

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

DOCKET NO. 02M-259T

IN THE MATTER OF QWEST CORPORATION'S COLORADO PERFORMANCE
ASSURANCE PLAN.

**ORDER OF THE INDEPENDENT MONITOR ON
QWEST CORPORATION'S ROOT CAUSE ANALYSES
ON PERFORMANCE INDICATORS BI-1A UNE RESALE,
MR-5A UBL DS1, MR-5X UBL DS1, MR-6D UBL ISDN,
AND OP-4E EEL DS1**

Mailed Date: August 14, 2007

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I. BY THE INDEPENDENT MONITOR**A. Statement**

1. On May 31, 2007, the Independent Monitor ordered Qwest Corporation (Qwest) to perform root cause analyses on the following Performance Indicator Definitions (PIDs) and product categories:¹

- BI-1A UNE Resale (This Billing PID measures the time to provide recorded usage records.)
- MR-5A and MR-5X UBL DS1 (These Maintenance and Repair PIDs measure the report rate of all trouble cleared within four hours for DS1 unbundled loops.)
- MR-6D UBL ISDN (This Maintenance and Repair PID measures the mean time to restore service for unbundled loops at the ISDN level.)²
- OP-4E EEL DS1 (This Provisioning PID measures the installation interval for enhanced extended loops at the DS1 level.)

2. The Colorado Performance Assurance Plan (CPAP) authorizes the Independent Monitor to require Qwest to perform a root cause analysis “if Qwest is repeatedly penalized for failing to meet the performance requirements under any given PID (Performance Indicator Definition).”³

3. Qwest’s report of payments under the CPAP indicated that Qwest was repeatedly penalized for failing to meet performance requirements for some PIDs and product categories in the period September 2006 through March 2007.⁴

¹ Order Of The Independent Monitor Requiring Qwest Corporation’s Root Cause Analyses On Performance Indicators BI-1A UNE Resale, MR-5A UBL DS1, MR-5X UBL DS1, MR-6D UBL ISDN, And OP-4E EEL DS1. (May 31, 2007.) (Independent Monitor May 31, 2007, Order.)

² On June 4, 2007, the Independent Monitor issued an order correcting a mistake in the May 31, 2007, order. Correcting Order Of The Independent Monitor Requiring Qwest Corporation’s Root Cause Analyses On Performance Indicators BI-1A UNE Resale, MR-5A UBL DS1, MR-5X UBL DS1, MR-6D UBL ISDN, And OP-4E EEL DS1. (June 4, 2007.)

³ § 17.5 Qwest Colorado SGAT Ninth Revision, Tenth Amended Exhibit K, August 18, 2005.

⁴ <http://www.qwest.com/about/policy/ldreentryco/>

4. The Independent Monitor required the root cause analysis because Qwest made penalty payments for certain PID and product categories in five of the last seven months of the study period and the total penalty payments were over \$10,000. Limiting the inquiry in this manner focuses attention on those PIDs and product categories where there have been recent repeated performance failures and where the amounts of the penalty payments are significant.

5. On July 2, 2007, Qwest responded to the Independent Monitor's May 31 and June 4, 2007 orders.⁵ No other participant filed comments in this proceeding.

6. In this order, the Independent Monitor accepts Qwest's root cause analysis and requires the company to file, within 30 days of the mailing date of this order, the following:

- A report on the feasibility and resources involved in addressing the measured to flat rated UNE service conversion issue causing misses of BI-1A UNE Resale. Qwest should also set forth the steps it will take to eliminate the problem and associated BI-1A UNE Resale payments.
- A report showing its schedule for implementing process changes to improve installation times for the EEL DS1 product and its plans to align the standard interval with the measurement interval.

B. Qwest's Root Cause Analyses

1. BI-1A UNE Resale

7. BI-1A UNE Resale measures the timeliness with which Qwest provides daily usage records to competitive local exchange carriers (CLECs) and requires Qwest to provide the records within the same time or better as Qwest retail.

