and is not repeated here.

2.0 SPECIFICATIONS

Specifications - Revision of Sections 105 and 106, Quality of Hot Bituminous Pavement (Voids Acceptance). The Revision to Sections 105 & 106 governs the QC/QA calculations. A major change to the specification was made with the release of the specification dated December 20, 2002. Joint density testing was included in the calculation for Incentive/Disincentive Payments (I/DP) in this release. The joint density element accounts for 15 percent of the total in the calculation for I/DP. 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.

Table 1. "W" Factors for Various Elements

	W Factor				
Specification	**Percent Asphalt**	**VMA**	**Air Voids**	**Mat Density**	**Joint Density**
10/4/01 & Older	10	10	40	40	
12/20/02 & Newer	10	10	30	35	15

The Revision of Sections 105 and 106 has been revised numerous times over the years but the changes were in other areas and did not affect the QC/QA calculations. The calculation for quality levels has remained unchanged since the beginning. 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 are used for all calculations in this report except for the calculation of the Calculated Pay Factor Composite. In general, processes group like material or construction techniques together. As long as the material being evaluated remains unchanged it will be added to the current process. If a change to the material or the construction technique occurs then a new process will be created. Please see the Revision to Sections 105 & 106, Quality of Hot Bituminous Pavement (Voids Acceptance) for details on processes.

Award Date – The date on which the project was awarded to contract.

Bid Date – Same as Award Date.

Calculated Pay Factor Composite – The Calculated Pay Factor Composite (CPFC) 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 HMA 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 that occurred in some of the reported projects in which the final element quantities were not equal between test elements. 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_P = Calculated Unit Price for the project.

QR_P = Quantity Represented Project, average of the tons reported in the percent asphalt, VMA, and air voids 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, VMA, and air voids elements.

Note: The quantities used in the calculation of average tons and average price are the quantities reported in the percent asphalt, VMA, and air voids elements. After reviewing the project data it was determined that these quantities most accurately represented the actual produced quantity when the reported quantities were not equal in the test elements.

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

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

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

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

Joint Density – Density measurements taken on the longitudinal joint between paving passes, see subsection 401.17 Compaction for details.

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 calculated mean for the process and the target value for the test element. The lower the value the closer the mean approaches the target value of the specification. One of the two factors that affects the quality level calculation, the other factor being the standard deviation for the process.

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

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

Project Code – An alpha-numeric identifier unique to each project.

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

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

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

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

Std. Dev. (Standard Deviation) - Definition, see variance.

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

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 this number the better. One of the two factors that affects the quality level calculation, the other factor being the mean for the process as it relates to the target value for the specification.

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.

VA – Voids Acceptance

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.

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

Where: $\sum$ = summation

x_i = individual test value

$\overline{x}$ = mean

n = number of samples

VMA – Voids in Mineral Aggregate

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 calculated on the tons of material represented.

2V Adj. (2V adjustment) – Test results in the asphalt content or mat density test elements that are greater than 2 x V outside the tolerance limits are designated as a separate process and the quantity it represents is price reduced according to subsection 105.03(d). A price reduction is applied to all of the test elements for the quantity of material represented. This requires that adjustments are made to the original calculations for I/DP in the other test elements. The amount shown as the 2V Adj. is the total amount of adjustment applied to the original calculations.

4.0 DESCRIPTION OF REPORTS

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

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

Reports 1 to 5 - ***Test Element Reports, Recap by Year/Region 2000 through 2004: Asphalt Content, Voids in Mineral Aggregate, Air Voids, Mat Density, & Joint Density,*** **Appendix A.** For each of the test elements a report that recaps the information is presented. The information is grouped by year and then by region. Information presented includes: processes, tons, and tests along with the weighted averages for price, quality level, pay factor, mean to target value, standard deviation, and standard deviation minus the V value. Totals are calculated for each year. These reports are very useful for tracking the performance of the HMA through the years and by each region.

Reports 6 to 10 - ***Test Element Reports, Recap by Grading/Year/Region 2000 through 2004: Asphalt Content, Voids in Mineral Aggregate, Air Voids, Mat Density, & Joint Density,*** **Appendix B.** For each of the test elements a report that recaps the information is presented. The information is first grouped by grading and

then by year and region. Information presented includes: processes, tons, and tests along with the weighted averages for price, quality level, pay factor, mean to target value, standard deviation, and standard deviation minus the V value. Totals are calculated for each year by grading. Overall results for each grading are also calculated. These reports are useful for tracking the performance of the HMA by grading through the years and by region.

2004 REPORTS (PROJECTS WITH START DATES OF 2004), APPENDIX C

A series of detailed reports are presented for the year 2004.

***Project Listing by Region/Subaccount, Report 11*.** This report contains information for the projects with a start date of 2004 included in the evaluations. The subaccount, project code, location, region, supplier, bid date, start date, total bid, and plan quantity are listed for each project. The report groups the projects by region and contains a region recap. A statewide recap is given at the end of the report.

Project Data, Report 12. The Project Data report displays all of the QC/QA data reported for each project. The projects are sorted by subaccount number. Each project's data is detailed by mix design and process number. The number of tests, quantity in tons, quality levels, pay factors, and Incentive/Disincentive Payment are given for each mix design and process. A summary for each project is also displayed and shows the CPFC. This report contains all of the project's data and is the best report to review when concerned about an individual project. All of a project's data may not be contained in other reports if the data does not meet that report's individual criteria.

***Calculated Pay Factor Composite and I/DP by Region, Report 13*.** This report evaluates two key calculations for each project, the Calculated Pay Factor Composite (CPFC) and the project Incentive/Disincentive Payment (I/DP). The Calculated Pay Factor Composite gives an index of the overall quality of the project; see Calculations

for details on the calculation of the CPFC. The I/DP is the incentive or disincentive amount the project received for the 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 14. 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.

Voids In Mineral Aggregate – Process Information, Report 15. Voids in Mineral Aggregate 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.

Air Voids – Process Information, Report 16. Air Voids 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 17. 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.

Joint Density – Process Information by Grading, Report 18. Joint density information is detailed in this report for the projects that contained that specification. 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.

5.0 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. An overview of the region boundaries is given in Figure 1.

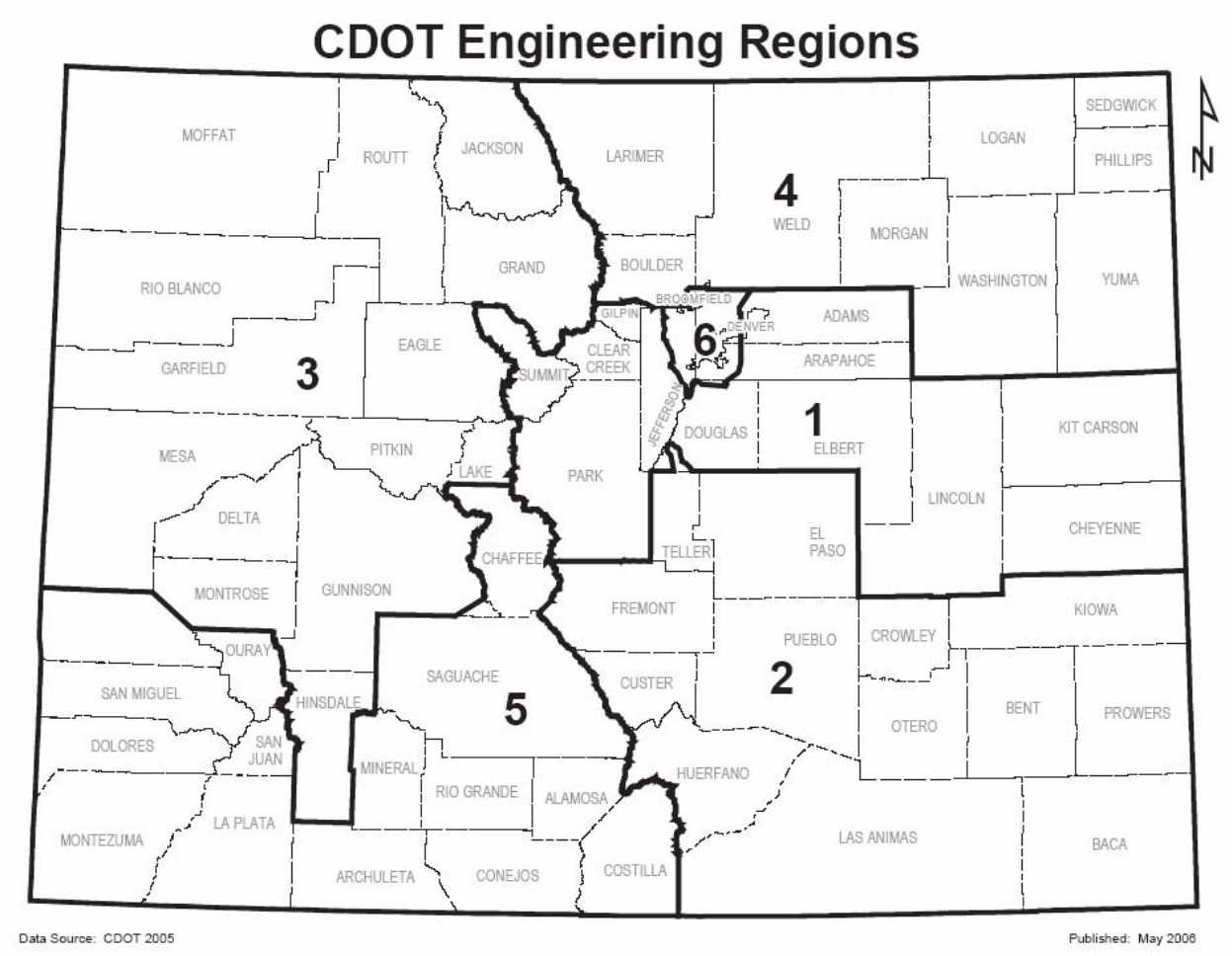

Figure 1. CDOT Engineering Regions

6.0 DISCUSSION OF THE DATA

6.1 Projects Evaluated

Table 2 displays the number of projects and tons of material awarded by year. The gradation acceptance projects are covered in a separate report. Table 3 lists the projects evaluated by start date, the date the paving began. The start date is used as the primary data grouping for this report. The voids acceptance specification became a standard special provision on July 21, 1999. All projects evaluated in this report were constructed using the standard special provision specification. Additional project data will be added to the database as it is received by the Pavement Design Unit.

Table 2. Projects Evaluated by Bid Date

			Evaluated			
	Awarded		**Voids Acceptance**		Gradation Acceptance	
Year	Projects	Tons	**Projects**	**Tons**	Projects	Tons
2000	78	2,258,407	**11**	**741,956**	50	1,186,203
2001	53	1,306,757	**3**	**155,270**	40	954,646
2002	71	1,974,106	**21**	**826,936**	42	880,699
2003	74	2,327,464	**21**	**967,742**	33	879,370
2004	78	2,348,013	**23**	**1,091,072**	26	530,005

Table 3. Projects Evaluated by Start Date

Projects by Start Date	Voids Acceptance	
Year	**Projects**	**Tons**
2000	**5**	**216,281**
2001	**9**	**680,945**
2002	**11**	**421,562**
2003	**29**	**1,265,596**
2004	**19**	**1,068,777**

6.2 Variability of the Reported Data and Construction Experience

Much of the data evaluated in this report does not show clear trends and shows variation from year to year. Two factors can explain some of this variation. First, the new voids acceptance specification and testing requirements. Second, the amount of experience the contractor has in constructing voids acceptance projects. The specification was released as a standard special provision in 1999. The first projects constructed using the new specification are those reported for the year 2000. The contractors who selected these first projects probably did so cautiously but were also confident that they could handle the new testing requirements. The results for 2000 were very good. The results for 2001 showed improvements in most areas. Experience most likely played a big part in this. A single contractor completed four of the nine projects completed in that year. That same contractor had completed one of the projects in 2000. Four contractors completed their first VA projects in 2001. Two of the projects received the best results reported in that year. The other two projects had the worst results. 2002 generally has the worst results of any year. Eight of the eleven projects completed in that year were constructed by contractors who had not previously constructed a voids acceptance project. 2002 also contained the project with the worst overall results. This project decreased the overall results for that year. The projects constructed in 2002 were completed by contractors with the least overall VA experience. Twenty-nine projects were completed in 2003. Five of the nine projects that had the lowest results were constructed by contractors for which these projects were their first voids acceptance projects. The seven best reported projects were all constructed by contractors who had previously completed at least two voids acceptance projects. Experience with the new specification does seem to pay off. In 2004 only three contractors constructed their first voids acceptance projects. Fourteen of the nineteen projects completed were by contractors with at least three previous voids acceptance projects. By 2004 good experience had been reached with the voids acceptance specification and testing requirements. 2004 has shown good results in all areas.

6.3 Calculated Pay Factor Composite

The Calculated Pay Factor Composite (CPFC) information for the years 2000 through 2004 is displayed in Table 4. The information is sorted by year and then by region. The CPFC represents the percentage increase or decrease to the unit price for HMA paid on the project, see 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 pavement. The maximum and minimum values are displayed for each data grouping. The weighted average is calculated for each year and for the five-year time period. Figure 2 displays the overall CPFC, all gradings of HMA included, by year for the years 2000 through 2004. 2001 shows the best results with an average of over 2% incentive being awarded to the projects in that year. The following year, 2002, showed the worst results with an average CPFC of 0.9870. On average, disincentives were applied to the projects constructed in this year. In 2003 the CPFC was again above the neutral mark of 1.0 and incentives were being paid for most of the HMA. Improvements continued in 2004 with the CPFC improving by 0.007% from the previous year. 2004 has the second best average CPFC reported for any year. For the five-year time period, 2000 through 2004, the overall average is 1.00848. More projects have received incentive payments than disincentive payments over this time period.

Table 4. Calculated Pay Factor Composite by Year/Region

				Calculated Pay Factor Composite		
2000	**Region**	**Projects**	**Tons**	**Average**	**Minimum**	**Maximum**
	1	1	12,317	1.03974	1.03974	1.03974
	2	2	122,774	1.00330	0.99521	1.01140
	4	1	74,292	0.98801	0.98801	0.98801
	6	1	19,841	1.03272	1.03272	1.03272
	Totals	5	229,224	1.01342	0.98801	1.03974

				Calculated Pay Factor Composite		
2001	**Region**	**Projects**	**Tons**	**Average**	**Minimum**	**Maximum**
	2	4	264,164	1.02421	0.99949	1.05302
	4	3	250,886	1.03080	1.02708	1.03414
	5	1	70,475	0.97118	0.97118	0.97118
	6	1	53,879	1.04691	1.04691	1.04691
	Totals	9	639,404	1.02304	0.97118	1.05302

				Calculated Pay Factor Composite		
2002	**Region**	**Projects**	**Tons**	**Average**	**Minimum**	**Maximum**
	1	1	71,404	1.04132	1.04132	1.04132
	2	3	128,628	0.89072	0.76392	0.98500
	3	1	38,628	1.00929	1.00292	1.00292
	4	1	75,069	1.01807	1.01807	1.01807
	6	5	144,641	1.02319	0.98943	1.04162
	Totals	11	458,370	0.98698	0.76392	1.04162

				Calculated Pay Factor Composite		
2003	**Region**	**Projects**	**Tons**	**Average**	**Minimum**	**Maximum**
	1	1	16,978	1.00047	1.00047	1.00047
	2	10	384,758	1.01097	0.96642	1.02979
	3	3	149,180	0.99094	0.97720	1.00292
	4	4	354,150	1.01462	0.97187	1.03799
	5	1	113,295	0.99338	0.99338	0.99338
	6	10	213,162	1.00784	0.83698	1.04771
	Totals	29	1,231,523	1.00736	0.83698	1.04771

				Calculated Pay Factor Composite		
2004	**Region**	**Projects**	**Tons**	**Average**	**Minimum**	**Maximum**
	1	3	212,060	1.00909	0.96524	1.03872
	2	4	195,284	1.03012	1.02044	1.04055
	3	2	206,299	0.99636	0.98525	1.00747
	4	3	261,023	1.01310	1.00383	1.02639
	6	7	137,023	1.01352	0.94133	1.03329
	Totals	19	1,011,689	1.01444	0.94133	1.04055

Table 4. Continued

2000 to 2004	Region	Projects	Tons	Calculated Pay Factor Composite		
				Average	Minimum	Maximum
	1	6	312,759	1.01813	0.96524	1.04132
	2	23	1,095,608	1.00026	0.76392	1.05302
	3	6	394,107	0.99580	0.97720	1.00929
	4	12	1,015,420	1.01635	0.97187	1.03799
	5	2	183,770	0.98228	0.97118	0.99338
	6	24	568,546	1.01536	0.83698	1.04771
	Totals	73	3,570,210	1.00848	0.76392	1.05302

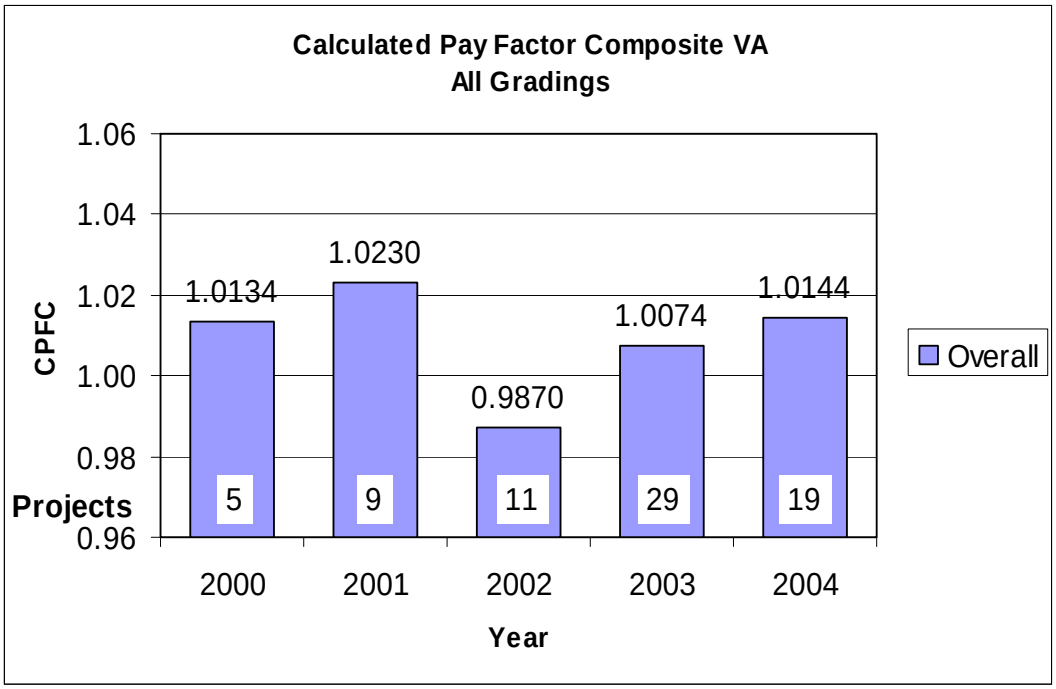

Figure 2. Calculated Pay Factor Composite by Year

6.4 Calculated Pay Factor Composite by Year and Region

The five-year, 2000 through 2004, Calculated Pay Factor Composite information by region is displayed at the end of Table 4. The maximum and minimum values are also displayed. The overall results for all projects are also calculated. Four of the six regions have overall results above 1.0, incentive being paid for the HMA. Region 1 has the best results with an average CPFC of 1.01813. Two regions have average CPFC that are less than 1.0, disincentives being paid. Region 5 shows the worst results but only two projects have been completed using the voids acceptance specification. Regions 2 and 6 have completed the most voids acceptance projects, 23 and 24 respectively. The overall CPFC is 1.00848, more incentives being paid than disincentives. Figure 3 shows the overall results for each region for the five-year time period.

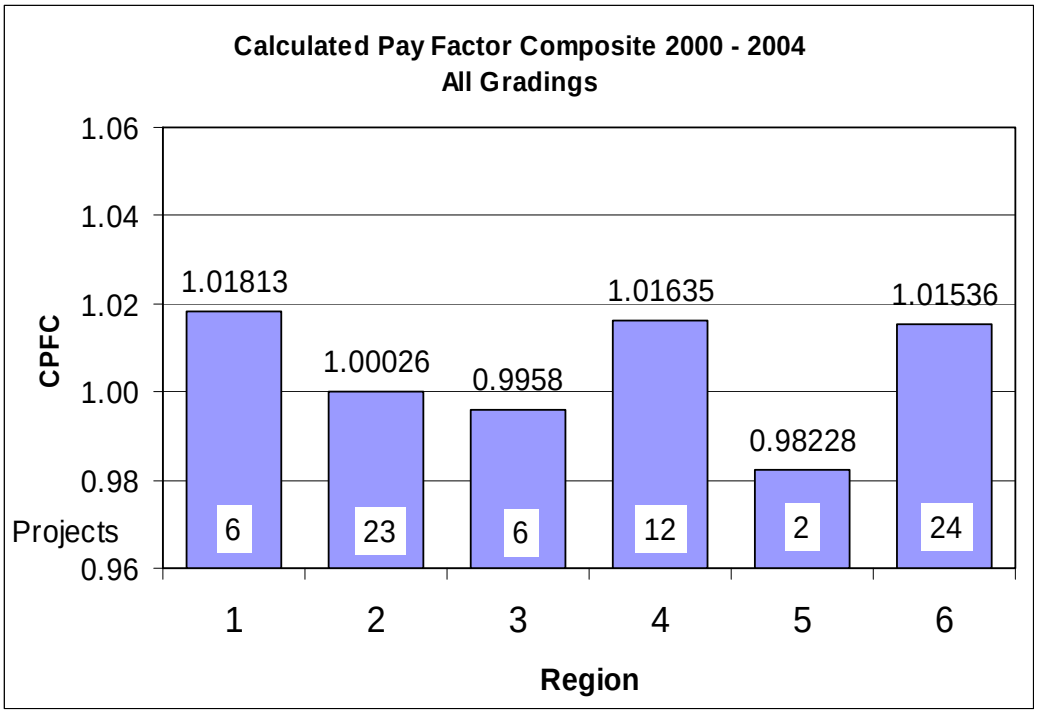

Figure 3. Calculated Pay Factor Composite 2000 to 2004 by Region

6.5 Incentive/Disincentive Payments

A recap of the Incentive/Disincentive Payments (I/DP) for the years 2000 through 2004 is presented in Table 5. For each year, the total number of projects, the number that had incentive payments, and number with disincentive payments is displayed. The summation of the I/DPs, the maximum, minimum and average are given for each year. The I/DP is the total dollar amount of incentive or disincentive payment the project received for the HMA. The calculation for I/DP is directly related to the tons of material used in the project, pay factor times tons represented. The size of the projects, tons of HMA, included in the evaluations can somewhat skew the results. Large projects being compared to smaller projects will have different I/DPs purely based on the multiplication of the pay factor times the tons of material. The projects with the largest I/DPs do not necessarily equate to the projects with the best quality levels. It is important to consider the dollar amounts being paid but a better way of evaluating the HMA is to review the Calculated Pay Factor Composite and quality levels. The percentage of projects receiving disincentive payments is also calculated for each year and for the five-year time period. Overall, 2000 through 2004, 25% of the projects have received some amount of disincentive payment. In 2000 the percentage receiving disincentive payments was 40%. In 2004 the percentage receiving disincentive payments had dropped to 16%.

Table 5. Incentive/Disincentive Payments – Recap by Year

2000				**Incentive/Disincentive Payment**	
	Number of Projects	5		Sum I/DPs	$41,411.82
	Positive I/DPs	3		Maximum	$29,863.90
	Negative I/DPs	2	40%	Minimum	($34,248.47)
	Total Tons	229,224		Average I/DP	$8,282.36

2001				**Incentive/Disincentive Payment**	
	Number of Projects	9		Sum I/DPs	$489,645.08
	Positive I/DPs	7		Maximum	$119,561.18
	Negative I/DPs	2	22%	Minimum	($67,655.18)
	Total Tons	639,404		Average I/DP	$54,405.01

2002				**Incentive/Disincentive Payment**	
	Number of Projects	11		Sum I/DPs	$113,487.41
	Positive I/DPs	7		Maximum	$99,877.90
	Negative I/DPs	4	36%	Minimum	($95,998.88)
	Total Tons	827,915		Average I/DP	$10,317.04

2003				**Incentive/Disincentive Payment**	
	Number of Projects	29		Sum I/DPs	$533,992.91
	Positive I/DPs	22		Maximum	$109,804.69
	Negative I/DPs	7	24%	Minimum	($53,185.02)
	Total Tons	1,231,523		Average I/DP	$18,413.55

2004				**Incentive/Disincentive Payment**	
	Number of Projects	19		Sum I/DPs	$368,089.92
	Positive I/DPs	16		Maximum	$119,310.36
	Negative I/DPs	3	16%	Minimum	($83,206.36)
	Total Tons	1,011,689		Average I/DP	$19,373.15

2000 to 2004				**Incentive/Disincentive Payment**	
	Number of Projects	73		Sum I/DPs	$1,546,627.14
	Positive I/DPs	55		Maximum	$119,561.18
	Negative I/DPs	18	25%	Minimum	($95,998.88)
	Total Tons	3,570,210		Average I/DP	$21,186.67

6.6 Review of Yearly Data by Test Element 2000 through 2004

The overall results, all grading included, for each of the test elements for the years 2000 through 2004 are listed in Table 6. The quality level, pay factor, and standard deviation are shown for each element. The mean to target value and standard deviation minus V factor are also calculated. The mean to target value calculation shows the relationship between the mean for the processes in comparison to the midpoint of the specification limits, the target value. The calculated value is the absolute difference between the mean and the target value. The lower the value the closer the mean is to the target value, which increases the probability that the material will be within specification. The standard deviation minus V factor shows the comparison of the standard deviation for the processes to the historical standard deviation, the V factor. A negative number indicates that the standard deviation for the processes is less than the historical value, increasing the probability that the material will be within specification. Positive values show that the standard deviations have exceeded the historical values. The calculation of quality levels is dependent on the relationship of both of these values as they relate to the specification limits. Quality levels are not calculated on processes with less than three tests. Therefore, these processes are excluded from the evaluations that include the quality level calculation. Table 7 contains the five year average for the percent asphalt, VMA, air voids, & mat density elements.

Most of the element pay factors reported show good results. Eighteen of the twenty-two elements are above 1.0 indicating that incentives are being paid. The yearly quality levels for each of the elements also show good results. The lowest reported quality level is 83.845 in the joint density element for 2004. However, this is only the second year that this element has been tested and included in the calculations for I/DP. The next lowest reported quality level is 87.678 in the percent asphalt element for 2003. At this level the calculated pay factor is just under the 1.0 value. All of the other reported quality levels are above this level and the associated pay factors are greater than 1.0, incentive payments being awarded. When evaluating the mean to target value calculations we see that the material is being produced close to the midpoint of the specification, calculated values approaching zero. This increases the probability that the material will be within specification limits. All of the calculated values are within 0.75 of the V value to the mean except for those reported in the joint density element. A

mean within 0.75 V to the midpoint of the specification generally results in good quality level calculations. However, quality level calculations are also dependent on the calculated standard deviation for the process. The standard deviations reported for the test results show that the majority of the material being produced is below the variation of the historical data, negative values in the standard deviation minus V value column. Excluding the joint density results, all of the calculated values in this column except one are negative numbers. The variation being reported in the joint density element has been equal to or above the V value in its first two years of being tested. The quality levels and pay factors for each of the elements are displayed in Figures 4 – 13.

The results for the test elements are somewhat mixed. Reliable trends cannot be established on all of the elements. The data tends to vary over the five-year time period. Part of this variation is probably due to the newness of the specification and the time required for the contractors to gain experience on voids acceptance projects. The pattern that is generally seen in the test elements is: good initial results. This is probably due to the limited number of contractors who bid on the first voids acceptance projects. In the second or third years there was a decrease in the quality levels reported. In 2002 the number of contractors constructing their first voids acceptance projects was the greatest. In the last two or three years evaluated the results have been increasing. Most of the contractors had completed at least two VA projects by this time. This particular pattern can be seen in the percent asphalt, VMA, and air voids elements. These elements have all shown acceptable results and resulted in incentive payments being made. The five-year average quality levels have been: percent asphalt 89.855, VMA 95.041, and Air Voids 90.408. The mat density results have remained at a constant level, excluding 2000. The average quality level over the last four years is 93.1. The quality levels have been within 1% of each other over the last four years. Incentive payments of approximately 2% have been made on this element over this time. Joint density testing has been a requirement since 2003. The results for 2004 are less than those reported in 2003. More data is required to fully evaluate this element.

Table 6. Recap of Yearly Data by Test Element, All Gradings

Percent Asphalt

Year	Proj.	Tons	Tests	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	St. Dev. - V
2000	5	229,224	234	90.232	1.01083	0.10	0.146	0.200	-0.054
2001	9	638,541	641	91.889	1.01833	0.06	0.152	0.200	-0.048
2002	11	449,348	478	92.385	1.02744	0.06	0.151	0.200	-0.049
2003	29	1,217,072	1248	87.678	0.99472	0.08	0.168	0.200	-0.032
2004	19	1,005,858	1027	89.981	1.01142	0.07	0.158	0.200	-0.042

VMA

Year	Proj.	Tons	Tests	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	St. Dev. - V
2000	5	229,224	234	96.034	1.03765	0.28	0.461	0.600	-0.139
2001	9	638,540	641	96.691	1.04257	0.26	0.417	0.600	-0.183
2002	11	445,348	475	93.464	1.02296	0.27	0.504	0.600	-0.096
2003	29	1,223,050	1254	93.925	1.02450	0.38	0.421	0.600	-0.179
2004	19	1,005,858	1026	95.823	1.03195	0.29	0.419	0.600	-0.181

Air Voids

Year	Proj.	Tons	Tests	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	St. Dev. - V
2000	5	229,224	234	87.841	0.99411	0.42	0.575	0.600	-0.025
2001	9	617,540	620	90.942	1.01246	0.31	0.575	0.600	-0.025
2002	11	445,348	461	89.503	1.00273	0.25	0.628	0.600	0.028
2003	29	1,222,085	1253	89.369	1.00613	0.36	0.593	0.600	-0.007
2004	19	1,005,858	1026	92.328	1.02260	0.31	0.553	0.600	-0.047

Notes: *Mean to TV* – The closer the calculated value is to zero the better.
Std. Dev. - V – The smaller the value the better.

Table 6. Continued

Mat Density

Year	Proj.	Tons	Tests	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	St. Dev. - V
2000	5	227,946	463	89.214	0.99597	0.694	0.987	1.100	-0.113
2001	9	586,423	1,180	93.449	1.02151	0.595	0.879	1.100	-0.221
2002	11	408,517	818	92.807	1.02312	0.559	0.897	1.100	-0.203
2003	29	1,118,739	2,289	93.586	1.02641	0.424	0.919	1.100	-0.181
2004	19	868,004	1,750	92.634	1.01820	0.451	0.989	1.100	-0.111

Joint Density

Year	Proj.	Tons	Tests	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	St. Dev. - V
2003	16	730,560	398	90.171	1.00955	1.577	1.600	1.600	0.000
2004	19	836,133	552	83.845	0.96445	2.007	1.713	1.600	0.113

Notes: *Mean to TV* – The closer the calculated value is to zero the better.
Std. Dev. - V – The smaller the value the better.

