Appendix C

Clark County, Nevada

Particulate Matter (PM_{10}) Saturation Monitoring Study

Final Report

February 5, 2007

T&B Systems
environmental research associates

859 2nd St, Santa Rosa, CA 95404
(707) 526-2775 fax (707) 579-5954

PARTICULATE MATTER (PM_{10}) SATURATION MONITORING STUDY

FINAL REPORT (P.O. 212114)

Prepared for:

Mr. Rodney Langston
Clark County

Protecting the air we share
Air Quality

Department of Air Quality & Environmental Management
500 South Grand Central Parkway
Las Vegas, NV 89106

Prepared by:

T&B Systems
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Robert Baxter
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EXECUTIVE SUMMARY

As a commitment in the 2001 PM_{10} State Implementation Plan (SIP) for Clark County, a field study was conducted to help understand the spatial distribution of PM_{10} and assess the adequacy of the existing monitoring network in measuring impacts. Planning for the study was initiated in 2004 with the monitoring conducted in 2005. The primary objectives of the program were to:

- Determine particulate matter concentrations in geographic locations that may not be well represented by the current monitoring network due to the recent growth in the Las Vegas Valley
- Determine inter-basin and intra-basin transport during high wind speed events
- Determine the neighborhood impacts of major sources in the region

To achieve these goals, the study was designed in two phases. The first phase was to evaluate and select an appropriate PM_{10} measurement instrument that could be cost-effectively deployed and operated in remote areas and provide high time- resolved data. Concurrent with this first phase was a detailed evaluation of the existing PM_{10} data to determine the optimum time for the conduct of a "saturation study", so named because the area of interest was saturated with numerous monitors, and to select the locations for placement of the monitors. The second phase then implemented the study by deploying 12 additional PM_{10} monitors over an 11-week period in the spring and early summer of 2005.

The analysis of prior PM_{10} exceedances identified high wind speed events as the primary driver in initiating exceedances. The wind event also required a prolonged dry period with a lack of precipitation, and soils that had been disturbed in one manner or another such that the surface crust had been broken. In the years leading up to the saturation study, 1999 through 2002 were all drier than normal with 2002 having the sixth lowest precipitation amount on record. Conversely, the years 2003 through 2005 were all among the 10 wettest years on record. The result was far fewer exceedances during this latest three-year period. The saturation study then followed the wet period of winter rains in 2004/2005, but was delayed by two months to allow time for the desert surface to dry. During this drying period the desert surface was effectively "reset" or stabilized with the soils in an encrusted state that naturally inhibits fugitive dust until such a time that it is disturbed.

Monitoring was started on April 15, 2005 and continued through June 30, 2005. The deployment of saturation sites covered regions to address the objectives of the study. Three sites were placed outside of, but close to, the BLM disposal boundaries in the southwest, northwest and northeast portions of the Las Vegas Valley in addition to sites in recently built areas and areas that were in potential growth regions. Also deployed were sites in regions of known high emissions potential soils. Two additional sites were located near major sources of earth and rock movement to evaluate the neighborhood impacts, and one site was collocated with a Department of Air Quality and Environmental Management (DAQEM) air monitoring station for quality control purposes.

During the period of the saturation study there were four identified high wind speed events. These events in prior years may potentially have produced exceedances. However, with the exception of Mesquite, which is outside of the valley, no exceedances were observed. The

saturation network and DAQEM network results did however produce enough information to conclude the following:

- 24-hour average PM_{10} levels observed even on highest PM days during the saturation study were relatively low, and the resulting concentration patterns were not well defined in the Valley. It is suspected that during prior dry years with the same high wind speeds, and desert surface more disturbed, the patterns may have been better defined.

- On the basis of the saturation sampler results, there appeared to be one location that would benefit from additional routine measurements of PM_{10}--the southern end of the Valley. It is suspected that the potential plume from Jean Lake and other source areas in high wind speed events may be arriving between the existing stations at Green Valley and Lone Mountain. A station in this recommended location would identify any of these sources or airborne particulate that would otherwise be missed.

- The DAQEM network reflected the patterns identified in the historical analysis with the areas to the northeast having the highest concentrations. However, what appeared to be lacking in the DAQEM network was a measurement station at the inflow region of the Valley during southwest winds, around the location of the southern most saturation site. This area showed some of the higher concentrations in the saturation network during the wind speed events and appeared to be missed by the DAQEM network. The events on May 29 and June 17 show this pattern with an apparent "PM_{10} plume" appearing in the saturation network. The DAQEM station at Jean was too far to the southwest to be representative of the southern Valley boundary and under these southerly wind events, it would be upwind of a potentially significant natural source at Jean Dry Lake. Additionally, this region is undergoing significant current and potential future growth, which further underscores the need to establish a monitoring site in this region.

- The sites on the west side at Paul Meyer, Palo Verde, Walter Johnson and Lone Mountain all have experienced relatively few exceedances, with the saturation study period being no exception. The value of maintaining all of these sites for historical continuity purposes may be worthwhile, but as locations that represent potential exceedance regions, consideration should be given to other potential locations, such as the south end of the Valley, or in regions where significant development is anticipated.

- When the desert surface is stabilized, the entrainment of particulate matter during high winds is minimized. When the surface is disturbed, the available particulate matter is significantly greater and entrainment in high winds is increased. The DAQEM requirements for soil stabilization as part of the earth disturbance permit process greatly reduce the available particulate matter for entrainment. Observations made by the field crews during the saturation study reported dust mitigation measures, mostly with watering of the soil surface, being implemented at active construction sites. This had a noticeable reduction on the visible dust generation. A key to the continued prevention of fugitive dust sources is the continuation of active enforcement and verification of soil stabilization.

- The high wind speed events that occurred showed initial peaks in the PM_{10} concentrations during the first several hours of the wind events. While the events lasted longer, it is suspected that the reservoir of available PM to entrain in the high winds had been depleted during the first several hours. With the substantial rains during the

months prior to the wind events, the soils were sufficiently stabilized to prevent a longer duration PM event, thus preventing an exceedance.

- On the basis of the measured data near two potential major sources, a quarry on the west side of the Valley and quarry operations in the northeast, material handling at the sites could be detected at the nearby saturation monitors. The contribution from these sources was not due to high wind speed entrainment, but instead appeared to be due to the transport of particulate matter that had become airborne due to material handling. While the effect of the operations could be detected, the magnitude of the contribution to the ambient concentrations could not be calculated because of the lack of upwind measurements. However, we could determine that any contribution of the operations to the measured concentrations was not high enough to create an exceedance of the air quality standard.

- From the saturation network data, an hourly average wind speed threshold of about 15 mph was needed before significant airborne particulate matter was observed.

- The selected optical method for the PM_{10} saturation samplers worked well, but does have some response differences from the EPA designated equivalent methods, such as Beta Attenuation Method (BAM) being used at the DAQEM stations. As a relative measure for the saturation study, the method accuracy and overall results appeared adequate.

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1. INTRODUCTION

As a commitment in the PM_{10} State Implementation Plan for Clark County (June 2001), section 4.8.2.2 defined the conduct of a PM_{10} saturation study that would begin in 2004 and be completed in 2006. The Clark County Department of Air Quality and Environmental Management (DAQEM) contracted T&B Systems to conduct the saturation study. The overall goals of the study were as follows:

1. Determine particulate matter concentrations in geographic locations that may not be well represented by the current monitoring network due to the recent growth in the Las Vegas Valley, hereafter referred to as the valley.

2. Determine inter-basin and intra-basin transport during high wind speed events.

3. Determine the neighborhood impacts of major sources in the region.

In pursuing these goals, the results were also used to further evaluate the representativeness of the NAMS, SLAMS and Special Purpose Location monitoring stations in the monitoring network. The overall results can be used to assesses the appropriateness of the existing monitoring network and can be used for the basis for recommendations for - changing the locations of monitoring stations or adding new monitors to the network to provide better coverage of the impacts from changing population and work centers in the valley. This report describes the PM_{10} saturation study, and presents the results and conclusions.

1.1 Overview of the Study

The PM_{10} saturation study was divided into specific tasks that evaluated existing data, planned an appropriate saturation network, determined the most appropriate instrumentation to conduct the study, conducted the saturation monitoring study, processed the collected data, and reported the results. The key elements of the study included the following:

- Preparation of the Work Plan – From information received during initial meetings with the DAQEM and review of the SIP materials, a draft Work Plan was developed that formed the road map for project execution. The draft Work Plan included preliminary analyses of data and the steps used for equipment evaluation, fielding of the saturation study and anticipated products of the overall study.

- Analysis of Existing Data – The most recent four years of data from 2000 through 2003 were analyzed to determine the regions experiencing the greatest number of 24-hour exceedances and the meteorological conditions related to those exceedances.

- Evaluation of Candidate PM_{10} Saturation Samplers – Due to the nature of the study and the existing sampler network, which is comprised of continuous monitors, the evaluation focused on prospective samplers that could continuously monitor the PM_{10} concentration, rather than only 24-hour averages as from filter-based methods. Due to the short duration of monitoring and large number of sampling locations, the method selected would likely not be an EPA designated equivalent method. Thus, various optical sampling methods were reviewed. The sampler choice was based on both evaluations of specifications and a field comparison of candidate samplers at two sites. One site would be representative of PM_{10} station outside the urban core, and one site

with an urban exposure. These sites were also chosen because they experienced more days when measured concentrations exceeded the NAAQS. The evaluation of the candidate samplers was performed during the fall of 2004.

- Saturation Site Selection and Acquisition – Various criteria were established for candidate sites based on the existing network, the need for establishing boundary conditions near the BLM disposal boundary for assessing transport, and key locations where soil types may be conducive to suspended particulate generation, if the soil were disturbed. The site locations were reviewed with the DAQEM and an agreement was achieved for the selected sites.

- Saturation Study – Twelve PM_{10} sites were deployed in April 2005 for the monitoring period, which ran through early July 2005. The original schedule had planned for the deployment earlier in the spring, but an unusually wet winter precluded the usefulness of the data collection starting any earlier than April.

- Quality Assurance – Key in the saturation study was the link between the existing network measurements and the saturation study network. The QA program included DAQEM equipment audits, siting, equipment calibrations, flow audits of saturation samplers and data audits of the final database.

- Data Processing and Validation – Data collected by the saturation samplers included recording of 1-minute values on the internal sampler data logger as hourly averaged concentrations on external data loggers of PM_{10} concentration at most of the stations. Data collected were processed and appropriate corrections made for zero offsets and measured flow rates. The resulting database underwent an audit to verify the appropriateness of corrections made to the data and validity of the values obtained.

- Data Analysis – Results obtained from the saturation and DAQEM networks were evaluated to answer and address the objectives of the program. In particular, the representativeness of the current DAQEM monitor locations and appropriateness of the locations to monitor transport as well as localized impacts from major source areas was assessed.

1.2 Overview of the Field Activities

The saturation study had two periods of field activities. The first was from October 7 through November 23, 2004 during which candidate PM_{10} saturation samplers were evaluated at the two sites in the DAQEM network. The first site was at Joe Neal, and was representative of a non-urban environment with the primary particulate matter source originating from crustal matter that becomes airborne during higher wind events. The second site was at the City Center site in the urbanized area of Las Vegas. At this site there was a higher fraction of particulate matter related to combustion and is more indicative of an urban environment. Comparisons at sites with a different type of particulate matter was necessary because the methods of detection in the candidate saturation samplers using the optical technique have varying responses to different particulate matter types. Results from the sampler evaluations showed the optical method response to combustion type particulate to be greater than to crustal material. Thus, the adjustment factor (also known as the K factor) required to correct the concentration from the optical method to that reported by the Beta Attenuation Method (BAM) used by the DAQEM, is greater for the windblown dust, or crustal material, than it is for the more urban environment.

This period of data collection provided the information needed to understand the different responses to both the types of material as well as potential differences in the response of each of the PM samplers. This period of operation also provided the opportunity to evaluate individual operational issues with each of the candidate samplers and identify problems that could affect the larger scale operation of 12 of the samplers in the saturation study.

The second period of field activities was from early April through July 3, 2005 during which the final site selection of the PM_{10} saturation sites was performed and the samplers deployed to the field for the saturation sampling period. Prior to the saturation study, field surveys were conducted of prospective sites and the list of candidate sites narrowed to include those that met both the technical requirements of the study and logistical requirements of site access and exposure. Deployment of the saturation sampling network began on April 15 with the full network of samplers operational within one week. Operation of the network continued through June 2005 with decommissioning of the sites starting on July 1 and completed by July 3. In late May, field audits were conducted of each of the sites to verify operations and document the siting of the samplers and any issues that may affect the data.

1.3 Overview of the Data Processing and Analysis

Two periods of data collection were performed. The first focused on the evaluation of the candidate samplers that could be used for the saturation study, while the second collected data as part of the saturation study.

For the collection of the first data set for evaluation of the samplers, the three selected instrument types were operated in accordance with the manufacturer's recommendations. The analog data output for each of the three samplers was recorded on a single digital data logger with a sample read every second and averages formed over 5-minute and 60-minute intervals. This provided a common time stamp on all data collected. Following the data collection period at each of two sites, the relationship of the averaged optical data to the on-site BAM, operated by the DAQEM, was established through a regression analysis of the hourly values. Individual "K" values were then calculated for correcting the optical readings to equivalent BAM concentrations. These calculations were performed for both the Joe Neal and City Center sites with differences noted for each location. These differences are likely due to the differing response of the optical methods used by the candidate PM_{10} samplers to the particulate matter (PM) characteristics at the two different sites. Joe Neal is a non-urban site with the primary PM being of crustal nature. The City Center site PM was more combustion related, as the site is near the urban center and close to a major highway. The overall results showed the "K" factor to be greater for the crustal material (i.e., the response of the sensors was less, thus requiring a higher multiplier).

Data collected during the spring 2005 saturation study were recorded in two different manners. The selected instrument, the TSI DustTrak 8520, had an internal data logger that was programmed to collect data at one-minute intervals. All sites deployed used the internal data logger as either the primary data recorder (for the sites without an external logger), or as a backup logger for sites with an external data logger Those sites that had DustTraks with the optional analog output were also recorded on a Campbell Scientific CR10 digital data logger. For these sites, the CR10 was the primary data logger. The analog data output signal was scanned at a one-second interval, and averaged and stored as hourly averages. These samplers with the CR10 loggers also recorded the sampler enclosure's internal temperature. All data collected during the saturation study period underwent an automatic screening test for

outliers and unusual readings, and a time series evaluation by an analyst for data reasonableness. Unusual values were researched to determine the cause and appropriate action was taken. Unless a specific reason was found to invalidate the data, the values were considered valid and kept in the database.

Factors were then applied to the data set to adjust the values for flow issues identified during the sampling period. These flow problems are a known issue with the TSI DustTrak, and theoretically should not affect the response to PM_{10}. However, over the course of the saturation study we conducted evaluations in a controlled environment of the samplers at different stages of the pump failure and found a dependence of the response on the sampler flow rate. The resulting data from samplers that experienced the flow dropping problem were then adjusted using the factors derived from testing of the samplers.

Once all data were adjusted for the K factor and flow rate issues, the time standard was adjusted to PST and 24-hour average concentrations of PM_{10} calculated that matched the reporting interval from the DAQEM operated stations. Evaluations of the data were then performed that evaluated the distribution of PM_{10} during higher wind events using both the DAQEM network and the saturation network. Significant relationships between the networks are noted in this report.

2. INSTRUMENTATION

The instruments, the selection process, and later testing for low-flow effects are described in this section.

2.1 PM_{10} Sampler Selection and Evaluation

At the outset of the sampling program one of the initial goals was to evaluate and select a cost-effective, continuous field method that could be related to the DAQEM samplers being operated throughout the Clark County Network. An initial literature review identified a variety of samplers as candidates for the saturation study. This list of samplers was narrowed based on availability, cost and an assessment for the suitability for making the measurements. The three samplers evaluated included the following:

- Met One E-Sampler
- R&P Dustscan
- TSI DustTrak

All three samplers employed an optical method for measuring PM, though the E Sampler and the Dustscan use forward scattering, whereas the DustTrak uses 90° scattering. In addition, the E-Sampler and Dustscan were both equipped with relative humidity sensors and inlet driers, which are designed to deal with potentially erroneously high scattering readings when relative humidity rises above approximately 70 percent.

Two DAQEM sites were chosen for the evaluation. Joe Neal was selected as being representative of suburban conditions with more mechanically generated (crustal) particulate matter. City Center was selected as being representative of urban conditions, where particulate matter would have a larger combustion related fraction. The two sites were necessary in order to investigate the possibility that the optical samplers would respond differently to PM of different compositions. Both sites had BAM PM_{10} samplers for comparison against the data from the optical samplers. T&B Systems conducted independent system and flow audits of the DAQEM BAMs prior to the evaluation period. Both samplers appeared to be operating correctly at the time of the audit. More detailed results of the audit are provided later in this report.

October and November 2004 were chosen for the evaluation period, as these months provided the best chance for elevated PM_{10} readings prior to the saturation study in the spring of 2005. All three samplers were installed at the Joe Neal site on October 6, 2004. The samplers were moved to the City Center site on November 4, 2004. As mentioned above, the E-Sampler was only rented for one month, and consequently was not involved in the comparison at City Center. At both sites, the samplers were positioned at approximately the same height and within approximately two meters of the BAM inlet.

Data from all three samplers were set up with the internal programmed K factor set to 1, i.e., the raw output of the instrument was recorded with no slope applied. **Table 2-1** presents the regression results comparing the raw output of the evaluated samplers to the DAQEM collocated BAM. The calculated slope, intercept, and correlation coefficient (r) are presented for each day, comparing 24 hourly PM_{10} reading from each of the samplers against the "unaudited" BAM PM_{10} value. For this comparison the "unaudited" BAM values were the raw BAM readings recorded at the DAQEM sites. After discussions with the DAQEM personnel it was recognized that these raw values might be noisy, especially when concentrations are

changing significantly from hour to hour. **Table 2-2** therefore presents a similar comparison based on all hourly points within a definable sampling period where it was observed that the sampler response was consistent. These periods were typically bracketed by days when the sampler was physically changed or some other servicing was performed. In addition, since the Met One E-Sampler's response was automatically adjusted whenever a zero check was conducted (this function could not be turned off), these zero check times modified and adjusted the time periods used for the comparisons.

It should be noted that the BAM hourly data are sliding averages. Thus the optical sampler data were reprocessed using the recorded 5-minute average values to match our understanding of how the BAM hourly values were computed and stored. We recognize that the final 24-hour average BAM data may be slightly different because it is computed based on the accumulated mass over the 24-hour period and not the individual hourly values. At the time of this analysis we had only the raw reported hourly values and for the purposes of the K factor analysis, these values were considered adequate.

As can be seen in Table 2-1, the correlation between the samplers and the BAM varied widely. Correlation between the samplers themselves was frequently much better. The majority of the days when there was poorer correlation occurred when ambient concentrations were low. Lower correlations during these days are expected due to the decrease in the range of the data being compared. Some of the results in Table 2-2 are similarly affected. Thus, to calculate the K factors for the each of the samplers, only days when the correlation was greater than 0.9 were used. These results are presented in **Table 2-3**, and the resulting factors were used as the K factors for the samplers. **Figures 2-1** and **2-2** present time series plots of the 24-hour average data after adjustment using the derived K factors.

Looking at Table 2-3, several observations can be made regarding the performance of the samplers. First, there appears to have been an approximately 10 percent shift in response in the Met One E-Sampler over a two-week period. In addition, the resulting adjustment factors have a significant intercept, which was not noted with the other two samplers. Intercepts were close enough to zero for both the TSI DustTrak and R&P Dustscan to not be used in adjusting the data, whereas the intercept was used when adjusting the E-Sampler data. The existence of the intercept implies that there is some non-linearity in the E-Sampler response at low concentrations, since zero checks of the sampler always produced a reading of 0. These response-related issues played a significant role in the decision to not continue to test the E-Sampler after the initial one-month rental elapsed.

The R&P Dustscan also had some problems with response. The original sampler supplied by R&P had a response that was significantly lower than the other samplers, though it was well correlated with the other samplers. This appears to have been due to an instrument problem, as the sampler ultimately failed on October 15. The replacement sampler had a response similar to that of the E-Sampler.