⁵ Response Of Qwest Corporation To The Order Of The Independent Monitor Requiring Qwest To Perform Root Cause Analyses On Performance Indicators BI-1A UNE Resale, MR-5A UBL DS1, MR-5X UBL DS1, MR-6D UBL ISDN, And OP-4E EEL DS1. (July 2, 2007.) (Response.)

8. The Independent Monitor's May 31, 2007, Order indicated that performance problems were continuing with BI-1A UNE Resale for the period between September 2006 and March 2007.

9. In its Response, Qwest indicated that the performance problems for the study period are attributable to three categories of causes: guide conflicts, human error, and issues associated with conversion from flat rated to measured products.

10. According to Qwest, October and November 2006 payments were caused by multiple guides assigned to the same telephone numbers. The telephone numbers had been reserved for a previous customer and the guide information had not been removed when the reservation was no longer active. When telephone numbers were assigned to wholesale customers with new guide information, the old information caused a conflict. The records could not be provided to the new owners because the system did not know which guides to use. Qwest personnel corrected the issue manually. The performance failures, which took place from July to September 2006, were reflected in October and November payments. For October, there were 104 impacted records out of an aggregate total of 931,468 or 0.011 percent. For November, there were 136 impacted records out of 853,696 or 0.016 percent.

11. The March 2007 payment resulted when issuing disconnect and new connect orders changing account ownership from retail to wholesale. According to Qwest, the orders inadvertently contained the same effective date, rather than the new connection starting the day after disconnection. The conflict resulted in incorrect information being sent to the CLEC. For March 2007, there were 32 records in error for the affected CLEC, resulting in a PID performance failure.

12. One of the two December 2006 payments was due to human error in writing a service order on an account conversion. As a result, the toll guide was not updated in a timely manner causing a delay in delivering usage to the new owner. There were 129 impacted records representing 0.016 percent of the aggregate volume of 786,118 records. However, for the affected CLEC, the error impacted over 20 percent of the individual CLEC's December usage. Qwest stated that when human error is identified, it follows existing coaching processes for the employee to mitigate future errors.

13. A portion of the December 2006, January 2007, and February 2007 payments were caused by a problem identified in Qwest's February 26, 2007, root cause analysis and discussed in the Independent Monitor January 16 and April 13, 2007, Orders. These payments occurred when a CLEC converts from a flat rated resale product to a measured rated commercial product. Performance impacts are occurring because records are generated on the last day the service is classified as flat-rated. When the system tries to provide measured records to an account with a flat rated service, an error takes place. Delays in delivering usage occurs because the records must be investigated and manually released. In addition, Qwest is delivering usage records for a flat rated product that does not require usage records.

14. The impact on the total number of records is described below:

Month	Number of Records	State Total Volume	Percent of Volume
December 2006	51	786,118	0.0065
January 2007	26	809,753	0.0032
February 2007	54	703,540	0.0077

15. According to Qwest, the delays were relatively short, but they represented the total volume of usage records for the particular CLEC. Qwest indicated that when this problem occurred previously, it did not warrant a system change because it did not harm the CLEC and occurred infrequently. Due to the recurrence of this issue, Qwest is re-examining the feasibility of, and resources required for, changes to mitigate future impacts.

16. Qwest asserts that its performance in delivering records for the study period was been high. It notes that the longest CLEC result for Colorado was 1.05 days versus 2.80 days for retail service. The CLEC average was 0.88 days versus the retail result of 2.49 days. Parity scores ranged from -81.52 to -115.48.

2. MR-5A and MR-5X UBL DS1

17. MR-5A and MR-5X UBL DS1 measures the report rate of all trouble cleared within four hours for DS1 unbundled loops. Qwest performed a root cause analysis for MR-5A and MR-5X in conjunction with one another, since the data overlap. MR-5X includes both MR-5A and MR-5B.

18. Qwest states that, in the course of conducting its root cause analysis, it determined that its interpretation of the PID and its implementation of the CPAP included an additional statistical test that unnecessarily increased the payments that it made to CLECs. Qwest notes that, on a going forward basis, it will implement a different interpretation of the CPAP that will significantly reduce the penalties that it pays under MR-5X.