Table 7. Test Element Results, All Gradings - 2000 through 2004

Test	Tons	Proc.	Tests	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	St. Dev. - V
Percent Asphalt	3,540,043	183	3,628	89.855	1.00892	0.07	0.159	0.200	-0.041
VMA	3,542,020	185	3,630	95.041	1.03053	0.31	0.433	0.600	-0.167
Air Voids	3,520,055	183	3,594	90.408	1.01074	0.33	0.582	0.600	-0.018
Mat Density	3,209,629	176	6,500	92.894	1.02071	0.50	0.932	1.100	-0.168

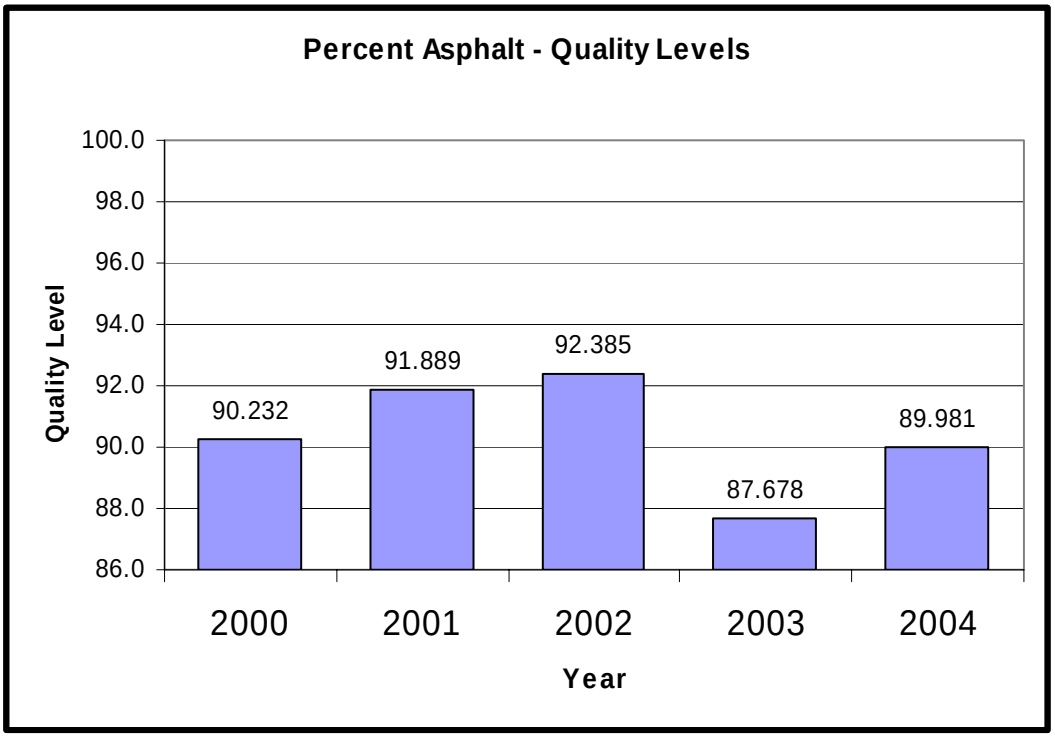

Figure 4. Percent Asphalt Quality Levels

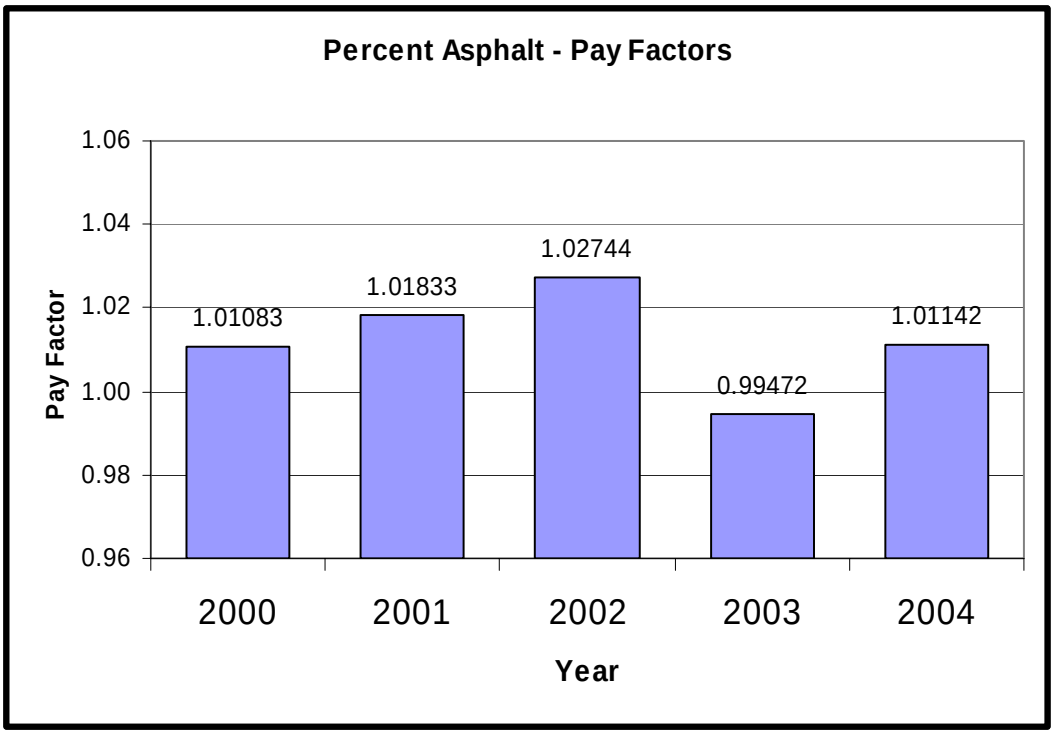

Figure 5. Percent Asphalt Pay Factors

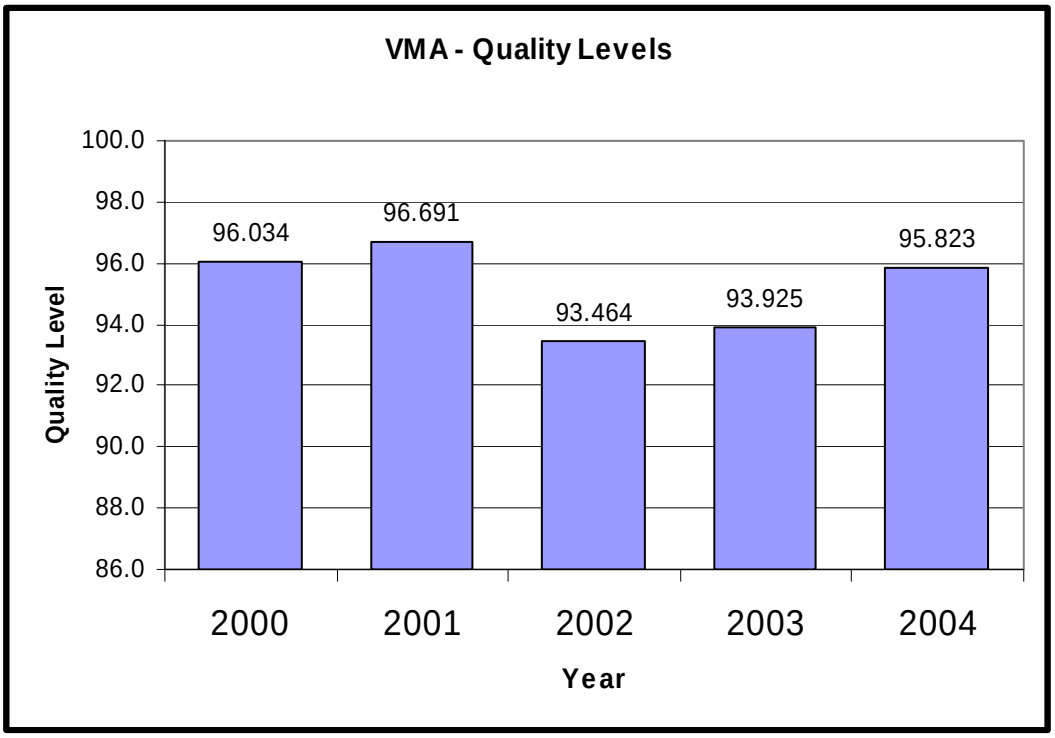

Figure 6. VMA Quality Levels

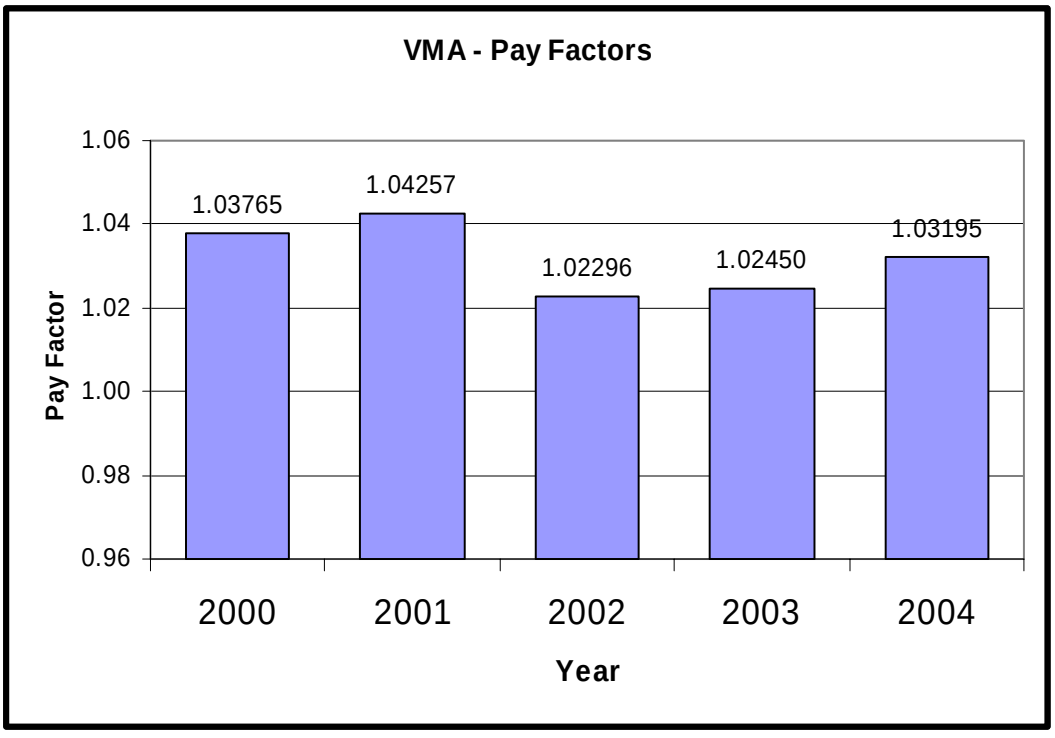

Figure 7. VMA Pay Factors

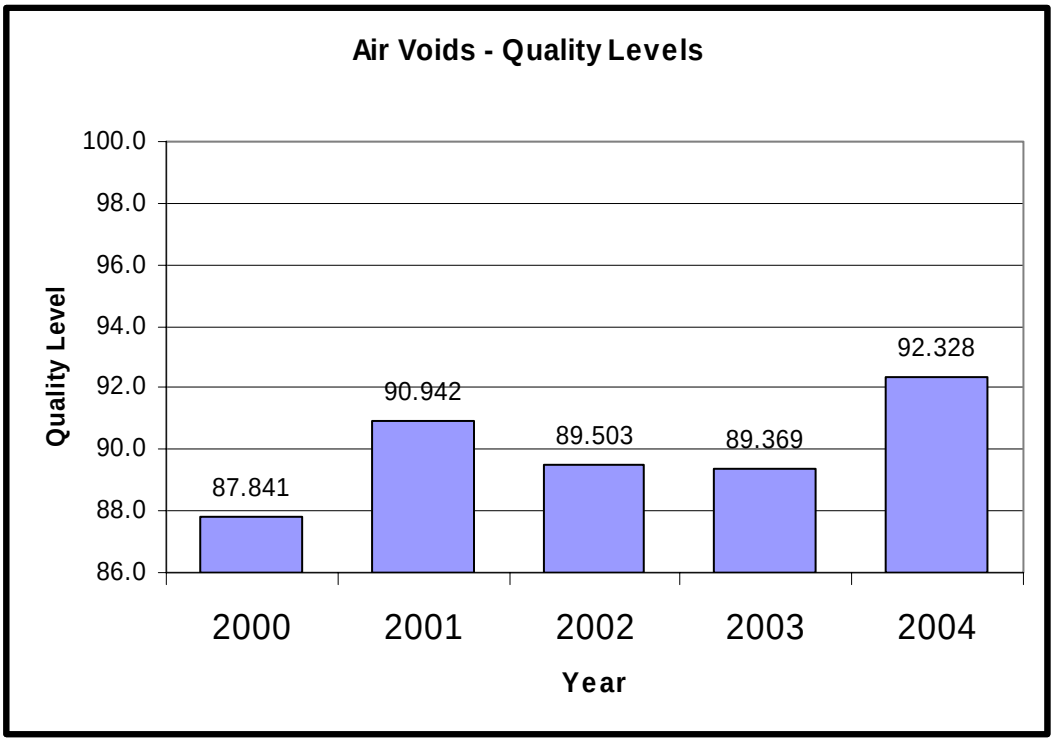

Figure 8. Air Voids Quality Levels

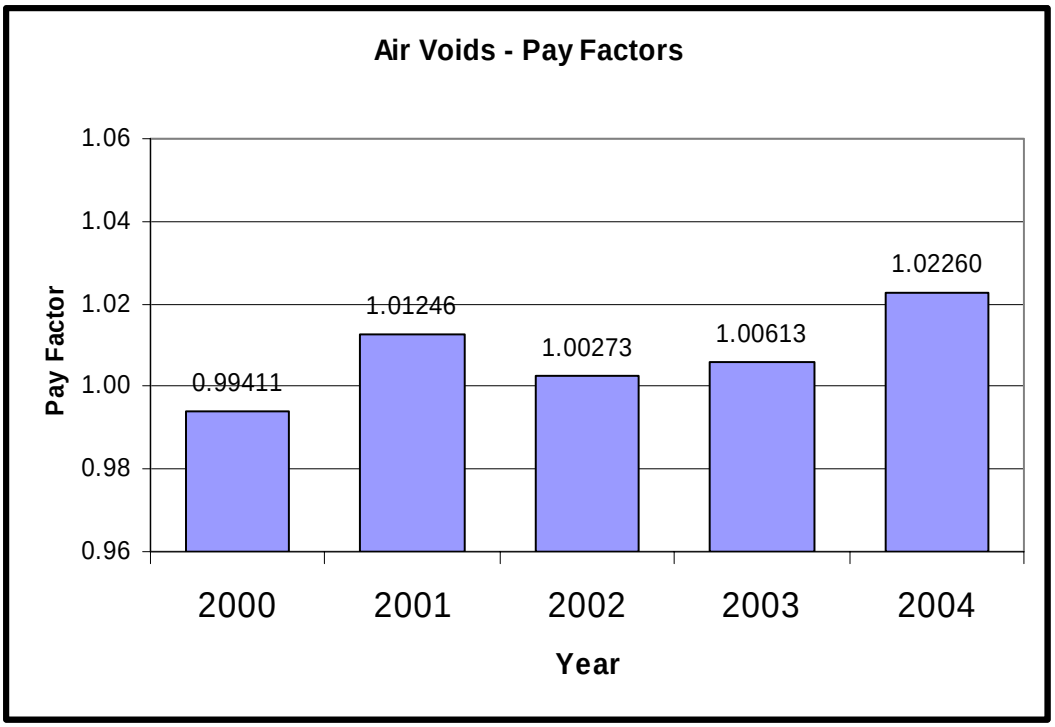

Figure 9. Air Voids Pay Factors

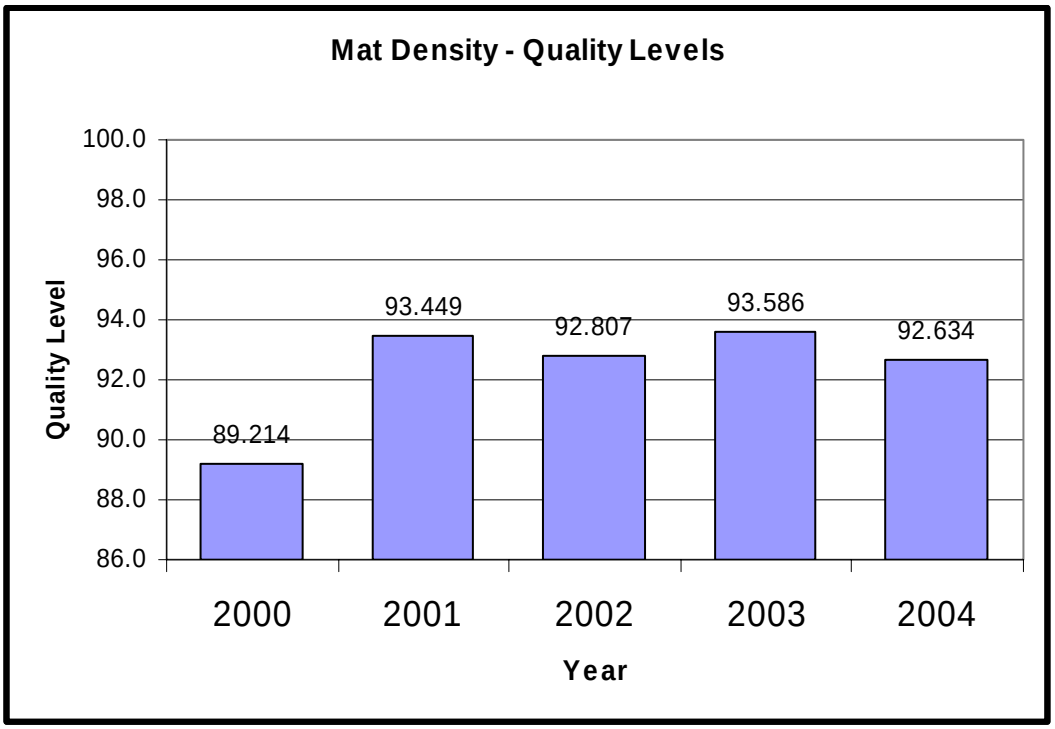

Figure 10. Mat Density Quality Levels

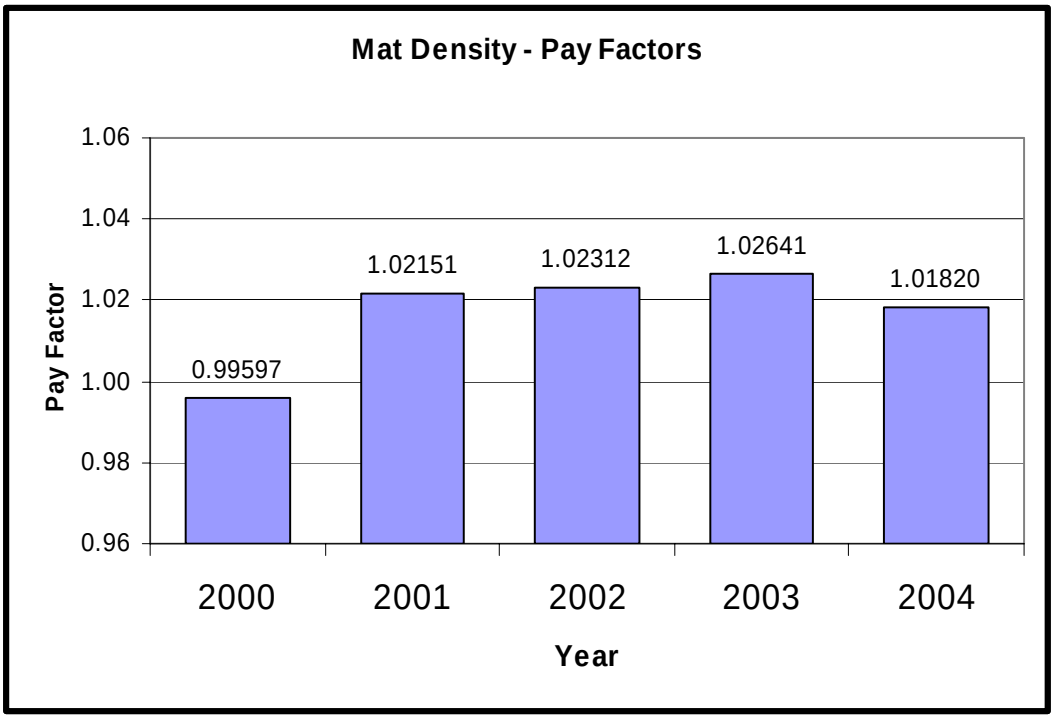

Figure 11. Mat Density Pay Factors

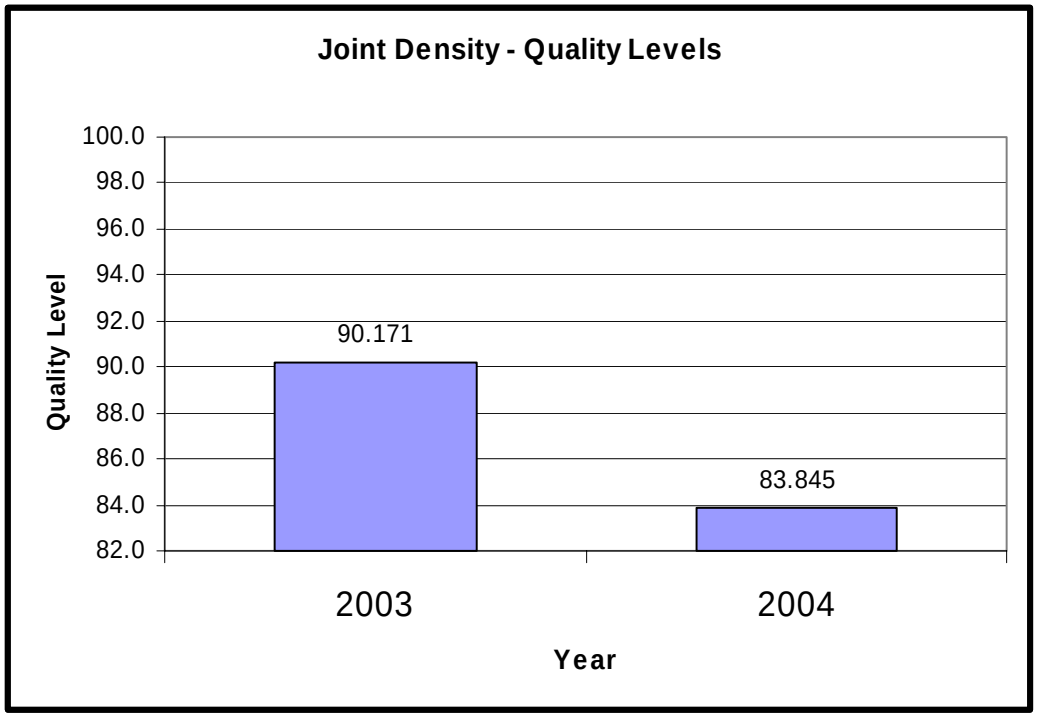

Figure 12. Joint Density Quality Levels

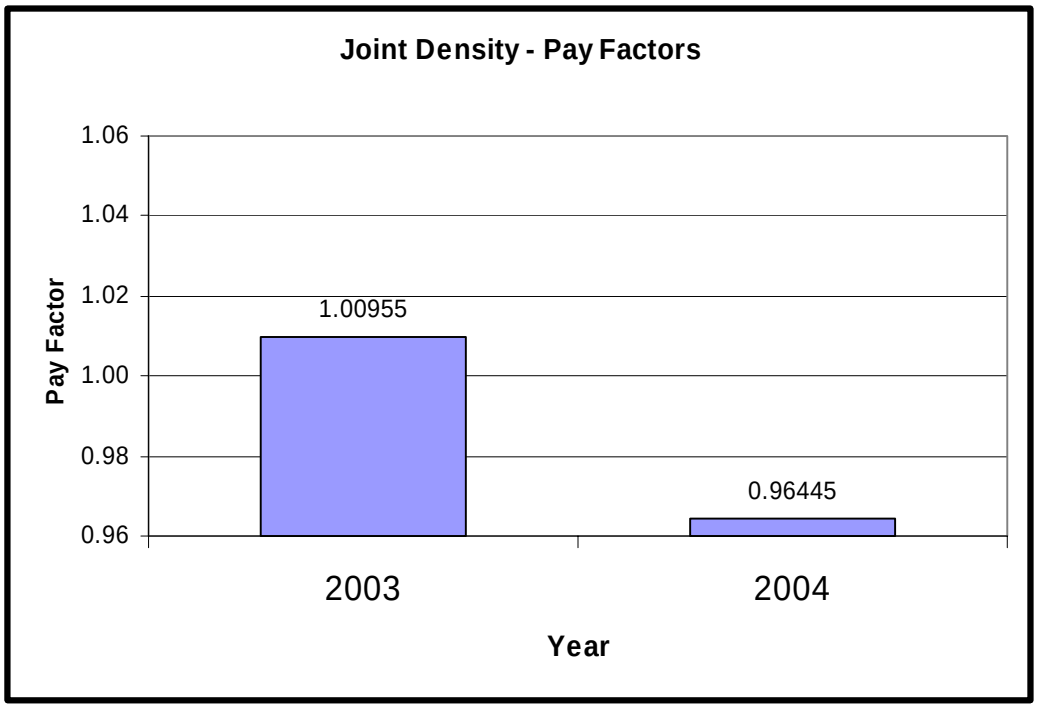

Figure 13. Joint Density Pay Factors

6.7 Comparison Between Test Element Quality Levels 2000 through 2004

The quality levels for each of the elements by year, excluding joint density, 2000 through 2004, are displayed in Figures 14 and 15. These figures help display the relationship between the quality levels of the test elements. The quality levels for VMA have been the best of any of the elements in each year. Mat density has had the next best results in the last four years. Percent asphalt had the third best results in the first three years. It had the worst results in the last two years. Air voids had the worst results in the first three years but then moved ahead of percent asphalt in the last two years. The results do tend to be gapped in most instances, having the same ranking and distance between elements. This is especially true when reviewing the results for the last two years. The pay factors results are displayed in Figure 16.

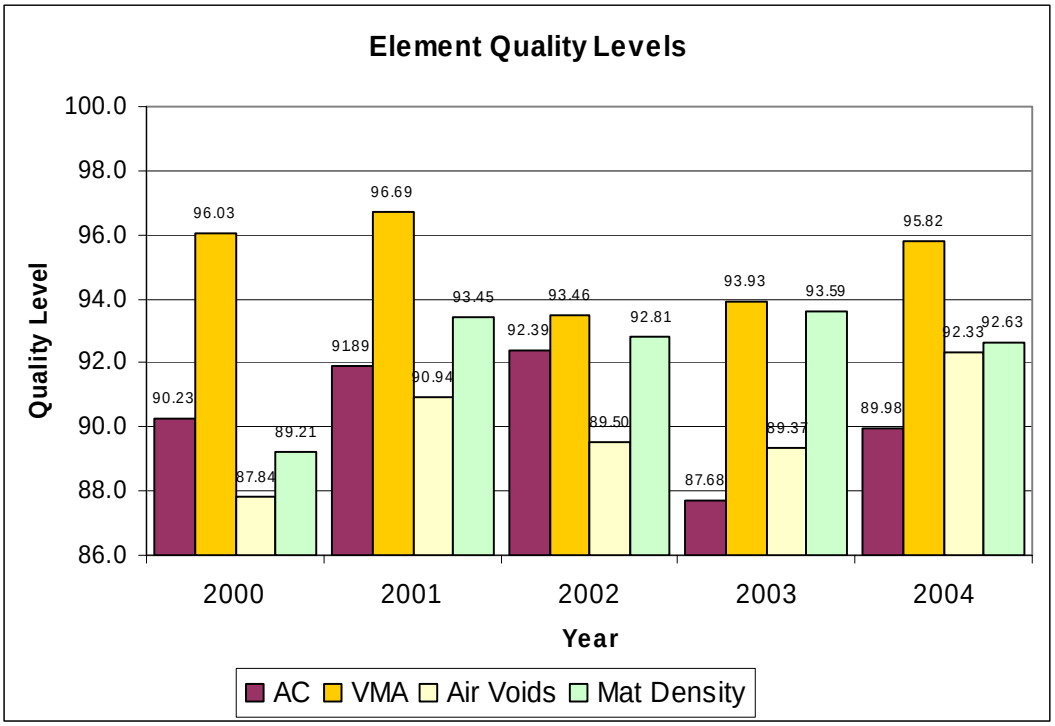

Figure 14. Quality Levels by Test Element

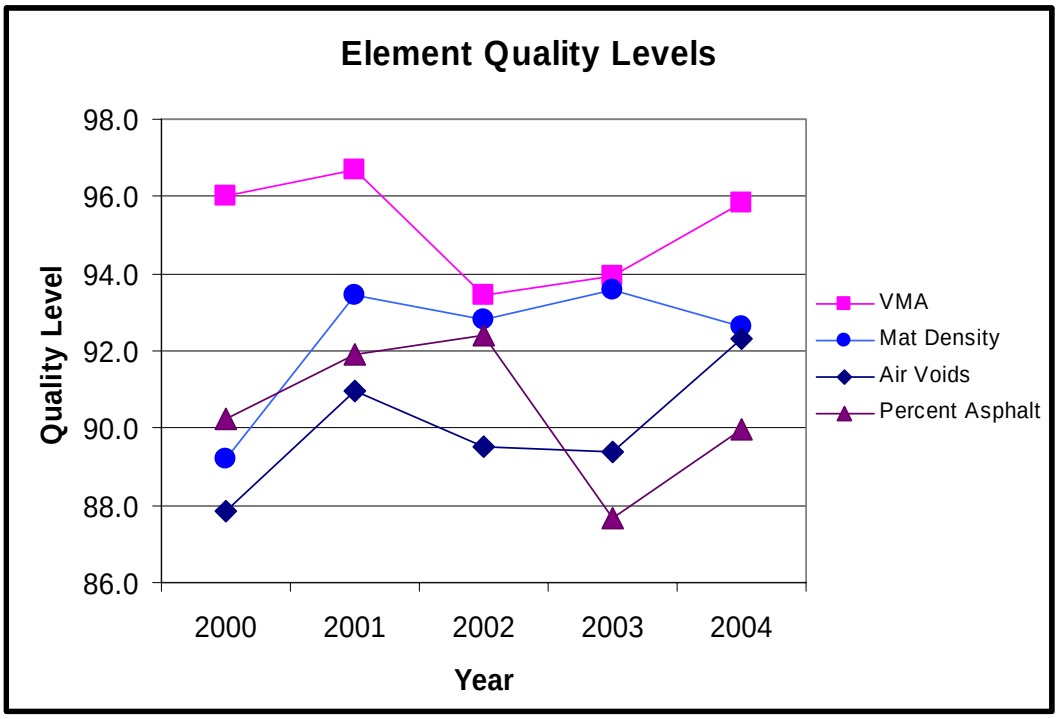

Figure 15. Quality Levels by Test Element

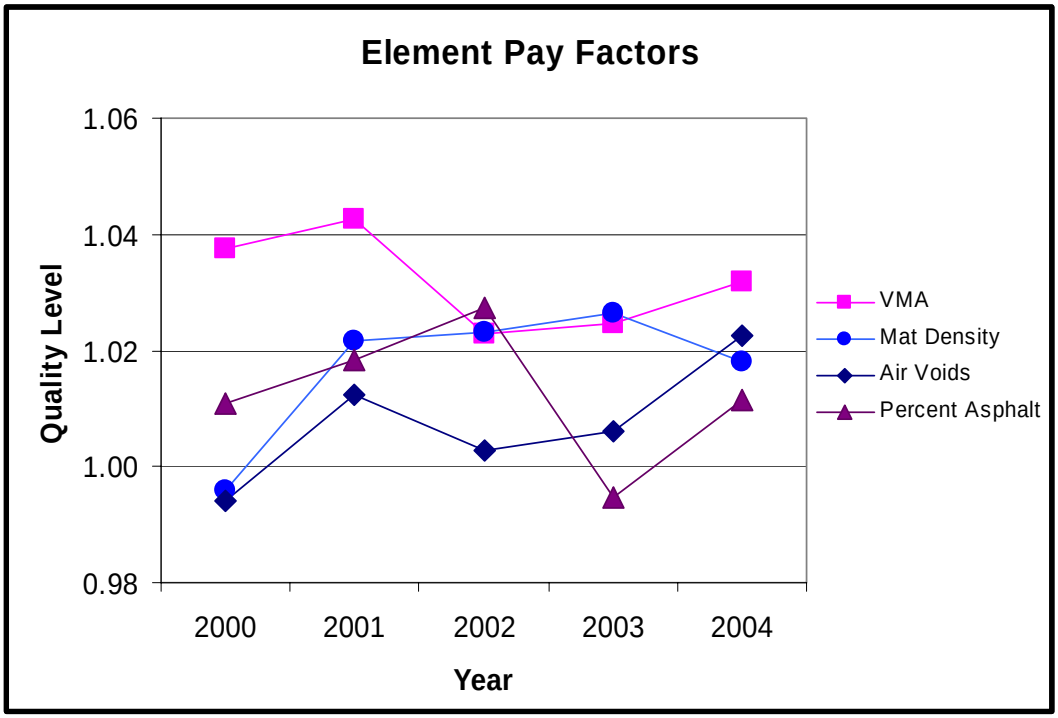

Figure 16. Pay Factors by Test Element

One factor that might influence how the elements rank, lowest to highest, in quality levels is the importance given the test element by the specification, the weight assigned to the element. Table 1, "W" Factors for Various Elements displays the weights given to each of the elements. Figure 17 displays the average quality levels, 2000 through 2004, for each of the test elements and its assigned weight. A high level of importance is given to the mat density element. Its W factor is equal to or higher than the other elements. This element ranks second in reported quality levels. The air voids element has the second highest W factor and is ranked third behind mat density. The VMA element has the highest reported quality levels but its weight is only 10%. Joint density has been a testing requirement for two years. This element is still too new and requires more data to be received before a good analysis can be completed on it. Overall there does seem to be a relationship between the element weight and the resulting quality levels, with the exception of the VMA element. The current quality levels are acceptable and are expected to increase as more experience is gained. Figure 18 displays the average pay factor for each of the test elements, 2000 through 2004. Except for joint density, all of the average pay factors are above 1.0.