Table 2-1. Regression Results of Candidate Samplers Versus BAM Samplers for Individual 24-Hour Periods

		Met One raw			R&P raw			TSI raw			r (versus TSI)		24-hr average PM10	
Site	Day	r	slope	intercept	r	slope	intercept	r	slope	intercept	Met One	R&P	TSI	BAM
JO	10/8	0.941	4.457	-17.5	0.947	13.700	5.0	0.971	1.746	-1.2	0.947	0.954	49.7	34.2
JO	10/9	0.817	2.184	9.0	0.820	6.899	19.2	0.921	1.421	1.3	0.944	0.942	42.5	17.3
JO	10/10	0.361	2.160	10.8	0.374	8.153	19.1	0.754	2.166	-2.3	0.661	0.719	34.0	17.2
JO	10/11	0.693	14.337	-103.0	0.742	71.543	-69.3	0.967	2.793	-7.2	0.755	0.800	32.2	27.6
JO	10/12	0.820	4.257	-13.6	0.917	19.261	-4.4	0.978	2.082	-3.7	0.799	0.915	23.0	18.3
JO	10/13	0.770	7.909	-43.9	0.745	26.408	-4.9	0.981	2.066	-1.6	0.758	0.737	45.9	31.0
JO	10/14	0.942	4.724	-20.5	0.858	51.588	-42.0	0.990	1.561	3.8	0.934	0.824	40.4	39.4
JO	10/15	0.944	4.255	-10.1	-0.307	-36.416	45.0	0.988	1.558	3.3	0.941	-0.248	45.2	37.7
JO	10/16	0.927	5.241	-22.9				0.968	1.850	-6.3	0.969		63.3	48.9
JO	10/17	0.652	2.954	-1.3				0.821	1.520	4.0	0.929		30.1	16.1
JO	10/18	0.451	1.672	6.7				0.903	1.394	3.8	0.560		21.6	10.8
JO	10/19	0.602	3.832	-11.1				0.804	1.612	3.4	0.852		18.1	11.3
JO	10/20	0.585	4.706	-19.2				0.711	1.861	2.8	0.912		11.1	9.3
JO	10/21	0.862	3.417	-15.4				0.865	1.075	6.3	0.992		14.0	10.4
JO	10/22	0.722	2.688	-2.8	0.620	1.267	14.7	0.909	0.744	5.7	0.734	0.940	20.1	11.6
JO	10/23	0.851	2.112	0.3	0.757	0.990	6.4	0.891	0.571	2.3	0.976	0.816	18.2	12.9
JO	10/24	-0.045	-0.155	12.6	-0.237	-1.224	18.1	-0.226	-0.308	16.0	0.843	0.929	11.8	6.7
JO	10/25	0.781	1.956	2.9	0.766	2.204	2.6	0.745	0.680	4.6	0.944	0.986	22.4	11.2
JO	10/26	0.658	0.836	10.8	0.649	1.104	9.5	0.687	0.430	8.2	0.977	0.989	22.0	10.1
JO	10/27	0.548	2.204	1.2	0.146	0.498	9.8	0.340	0.480	7.6	0.996	0.883	12.4	6.9
JO	10/28													
JO	10/29				0.897	4.716	-3.5	0.878	1.373	2.7		0.994	21.9	12.1
JO	10/30				0.937	4.666	-2.7	0.946	1.251	2.7		0.997	15.9	13.5
JO	10/31				0.808	16.483	-26.6	0.893	2.306	-2.2		0.965	19.1	16.5
JO	11/1				0.889	16.496	-15.0	0.929	2.054	4.9		0.894	19.1	14.1
JO	11/2				0.939	4.903	0.0	0.914	1.583	4.1		0.976	25.4	21.7
JO	11/3							0.715	1.163	3.8			20.4	15.3

Table 2-1. Regression Results of Candidate Samplers Versus BAM Samplers for Individual 24-Hour Periods (continued)

		Met One raw			R&P raw			TSI raw			r (versus TSI)		24-hr average PM10	
Site	Day	r	slope	intercept	r	slope	intercept	r	slope	intercept	Met One	R&P	TSI	BAM
CC	11/5				0.977	4.049	-1.9	0.953	1.398	2.3		0.984	56.1	31.3
CC	11/6				0.942	3.468	1.2	0.931	1.223	3.9		0.994	39.6	19.6
CC	11/7				-0.222	-3.257	66.6	0.011	0.050	36.0		0.993	36.5	39.4
CC	11/8							0.246	0.267	13.1			17.1	12.4
CC	11/9							0.926	1.044	-1.9			30.9	23.6
CC	11/10				0.720	2.836	0.3	0.860	0.977	-2.4		0.989	40.5	24.4
CC	11/11				0.828	3.503	-20.3	0.868	1.471	-31.4		0.974	40.2	27.7
CC	11/12				0.746	1.400	4.4	0.745	0.612	3.8		0.954	17.5	12.2
CC	11/13				0.182	0.985	8.0	0.098	0.152	10.5		0.963	11.9	8.2
CC	11/14				0.701	4.698	-11.4	0.762	1.891	-16.7		0.958	13.8	10.2
CC	11/15				0.867	4.021	-8.0	0.861	1.322	-7.7		0.993	18.4	14.5
CC	11/16				0.898	3.783	-4.9	0.863	1.150	-1.3		0.985	28.3	15.9
CC	11/17				0.921	3.879	-3.8	0.904	1.182	0.2		0.987	35.6	21.8
CC	11/18				0.955	3.723	-4.3	0.941	1.156	-0.3		0.994	34.7	24.4
CC	11/19				0.963	3.924	-5.8	0.965	1.271	-1.8		0.997	32.7	26.2
CC	11/20				0.559	5.178	-6.1	0.744	2.028	-5.3		0.960	17.4	19.5
CC	11/21				0.744	2.835	-2.2	0.751	1.332	1.6		0.978	9.4	9.0
CC	11/22							0.947	0.822	1.3			23.4	20.9

Table 2-2. Regression Results of Candidate Samplers Versus BAM Samplers for Periods of Consistent Operation

		Met One			R&P			TSI			r (versus TSI)	
Site	Period	r	slope	intercept	r	slope	intercept	r	slope	intercept	Met One	R&P
JO	10/7 - 10/14	0.773	3.988	0.8	0.770	12.449	0.8	0.936	1.756	0.9	0.880	0.890
JO	10/14 - 10/22	0.921	4.726	-19.2	0.910	43.103	-1.8	0.970	1.617	2.2	0.953	
JO	10/22 - 10/31	0.687	1.345	7.2	0.539	1.181	10.1	0.666	0.562	7.9	0.918	0.913
JO	10/7 - 10/31	0.814	3.797	-10.0				0.848	1.373	2.4		
JO	10/7 - 10/22	0.864	4.446	-15.7	0.713	12.467	12.3	0.956	1.670	2.2		
CC	11/4 - 11/10				0.631	2.930	15.2	0.673	0.935	12.3		0.990
CC	11/10 - 11/23				0.823	2.941	-0.6	0.833	0.856	3.3		0.976

Table 2-3. Composite Statistics for Periods of Consistent Operation Using Days when the Correlation was Greater Than 0.9

Site	Period	Sampler	slope	intercept
JO	10/7 - 10/14	Met One	4.457	-17.4
JO	10/14 - 10/22	Met One	4.748	-16.5
JO	10/7 - 10/15	R&P	16.480	5.0
JO	10/22 - 11/3	R&P	4.785	-2.7
JO	10/7 - 11/4	TSI	1.700	0.7
CC	11/4 - 11/22	R&P	4.049	-1.9
CC	11/4 - 11/10	TSI	1.221	1.4
CC	11/10 - 11/23	TSI	1.107	0.2

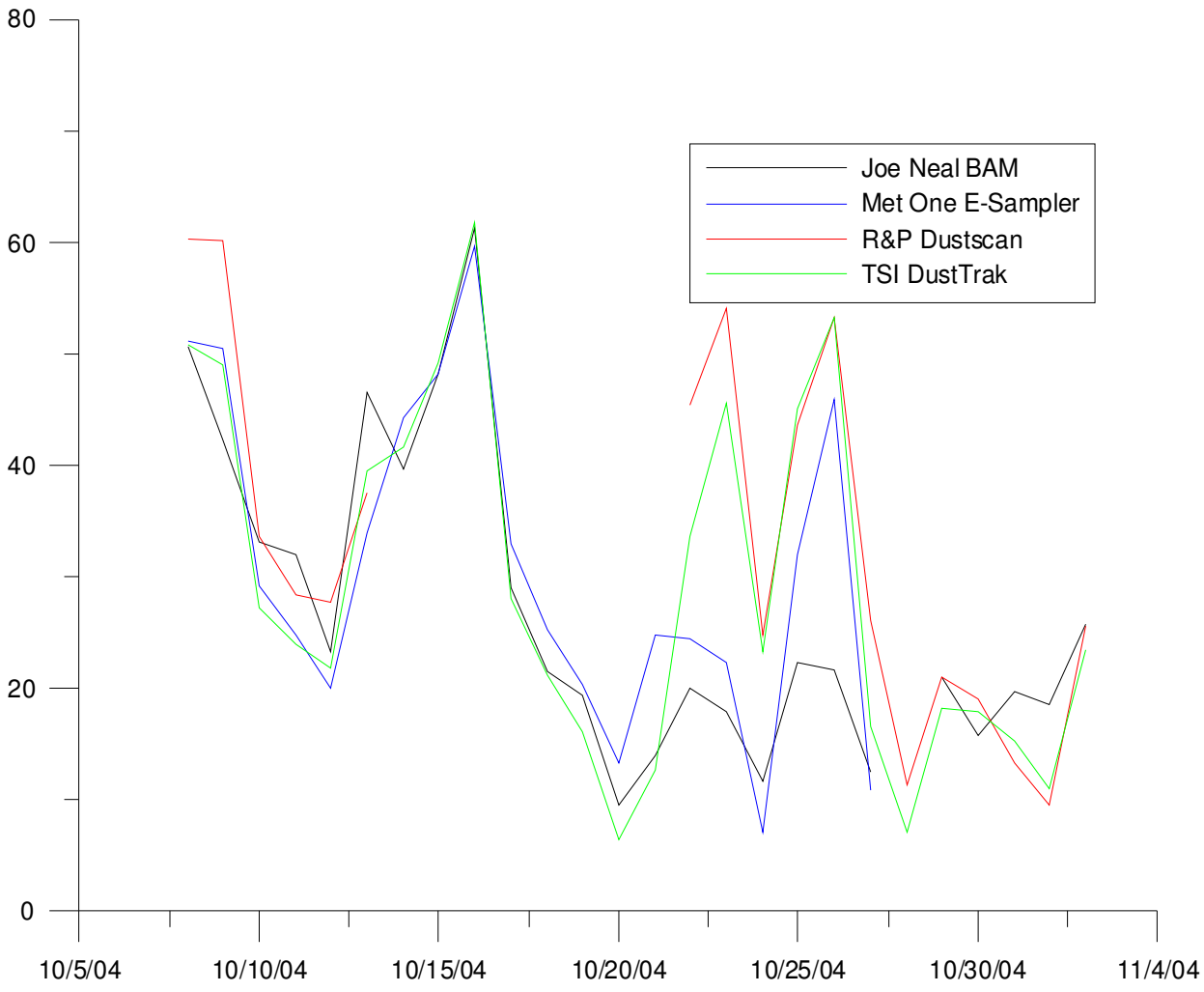

Figure 2-1. Time Series Plot of BAM and K Factor Corrected Optical Data – Joe Neal

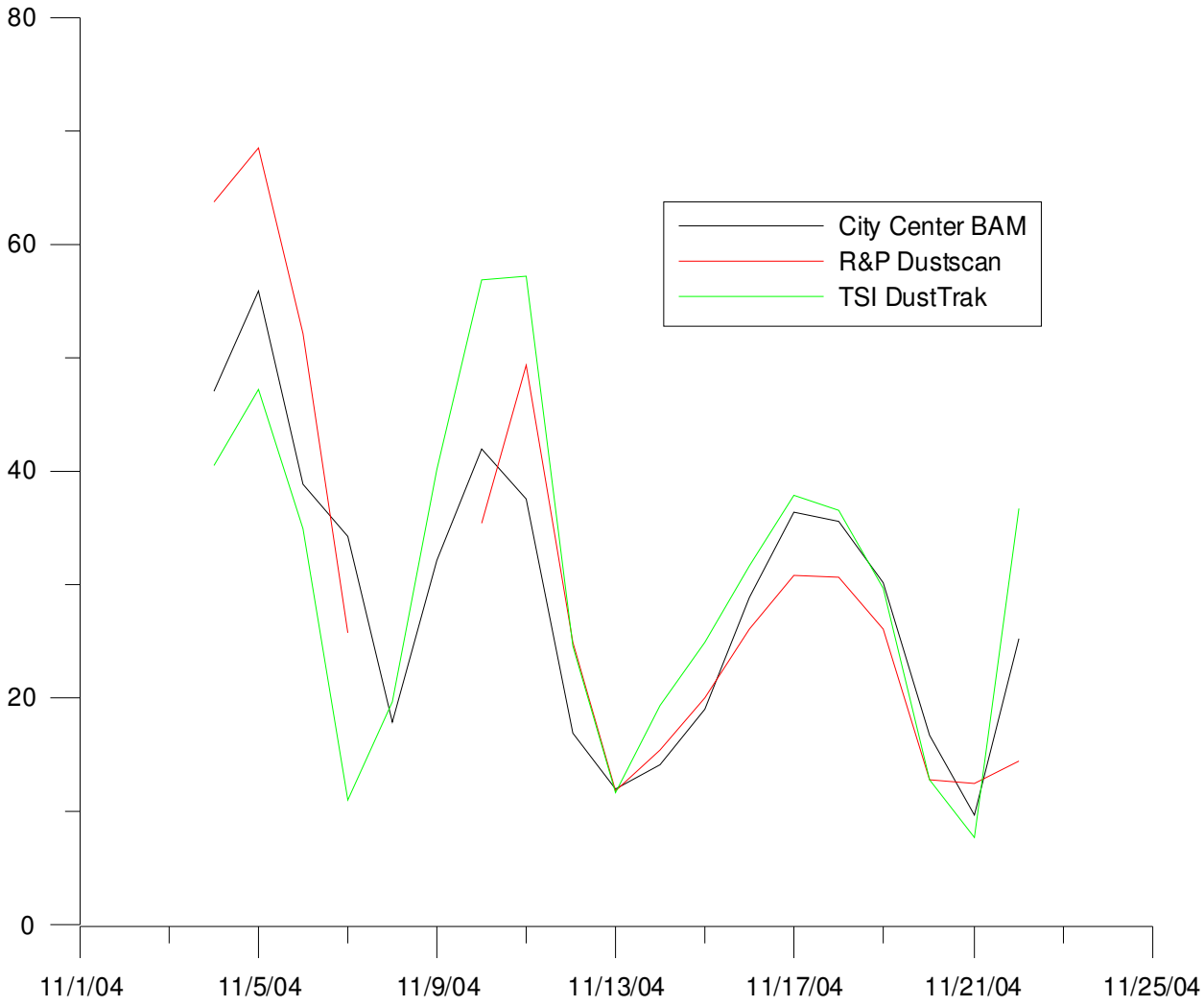

Figure 2-2. Time Series Plot of BAM and K Factor Corrected Optical Data – City Center

In contrast, the response for the TSI DustTrak remained consistent throughout the comparison periods, and no response related problems were noted. A known problem with the DustTrak is that the sample pumps are not designed for prolonged continuous use, and consequently fail after about two months of continuous operation. Midway through the comparison at City Center, the DustTrak pump did indeed begin to fail, and the sampler was replaced. K factors for the two samplers appeared to be relatively close – within approximately 10 percent of each other.

Though data are somewhat limited, Table 2-3 appears to indicate that the particulate matter composition may have an effect on the K factor. Both the TSI DustTrak and R&P Dustscan show a drop in the K factor on the order of about 20 percent when the sampler was moved from Joe Neal to City Center. Again, data are limited. October and November both had periods of rain, which was unusual for this area. The rain had a significant effect on PM concentrations, and the higher concentrations hoped for during the evaluation period did not materialize.

In reviewing Figures 2-1 and 2-2 where the K factors have been applied, there is relatively good agreement between the optical samplers and the BAM for 24-hour averages. However, there are notable exceptions, especially in late October. **Figures 2-3**, **2-4 and 2-5** further investigate possible reasons for noted differences between the BAM and the optical methods. Figure 2-3 plots noted hourly differences as a function of the PM_{10} concentration. For all three plots, the TSI DustTrak is used for the comparison, as it is the simplest of the samplers evaluated and represents a potential worst-case comparison. No relationship between concentration and response differences was noted. Figures 2-4 and 2-5 present similar plots for temperature and relative humidity, respectively. Again, no obvious relationships are noted. For all three plots, the best-fit line is plotted in red. However, r^2 for all three relationships was below 0.1, a very poor correlation.

The TSI DustTrak was selected as the saturation study sampler for the following reasons:

- Of the three optical samplers, the DustTrak had the fewest response-related issues.
- Costs for the DustTrak were about half of those for the other two samplers thus allowing the deployment of more samplers under the existing budget
- Based on the data collected, the other two samplers do not show any obvious improvement in accuracy as defined by the comparison with the BAM data.
- All three samplers correlated well with each other, indicating that there was no obvious benefit from the additional features included in the other samplers, including the inlet dryer. Furthermore, relative humidity is not anticipated to be a major issue during high PM concentrations experienced in the Las Vegas area.

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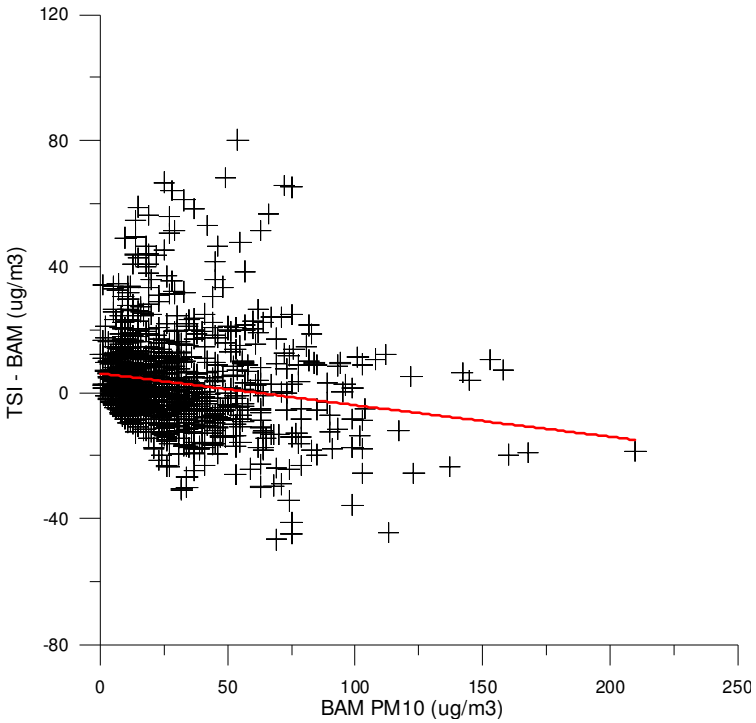


Figure 2-3. Difference Between Adjusted TSI PM_{10} and BAM PM_{10} as a Function of BAM PM_{10}

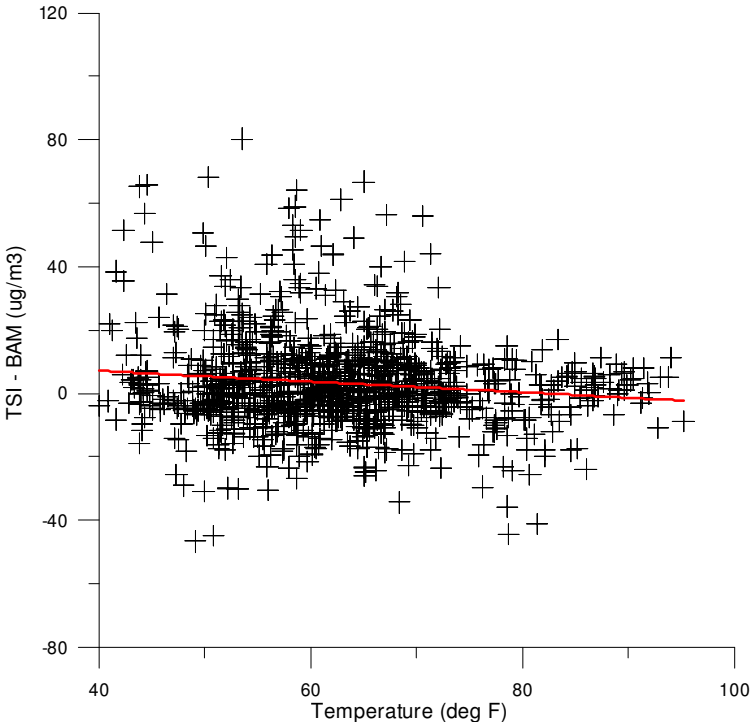


Figure 2-4. Difference Between Adjusted TSI PM_{10} and BAM PM_{10} as a Function of Temperature

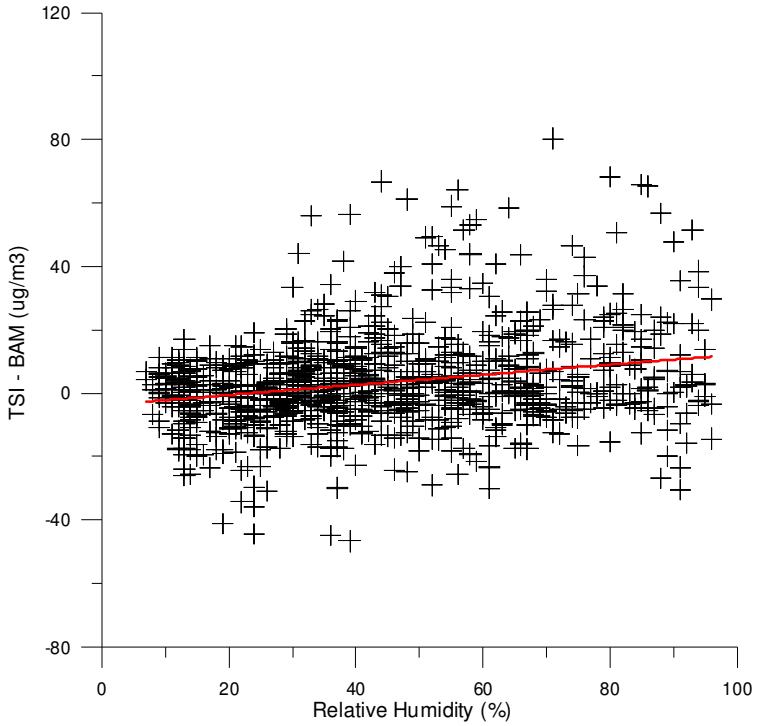


Figure 2-5. Difference Between Adjusted TSI PM_{10} and BAM PM_{10} as a Function of Relative Humidity

2.2 Saturation Monitoring Equipment Configuration

The saturation sampler configuration consisted of the TSI model 8520 DustTrak sampler, powered using a 12-volt battery power supply. The 12-volt supply was then regulated to approximately 8 volts, the voltage used by the DustTrak sampler. The 12-volt supply consisted of an 85 amp-hour 12-volt deep cycle marine/RV battery that was charged using either solar panels or a 115 VAC adapter (for the sites that had "plug-in" power). With the exception of the Joe Neal site, which had reliable 110 VAC power, all samplers used this deep cycle battery/regulator system. Additionally, each of the samplers had an internal backup battery supply that used "C" cells to power the sampler in the event of an external power failure.

The sample was collected using the TSI omni directional sample inlet mated to a 3 meter length of refrigeration grade ¼" copper tubing. This allowed the inlet to be placed atop a pole or mount at a height of at least 2 meters above ground level (the minimum sampling height recommended by EPA for PM_{10} sampling). A custom water dropout bottle was then used at the inlet of the sampler to prevent liquid water from entering the sampler. All samplers used the same inlet system with the same length of inlet tubing. Prior to the field deployment, the long length sample system was tested at the T&B Systems Valencia facility to verify the integrity of the sample system. Three DustTrak units were operated, one with the standard configuration of the sample inlet mounted on the environmental enclosure, one with a 3-meter inlet length of copper tubing between the sample inlet and the sampler, and one with a 4-meter length of copper tubing. While ambient concentrations of PM_{10} were relatively low, there was no measurable difference between the individual readings. **Figure 2-6** shows the installation at the

Blue Diamond site with the instrument, battery and solar panels at the base of a pole that supported the sample inlet.

Figure 2-6. Typical Installation of the DustTrak Sampler and Sample System

The DustTrak samplers recorded the observed PM_{10} concentrations using two data logging techniques. The first technique used the internal data logger to record the sampler concentration every four minutes. The one-minute interval allowed a recording of the entire springtime saturation sampling event in internal memory. For all but three of the sites, the data were also recorded on Campbell Scientific CR10 data loggers. These data loggers scanned the DustTrak analog output once per second and recorded hourly average PM_{10} concentrations. The loggers also recorded the temperature inside the environmental enclosure that housed the DustTrak and data logger.

For the sites that had the CR10 loggers, that data was considered the primary data collected, with the DustTrak internal logger providing a backup. Data collected by the CR10 loggers were downloaded on a weekly basis using a Palm Pilot PDA. For several sites that had only the internal DustTrak data logger (the DustTrak had no analog voltage output), the internal loggers were downloaded on a weekly basis using a laptop computer.

3. SATURATION SAMPLING NETWORK

The saturation sampling network was intended to place samplers in locations where suspected gaps in the DAQEM network may exist. This section provides an overview of the existing network and then provides the rationale used for selection of the sites for saturation network.