19. Qwest explained that the statistical parity calculations used on the combined MR-5A and MR-5B, reported under MR-5X, were based on the language of CPAP Section 4.3.⁶ This provision requires that, for low volumes, Qwest must perform the permutation or exact proportions test (collectively, the z-test) on the aggregated Zone 1 and Zone 2 results.⁷ Aggregating zone results increases the sample size. A larger sample tends to reduce the likelihood that the statistical test would indicate a significant difference in performance when no difference actually exists. According to Qwest, this is the case, especially when the volumes being combined have similar characteristics so that statistical differences are not created based on non-performance based characteristics. Qwest observed that Zones 1 and 2 were created because the parties believed such differences do exist in geographically diverse areas.⁸

20. In addition to the statistical test required in Section 4.3 of the CPAP, there is another method of testing described in Section 6 of the CPAP—the Tier 1A variance test. This test focuses on specific products and measures that the CPAP defines as more critical and likely to be relied upon more heavily by smaller companies.⁹ This section indicates that where sample size is less than 30, both the z-test and variance test will be performed on sub-measures. The CLECs receive the higher payment. In contrast, Section 4.3 requires only the z-test when combining zones for volumes of 10 or less.

⁶ For individual month testing for performance measures involving LIS trunks and DS-1 and DS1-3 that are Unbundled Dedicated Interoffice Transport, Resale, or Unbundled Loops (performance measurements: OP-3D/E, OP-4D/E, OP-5, OP-6-4/4, MR-5A/B, MR-7D/E, and MR-8) with sample sizes of 1-10, $\alpha = 0.15$. When performance measures disaggregate for zone 1 and zone 2, the CLEC volumes in both zones shall be combined for purposes of statistical testing. CPAP § 4.3.

⁷ MR-5A applies to Zone 1, which includes primarily urban areas. MR-5B applies to Zone 2, which includes primarily rural and suburban areas.

⁸ Qwest notes that, when it agreed to combine zones, it anticipated that small CLECs operating in both zones would have low volumes in each zone. As the market has developed, Qwest indicates that the situations triggering combining of zones originate from CLECs with low volumes in Zone 2 and statistically significant volumes in Zone 1.

⁹ See CPAP Section 6.1.

21. In the course of conducting this root cause analysis, Qwest concluded that the CPAP does not require it to perform the Tier 1A variance test on the combined zone results. Qwest asserts that the only test applicable to the zone combination is the z-test under Section 4.3. Section 6 does not mention zone combination. Qwest contends that, for the study period, if the Tier 1A variance test had not been performed, it would have made no MR-5X payments for unbundled DS1, because the combined zone results never failed the z-test.

22. In addition, Qwest argues that its method of implementing Section 4.3 inappropriately produced escalation payments. Qwest explained that for administrative efficiency, its system calculated MR-5X results every month regardless of sample size. This method inadvertently caused MR-5X escalation payments to be assessed independently from the escalation payments for MR-5A and B. In fact, the payments were even assessed in months when MR-5X did not apply, such as months when there were volumes in only one zone, but not both. Qwest explains that MR-5X is not a PID metric or sub-measurement. It is only a vehicle for statistical testing when combining zones. Qwest notes that the only appropriate PIDs to receive escalation treatment are the measurements or sub-measurements defined in the CPAP. As a result, going forward, Qwest will apply escalation for MR-5 UBL DS1 only when MR-5X confirms that it failed the statistical test for the individual zone with the small sample size.

23. Applying this interpretation to the study period, payments for MR-5X would shift to MR-5A and B, with a net reduction of \$9,048. No payments would have been made for MR-5X.

24. Even after making the above adjustments, Qwest found that it was still making MR-5 payments. After additional analysis, Qwest determined that the cause appears to be driven by inherent differences in the time of day when wholesale and retail tickets are created.

Qwest found that wholesale customers consistently send in unbundled DS1 repair tickets later in the day than Qwest retail DS1 customers. For the study period, 19 percent of evening or after hours tickets came from Qwest retail customers compared to 37 percent of CLEC tickets. Qwest's correlation test comparing payments to MR-5X separated by time of day produced a near perfect correlation of 0.995.