Table 1. "W" Factors for Various Elements

	W Factor				
Specification	**Percent Asphalt**	**VMA**	**Air Voids**	**Mat Density**	**Joint Density**
10/4/01 & Older	10	10	40	40	
12/20/02 & Newer	10	10	30	35	15

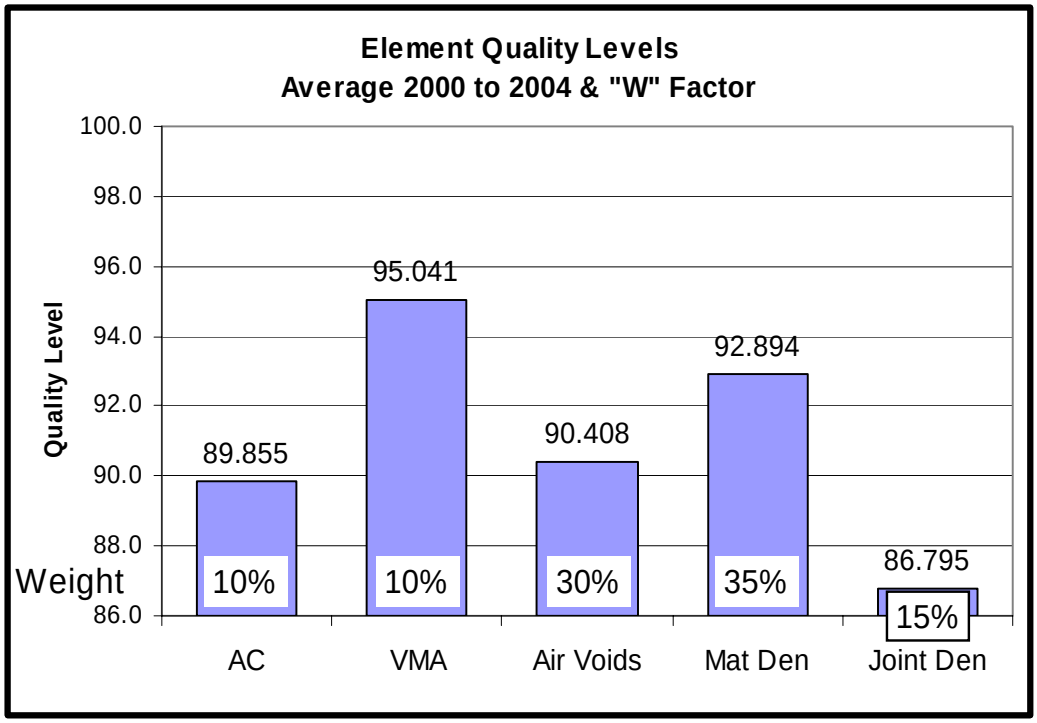

Figure 17. Quality Levels by Test Element 2000 to 2004 & "W" Factor

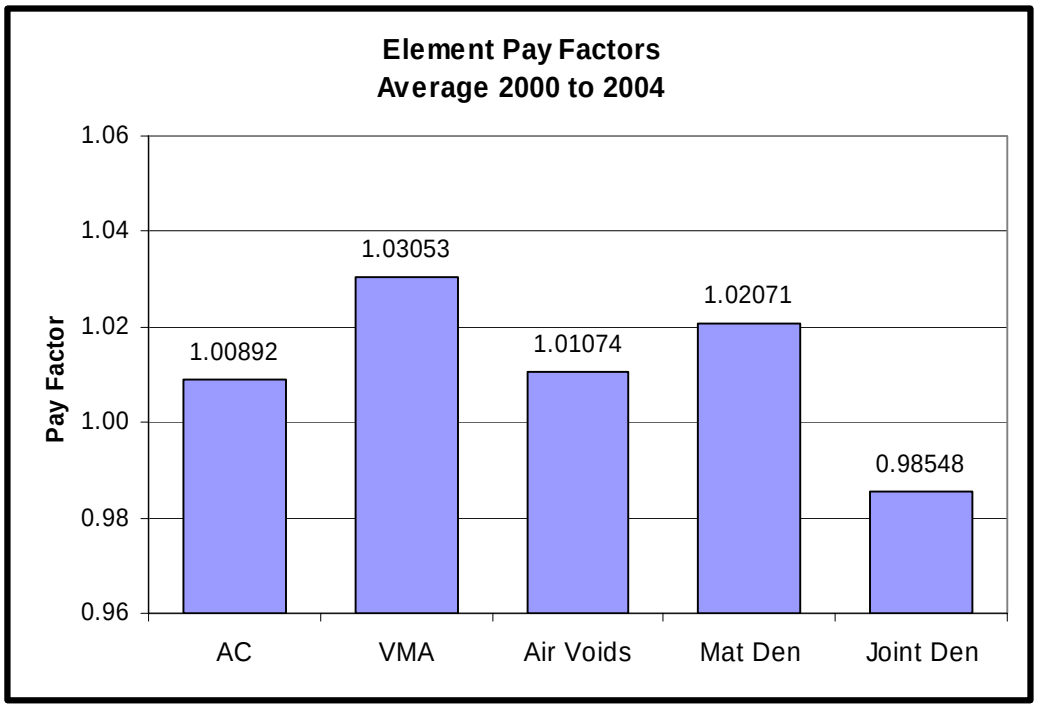

Figure 18. Average Pay Factors 2000 to 2004

6.8 Calculated Pay Factor Composite for Gradings S & SX, 2000 Through 2004

For each year, the calculated pay factor composite for gradings S and SX is given in Table 8. Only thirteen of the sixty-eight projects evaluated contained grading SX. No projects in 2000 contained grading SX. Only one project in 2001 and two in 2002 contained grading SX. Overall grading S has had better results in each year except 2002. However, only two grading SX projects were constructed in 2002. A good comparison of the two gradings is limited because of the small number of SX projects. By comparing the data for the last two years, the years with the best data, grading S shows better results than grading SX. Over the five-year time period, 2000 to 2004, grading S has a 0.005% higher CPFC than grading SX. Both gradings on average are receiving incentive payments. Figure 18 displays the CPFC for each grading 2000 through 2004.

Table 8. Calculated Pay Factor Composite by Year and Grading

Year	Grading	Projects	Tons	CPFC Average	CPFC Minimum	CPFC Maximum
2000	S	5	229,224	1.01342	0.98801	1.03974
	Totals	5	229,224	1.01342	0.98801	1.03974
2001	S	8	568,929	1.02952	0.99949	1.05302
	SX	1	70,475	0.97118	0.97118	0.97118
	Totals	9	639,404	1.02304	0.97118	1.05302
2002	S	9	348,338	0.97847	0.76392	1.04162
	SX	2	110,032	1.02530	1.00929	1.04132
	Totals	11	458,370	0.98698	0.76392	1.04162
2003	S	21	762,090	1.01000	0.83698	1.04771
	SX	5	289,475	0.99410	0.97720	1.00431
	Totals	26	1,051,565	1.00695	0.83698	1.04771
2004	S	12	499,312	1.01963	0.94133	1.04055
	SX	5	367,665	1.01395	0.98525	1.03872
	Totals	17	886,977	1.01796	0.94133	1.04055
Overall '00 to '04	S	55	2,407,893	1.01009	0.76392	1.05302
	SX	13	837,647	1.00477	0.97118	1.04132
	Totals	68	3,245,540	1.00908	0.76392	1.05302

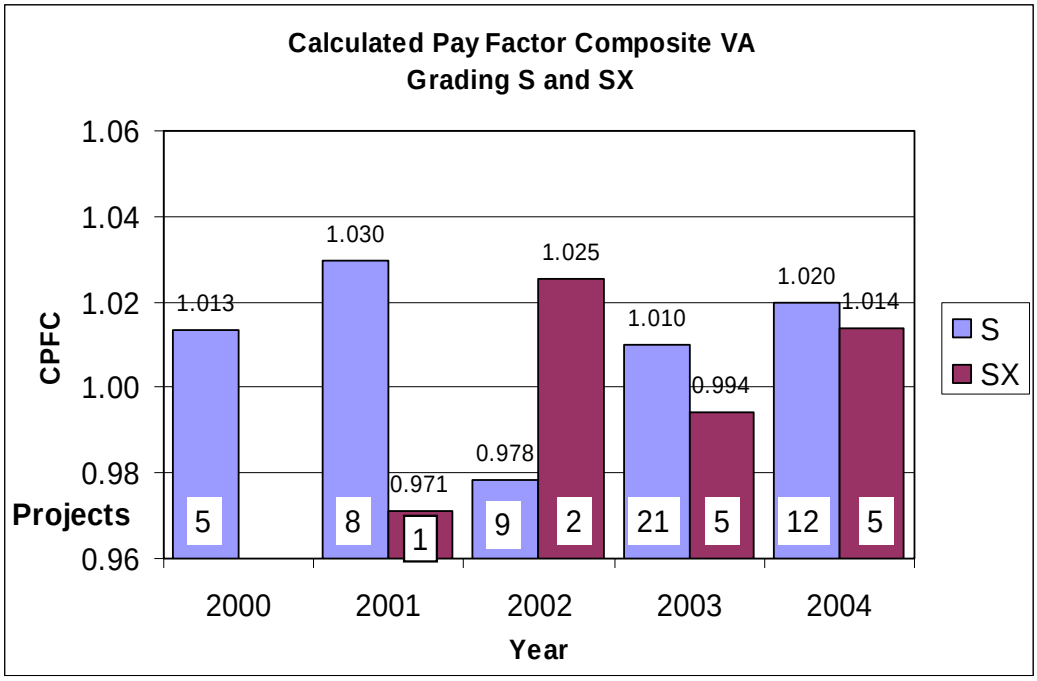

Figure 19. Calculated Pay Factor Composite by Year, Grading S & SX

6.9 Test Element Quality Levels for Gradings S & SX 2000 Through 2004

For each of the test elements the quality level information is separated into gradings S and SX by year and is presented in Table 9. Figures 20 to 24 graphically present the quality level information for each element. Good comparison of the results of the two gradings is limited by the fact that there are a small number of SX projects. No projects were constructed in 2000 that used SX. Only one project in 2001 and two in 2002 used grading SX. The results are somewhat scattered with trends not clearly defined. This is probably due to the newness of the specification and the time needed for the contractors to gain experience constructing voids acceptance projects. Most of the quality levels are above 85% within specification limits. At this level the resulting pay factor will be close to the neutral mark of 1.0. Pay factors above 1.0 will result in incentive payments being awarded. The results for grading S are slightly better than that of SX in most comparisons. In 2004 the differences between the two gradings are the closest of any year in each of the elements. Excluding joint density, the difference between the two gradings is less than 1.6% in each of the elements. The small number of SX projects limits the comparison to the two gradings. The number of projects of each grading years 2003 and 2004 is sufficient for

a good comparison of the two gradings. No conclusions on the difference between the two gradings should be made until more data is available.

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

Percent Asphalt

Grading	Year	Projects	Processes	Tests	Tons	Quality Level	Pay Factor
S	**2000**	**5**	14	234	229,224	90.232	1.01083
	2001	**8**	21	569	568,066	92.886	1.02389
	2002	**9**	17	365	339,316	91.991	1.02581
	2003	**24**	54	928	904,748	88.652	1.00191
	2004	**14**	32	573	559,904	89.837	1.01200
SX	**2000**	**0**	--	--	--	--	--
	2001	**1**	3	72	70,475	83.847	0.97351
	2002	**2**	4	113	110,032	93.599	1.03248
	2003	**8**	14	320	312,324	84.857	0.97390
	2004	**7**	24	454	445,954	90.161	1.01070

VMA

Grading	Year	Projects	Processes	Tests	Tons	Quality Level	Pay Factor
S	**2000**	**5**	15	234	229,224	96.034	1.03765
	2001	**8**	21	569	568,065	97.891	1.04875
	2002	**9**	17	362	335,316	91.679	1.01300
	2003	**24**	54	933	909,726	96.924	1.04388
	2004	**14**	32	572	559,904	95.097	1.02612
SX	**2000**	**0**	--	--	--	--	--
	2001	**1**	3	72	70,475	87.015	0.99281
	2002	**2**	4	113	110,032	98.906	1.05330
	2003	**8**	15	321	313,324	85.220	0.96826
	2004	**7**	24	454	445,954	96.736	1.03928

Table 9. Continued

Air Voids

Grading	Year	Projects	Processes	Tests	Tons	Quality Level	Pay Factor
S	**2000**	**5**	14	234	229,224	87.841	0.99411
	2001	**8**	20	548	547,065	91.863	1.01741
	2002	**9**	17	348	335,316	87.493	0.98952
	2003	**24**	54	932	908,761	91.184	1.01829
	2004	**14**	32	572	559,904	91.724	1.02105
SX	**2000**	**0**	---	--	--	--	--
	2001	**1**	3	72	70,475	83.789	0.97401
	2002	**2**	4	113	110,032	95.631	1.04299
	2003	**8**	15	321	313,324	84.103	0.97088
	2004	**7**	24	454	445,954	93.087	1.02455

Mat Density

Grading	Year	Projects	Processes	Tests	Tons	Quality Level	Pay Factor
S	**2000**	**5**	15	463	227,946	89.214	0.99597
	2001	**8**	21	1084	539,011	94.411	1.02832
	2002	**9**	21	692	344,838	92.926	1.02415
	2003	**24**	58	1739	849,001	94.099	1.03151
	2004	**14**	30	1038	515,306	92.767	1.01990
SX	**2000**	**0**	--	--	--	--	--
	2001	**1**	2	96	47,412	82.510	0.94405
	2002	**2**	2	126	63,679	92.166	1.01752
	2003	**8**	10	550	269,738	91.973	1.01035
	2004	**7**	17	712	352,698	92.440	1.01573

Joint Density

Grading	Year	Projects	Processes	Tests	Tons	Quality Level	Pay Factor
S	**2003**	**13**	25	342	628,271	89.603	1.00652
	2004	**14**	19	302	485,477	85.998	0.98576
SX	**2003**	**3**	3	56	102,289	93.654	1.02815
	2004	**7**	8	250	350,656	80.864	0.93495

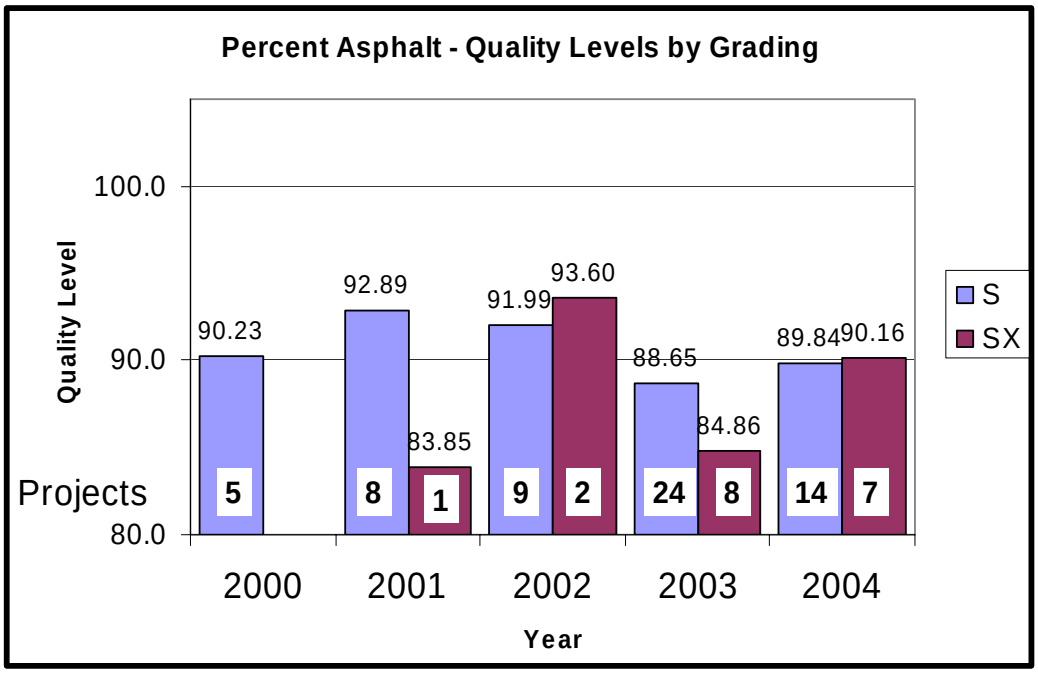

Figure 20. Percent Asphalt Quality Levels – Gradings S & SX

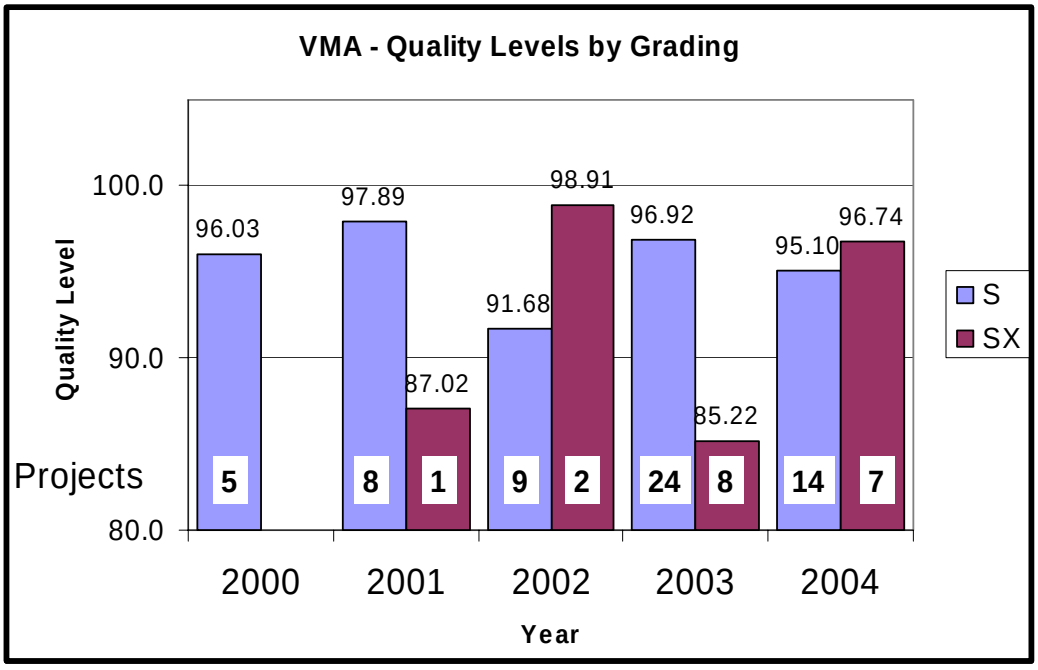

Figure 21. VMA Quality Levels – Gradings S & SX

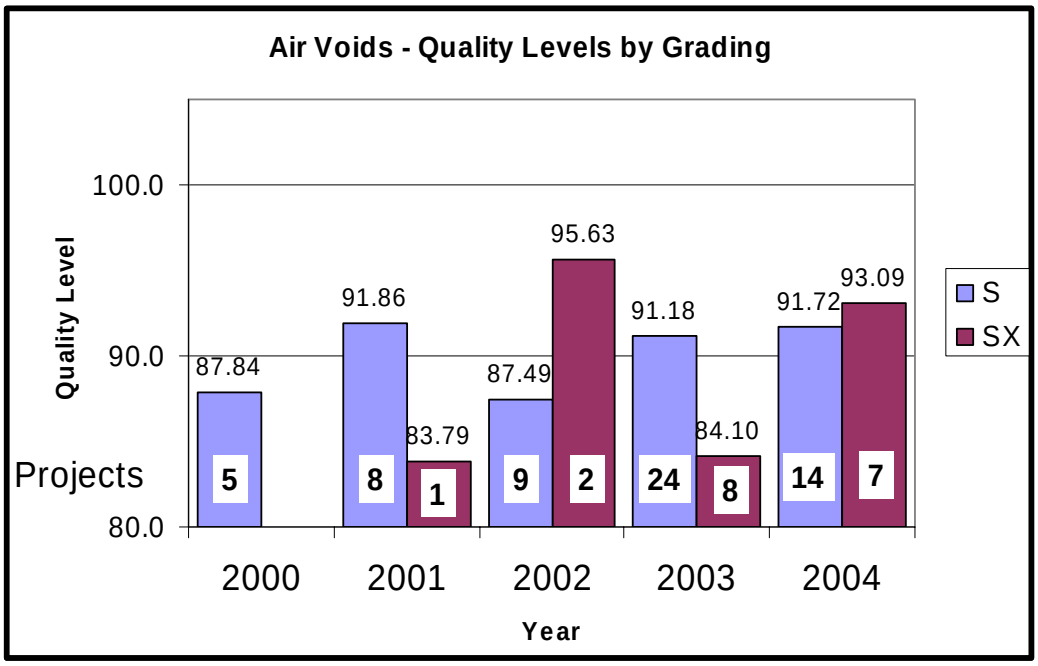

Figure 22. Air Voids Quality Levels – Gradings S & SX

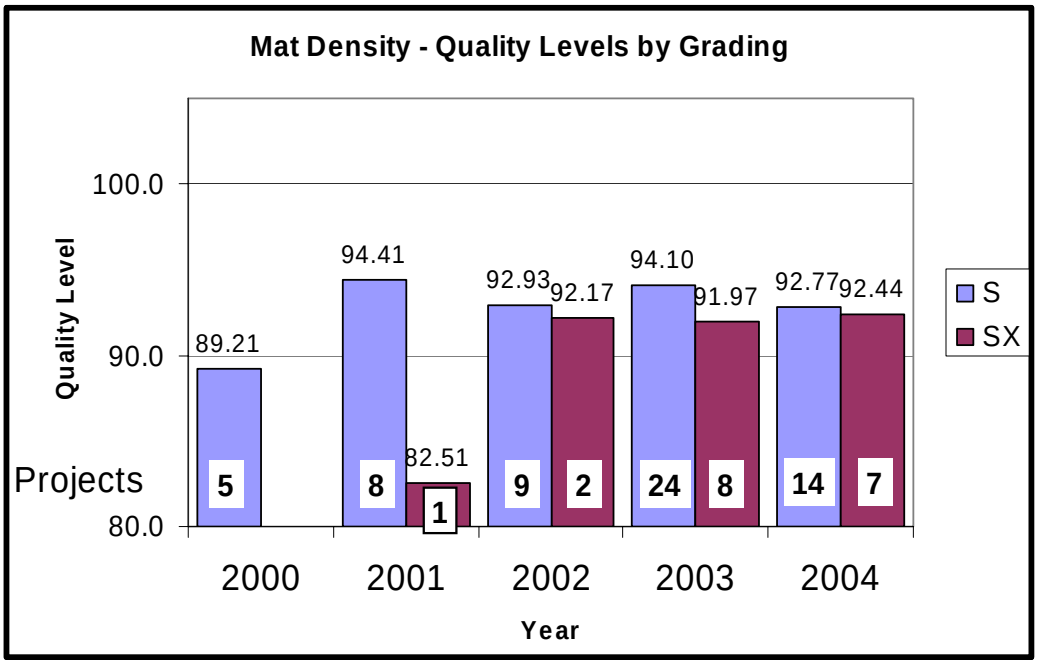

Figure 23. Mat Density Quality Levels – Gradings S & SX

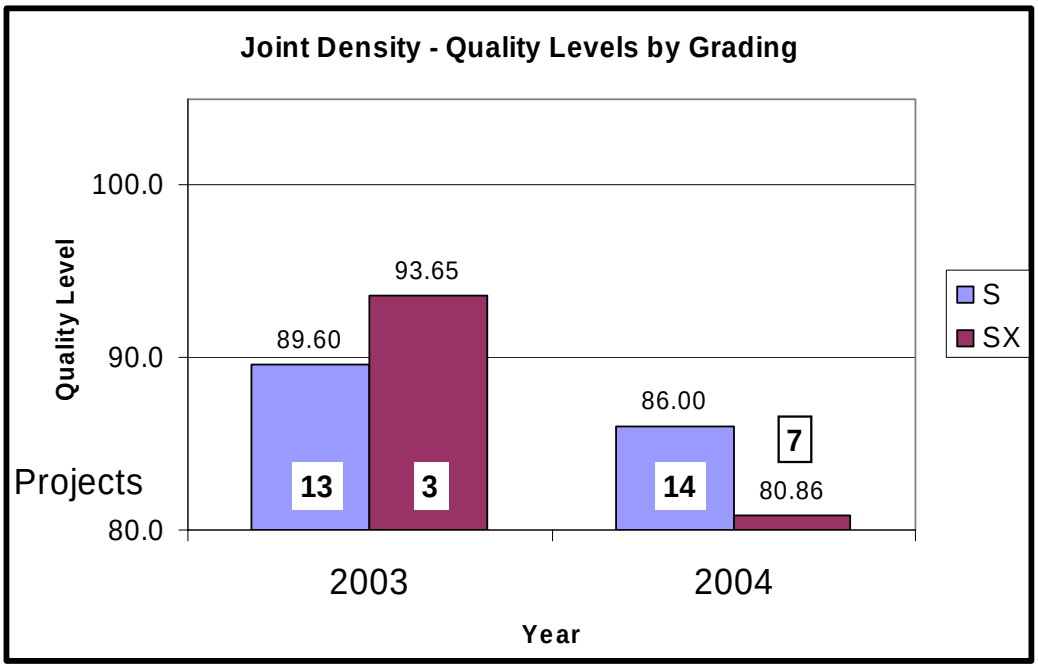

Figure 24. Joint Density Quality Levels – Gradings S & SX

Table 10 displays the five-year averages for quality level and pay factor for each of the elements. On average grading S has shown better results in each of the test elements. The difference in the quality levels of three of the elements is 2.1% or less. The difference in the VMA element is 3.6%. The difference in the joint density element after two years of testing is 4.3%. The differences at this stage appear to be within reasonable limits. Seven of the ten pay factors are above 1.0 indicating that on average incentive payments are being awarded. Two of the evaluations are less than 0.003% under 1.0. Just slightly more disincentives were made than incentives. The joint density results for grading SX have the lowest reported pay factors. Joint density testing has been a requirement for two years. Grading SX has been used on only 10 projects that contained the joint density testing requirement. Figures 25 and 26 display the five-year average quality level and pay factors information for each of the elements.