3.1 Overview of Existing DAQEM Network

Monitoring for PM_{10} has been ongoing in Clark County for some time. The period of interest for this analysis began with the year 2000, as this provided a sufficiently long period to determine if reasonable progress is being made toward the attainment of the Ambient Air Quality Standard (NAAQS). During the initial analysis of the four-year period from 2000 through 2003, the network consisted of 19 stations. Since that time the number of sites has been reduced by 2 to the current 17, with the primary concentration of Clark County stations being within the Las Vegas Valley. Key to this analysis is the distribution of the sites throughout the Valley, and in the regions where a high potential for fugitive PM_{10} may exist. **Figure 3-1** shows a map of the monitoring stations in and around the Las Vegas Valley, and the indicated number of exceedances of the 24-hour average 150 µg/m3 NAAQS during the four year analysis period. All stations within the network are currently operating EPA designated equivalent continuous monitors.

Figure 3-1. Location of the DAQEM Monitoring Stations During the 2000 to 2003 Period. (The red circles show the site locations with the indicated number of exceedance days during the period.)

3.2 Rationale for Saturation Monitor Siting

In 2003, a detailed analysis of the soil types and emissions potential was performed to provide maps of the Las Vegas Valley, and in particular Hydrographic Region 212 identifying where there is a likelihood of high fugitive emissions from soils, if they are disturbed. Thus, the identified regions within the maps that have a high emissions potential are regions, that if disturbed through either recreational, or construction use, and appropriate mitigation measures are not taken, then the potential for fugitive emissions during strong wind events is high. These soils have much higher silt content and are more readily resuspended in strong winds or soil movement then the regions with less silt in the soil composition. **Figure 3-2** shows the location and number of exceedances at the DAQEM monitoring sites on the emissions potential map for the Hydrographic Region 212. A general pattern of the greater number of exceedances in the regions of the red, higher emissions potential, areas can be observed. However, one needs to interpret the map with caution. Even though there is a region of higher emissions potential, the higher emissions will not likely be recognized unless the soil is disturbed. Similarly, if a region of lower emissions potential is disturbed, and no mitigation measures are employed to restore the surface, then that soil can also produce emissions of fugitive dust.

Given the location of the existing network of monitors shown in Figure 3-2, the saturation network sites were chosen to fill in regions between the existing monitors and to make measurements in regions that may be suspected of having elevated PM_{10} levels, and also document the transport throughout the Hydrographic Region 212. **Figure 3-3** shows the locations of the saturation sites on the same emissions potential map as the DAQEM stations. The rationale for the selection of the saturation sites included the following:

- Sites in the south to southwest region helped to identify the upwind PM_{10} concentrations during the wind events that have more southerly flow.

- Selected sites to the southeast and east followed along the soil types that are potentially high emission sources and are further away from the main urban areas.

- Selected sites in the northeast to north quadrants filled in likely monitoring gaps in potential high emission areas. These areas have some relatively new housing and commercial developments.

- To the northwest are potential gaps in established neighborhoods that, depending on activities, could be impacted by increased fugitive emissions. This included the selection of the Mountain Crest site near a possible large source.

- Sites placed near the BLM disposal boundary helped address questions about transport and remote area concentrations.

- To the extent possible, the EPA siting criteria for exposure and sample height were followed to make the data as representative as possible.

A summary of the selected sites and their locations is provided in **Table 3-1**. The site number and name identifies the location in the resulting database. **Figure 3-4** shows the individual sites identified by site number.

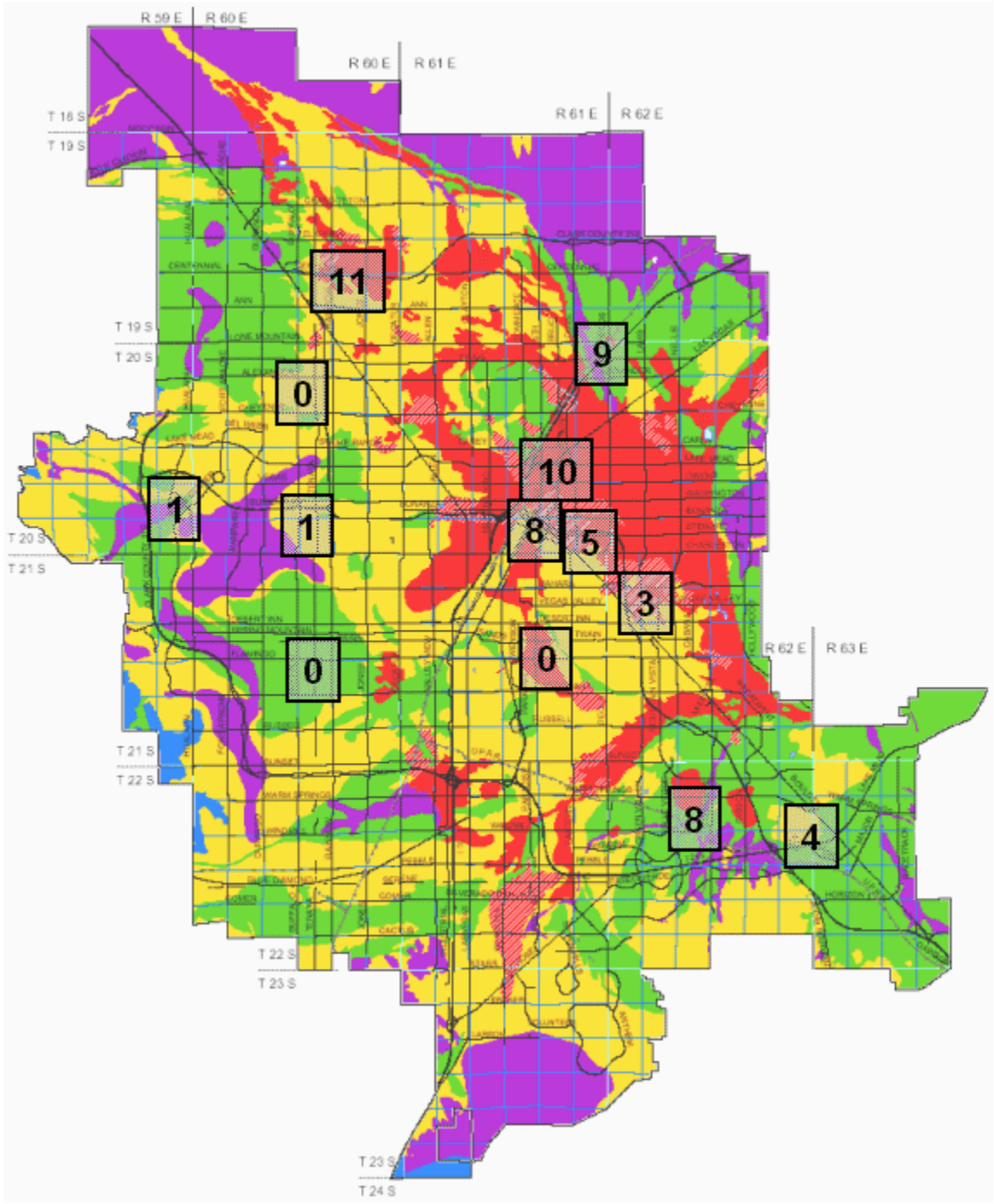


Figure 3-2. Location of DAQEM Sites with Indicated Exceedances During 2000-2003 at Each Site

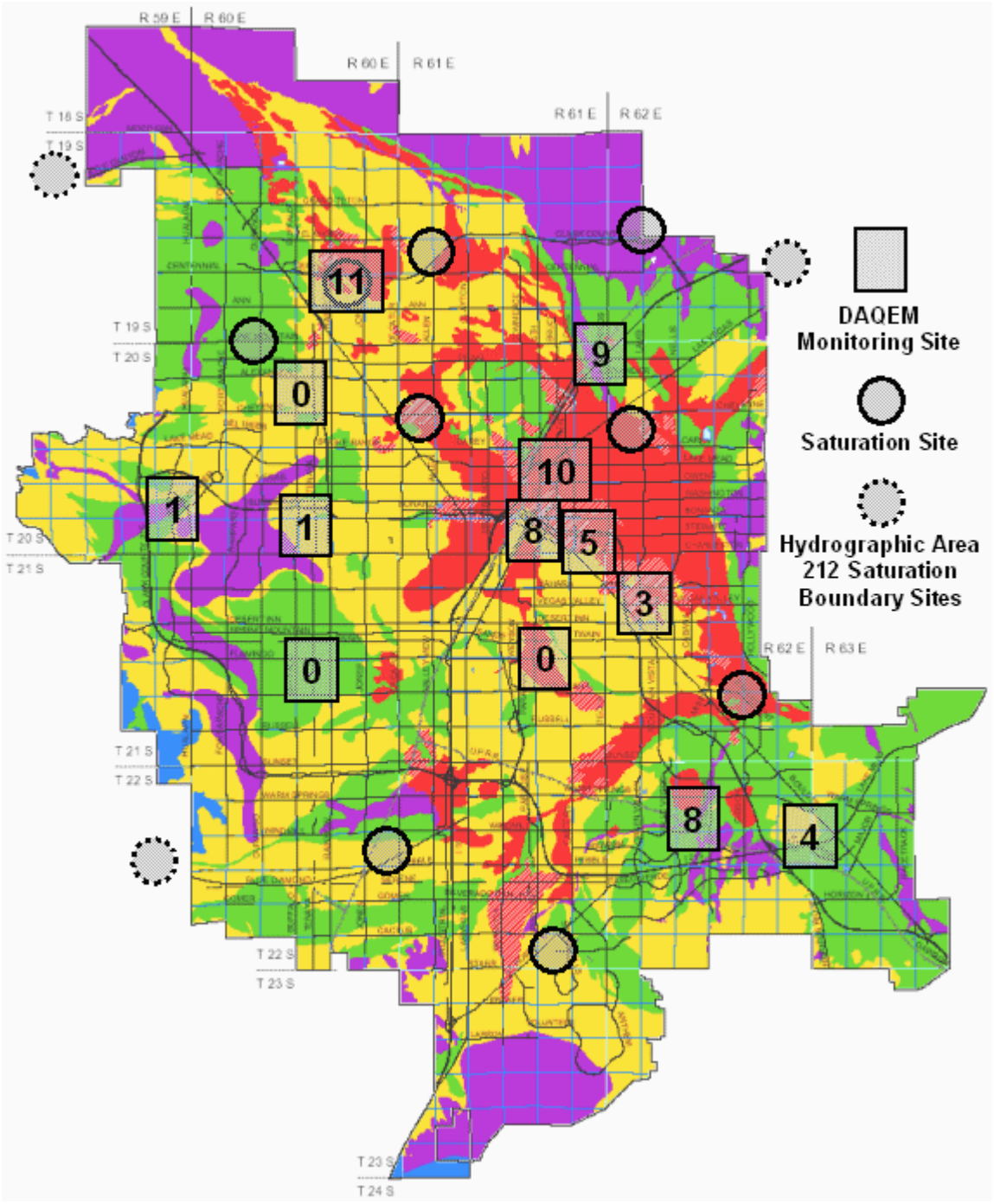


Figure 3-3. DAQEM and Saturation Monitoring Network

Table 3-1. Summary of Site Locations

Site Designation	Location	Purpose
13 -- Kyle Canyon Lat: 36.3105 Lon: -115.3957 Alt: 1129 m	Private residence	Boundary of BLM disposal area, NW
21 -- Blue Diamond Lat: 36.0259 Lon: 115.3174 Alt: 897	Private residence	Boundary of BLM disposal area, SW
31 – Speedway Lat: 36.2759 Lon: -115.0032 Alt: 607 m	Las Vegas Speedway	Boundary of BLM disposal area, NE
43 – Mountain Crest Lat: 36.2478 Lon: 115.2835 Alt: 738	Mountain Crest Park	Downwind of quarry during drainage flow and west to southwest wind events
52 – North Las Vegas Airport Lat: 36.2170 Lon: -115.1942 Alt: 669 m	North side, North Las Vegas airport	Near northwest area
64 – Aliante Lat: 36.2793 Lon: -115.1885 Alt: 688 m	Aliante Deer Springs Park	Recently built area
72 – Lamb Lat: 36.2918 Lon: -115.0828 Alt: 648 m	Near CC215 and Lamb	Remote location north of newly built area, potential growth area
82 – Alto Lat: 36.2097 Lon: -115.0861 Alt: 557 m	Private residence near Alto Rd and Lamb Blvd	Established area near Nellis AFB
91 – Wetlands Lat: 36.1014 Lon: -115.0230 Alt: 496 m	Wetlands Park Visitor Center	Southeast side
101 – Henderson AP Storage Lat: 35.9918 Lon: 115.1346 Alt: 710	Storage facility north of Airport	South side
112 – Star Nursery Lat: 36.0312 Lon: -115.2165 Alt: 737 m	Star Nursery, Mohawk and Blue Diamond Highway	South side, west of I-15
120 -- Joe Neal Lat: 36.2706 Lon: -115.2382 Alt: 709 m	DAQEM site	QC purposes

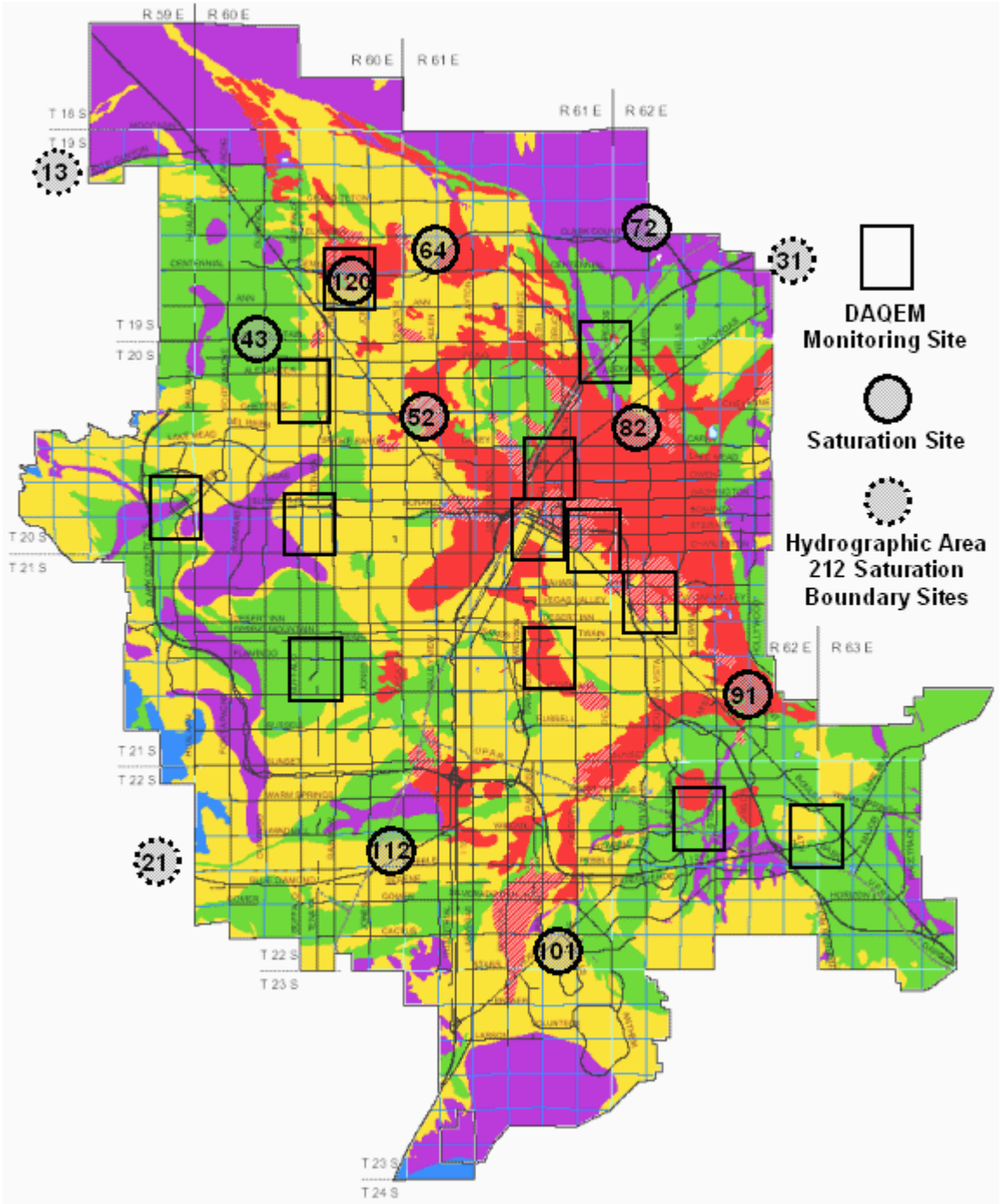


Figure 3-4. DAQEM and Saturation Monitoring Network Sites. The site numbers correspond to those provided in Table 3-1.

4. QUALITY ASSURANCE

The quality assurance efforts implemented throughout the program were designed to create a data set of known quality that could be used for the assessment of PM_{10} concentrations throughout the network.

4.1 Acceptance Tests

All instrumentation used for collection of data in the field underwent evaluation and acceptance testing before the start of the field program. The TSI DustTrak 8520 Aerosol Monitors used were obtained from a rental agency (ASC MasterTek) and upon receipt were checked using the manufacturers procedures for the zero and flow checks. Each instrument was then allowed to run overnight with the entire sample system and CR10 data logging system running. The combination of DustTrak/analog cable/data logger sampling sets were all attached and kept together so as to minimize any uncertainties that may be associated with mixing and matching individual components. The analog output of the DustTrak (for the units so equipped) used a 2:1 voltage divider to convert the 0-5 volt output signal to a 0-2.5 volt range compatible with the data logger. Each data logger was then programmed to scan the DustTrak output once per second and to calculate and store hourly averages in engineering units (µg/m3). Each of the DustTrak/data logger units had a unique program that included the site number identifier that was embedded into the data stream. This would help assure that even if data files were mixed, the data records could be tracked to the proper site.

Each of the sampler sets underwent zero and span tests by comparing the internal data logger readings with the zero filter applied (and the unit properly zero calibrated) and ambient readings for the upscale points. Each of the analog outputs had a measured offset of 0 to 4 µg/m3, which was considered acceptable and is so indicated in the descriptors of the data quality. This was found to be an offset in the DustTrak analog output and is considered the lower detectable limit, as the analog output of the DustTrak could not go below these values, or show negative values, even though the internal data logger in the DustTrak could show and record these negative values. This was a limitation of the D/A conversion provided by the DustTrak to the analog output. It also defined that if the DustTrak drifted negative in the zero check, then data from the internal DustTrak logger would need to be substituted for the CR10 recorded values. This did occur on several occasions with the data appropriately recovered from the internal logger.

During the acceptance test of all units, one was found to have a low flow rate and could not be properly adjusted back into the proper flow range. For the DustTrak units, this is indicative of either a pump diaphragm starting to fail, or a pulse chamber bladder starting to tear. Either way, the reduced flow would continue to drop until such time that no flow could be drawn. While the manufacturer indicates that the accuracy of the PM_{10} measurement is not adversely affected by not maintaining the indicated 1.7 lpm flow rate, at some point there is a loss of accuracy, as was demonstrated by laboratory testing of instruments during the saturation study. This one initial unit was returned to the rental company with a request for a replacement, but the supply was depleted. For the duration of the sampling program there were no replacements available. This difficulty in obtaining spares was somewhat remedied by the DAQEM locating a source of two backup units, one of which was put into service during the saturation study.

During the period of the acceptance test of all units, a test using the conventional means of measurement with the TSI environment enclosure and two lengths of copper inlet tubing was

performed. The intent of the tests was to verify the accuracy of the sample readings with the sample inlet running through a length of copper tubing to the inlet mounted 2 to 3 meters above the ground. Three samplers were used in the test. The first was a standard environmental enclosure with the inlet mounted on the top of the enclosure. The second and third samplers had 3 and 4 meter lengths of ¼" copper tubing between the inlet and custom water dropout bottles. All systems recorded the analog output signals on a single data logger and were operated over a two-day period recording both 5-minute and 60-minute averages. While the ambient concentrations were seldom above 50 to 75 µg/m3 during the test period, the reported values from all three systems showed no significant difference outside the accuracy of the measurement method.

4.2 Quality Assurance Audit Results

Several audits were performed during the course of the program. The first was conducted as part of the equipment evaluation in the fall of 2004. Two audits were on the PM_{10} DAQEM monitoring equipment at the Joe Neal and City Center sites to assure that the comparison tests being performed to evaluate the candidate samplers had reliable information from the DAQEM monitors to evaluate. No issues were found with the operations. The audit results are presented in Appendix A.

Once the saturation network was operational and under a normal field servicing schedule, an audit of the operations was conducted. The audits were conducted from May 24 through May 27. Each site was visited by an auditor that was not responsible for any of the preparation, servicing or data processing activities for the project. The audit consisted of the following:

- Review of the siting to assess adherence with the EPA criteria for PM_{10} measurements
- Measurement of the sampler flow and comparison to the manufacturers recommendations and the indicated site flow
- Zero check of the instrument and comparison to the manufacturers specifications
- Measurement of the sampling power system to assure proper charging and voltages for operation
- Verification of the sampler time stamp
- Check of the integrity of the sample inlet system.

The results of the saturation network audit are presented in **Table 4-1**. A network-wide issue was confirmed when a number of the samplers were unable to maintain the specified 1.7 lpm flow. While TSI, the manufacturer of the sampler has indicated that the cut point of the sampler for PM_{10} is not flow critical; the magnitude of the flow differences was of concern. This was a known issue with the samplers, and the audit duplicated the flow rates that were measured during each of the weekly site checks. As indicated elsewhere in this report, the final data were adjusted for significant flow rate differences.

The only other significant problem found was a zero significantly different from the operational specifications at the Star Nursery site and a zero that was just outside criteria at the Wetlands site. Both sites were visited immediately following the audit to take corrective action. The sampler at Star Nursery was replaced and testing conducted to determine the reason for the zero drift. The affected data were appropriately flagged.

Table 4-1. Summary of Audit Results from the Saturation Network

Site Name	Site Number	Date	Time (PDT)	Flow (lpm)	Zero (ug/m3)	Battery (volts)
Kyle Canyon	13	24-May	17:40	0.4	0.001	11.3
Mountain Crest	43	24-May	18:30	0.3	0.002	12.1
Joe Neal	120	25-May	8:05	1.5	0.000	12.6
Wetlands	91	25-May	12:50	1.4	0.004	11.6
Lamb	72	26-May	8:50	0.4	0.000	12.3
Aliante	64	26-May	9:30	1.5	0.000	12.3
Blue Diamond	21	26-May	10:40	0.6	0.000	11.5
Star Nursery	112	26-May	11:30	0.5	0.037	12.3
Alto	82	26-May	18:00	0.8	0.002	13.1
N Las Vegas	52	27-May	6:30	1.6	0.000	12.0
Speedway	31	27-May	7:30	1.6	0.002	11.5
Henderson AP Storage	101	27-May	12:40	0.5	0.002	12.8

The third audit performed was the data processing audit following the completion of the data processing and validation stage. The intent was to follow the processing from the initial, raw data collected in the field through the processing steps and reported in the final data tables. The audit consisted of the following:

- Selected manual recalculations of the hourly average concentration from the DustTrak internal data logger recording values at 4-minute intervals
- Comparison of the hourly averages calculated by the CR10 data loggers to the DustTrak calculated hourly averages
- Calculations of the 24-hour average concentrations from the hourly reported values
- Review of the correction methodology for the data collected by the DustTrak samplers with flow rates significantly less than the manufacturers recommendations
- Assessment of the proper conversion of collected data in PDT to reported values in PST

The results of the data processing and validation audit found some minor issues with the time convention and corrections from the stored data in the CR10 data loggers time stamp of hour ending to the end result of PST with hour beginning. Those issues were addressed and resolved in the final database.