25. Qwest's analysis for after-hours repair process showed equal process handling for wholesale and retail customers. Qwest also determined that there were overall longer dispatch intervals, which can negatively impact the four hour commitment, for both wholesale and retail after-hours tickets. Qwest's analysis showed that parity failures appeared when comparing the higher proportion of after hour tickets for wholesale customers to the higher proportion of within business hour tickets from retail customers.

26. When conducting its analysis, Qwest found differences between dispatch centers in the way they implemented internal procedures for calculating dispatch intervals. Qwest's internal procedures provide that when Qwest does not have remote test access, and problem isolation is required in a Central Office or by a field technician, it must determine if the Central Office is staffed around the clock or if roving technicians are available. When such assistance is not available, Qwest's processes specify that the clock be stopped until normal access hours. However, Qwest determined that the clocks had not been stopped and additional time had been included in the MR-5 interval result. Qwest is currently retraining dispatch center personnel on this process.

27. In addition, the company intends to provide refresher training on appropriate handling procedures for tickets received when Qwest has less than one hour between receipt of the ticket and the end of the customer supplied access window. In some centers, personnel were

first determining if there was an available technician to dispatch before the close of the premises access window. If no technician was available at the end of the window, they would apply the No Access stop time. Qwest's procedures, however, require that when a technician is not available, the center should attempt to renegotiate the window. If that is not feasible, excludable No Access begins.

28. Qwest concludes that the majority of CPAP payments for the study period were caused by the unnecessary statistical tests that it performed and the higher proportion of after-hours wholesale tickets. Qwest asserts that there are no discriminatory processes for after-hours repair handling. Finally, Qwest is engaged in retraining efforts to increase process adherence on the appropriate application of No Access time on dispatch tickets. Qwest contends this will reduce the number of tickets improperly recorded as missing the four hour commitment.

3. MR-6D UBL ISDN

29. MR-6D UBL ISDN measures the mean time to restore service for unbundled loops at the ISDN level. For the study period, Qwest found two significant non-Qwest factors causing it to miss the parity standard and pay CPAP penalties: a cable cut and one CLEC's non conforming product use. In addition, Qwest notes that its performance is affected by Test OK/No Trouble Found (TOK/NTF) tickets of less than one hour duration. Such tickets would be excluded from the calculation of MR-6 penalties under a stipulation recently submitted to the Commission.¹⁰ Qwest explains that excluding non-Qwest caused factors and TOK/NTF tickets would reduce CPAP payments by 80 percent.

¹⁰ Qwest Corporation's Supplement To The June 22, 2007 Notice Of Stipulation Regarding Certain Performance Indicator Definitions And Qwest Performance Assurance Plan Provisions And Joint Motion To Approve Same On Behalf Of The Stipulating Parties. (June 29, 2007.) (2007 Stipulation.)

30. In March 2007, Qwest paid a penalty of \$11,000 for a non-Qwest caused cable cut which occurred on March 1. The cut affected more wholesale customers than retail customers. When MR-6D results are recalculated with the tickets for this cut removed from wholesale and retail results, the CLEC ticket volume is reduced by 27 percent and the mean time to restore service is reduced by more than half for the month. Excluding these tickets would result in parity being met and no payment required.

31. In 2005, Qwest determined that significant MR-6D penalties were being generated because a CLEC was requesting technical capabilities beyond the limitations of the ISDN capable unbundled loop. Qwest notes that, since 2005, it has been working with the CLEC to convert service from a non conforming ISDN product to a XDSLi Unbundled Loop product. Since January 2006, the customer has been ordering XDSLi loops. However, service under its embedded base of ISDN loops is still generating penalty payments. Qwest's root cause analysis found that had the embedded base circuits been converted to XDSLi loops the trouble tickets would not have been issued and the payments would have decreased 30 percent—from \$6,253 to \$4,356.

4. OP-4E EEL DS1

32. OP-4E measures the timeliness of Qwest's installation of services for customers, focusing on the average time to install service by measuring the average interval (in business days) between the application date and the completion date for eligible service orders. The PID excludes orders with customer requested due dates greater than the current standard interval. This exclusion ensures that customer initiated impacts on intervals do not influence Qwest's ability to meet the measurement standard.