Table 10. Quality Levels and Pay Factors by Grading Average 2000 Through 2004

Test		Processes	Tons	Tests	Quality Level	Pay Factor
Asphalt Content	S	138	2,601,258	2,669	90.407	1.01278
	SX	45	938,785	959	88.325	0.99822
VMA	S	139	2,602,235	2,670	95.988	1.03659
	SX	46	939,785	960	92.421	1.01376
Air Voids	S	137	2,580,270	2,634	90.669	1.01282
	SX	46	939,785	960	89.692	1.00503
Mat Density	S	145	2,476,102	5,016	93.277	1.02410
	SX	31	733,527	1,484	91.602	1.00927
Joint Density	S	44	1,113,748	644	88.032	0.99747
	SX	11	452,945	306	83.752	0.95600

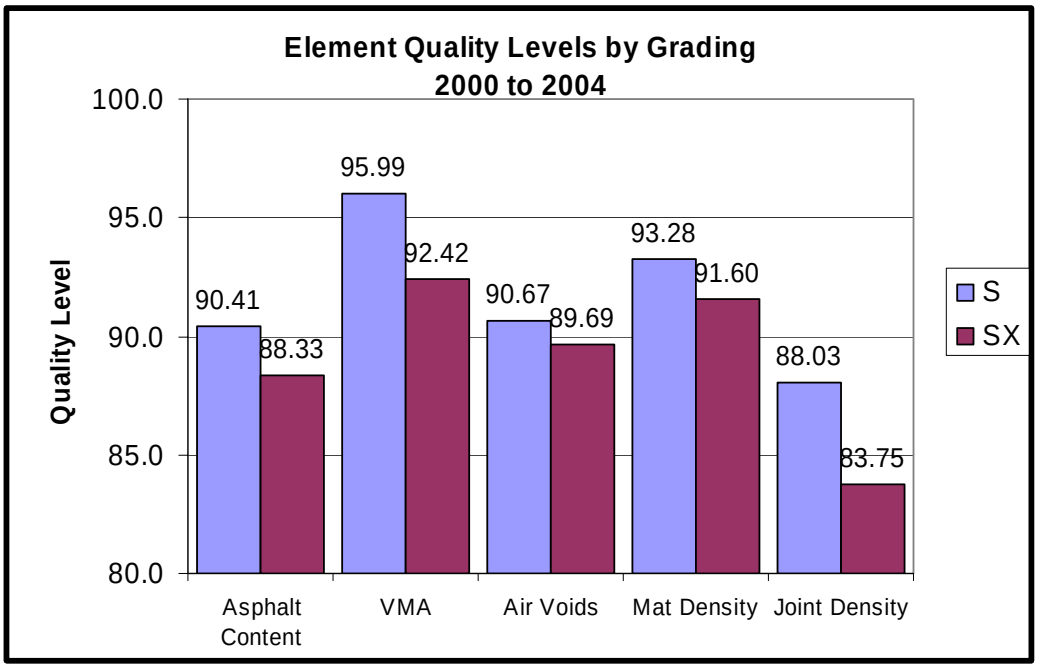

Figure 25. Element Quality Levels by Grading 2000 to 2004

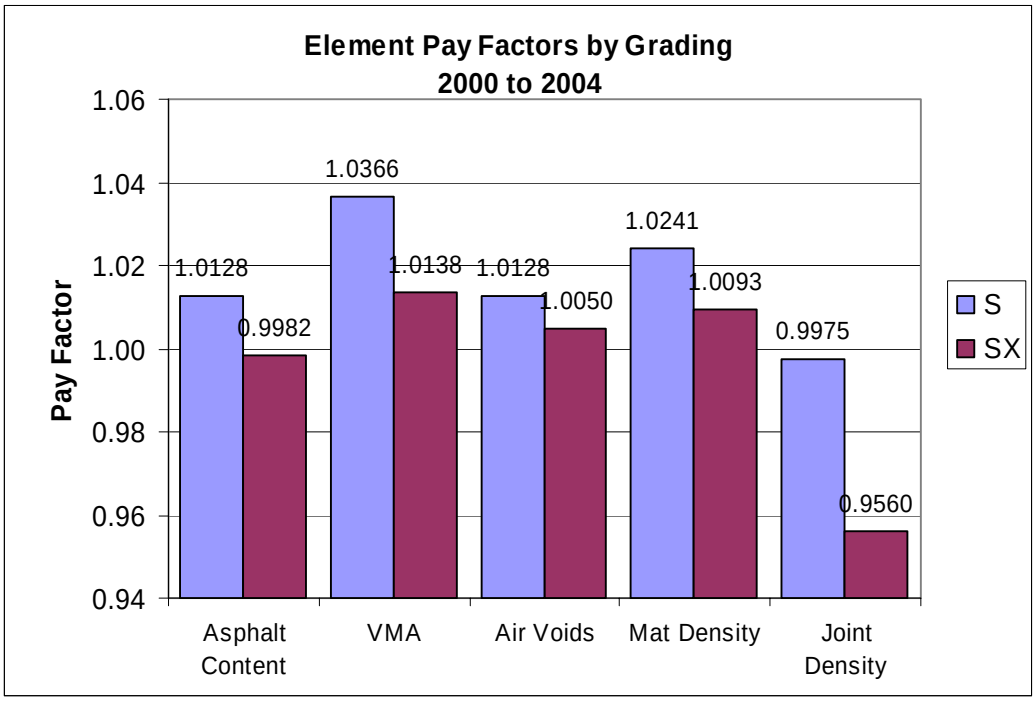

Figure 26. Element Pay Factors by Grading 2000 to 2004

6.10 Recap Reports, 2000 through 2004 Data

A series of recap reports for the information contained in this report 2000 through 2004 is presented in Appendix A. For each of the test elements a report is presented in which the data is grouped by year and then by region. The weighted averages are calculations for: price, quality level, pay factor, mean to target value, standard deviation, and standard deviation minus the V factor. These reports help evaluate the data by year and by region. When evaluating the results by region remember to consider the number of projects included in the grouping. Data sets with less than five observations are usually not considered very reliable. Appendix B contains a series of reports similar to those in Appendix A but the data is first grouped by grading. These reports are useful for evaluating the data by grading S or SX.

6.11 Yearly Reports for 2004 Projects

A series of detailed reports is presented in Appendix C that covers the test information for projects with a start date of 2004. These are detailed reports that contain all of the data and calculations not contained in previous reports. Specific information about each process can be found in these reports. Report number 11 details the project information by region and displays the total bid amount and the plan quantity. The Project Data report, report number 12, contains all of the test data for each project broken out by mix design and process number. This is a complete listing of the reported tests associated with the project. Calculations are displayed for: target value, mean, mean to target value, standard deviation, and standard deviation minus the V value. The Calculated Pay Factor Composite and Incentive/Disincentive Payment information is also detailed. 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 presented in report 13. For each region the number of projects and tons of material are displayed. The maximum, minimum, and average values are given for both CPFC and I/DP. Reports 14 through 18 detail the results for each of the elements: asphalt content, VMA, air voids, mat density and joint density. These reports contain all of the process information that is included in the evaluations. Calculations are given for each process that show the target value, mean, mean to target value, standard deviation, and standard deviation minus the V value. The reports are grouped by grading and grading results are calculated that show the best, worst and weighted average values. At the end of the report the overall results are given for the year showing the best, worst, and weighted averages.

7.0 SUMMARY

The voids acceptance specification and the projects are performing reasonably well at this time. The specification was released as a standard special provision in 1999. Experience with the new specification does seem to pay off when constructing projects. Some of the variability of the data reported in the first three years is most likely due to the newness of the specification and testing requirements. By 2003 most of the contractors had completed at least one VA project. The results for 2004 showed improvements in all areas. Joint density testing has been a requirement beginning in 2003. The initial results are somewhat low but are also expected to increase with experience.

Reviewing the CPFC is one way to evaluate the HMA. The CPFC represents the percentage increase or decrease to the unit price for HMA paid on the project. The worst results were shown in 2002 with an average CPFC of 0.9870. On average disincentives were applied to the projects constructed in this year. 2002 had the highest number of contractors constructing their first voids acceptance projects. In 2003 the average CPFC was above the neutral mark of 1.0 and incentives were being paid for most of the HMA. Improvements continued in 2004 with the CPFC improving by 0.007% from the previous year. For the five-year time period, 2000 through 2004, the overall average is 1.00848. Overall, 2000 through 2004, 25% of the projects have received some amount of disincentive payment. In 2000 the percentage receiving disincentive payments was 40%. In 2004 the percentage receiving disincentive payments had dropped to 16%.

Most of the element pay factors reported have shown good results. Eighteen of the twenty-two elements groupings are above 1.0 indicating that incentives are being paid. The yearly quality levels for each of the elements also show good results. The lowest reported quality level is 83.845 in the joint density element for 2004. However, this is only the second year that this element has been tested and included in the calculations for I/DP. The next lowest reported quality level is 87.678 in the percent asphalt element for 2003. At this level the calculated pay factor is just under the 1.0 value. All of the other reported quality levels are above this level and the associated pay factors are greater than 1.0, incentive payments being awarded. The mean to target value calculations show that the material is being

produced close to the midpoint of the specification. This increases the probability that the material will be within specification limits. The standard deviations reported for the test results show that the majority of the material being produced is below the variation of the historical data. The variation being reported in the joint density element has been equal to or above the V value in its first two years of being tested.

The results for the test elements are somewhat mixed. Reliable trends cannot be established on all of the elements. The data tends to vary over the five-year time period. Part of the variation is probably due to the newness of the specification and the time required for the contractors to gain experience on voids acceptance projects. Three of the test elements showed the following pattern: good initial results in the first and second years; in the second or third years there was a decrease; in the last two or three years the results have been increasing. This pattern can be seen in the percent asphalt, VMA, and air voids elements. These elements have all shown acceptable results and resulted in incentive payments being made. The five-year average quality levels have been: percent asphalt 89.855, VMA 95.041, and air voids 90.408. The mat density results have remained at a constant level, excluding 2000. The average quality level over the last four years is 93.1. The quality levels have been within 1% of each other over the last four years. Incentive payments of approximately 2% have been made on this element over this time period. Joint density testing has been a requirement since 2003. The results for 2004 are less than those reported in 2003. More data is required to fully evaluate this element.

The relationship between the test elements quality levels was also analyzed. The quality levels for VMA have been the best of any of the elements in each year. Mat density has had the next best results in the last four years. Percent asphalt had the third best results in the first three years. It had the worst results in the last two years. Air voids had the worst results in the first three years but then moved ahead of percent asphalt in the last two years. Joint density has only been tested since 2003. The results tend to be gapped in most instances, having the same ranking and same interval between elements. This is especially true when reviewing the results for 2003 and 2004.

One factor that might influence how the elements rank, lowest to highest, in quality levels is the importance given the test element by the specification, the weight assigned to the element. A high level of importance is given to the mat density element. Its W factor is equal to or higher than the other elements. This element ranks second in reported quality levels. The air voids element has the second highest W factor and is ranked third behind mat density. The VMA element has the highest reported quality levels but its weight is only 10%. The weight given the element and its reported quality levels does show a relationship in the mat density and air voids elements but this is not true for all of the elements. Overall there does seem to be a relationship between the element weight and the resulting quality levels, with the exception of the VMA element. Joint density has been a testing requirement for two years. This element is still too new and requires more data to be received before a good analysis can be completed on it. The current quality levels are acceptable and are expected to increase as more experience is gained. Except for joint density, all of the average pay factors are above 1.0.

Differences between grading S and SX were also analyzed. Only thirteen of the sixty-eight projects evaluated contained grading SX. Overall grading S has had better results in each year except 2002. However, only two grading SX projects were constructed in 2002. A good comparison of the two gradings is limited because of the small number of SX projects. Over the five-year time period, 2000 to 2004, grading S has a 0.005% higher CPFC than grading SX. Overall both gradings on average are receiving incentive payments. In evaluating the individual elements grading S has shown better results than SX. The difference in the quality levels of the percent asphalt, air voids, and mat density elements is 2.1% or less. The difference in the VMA element is 3.6%. The difference in the joint density element after two years of testing is 4.3%. The differences at this stage appear to be within reasonable limits. Seven of the ten pay factors are above 1.0 indicating that on average incentive payments are being awarded.

8.0 UPDATES AND CONTACT

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

REFERENCES

1. Standard Recommended Practice for *Acceptance Sampling Plans for Highway Construction*, AASHTO Designation: R9-97 (2000)

2. 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.

3. Hot Bituminous Pavement Voids Acceptance Review of QC/QA Data 2000 through 2003, (March 2005, Eric Chavez, Colorado Department of Transportation, 4201 East Arkansas Ave, Denver, CO 80222), Report No. CDOT-DTD-R-2005-8.

URLs

CDOT Library: http://www.dot.state.co.us/Publications/Library.htm
CDOT 2005 Construction Specifications Book:
http://www.dot.state.co.us/DesignSupport/Construction/2005SpecsBook/2005Book/2005text%201.htm
CDOT Standard Special Provisions:
http://www.dot.state.co.us/DesignSupport/Construction/2005SpecsBook/2005SSP/2005_SSP_Index.htm
CDOT Field Materials Manual:
http://www.dot.state.co.us/DesignSupport/Field%20Materials%20Manual/2007/Table%20of%20Contents%2007.pdf
CDOT Application Software: http://www.dot.state.co.us/ecsu/Products.asp

Appendix A

Recap Reports by Year 2000 through 2004

Asphalt Content - Recap by Year/Region, VA

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.
Processes with less than 3 tests not included.

				Weighted Average						
	Processes	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000										
Region: 1	2	12,317	16	$49.20	85.903	1.01275	0.16	0.129	0.200	-0.071
Region: 2	4	122,774	124	$29.91	92.988	1.02540	0.08	0.140	0.200	-0.060
Region: 4	7	74,292	74	$38.44	89.036	1.00066	0.11	0.139	0.200	-0.061
Region: 6	1	19,841	20	$46.00	80.347	0.95762	0.08	0.220	0.200	0.020
Totals 2000	14	229,224	234	$35.10	90.232	1.01083	0.10	0.146	0.200	-0.054
2001										
Region: 2	8	264,164	264	$28.34	93.476	1.02307	0.05	0.151	0.200	-0.049
Region: 4	12	250,023	251	$42.55	91.174	1.01805	0.09	0.145	0.200	-0.055
Region: 5	3	70,475	72	$33.31	83.847	0.97351	0.06	0.197	0.200	-0.003
Region: 6	1	53,879	54	$37.50	97.940	1.05500	0.01	0.131	0.200	-0.069
Totals 2001	24	638,541	641	$35.23	91.889	1.01833	0.06	0.152	0.200	-0.048
2002										
Region: 1	2	71,404	73	$33.86	97.826	1.05314	0.04	0.124	0.200	-0.076
Region: 2	6	128,628	154	$32.05	91.438	1.02333	0.05	0.159	0.200	-0.041
Region: 3	2	38,628	40	$36.38	85.786	0.99428	0.07	0.191	0.200	-0.009
Region: 4	4	75,069	76	$37.25	92.942	1.02971	0.10	0.136	0.200	-0.064
Region: 6	7	135,619	135	$39.88	91.990	1.02600	0.06	0.154	0.200	-0.046
Totals 2002	21	449,348	478	$35.94	92.385	1.02744	0.06	0.151	0.200	-0.049

	Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2003										
Region: 1	4	16,978	24	$36.39	76.824	0.97074	0.10	0.211	0.200	0.011
Region: 2	19	378,653	384	$32.48	88.593	1.00057	0.09	0.158	0.200	-0.042
Region: 3	7	149,180	150	$33.10	85.724	0.98792	0.04	0.199	0.200	-0.001
Region: 4	20	349,400	358	$33.93	87.134	0.98847	0.09	0.160	0.200	-0.040
Region: 5	1	113,295	117	$31.30	87.504	0.97305	0.02	0.195	0.200	-0.005
Region: 6	17	209,566	215	$37.44	89.296	1.01308	0.09	0.158	0.200	-0.042
Totals 2003	68	1,217,072	1248	$33.77	87.678	0.99472	0.08	0.168	0.200	-0.032
2004										
Region: 1	6	212,060	216	$35.59	94.832	1.04015	0.05	0.146	0.200	-0.054
Region: 2	8	194,420	198	$31.59	93.984	1.03561	0.05	0.152	0.200	-0.048
Region: 3	10	203,648	207	$33.89	90.767	1.01376	0.05	0.157	0.200	-0.043
Region: 4	22	258,707	260	$35.38	83.516	0.97984	0.11	0.174	0.200	-0.026
Region: 6	10	137,023	146	$32.72	87.829	0.98881	0.08	0.158	0.200	-0.042
Totals 2004	56	1,005,858	1027	$34.03	89.981	1.01142	0.07	0.158	0.200	-0.042

Asphalt Content - Totals 1/1/2000 to 12/31/2004.

Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
183	3,540,043	3,628	$34.47	89.855	1.00892	0.07	0.159	0.200	-0.041

VMA - Recap by Year/Region

Criteria: Projects with Bid Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

2000											
	Region: 1	2	12,317	16	$49.20	100.000	1.04260	0.07	0.318	0.600	-0.282
	Region: 2	4	122,774	124	$29.91	97.228	1.04863	0.31	0.460	0.600	-0.140
	Region: 4	7	74,292	74	$38.44	97.270	1.03894	0.20	0.431	0.600	-0.169
	Region: 6	2	19,841	20	$46.00	81.561	0.96184	0.51	0.669	0.600	0.069
Totals 2000		15	229,224	234	$35.10	96.034	1.03765	0.28	0.461	0.600	-0.139
2001											
	Region: 2	8	264,164	264	$28.34	97.385	1.04825	0.31	0.399	0.600	-0.201
	Region: 4	12	250,022	251	$42.55	98.561	1.04792	0.19	0.335	0.600	-0.265
	Region: 5	3	70,475	72	$33.31	87.015	0.99281	0.36	0.703	0.600	0.103
	Region: 6	1	53,879	54	$37.50	97.266	1.05500	0.21	0.514	0.600	-0.086
Totals 2001		24	638,540	641	$35.23	96.691	1.04257	0.26	0.417	0.600	-0.183
2002											
	Region: 1	2	71,404	73	$33.86	99.734	1.05500	0.31	0.334	0.600	-0.266
	Region: 2	6	124,628	151	$32.16	83.116	0.95988	0.36	0.716	0.600	0.116
	Region: 3	2	38,628	40	$36.38	97.374	1.05016	0.22	0.487	0.600	-0.113
	Region: 4	4	75,069	76	$37.25	100.000	1.05134	0.11	0.281	0.600	-0.319
	Region: 6	7	135,619	135	$39.88	94.941	1.04059	0.28	0.528	0.600	-0.072
Totals 2002		21	445,348	475	$36.01	93.464	1.02296	0.27	0.504	0.600	-0.096
2003											
	Region: 1	4	16,978	24	$36.39	98.666	1.03911	0.13	0.556	0.600	-0.044
	Region: 2	19	381,653	387	$32.47	91.868	1.01272	0.49	0.350	0.600	-0.250
	Region: 3	8	149,180	150	$33.10	87.540	0.98846	0.52	0.483	0.600	-0.117
	Region: 4	20	350,400	359	$33.91	97.916	1.04791	0.29	0.372	0.600	-0.228
	Region: 5	1	113,295	117	$31.30	90.584	0.99861	0.32	0.646	0.600	0.046
	Region: 6	17	211,544	217	$37.44	96.939	1.04511	0.31	0.455	0.600	-0.145
Totals 2003		69	1,223,050	1254	$33.77	93.925	1.02450	0.38	0.421	0.600	-0.179

	Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	6	212,060	216	$35.59	94.300	1.02659	0.28	0.472	0.600	-0.128
Region: 2	8	194,420	198	$31.59	95.801	1.03156	0.26	0.398	0.600	-0.202
Region: 3	10	203,648	207	$33.89	96.283	1.03756	0.44	0.355	0.600	-0.245
Region: 4	22	258,707	260	$35.38	94.667	1.02351	0.28	0.458	0.600	-0.142
Region: 6	10	137,023	145	$32.72	99.714	1.04843	0.15	0.385	0.600	-0.215
Totals 2004	56	1,005,858	1026	$34.03	95.823	1.03195	0.29	0.419	0.600	-0.181

VMA - Totals 1/1/2000 to 12/31/2004.

Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
185	3,542,020	3,630	$34.47	95.041	1.03053	0.31	0.433	0.600	-0.167

Air Voids - Recap by Year/Region

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

				Weighted Average:						
	Process	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000										
Region: 1	2	12,317	16	$49.20	98.668	1.04260	0.39	0.416	0.600	-0.184
Region: 2	4	122,774	124	$29.91	86.690	0.98077	0.38	0.596	0.600	-0.004
Region: 4	7	74,292	74	$38.44	85.698	0.99318	0.51	0.583	0.600	-0.017
Region: 6	1	19,841	20	$46.00	96.268	1.05000	0.31	0.513	0.600	-0.087
Totals: 2000	14	229,224	234	$35.10	87.841	0.99411	0.42	0.575	0.600	-0.025
2001										
Region: 2	7	243,164	243	$28.55	91.065	1.00889	0.28	0.601	0.600	0.001
Region: 4	12	250,022	251	$42.55	92.251	1.02304	0.33	0.505	0.600	-0.095
Region: 5	3	70,475	72	$33.31	83.789	0.97401	0.26	0.806	0.600	0.206
Region: 6	1	53,879	54	$37.50	93.666	1.02977	0.47	0.482	0.600	-0.118
Totals: 2001	23	617,540	620	$35.54	90.942	1.01246	0.31	0.575	0.600	-0.025
2002										
Region: 1	2	71,404	73	$33.86	98.602	1.05500	0.20	0.423	0.600	-0.177
Region: 2	6	124,628	137	$32.14	76.457	0.91225	0.40	0.815	0.600	0.215
Region: 3	2	38,628	40	$36.38	90.137	1.02080	0.10	0.722	0.600	0.122
Region: 4	4	75,069	76	$37.25	98.282	1.05049	0.17	0.451	0.600	-0.149
Region: 6	7	135,619	135	$39.88	91.662	1.02678	0.23	0.634	0.600	0.034
Totals: 2002	21	445,348	461	$36.00	89.503	1.00273	0.25	0.628	0.600	0.028

				Weighted Average:						
	Process	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2003										
Region: 1	4	16,978	24	$36.39	77.461	0.96446	0.32	0.893	0.600	0.293
Region: 2	19	381,653	387	$32.47	91.320	1.01942	0.36	0.516	0.600	-0.084
Region: 3	8	149,180	150	$33.10	80.952	0.95816	0.50	0.732	0.600	0.132
Region: 4	20	350,400	359	$33.91	89.851	1.00588	0.44	0.559	0.600	-0.041
Region: 5	1	113,295	117	$31.30	88.851	0.98425	0.01	0.757	0.600	0.157
Region: 6	17	210,579	216	$37.44	92.230	1.03160	0.32	0.577	0.600	-0.023
Totals: 2003	69	1,222,085	1253	$33.76	89.369	1.00613	0.36	0.593	0.600	-0.007
2004										
Region: 1	6	212,060	216	$35.59	91.010	1.01241	0.34	0.588	0.600	-0.012
Region: 2	8	194,420	198	$31.59	92.661	1.02169	0.28	0.584	0.600	-0.016
Region: 3	10	203,648	207	$33.89	95.255	1.03673	0.29	0.479	0.600	-0.121
Region: 4	22	258,707	260	$35.38	88.974	1.01124	0.40	0.568	0.600	-0.032
Region: 6	10	137,023	145	$32.72	95.880	1.04013	0.14	0.538	0.600	-0.062
Totals: 2004	56	1,005,858	1026	$34.03	92.328	1.02260	0.31	0.553	0.600	-0.047

Air Voids - Totals 1/1/2000 to 12/31/2004.

				Weighted Average:						
Process	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
183	3,520,055	3,594	$34.52	90.408	1.01074	0.33	0.582	0.600	-0.018

Mat Density - Recap by Year/Region, Voids

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

Compaction Test Sections not included.

				Weighted Average:						
	Process	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000										
Region: 1	2	12,317	31	$49.20	94.174	1.04331	0.458	0.989	1.100	-0.111
Region: 2	4	122,274	246	$29.91	91.387	0.99865	0.696	0.901	1.100	-0.199
Region: 4	7	73,514	146	$38.46	82.829	0.96848	0.813	1.155	1.100	0.055
Region: 6	2	19,841	40	$46.00	96.410	1.05194	0.386	0.892	1.100	-0.208
Totals 2000	15	227,946	463	$35.11	89.214	0.99597	0.694	0.987	1.100	-0.113
2001										
Region: 2	8	262,664	526	$28.33	92.495	1.01264	0.637	0.890	1.100	-0.210
Region: 4	12	222,468	450	$43.30	95.578	1.03916	0.695	0.774	1.100	-0.326
Region: 5	2	47,412	96	$33.31	82.510	0.94405	0.383	1.422	1.100	0.322
Region: 6	1	53,879	108	$37.50	98.934	1.06000	0.160	0.777	1.100	-0.323
Totals 2001	23	586,423	1,180	$35.25	93.449	1.02151	0.595	0.879	1.100	-0.221
2002										
Region: 1	1	37,338	76	$36.05	95.177	1.03804	0.317	0.972	1.100	-0.128
Region: 2	6	128,628	260	$32.05	96.066	1.03847	0.483	0.793	1.100	-0.307
Region: 3	1	26,341	50	$35.47	87.899	0.98844	0.140	1.292	1.100	0.192
Region: 4	5	75,069	158	$37.25	85.665	0.97372	0.946	0.969	1.100	-0.131
Region: 6	10	141,141	274	$39.97	93.925	1.03793	0.566	0.859	1.100	-0.241
Totals 2002	23	408,517	818	$36.33	92.807	1.02312	0.559	0.897	1.100	-0.203

				Weighted Average:						
	Process	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2003										
Region: 1	4	16,978	41	$36.39	92.332	1.03273	0.530	0.856	1.100	-0.244
Region: 2	18	338,117	682	$32.58	92.822	1.02437	0.581	0.894	1.100	-0.206
Region: 3	6	127,131	258	$33.73	90.702	1.00589	0.523	1.073	1.100	-0.027
Region: 4	21	318,891	644	$33.99	94.863	1.03603	0.393	0.899	1.100	-0.201
Region: 5	1	107,489	221	$31.30	92.700	1.00664	0.149	1.108	1.100	0.008
Region: 6	18	210,133	443	$37.45	95.179	1.03709	0.291	0.807	1.100	-0.293
Totals 2003	68	1,118,739	2,289	$33.96	93.586	1.02641	0.424	0.919	1.100	-0.181
2004										
Region: 1	4	174,036	351	$35.89	91.312	1.00695	0.379	1.097	1.100	-0.003
Region: 2	8	193,420	390	$31.59	93.773	1.02650	0.525	0.896	1.100	-0.204
Region: 3	7	164,320	331	$34.46	91.038	1.00730	0.315	1.109	1.100	0.009
Region: 4	18	201,690	404	$35.74	94.559	1.03440	0.580	0.858	1.100	-0.242
Region: 6	10	134,538	274	$32.74	91.771	1.00986	0.410	1.030	1.100	-0.070
Totals 2004	47	868,004	1,750	$34.14	92.634	1.01820	0.451	0.989	1.100	-0.111

Mat Density - Totals 1/1/2000 to 12/31/20

			Weighted Average:						
Process	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
176	3,209,629	6,500	$34.63	92.894	1.02071	0.499	0.932	1.100	-0.168

Joint Density - Recap by Year/Region, VA

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

				Weighted Average:							
	Processes	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
2003											
Region: 2	13	334,800	188	88.795	1.00092	92.00	90.173	1.997	1.518	1.60	-0.082
Region: 3	2	78,685	38	95.028	1.03214	92.00	91.359	0.641	1.670	1.60	0.070
Region: 4	9	242,139	131	96.133	1.04205	92.00	91.185	0.995	1.571	1.60	-0.029
Region: 6	4	74,936	41	71.952	0.91940	92.00	89.437	2.563	1.991	1.60	0.391
Totals 2003	28	730,560	398	90.171	1.00955	92.00	90.561	1.577	1.600	1.60	0.000
2004											
Region: 1	4	170,859	92	88.557	0.99493	92.00	90.385	1.615	1.553	1.60	-0.047
Region: 2	6	188,581	105	93.199	1.03979	92.00	90.671	1.329	1.679	1.60	0.079
Region: 3	3	159,343	142	72.323	0.86084	92.00	89.277	2.723	2.169	1.60	0.569
Region: 4	6	180,327	111	88.858	0.99511	92.00	90.693	1.892	1.449	1.60	-0.151
Region: 6	8	137,023	102	71.897	0.90290	92.00	89.255	2.745	1.776	1.60	0.176
Totals 2004	27	836,133	552	83.845	0.96445	92.00	90.120	2.007	1.713	1.60	0.113

Joint Density Totals 1/1/2000 to 12/31/2004

				Weighted Average:							
Processes	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
55	1,566,693	950	86.795	0.98548	92.00	90.325	1.806	1.661	1.60	0.061

Appendix B

Recap Reports by Grading/Year 2000 through 2004

Asphalt Content - Recap by Grading/Year/Region, VA

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.
Processes with less than 3 tests not included.

Grading: S

					Weighted Average						
		Processes	Tons	Tests	Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000											
	Region: 1	2	12,317	16	$49.20	85.903	1.01275	0.16	0.129	0.200	-0.071
	Region: 2	4	122,774	124	$29.91	92.988	1.02540	0.08	0.140	0.200	-0.060
	Region: 4	7	74,292	74	$38.44	89.036	1.00066	0.11	0.139	0.200	-0.061
	Region: 6	1	19,841	20	$46.00	80.347	0.95762	0.08	0.220	0.200	0.020
Totals 2000		14	229,224	234	$35.10	90.232	1.01083	0.10	0.146	0.200	-0.054
2001											
	Region: 2	8	264,164	264	$28.34	93.476	1.02307	0.05	0.151	0.200	-0.049
	Region: 4	12	250,023	251	$42.55	91.174	1.01805	0.09	0.145	0.200	-0.055
	Region: 6	1	53,879	54	$37.50	97.940	1.05500	0.01	0.131	0.200	-0.069
Totals 2001		21	568,066	569	$35.46	92.886	1.02389	0.06	0.147	0.200	-0.053
2002											
	Region: 2	6	128,628	154	$32.05	91.438	1.02333	0.05	0.159	0.200	-0.041
	Region: 4	4	75,069	76	$37.25	92.942	1.02971	0.10	0.136	0.200	-0.064
	Region: 6	7	135,619	135	$39.88	91.990	1.02600	0.06	0.154	0.200	-0.046
Totals 2002		17	339,316	365	$36.33	91.991	1.02581	0.07	0.152	0.200	-0.048
2003											
	Region: 1	4	16,978	24	$36.39	76.824	0.97074	0.10	0.211	0.200	0.011
	Region: 2	16	338,653	344	$32.47	89.878	1.00904	0.09	0.153	0.200	-0.047
	Region: 4	18	346,551	352	$33.85	87.466	0.98952	0.09	0.160	0.200	-0.040
	Region: 6	16	202,566	208	$37.25	89.622	1.01378	0.09	0.156	0.200	-0.044
Totals 2003		54	904,748	928	$34.14	88.652	1.00191	0.09	0.158	0.200	-0.042

Grading: S

	Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	1	39,910	40	$30.00	95.002	1.04167	0.03	0.152	0.200	-0.048
Region: 2	8	194,420	198	$31.59	93.984	1.03561	0.05	0.152	0.200	-0.048
Region: 4	15	210,007	211	$34.27	83.998	0.98275	0.11	0.175	0.200	-0.025
Region: 6	8	115,567	124	$31.74	91.688	1.01518	0.06	0.156	0.200	-0.044
Totals 2004	32	559,904	573	$32.51	89.837	1.01200	0.07	0.161	0.200	-0.039

Totals Grading: S

Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
138	2,601,258	2669	$34.45	90.407	1.01278	0.08	0.154	0.200	-0.046

Grading: SX

	Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2001										
Region: 5	3	70,475	72	$33.31	83.847	0.97351	0.06	0.197	0.200	-0.003
Totals 2001	3	70,475	72	$33.31	83.847	0.97351	0.06	0.197	0.200	-0.003
2002										
Region: 1	2	71,404	73	$33.86	97.826	1.05314	0.04	0.124	0.200	-0.076
Region: 3	2	38,628	40	$36.38	85.786	0.99428	0.07	0.191	0.200	-0.009
Totals 2002	4	110,032	113	$34.74	93.599	1.03248	0.05	0.148	0.200	-0.052
2003										
Region: 2	3	40,000	40	$32.52	77.711	0.92887	0.11	0.195	0.200	-0.005
Region: 3	7	149,180	150	$33.10	85.724	0.98792	0.04	0.199	0.200	-0.001
Region: 4	2	2,849	6	$43.00	46.730	0.86015	0.33	0.206	0.200	0.006
Region: 5	1	113,295	117	$31.30	87.504	0.97305	0.02	0.195	0.200	-0.005
Region: 6	1	7,000	7	$42.75	79.880	0.99276	0.11	0.214	0.200	0.014
Totals 2003	14	312,324	320	$32.68	84.857	0.97390	0.05	0.198	0.200	-0.002

Grading: SX

	Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	5	172,150	176	$36.88	94.792	1.03979	0.05	0.144	0.200	-0.056
Region: 3	10	203,648	207	$33.89	90.767	1.01376	0.05	0.157	0.200	-0.043
Region: 4	7	48,700	49	$40.17	81.436	0.96729	0.10	0.166	0.200	-0.034
Region: 6	2	21,456	22	$38.00	67.048	0.84677	0.23	0.170	0.200	-0.030
Totals 2004	24	445,954	454	$35.93	90.161	1.01070	0.07	0.154	0.200	-0.046

Totals Grading: SX

Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
45	938,785	959	$34.51	88.325	0.99822	0.06	0.171	0.200	-0.029

Asphalt Content - Totals 1/1/2000 to 12/31/2004.