4.3 Field Zero and Flow Checks

As part of the weekly servicing of the sampling sites two types of active checks were performed on the PM_{10} samplers. The first was a zero of the instrument that involved placing the manufacturer supplied zero filter on the sample inlet to document the response with particle free air. If the result was greater than the ±1 µg/m3 then the manufacturer recommended, the zero calibration procedure was followed and the zero rechecked to assure it was within specification. If it was outside specification then the procedure was followed again until the response was acceptable. A record of the zero checks is provided in Appendix B.

During the site servicing a flow check was also performed. As indicated above, the DustTraks have a known issue with the internal pump and dampener whereby the pump diaphragm and/or dampener chamber materials fail, causing a reduction in the flow rate. This typically occurred following one to three months of continuous operation. While there is a flow adjustment on the sampler, increasing this adjustment only serves to make the internal pump work harder, without increasing the flow rate. Pumps and or dampeners that failed could not be field serviced and with the exception of the two units borrowed from Clark County, replacements were not readily available. Detailed records were maintained on the flow rates of each sampler based on the weekly flow checks and the data were subsequently adjusted for significantly low flow rates. Appendix C provides the flow check records.

4.4 Data Processing

Data collected during the saturation study underwent a series of data processing and validation steps. A summary of the steps is as follows:

1. Data collected by the samplers with the DustTrak internal data logger only (non-analog output units) had the 4-minute sample data averaged into hourly averages.
2. Data collected by the CR10 data loggers that for one reason or another had missing periods, were filled in with the data from the internal DustTrak data logger. This generally only applied to times that had a power failure of the CSI backup battery.
3. The data from each of the DustTrak loggers were reviewed for any periods that had negative values. These periods were used to fill in the data in the CR10 database as the analog output from the DustTrak logger did not allow negative values.
4. Periods with instrument malfunctions were documented and the data edited with flags in the database.
5. Periods with zero checks performed were edited and flagged in the database.
6. Data for periods with minor zero offsets based on the zero check data were adjusted for the zero drift.
7. Periods with significant zero offsets were invalidated.
8. The flow rate history at each of the sites was documented and adjustments made to the collected data based on the derived factors and associated flow rates.
9. Derived K factors were applied to relate the optical PM_{10} method to the relationship derived from the comparisons made at the two sites in the fall of 2004 and adjusted for the findings from the Joe Neal QC site.
10. The data time stamp was adjusted from Pacific Daylight Time to Pacific Standard Time and 24-hour averages calculated.

The resulting data are provided in Appendix D.

4.5 Quality Control Site Evaluation

During the saturation study the Joe Neal site was designated as the quality control site. As such, a DustTrak was designated for QC purposes and run adjacent to the DAQEM sampler during the study. The original intent in the planning of the data collection at this site was to use the information to refine the “K” factor used to adjust the optical PM_{10} method to the measured

BAM values. The initial correlation of the DustTrak to BAM values showed an apparent offset with the DustTrak requiring a positive intercept to relate the values to the DAQEM BAM data. **Figure 4-1** shows this initial relationship. These data have had the high values observed during smoke events in late June removed. This high intercept is somewhat problematic in that it brings into question the response of the sampler at low PM concentrations, since a normally operating sampler with its zero set to zero can never produce correct readings lower than the indicated intercept of 19 µg/m3. Additionally, the high intercept goes against the findings of the sampler evaluation conducted in November 2004. One of the reasons that the DustTrak was chosen was that it provided a consistent near-zero intercept when compared with the DAQEM monitor data. After careful review of the data it was decided that the adjustments to the DustTrak data would use a "K" factor that would be a composite of the urban and rural factors (1.4) determined during the fall study, with a minor intercept of 5 µg/m^3 applied.

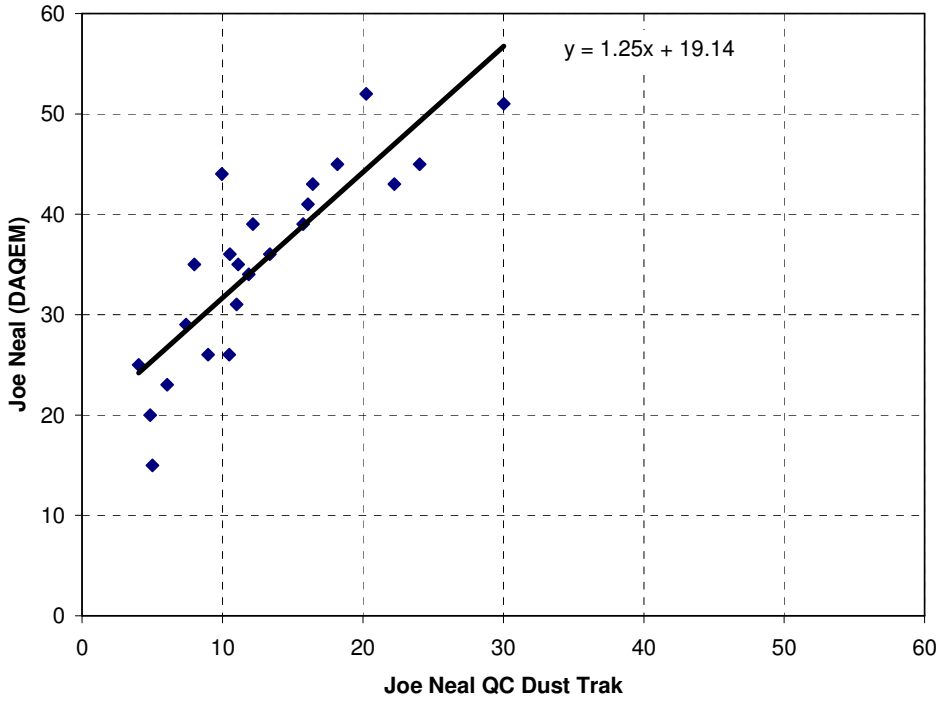


Figure 4-1. Initial Comparison of 24-Hour Coverage PM_{10} Readings from DAQEM Monitor and Saturation QC DustTrak at the Joe Neal Site

This composite factor was applied and the data reanalyzed to review the resulting data. **Figure 4-2** shows the time series of 24-hour average PM_{10} from both the DAQEM monitor and the saturation monitor. Early in the study there is an apparent offset, while later the values agree starting around June 18. This situation cannot be explained simply be stating that the DAQEM Joe Neal site has a significant offset early in the period, since that sampler regularly reads near-zero readings and has low concentration 24-hour averages that agree with other DAQEM sites. However, there are clearly times when the sampler response appeared high when compared to other readings in the DAQEM network. Thus, simply ignoring the offset doesn't seem appropriate either. As the reasons for the differences at Joe Neal cannot be resolved, the composite K factor appeared to be an appropriate choice to process the data with a minor offset of 5 µg/m^3. The results after application of the factor looked reasonable in the

latter part of the study. The reasons for the differences in the early part of the study will remain unknown. Following the saturation study, the sampler at Joe Neal was replaced as part of routine upgrades to the sampling network. The replacement was indicated by DAQEM to be related to unusual readings.

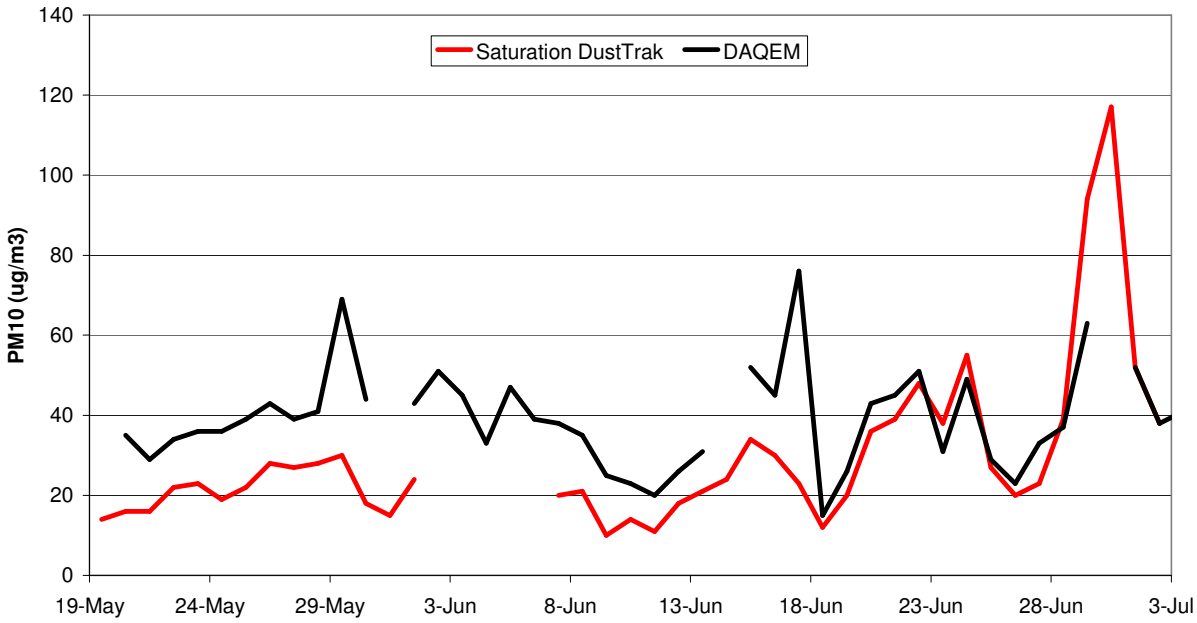


Figure 4-2. Time Series of 24-Hour Average PM_{10} from the Joe Neal Saturation and DAQEM Monitors After the Composite K Factor was Applied

4.6 Data Capture

The performance of the DustTrak samplers during the saturation sampler was as expected. While there were significant issues with the flow rates, those were expected given the track record of the instruments. Correction factors were calculated based on tests with a variety of instruments so no data were lost as a result of the flow rate issues. The primary reasons for loss of data were either a power failure in the primary and backup battery supplies, or a data logger malfunction of one form or another. **Table 4-2** presents the overall data capture rates for each of the saturation sites. The rate for the Joe Neal site is lower because the site was to be used to collect QC data for the sampling technique. First priority was given to the establishment and operations of the saturation site network. The values are calculated based on at least 50 percent of the hourly values being available to calculate the 24-hour average during the period of April 16 through July 2.

Table 4-2. Data Capture Rates for 24-Hour Average Saturation Network PM_{10} Values

Site	13 Kyle	21 B D	31 Spd	43 Mt Cr.	52 NLV	64 Alian	72 Lamb	82 Alto	91 Wetls	101 Hend	112 Star	120 JO
Capture Rate (%)	92	88	96	95	96	86	94	87	87	90	81	50

5. FIELD PROGRAM

The field study was planned to initially start in late winter/early spring. However, due to instrument shortages and the extensive rainy season continuing well into the spring time, the field deployment was delayed until mid-April when it was hoped that the rains would be over for a period of time with the soils dried to the extent that fugitive emissions could be expected. This section describes the overall weather conditions experienced during the field effort and the logistics of the network operations.

5.1 Project Weather Conditions

The Clark County region of southern Nevada is an arid desert region of the desert southwest that experiences an annual average rainfall of less than 5 inches per year, as reported at the National Weather Service station at McCarran International Airport. The synoptic and local meteorological conditions leading up to the PM_{10} saturation study, as well as several years prior to the project can be characterized as abnormally wet. Under such conditions, the desert can become a region with minimal dust activity and transport, even during times of high wind speed events, which may initiate inter-basin and intra-basin transport events. The stabilization of the desert surface, a result of several years of above normal precipitation, likely limited the number of PM_{10} exceedances reported during the couple of years prior to the saturation study. Prior to this wet period, the region experienced abnormally dry conditions that led to a higher fugitive dust potential. Summarized below is a discussion of the conditions leading up to the period of the PM_{10} study.

Table 5-1 presents the annual precipitation totals for the years of 1999 and 2005 at McCarran Airport. Additionally, the running 30-year "normal" has been included for the purpose of calculating the percent of normal precipitation observed for a given year. This table shows that in the years leading up to the project, recorded annual precipitation totals were well above normal (>50%). Prior to these "wet" years, a period of below normal precipitation was recorded during a four-year period from 1999 to 2002. It was in 2002 that Clark County reported its greatest number of PM_{10} exceedance days during this 6-year period.

Table 5-1. Annual Precipitation and Associated Number of PM_{10} Exceedance Days from 1999 Through 2005 at McCarran Airport

Calendar Year	Precipitation[a]	Annual Normal[a] (30-year)	% of Normal	Number of PM_{10} Exceedance Days	Comments
1999	3.73	4.13	90	9[b]	
2000	3.47	4.13	84	4[b]	
2001	3.97	4.13	96	3[b]	
2002	1.44	4.49	32	11[b]	3 days had exceedances at Mesquite only
2003	6.86	4.49	153	4[c]	
2004	7.76	4.49	173	2[c]	Both exceedances at Craig Road only
2005	7.37	4.49	164	1[c]	Exceedance at Mesquite only

[a]Precipitation totals are expressed as inches of water
[b]Source: 2002 DAQEM NAMS/SLAMS Network Review
[c]Source: http://www.ccairquality.org/report/pmexceed.html

Table 5-2 shows a listing of the ten wettest and driest years on record for Las Vegas. Three of the ten wettest years on record occurred in the three years leading up to the project, which include years 2003, 2004 and 2005. Additionally, year 2002 is one of the ten driest years on record with only 1.44 inches of precipitation recorded during the year. 2002 was a year with a high incidence of PM_{10} exceedances (11).

Table 5-2. Ten Wettest and Driest Years Reported at McCarran Airport

10 Wettest Years			10 Driest Years		
Record	**Total***	**Year**	**Record**	**Total***	**Year**
1	10.72	1941	1	0.56	1953
2	9.88	1992	2	0.76	1948
3	7.96	1965	3	1.11	1968
4	**7.76**	**2004**	4	1.12	1964
5	7.65	1978	5	1.27	1985
6	**7.37**	**2005**	**6**	**1.44**	**2002**
7	7.35	1998	7	1.45	1962
8	7.3	1939	8	1.91	1966
9	**6.86**	**2003**	9	2.04	1956
10	8.85	1984	10	2.11	1989

*Precipitation totals are expressed as inches of water.

Finally, **Table 5-3** presents a listing of consecutive wet and dry days recorded at McCarran. The first and second sections includes the number of consecutive days with more than 0.01 inches of precipitation and the number of consecutive days with more than a trace of precipitation recorded at McCarran. During February of 2003, McCarran recorded 6 consecutive days of precipitation, the greatest number of consecutive days of precipitation >0.01 inches on record. An all time record of 10 consecutive days of more than a trace of precipitation was also recorded. The third and fourth sections of the table show the other extreme of the climatology, which are the extremely dry periods. During the periods that experienced numerous PM_{10} exceedances, McCarran recorded 100 consecutive dry days, the third highest number of days on record, from March 25, 2002 through July 2, 2002. Additionally, there were back-to-back periods in 1999 and 2000 with 140 consecutive days or more without measurable rain.

Table 5-3. Consecutive Wet and Dry Days as Recorded at McCarran Airport

Consecutive wet days (0.01 inch or greater)	
# of days	**Dates**
6	**02/24/03 - 03/01/03**
6	04/06/43 - 04/11/43
5	01/12/93 - 01/16/93
5	08/06/83 - 08/12/83

Consecutive days with a trace or better	
# of days	**Dates**
10	**02/17/05 - 02/26/05**
9	02/05/78 - 02/13/78
9	07/23/52 - 07/31/52
9	02/14/41 - 02/22/41

Consecutive dry days	
# of days	**Dates**
101	09/02/95 - 12/11/95
101	07/02/44 - 10/10/44
100	**03/25/02 - 07/02/02**

Consecutive days without measureable rain	
# of days	**Dates**
150	02/22/59 - 07/21/59
146	**03/09/00 - 08/01/00**
145	05/31/44 - 10/22/44
143	02/12/50 - 07/04/50
140	**09/22/99 - 02/09/00**

5.2 Saturation Network Operations

The saturation network sites were selected and permission obtained for deployment during the winter of 2004/2005. All sites were deployed starting April 15 with the full monitoring network operational by April 20. The QC site at Joe Neal was brought on-line May 9.

Once deployed, the sites were visited weekly with a series of checks performed, in accordance with the Standard Operating Procedures shown in Appendix E. Checks included the following:

- Downloading of data from the primary data logger and review for reasonableness
- Zero check using the manufacturer provided zero filter
- Flow check using the manufacturer provided rotometer
- Check of the battery voltage and integrity of the charging system
- Inspection of the water drop-out bottle for signs of moisture
- Inspection of the sampling system for signs of damage or leakage
- Inspection of the entire monitoring site for signs of vandalism

Upon returning to the field office the data were transferred from either the data collection laptop (for the DustTrak internal data loggers) or the Palm Pilot (for the CR10 data loggers) to the primary Las Vegas office data computer. Data stored on this computer was automatically backed up to the office Internet gateway computer every four hours and then transferred to the main data processing center computer in Valencia, California by FTP every 12 hours. This provided redundancy and off-site storage. These data were then reviewed for proper instrument operation and notes made on potential issues to be resolved.

Periodically throughout the program, instruments or batteries/charging systems were removed from stations for repair and testing and replaced with backup units. Anytime a replacement was made it was noted in the site check forms as well as the traveling log that was maintained by the instrument technician.

6. RESULTS

The saturation study had several components that led to the field monitoring effort. This section describes the evaluation performed of the historical PM_{10} events leading up to the saturation study, and the evaluation of the data collected and how it relates to the objectives of the study.

6.1 Evaluation of Historical PM_{10} Events

Data were obtained from the DAQEM database for the four-year period of 2000 through 2003 as the base period for analysis. The sites analyzed and their respective codes are shown in **Table 6-1**. **Figure 6-1** shows the number of exceedance days by site. **Figure 6-2** shows these values plotted on a map of the region. These figures underscore the observation that most exceedances occur at sites in the north, east, and southeast portions of the valley.

Table 6-1. PM_{10} Sites and Site Codes

Apex	AP	Green Valley	GV	East Sahara	MC	Paul Meyer	PM
Boulder City	BC	J.D. Smith	JD	Mesquite	MQ	Pittman*	PT
City Center	CC	Jean	JN	Microscale	MS	Palo Verde	PV
Craig Road	CR	Joe Neal	JO	Orr	OR	Walter Johnson	WJ
Flamingo*	FL	Lone Mountain	LO	SE Valley	PL		

*Site is closed and is no longer collecting data.

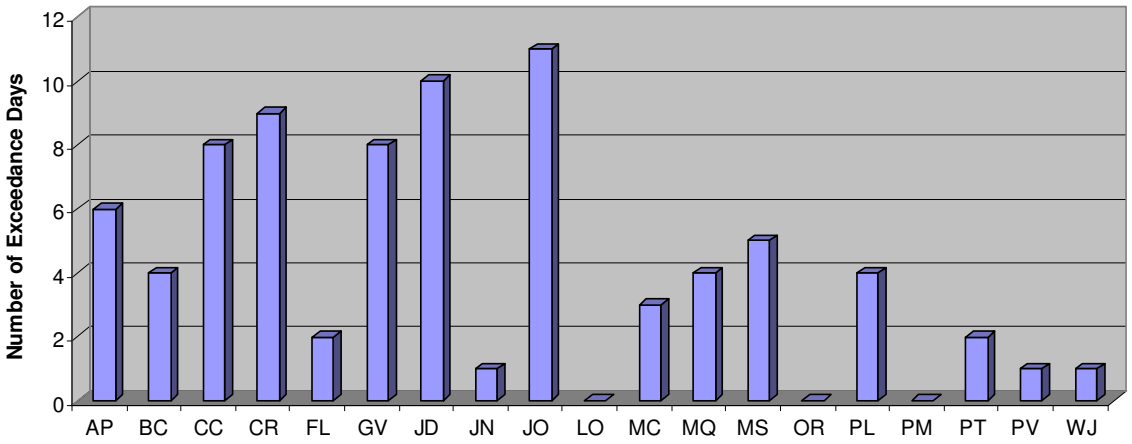


Figure 6-1. Number of Exceedance Days by Site (2000-2003)

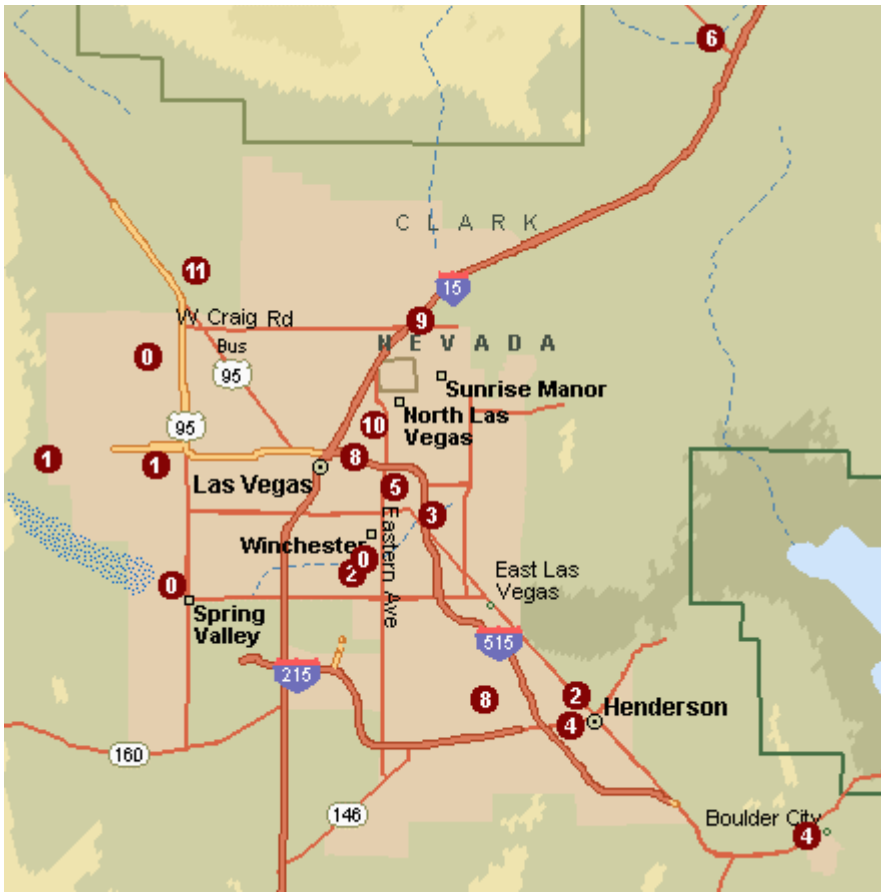


Figure 6-2. Location of the DAQEM Monitoring Stations During the 2000 to 2003 Period (The red circles show the site locations with the indicated number of

Figure 6-3 shows the history of the number of days of exceedances by seasons in the years 2000-2003 (irrespective of the number of sites on a day that had an exceedance). **Figure 6-4** summarizes the number of exceedance days by season for all years combined. The total number of site-days with exceedances (all exceedances for all sites) by season is shown in **Figure 6-5**. High values indicate the exceedances were widespread, such as the period during the spring and summer of 2002. The number of site-days with exceedances by season is shown in **Figure 6-6**. The dominance of the spring and summer season is primarily linked to exceedances during 2002. Winter months have had few exceedances in any year.