33. Qwest's analysis found that a primary cause of its performance failures is a difference between the agreed upon measured average interval of six days in Zones 1 and 2 and a published standard interval of eight days in Zone 2. In addition, Qwest identified delays due to facility issues, such as lack of facilities that contributed to CPAP payments.

34. In July 2003, Qwest agreed to change the OP-4E EEL DS1 submeasure to a standard of six business days. The agreement was based on the existing EEL standard interval of five days in Zone 1 and a planned reduction to eight days for Zone 2. However, the standard interval remained at eight days with a target to provide Zone 2 EEL DS1 circuits in six days. Thus, the standard interval and the measured interval differed by two days. Unlike other product categories in OP-4E, there is no time to allow for averaging within the calculation to consider orders that must extend beyond the measured interval.

35. In September 2006, both CPAP payments were the result of facility delays that increased the average interval to miss the benchmark by less than a day. One of the facility delays caused the CLEC's orders to be 6.45 days, less than half a day over the standard. The second payment was caused by provisioning delays on five of the CLEC's 40 orders that drove the interval to 6.93 days. The January 2007 payment was caused by six orders with complex facility delays that contributed an additional 105 days to the overall interval.

36. Qwest asserts that its leadership has committed to focus on the problem. The commitment has lead to improvement in the month over month performance for March 2007 through May 2007. Qwest also asserts that it is reviewing the delayed order process and addressing process changes that will improve cycle times for delayed orders. These changes are targeted for July 2007. Qwest is also planning to align the Zone 2 interval with the standard

interval for Zone 1 orders. With these changes, Qwest believes the Zone 2 EEL DS1 CPAP payments will be significantly reduced.

C. Independent Monitor Opinion

1. BI-1A UNE Resale

37. BI-1A UNE Resale was selected for a root cause analysis because Qwest made CPAP payments in six of the seven months of the study period totaling \$29,196.

38. This PID and product category were a subject of the Independent Monitor's January 16, 2007, root cause analysis order.¹¹ In that root cause analysis, Qwest observed that its payments associated with BI-1A UNE Resale between January 2006 and July 2007 were attributable to separate, unrelated, and isolated events. In the January 16, 2007 order, I accepted Qwest's explanations for the payments. I noted that Qwest was conducting a process improvement project to increase controls and reporting of recirculating usage. It was also taking steps to address problems to correct a record indicator coding issue. I directed Qwest to report back on the progress of its efforts to improve performance measured by this PID. On February 26, 2007, Qwest provided the additional information.¹² On April 13, 2007, I issued an order acknowledging receipt of the Qwest report.¹³ In that order, I found that Qwest's efforts appeared reasonable and Qwest's process for studying the problem appeared appropriate. I noted, however, that the effectiveness of Qwest's efforts to reduce delays in delivering billing

¹¹ Order of the Independent Monitor Requiring Qwest Corporation to Perform Root Cause Analyses on Performance Indicators BI-1A UNE Resale, MR-5 UBL DS1, MR-6 UBL DS1, and MR-7 EEL DS1. (January 16, 2007.) (Independent Monitor January 16, 2007, Order.)

¹² Qwest Corporation's Response to the Independent Monitor Providing Additional Root Cause Analyses on Performance Indicators BI-1A UNE Resale, MR-5 UBL DS1, MR-6 UBL DS1, and MR-7 EEL DS1. (February 26, 2007.)

¹³ Order of the Independent Monitor Requiring Qwest Corporation to Perform Root Cause Analyses on Performance Indicators BI-1A UNE Resale, MR-5 UBL DS1, MR-6 UBL DS1, and MR-7 EEL DS1. (April 13, 2007.) (Independent Monitor April 13, 2007, Order.)

information will be reflected in future PID reports. I did not require any additional action at that time.