Processes	Tons	Tests	Weighted Average Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
183	3,540,043	3,628	$34.47	89.855	1.00892	0.07	0.159	0.200	-0.041

VMA - Recap by Grading/Year/Region

Criteria: Projects with Bid Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

Grading: S

	Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000										
Region: 1	2	12,317	16	$49.20	100.000	1.04260	0.07	0.318	0.600	-0.282
Region: 2	4	122,774	124	$29.91	97.228	1.04863	0.31	0.460	0.600	-0.140
Region: 4	7	74,292	74	$38.44	97.270	1.03894	0.20	0.431	0.600	-0.169
Region: 6	2	19,841	20	$46.00	81.561	0.96184	0.51	0.669	0.600	0.069
Totals 2000	15	229,224	234	$35.10	96.034	1.03765	0.28	0.461	0.600	-0.139
2001										
Region: 2	8	264,164	264	$28.34	97.385	1.04825	0.31	0.399	0.600	-0.201
Region: 4	12	250,022	251	$42.55	98.561	1.04792	0.19	0.335	0.600	-0.265
Region: 6	1	53,879	54	$37.50	97.266	1.05500	0.21	0.514	0.600	-0.086
Totals 2001	21	568,065	569	$35.46	97.891	1.04875	0.24	0.382	0.600	-0.218
2002										
Region: 2	6	124,628	151	$32.16	83.116	0.95988	0.36	0.716	0.600	0.116
Region: 4	4	75,069	76	$37.25	100.000	1.05134	0.11	0.281	0.600	-0.319
Region: 6	7	135,619	135	$39.88	94.941	1.04059	0.28	0.528	0.600	-0.072
Totals 2002	17	335,316	362	$36.42	91.679	1.01300	0.27	0.543	0.600	-0.057
2003										
Region: 1	4	16,978	24	$36.39	98.666	1.03911	0.13	0.556	0.600	-0.044
Region: 2	16	340,653	346	$32.46	95.827	1.03886	0.41	0.360	0.600	-0.240
Region: 4	18	347,551	353	$33.84	97.966	1.04810	0.29	0.371	0.600	-0.229
Region: 6	16	204,544	210	$37.26	96.834	1.04545	0.31	0.459	0.600	-0.141
Totals 2003	54	909,726	933	$34.14	96.924	1.04388	0.34	0.390	0.600	-0.210

Grading: S

	Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	1	39,910	40	$30.00	83.176	0.95759	0.47	0.731	0.600	0.131
Region: 2	8	194,420	198	$31.59	95.801	1.03156	0.26	0.398	0.600	-0.202
Region: 4	15	210,007	211	$34.27	94.101	1.02158	0.27	0.462	0.600	-0.138
Region: 6	8	115,567	123	$31.74	99.839	1.04890	0.11	0.386	0.600	-0.214
Totals 2004	32	559,904	572	$32.51	95.097	1.02612	0.25	0.444	0.600	-0.156

Totals Grading: S

Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
139	2,602,235	2,670	$34.46	95.988	1.03659	0.28	0.426	0.600	-0.174

Grading: SX

	Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2001										
Region: 5	3	70,475	72	$33.31	87.015	0.99281	0.36	0.703	0.600	0.103
Totals 2001	3	70,475	72	$33.31	87.015	0.99281	0.36	0.703	0.600	0.103
2002										
Region: 1	2	71,404	73	$33.86	99.734	1.05500	0.31	0.334	0.600	-0.266
Region: 3	2	38,628	40	$36.38	97.374	1.05016	0.22	0.487	0.600	-0.113
Totals 2002	4	110,032	113	$34.74	98.906	1.05330	0.28	0.388	0.600	-0.212
2003										
Region: 2	3	41,000	41	$32.53	58.976	0.79556	1.12	0.268	0.600	-0.332
Region: 3	8	149,180	150	$33.10	87.540	0.98846	0.52	0.483	0.600	-0.117
Region: 4	2	2,849	6	$43.00	91.760	1.02500	0.65	0.427	0.600	-0.173
Region: 5	1	113,295	117	$31.30	90.584	0.99861	0.32	0.646	0.600	0.046
Region: 6	1	7,000	7	$42.75	100.000	1.03500	0.33	0.340	0.600	-0.260
Totals 2003	15	313,324	321	$32.68	85.220	0.96826	0.52	0.510	0.600	-0.090

Grading: SX

	Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	5	172,150	176	$36.88	96.879	1.04259	0.24	0.412	0.600	-0.188
Region: 3	10	203,648	207	$33.89	96.283	1.03756	0.44	0.355	0.600	-0.245
Region: 4	7	48,700	49	$40.17	97.108	1.03182	0.28	0.437	0.600	-0.163
Region: 6	2	21,456	22	$38.00	99.040	1.04593	0.35	0.381	0.600	-0.219
Totals 2004	24	445,954	454	$35.93	96.736	1.03928	0.34	0.387	0.600	-0.213

Totals Grading: SX

Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
46	939,785	960	$34.51	92.421	1.01376	0.40	0.452	0.600	-0.148

VMA - Totals 1/1/2000 to 12/31/2004.

Processes	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
185	3,542,020	3,630	$34.47	95.041	1.03053	0.31	0.433	0.600	-0.167

Air Voids - Recap by Grading/Year/Region

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

Grading: S

	Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000										
Region: 1	2	12,317	16	$49.20	98.668	1.04260	0.39	0.416	0.600	-0.184
Region: 2	4	122,774	124	$29.91	86.690	0.98077	0.38	0.596	0.600	-0.004
Region: 4	7	74,292	74	$38.44	85.698	0.99318	0.51	0.583	0.600	-0.017
Region: 6	1	19,841	20	$46.00	96.268	1.05000	0.31	0.513	0.600	-0.087
Totals: 2000	14	229,224	234	$35.10	87.841	0.99411	0.42	0.575	0.600	-0.025
2001										
Region: 2	7	243,164	243	$28.55	91.065	1.00889	0.28	0.601	0.600	0.001
Region: 4	12	250,022	251	$42.55	92.251	1.02304	0.33	0.505	0.600	-0.095
Region: 6	1	53,879	54	$37.50	93.666	1.02977	0.47	0.482	0.600	-0.118
Totals: 2001	20	547,065	548	$35.83	91.863	1.01741	0.32	0.545	0.600	-0.055
2002										
Region: 2	6	124,628	137	$32.14	76.457	0.91225	0.40	0.815	0.600	0.215
Region: 4	4	75,069	76	$37.25	98.282	1.05049	0.17	0.451	0.600	-0.149
Region: 6	7	135,619	135	$39.88	91.662	1.02678	0.23	0.634	0.600	0.034
Totals: 2002	17	335,316	348	$36.41	87.493	0.98952	0.28	0.660	0.600	0.060
2003										
Region: 1	4	16,978	24	$36.39	77.461	0.96446	0.32	0.893	0.600	0.293
Region: 2	16	340,653	346	$32.46	92.608	1.02578	0.30	0.525	0.600	-0.075
Region: 4	18	347,551	353	$33.84	89.768	1.00572	0.44	0.559	0.600	-0.041
Region: 6	16	203,579	209	$37.26	92.364	1.03169	0.33	0.568	0.600	-0.032
Totals: 2003	54	908,761	932	$34.14	91.184	1.01829	0.36	0.554	0.600	-0.046

Grading: S

	Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	1	39,910	40	$30.00	92.372	1.02380	0.30	0.617	0.600	0.017
Region: 2	8	194,420	198	$31.59	92.661	1.02169	0.28	0.584	0.600	-0.016
Region: 4	15	210,007	211	$34.27	88.502	1.00980	0.43	0.574	0.600	-0.026
Region: 6	8	115,567	123	$31.74	95.777	1.03947	0.11	0.558	0.600	-0.042
Totals: 2004	32	559,904	572	$32.51	91.724	1.02105	0.30	0.577	0.600	-0.023

Totals Grading: S

Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
137	2,580,270	2634	$34.53	90.669	1.01282	0.33	0.573	0.600	-0.027

Grading: SX

	Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2001										
Region: 5	3	70,475	72	$33.31	83.789	0.97401	0.26	0.806	0.600	0.206
Totals: 2001	3	70,475	72	$33.31	83.789	0.97401	0.26	0.806	0.600	0.206
2002										
Region: 1	2	71,404	73	$33.86	98.602	1.05500	0.20	0.423	0.600	-0.177
Region: 3	2	38,628	40	$36.38	90.137	1.02080	0.10	0.722	0.600	0.122
Totals: 2002	4	110,032	113	$34.74	95.631	1.04299	0.17	0.528	0.600	-0.072
2003										
Region: 2	3	41,000	41	$32.53	80.616	0.96658	0.87	0.441	0.600	-0.159
Region: 3	8	149,180	150	$33.10	80.952	0.95816	0.50	0.732	0.600	0.132
Region: 4	2	2,849	6	$43.00	100.000	1.02500	0.23	0.650	0.600	0.050
Region: 5	1	113,295	117	$31.30	88.851	0.98425	0.01	0.757	0.600	0.157
Region: 6	1	7,000	7	$42.75	88.339	1.02885	0.03	0.818	0.600	0.218
Totals: 2003	15	313,324	321	$32.68	84.103	0.97088	0.36	0.704	0.600	0.104

Grading: SX

	Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	5	172,150	176	$36.88	90.694	1.00977	0.35	0.581	0.600	-0.019
Region: 3	10	203,648	207	$33.89	95.255	1.03673	0.29	0.479	0.600	-0.121
Region: 4	7	48,700	49	$40.17	91.006	1.01745	0.30	0.544	0.600	-0.056
Region: 6	2	21,456	22	$38.00	96.438	1.04365	0.34	0.430	0.600	-0.170
Totals: 2004	24	445,954	454	$35.93	93.087	1.02455	0.31	0.523	0.600	-0.077

Totals Grading: SX

Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
46	939,785	960	$34.51	89.692	1.00503	0.31	0.605	0.600	0.005

Air Voids - Totals 1/1/2000 to 12/31/2004.

Process	Tons	Tests	Weighted Average: Price	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
183	3,520,055	3,594	$34.52	90.408	1.01074	0.33	0.582	0.600	-0.018

Mat Density - Recap by Grading/Year/Region, VA

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

Compaction Test Sections not included.

Grading: S

	Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2000										
Region: 1	2	12,317	31	$49.20	94.174	1.04331	0.458	0.989	1.100	-0.111
Region: 2	4	122,274	246	$29.91	91.387	0.99865	0.696	0.901	1.100	-0.199
Region: 4	7	73,514	146	$38.46	82.829	0.96848	0.813	1.155	1.100	0.055
Region: 6	2	19,841	40	$46.00	96.410	1.05194	0.386	0.892	1.100	-0.208
Totals 2000	15	227,946	463	$35.11	89.214	0.99597	0.694	0.987	1.100	-0.113
2001										
Region: 2	8	262,664	526	$28.33	92.495	1.01264	0.637	0.890	1.100	-0.210
Region: 4	12	222,468	450	$43.30	95.578	1.03916	0.695	0.774	1.100	-0.326
Region: 6	1	53,879	108	$37.50	98.934	1.06000	0.160	0.777	1.100	-0.323
Totals 2001	21	539,011	1,084	$35.42	94.411	1.02832	0.613	0.831	1.100	-0.269
2002										
Region: 2	6	128,628	260	$32.05	96.066	1.03847	0.483	0.793	1.100	-0.307
Region: 4	5	75,069	158	$37.25	85.665	0.97372	0.946	0.969	1.100	-0.131
Region: 6	10	141,141	274	$39.97	93.925	1.03793	0.566	0.859	1.100	-0.241
Totals 2002	21	344,838	692	$36.42	92.926	1.02415	0.618	0.858	1.100	-0.242
2003										
Region: 1	4	16,978	41	$36.39	92.332	1.03273	0.530	0.856	1.100	-0.244
Region: 2	17	311,117	628	$32.60	92.566	1.02258	0.581	0.900	1.100	-0.200
Region: 4	21	318,891	644	$33.99	94.863	1.03603	0.393	0.899	1.100	-0.201
Region: 6	16	202,015	426	$37.24	95.403	1.03801	0.240	0.827	1.100	-0.273
Totals 2003	58	849,001	1,739	$34.30	94.099	1.03151	0.428	0.881	1.100	-0.219

Grading: S

	Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	1	39,910	80	$30.00	88.765	0.98671	0.381	1.206	1.100	0.106
Region: 2	8	193,420	390	$31.59	93.773	1.02650	0.525	0.896	1.100	-0.204
Region: 4	13	168,894	338	$34.58	94.135	1.03246	0.579	0.876	1.100	-0.224
Region: 6	8	113,082	230	$31.74	90.416	1.00155	0.415	1.089	1.100	-0.011
Totals 2004	30	515,306	1,038	$32.48	92.767	1.01990	0.507	0.956	1.100	-0.144

Totals - Grading: S

Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
145	2,476,102	5,016	$34.54	93.277	1.02410	0.536	0.892	1.100	-0.208

Grading: SX

	Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2001										
Region: 5	2	47,412	96	$33.31	82.510	0.94405	0.383	1.422	1.100	0.322
Totals 2001	2	47,412	96	$33.31	82.510	0.94405	0.383	1.422	1.100	0.322
2002										
Region: 1	1	37,338	76	$36.05	95.177	1.03804	0.317	0.972	1.100	-0.128
Region: 3	1	26,341	50	$35.47	87.899	0.98844	0.140	1.292	1.100	0.192
Totals 2002	2	63,679	126	$35.81	92.166	1.01752	0.244	1.104	1.100	0.004
2003										
Region: 2	1	27,000	54	$32.41	95.771	1.04500	0.585	0.825	1.100	-0.275
Region: 3	6	127,131	258	$33.73	90.702	1.00589	0.523	1.073	1.100	-0.027
Region: 5	1	107,489	221	$31.30	92.700	1.00664	0.149	1.108	1.100	0.008
Region: 6	2	8,118	17	$42.75	89.610	1.01415	1.552	0.313	1.100	-0.787
Totals 2003	10	269,738	550	$32.90	91.973	1.01035	0.411	1.039	1.100	-0.061

Grading: SX

	Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
2004										
Region: 1	3	134,126	271	$37.64	92.070	1.01297	0.378	1.065	1.100	-0.035
Region: 3	7	164,320	331	$34.46	91.038	1.00730	0.315	1.109	1.100	0.009
Region: 4	5	32,796	66	$41.75	96.740	1.04440	0.582	0.763	1.100	-0.337
Region: 6	2	21,456	44	$38.00	98.915	1.05364	0.387	0.720	1.100	-0.380
Totals 2004	17	352,698	712	$36.56	92.440	1.01573	0.368	1.036	1.100	-0.064

Totals - Grading: SX

Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
31	733,527	1,484	$34.94	91.602	1.00927	0.374	1.068	1.100	-0.032

Mat Density - Totals 1/1/2000 to 12/31/20

Process	Tons	Tests	Price	Weighted Average: Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
176	3,209,629	6,500	$34.63	92.894	1.02071	0.499	0.932	1.100	-0.168

Joint Density - Recap by Grading/Year/Region, VA

Criteria: Projects with Start Dates from 1/1/2000 to 12/31/2004.

Processes with less than 3 tests not included.

Grading S

	Processes	Tons	Tests	Weighted Average: Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
2003											
Region: 2	12	311,196	170	88.773	0.99986	92.00	90.175	2.009	1.500	1.60	-0.100
Region: 4	9	242,139	131	96.133	1.04205	92.00	91.185	0.995	1.571	1.60	-0.029
Region: 6	4	74,936	41	71.952	0.91940	92.00	89.437	2.563	1.991	1.60	0.391
Totals 2003	25	628,271	342	89.603	1.00652	92.00	90.476	1.684	1.586	1.60	-0.014
2004											
Region: 1	1	34,798	19	64.423	0.83893	92.00	88.910	3.090	2.422	1.60	0.822
Region: 2	6	188,581	105	93.199	1.03979	92.00	90.671	1.329	1.679	1.60	0.079
Region: 4	5	146,531	83	93.212	1.02467	92.00	91.160	1.561	1.492	1.60	-0.108
Region: 6	7	115,567	95	71.597	0.89247	92.00	89.308	2.692	1.830	1.60	0.230
Totals 2004	19	485,477	302	85.998	0.98576	92.00	90.368	1.850	1.712	1.60	0.112
Totals Grading S	44	1,113,748	644	88.032	0.99747	92.00	90.429	1.756	1.641	1.60	0.041

Grading SX

	Processes	Tons	Tests	Weighted Average: Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
2003											
Region: 2	1	23,604	18	89.075	1.01484	92.00	90.150	1.850	1.759	1.60	0.159
Region: 3	2	78,685	38	95.028	1.03214	92.00	91.359	0.641	1.670	1.60	0.070
Totals 2003	3	102,289	56	93.654	1.02815	92.00	91.080	0.920	1.690	1.60	0.090
2004											
Region: 1	3	136,061	73	94.729	1.03483	92.00	90.763	1.237	1.331	1.60	-0.269
Region: 3	3	159,343	142	72.323	0.86084	92.00	89.277	2.723	2.169	1.60	0.569
Region: 4	1	33,796	28	69.981	0.86694	92.00	88.670	3.330	1.265	1.60	-0.335
Region: 6	1	21,456	7	73.509	0.95908	92.00	88.970	3.030	1.483	1.60	-0.117
Totals 2004	8	350,656	250	80.864	0.93495	92.00	89.776	2.224	1.715	1.60	0.115
Totals Grading SX	11	452,945	306	83.752	0.95600	92.00	90.071	1.929	1.709	1.60	0.109

Joint Density Totals

1/1/2000 to 12/31/2004

Processes	Tons	Tests	Weighted Average: Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
55	1,566,693	950	86.795	0.98548	92.00	90.325	1.806	1.661	1.60	0.061

Appendix C

Detailed Reports for 2004 Projects

Project Listing by Start Date/Region/Subaccount - Voids Acceptance

Projects with Start Dates from 1/1/2004 to 12/31/2004.

Region: **1**

Subacct.	Project Code	Location	Supplier	Bid Date	Start Date	Total Bid	Plan Quant.
13818	STA 0405-030	SH 40 Kit Carson East	19	03/04/04	8/30/2004	$4,873,435.70	84,282
14560	IM 0704-203	I-70, Genoa - East	14	01/15/04	5/4/2004	$2,671,609.00	55,809
14657	STA C470-026	SH 83/86 Resurfacing	19	03/18/04	5/18/2004	$5,191,685.47	72,845

Number of Projects 3 ***Total Plan Quantity*** 212,936

Region: **2**

Subacct.	Project Code	Location	Supplier	Bid Date	Start Date	Total Bid	Plan Quant.
14146	STA 1604-008	Pritchett East to	11	02/05/04	3/29/2004	$2,480,778.27	55,467
14209	NH 0504-046	US 50 Troy to SH 233	19	03/18/04	6/14/2004	$2,300,381.95	46,216
14212	STA 165A-010	SH 165 overlay I-25 to W of R	32	05/20/04	8/2/2004	$2,557,928.70	66,323
14463	STU M240-080	Powers Blvd	49	11/13/03	9/15/2004	$1,798,406.62	37,435

Number of Projects 4 ***Total Plan Quantity*** 205,441

Region: **3**

Subacct.	Project Code	Location	Supplier	Bid Date	Start Date	Total Bid	Plan Quant.
13535	IM 0701-157	Fruita to Clifton	12	02/26/04	5/10/2004	$7,817,860.78	106,305
14483	IM 0701-164	Parachute East & West	17	02/12/04	7/21/2004	$7,163,679.84	112,079

Number of Projects 2 ***Total Plan Quantity*** 218,384

Region: **4**

Subacct.	Project Code	Location	Supplier	Bid Date	Start Date	Total Bid	Plan Quant.
13528	STA 0343-021	E/O Brush to Akron	60	07/10/03	4/13/2004	$5,399,161.60	70,085
13977	IM 0761-185	I-76 Lochbuie to Hudson	10	06/24/04	8/9/2004	$3,183,834.35	72,754
14706	NH 2873-134	US 287 Virginiadale	14	04/01/04	8/4/2004	$4,582,362.55	111,715

Number of Projects 3 ***Total Plan Quantity*** 254,554

Region: **6**

Subacct.	*Project Code*	*Location*	*Supplier*	*Bid Date*	*Start Date*	*Total Bid*	*Plan Quant.*
13957	STA 1211-057	SH 121 Belliview to Hampden	33	02/12/04	5/17/2004	$1,112,323.90	14,514
14237	STA 1211-058	SH 121, 90th to 104th	37	01/29/04	7/26/2004	$1,022,091.35	15,323
14238	STA 1211-059	SH 121 from 6th to Grandview	13	01/29/04	5/24/2004	$2,083,604.60	29,367
14239	STA 0853-052	Sante Fe Dr I-25 to Florida Av	41	02/05/04	6/24/2004	$1,269,980.46	16,154
14240	STA 0404-040	Colfax, Sheridan to Viaduct	37	02/12/04	6/29/2004	$1,831,904.50	8,683
14241	STA 0062-015	6th Ave @ Federal	33	01/08/04	7/21/2004	$1,586,248.25	20,555
14613	IM 0253-186	I-25/120th to SH 7	33	06/17/04	8/26/2004	$4,034,586.35	72,866

Number of Projects 7 ***Total Plan Quantity*** 177,462

Totals: Projects with Start Dates from 1/1/2004 to 12/31/2004.

Number of Projects 19 ***Total Plan Quantity*** 1,068,777

Project Data, Voids Acceptance

Projects with Start Dates from 1/1/2004 to 12/31/2004.

Subaccount: 13528 ***STA 0343-021*** ***E/O Brush to Akron*** ***Region: 4*** ***Supplier: 60***

Bid Date: 7/10/2003 ***Start Date: 4/13/2004***

Mix Design No **149926** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $35.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	7	7,423	82.610	1.00548	$142.45	5.500	5.581	0.081	0.214	0.200	0.014
Density	2	1,313			$0.00	94.000				1.100	
VMA	7	7,423	98.675	1.03500	$909.32	14.800	14.943	0.143	0.574	0.600	-0.026
Air Voids	7	7,423	85.440	1.01759	$1,370.81	3.300	3.657	0.357	0.783	0.600	0.183
				I/DP:	$2,851.32						

Other	
CTS Tons	1,000
I/DP	$428.74
PF 1.0 Tons	5,110
2V Adj.	$0.00

Mix Design No **149926A** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $35.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	29	28,036	89.279	1.00908	$891.21	5.400	5.322	0.078	0.171	0.200	-0.029
Density	54	26,875	92.338	1.02005	$6,600.38	94.000	93.556	0.444	1.049	1.100	-0.051
VMA	29	28,036	97.560	1.05500	$5,396.93	14.000	13.739	0.261	0.488	0.600	-0.112
Air Voids	29	28,036	98.356	1.05500	$16,190.76	3.000	2.629	0.371	0.402	0.600	-0.198
				I/DP:	$29,079.28						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	1,161
2V Adj.	$0.00

Mix Design No **150009** ***Process No*** 1 ***Grading*** S (100) PG 64-28 ***Price Per Ton*** $38.80

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	28	27,632	81.887	0.95836	($4,464.12)	5.000	5.075	0.075	0.213	0.200	0.013
Density	54	27,132	91.100	1.01090	$4,016.28	94.000	93.361	0.639	1.000	1.100	-0.100
VMA	28	27,632	99.820	1.05500	$5,896.67	14.000	14.189	0.189	0.373	0.600	-0.227
Air Voids	28	27,632	90.285	1.01563	$5,025.73	3.100	3.557	0.457	0.574	0.600	-0.026
				I/DP:	$10,712.21						

Other	
CTS Tons	500
I/DP	$237.65
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **150009A** ***Process No*** 1 ***Grading*** S (100) PG 64-28 ***Price Per Ton*** $38.80

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	10	9,610	98.317	1.04500	$1,677.91	5.300	5.364	0.064	0.124	0.200	-0.076
Density	20	9,610	99.901	1.05000	$6,525.19	94.000	94.070	0.070	0.688	1.100	-0.412
VMA	10	9,610	100.000	1.04500	$1,677.91	14.700	14.740	0.040	0.272	0.600	-0.328
Air Voids	10	9,610	99.651	1.04500	$5,033.72	3.100	3.560	0.460	0.331	0.600	-0.269
				I/DP:	$14,914.73						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$35.00	1	1	5,133			$0.00	92.000				1.600	
S	$35.00	2	7	19,427	99.938	1.03500	$3,569.71	92.000	91.300	0.700	1.537	1.600	-0.063
S	$35.00	3	1	10,899			$0.00	92.000				1.600	
S	$38.80	4	14	37,242	98.817	1.04500	$9,753.68	92.000	91.630	0.370	1.715	1.600	0.115

Totals: 13528

	Tests	Tons	I/DP	CTS I/DP		
AC	74	72,701	($1,752.55)			
Density	130	72,701	$17,141.85	$666.39		
VMA	74	72,701	$13,880.83	**2V Adj**		
Air Voids	74	72,701	$27,621.02	$0.00		
Joint Density	23	72,701	$13,323.39			
Plan Quant		70,085	**Project I/DP**	$70,880.93	**CPFC**	**1.02639**

Comments:

Subaccount:* 13535** ***IM 0701-157 ***Fruita to Clifton*** ***Region:* 3** ***Supplier:* 12**

***Bid Date:* 2/26/2004** ***Start Date:* 5/10/2004**

Mix Design No **64-22** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $31.91

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	3	3,950	79.167	1.02500	$315.08	5.600	5.677	0.077	0.244	0.200	0.044
Density		0			$0.00	94.000				1.100	
VMA	3	3,950	62.338	0.96617	($426.35)	15.200	14.067	1.133	0.153	0.600	-0.447
Air Voids	3	3,950	50.000	0.88900	($4,196.73)	3.700	2.500	1.200	0.436	0.600	-0.164
				I/DP:	($4,308.00)						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	3,950
2V Adj.	$0.00

Mix Design No **64-22 #2** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $31.68

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	7	5,878	100.000	1.03500	$651.73	5.500	5.496	0.004	0.081	0.200	-0.119
Density		0			$0.00	94.000				1.100	
VMA	7	5,878	100.000	1.03500	$651.73	15.200	14.857	0.343	0.140	0.600	-0.460
Air Voids	7	5,878	100.000	1.03500	$1,955.19	3.700	3.871	0.171	0.325	0.600	-0.275
				I/DP:	$3,258.65						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	5,878
2V Adj.	$0.00

Mix Design No **64-22 #3** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $31.30

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	9	8,378	88.268	1.02166	$567.91	5.400	5.268	0.132	0.143	0.200	-0.057
Density		0			$0.00	94.000				1.100	
VMA	9	8,378	100.000	1.04000	$1,048.92	14.700	14.367	0.333	0.224	0.600	-0.376
Air Voids	9	8,378	99.826	1.04000	$3,146.75	3.700	3.567	0.133	0.469	0.600	-0.131
				I/DP:	$4,763.58						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	8,378
2V Adj.	$0.00

Mix Design No **64-22 #4** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $31.39

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	21	20,773	96.573	1.05000	$3,259.93	5.300	5.304	0.004	0.148	0.200	-0.052
Density		0			$0.00	94.000				1.100	
VMA	21	20,773	99.988	1.05000	$3,259.93	14.700	14.410	0.290	0.290	0.600	-0.310
Air Voids	21	20,773	99.991	1.05000	$9,779.78	3.700	3.529	0.171	0.324	0.600	-0.276
				I/DP:	$16,299.64						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	20,773
2V Adj.	$0.00

Mix Design No **76-28** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.02

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	5	4,622	32.000	0.61651	($5,674.71)	5.600	5.230	0.370	0.110	0.200	-0.090
Density	8	4,122	92.828	1.04000	$1,847.56	94.000	93.275	0.725	0.910	1.100	-0.190
VMA	5	4,622	100.000	1.03000	$443.93	15.000	15.080	0.080	0.512	0.600	-0.088
Air Voids	5	4,622	47.556	0.80715	($8,561.09)	3.500	4.760	1.260	0.873	0.600	0.273
				I/DP:	($14,831.86)						

Other	
CTS Tons	500
I/DP	2,887.55)
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **76-28 #2** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.29

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	2	2,151			$0.00	5.500				0.200		CTS Tons	500
Density	4	2,151	52.904	0.87438	($3,054.06)	94.000	92.175	1.825	2.009	1.100	0.909	I/DP	$197.79
VMA	2	2,151		0.97917	($144.71)	14.700				0.600		PF 1.0 Tons	0
Air Voids	2	2,151		0.75000	($5,209.59)	3.500				0.600		2V Adj.	$0.00
				I/DP:	($8,210.57)								

Mix Design No **76-28 #2** ***Process No*** 2 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.29

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	1	500			$0.00	5.500				0.200		CTS Tons	0
Density		0			$0.00	94.000				1.100		I/DP	$0.00
VMA	1	500			$0.00	14.700				0.600		PF 1.0 Tons	0
Air Voids	1	500			$0.00	3.500				0.600		2V Adj.	$0.00
				I/DP:	$0.00								

Mix Design No **76-28 #3** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.26

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	12	11,833	93.378	1.04067	$1,552.40	5.400	5.352	0.048	0.165	0.200	-0.035	CTS Tons	500
Density	22	11,333	94.636	1.04426	$5,663.65	94.000	94.495	0.495	0.943	1.100	-0.157	I/DP	$197.60
VMA	12	11,833	100.000	1.04500	$1,717.88	14.700	14.250	0.450	0.207	0.600	-0.393	PF 1.0 Tons	0
Air Voids	12	11,833	92.055	1.03507	$4,016.30	3.700	3.208	0.492	0.514	0.600	-0.086	2V Adj.	$0.00
				I/DP:	$13,147.83								

Mix Design No **76-28 #4** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.01

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	52	51,318	97.663	1.05500	$9,035.11	5.300	5.243	0.057	0.123	0.200	-0.077	CTS Tons	0
Density	103	50,318	94.324	1.03001	$16,916.49	94.000	94.060	0.060	1.055	1.100	-0.045	I/DP	$0.00
VMA	52	51,318	98.795	1.05500	$9,035.11	14.700	14.342	0.358	0.381	0.600	-0.219	PF 1.0 Tons	0
Air Voids	52	51,318	98.737	1.05500	$27,105.34	3.700	3.446	0.254	0.430	0.600	-0.170	2V Adj.	$0.00
				I/DP:	$62,092.05								

Mix Design No **76-28 #4** ***Process No*** 2 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.01

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC					$0.00					0.200		CTS Tons	0
Density	1	500		0.17000	($5,601.95)	94.000				1.100		I/DP	$0.00
VMA					$0.00					0.600		PF 1.0 Tons	0
Air Voids					$0.00					0.600		2V Adj.	$0.00
				I/DP:	($5,601.95)								

Mix Design No **76-28 #4** ***Process No*** 3 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $32.01

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC					$0.00					0.200		CTS Tons	0
Density	1	500		0.45455	($3,055.58)	94.000				1.100		I/DP	$0.00
VMA					$0.00					0.600		PF 1.0 Tons	
Air Voids					$0.00					0.600			0
				I/DP:	($3,055.58)						2V Adj.		$0.00

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	$32.67	1	10	11,031	57.524	0.82461	($9,481.30)	92.000	88.610	3.390	3.061	1.600	1.461
SX	$32.67	2	1	1,123		0.48438	($2,837.59)	92.000				1.600	
SX	$32.67	3	1	1,119		0.68750	($1,713.64)	92.000				1.600	
SX	$32.67	4	1	1,123		0.28125	($3,955.47)	92.000				1.600	
SX	$32.67	5	53	53,738	79.978	0.92584	($19,529.80)	92.000	89.690	2.310	2.006	1.600	0.406
SX	$32.67	8	1	38,979			$0.00	92.000				1.600	
SX	$32.67	9	1	2,290			$0.00	92.000				1.600	

Totals: 13535

	Tests	Tons	I/DP			
AC	112	109,403	$9,707.45	CTS I/DP		
Density	139	109,403	$12,716.11	($2,492.16)		
VMA	112	109,403	$15,586.44	2V Adj		
Air Voids	112	109,403	$28,035.95	$0.00		
Joint Density	68	109,403	($37,517.80)			
Plan Quant		106,305	**Project I/DP**	$26,035.99	**CPFC**	**1.00747**