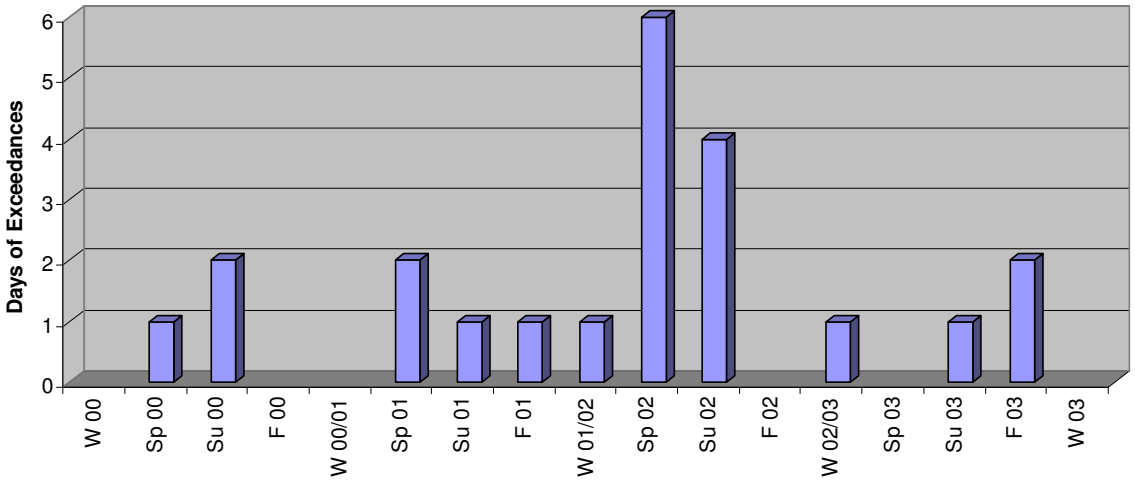


Figure 6-3. Time History of the Number of Network Exceedance Days

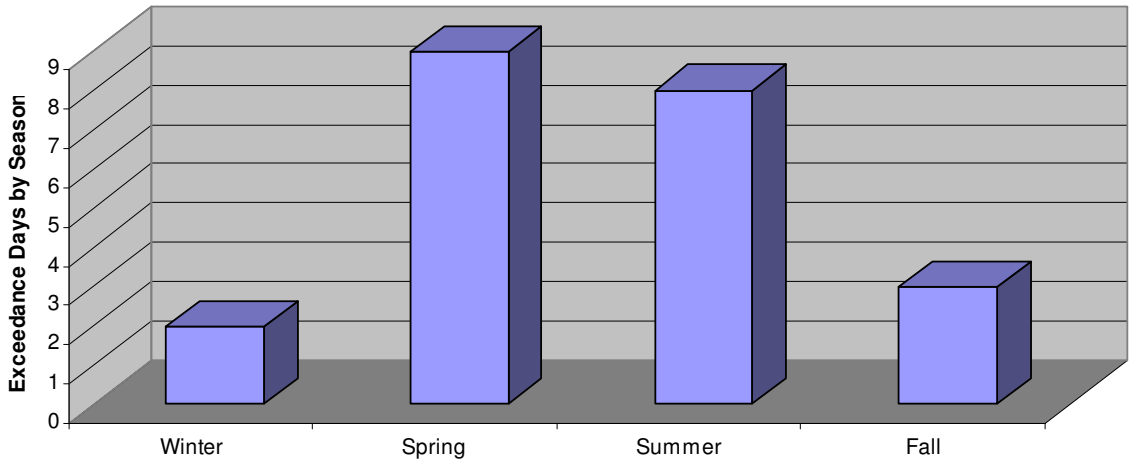


Figure 6-4. Overall Number of Network Exceedance Days by Season

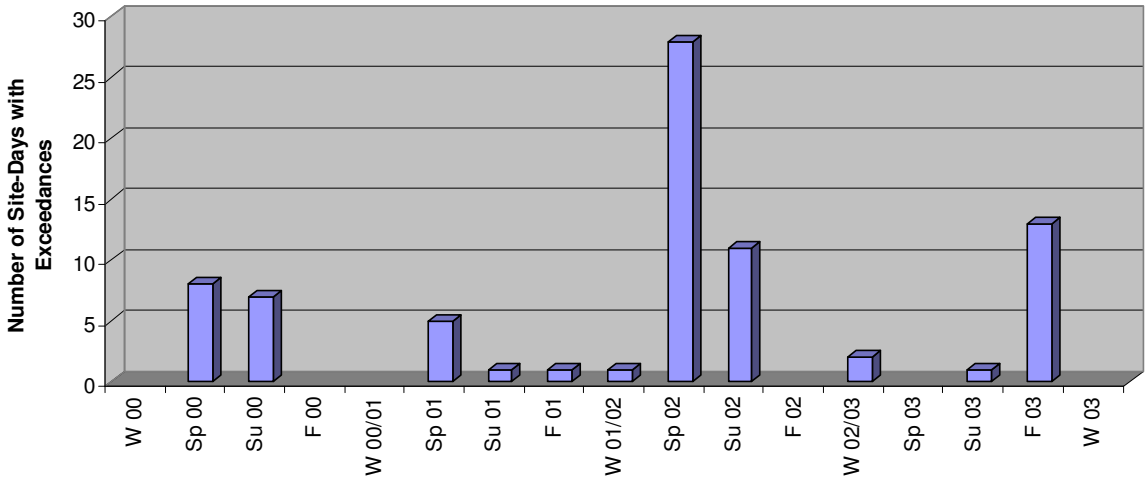


Figure 6-5. Total Number of Site-Days with Exceedances by Season. High values indicate the exceedances were widespread.

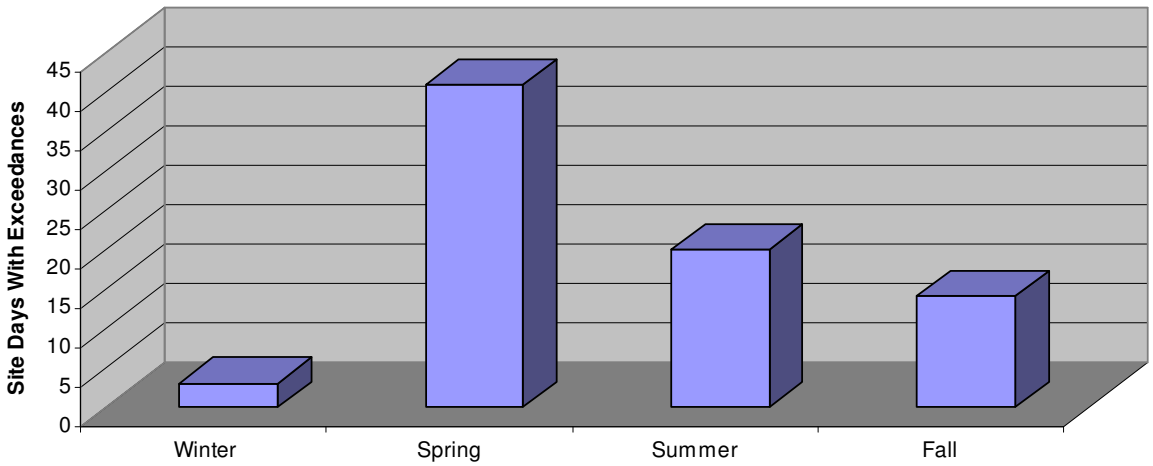


Figure 6-6. Total Number of Site Days with Exceedances by Season. High values indicate generally widespread exceedances.

To further understand the periods of high PM_{10} concentrations, a summary of the number of hourly values greater than 150 $\mu g/m^3$ at seven key sites for the 2000 through 2003 period is provided in **Table 6-2**. These hourly values are not part of the reported database, and have some limitations based on the measurement method, but it is these hourly values that have the predominant contribution to calculated 24-hour exceedances and the values provide a relative contribution to the 24-hour PM loading. The Craig Road site does stand out as having the highest number of hourly values, and it is suspected that this is a local occurrence and may not be considered representative of the region surrounding the site. The other sites, however, can be considered more regional with the JD Smith site showing a fair number of high values within the more urbanized region of the valley.

Table 6-2. Summary of Number of Hours with PM_{10} Concentrations Greater than 150 $\mu g/m^3$ at Seven Key Sites in the Network

Site	Number of Hours >150 $\mu g/m^3$
Apex (AP)	261
Craig Road (CR)	948
City Center (CC)	386
Green Valley (GV)	348
JD Smith (JD)	495
Jean (JN)	73
Joe Neal (JO)	627

Additional analyses were performed on days when more than two sites had exceedances of the PM_{10} standard in the 2000 through 2003 period. This segregated the data set into specific periods when the PM_{10} exceedances were more widespread and not just isolated events. **Table 6-3** shows the dates of the multiple site high PM_{10} events along with the average concentrations derived from the >150 $\mu g/m^3$ data set from the seven sites, and their corresponding scalar wind speeds and wind directions during the events. This analysis provides a general indication of the speeds and directions that produced the values in excess of 150 $\mu g/m^3$. From review of these data, the summer events occurred under lighter wind speeds

with wind directions from the southeast. The spring and fall events were under higher wind speeds with directions from the southwest to northwest directions. However, while the wind speed data are valid, one must be very cautious in the interpretation of the wind direction data as four of the seven key sites analyzed had invalid wind direction information. The affected sites were Apex, City Center, Green Valley and Joe Neal. Therefore, only the general direction of the winds during these events are provided with the understanding that these values may have issues.

Table 6-3. Summary of the Average PM_{10} Concentration, Wind Speed and Wind Direction for the Days with More than Two of the Seven Sites Showing an Exceedance of the 24-hour Standard. The values shown represent the average of concentrations over 150 $\mu g/m^3$ for the seven sites.

Date	Avg PM_{10} ($\mu g/m^3$)	Avg Wind Speed (mph)	Avg Wind Direction* (°)
5/10/2000	405	24	SSW
8/12/2000	294	9	SE
8/13/2000	526	12	SE
5/2/2001	501	19	WNW
3/1/2002	604	18	N
3/13/2002	501	24	W
4/15/2002	598	23	SW
8/19/2002	304	17	SE
10/29/2003	233	13	S
10/30/2003	387	24	SSW

*The wind direction provides a general indication as some sites reported invalid wind direction data

To understand the relationship between the wind direction, wind speed and hourly average PM_{10} concentrations at each network site, frequency distributions were calculated and are presented in Appendix F. **Table 6-4** presents a sample of the data in these tables from the City Center site. These distributions were calculated from the four-year 2000 through 2003 period. The reported hourly PM_{10} concentrations do have some noise in the values that is averaged out when the 24-hour average values are calculated. Again, caution needs to be exercised with the interpretation of the data, as there were some wind direction issues at a total of 9 of the network sites. The sites affected by the wind direction issue are indicated in the respective tables. The reporting data are in the normal 16-point convention with each of the reported arcs centered on the compass points (N, NNE, NE, etc.) The resulting "bins" are 22.5° in arc. Some notable features from the data include:

- In general, the wind speed threshold to produce higher PM_{10} concentrations appeared to be lower at the more urban sites, such as City Center or Microscale, than at the more non-urban sites. It is suspected that the lower wind speeds are a result of the increased surface friction in the urban area, and the airborne PM_{10} may already be suspended from sources upwind and not necessarily from sources close to the site.
- While recognizing the wind direction issue noted above, we could still say that wind directions from the southwesterly and northwesterly quadrants generally produced the highest wind speeds and correspondingly higher hourly PM_{10} values.

- The wind speed and wind direction trends highlighted the southwest wind "pre-frontal" conditions as notable events to use in planning the siting and seasons for the saturation study.

Table 6-4. Average PM_{10} Distribution by Wind Speed and Wind Direction for the 2000 Through 2003 Data Set at City Center. (Appendix F presents the balance of the site data.)

City Center - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	108	30	0	0	0
2	33.76 - 56.25	45.0	NE	29	19	137	738	0
3	56.26 - 78.75	67.5	ENE	37	27	62	38	0
4	78.76 - 101.25	90.0	E	40	26	61	0	0
5	101.26 - 123.75	112.5	ESE	38	34	83	0	0
6	123.76 - 146.25	135.0	SE	39	35	84	204	0
7	146.26 - 168.75	157.5	SSE	41	32	59	251	0
8	168.76 - 191.25	180.0	S	42	34	68	151	0
9	191.26 - 213.75	202.5	SSW	43	35	88	511	0
10	213.76 - 236.25	225.0	SW	44	33	70	264	0
11	236.26 - 258.75	247.5	WSW	49	33	95	0	0
12	258.76 - 281.25	270.0	W	54	32	161	248	517
13	281.26 - 303.75	292.5	WNW	56	34	44	205	326
14	303.76 - 326.25	315.0	NW	55	21	46	86	360
15	326.26 - 348.75	337.5	NNW	0	0	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

City Center - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	1	1	0	0	0
2	33.76 - 56.25	45.0	NE	25	22	8	1	0
3	56.26 - 78.75	67.5	ENE	681	489	101	1	0
4	78.76 - 101.25	90.0	E	2118	658	15	0	0
5	101.26 - 123.75	112.5	ESE	2654	1311	30	0	0
6	123.76 - 146.25	135.0	SE	2436	1021	126	2	0
7	146.26 - 168.75	157.5	SSE	2097	906	95	2	0
8	168.76 - 191.25	180.0	S	2114	1196	138	7	0
9	191.26 - 213.75	202.5	SSW	1926	1329	182	4	0
10	213.76 - 236.25	225.0	SW	1916	1149	159	9	0
11	236.26 - 258.75	247.5	WSW	1636	575	72	0	0
12	258.76 - 281.25	270.0	W	1686	451	52	1	2
13	281.26 - 303.75	292.5	WNW	2521	1190	225	39	8
14	303.76 - 326.25	315.0	NW	215	307	366	70	6
15	326.26 - 348.75	337.5	NNW	0	0	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

6.2 Saturation Network Database

Data collected by the PM_{10} saturation network were recorded in either 4-minute scans on the internal data logger within the DustTraks, or in hourly averages of 1-second scans in the CR10 data loggers. Hourly average values from any of the DustTrak data were then calculated to match the time stamp of the data collected from the CR10 loggers. The data sets were then merged into one database of the hourly values. The hourly values were subsequently averaged into 24-hour averages to match the time stamp and convention of the DAQEM monitoring data. The hourly tabulated data and 24-hour averages are presented in Appendix D. It should be noted that the indicated 24-hour averages were calculated using all available valid data during

the reporting day, irrespective of the number of values available. Thus, if only one hour had valid data, a daily average would be reported.

All data are available in an hourly format in electronic format. The file is comma delimited and includes values from all of the saturation network sites. A description of the file format is provided in the documentation file that accompanies the data. This documentation file is also presented in **Figure 6-7**.

```
README file generated by SUBMIT 1.2 32-bit on 02-15-2006 at 10:15:23.
This file is best viewed in an ASCII editor such as Notepad using a monospaced font.
Site and variable information were obtained from the station processing INI file.
All data in the data file are reported as hour ending, i.e. 1300 is 1200 to 1300.

This README.DOC file name:      pmsat.doc
Data file name it describes:    pmsat.dat
Site name:                      Clark County PM10 Saturation Study
Processing INI file name:       pm1.ini
Start month and year:           04 2005
End month and year:             07 2005
Validation level:               B

Data are provided in a comma delimited format with one record per hour.
A description of the fields in each record follows:

Field   Variable Name                           Units
-------------------------------------------------------
    1   Year                                    NA
    2   Day                                     NA
    3   Hour-Minute                             Hour ending
    4   Kyle Canyon (13)                        ug/m3
    5   Blue Diamond (21)                       ug/m3
    6   Speedway (31)                           ug/m3
    7   Mountain Crest (43)                     ug/m3
    8   North Las Vegas Airport (52)            ug/m3
    9   Aliante (64)                            ug/m3
   10   Lamb (72)                               ug/m3
   11   Alto (82)                               ug/m3
   12   Wetlands (91)                           ug/m3
   13   Henderson (101)                         ug/m3
   14   Star Nursery (112)                      ug/m3
   15   Joe Neal (120)                          ug/m3
-------------------------------------------------------

Values less than -900 describe any missing data.  A summary of the codes follows:

 Code   Description
-------------------------------------------------------
 -910  No data collected - system not set up
 -920  Instrument Malfunction
 -930  Data Logger Malfunction
 -940  Calibration
 -950  Audit
 -960  Maintenance
 -970  Data invalid - Does not meet consistency or an obvious problem
 -971  Local Interference
 -980  Power failure
 -990  Reserved for future descriptor
-------------------------------------------------------
```

Figure 6-7. Saturation PM_{10} Network Hourly Data File Documentation

Documentation describing the data collected is provided in **Appendix H** in metafiles that describe each of the sites and the data collected at each site. Included is information on the quality of the data and issues relating to the site operations and potential limitations to the use of the data. Pictures of each of the sites are provided.

6.3 DAQEM PM_{10} Network Observations

During the course of the saturation study from mid-April through June, there were no exceedances of the 24-hour PM_{10} ambient air quality standard. **Figure 6-8** presents 24-hour average data collected by the DAQEM network in a time series format. For each day all sites that collected data are grouped in a narrow bar format with the magnitude of the value represented by the height of the bar. The delineation of days can be seen with the gap between the groupings of the data. Highlighted on the plot are key days that showed the highest values in the network as measured at more than three sites. This provided an identification of periods when the exceedances were more wide spread. In the latter part of the study in late June and early July there were widespread fires that impacted the PM levels in the network. Those periods are identified on the time series plot.

Figure 6-9 shows the 24-hour average wind speed record at five of the key sites in the network; Jean, Paul Meyer, Joe Neal, Craig Road and Green Valley. Each of these five sites had winds measured at 10 meters with the exception of Jean, which was from the 30-meter level. Additionally, these sites were reasonably spaced across the DAQEM network of observations with good spatial coverage of the Las Vegas Valley. From the wind speed and PM_{10} records, it is clear that the higher reported PM_{10} values occurred during the observed higher wind speed days. These days formed the periods of interest for the evaluation of the saturation network data.

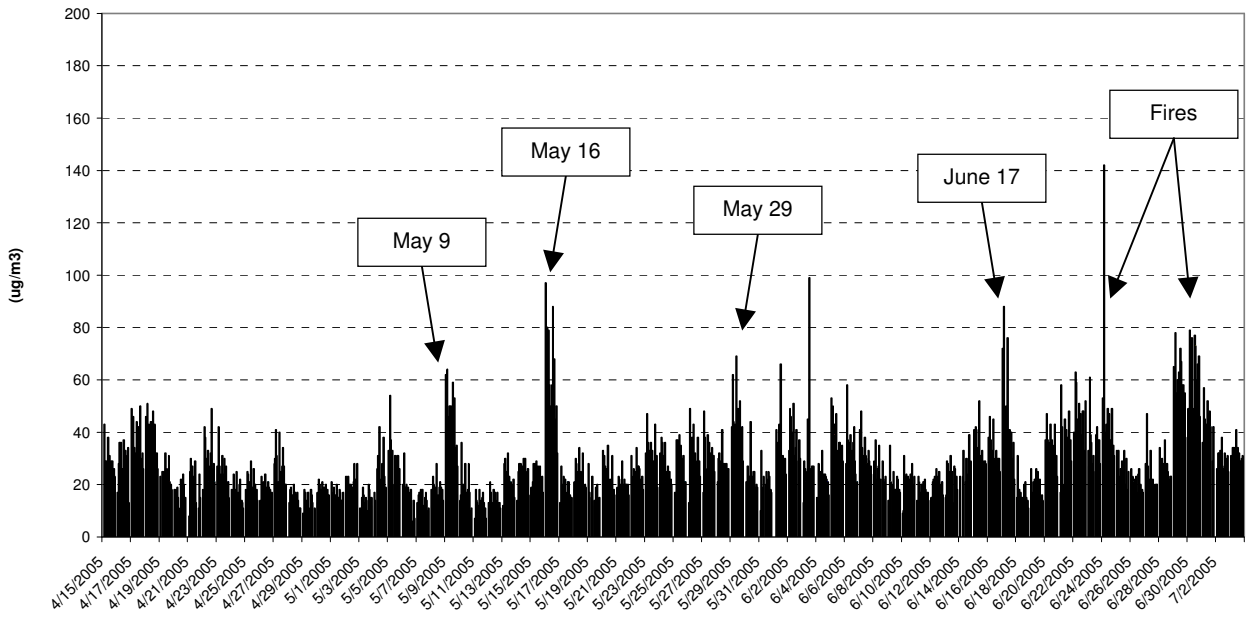


Figure 6-8. 24-Hour Average PM_{10} Data Collected by the DAQEM Network

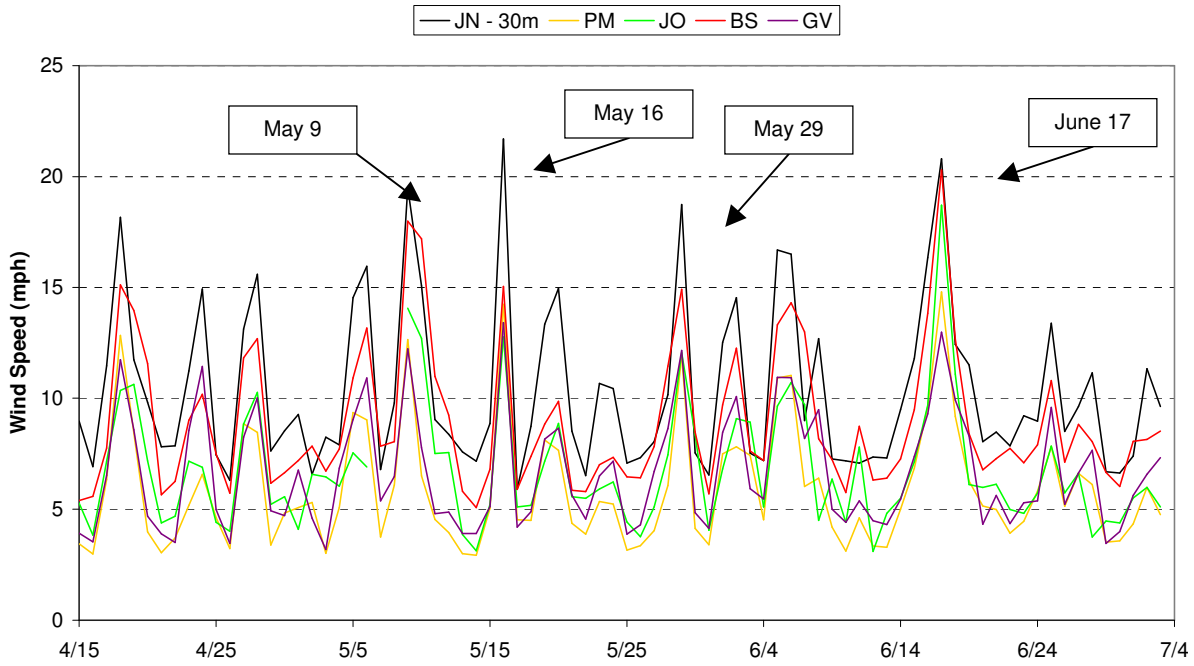


Figure 6-9. 24-Hour Average Wind Speed Record at Five DAQEM Sites

6.4 PM_{10} Saturation Network Observations

Figure 6-10 presents the PM_{10} data collected by the saturation network on the same type of time series as the plot for the DAQEM data in Figure 6-8. What is notable is the peaks observed in the saturation network on the indicated days due to high wind speeds are less than those reported in the BAM data collected by the DAQEM. Conversely, the peaks due to the fire impact are greater in the saturation data than the BAM reported data. The response of the DustTrak optical method is less to the windblown particulate and greater to the smoke related particulate. However, the wind driven events can still be seen with the saturation network.