39. Qwest's performance, as measured by this PID, continues to generate misses and CPAP payments. The one recurring problem area is associated with conversion from flat rated to measured products. Qwest states that, due to the recurrence of the problem, it is reexamining the feasibility and resources required to mitigate future impacts. I acknowledge Qwest's statement that misses on this PID do not harm the CLEC involved. However, that does not provide a rationale for ignoring persistent service failures under the CPAP. Qwest has an obligation to address this issue. I direct Qwest to report back to me on the feasibility and resources involved in addressing the conversion issue. Qwest should also set forth the steps it will take to eliminate the problem.

40. It is unclear whether the guide conflict issue is a system problem or a human error. Because it did not show up in the earlier root cause analysis, it appears to be an isolated matter. Because the number of records is relatively small, I will not require Qwest to take additional action to rectify the problem. Qwest is addressing the order writing error through training. This appears to be a reasonable approach to the problem.

2. MR-5A and MR-5X UBL DS1

41. MR-5A was selected for a root cause analysis because Qwest made CPAP payments in five of the six months of the study period totaling \$10,191. MR-5X was selected because Qwest made payments in all seven months of the study period totaling \$51,747.

42. Qwest indicates that the misses measured by these PIDs are due to an overly expansive reading of the CPAP regarding statistical testing and inconsistent implementation of No Action procedures for calculating dispatch intervals.

43. Qwest identifies a statistical test that it contends is not necessary when measuring performance under this PID. Qwest states that there is no requirement under the CPAP to perform Tier 1A variance tests on combined Zone 1 and Zone 2 performance. In addition, Qwest contends that there is no requirement to assess escalation payments for MR-5X independently from MR-5A and MR-5B. Qwest indicates that it will immediately implement changes in the way it performs the statistical tests and calculates payments.

44. I conclude that Qwest's description of the statistical testing procedures and its proposed changes appear reasonable. I note, however, that no CLEC submitted comments on Qwest's root cause analysis. It is fair to assume that CLECs are indifferent to Qwest's intended actions. Qwest is planning to implement the changes on its own and has not requested that I approve its actions. Qwest will give the CLECs notice of its action in the ordinary course of its business processes. At this time, there is no reason for me to act on the changes.

45. Qwest is also planning to provide additional training on procedures for calculating dispatch intervals. The effectiveness of the training should be reflected in future payment reports.

3. MR-6D UBL ISDN

46. MR-6D UBL ISDN was selected for a root cause analysis because Qwest made CPAP payments in five of the seven months of the study period totaling \$21,471.

47. Qwest attributes misses under this PID to a cable cut and one CLEC's non conforming product use. I see no reason for action on either of these matters.

4. OP-4E EEL DS1

48. OP-4E EEL DS1 was selected for a root cause analysis because Qwest made CPAP payments in five of the seven months of the study period totaling \$33,309.

49. Qwest explains that the misses under this PID are due to a difference between the measured and standard performance intervals and to a lack of facilities. Qwest should address both of these problems. Qwest notes that its month over month performance for March through May 2007 has shown improvement. I request that Qwest provide me a report showing its schedule to align the standard interval with the measurement interval.

II. THE INDEPENDENT MONITOR ORDERS THAT:

1. Qwest's root cause analysis filed on July 2, 2007, is accepted.
2. Qwest shall submit a report on the feasibility and resources involved in addressing the measured to flat rated UNE service conversion issue causing misses of BI-1A UNE Resale. Qwest should also set forth the steps it will take to eliminate the problem and associated BI-1A UNE Resale payments.
3. Qwest shall submit a report showing its schedule for implementing process changes to improve installation times for the EEL DS1 product and its plans to align the standard interval with the measurement interval.
4. The filings required in this order shall be filed within 30 days of the mailed date of this order. Qwest shall serve the reports on the Independent Monitor and interested parties.
5. Documents shall be served on the Independent Monitor by email and first-class mail. Email shall be sent to tpmbarkin@yahoo.com. First-class mail shall be sent to:

Thomas G. Barkin
2190 Charnelton Street
Eugene, OR 97405
6. All documents shall be served on participants by email. Hard copies shall be filed with the Commission and served on Staff.

7. This Order is effective on its Mailed Date.

Respectfully submitted,

THOMAS G. BARKIN
Independent Monitor