Comments:

Subaccount: 13818 ***STA 0405-030*** ***SH 40 Kit Carson East*** ***Region: 1*** ***Supplier: 19***

Bid Date: 3/4/2004 ***Start Date: 8/30/2004***

Mix Design No **136488** ***Process No*** 1 ***Grading*** SX (75) PG 64-22 ***Price Per Ton*** $33.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	34	33,289	98.085	1.05500	$6,041.95	5.500	5.470	0.030	0.129	0.200	-0.071
Density		0			$0.00	94.000				1.100	
VMA	34	33,289	99.999	1.05500	$6,041.95	14.800	14.768	0.032	0.313	0.600	-0.287
Air Voids	34	33,289	97.844	1.05500	$18,125.86	3.800	4.018	0.218	0.493	0.600	-0.107
				I/DP:	$30,209.76						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	33,289
2V Adj.	$0.00

Mix Design No **136488-2** ***Process No*** 1 ***Grading*** SX (75) PG 64-28 ***Price Per Ton*** $38.60

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	52	51,361	94.591	1.03684	$7,303.21	5.700	5.651	0.049	0.150	0.200	-0.050
Density	103	50,861	94.772	1.03358	$23,076.20	94.000	94.158	0.158	1.025	1.100	-0.075
VMA	52	51,361	98.805	1.05500	$10,903.94	15.100	14.613	0.487	0.322	0.600	-0.278
Air Voids	52	51,361	97.358	1.05500	$32,711.82	3.500	3.604	0.104	0.541	0.600	-0.059
				I/DP:	$74,231.59						

Other	
CTS Tons	500
I/DP	$236.42
PF 1.0 Tons	0
2V Adj.	$0.00

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	$33.00	1	1	33,289			$0.00	92.000				1.600	
SX	$38.60	2	23	51,361	95.884	1.05000	$14,869.01	92.000	89.660	2.340	0.979	1.600	-0.621

Totals: 13818

	Tests	Tons	I/DP	
AC	86	84,650	$13,345.16	CTS I/DP
Density	103	84,650	$23,076.20	$236.42
VMA	86	84,650	$16,945.89	2V Adj
Air Voids	86	84,650	$50,837.68	$0.00
Joint Density	24	84,650	$14,869.01	
Plan Quant		84,282	Project I/DP	$119,310.36

CPFC **1.03872**

Comments:

Subaccount: 13957 ***STA 1211-057*** ***SH 121 Belliview to Hampden*** ***Region: 6*** ***Supplier: 33***

Bid Date: 2/12/2004 ***Start Date: 5/17/2004***

Mix Design No **147059-1** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $30.30

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	15	14,115	99.400	1.05000	$2,138.42	4.700	4.711	0.011	0.123	0.200	-0.077
Density	28	13,615	98.378	1.05500	$7,941.29	94.000	93.804	0.196	0.845	1.100	-0.255
VMA	15	14,115	99.481	1.05000	$2,138.42	14.700	14.560	0.140	0.458	0.600	-0.142
Air Voids	15	14,115	99.997	1.05000	$6,415.27	3.200	3.213	0.013	0.383	0.600	-0.217
				I/DP:	$18,505.98						

Other	
CTS Tons	500
I/DP	($127.42)
PF 1.0 Tons	0
2V Adj.	$0.00

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	$30.30	1	12	14,115	61.678	0.84693	($9,819.77)	92.000	88.670	3.330	2.212	1.600	0.612

Totals: 13957

	Tests	Tons	I/DP
AC	15	14,115	$2,138.42
Density	28	14,115	$7,941.29
VMA	15	14,115	$2,138.42
Air Voids	15	14,115	$6,415.27
Joint Density	12	14,115	($9,819.77)
Plan Quant		14,514	**Project I/DP** $8,686.21

CTS I/DP ($127.42)
2V Adj $0.00
CPFC **1.02031**

Comments:

Subaccount: 13977 ***IM 0761-185*** ***I-76 Lochbuie to Hudson*** ***Region: 4*** ***Supplier: 10***

Bid Date: 6/24/2004 ***Start Date: 8/9/2004***

Mix Design No **154122** ***Process No*** 1 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $41.75

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	4	4,000	100.000	1.03000	$501.00	5.300	5.343	0.043	0.131	0.200	-0.069
Density	7	3,500	100.000	1.03500	$1,790.03	94.000	93.257	0.743	0.486	1.100	-0.614
VMA	4	4,000	100.000	1.03000	$501.00	15.400	15.475	0.075	0.222	0.600	-0.378
Air Voids	4	4,000	50.000	0.85237	($7,396.14)	3.400	4.600	1.200	0.258	0.600	-0.342
				I/DP:	($4,348.39)						

Other	
CTS Tons	500
I/DP	$255.72
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **154122B** ***Process No*** 1 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $41.75

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	14	13,978	87.696	1.01209	$705.66	5.700	5.606	0.094	0.174	0.200	-0.026
Density	28	13,978	97.551	1.05500	$11,233.94	94.000	93.321	0.679	0.690	1.100	-0.410
VMA	14	13,978	90.484	1.02603	$1,519.10	15.500	15.086	0.414	0.606	0.600	0.006
Air Voids	14	13,978	96.535	1.04500	$7,878.35	3.900	4.050	0.150	0.587	0.600	-0.013
				I/DP:	$21,337.05						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **162103** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $36.60

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	7	7,000	99.310	1.03500	$896.70	5.300	5.304	0.004	0.148	0.200	-0.052
Density		0			$0.00	94.000				1.100	
VMA	7	7,000	100.000	1.03500	$896.70	15.000	14.871	0.129	0.221	0.600	-0.379
Air Voids	7	7,000	90.528	1.03500	$2,690.10	3.800	3.186	0.614	0.460	0.600	-0.140
				I/DP:	$4,483.50						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	7,000
2V Adj.	$0.00

Mix Design No **162103A** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $36.60

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	8	7,904	77.292	0.97258	($793.17)	5.200	5.191	0.009	0.252	0.200	0.052
Density		0			$0.00	94.000				1.100	
VMA	8	7,904	99.008	1.04000	$1,157.15	15.000	14.787	0.213	0.506	0.600	-0.094
Air Voids	8	7,904	84.405	1.00781	$677.88	3.500	3.588	0.088	0.874	0.600	0.274
				I/DP:	$1,041.86						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	7,904
2V Adj.	$0.00

Mix Design No **162105** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $35.40

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	6	6,000	64.292	0.91199	($1,869.23)	5.200	5.002	0.198	0.255	0.200	0.055
Density	11	5,500	95.291	1.04500	$3,066.52	94.000	93.236	0.764	0.775	1.100	-0.325
VMA	6	6,000	85.180	1.02007	$426.31	15.100	14.733	0.367	0.792	0.600	0.192
Air Voids	6	6,000	70.077	0.94806	($3,309.56)	3.700	3.017	0.683	0.922	0.600	0.322
				I/DP:	($1,469.14)						

Other	
CTS Tons	500
I/DP	$216.82
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **162105A** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $35.40

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	6	6,000	84.616	1.01796	$381.37	5.200	5.037	0.163	0.133	0.200	-0.067	CTS Tons	0
Density	12	6,000	97.258	1.04500	$3,345.30	94.000	93.892	0.108	0.989	1.100	-0.111	I/DP	$0.00
VMA	6	6,000	100.000	1.03500	$743.40	15.100	14.883	0.217	0.479	0.600	-0.121	PF 1.0 Tons	0
Air Voids	6	6,000	67.906	0.93508	($4,136.76)	3.700	2.817	0.883	0.637	0.600	0.037		
				I/DP:	$333.31						2V Adj.		$0.00

Mix Design No **162105B** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $35.40

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	12	11,862	67.463	0.89157	($4,553.07)	5.100	4.949	0.151	0.264	0.200	0.064	CTS Tons	0
Density	24	11,862	98.437	1.05000	$7,348.51	94.000	93.558	0.442	0.753	1.100	-0.347	I/DP	$0.00
VMA	12	11,862	98.803	1.04500	$1,889.62	15.100	15.308	0.208	0.485	0.600	-0.115	PF 1.0 Tons	0
Air Voids	12	11,862	82.196	0.98654	($1,695.28)	3.500	4.075	0.575	0.672	0.600	0.072		
				I/DP:	$2,989.78						2V Adj.		$0.00

Mix Design No **162107** ***Process No*** 1 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $41.75

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	6	6,000	58.286	0.86957	($3,267.19)	5.400	5.120	0.280	0.088	0.200	-0.112	CTS Tons	500
Density	11	5,500	97.615	1.04500	$3,616.59	94.000	94.400	0.400	0.874	1.100	-0.226	I/DP	$255.72
VMA	6	6,000	100.000	1.03500	$876.75	15.100	14.683	0.417	0.306	0.600	-0.294	PF 1.0 Tons	0
Air Voids	6	6,000	100.000	1.03500	$2,630.25	3.500	3.217	0.283	0.387	0.600	-0.213		
				I/DP:	$4,112.12						2V Adj.		$0.00

Mix Design No **162107A** ***Process No*** 1 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $41.75

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	5	5,000	40.604	0.74560	($5,310.53)	5.400	5.058	0.342	0.158	0.200	-0.042	CTS Tons	0
Density	10	5,000	99.695	1.04500	$3,287.81	94.000	94.920	0.920	0.478	1.100	-0.622	I/DP	$0.00
VMA	5	5,000	100.000	1.03000	$626.25	14.800	14.420	0.380	0.363	0.600	-0.237	PF 1.0 Tons	0
Air Voids	5	5,000	100.000	1.03000	$1,878.75	3.500	3.600	0.100	0.418	0.600	-0.182		
				I/DP:	$482.28						2V Adj.		$0.00

Mix Design No **162107B** ***Process No*** 1 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $41.75

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	5	4,818	99.892	1.03000	$603.45	5.400	5.406	0.006	0.167	0.200	-0.033	CTS Tons	0
Density	10	4,818	87.954	1.01919	$1,351.10	94.000	93.960	0.040	1.342	1.100	0.242	I/DP	$0.00
VMA	5	4,818	100.000	1.03000	$603.45	14.800	14.700	0.100	0.561	0.600	-0.039	PF 1.0 Tons	0
Air Voids	5	4,818	100.000	1.03000	$1,810.36	3.500	3.440	0.060	0.568	0.600	-0.032		
				I/DP:	$4,368.36						2V Adj.		$0.00

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	$36.60	1	1	14,904			$0.00	92.000				1.600	
S	$35.40	2	28	23,862	94.784	1.04385	$5,555.87	92.000	90.000	2.000	1.253	1.600	-0.347

SX	$41.75	3	28	33,796	69.981	0.86694	($28,160.98)	92.000	88.670	3.330	1.265	1.600	-0.335

Totals: 13977

	Tests	Tons	I/DP			
AC	73	72,562	($12,705.01)	**CTS I/DP**		
Density	113	72,562	$35,039.80	$728.26		
VMA	73	72,562	$9,239.73	**2V Adj**		
Air Voids	73	72,562	$1,027.95	$0.00		
Joint Density	57	72,562	($22,605.11)			
Plan Quant		72,754	**Project I/DP**	$10,725.62	**CPFC**	**1.00383**

Comments:

Subaccount: 14146 ***STA 1604-008*** ***Pritchett East to*** ***Region: 2*** ***Supplier: 11***

Bid Date: 2/5/2004 ***Start Date: 3/29/2004***

Mix Design No **14146** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $32.65

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	56	55,482	95.848	1.04530	$8,205.64	5.300	5.241	0.059	0.137	0.200	-0.063	**CTS Tons**	500
Density	110	54,982	91.804	1.00896	$5,631.89	94.000	93.230	0.770	0.883	1.100	-0.217	**I/DP**	$199.98
VMA	56	55,482	99.975	1.05500	$9,963.18	14.600	14.718	0.118	0.326	0.600	-0.274	**PF 1.0 Tons**	0
Air Voids	56	55,482	98.556	1.05500	$29,889.54	3.500	3.796	0.296	0.420	0.600	-0.180		
				I/DP:	$53,890.23							**2V Adj.**	$0.00

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	29	55,482	95.354	1.04700	$19,557.95	92.000	91.450	0.550	1.985	1.600	0.385

Totals: 14146

	Tests	Tons	I/DP			
AC	56	55,482	$8,205.64	**CTS I/DP**		
Density	110	55,482	$5,631.89	$199.98		
VMA	56	55,482	$9,963.18	**2V Adj**		
Air Voids	56	55,482	$29,889.54	$0.00		
Joint Density	29	55,482	$19,557.95			
Plan Quant		55,467	**Project I/DP**	$73,448.18	**CPFC**	**1.04055**

Comments: Unit price for joint density?

Subaccount: 14209 ***NH 0504-046*** ***US 50 Troy to SH 233*** ***Region: 2*** ***Supplier: 19***

Bid Date: 3/18/2004 ***Start Date: 6/14/2004***

Mix Design No **14209 RAP** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $30.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	22	21,062	93.241	1.03639	$2,299.09	5.300	5.205	0.095	0.138	0.200	-0.062
Density	42	20,562	86.620	0.98222	($3,837.86)	94.000	94.107	0.107	1.340	1.100	0.240
VMA	22	21,062	99.933	1.05000	$3,159.30	13.800	13.436	0.364	0.292	0.600	-0.308
Air Voids	22	21,062	84.135	0.98044	($3,708.54)	3.500	2.836	0.664	0.536	0.600	-0.064
				I/DP:	($1,904.26)						

Other	
CTS Tons	500
I/DP	$183.75
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **14209 Top** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $36.20

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	25	24,150	90.438	1.01831	$1,600.38	5.400	5.373	0.027	0.181	0.200	-0.019
Density	49	24,150	96.229	1.04884	$14,943.66	94.000	94.047	0.047	0.978	1.100	-0.122
VMA	25	24,150	100.000	1.05000	$4,371.15	14.200	14.100	0.100	0.173	0.600	-0.427
Air Voids	25	24,150	95.837	1.05000	$13,113.45	3.900	3.628	0.272	0.542	0.600	-0.058
				I/DP:	$34,028.64						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **14209TopR** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $36.20

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	1	864			$0.00	5.600				0.200	
Density	2	864			$0.00	94.000				1.100	
VMA	1	864			$0.00	14.800				0.600	
Air Voids	1	864		0.66667	($3,127.68)	3.900				0.600	
				I/DP:	($3,127.68)						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$30.00	1	8	15,854	90.975	1.03449	$2,460.38	92.000	90.630	1.370	2.016	1.600	0.416
S	$36.20	2	8	23,519	85.319	1.01186	$1,514.64	92.000	88.900	3.100	0.855	1.600	-0.745

Totals: 14209

	Tests	Tons	I/DP	
AC	48	46,076	$3,899.47	CTS I/DP
Density	93	46,076	$11,105.80	$183.75
VMA	48	46,076	$7,530.45	2V Adj
Air Voids	48	46,076	$6,277.23	$0.00
Joint Density	16	39,373	$3,975.02	
Plan Quant		46,216	**Project I/DP**	$32,971.72

CPFC **1.02145**

Comments: Joint density quantity

Subaccount: 14212 ***STA 165A-010*** ***SH 165 overlay I-25 to W of Rye*** ***Region: 2*** ***Supplier: 32***

Bid Date: 5/20/2004 ***Start Date: 8/2/2004***

Mix Design No **14212A** ***Process No*** 1 ***Grading*** S (75) PG 58-28 ***Price Per Ton*** $29.25

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	6	6,000	100.000	1.03500	$614.25	5.500	5.513	0.013	0.121	0.200	-0.079
Density	12	6,000	96.907	1.04500	$2,764.12	94.000	92.958	1.042	0.545	1.100	-0.555
VMA	6	6,000	100.000	1.03500	$614.25	13.700	14.033	0.333	0.372	0.600	-0.228
Air Voids	6	6,000	99.025	1.03500	$1,842.75	3.500	3.683	0.183	0.564	0.600	-0.036
				I/DP:	$5,835.37						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **14212B** ***Process No*** 1 ***Grading*** S (75) PG 58-28 ***Price Per Ton*** $29.25

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	9	9,000	95.705	1.04000	$1,053.00	5.800	5.777	0.023	0.163	0.200	-0.037
Density	18	9,000	99.980	1.05000	$4,606.88	94.000	94.056	0.056	0.646	1.100	-0.454
VMA	9	9,000	66.348	0.89632	($2,729.38)	13.700	14.733	1.033	0.381	0.600	-0.219
Air Voids	9	9,000	90.443	1.03049	$2,407.88	3.500	3.922	0.422	0.608	0.600	0.008
				I/DP:	$5,338.38						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **14212C** ***Process No*** 1 ***Grading*** S (75) PG 58-28 ***Price Per Ton*** $29.25

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	48	47,761	95.329	1.04270	$5,964.81	5.800	5.778	0.022	0.152	0.200	-0.048
Density	96	47,761	95.541	1.04008	$19,599.10	94.000	93.495	0.505	0.874	1.100	-0.226
VMA	48	47,761	89.534	1.00127	$177.33	14.800	14.444	0.356	0.653	0.600	0.053
Air Voids	48	47,761	84.868	0.96648	($14,048.21)	3.500	3.354	0.146	0.828	0.600	0.228
				I/DP:	$11,693.03						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$29.25	1	37	62,761	96.675	1.05320	$14,648.97	92.000	90.890	1.110	1.599	1.600	-0.001

Totals: 14212

	Tests	Tons	I/DP	
AC	63	62,761	$7,632.06	CTS I/DP
Density	126	62,761	$26,970.10	$0.00
VMA	63	62,761	($1,937.80)	2V Adj
Air Voids	63	62,761	($9,797.58)	$0.00
Joint Density	37	62,761	$14,648.97	
Plan Quant		66,323	**Project I/DP**	$37,515.75

CPFC **1.02044**

Comments:

Subaccount: 14237 ***STA 1211-058*** ***SH 121, 90th to 104th*** ***Region: 6*** ***Supplier: 37***

Bid Date: 1/29/2004 ***Start Date: 7/26/2004***

Mix Design No **146999-1** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $32.25

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	15	15,341	94.045	1.04197	$2,076.34	5.100	4.955	0.145	0.102	0.200	-0.098
Density	30	14,841	90.104	1.01329	$2,226.87	94.000	93.940	0.060	1.229	1.100	0.129
VMA	14	15,341	100.000	1.04500	$2,226.36	14.800	14.807	0.007	0.300	0.600	-0.300
Air Voids	14	15,341	95.366	1.04500	$6,679.09	3.000	3.357	0.357	0.520	0.600	-0.080
				I/DP:	$13,406.19						

Other	
CTS Tons	500
I/DP	$197.53
PF 1.0 Tons	0
2V Adj.	$0.00

Joint Density

Grad.	Price	Proc. No	Tests	Tons	*Quality Level*	*Pay Factor*	I/DP	TV	Mean	*Mean to TV*	Std Dev	V	*St Dev. - V*
S	$32.25	1	12	15,341	90.141	1.02659	$1,973.48	92.000	89.770	2.230	1.396	1.600	-0.204

Totals: 14237

	Tests	Tons	I/DP		
AC	15	15,341	$2,076.34	**CTS I/DP**	
Density	30	15,341	$2,226.87	$197.53	
VMA	14	15,341	$2,226.36	**2V Adj**	
Air Voids	14	15,341	$6,679.09	$0.00	
Joint Density	12	15,341	$1,973.48		
Plan Quant		15,323	**Project I/DP**	$15,379.67	**CPFC** **1.03109**

Comments:

Subaccount: 14238 ***STA 1211-059*** ***SH 121 from 6th to Grandview*** ***Region: 6*** ***Supplier: 13***

Bid Date: 1/29/2004 ***Start Date: 5/24/2004***

Mix Design No **147014** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $31.60

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	18	18,000	88.943	1.01410	$801.86	5.100	5.175	0.075	0.176	0.200	-0.024
Density	36	18,000	95.693	1.04711	$9,378.18	94.000	93.636	0.364	0.941	1.100	-0.159
VMA	18	18,000	99.998	1.05000	$2,844.00	14.200	14.106	0.094	0.337	0.600	-0.263
Air Voids	18	18,000	98.993	1.05000	$8,532.00	3.000	2.983	0.017	0.508	0.600	-0.092
				I/DP:	$21,556.04						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **147014-1** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $31.60

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	8	7,487	98.263	1.04000	$946.36	5.100	5.196	0.096	0.111	0.200	-0.089
Density	14	7,487	95.558	1.04500	$3,726.28	94.000	93.471	0.529	0.897	1.100	-0.203
VMA	8	7,487	100.000	1.04000	$946.36	14.200	13.688	0.512	0.236	0.600	-0.364
Air Voids	8	7,487	100.000	1.04000	$2,839.07	3.000	2.825	0.175	0.396	0.600	-0.204
				I/DP:	$8,458.07						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$31.60	1	5	5,631	39.958	0.73955	($6,951.55)	92.000	87.580	4.420	1.482	1.600	-0.118
S	$31.60	2	19	19,856	93.688	1.03985	$3,750.64	92.000	89.880	2.120	1.257	1.600	-0.343

Totals: 14238

	Tests	Tons	I/DP	
AC	26	25,487	$1,748.22	CTS I/DP
Density	50	25,487	$13,104.46	$0.00
VMA	26	25,487	$3,790.36	2V Adj
Air Voids	26	25,487	$11,371.07	$0.00
Joint Density	24	25,487	($3,200.91)	
Plan Quant		29,367	**Project I/DP**	$26,813.20

CPFC **1.03329**

Comments:

Subaccount: 14239 ***STA 0853-052*** ***Sante Fe Dr I-25 to Florida Ave*** ***Region: 6*** ***Supplier: 41***

Bid Date: 2/5/2004 ***Start Date: 6/24/2004***

Mix Design No **147057** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $31.37

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	15	13,745	95.401	1.04804	$2,071.30	5.500	5.504	0.004	0.159	0.200	-0.041
Density	27	13,245	92.586	1.03072	$4,467.92	94.000	94.026	0.026	1.144	1.100	0.044
VMA	15	13,745	99.960	1.05000	$2,155.90	15.200	15.120	0.080	0.402	0.600	-0.198
Air Voids	15	13,745	92.485	1.03472	$4,490.58	3.400	3.280	0.120	0.691	0.600	0.091
				I/DP:	$12,935.02						

Other

CTS Tons	500
I/DP	($250.68)
PF 1.0 Tons	0
2V Adj.	$0.00

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	$31.37	1	9	13,745	85.059	1.00744	$481.20	92.000	91.990	0.010	2.873	1.600	1.273

Totals: 14239

	Tests	Tons	I/DP
AC	15	13,745	$2,071.30
Density	27	13,745	$4,467.92
VMA	15	13,745	$2,155.90
Air Voids	15	13,745	$4,490.58
Joint Density	9	13,745	$481.20
Plan Quant		16,154	**Project I/DP** $13,416.22

CTS I/DP ($250.68)

2V Adj $0.00

CPFC **1.03112**

Comments:

Subaccount: 14240 ***STA 0404-040*** ***Colfax, Sheridan to Viaduct*** ***Region: 6*** ***Supplier: 37***

Bid Date: 2/12/2004 ***Start Date: 6/29/2004***

Mix Design No **146999-1** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $33.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	3	3,095	100.000	1.02500	$255.34	5.100	4.813	0.287	0.006	0.200	-0.194
Density	7	3,095	97.972	1.03500	$1,251.15	94.000	94.700	0.700	0.739	1.100	-0.361
VMA	3	3,095	100.000	1.02500	$255.34	14.800	14.400	0.400	0.520	0.600	-0.080
Air Voids	3	3,095	100.000	1.02500	$766.01	3.000	2.767	0.233	0.321	0.600	-0.279
				I/DP:	$2,527.84						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **146999-2** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $33.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	6	5,883	95.522	1.03500	$679.49	5.100	4.967	0.133	0.110	0.200	-0.090
Density	13	5,883	98.832	1.04500	$3,057.69	94.000	93.915	0.085	0.887	1.100	-0.213
VMA	6	5,883	100.000	1.03500	$679.49	14.400	14.500	0.100	0.477	0.600	-0.123
Air Voids	6	5,883	90.596	1.03500	$2,038.46	3.000	2.583	0.417	0.618	0.600	0.018
				I/DP:	$6,455.13						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$33.00	1	5	8,978	67.605	0.94797	($2,312.38)	92.000	89.620	2.380	3.231	1.600	1.631

Totals: 14240

	Tests	Tons	I/DP			
AC	9	8,978	$934.83	CTS I/DP		
Density	20	8,978	$4,308.84	$0.00		
VMA	9	8,978	$934.83	2V Adj		
Air Voids	9	8,978	$2,804.47	$0.00		
Joint Density	5	8,978	($2,312.38)			
Plan Quant		8,683	**Project I/DP**	$6,670.59	**CPFC**	**1.02251**

Comments:

Subaccount: 14241 ***STA 0062-015*** ***6th Ave @ Federal*** ***Region: 6*** ***Supplier: 33***

Bid Date: 1/8/2004 ***Start Date: 7/21/2004***

Mix Design No **147063** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $38.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	16	15,628	55.990	0.77658	($13,267.93)	5.400	5.129	0.271	0.191	0.200	-0.009
Density	28	15,628	99.227	1.05500	$11,431.88	94.000	93.746	0.254	0.749	1.100	-0.351
VMA	16	15,628	98.682	1.05000	$2,969.32	15.400	15.069	0.331	0.419	0.600	-0.181
Air Voids	16	15,628	95.110	1.04687	$8,350.48	3.100	2.669	0.431	0.478	0.600	-0.122
				I/DP:	$9,483.75						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **147063-1** ***Process No*** 2 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $38.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	6	5,828	96.699	1.03500	$775.12	5.200	5.083	0.117	0.115	0.200	-0.085
Density	16	5,828	98.077	1.05000	$3,875.62	94.000	93.256	0.744	0.643	1.100	-0.457
VMA	6	5,828	100.000	1.03500	$775.12	15.400	15.817	0.417	0.279	0.600	-0.321
Air Voids	6	5,828	100.000	1.03500	$2,325.37	3.100	3.200	0.100	0.303	0.600	-0.297
				I/DP:	$7,751.23						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$38.00	1	7	21,456	73.509	0.95908	($5,004.13)	92.000	88.970	3.030	1.483	1.600	-0.117

Totals: 14241

	Tests	Tons	I/DP	
AC	22	21,456	($12,492.81)	CTS I/DP
Density	44	21,456	$15,307.50	$0.00
VMA	22	21,456	$3,744.44	2V Adj
Air Voids	22	21,456	$10,675.85	$0.00
Joint Density	7	21,456	($5,004.13)	
Plan Quant		20,555	**Project I/DP**	$12,230.85

CPFC **1.01500**

Comments:

Subaccount: 14463 ***STU M240-080*** ***Powers Blvd*** ***Region: 2*** ***Supplier: 49***

Bid Date: 11/13/2003 ***Start Date: 9/15/2004***

Mix Design No **14463** ***Process No*** 1 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $31.94

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	19	18,759	96.759	1.05000	$2,995.81	5.500	5.527	0.027	0.145	0.200	-0.055
Density	38	18,759	93.303	1.03062	$6,420.90	94.000	93.195	0.805	0.804	1.100	-0.296
VMA	19	18,759	99.966	1.05000	$2,995.81	15.300	15.200	0.100	0.376	0.600	-0.224
Air Voids	19	18,759	97.979	1.05000	$8,987.44	3.900	4.000	0.100	0.540	0.600	-0.060
				I/DP:	$21,399.96						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **14463B** ***Process No*** 2 ***Grading*** S (100) PG 64-22 ***Price Per Ton*** $31.94

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	13	12,206	80.058	0.97173	($1,102.04)	5.500	5.374	0.126	0.197	0.200	-0.003
Density	25	12,206	97.524	1.05000	$6,822.54	94.000	93.192	0.808	0.626	1.100	-0.474
VMA	13	12,206	99.163	1.04500	$1,754.37	15.300	15.008	0.292	0.421	0.600	-0.179
Air Voids	13	12,206	95.120	1.04500	$5,263.11	3.900	4.138	0.238	0.595	0.600	-0.005
				I/DP:	$12,737.98						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

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	$31.94	1	12	18,759	91.171	1.03121	$2,804.80	92.000	90.630	1.370	1.983	1.600	0.383
S	$31.94	2	11	12,206	86.715	1.01193	$697.53	92.000	89.530	2.470	1.377	1.600	-0.223

Totals: 14463

	Tests	Tons	I/DP	
AC	32	30,965	$1,893.77	CTS I/DP
Density	63	30,965	$13,243.44	$0.00
VMA	32	30,965	$4,750.18	2V Adj
Air Voids	32	30,965	$14,250.55	$0.00
Joint Density	23	30,965	$3,502.33	
Plan Quant	37,435		Project I/DP	$37,640.27

CPFC **1.03806**

Comments: SMA tested under gradation acceptance.