During the saturation monitoring period, the only 24-hour average values over 150 $\mu g/m^3$ were during wildfire events. During events that would have been wind driven, the highest observed 24-hour value was 81 $\mu g/m^3$. It should be noted that all of the saturation data has had the K-factor applied that represents a correction for more of a "dust mix." For the more combustion related PM, as was observed during the wildfires, this associated K-factor would reduce the reported concentrations by 30 percent or more from the reported values in Figure 6-10.

One of the advantages of the saturation network was the increased time resolution of the data. While the BAM network had the ability to provide hourly average data, the shorter duration values are somewhat noisy during periods of high particulate loading and thus the confidence in the shorter-term one-hour averages is less. The final data validation of the BAM data had the averages calculated from the total loading during the day, rather than the average of the individual hourly values. The optical method for the DustTrak had reasonably reliable short-term data so the hourly values can be used to perform additional analyses to review the progress of the PM events during higher wind speed events.

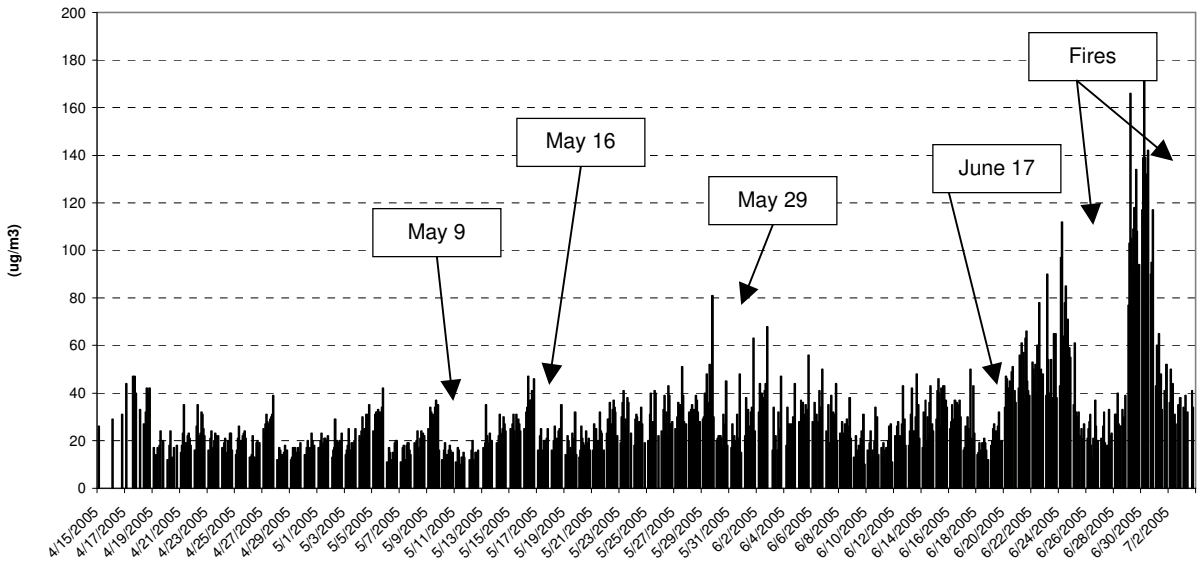


Figure 6-10. 24-Hour Average PM_{10} Data Collected by the Saturation Network

The four days identified has having the highest PM_{10} concentrations during high-wind events in the DAQEM network were selected for further evaluation. **Figures 6-11** through **6-14** show the saturation network PM_{10} concentrations and associated composite wind speed data from four of the Las Vegas Valley DAQEM stations. These four stations (Green Valley, Paul Meyer, Joe Neal and Craig Road) provide a reasonable cross section of the observed wind speeds throughout the domain of the saturation study. Notable observations from the data include:

- A wind speed threshold of about 15 mph was needed before the wind driven PM_{10} event was started.

- The high wind speed events on May 9 and May 29 showed an initial peak in the PM_{10} concentrations during the first several hours of the wind event. While the wind event lasted longer, it is suspected that the reservoir of available PM to entrain in the high winds had been depleted during the first several hours. With the substantial rains during the months prior to the wind events, the soils were sufficiently stabilized to prevent a longer duration PM event.

- The high wind speed event on May16 was shorter lived with the peak of PM following the peak in the wind speed fairly well. Again, however, the PM peak trailed off before the wind speeds decreased.

- The high wind speed event on June 17 had a double peak, but still showed a tail off of the PM concentrations even when the wind speed remained relatively high. Again, it is suspected that the reservoir of PM was depleted fairly rapidly with much of the desert surface still stabilized from the winter rainfall.

- Overall, the regions selected for the saturation measurement of PM_{10} did not show appreciable increases or hot spots in PM_{10} concentrations. Only localized PM short-term “hits” were observed that were most likely due to a local short-term source.

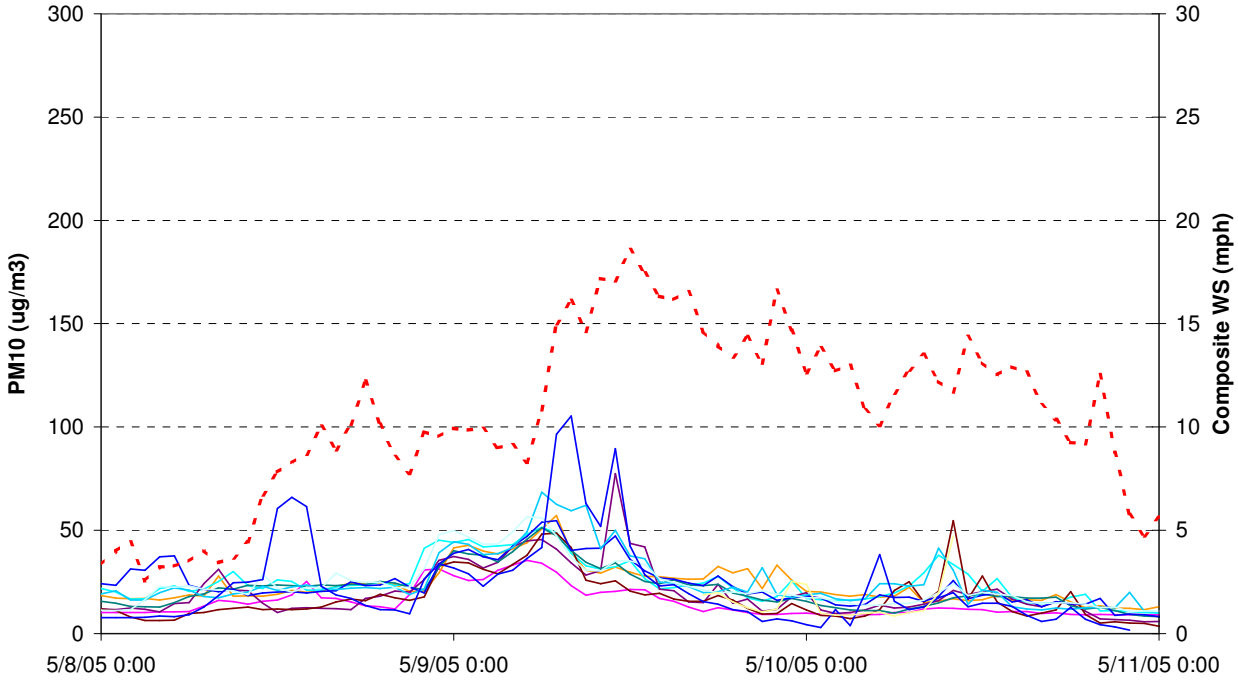


Figure 6-11. Elevated PM_{10} Concentrations During the High Wind Speed Event on May 9, 2005 (The composite wind speed is shown in the dashed line.)

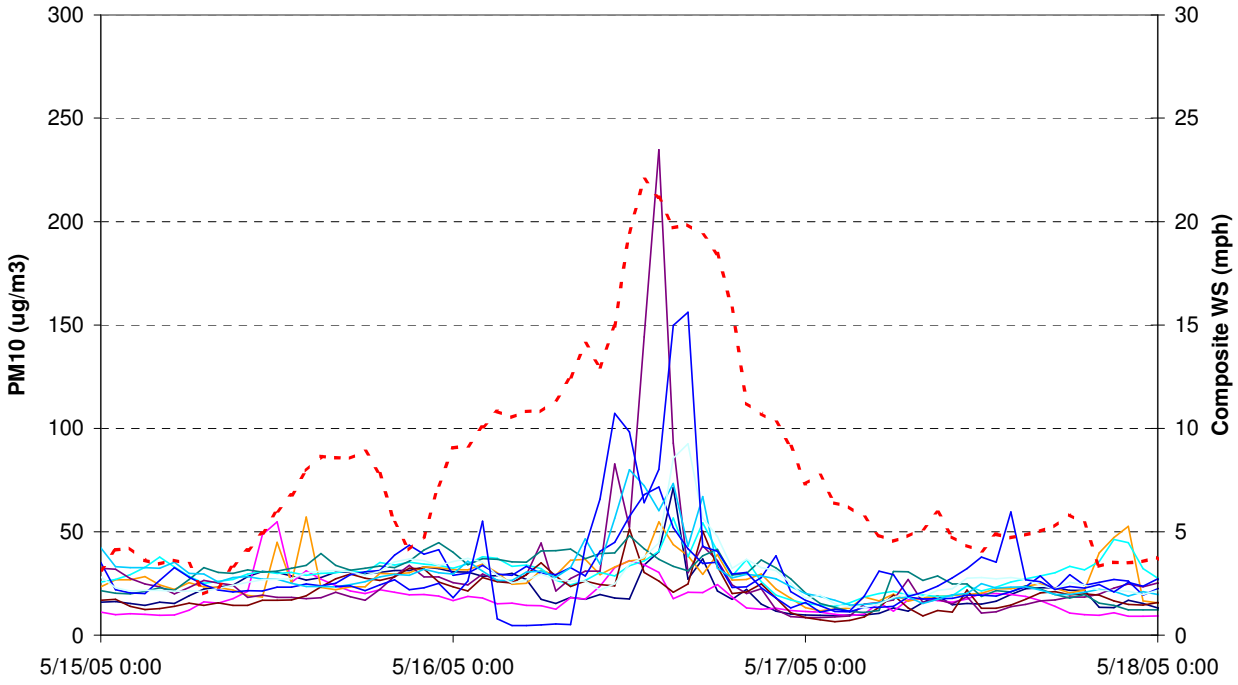


Figure 6-12. Elevated PM_{10} Concentrations During the High Wind Speed Event on May 16, 2005 (The composite wind speed is shown in the dashed line.)

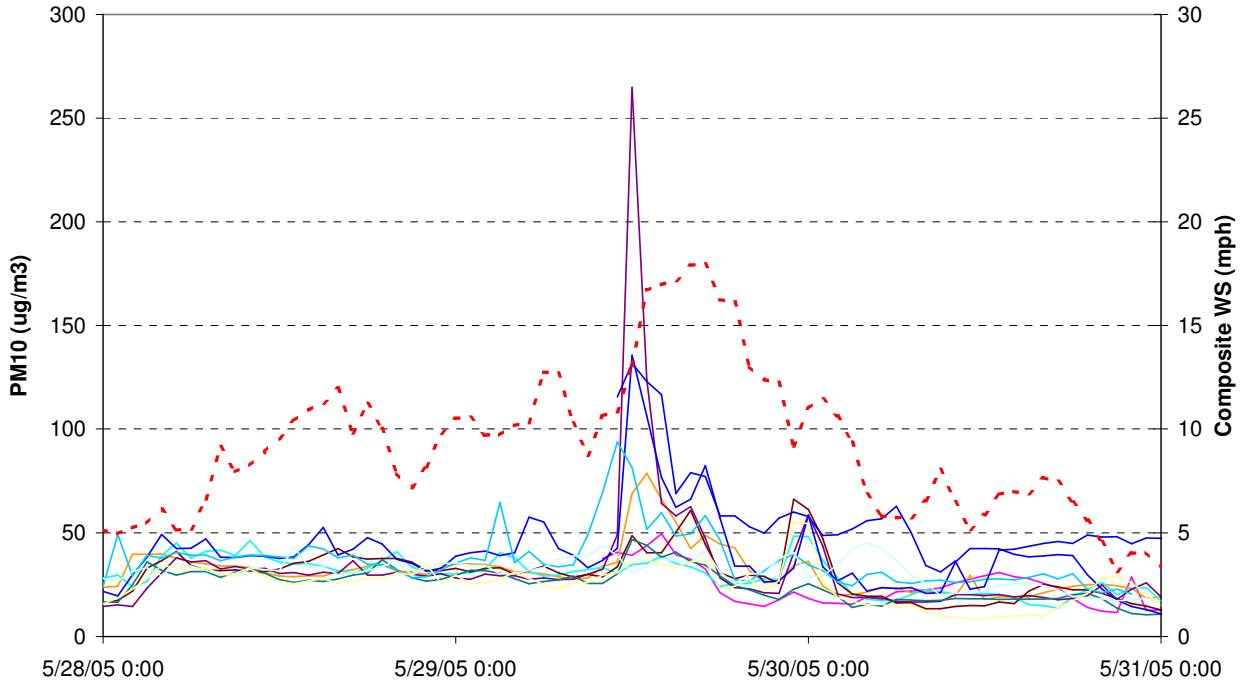


Figure 6-13. Elevated PM_{10} Concentrations During the High Wind Speed Event on May 29, 2005 (The composite wind speed is shown in the dashed line.)

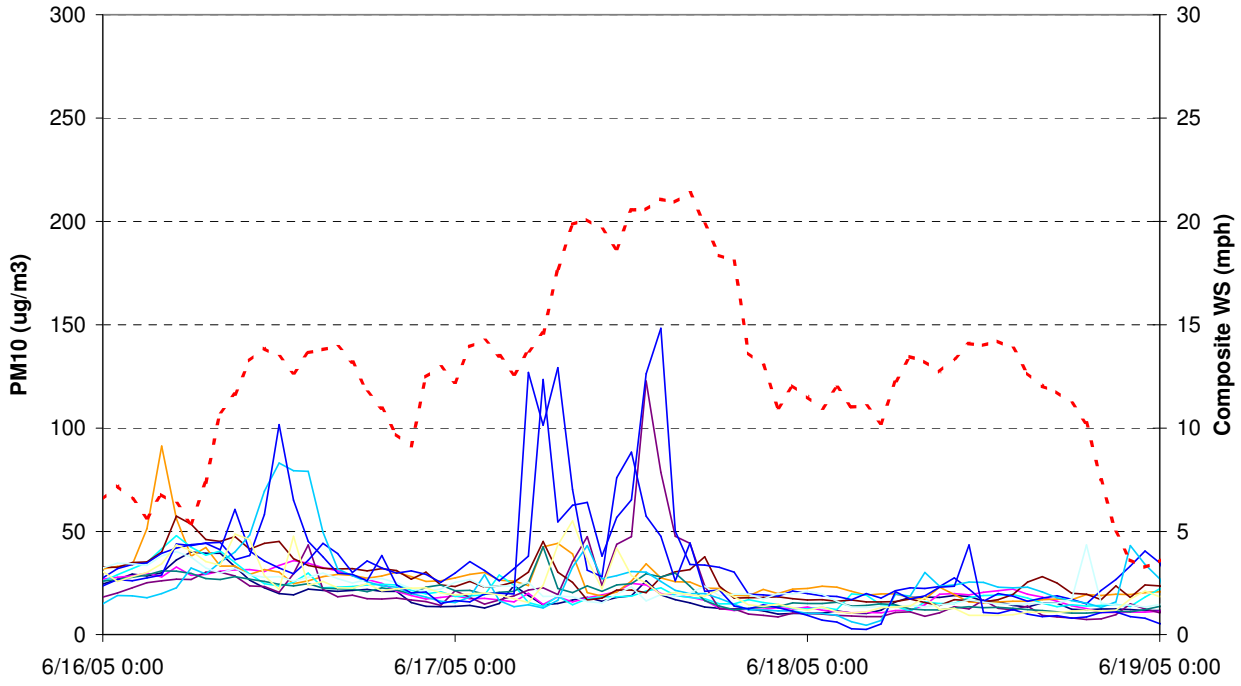


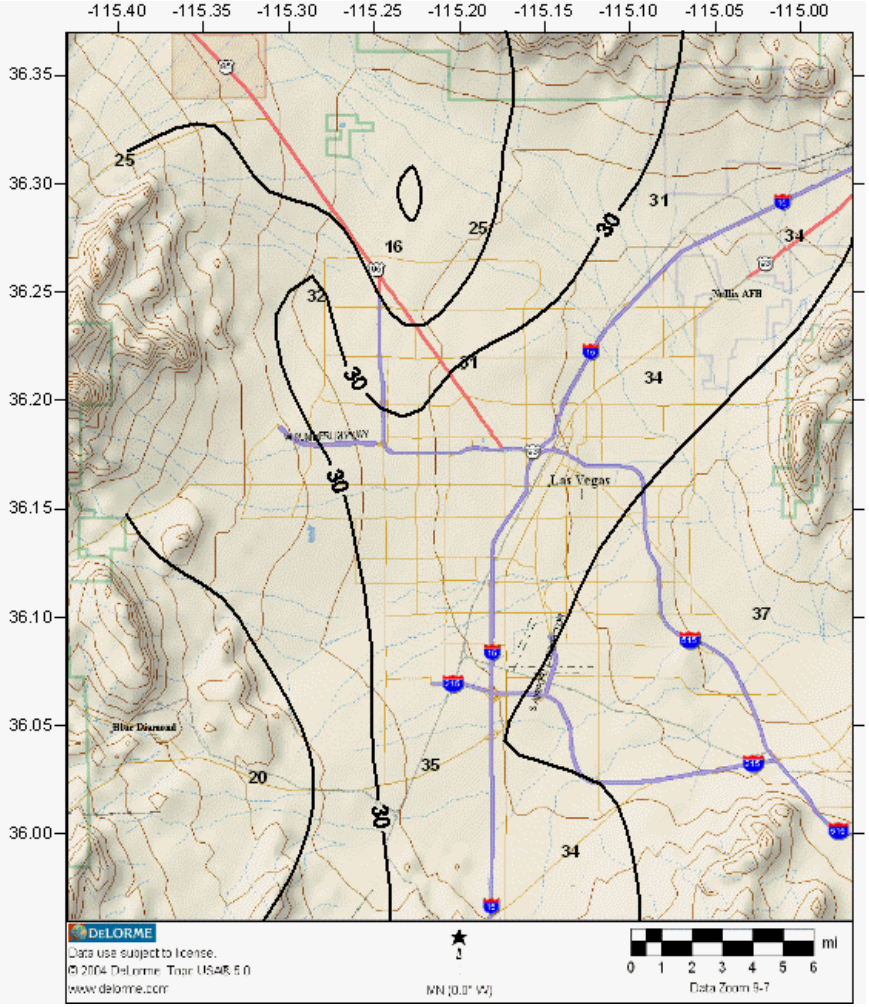
Figure 6-14. Elevated PM_{10} Concentrations During the High Wind Speed Event on June 17, 2005 (The composite wind speed is shown in the dashed line.)

6.5 Adequacy of the DAQEM PM_{10} Measurement Network

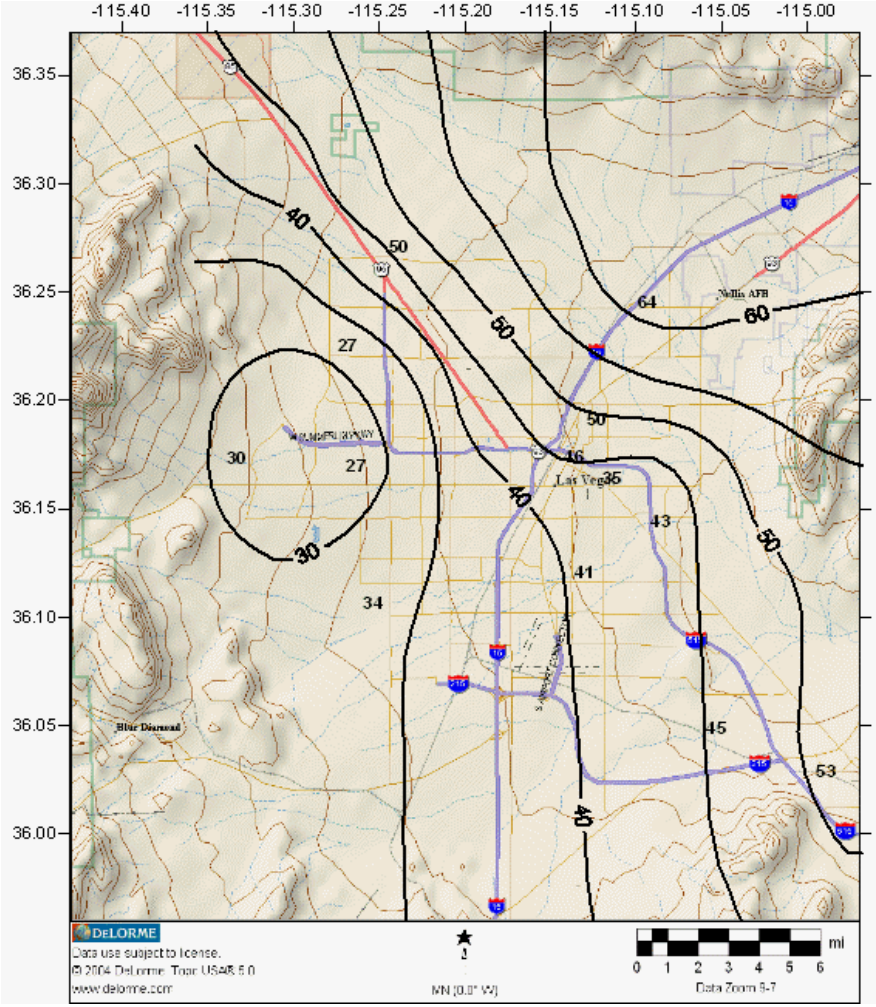
To evaluate the adequacy of the DAQEM PM_{10} measurement network, the concentration distribution across the study domain was plotted for each of the identified high PM_{10} events. It should be stressed that these were not exceedance days, but were high-wind events that in prior years might have produced exceedances. Also plotted was the PM_{10} distribution, as measured by the saturation network. **Figures 6-15** through **6-18** present the 24-hour concentration isopleths for the four identified high wind days. The left panel shows the distribution as measured by the saturation network while the right panel shows the distribution measured by the DAQEM network. The key observations from the four days evaluated include:

- 24-hour average PM_{10} levels observed even on so-called high-PM days during the saturation study were relatively low, and the resulting concentration patterns were not well defined. It is suspected that during prior dry years with the same high wind speeds, and desert surface more disturbed, the patterns may have been better defined.

- The DAQEM network reflected the patterns identified in the historical analysis with the areas to the northeast having the highest concentrations. However, what appeared to be lacking in the DAQEM network was a measurement station at the inflow region of the Valley during southwest winds, around the location of the Star Nursery saturation site. This area showed some of the higher concentrations in the saturation network during the wind speed events and appeared to be missed by the DAQEM network. The events on May 29 and June 17 show this pattern with an apparent "PM_{10} plume" appearing in the saturation network. The station at Jean was too far to the southwest to be representative of the southern valley boundary and, under these southerly wind events, it would be upwind of a potentially significant natural source at Jean Dry Lake. Additionally, this region is undergoing significant current and potential future growth, which underscores the need to establish a monitoring site in this region.

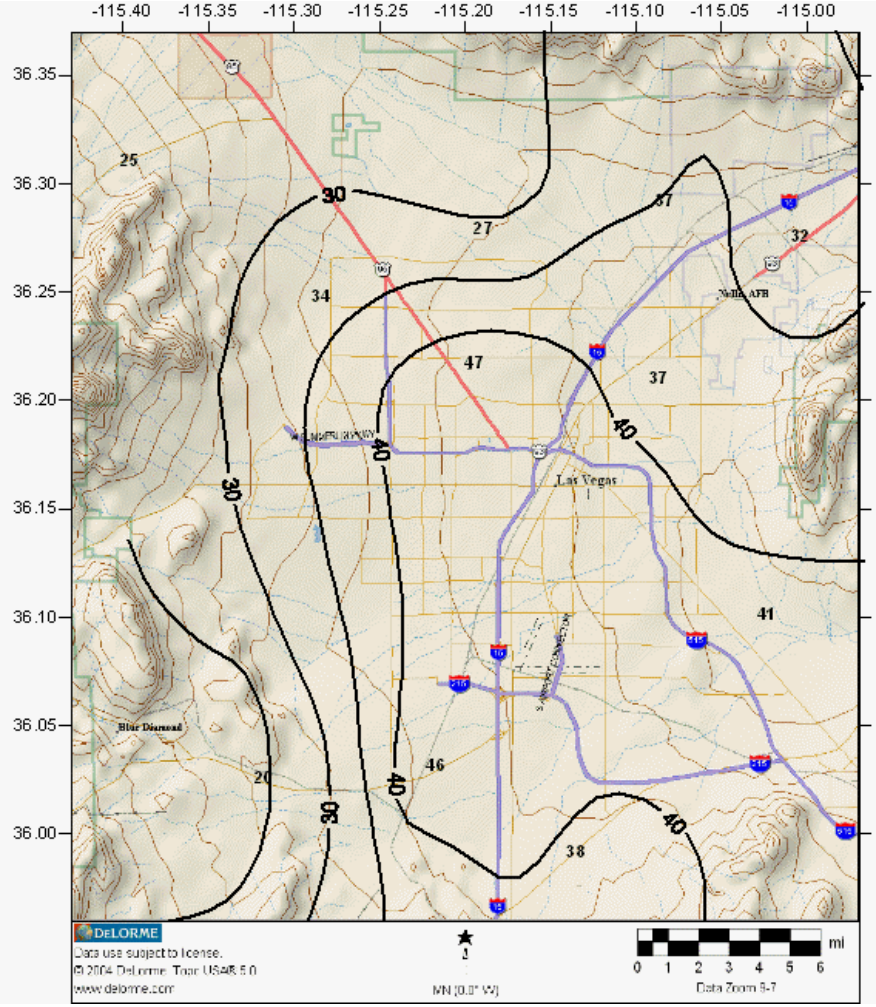


May 9, 2005 24-hour Particulate Levels
Saturation Network

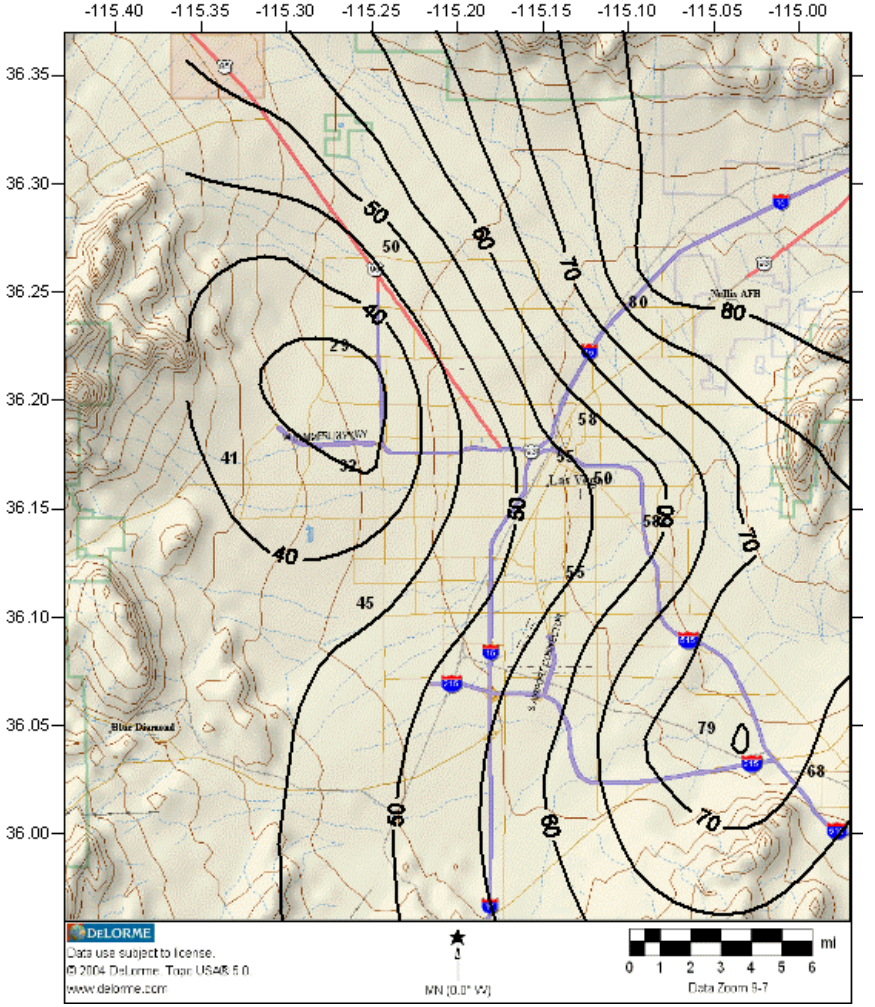


May 9, 2005 24-hour Particulate Levels
DAQEM Network

Figure 6-15. Concentration Profiles from the Saturation and DAQEM Networks for May 9, 2005

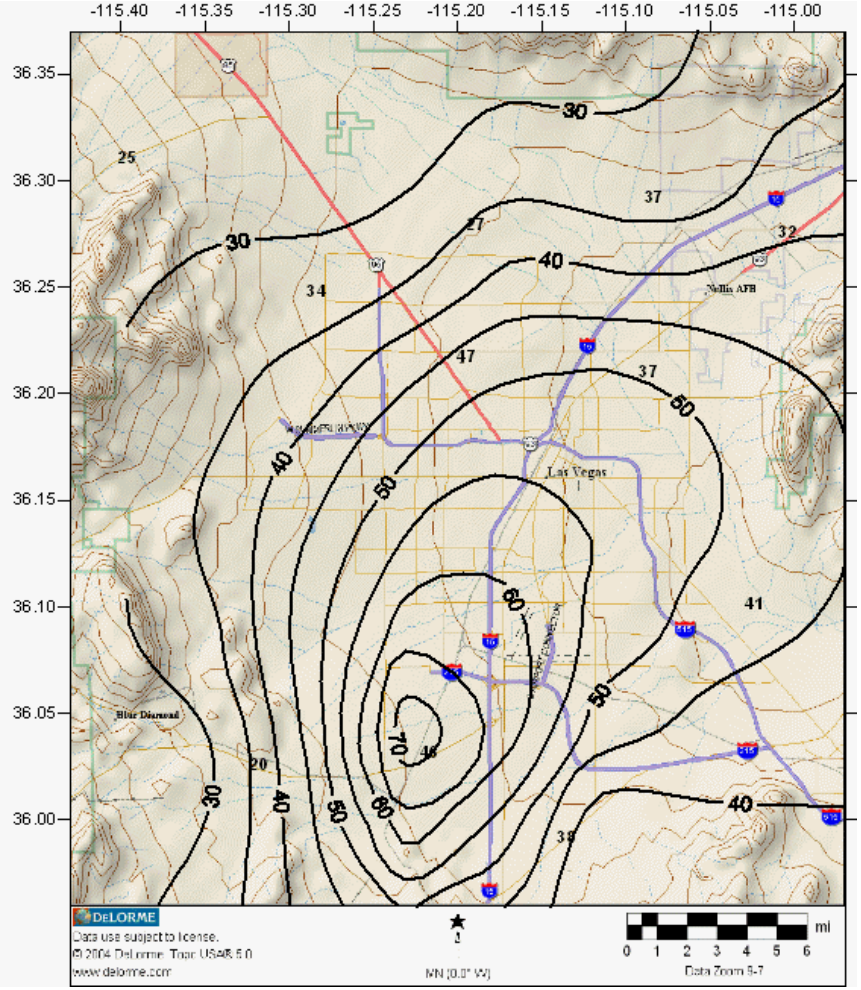


May 16, 2005 24-hour Particulate Levels
Saturation Network

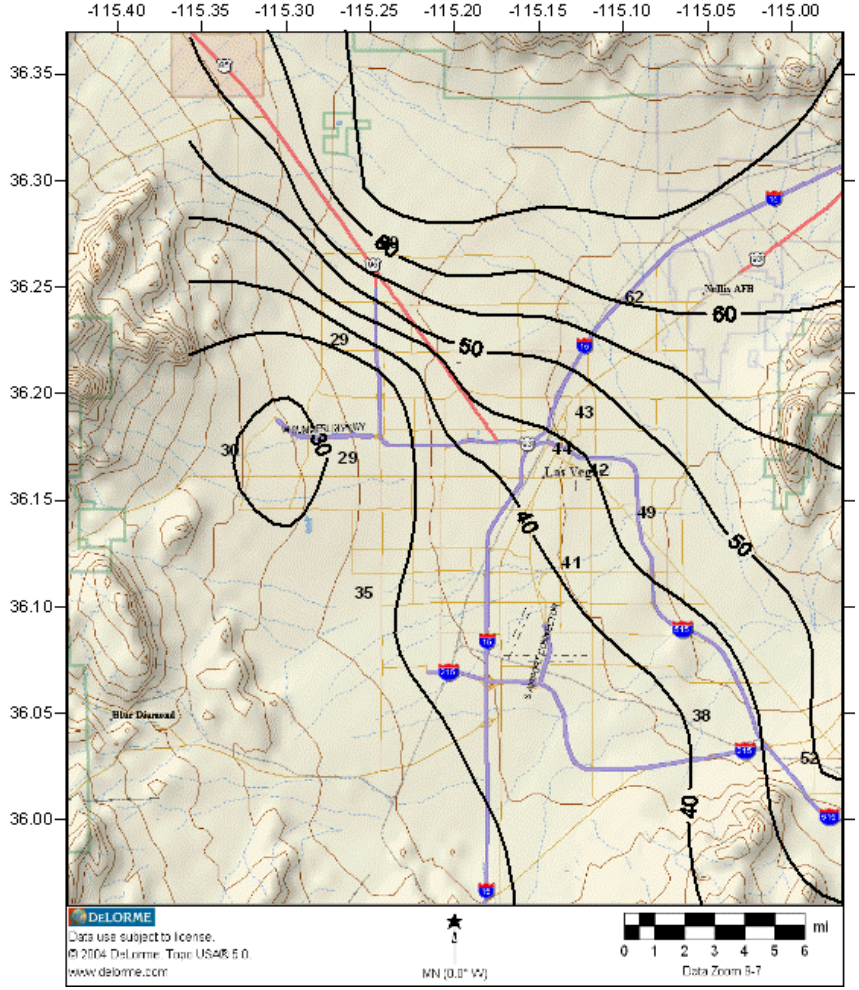


May 16, 2005 24-hour Particulate Levels
DAQEM Network

Figure 6-16. Concentration Profiles from the Saturation and DAQEM Networks for May 16, 2005

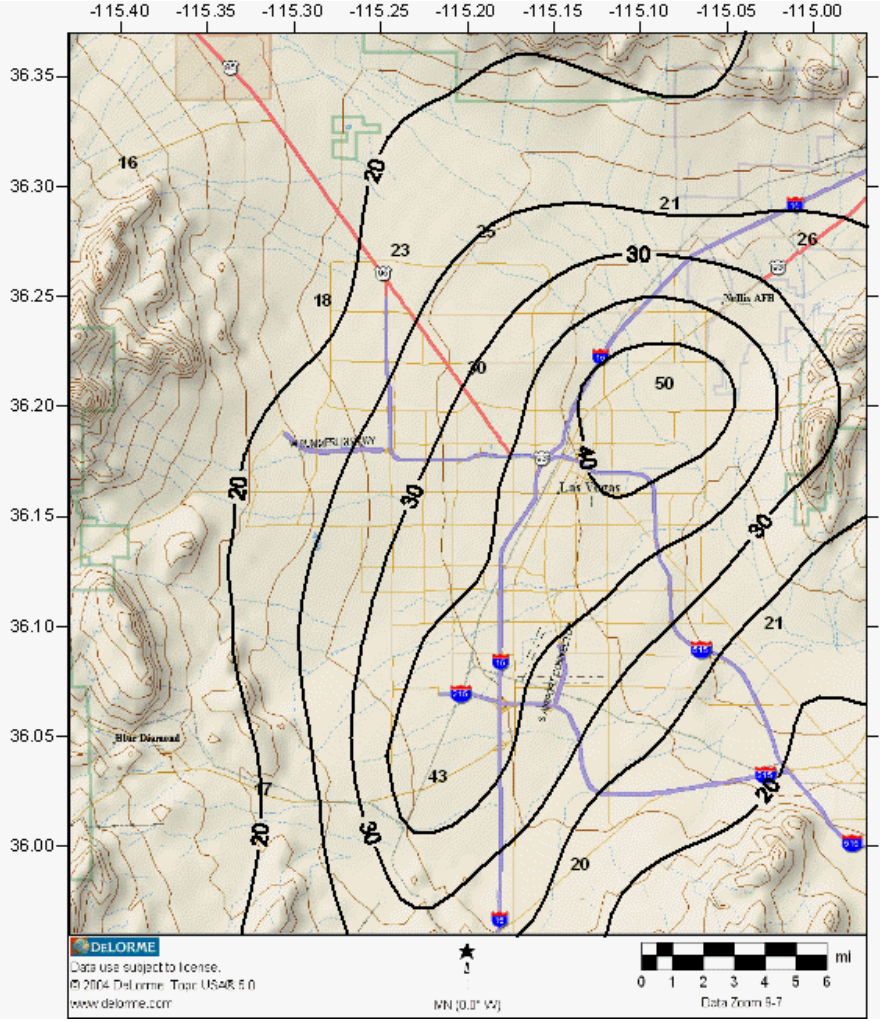


May 29, 2005 24-hour Particulate Levels
Saturation Network

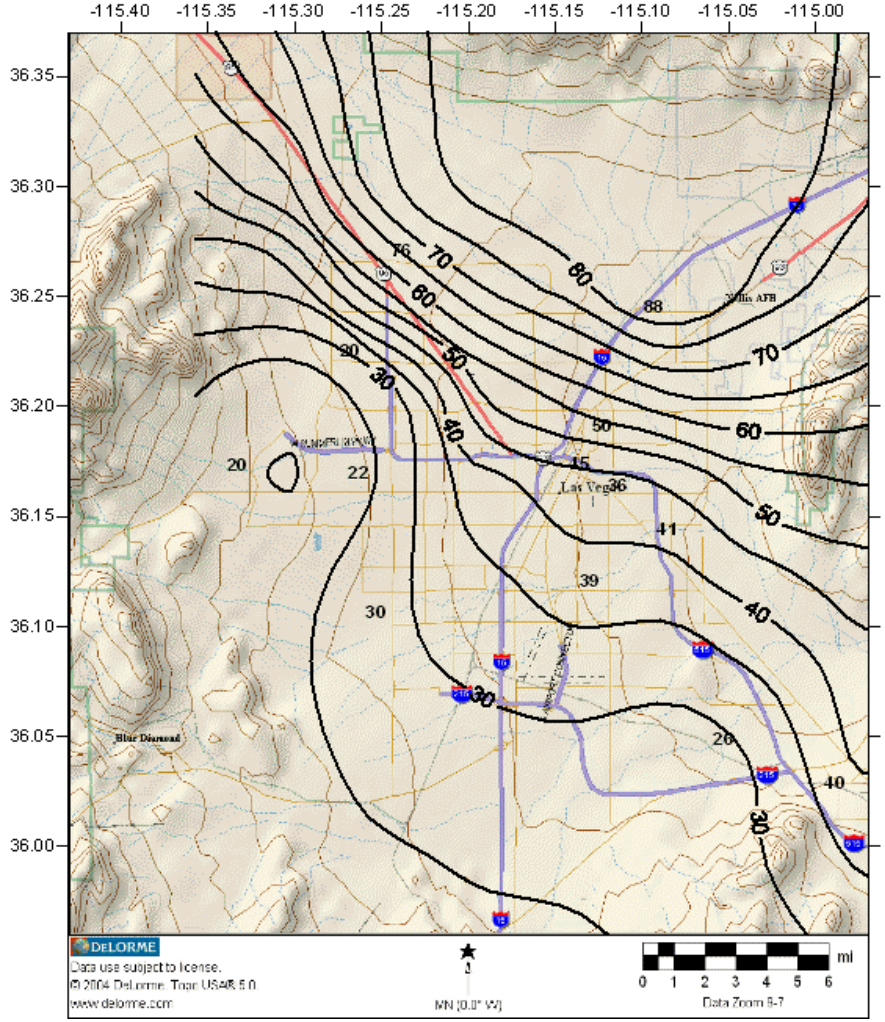


May 29, 2005 24-hour Particulate Levels
DAQEM Network

Figure 6-17. Concentration Profiles from the Saturation and DAQEM Networks for May 29, 2005



June 17, 2005 24-hour Particulate Levels
Saturation Network



June 17, 2005 24-hour Particulate Levels
DAQEM Network

Figure 6-18. Concentration Profiles from the Saturation and DAQEM networks for June 17, 2005

6.6 Particulate Matter Transport During High Wind Speed Events

Four high wind speed events were identified during the saturation study period. While the events did not produce exceedance level 24-hour average PM concentrations, the patterns that developed did reflect transport through and out of the study domain. June 17, in particular, had concentrations that showed a southwest to northeast axis of concentrations, as shown in the saturation data in Figure 6-18. **Figure 6-19** combines the data from both the saturation and DAQEM networks with a composite distribution. The plot is skewed somewhat by the Craig Road site that has a potential local source influence, but the overall pattern reflects the transport through the valley.

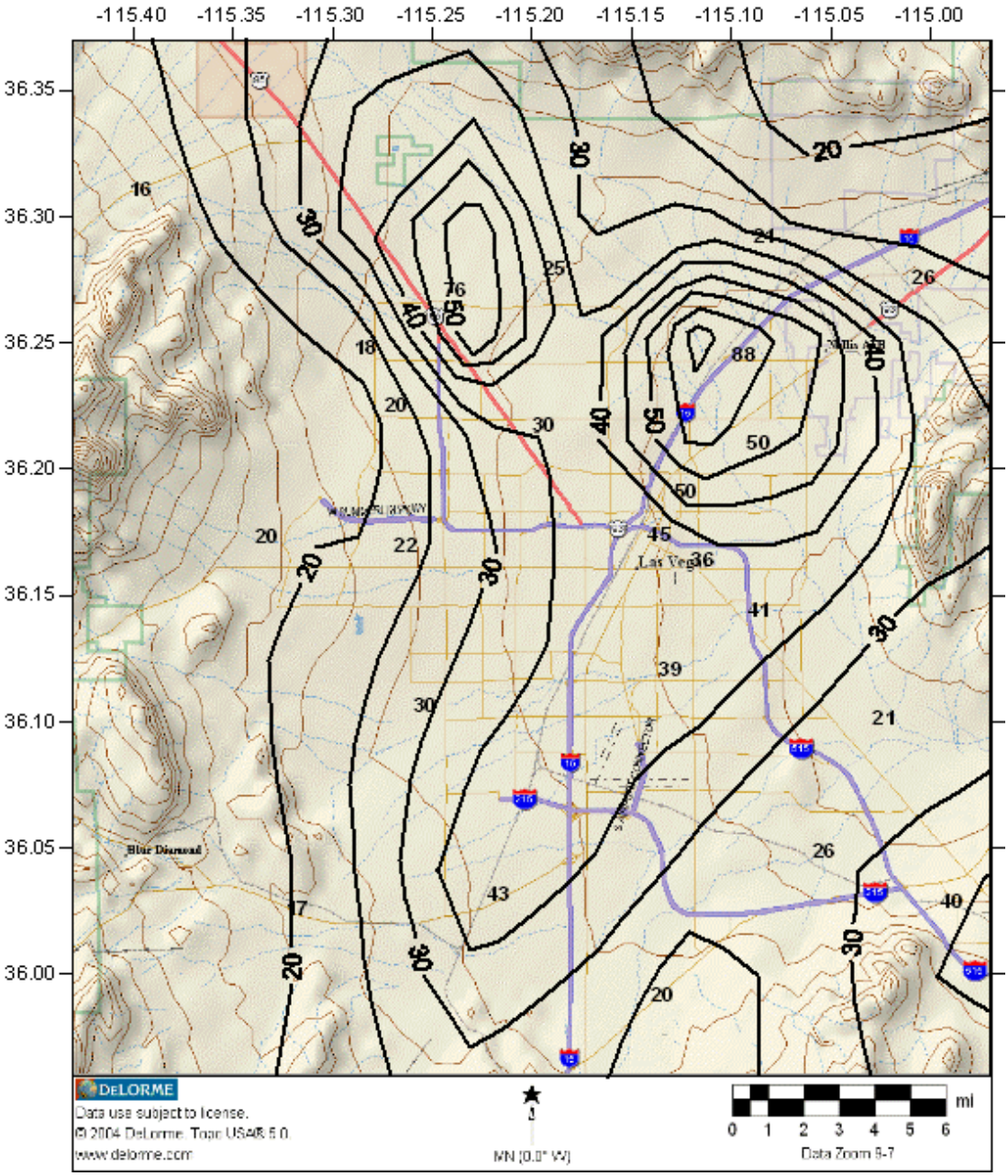


Figure 6-19. Combined Concentration Profile from June 17, 2005

While it is evident that transport did occur during the high wind speed events, the magnitude of the concentrations was governed by the available reservoir of PM_{10} that could be entrained by the wind. With the rains that occurred during the 2004/2005 season, the desert surface throughout the Hydrographic area 212 as well as regions upwind of 212 had been substantially stabilized. Without disturbance of the surface, this region will remain somewhat stabilized and the emissions during high winds will be reduced. As evidenced by the hourly values of PM_{10} from the saturation network, initial concentrations were high in the early parts of the wind events, but dropped significantly once the loose surface material had been entrained, even though the high wind speeds continued, as shown in Figures 6-11 through 6-14.