Subaccount: 14483 ***IM 0701-164*** ***Parachute East & West*** ***Region: 3*** ***Supplier: 17***

Bid Date: 2/12/2004 ***Start Date: 7/21/2004***

Mix Design No **5-17** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $36.01

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	5	4,377	65.513	0.93582	($1,011.67)	6.400	6.162	0.238	0.141	0.200	-0.059
Density	8	3,877	95.061	1.04000	$1,954.70	94.000	93.663	0.337	1.069	1.100	-0.031
VMA	5	4,377	100.000	1.03000	$472.88	14.800	14.800	0.000	0.141	0.600	-0.459
Air Voids	5	4,377	100.000	1.03000	$1,418.65	3.500	2.980	0.520	0.370	0.600	-0.230
				I/DP:	$3,055.14						

Other	
CTS Tons	500
I/DP	$220.58
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **7-23** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $35.95

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	34	34,408	92.484	1.02689	$3,326.18	6.100	6.109	0.009	0.171	0.200	-0.029
Density	69	34,408	88.860	0.98875	($4,868.31)	94.000	93.280	0.720	1.035	1.100	-0.065
VMA	34	34,408	98.636	1.05500	$6,802.46	14.600	15.050	0.450	0.350	0.600	-0.250
Air Voids	34	34,408	98.893	1.05500	$20,407.38	3.500	3.729	0.229	0.437	0.600	-0.163
				I/DP:	$25,667.71						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **8-11** ***Process No*** 1 ***Grading*** SX (100) PG 76-28 ***Price Per Ton*** $36.27

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	59	58,111	87.844	0.98454	($3,258.52)	6.200	6.244	0.044	0.190	0.200	-0.010
Density	117	58,111	89.796	0.99183	($6,028.19)	94.000	93.825	0.175	1.215	1.100	0.115
VMA	59	58,111	91.410	1.01179	$2,484.38	14.600	15.192	0.592	0.447	0.600	-0.153
Air Voids	59	58,111	94.357	1.03389	$21,426.26	3.500	3.731	0.231	0.593	0.600	-0.007
				I/DP:	$14,623.93						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Joint Density

Grad.	Price	Proc. No	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std Dev	V	St Dev. - V
SX	$35.44	1	79	94,574	69.700	0.82813	($86,410.06)	92.000	89.120	2.880	2.158	1.600	0.558
SX	$35.44	2	1	1,008		0.25000	($4,018.90)	92.000				1.600	
SX	$35.44	3	1	1,314		0.34375	($4,584.05)	92.000				1.600	

Totals: 14483

	Tests	Tons	I/DP	
AC	98	96,896	($944.01)	CTS I/DP
Density	194	96,896	($8,941.80)	$220.58
VMA	98	96,896	$9,759.72	2V Adj
Air Voids	98	96,896	$43,252.29	$0.00
Joint Density	81	96,896	($95,013.01)	
Plan Quant		112,079	**Project I/DP**	($51,666.23)

CPFC **0.98525**

Comments:

Subaccount: 14560 ***IM 0704-203*** ***I-70, Genoa - East*** ***Region: 1*** ***Supplier: 14***

Bid Date: 1/15/2004 ***Start Date: 5/4/2004***

Mix Design No **95804** ***Process No*** 1 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $37.50

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	56	55,260	96.130	1.04735	$9,811.28	5.300	5.346	0.046	0.140	0.200	-0.060
Density	2	1,000			$0.00	94.000				1.100	
VMA	56	55,260	99.915	1.05500	$11,397.37	15.000	14.955	0.045	0.374	0.600	-0.226
Air Voids	56	55,260	90.433	1.00532	$3,306.89	3.800	4.207	0.407	0.601	0.600	0.001
				I/DP:	$23,791.65						

Other	
CTS Tons	500
I/DP	($723.89)
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **95804** ***Process No*** 2 ***Grading*** SX (100) PG 64-22 ***Price Per Ton*** $37.50

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC					$0.00					0.200	
Density	107	53,260	91.940	1.01029	$7,195.13	94.000	93.471	0.529	1.022	1.100	-0.078
VMA					$0.00					0.600	
Air Voids					$0.00					0.600	
				I/DP:	$7,424.82						

Other	
CTS Tons	500
I/DP	$229.69
PF 1.0 Tons	0
2V Adj.	$0.00

Joint Density

Grad.	Price	Proc. No	Tests	Tons	*Quality Level*	*Pay Factor*	I/DP	TV	Mean	*Mean to TV*	Std Dev	V	*St Dev. - V*
SX	$37.50	1	26	55,260	100.000	1.05500	$17,096.06	92.000	91.800	0.200	0.950	1.600	-0.650

Totals: 14560

	Tests	Tons	I/DP	
AC	56	55,260	$9,811.28	CTS I/DP
Density	109	55,260	$7,195.13	($494.20)
VMA	56	55,260	$11,397.37	2V Adj
Air Voids	56	55,260	$3,306.89	$0.00
Joint Density	26	55,260	$17,096.06	
Plan Quant		55,809	**Project I/DP**	$48,312.53

CPFC **1.02331**

Comments:

Subaccount: 14613 ***IM 0253-186*** ***I-25/120th to SH 7*** ***Region: 6*** ***Supplier: 33***

Bid Date: 6/17/2004 ***Start Date: 8/26/2004***

Mix Design No **147075** ***Process No*** 1 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $32.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	44	37,901	85.245	0.97117	($3,496.88)	5.300	5.286	0.014	0.208	0.200	0.008	CTS Tons	0
Density	75	36,916	81.236	0.92590	($30,639.38)	94.000	93.193	0.807	1.275	1.100	0.175	I/DP	$0.00
VMA	44	37,901	99.719	1.05500	$6,670.58	13.300	13.250	0.050	0.417	0.600	-0.183	PF 1.0 Tons	0
Air Voids	44	37,901	93.663	1.03181	$11,574.14	3.100	3.102	0.002	0.656	0.600	0.056		
				I/DP:	($15,891.54)							2V Adj.	$0.00

Mix Design No **147075** ***Process No*** 2 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $32.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC					$0.00					0.200		CTS Tons	0
Density	1	492		0.36364	($3,506.60)	94.000				1.100		I/DP	$0.00
VMA					$0.00					0.600		PF 1.0 Tons	0
Air Voids					$0.00					0.600			
				I/DP:	($3,506.60)							2V Adj.	$0.00

Mix Design No **147075** ***Process No*** 3 ***Grading*** S (100) PG 76-28 ***Price Per Ton*** $32.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC					$0.00					0.200		CTS Tons	0
Density	1	493		0.17000	($5,521.60)	94.000				1.100		I/DP	$0.00
VMA					$0.00					0.600		PF 1.0 Tons	0
Air Voids					$0.00					0.600			
				I/DP:	($5,521.60)							2V Adj.	$0.00

Joint Density

Grad.	Price	Proc. No	Tests	Tons	*Quality Level*	*Pay Factor*	I/DP	TV	Mean	*Mean to TV*	Std Dev	V	*St Dev. - V*
S	$32.00	1	33	37,901	56.977	0.74581	($46,243.10)	92.000	88.270	3.730	1.505	1.600	-0.095

Totals: 14613

	Tests	Tons	I/DP	
AC	44	37,901	($3,496.88)	CTS I/DP
Density	77	37,901	($39,667.58)	$0.00
VMA	44	37,901	$6,670.58	2V Adj
Air Voids	44	37,901	$11,574.14	$0.00
Joint Density	33	37,901	($46,243.10)	
Plan Quant		72,866	**Project I/DP**	($71,162.84)

CPFC **0.94133**

Comments: SMA not reported?

Subaccount: 14657 ***STA C470-026*** ***SH 83/86 Resurfacing*** ***Region: 1*** ***Supplier: 19***

Bid Date: 3/18/2004 ***Start Date: 5/18/2004***

Mix Design No **158229** ***Process No*** 1 ***Grading*** S (100) PG 58-28 ***Price Per Ton*** $30.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	40	39,910	95.002	1.04167	$4,989.48	4.800	4.768	0.032	0.152	0.200	-0.048	CTS Tons	0
Density	80	39,910	88.765	0.98671	($5,570.60)	94.000	93.619	0.381	1.206	1.100	0.106	I/DP	$0.00
VMA	40	39,910	83.176	0.95759	($5,078.05)	14.900	14.430	0.470	0.731	0.600	0.131	PF 1.0 Tons	0
Air Voids	40	39,910	92.372	1.02380	$8,548.96	3.600	3.302	0.298	0.617	0.600	0.017		
				I/DP:	$2,889.79							2V Adj.	$0.00

Mix Design No **158240** ***Process No*** 1 ***Grading*** SX (100) PG 58-28 ***Price Per Ton*** $52.12

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	3	1,735	55.508	0.92665	($663.31)	5.200	5.250	0.050	0.346	0.200	0.146	CTS Tons	0
Density		0			$0.00	94.000				1.100		I/DP	$0.00
VMA	3	1,735	57.118	0.93668	($572.60)	15.100	14.100	1.000	0.781	0.600	0.181	PF 1.0 Tons	0
Air Voids	3	1,735	45.443	0.85397	($3,961.65)	4.000	2.633	1.367	1.012	0.600	0.412		
				I/DP:	($5,197.56)							2V Adj.	$0.00

Mix Design No **158244** ***Process No*** 1 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $36.25

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	31	30,505	91.350	1.02091	$2,312.57	5.500	5.398	0.102	0.146	0.200	-0.054	CTS Tons	0
Density	61	30,005	87.722	0.98281	($6,542.38)	94.000	93.518	0.482	1.209	1.100	0.109	I/DP	$0.00
VMA	31	30,505	86.992	0.99169	($918.50)	14.900	14.555	0.345	0.720	0.600	0.120	PF 1.0 Tons	0
Air Voids	31	30,505	74.720	0.90119	($32,780.72)	3.600	2.861	0.739	0.685	0.600	0.085		
				I/DP:	($37,929.03)							2V Adj.	$0.00

Mix Design No **158244** ***Process No*** 2 ***Grading*** SX (100) PG 64-28 ***Price Per Ton*** $36.25

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC					$0.00					0.200		CTS Tons	0
Density	1	500		0.47727	($3,316.07)	94.000				1.100		I/DP	$0.00
VMA					$0.00					0.600		PF 1.0 Tons	0
Air Voids					$0.00					0.600			
				I/DP:	($3,316.07)							2V Adj.	$0.00

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	$30.00	1	19	34,798	64.423	0.83893	($25,221.34)	92.000	88.910	3.090	2.422	1.600	0.822
SX	$36.25	2	24	29,440	82.822	0.97050	($4,722.17)	92.000	90.740	1.260	2.662	1.600	1.062
S	$30.00	3	1	1,610		0.67188	($2,377.27)	92.000				1.600	
SX	$36.25	4	1	1,065		0.43750	($3,257.40)	92.000				1.600	
S	$30.00	5	1	1,610		0.43750	($4,075.31)	92.000				1.600	

Totals: 14657

	Tests	Tons	I/DP			
AC	74	72,150	$6,638.74	**CTS I/DP**		
Density	142	70,415	($15,429.05)	$0.00		
VMA	74	72,150	($6,569.15)	**2V Adj**		
Air Voids	74	72,150	($28,193.41)	$0.00		
Joint Density	46	68,523	($39,653.49)			
Plan Quant		72,845	**Project I/DP**	($83,206.36)	**CPFC**	**0.96524**

Comments: Final quantities. 2V out tests. SMA gradation tested.

Subaccount: 14706 ***NH 2873-134*** ***US 287 Virginiadale*** ***Region: 4*** ***Supplier: 14***

Bid Date: 4/1/2004 ***Start Date: 8/4/2004***

Mix Design No **104104L** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	1	1,000		1.00000	$0.00	5.000				0.200		CTS Tons	0
Density		0			$0.00	94.000				1.100		I/DP	$0.00
VMA	1	1,000		1.00000	$0.00	14.400				0.600		PF 1.0 Tons	0
Air Voids	1	1,000		1.00000	$0.00	3.500				0.600			
				I/DP:	$0.00						2V Adj.		$0.00

Mix Design No **104104L_M** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $45.00

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	2	1,316		0.91875	($481.16)	5.000	5.125	0.125		0.200		CTS Tons	0
Density	2	620			$0.00	94.000				1.100		I/DP	$0.00
VMA	2	1,316			$0.00	13.600				0.600		PF 1.0 Tons	0
Air Voids	2	1,316			$0.00	3.500				0.600			
				I/DP:	($481.16)						2V Adj.		$0.00

Mix Design No **104104L-1** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	32	32,225	83.665	0.96748	($3,385.63)	5.000	4.873	0.127	0.173	0.200	-0.027	CTS Tons	0
Density		0			$0.00	94.000				1.100		I/DP	$0.00
VMA	32	32,225	84.505	0.97350	($2,759.41)	14.400	13.813	0.587	0.601	0.600	0.001	PF 1.0 Tons	0
Air Voids	32	32,225	94.437	1.04033	$12,598.28	3.500	3.434	0.066	0.637	0.600	0.037		
				I/DP:	$6,453.24						2V Adj.		$0.00

Mix Design No **104104L-1T** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	15	15,000	88.764	1.01621	$785.69	5.000	4.954	0.046	0.189	0.200	-0.011	CTS Tons	500
Density	33	16,500	90.345	1.01318	$2,459.23	94.000	93.624	0.376	1.159	1.100	0.059	I/DP	$168.87
VMA	15	15,000	93.069	1.03746	$1,815.68	14.400	14.360	0.040	0.688	0.600	0.088	PF 1.0 Tons	0
Air Voids	15	15,000	76.333	0.94219	($8,405.35)	3.500	4.007	0.507	0.879	0.600	0.279		
				I/DP:	($3,175.88)						2V Adj.		$0.00

Mix Design No **104104L-1T** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V	Other	
AC	4	4,000	72.192	0.98907	($141.31)	5.000	5.215	0.215	0.128	0.200	-0.072	CTS Tons	0
Density	10	5,000	93.310	1.04120	$2,329.66	94.000	93.350	0.650	0.934	1.100	-0.166	I/DP	$0.00
VMA	4	4,000	84.620	1.03000	$387.72	14.400	14.150	0.250	0.915	0.600	0.315	PF 1.0 Tons	0
Air Voids	4	4,000	64.000	0.94704	($2,053.31)	3.500	3.225	0.275	1.250	0.600	0.650		
				I/DP:	$522.76						2V Adj.		$0.00

Mix Design No **104104L-1T** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	3	3,000	81.284	1.02500	$242.32	5.000	5.163	0.163	0.142	0.200	-0.058
Density	6	3,000	83.803	1.01483	$503.16	94.000	93.000	1.000	1.000	1.100	-0.100
VMA	3	3,000	30.000	0.31177	($6,671.01)	13.200	15.067	1.867	0.153	0.600	-0.447
Air Voids	3	3,000	100.000	1.02500	$726.97	3.500	4.500	1.000	0.100	0.600	-0.500
				I/DP:	($5,198.56)						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **152066** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	7	7,000	81.544	1.00064	$14.36	5.300	5.111	0.189	0.122	0.200	-0.078
Density	12	6,000	94.001	1.04323	$2,932.86	94.000	93.325	0.675	0.881	1.100	-0.219
VMA	7	7,000	100.000	1.03500	$791.59	13.600	13.071	0.529	0.189	0.600	-0.411
Air Voids	7	7,000	51.873	0.80309	($13,360.84)	3.600	2.414	1.186	0.285	0.600	-0.315
				I/DP:	($9,424.13)						

Other	
CTS Tons	500
I/DP	$197.90
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **152066-1** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	3	3,000	100.000	1.02500	$242.32	5.200	5.267	0.067	0.090	0.200	-0.110
Density	5	2,500	100.000	1.03000	$848.14	94.000	94.020	0.020	0.722	1.100	-0.378
VMA	3	3,000	40.809	0.81473	($1,795.85)	14.300	12.900	1.400	0.608	0.600	0.008
Air Voids	3	3,000	48.786	0.88002	($3,488.99)	3.400	2.167	1.233	0.757	0.600	0.157
				I/DP:	($4,194.38)						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **152066-2** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	24	24,000	89.085	1.01045	$810.59	5.200	5.080	0.120	0.147	0.200	-0.053
Density	46	23,000	95.937	1.04717	$12,269.80	94.000	93.026	0.974	0.595	1.100	-0.505
VMA	24	24,000	99.995	1.05000	$3,877.20	13.400	13.538	0.138	0.317	0.600	-0.283
Air Voids	24	24,000	99.098	1.05000	$11,631.60	3.400	3.171	0.229	0.432	0.600	-0.168
				I/DP:	$28,589.19						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Mix Design No **152066-3** ***Process No*** 1 ***Grading*** S (100) PG 58-34 ***Price Per Ton*** $32.31

	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	St Dev.	V	St Dev. - V
AC	25	25,219	81.437	0.95838	($3,391.71)	5.200	5.040	0.160	0.156	0.200	-0.044
Density	51	25,915	95.734	1.04512	$13,224.25	94.000	93.273	0.727	0.747	1.100	-0.353
VMA	25	25,219	99.999	1.05000	$4,074.13	13.400	13.412	0.012	0.330	0.600	-0.270
Air Voids	25	25,219	91.479	1.02477	$6,055.10	3.400	2.924	0.476	0.533	0.600	-0.067
				I/DP:	$19,961.77						

Other	
CTS Tons	0
I/DP	$0.00
PF 1.0 Tons	0
2V Adj.	$0.00

Joint Density

Grad.	Price	Proc. No	Tests	Tons	Quality Level	Pay Factor	I/DP	TV	Mean	Mean to TV	Std Dev	V	St Dev. - V
S	$32.31	1	21	40,000	83.470	0.97837	($4,192.60)	92.000	89.480	2.520	1.513	1.600	-0.087
S	$32.31	2	13	26,000	93.705	1.04148	$5,227.01	92.000	94.030	2.030	1.324	1.600	-0.276

Totals: 14706

	Tests	Tons	I/DP	CTS I/DP
AC	116	115,760	($5,304.53)	
Density	165	83,535	$34,567.10	$366.77
VMA	116	115,760	($279.95)	**2V Adj**
Air Voids	116	115,760	$3,703.46	$0.00
Joint Density	34	66,000	$1,034.41	
Plan Quant		111,715	**Project I/DP**	$34,087.26

CPFC **1.00907**

Comments: Quantities

Totals for all Projects

Projects with Start Dates from 1/1/2004 to 12/31/2004.

Number of Projects: 19

	Tests	*Tons*	*I/DP*	
AC	1034	1,011,689	$33,406.89	***CTS I/DP***
Density	1763	977,729	$170,005.87	($564.78)
VMA	1033	1,011,689	$111,927.78	***2V Adj***
Air Voids	1033	1,011,689	$224,222.04	$0.00
Joint Density	566	951,599	($170,907.88)	
Plan Quant		1,068,777	***Total I/DP***	$368,089.92

Calculated Pay Factor Composite and I/DP by Region, Voids

Criteria: Projects with Start Dates from 1/1/2004 to 12/31/2004.

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

A Calculated Average Unit Price is used in the calculation.

Region 1

Subacct.	Bid Date	Project Code	Reg.	Grading	Total Tons	Average Price	Pay Factor Composite	Project I/DP	Supplier
13818	03/04/04	STA 0405-030	1	SX	84,650	$36.40	1.03872	$119,310.36	19
14560	01/15/04	IM 0704-203	1	SX	55,260	$37.50	1.02331	$48,312.53	14
14657	03/18/04	STA C470-02	1	S	72,150	$33.17	0.96524	($83,206.36)	19

Region 1

Number of Projects: 3 **CPFC: Maximum:** 1.03872

Total Tons: 212,060 **Minimum:** 0.96524

Average: 1.00909

Incentive/Disincentive Payments

Positive I/DPs:	2	***Sum I/DPs:***	$84,416.53
Negative I/DPs:	1	***Maximum:***	$119,310.36
		Minimum:	($83,206.36)
		Average IDP:	$28,138.84

Region 2

Subacct.	Bid Date	Project Code	Reg.	Grading	Total Tons	Average Price	Pay Factor Composite	Project I/DP	Supplier
14146	02/05/04	STA 1604-008	2	S	55,482	$32.65	1.04055	$73,448.18	11
14463	11/13/03	STU M240-08	2	S	30,965	$31.94	1.03806	$37,640.27	49
14209	03/18/04	NH 0504-046	2	S	46,076	$33.37	1.02145	$32,971.72	19
14212	05/20/04	STA 165A-01	2	S	62,761	$29.25	1.02044	$37,515.75	32

Region 2

Number of Projects: 4 **CPFC: Maximum:** 1.04055

Total Tons: 195,284 **Minimum:** 1.02044

Average: 1.03012

Incentive/Disincentive Payments

Positive I/DPs:	4	***Sum I/DPs:***	$181,575.92
Negative I/DPs:	0	***Maximum:***	$73,448.18
		Minimum:	$32,971.72
		Average IDP:	$45,393.98

Region 3

Subacct.	Bid Date	Project Code	Reg.	Grading	Total Tons	Average Price	Pay Factor Composite	Project I/DP	Supplier
13535	02/26/04	IM 0701-157	3	SX	109,403	$31.85	1.00747	$26,035.99	12
14483	02/12/04	IM 0701-164	3	SX	96,896	$36.14	0.98525	($51,666.23)	17

Region 3

Number of Projects: 2 **Total Tons:** 206,299

CPFC: **Maximum:** 1.00747 **Minimum:** 0.98525 **Average:** 0.99636

Incentive/Disincentive Payments

Positive I/DPs: 1 ***Negative I/DPs:*** 1

Sum I/DPs: ($25,630.24) ***Maximum:*** $26,035.99 ***Minimum:*** ($51,666.23) ***Average IDP:*** ($12,815.12)

Region 4

Subacct.	Bid Date	Project Code	Reg.	Grading	Total Tons	Average Price	Pay Factor Composite	Project I/DP	Supplier
13528	07/10/03	STA 0343-021	4	S	72,701	$36.95	1.02639	$70,880.93	60
14706	04/01/04	NH 2873-134	4	S	115,760	$32.45	1.00907	$34,087.26	14
13977	06/24/04	IM 0761-185	4	S	72,562	$38.60	1.00383	$10,725.62	10

Region 4

Number of Projects: 3 **Total Tons:** 261,023

CPFC: **Maximum:** 1.02639 **Minimum:** 1.00383 **Average:** 1.01310

Incentive/Disincentive Payments

Positive I/DPs: 3 ***Negative I/DPs:*** 0

Sum I/DPs: $115,693.81 ***Maximum:*** $70,880.93 ***Minimum:*** $10,725.62 ***Average IDP:*** $38,564.60

Region 6

Subacct.	Bid Date	Project Code	Reg.	Grading	Total Tons	Average Price	Pay Factor Composite	Project I/DP	Supplier
14238	01/29/04	STA 1211-059	6	S	25,487	$31.60	1.03329	$26,813.20	13
14239	02/05/04	STA 0853-052	6	S	13,745	$31.37	1.03112	$13,416.22	41
14237	01/29/04	STA 1211-058	6	S	15,341	$32.25	1.03109	$15,379.67	37
14240	02/12/04	STA 0404-040	6	S	8,978	$33.00	1.02251	$6,670.59	37
13957	02/12/04	STA 1211-057	6	S	14,115	$30.30	1.02031	$8,686.21	33
14241	01/08/04	STA 0062-015	6	SX	21,456	$38.00	1.01500	$12,230.85	33
14613	06/17/04	IM 0253-186	6	S	37,901	$32.00	0.94133	($71,162.84)	33

Region 6

Number of Projects: 7 **CPFC:** **Maximum:** 1.03329
Total Tons: 137,023 **Minimum:** 0.94133
Average: 1.01352

Incentive/Disincentive Payments

Positive I/DPs:	6	***Sum I/DPs:***	$12,033.90
Negative I/DPs:	1	***Maximum:***	$26,813.20
		Minimum:	($71,162.84)
		Average IDP:	$1,719.13

Statewide Totals: 1/1/2004 to 12/31/2004.

Number of Projects: 19 **CPFC** **Maximum:** 1.04055
Total Tons: 1,011,689 **Minimum:** 0.94133
Average: 1.01444

Incentive/Disincentive Payments

Positive I/DPs:	16	***Sum I/DPs:***	$368,089.92
Negative I/DPs:	3	***Maximum:***	$119,310.36
		Minimum:	($83,206.36)
		Average IDP:	$19,373.15

Asphalt Content - Process Information, Voids

Criteria: Projects with Start Dates from 1/1/2004 to 12/31/2004.

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
14212	2	66,323	14212A	$29.25	1	6,000	6	100.000	1.03500	5.50	5.51	0.01	0.121	0.20	-0.08
14240	6	8,683	146999-1	$33.00	1	3,095	3	100.000	1.02500	5.10	4.81	0.29	0.006	0.20	-0.19
14706	4	111,715	152066-1	$32.31	1	3,000	3	100.000	1.02500	5.20	5.27	0.07	0.090	0.20	-0.11
13957	6	14,514	147059-1	$30.30	1	14,115	15	99.400	1.05000	4.70	4.71	0.01	0.123	0.20	-0.08
13528	4	70,085	150009A	$38.80	1	9,610	10	98.317	1.04500	5.30	5.36	0.06	0.124	0.20	-0.08
14238	6	29,367	147014-1	$31.60	1	7,487	8	98.263	1.04000	5.10	5.20	0.10	0.111	0.20	-0.09
14463	2	37,435	14463	$31.94	1	18,759	19	96.759	1.05000	5.50	5.53	0.03	0.145	0.20	-0.06
14146	2	55,467	14146	$32.65	1	55,482	56	95.848	1.04530	5.30	5.24	0.06	0.137	0.20	-0.06
14212	2	66,323	14212B	$29.25	1	9,000	9	95.705	1.04000	5.80	5.78	0.02	0.163	0.20	-0.04
14240	6	8,683	146999-2	$33.00	1	5,883	6	95.522	1.03500	5.10	4.97	0.13	0.110	0.20	-0.09
14239	6	16,154	147057	$31.37	1	13,745	15	95.401	1.04804	5.50	5.50	0.00	0.159	0.20	-0.04
14212	2	66,323	14212C	$29.25	1	47,761	48	95.329	1.04270	5.80	5.78	0.02	0.152	0.20	-0.05
14657	1	72,845	158229	$30.00	1	39,910	40	95.002	1.04167	4.80	4.77	0.03	0.152	0.20	-0.05
14237	6	15,323	146999-1	$32.25	1	15,341	15	94.045	1.04197	5.10	4.95	0.15	0.102	0.20	-0.10
14209	2	46,216	209 RAP	$30.00	1	21,062	22	93.241	1.03639	5.30	5.20	0.10	0.138	0.20	-0.06
14209	2	46,216	4209 Top	$36.20	1	24,150	25	90.438	1.01831	5.40	5.37	0.03	0.181	0.20	-0.02
13528	4	70,085	149926A	$35.00	1	28,036	29	89.279	1.00908	5.40	5.32	0.08	0.171	0.20	-0.03
14706	4	111,715	152066-2	$32.31	1	24,000	24	89.085	1.01045	5.20	5.08	0.12	0.147	0.20	-0.05
14238	6	29,367	147014	$31.60	1	18,000	18	88.943	1.01410	5.10	5.18	0.07	0.176	0.20	-0.02
14706	4	111,715	04L-1TM	$32.31	1	15,000	15	88.764	1.01621	5.00	4.95	0.05	0.189	0.20	-0.01
14613	6	72,866	147075	$32.00	1	37,901	44	85.245	0.97117	5.30	5.29	0.01	0.208	0.20	0.01
13977	4	72,754	162105A	$35.40	1	6,000	6	84.616	1.01796	5.20	5.04	0.16	0.133	0.20	-0.07
14706	4	111,715	04104L-1	$32.31	1	32,225	32	83.665	0.96748	5.00	4.87	0.13	0.173	0.20	-0.03
13528	4	70,085	149926	$35.00	1	7,423	7	82.610	1.00548	5.50	5.58	0.08	0.214	0.20	0.01
13528	4	70,085	150009	$38.80	1	27,632	28	81.887	0.95836	5.00	5.07	0.07	0.213	0.20	0.01
14706	4	111,715	152066	$32.31	1	7,000	7	81.544	1.00064	5.30	5.11	0.19	0.122	0.20	-0.08
14706	4	111,715	152066-3	$32.31	1	25,219	25	81.437	0.95838	5.20	5.04	0.16	0.156	0.20	-0.04
14706	4	111,715	4L-1TM3	$32.31	1	3,000	3	81.284	1.02500	5.00	5.16	0.16	0.142	0.20	-0.06
14463	2	37,435	14463B	$31.94	2	12,206	13	80.058	0.97173	5.50	5.37	0.13	0.197	0.20	0.00
14706	4	111,715	4L-1TM2	$32.31	1	4,000	4	72.192	0.98907	5.00	5.22	0.22	0.128	0.20	-0.07
13977	4	72,754	162105B	$35.40	1	11,862	12	67.463	0.89157	5.10	4.95	0.15	0.264	0.20	0.06
13977	4	72,754	162105	$35.40	1	6,000	6	64.292	0.91199	5.20	5.00	0.20	0.255	0.20	0.05

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

Totals Grading: S

			Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons:	559,904	**Best:**	100.000	1.05000	0.00	0.006	0.20	-0.19
Processes:	32	**Worst:**	64.292	0.89157	0.29	0.264	0.20	0.06
Tests:	573	**Weighted Average:**	89.837	1.01200	0.07	0.161	0.20	-0.04

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
13535	3	106,305	64-22 #2	$31.68	1	5,878	7	100.000	1.03500	5.50	5.50	0.00	0.081	0.20	-0.12
13977	4	72,754	154122	$41.75	1	4,000	4	100.000	1.03000	5.30	5.34	0.04	0.131	0.20	-0.07
13977	4	72,754	162107B	$41.75	1	4,818	5	99.892	1.03000	5.40	5.41	0.01	0.167	0.20	-0.03
13977	4	72,754	162103	$36.60	1	7,000	7	99.310	1.03500	5.30	5.30	0.00	0.148	0.20	-0.05
13818	1	84,282	136488	$33.00	1	33,289	34	98.085	1.05500	5.50	5.47	0.03	0.129	0.20	-0.07
13535	3	106,305	76-28 #4	$32.01	1	51,318	52	97.663	1.05500	5.30	5.24	0.06	0.123	0.20	-0.08
14241	6	20,555	147063-1	$38.00	2	5,828	6	96.699	1.03500	5.20	5.08	0.12	0.115	0.20	-0.09
13535	3	106,305	64-22 #4	$31.39	1	20,773	21	96.573	1.05000	5.30	5.30	0.00	0.148	0.20	-0.05
14560	1	55,809	95804	$37.50	1	55,260	56	96.130	1.04735	5.30	5.35	0.05	0.140	0.20	-0.06
13818	1	84,282	136488-2	$38.60	1	51,361	52	94.591	1.03684	5.70	5.65	0.05	0.150	0.20	-0.05
13535	3	106,305	76-28 #3	$32.26	1	11,833	12	93.378	1.04067	5.40	5.35	0.05	0.165	0.20	-0.03
14483	3	112,079	7-23	$35.95	1	34,408	34	92.484	1.02689	6.10	6.11	0.01	0.171	0.20	-0.03
14657	1	72,845	158244	$36.25	1	30,505	31	91.350	1.02091	5.50	5.40	0.10	0.146	0.20	-0.05
13535	3	106,305	64-22 #3	$31.30	1	8,378	9	88.268	1.02166	5.40	5.27	0.13	0.143	0.20	-0.06
14483	3	112,079	8-11	$36.27	1	58,111	59	87.844	0.98454	6.20	6.24	0.04	0.190	0.20	-0.01
13977	4	72,754	154122B	$41.75	1	13,978	14	87.696	1.01209	5.70	5.61	0.09	0.174	0.20	-0.03
13535	3	106,305	64-22	$31.91	1	3,950	3	79.167	1.02500	5.60	5.68	0.08	0.244	0.20	0.04
13977	4	72,754	162103A	$36.60	1	7,904	8	77.292	0.97258	5.20	5.19	0.01	0.252	0.20	0.05
14483	3	112,079	5-17	$36.01	1	4,377	5	65.513	0.93582	6.40	6.16	0.24	0.141	0.20	-0.06
13977	4	72,754	162107	$41.75	1	6,000	6	58.286	0.86957	5.40	5.12	0.28	0.088	0.20	-0.11
14241	6	20,555	147063	$38.00	1	15,628	16	55.990	0.77658	5.40	5.13	0.27	0.191	0.20	-0.01
14657	1	72,845	158240	$52.12	1	1,735	3	55.508	0.92665	5.20	5.25	0.05	0.346	0.20	0.15
13977	4	72,754	162107A	$41.75	1	5,000	5	40.604	0.74560	5.40	5.06	0.34	0.158	0.20	-0.04
13535	3	106,305	76-28	$32.02	1	4,622	5	32.000	0.61651	5.60	5.23	0.37	0.110	0.20	-0.09

Totals Grading: SX

			Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons:	445,954	**Best:**	100.000	1.05500	0.00	0.081	0.20	-0.12
Processes:	24	**Worst:**	32.000	0.61651	0.37	0.346	0.20	0.15
Tests:	454	**Weighted Average:**	90.161	1.01070	0.07	0.154	0.20	-0.05

Asphalt Content - Totals 1/1/2004 to 12/31/2004.

		Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons: 1,005,858	**Best:**	100.000	1.05500	0.00	0.006	0.20	-0.19
Processes: 56	**Worst:**	32.000	0.61651	0.37	0.346	0.20	0.15
Tests: 1,027	**Weighted Average:**	89.981	1.01142	0.07	0.158	0.20	-0.04

VMA - Process Information

Criteria: Projects with Start Dates from 1/1/2004 to 12/31/2004.

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
14209	2	46,216	4209 Top	$36.20	1	24,150	25	100.000	1.05000	14.20	14.10	0.10	0.173	0.60	-0.427
13528	4	70,085	150009A	$38.80	1	9,610	10	100.000	1.04500	14.70	14.74	0.04	0.272	0.60	-0.328
14237	6	15,323	146999-1	$32.25	1	15,341	14	100.000	1.04500	14.80	14.81	0.01	0.300	0.60	-0.300
14238	6	29,367	147014-1	$31.60	1	7,487	8	100.000	1.04000	14.20	13.69	0.51	0.236	0.60	-0.364
14706	4	111,715	152066	$32.31	1	7,000	7	100.000	1.03500	13.60	13.07	0.53	0.189	0.60	-0.411
14212	2	66,323	14212A	$29.25	1	6,000	6	100.000	1.03500	13.70	14.03	0.33	0.372	0.60	-0.228
14240	6	8,683	146999-2	$33.00	1	5,883	6	100.000	1.03500	14.40	14.50	0.10	0.477	0.60	-0.123
13977	4	72,754	162105A	$35.40	1	6,000	6	100.000	1.03500	15.10	14.88	0.22	0.479	0.60	-0.121
14240	6	8,683	146999-1	$33.00	1	3,095	3	100.000	1.02500	14.80	14.40	0.40	0.520	0.60	-0.080
14706	4	111,715	152066-3	$32.31	1	25,219	25	99.999	1.05000	13.40	13.41	0.01	0.330	0.60	-0.270
14238	6	29,367	147014	$31.60	1	18,000	18	99.998	1.05000	14.20	14.11	0.09	0.337	0.60	-0.263
14706	4	111,715	152066-2	$32.31	1	24,000	24	99.995	1.05000	13.40	13.54	0.14	0.317	0.60	-0.283
14146	2	55,467	14146	$32.65	1	55,482	56	99.975	1.05500	14.60	14.72	0.12	0.326	0.60	-0.274
14463	2	37,435	14463	$31.94	1	18,759	19	99.966	1.05000	15.30	15.20	0.10	0.376	0.60	-0.224
14239	6	16,154	147057	$31.37	1	13,745	15	99.960	1.05000	15.20	15.12	0.08	0.402	0.60	-0.198
14209	2	46,216	209 RAP	$30.00	1	21,062	22	99.933	1.05000	13.80	13.44	0.36	0.292	0.60	-0.308
13528	4	70,085	150009	$38.80	1	27,632	28	99.820	1.05500	14.00	14.19	0.19	0.373	0.60	-0.227
14613	6	72,866	147075	$32.00	1	37,901	44	99.719	1.05500	13.30	13.25	0.05	0.417	0.60	-0.183
13957	6	14,514	147059-1	$30.30	1	14,115	15	99.481	1.05000	14.70	14.56	0.14	0.458	0.60	-0.142
14463	2	37,435	14463B	$31.94	2	12,206	13	99.163	1.04500	15.30	15.01	0.29	0.421	0.60	-0.179
13977	4	72,754	162105B	$35.40	1	11,862	12	98.803	1.04500	15.10	15.31	0.21	0.485	0.60	-0.115
13528	4	70,085	149926	$35.00	1	7,423	7	98.675	1.03500	14.80	14.94	0.14	0.574	0.60	-0.026
13528	4	70,085	149926A	$35.00	1	28,036	29	97.560	1.05500	14.00	13.74	0.26	0.488	0.60	-0.112
14706	4	111,715	04L-1TM	$32.31	1	15,000	15	93.069	1.03746	14.40	14.36	0.04	0.688	0.60	0.088
14212	2	66,323	14212C	$29.25	1	47,761	48	89.534	1.00127	14.80	14.44	0.36	0.653	0.60	0.053
13977	4	72,754	162105	$35.40	1	6,000	6	85.180	1.02007	15.10	14.73	0.37	0.792	0.60	0.192
14706	4	111,715	4L-1TM2	$32.31	1	4,000	4	84.620	1.03000	14.40	14.15	0.25	0.915	0.60	0.315
14706	4	111,715	04104L-1	$32.31	1	32,225	32	84.505	0.97350	14.40	13.81	0.59	0.601	0.60	0.001
14657	1	72,845	158229	$30.00	1	39,910	40	83.176	0.95759	14.90	14.43	0.47	0.731	0.60	0.131
14212	2	66,323	14212B	$29.25	1	9,000	9	66.348	0.89632	13.70	14.73	1.03	0.381	0.60	-0.219

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
14706	4	111,715	152066-1	$32.31	1	3,000	3	40.809	0.81473	14.30	12.90	1.40	0.608	0.60	0.008
14706	4	111,715	4L-1TM3	$32.31	1	3,000	3	30.000	0.31177	13.20	15.07	1.87	0.153	0.60	-0.447

Totals Grading: S

			Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons:	559,904	**Best:**	100.000	1.05500	0.01	0.153	0.60	-0.447
Processes:	32	**Worst:**	30.000	0.31177	1.87	0.915	0.60	0.315
Tests:	572	**Weighted Average:**	95.097	1.02612	0.25	0.444	0.60	-0.156

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
13535	3	106,305	76-28 #3	$32.26	1	11,833	12	100.000	1.04500	14.70	14.25	0.45	0.207	0.60	-0.393
13535	3	106,305	64-22 #3	$31.30	1	8,378	9	100.000	1.04000	14.70	14.37	0.33	0.224	0.60	-0.376
13535	3	106,305	64-22 #2	$31.68	1	5,878	7	100.000	1.03500	15.20	14.86	0.34	0.140	0.60	-0.460
13977	4	72,754	162103	$36.60	1	7,000	7	100.000	1.03500	15.00	14.87	0.13	0.221	0.60	-0.379
14241	6	20,555	147063-1	$38.00	2	5,828	6	100.000	1.03500	15.40	15.82	0.42	0.279	0.60	-0.321
13977	4	72,754	162107	$41.75	1	6,000	6	100.000	1.03500	15.10	14.68	0.42	0.306	0.60	-0.294
14483	3	112,079	5-17	$36.01	1	4,377	5	100.000	1.03000	14.80	14.80	0.00	0.141	0.60	-0.459
13977	4	72,754	154122	$41.75	1	4,000	4	100.000	1.03000	15.40	15.48	0.08	0.222	0.60	-0.378
13977	4	72,754	162107A	$41.75	1	5,000	5	100.000	1.03000	14.80	14.42	0.38	0.363	0.60	-0.237
13535	3	106,305	76-28	$32.02	1	4,622	5	100.000	1.03000	15.00	15.08	0.08	0.512	0.60	-0.088
13977	4	72,754	162107B	$41.75	1	4,818	5	100.000	1.03000	14.80	14.70	0.10	0.561	0.60	-0.039
13818	1	84,282	136488	$33.00	1	33,289	34	99.999	1.05500	14.80	14.77	0.03	0.313	0.60	-0.287
13535	3	106,305	64-22 #4	$31.39	1	20,773	21	99.988	1.05000	14.70	14.41	0.29	0.290	0.60	-0.310
14560	1	55,809	95804	$37.50	1	55,260	56	99.915	1.05500	15.00	14.95	0.05	0.374	0.60	-0.226
13977	4	72,754	162103A	$36.60	1	7,904	8	99.008	1.04000	15.00	14.79	0.21	0.506	0.60	-0.094
13818	1	84,282	136488-2	$38.60	1	51,361	52	98.805	1.05500	15.10	14.61	0.49	0.322	0.60	-0.278
13535	3	106,305	76-28 #4	$32.01	1	51,318	52	98.795	1.05500	14.70	14.34	0.36	0.381	0.60	-0.219
14241	6	20,555	147063	$38.00	1	15,628	16	98.682	1.05000	15.40	15.07	0.33	0.419	0.60	-0.181
14483	3	112,079	7-23	$35.95	1	34,408	34	98.636	1.05500	14.60	15.05	0.45	0.350	0.60	-0.250
14483	3	112,079	8-11	$36.27	1	58,111	59	91.410	1.01179	14.60	15.19	0.59	0.447	0.60	-0.153
13977	4	72,754	154122B	$41.75	1	13,978	14	90.484	1.02603	15.50	15.09	0.41	0.606	0.60	0.006
14657	1	72,845	158244	$36.25	1	30,505	31	86.992	0.99169	14.90	14.56	0.34	0.720	0.60	0.120
13535	3	106,305	64-22	$31.91	1	3,950	3	62.338	0.96617	15.20	14.07	1.13	0.153	0.60	-0.447
14657	1	72,845	158240	$52.12	1	1,735	3	57.118	0.93668	15.10	14.10	1.00	0.781	0.60	0.181

Totals Grading: SX

			Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons:	445,954	**Best:**	100.000	1.05500	0.00	0.140	0.60	-0.460
Processes:	24	**Worst:**	57.118	0.93668	1.13	0.781	0.60	0.181
Tests:	454	**Weighted Average:**	96.736	1.03928	0.34	0.387	0.60	-0.213

VMA - Totals 1/1/2004 to 12/31/2004.

		Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons: 1,005,858	**Best:**	100.000	1.05500	0.00	0.140	0.60	-0.460
Processes: 56	**Worst:**	30.000	0.31177	1.87	0.915	0.60	0.315
Tests: 1,026	**Weighted Average:**	95.823	1.03195	0.29	0.419	0.60	-0.181

Air Voids - Process Information

Criteria: Projects with Start Dates from 1/1/2004 to 12/31/2004.

Processes with less than 3 tests not included.

Grading: S

Sub.	Reg.	Plan Quant.	Mix Design	Price	Process No	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev -V
14240	6	8,683	146999-1	$33.00	1	3,095	3	100.000	1.02500	3.00	2.77	0.23	0.321	0.60	-0.279
14706	4	111,715	)4L-1TM3	$32.31	1	3,000	3	100.000	1.02500	3.50	4.50	1.00	0.100	0.60	-0.500
14238	6	29,367	147014-1	$31.60	1	7,487	8	100.000	1.04000	3.00	2.83	0.17	0.396	0.60	-0.204
13957	6	14,514	147059-1	$30.30	1	14,115	15	99.997	1.05000	3.20	3.21	0.01	0.383	0.60	-0.217
13528	4	70,085	150009A	$38.80	1	9,610	10	99.651	1.04500	3.10	3.56	0.46	0.331	0.60	-0.269
14706	4	111,715	152066-2	$32.31	1	24,000	24	99.098	1.05000	3.40	3.17	0.23	0.432	0.60	-0.168
14212	2	66,323	14212A	$29.25	1	6,000	6	99.025	1.03500	3.50	3.68	0.18	0.564	0.60	-0.036
14238	6	29,367	147014	$31.60	1	18,000	18	98.993	1.05000	3.00	2.98	0.02	0.508	0.60	-0.092
14146	2	55,467	14146	$32.65	1	55,482	56	98.556	1.05500	3.50	3.80	0.30	0.420	0.60	-0.180
13528	4	70,085	149926A	$35.00	1	28,036	29	98.356	1.05500	3.00	2.63	0.37	0.402	0.60	-0.198
14463	2	37,435	14463	$31.94	1	18,759	19	97.979	1.05000	3.90	4.00	0.10	0.540	0.60	-0.060
14209	2	46,216	4209 Top	$36.20	1	24,150	25	95.837	1.05000	3.90	3.63	0.27	0.542	0.60	-0.058
14237	6	15,323	146999-1	$32.25	1	15,341	14	95.366	1.04500	3.00	3.36	0.36	0.520	0.60	-0.080
14463	2	37,435	14463B	$31.94	2	12,206	13	95.120	1.04500	3.90	4.14	0.24	0.595	0.60	-0.005
14706	4	111,715	04104L-1	$32.31	1	32,225	32	94.437	1.04033	3.50	3.43	0.07	0.637	0.60	0.037
14613	6	72,866	147075	$32.00	1	37,901	44	93.663	1.03181	3.10	3.10	0.00	0.656	0.60	0.056
14239	6	16,154	147057	$31.37	1	13,745	15	92.485	1.03472	3.40	3.28	0.12	0.691	0.60	0.091
14657	1	72,845	158229	$30.00	1	39,910	40	92.372	1.02380	3.60	3.30	0.30	0.617	0.60	0.017
14706	4	111,715	152066-3	$32.31	1	25,219	25	91.479	1.02477	3.40	2.92	0.48	0.533	0.60	-0.067
14240	6	8,683	146999-2	$33.00	1	5,883	6	90.596	1.03500	3.00	2.58	0.42	0.618	0.60	0.018
14212	2	66,323	14212B	$29.25	1	9,000	9	90.443	1.03049	3.50	3.92	0.42	0.608	0.60	0.008
13528	4	70,085	150009	$38.80	1	27,632	28	90.285	1.01563	3.10	3.56	0.46	0.574	0.60	-0.026
13528	4	70,085	149926	$35.00	1	7,423	7	85.440	1.01759	3.30	3.66	0.36	0.783	0.60	0.183
14212	2	66,323	14212C	$29.25	1	47,761	48	84.868	0.96648	3.50	3.35	0.15	0.828	0.60	0.228
14209	2	46,216	209 RAP	$30.00	1	21,062	22	84.135	0.98044	3.50	2.84	0.66	0.536	0.60	-0.064
13977	4	72,754	162105B	$35.40	1	11,862	12	82.196	0.98654	3.50	4.07	0.57	0.672	0.60	0.072
14706	4	111,715	04L-1TM	$32.31	1	15,000	15	76.333	0.94219	3.50	4.01	0.51	0.879	0.60	0.279
13977	4	72,754	162105	$35.40	1	6,000	6	70.077	0.94806	3.70	3.02	0.68	0.922	0.60	0.322
13977	4	72,754	162105A	$35.40	1	6,000	6	67.906	0.93508	3.70	2.82	0.88	0.637	0.60	0.037
14706	4	111,715	)4L-1TM2	$32.31	1	4,000	4	64.000	0.94704	3.50	3.22	0.28	1.250	0.60	0.650
14706	4	111,715	152066	$32.31	1	7,000	7	51.873	0.80309	3.60	2.41	1.19	0.285	0.60	-0.315
14706	4	111,715	152066-1	$32.31	1	3,000	3	48.786	0.88002	3.40	2.17	1.23	0.757	0.60	0.157

Totals Grading: S

			Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons:	559,904	**Best:**	100.000	1.05500	0.00	0.100	0.60	-0.500
Processes:	32	**Worst:**	48.786	0.80309	1.23	1.250	0.60	0.650
Tests:	572	**Weighted Average:**	91.724	1.02105	0.30	0.577	0.60	-0.023

Grading: SX

Sub.	Reg.	Plan Quant.	Mix Design	Price	Process No	Tons	Tests	Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev -V
14241	6	20,555	147063-1	$38.00	2	5,828	6	100.000	1.03500	3.10	3.20	0.10	0.303	0.60	-0.297
14483	3	112,079	5-17	$36.01	1	4,377	5	100.000	1.03000	3.50	2.98	0.52	0.370	0.60	-0.230
13977	4	72,754	162107B	$41.75	1	4,818	5	100.000	1.03000	3.50	3.44	0.06	0.568	0.60	-0.032
13977	4	72,754	162107	$41.75	1	6,000	6	100.000	1.03500	3.50	3.22	0.28	0.387	0.60	-0.213
13977	4	72,754	162107A	$41.75	1	5,000	5	100.000	1.03000	3.50	3.60	0.10	0.418	0.60	-0.182
13535	3	106,305	64-22 #2	$31.68	1	5,878	7	100.000	1.03500	3.70	3.87	0.17	0.325	0.60	-0.275
13535	3	106,305	64-22 #4	$31.39	1	20,773	21	99.991	1.05000	3.70	3.53	0.17	0.324	0.60	-0.276
13535	3	106,305	64-22 #3	$31.30	1	8,378	9	99.826	1.04000	3.70	3.57	0.13	0.469	0.60	-0.131
14483	3	112,079	7-23	$35.95	1	34,408	34	98.893	1.05500	3.50	3.73	0.23	0.437	0.60	-0.163
13535	3	106,305	76-28 #4	$32.01	1	51,318	52	98.737	1.05500	3.70	3.45	0.25	0.430	0.60	-0.170
13818	1	84,282	136488	$33.00	1	33,289	34	97.844	1.05500	3.80	4.02	0.22	0.493	0.60	-0.107
13818	1	84,282	136488-2	$38.60	1	51,361	52	97.358	1.05500	3.50	3.60	0.10	0.541	0.60	-0.059
13977	4	72,754	154122B	$41.75	1	13,978	14	96.535	1.04500	3.90	4.05	0.15	0.587	0.60	-0.013
14241	6	20,555	147063	$38.00	1	15,628	16	95.110	1.04687	3.10	2.67	0.43	0.478	0.60	-0.122
14483	3	112,079	8-11	$36.27	1	58,111	59	94.357	1.03389	3.50	3.73	0.23	0.593	0.60	-0.007
13535	3	106,305	76-28 #3	$32.26	1	11,833	12	92.055	1.03507	3.70	3.21	0.49	0.514	0.60	-0.086
13977	4	72,754	162103	$36.60	1	7,000	7	90.528	1.03500	3.80	3.19	0.61	0.460	0.60	-0.140
14560	1	55,809	95804	$37.50	1	55,260	56	90.433	1.00532	3.80	4.21	0.41	0.601	0.60	0.001
13977	4	72,754	162103A	$36.60	1	7,904	8	84.405	1.00781	3.50	3.59	0.09	0.874	0.60	0.274
14657	1	72,845	158244	$36.25	1	30,505	31	74.720	0.90119	3.60	2.86	0.74	0.685	0.60	0.085
13535	3	106,305	64-22	$31.91	1	3,950	3	50.000	0.88900	3.70	2.50	1.20	0.436	0.60	-0.164
13977	4	72,754	154122	$41.75	1	4,000	4	50.000	0.85237	3.40	4.60	1.20	0.258	0.60	-0.342
13535	3	106,305	76-28	$32.02	1	4,622	5	47.556	0.80715	3.50	4.76	1.26	0.873	0.60	0.273
14657	1	72,845	158240	$52.12	1	1,735	3	45.443	0.85397	4.00	2.63	1.37	1.012	0.60	0.412

Totals Grading: SX

Tons: 445,954
Processes: 24
Tests: 454

	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Best:	100.000	1.05500	0.06	0.258	0.60	-0.342
Worst:	45.443	0.80715	1.37	1.012	0.60	0.412
Weighted Average:	93.087	1.02455	0.31	0.523	0.60	-0.077

Air Voids - Totals 1/1/2004 to 12/31/2004.

Tons: 1,005,858
Processes: 56
Tests: 1,026

	Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Best:	100.000	1.05500	0.00	0.100	0.60	-0.500
Worst:	45.443	0.80309	1.37	1.250	0.60	0.650
Weighted Average:	92.328	1.02260	0.31	0.553	0.60	-0.047

Mat Density - Process Information, Voids Acceptance

Criteria: Projects with Bid Dates from 1/1/2004 to 12/31/2004.

Processes with less than 3 tests not included.

Compaction Test Sections 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
14706	4	111,715	52066-1	$32.31	1	2,500	5	100.000	1.03000	94.000	94.020	0.020	0.722	1.100	-0.378
14212	2	66,323	14212B	$29.25	1	9,000	18	99.980	1.05000	94.000	94.056	0.056	0.646	1.100	-0.454
13528	4	70,085	.50009A	$38.80	1	9,610	20	99.901	1.05000	94.000	94.070	0.070	0.688	1.100	-0.412
14240	6	8,683	46999-2	$33.00	1	5,883	13	98.832	1.04500	94.000	93.915	0.085	0.887	1.100	-0.213
13977	4	72,754	.62105B	$35.40	1	11,862	24	98.437	1.05000	94.000	93.558	0.442	0.753	1.100	-0.347
13957	6	14,514	47059-1	$30.30	1	13,615	28	98.378	1.05500	94.000	93.804	0.196	0.845	1.100	-0.255
14240	6	8,683	46999-1	$33.00	1	3,095	7	97.972	1.03500	94.000	94.700	0.700	0.739	1.100	-0.361
14463	2	37,435	14463B	$31.94	2	12,206	25	97.524	1.05000	94.000	93.192	0.808	0.626	1.100	-0.474
13977	4	72,754	.62105A	$35.40	1	6,000	12	97.258	1.04500	94.000	93.892	0.108	0.989	1.100	-0.111
14212	2	66,323	14212A	$29.25	1	6,000	12	96.907	1.04500	94.000	92.958	1.042	0.545	1.100	-0.555
14209	2	46,216	209 Top	$36.20	1	24,150	49	96.229	1.04884	94.000	94.047	0.047	0.978	1.100	-0.122
14706	4	111,715	52066-2	$32.31	1	23,000	46	95.937	1.04717	94.000	93.026	0.974	0.595	1.100	-0.505
14706	4	111,715	52066-3	$32.31	1	25,915	51	95.734	1.04512	94.000	93.273	0.727	0.747	1.100	-0.353
14238	6	29,367	147014	$31.60	1	18,000	36	95.693	1.04711	94.000	93.636	0.364	0.941	1.100	-0.159
14238	6	29,367	47014-1	$31.60	1	7,487	14	95.558	1.04500	94.000	93.471	0.529	0.897	1.100	-0.203
14212	2	66,323	14212C	$29.25	1	47,761	96	95.541	1.04008	94.000	93.495	0.505	0.874	1.100	-0.226
13977	4	72,754	162105	$35.40	1	5,500	11	95.291	1.04500	94.000	93.236	0.764	0.775	1.100	-0.325
14706	4	111,715	152066	$32.31	1	6,000	12	94.001	1.04323	94.000	93.325	0.675	0.881	1.100	-0.219
14706	4	111,715	IL-1TM2	$32.31	1	5,000	10	93.310	1.04120	94.000	93.350	0.650	0.934	1.100	-0.166
14463	2	37,435	14463	$31.94	1	18,759	38	93.303	1.03062	94.000	93.195	0.805	0.804	1.100	-0.296
14239	6	16,154	147057	$31.37	1	13,245	27	92.586	1.03072	94.000	94.026	0.026	1.144	1.100	0.044
13528	4	70,085	.49926A	$35.00	1	26,875	54	92.338	1.02005	94.000	93.556	0.444	1.049	1.100	-0.051
14146	2	55,467	14146	$32.65	1	54,982	110	91.804	1.00896	94.000	93.230	0.770	0.883	1.100	-0.217
13528	4	70,085	150009	$38.80	1	27,132	54	91.100	1.01090	94.000	93.361	0.639	1.000	1.100	-0.100
14706	4	111,715	)4L-1TM	$32.31	1	16,500	33	90.345	1.01318	94.000	93.624	0.376	1.159	1.100	0.059
14237	6	15,323	46999-1	$32.25	1	14,841	30	90.104	1.01329	94.000	93.940	0.060	1.229	1.100	0.129
14657	1	72,845	158229	$30.00	1	39,910	80	88.765	0.98671	94.000	93.619	0.381	1.206	1.100	0.106
14209	2	46,216	:09 RAP	$30.00	1	20,562	42	86.620	0.98222	94.000	94.107	0.107	1.340	1.100	0.240
14706	4	111,715	IL-1TM3	$32.31	1	3,000	6	83.803	1.01483	94.000	93.000	1.000	1.000	1.100	-0.100
14613	6	72,866	147075	$32.00	1	36,916	75	81.236	0.92590	94.000	93.193	0.807	1.275	1.100	0.175

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

Totals - Grading: S

		Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons: 515,306	**Best:**	100.000	1.05500	0.020	0.545	1.100	-0.555
Processes: 30	**Worst:**	81.236	0.92590	1.042	1.340	1.100	0.240
Tests: 1,038	**Weighted Average:**	92.767	1.01990	0.507	0.956	1.100	-0.144

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
13977	4	72,754	154122	$41.75	1	3,500	7	100.000	1.03500	94.000	93.257	0.743	0.486	1.100	-0.614
13977	4	72,754	.62107A	$41.75	1	5,000	10	99.695	1.04500	94.000	94.920	0.920	0.478	1.100	-0.622
14241	6	20,555	147063	$38.00	1	15,628	28	99.227	1.05500	94.000	93.746	0.254	0.749	1.100	-0.351
14241	6	20,555	47063-1	$38.00	2	5,828	16	98.077	1.05000	94.000	93.256	0.744	0.643	1.100	-0.457
13977	4	72,754	162107	$41.75	1	5,500	11	97.615	1.04500	94.000	94.400	0.400	0.874	1.100	-0.226
13977	4	72,754	.54122B	$41.75	1	13,978	28	97.551	1.05500	94.000	93.321	0.679	0.690	1.100	-0.410
14483	3	112,079	5-17	$36.01	1	3,877	8	95.061	1.04000	94.000	93.663	0.337	1.069	1.100	-0.031
13818	1	84,282	36488-2	$38.60	1	50,861	103	94.772	1.03358	94.000	94.158	0.158	1.025	1.100	-0.075
13535	3	106,305	76-28 #3	$32.26	1	11,333	22	94.636	1.04426	94.000	94.495	0.495	0.943	1.100	-0.157
13535	3	106,305	76-28 #4	$32.01	1	50,318	103	94.324	1.03001	94.000	94.060	0.060	1.055	1.100	-0.045
13535	3	106,305	76-28	$32.02	1	4,122	8	92.828	1.04000	94.000	93.275	0.725	0.910	1.100	-0.190
14560	1	55,809	95804	$37.50	2	53,260	107	91.940	1.01029	94.000	93.471	0.529	1.022	1.100	-0.078
14483	3	112,079	8-11	$36.27	1	58,111	117	89.796	0.99183	94.000	93.825	0.175	1.215	1.100	0.115
14483	3	112,079	7-23	$35.95	1	34,408	69	88.860	0.98875	94.000	93.280	0.720	1.035	1.100	-0.065
13977	4	72,754	.62107B	$41.75	1	4,818	10	87.954	1.01919	94.000	93.960	0.040	1.342	1.100	0.242
14657	1	72,845	158244	$36.25	1	30,005	61	87.722	0.98281	94.000	93.518	0.482	1.209	1.100	0.109
13535	3	106,305	76-28 #2	$32.29	1	2,151	4	52.904	0.87438	94.000	92.175	1.825	2.009	1.100	0.909

Totals - Grading: SX

		Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons: 352,698	**Best:**	100.000	1.05500	0.040	0.478	1.100	-0.622
Processes: 17	**Worst:**	52.904	0.87438	1.825	2.009	1.100	0.909
Tests: 712	**Weighted Average:**	92.440	1.01573	0.368	1.036	1.100	-0.064

Mat Density - Totals 1/1/2004 to 12/31/2004.

			Quality Level	Pay Factor	Mean to TV	St. Dev.	V	StDev - V
Tons:	868,004	**Best:**	100.000	1.05500	0.020	0.478	1.100	-0.622
Processes:	47	**Worst:**	52.904	0.87438	1.825	2.009	1.100	0.909
Tests:	1,750	**Weighted Average:**	92.634	1.01820	0.451	0.989	1.100	-0.111

Joint Density - Process Information by Grading, Voids

Criteria: Projects with Start Dates from 1/1/2004 to 12/31/2004.

Processes with less than 3 tests not included.

Grading S

Sub.	Reg.	Price	Proc. No	Tons	Tests	*Quality Level*	*Pay Factor*	TV	Mean	*Mean to TV*	Std Dev	V	*St Dev. - V*
13528	4	$35.00	2	19,427	7	99.938	1.03500	92.00	91.300	0.700	1.537	1.60	-0.063
13528	4	$38.80	4	37,242	14	98.817	1.04500	92.00	91.630	0.370	1.715	1.60	0.115
14212	2	$29.25	1	62,761	37	96.675	1.05320	92.00	90.890	1.110	1.599	1.60	-0.001
14146	2	$50.00	1	55,482	29	95.354	1.04700	92.00	91.450	0.550	1.985	1.60	0.385
13977	4	$35.40	2	23,862	28	94.784	1.04385	92.00	90.000	2.000	1.253	1.60	-0.347
14706	4	$32.31	2	26,000	13	93.705	1.04148	92.00	94.030	2.030	1.324	1.60	-0.276
14238	6	$31.60	2	19,856	19	93.688	1.03985	92.00	89.880	2.120	1.257	1.60	-0.343
14463	2	$31.94	1	18,759	12	91.171	1.03121	92.00	90.630	1.370	1.983	1.60	0.383
14209	2	$30.00	1	15,854	8	90.975	1.03449	92.00	90.630	1.370	2.016	1.60	0.416
14237	6	$32.25	1	15,341	12	90.141	1.02659	92.00	89.770	2.230	1.396	1.60	-0.204
14463	2	$31.94	2	12,206	11	86.715	1.01193	92.00	89.530	2.470	1.377	1.60	-0.223
14209	2	$36.20	2	23,519	8	85.319	1.01186	92.00	88.900	3.100	0.855	1.60	-0.745
14239	6	$31.37	1	13,745	9	85.059	1.00744	92.00	91.990	0.010	2.873	1.60	1.273
14706	4	$32.31	1	40,000	21	83.470	0.97837	92.00	89.480	2.520	1.513	1.60	-0.087
14240	6	$33.00	1	8,978	5	67.605	0.94797	92.00	89.620	2.380	3.231	1.60	1.631
14657	1	$30.00	1	34,798	19	64.423	0.83893	92.00	88.910	3.090	2.422	1.60	0.822
13957	6	$30.30	1	14,115	12	61.678	0.84693	92.00	88.670	3.330	2.212	1.60	0.612
14613	6	$32.00	1	37,901	33	56.977	0.74581	92.00	88.270	3.730	1.505	1.60	-0.095
14238	6	$31.60	1	5,631	5	39.958	0.73955	92.00	87.580	4.420	1.482	1.60	-0.118

Totals Grading: S

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	19	**Best:**	99.938	1.05320	92.00		0.010	0.855	1.60	-0.745
Tests:	302	**Worst:**	39.958	0.73955	92.00		4.420	3.231	1.60	1.631
Total Tons:	485,477	**Weighted Average:**	85.998	0.98576	92.00	90.368	1.850	1.712	1.60	0.112

Grading SX

Sub.	Reg.	Price	Proc. No	Tons	Tests	*Quality Level*	*Pay Factor*	TV	Mean	*Mean to TV*	Std Dev	V	*St Dev. - V*
14560	1	$37.50	1	55,260	26	100.000	1.05500	92.00	91.800	0.200	0.950	1.60	-0.650
13818	1	$38.60	2	51,361	23	95.884	1.05000	92.00	89.660	2.340	0.979	1.60	-0.621
14657	1	$36.25	2	29,440	24	82.822	0.97050	92.00	90.740	1.260	2.662	1.60	1.062
13535	3	$32.67	5	53,738	53	79.978	0.92584	92.00	89.690	2.310	2.006	1.60	0.406
14241	6	$38.00	1	21,456	7	73.509	0.95908	92.00	88.970	3.030	1.483	1.60	-0.117
13977	4	$41.75	3	33,796	28	69.981	0.86694	92.00	88.670	3.330	1.265	1.60	-0.335
14483	3	$35.44	1	94,574	79	69.700	0.82813	92.00	89.120	2.880	2.158	1.60	0.558
13535	3	$32.67	1	11,031	10	57.524	0.82461	92.00	88.610	3.390	3.061	1.60	1.461

Totals Grading: SX

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	8	**Best:**	100.000	1.05500	92.00		0.200	0.950	1.60	-0.650
Tests:	250	**Worst:**	57.524	0.82461	92.00		3.390	3.061	1.60	1.461
Total Tons:	350,656	**Weighted Average:**	80.864	0.93495	92.00	89.776	2.224	1.715	1.60	0.115

Joint Density Totals 1/1/2004 to 12/31/2004

			Quality Level	Pay Factor	TV	Mean	Mean to TV	St. Dev.	V	StDev - V
Processes:	27	**Best:**	100.000	1.05500	92.00		0.010	0.855	1.60	-0.745
Tests:	552	**Worst:**	39.958	0.73955	92.00		4.420	3.231	1.60	1.631
Total Tons:	836,133	**Weighted Average:**	83.845	0.96445	92.00	90.120	2.007	1.713	1.60	0.113