Visual observations of dust plumes were noted by our technicians on several occasions when servicing the PM_{10} network. Some of these plumes were from larger sources and lakebeds, such as Jean Lake. During these events the wind gusts were observed to "scoop" dust from the lakebed and transport in the direction of the Las Vegas Valley. As long as the wind speeds remained high the dust would remain airborne. These types of conditions would produce the transport with visual observations of valley wide haze. Closer to the sources would be higher concentrations, such as those observed at the saturation site at Star Nursery.

6.7 Neighborhood Impacts of Major Sources

One of the goals of the saturation study was to identify the neighborhood impacts of major sources. To this end several of the sites were specifically selected to help identify if suspected sources did have a significant impact on adjacent regions. This section describes the observations from saturation sites selected with this purpose.

One of the potential major sources was an active quarry on the west side of the Las Vegas Valley near Box Canyon. It was suspected that areas downslope from the quarry would be subjected to elevated levels of PM_{10} that were entrained in the drainage flow. The PM would have been released by various material handling operations within the quarry, and not necessarily from high winds. The Mountain Crest site was selected to assess the impact of the quarry on the adjacent areas, as it was downwind of the source during the night and early morning when drainage flows are most active. To assess if the influence of the quarry could be detected, the collected data were averaged by hour so that the diurnal average concentration could be evaluated. **Figure 6-20** presents the PM_{10} average concentration distribution by hour for the Mountain Crest site. It is clear from the figure that there is an increase in the PM_{10} concentrations during the nighttime and early morning hours. The multiple peaks seen in the daily distribution was unique to this site, with peaks near midnight, 0600 and again mid-day. The mid-day peak was normally seen at most other sites and is typical of the diurnal cycle observed throughout the saturation network. **Figure 6-21** shows the diurnal cycle at two other sites in the network, Blue Diamond and Wetlands, that were not influenced by a local source in drainage flow. Just how the observed pattern relates to the operational schedule at the quarry is unknown. This operational schedule may influence the late night and early morning observed peaks. One thing that can be said is that while an apparent influence could be seen, it was not high enough to generate an exceedance.

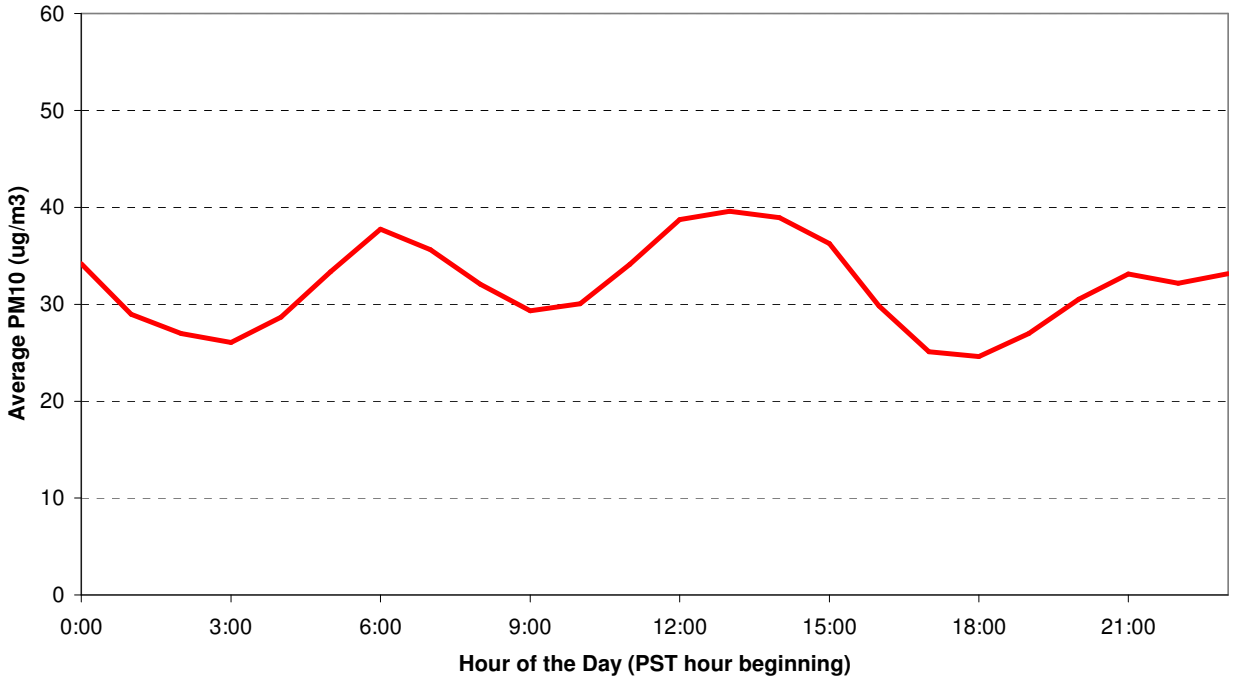


Figure 6-20. Average Concentration Distribution at the Mountain Crest Site by Hour of the Day

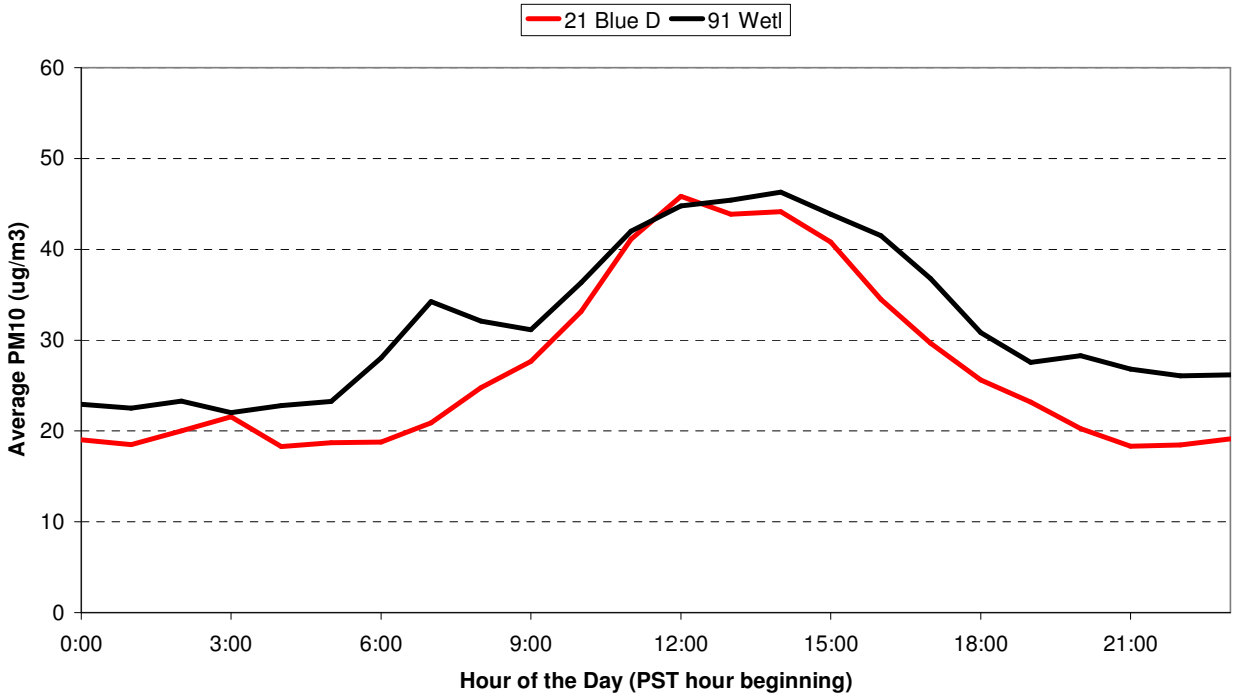


Figure 6-21. Typical Average Concentration Distribution at Two Sites Not Influenced by Drainage Flow from a Neighboring Source

On the basis of the measured data, sources adjacent to the Mountain Crest site could be detected by the site monitor during the periods of drainage flow. However, to fully understand the magnitude of this contribution would require an understanding of the type of material released during the quarry operations, upwind monitoring to determine the true background, and potential monitoring during the drainage flow with both the optical and a mass method to establish the response factor (K factor) for the DustTrak. Furthermore, quantifying the contribution of the potential source to an exceedance event would require measurements to be made during such an event. As there were no high concentration days during the study, we can only conclude that the observed data suggests that there is an influence on the downwind concentrations, but with the available data it could not be adequately quantified.

Similar to the Mountain Crest site, the Speedway site also had a nearby quarry with observations from employees at the monitoring site of occasional haze from the quarry region that would drift toward the Las Vegas Speedway. This would happen during morning drainage flow patterns from the northeast when particulate matter released from material handling operations would become airborne and available for transport. **Figure 6-22** shows the distribution from the Speedway site. Like the Mountain Crest site, these impacts could be seen, but it did not appear to be high enough to generate an exceedance. Just how the observed pattern relates to the operational schedule at the quarry and the response of the quarry material in the DustTrak (K factor) is unknown, but the peak at about 0600 was very apparent and was similar to that observed at the Mountain Crest site.

As identified previously, the dry lakebeds upwind of the Las Vegas Valley were observed to provide a major source of particulate matter that could be transported into the study domain during high wind speed events. While an exceedance event was not observed during the study period, there were visual observations of plumes from lakebeds that provided a source for a potential exceedance. The fact that these sources had been stabilized by winter rains and were only recently dried to where they could provide a potential source of particulate matter is an issue that should be explored further. The extent to which the surface is physically disturbed is not known, but the visual observations of what occurs during high wind speed events is enough reason to explore measures to minimize these as reservoirs of fugitive particulate matter.

Related to the issue of physical soil surface disturbance is the issue of mitigation of disturbed soils. As part of the observations made during the saturation study, there were numerous times where a concerted effort was seen in the application of water as a dust control measure. This was directly related to the dust permitting process undertaken by the DAQEM. Disturbed soil provides the greatest potential for fugitive emissions, and the measures observed did have a significant effect on the reduction of fugitive dust emissions. It is suspected that the lack of exceedances observed during the saturation study were due, in part, to the increased enforcement of dust mitigation measures.

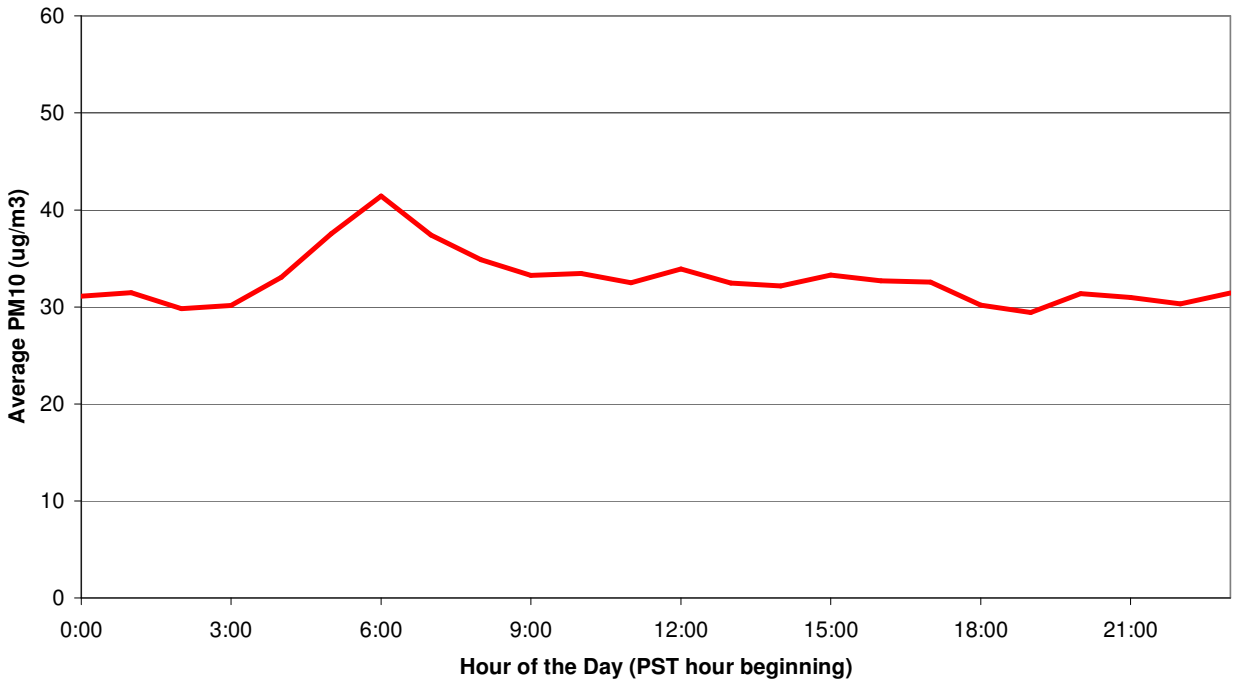


Figure 6-22. Average Concentration Distribution at the Speedway Site by Hour of the Day

7. KEY FINDINGS AND RECOMMENDATIONS

There were three major goals of the PM_{10} saturation study:

1. Determine particulate matter concentrations in geographic locations that may not be well represented by the current monitoring network due to the recent growth in the Las Vegas Valley.
2. Determine inter-basin and intra-basin transport during high wind speed events.
3. Determine the neighborhood impacts of major sources in the region.

To this end, the study found the following results:

Representativeness of the DAQEM Monitoring Network

- On the basis of the saturation sampler results, there appeared to be one location that would benefit from additional routine measurements of PM_{10}--the vicinity of the Star Nursery site. It is suspected that the potential plume from Jean Lake and other source areas in high wind speed events may be arriving between the existing stations at Green Valley and Lone Mountain. A station in this recommended location would identify any of these sources that would be missed at this entry point into the valley. Additionally, this region is undergoing significant current and potential future growth, which further underscores the need to establish a monitoring site in this region.

- The sites on the west side at Paul Meyer, Palo Verde and Walter Johnson all have experienced relatively few exceedances, with the saturation study period being no exception. The value of maintaining all of these sites for historical continuity purposes may be worthwhile, but as locations that represent potential exceedance regions, consideration should be given to other potential locations, such as the south end of the valley, or in regions where significant development is anticipated.

Inter-Basin and Intra-Basin Transport During High Wind Speed Events

- On the basis of the historical data analyzed, the key periods when exceedances would occur were under southwest flow with strong pressure gradients produced in synoptic scale pre-frontal conditions. Pressure gradients during these conditions are strong and southwest flow dominates. These events would be typically one to two days in duration.

- Following the passage of synoptic scale fronts that produced PM events, northwest winds would follow with wind speed magnitudes still high, but with lower PM_{10} concentrations. Even with relatively dry fronts, the particulate matter concentrations would not remain elevated. It is suspected that the reservoir of available particulate matter may have been depleted during the southwest winds and the northerly winds would have less material to entrain. Alternatively, the potential source areas to the northwest would have reduced emissions potential.

- From the hourly observations of PM_{10} from the saturation network, average winds of approximately 15 mph were needed before entrainment of particulate matter was observed in the network.

Neighborhood Impacts of Major Sources

- On the basis of the measured data near two potential major sources, a quarry near the Mountain Crest site and quarry operations near the Speedway site, the influence of material handling at the sites could be seen in the collected data during the periods of stable drainage flow. This contribution was not due to high wind speed entrainment, but instead apparently due to the transport of particulate matter that had become airborne due to material handling. While the influence could be detected, the magnitude of the concentrations was not enough to create an exceedance of the air quality standard. To quantify the contribution of the sources to the ambient PM_{10} concentrations would require further measurements upwind of the sources to determine the true background, and measurements made during representative times to assess the contribution.

The following are some general comments about what was learned over the course of the study:

- One of the factors that has reduced the number of exceedances in the last several years is the higher than normal rainfall. 2003 through 2005 were all among the 10 wettest years on record. Conversely, 2002, a year with a relatively high number of exceedances, was the sixth driest year on record. Precipitation plays a major role in stabilizing the desert surface and that is clearly shown in the lack of exceedances in recent years. A surface that has been significantly wetted will form a reasonable crust that will be maintained for some time, until it is disturbed in one manner or another.

- When the desert surface is stabilized, the entrainment of particulate matter during high winds is minimized. When the desert surface is disturbed the available particulate matter is significantly greater and entrainment in high winds is increased. The requirements for soil stabilization as part of the earth disturbance permit process greatly reduces the available particulate matter for entrainment. Observations made by the field crews during the saturation study reported dust mitigation measures, mostly with watering of the soil surface, being implemented at active construction sites. This had a noticeable impact on the fugitive dust generation.

- The optical method for PM_{10} works fairly well, but does have some response differences from the EPA designated equivalent methods, such as Beta Attenuation Method (BAM). For the selected DustTrak samplers, crustal material PM_{10} required approximately a 1.7 multiplier to correct the indicated readings to the BAM. Particulate matter with more of a combustion fraction required a factor of about 1.2. Significant differences in response were observed with the measurement of smoke from wildfires. The DustTraks were far more sensitive to this form of particulate matter with significantly higher concentrations reported from the saturation network than from the DAQEM BAM network.

- The desert environment is very harsh and did take its toll on the DustTrak saturation samplers. While the pumps and dampening chambers are known weak spots with the samplers, the overall operations were successful and the field sampling effort did produce reasonable results.

T&B Systems
environmental research associates

859 2nd St, Santa Rosa, CA 95404
(707) 526-2775 fax (707) 579-5954

APPENDICES TO: PARTICULATE MATTER (PM_{10}) SATURATION MONITORING STUDY

FINAL REPORT (P.O. 212114)

Prepared for:

Mr. Rodney Langston
Clark County

Protecting the air we share
Air Quality

Department of Air Quality & Environmental Management
500 South Grand Central Parkway
Las Vegas, NV 89106

Prepared by:

T&B Systems
environmental research associates

Robert Baxter
David Bush
William Knuth
Paul Fransioli
David Yoho

March 6, 2006

T&B Systems
environmental research associates

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March 6, 2006

APPENDICES

APPENDIX A

SUMMARY OF AUDIT RESULTS

Technical & Business Systems Inc.
859 Second Street · Santa Rosa, CA 95404 · 707-526-2775 · FAX 707-579-5954

MEMORANDUM

To: Bob Baxter

From: David Bush

Date: October 30, 2004

Re: Audit of Clark County PM_{10} Sampling

As part of the Clark County PM study, PM_{10} sampling at two Clark County sites (City Center and Joe Neal) were reviewed on October 6, 2004. The first site visited was the City Center site, where both a system and performance audit were conducted. The performance audit consisted of a flow and leak check of the BAM used for monitoring, and was conducted with the permission of the site technician. However, while the results of the audit showed good agreement between the site-reported flows and the audit standard, the sampler ceased working after the audit. Consequently, a performance audit was not attempted at the Joe Neal site, where the same model of BAM was in use.

No problems were noted during the audit, and the samplers appear to be operated in a consistent and appropriate manner. The audit included observing a mass calibration of the sampler by the technician. Again, no problems were noted, and the sampler passed the calibration.

Technical & Business Systems Inc.
859 Second Street · Santa Rosa, CA 95404 · 707-526-2775 · FAX 707-579-5954

M E M O R A N D U M

To: Bob Baxter

From: David Bush

Date: May 30, 2005

Re: PM Saturation Network Audit

The following discusses the results of my audit of the PM Saturation Network sites:

All sites in the network were audited between May 24 and May 27, 2005. The audits consisted of both a site evaluation and as and a independent check of sampler operations. The audit was conducted using an audit form designed expressly for this network, which addressed a number of sampler operating parameters, including flow checks using an independent, certified flow meter, and a zero check using an independent zero source (see attached form).

The following table presents key performance results. At the time of the audit, a number of decreased flow rates due to a known problem with gradual pump failure with extended operations. The flow values recorded during the audit were consistent with those reported by the sampler operator. Zero readings were also consistent with the operator's, with the exception of the zero recorded at Star Nursery, which was unusually high. Further investigation by the operator after the audit noted a similarly high reading, and the sampler was adjusted. No other operational issues were noted.

	Date	Time (PDT)	Flow	Zero	Batt V
Kyle Canyon	24-May	17:40	0.4	0.001	11.3
Mountain Crest	24-May	18:30	0.3	0.002	12.1
Joe Neal	25-May	8:05	1.5	0.000	12.6
Wetlands	25-May	12:50	1.4	0.004	11.6
Lamb	26-May	8:50	0.4	0.000	12.3
Aliante	26-May	9:30	1.5	0.000	12.3
Blue Diamond	26-May	10:40	0.6	0.000	11.5
Star Nursery	26-May	11:30	0.5	0.037	12.3
Alto	26-May	18:00	0.8	0.002	13.1
N Las Vegas	27-May	6:30	1.6	0.000	12.0
Speedway	27-May	7:30	1.6	0.002	11.5
Henderson AP Storage	27-May	12:40	0.5	0.002	12.8

The only possible siting issue noted concerned the Star Nursery site. The nursery also provided rock and earth materials for landscaping. At the time of the audit, material in the storage areas, located approximately 50 meters from the sampler, were being compacted, which involved pushing and scrapping the piles of material, generating some dust in the process. While it is unlikely that this activity will seriously affect 24-hour averages, it should be noted when reviewing the data.

PM10 Saturation Monitoring Network
Audit Form

Site: _____
Date: _____
Auditor: _____

Siting: Distance to road: _____ Distance to trees: _____
Road volume: _____ Obstacles: _____

_____
_____
_____

Flow Check:

	Rotameter reading		
At sampler:	_____	Temp:	_____
With tubing:	_____	Pressure:	_____

Time Check: Sampler: _____
Actual: _____

Settings:

Logging interval = 4 min	_____
Time constant = 60 sec	_____
Analog output = 0 - 1.0	_____
Calibration factor = 1.00	_____

Terminal voltage: _____

Comments: _____
_____
_____
_____

Technical & Business Systems Inc.
859 Second Street · Santa Rosa, CA 95404 · 707-526-2775 · FAX 707-579-5954

MEMORANDUM

To: Bob Baxter

From: David Bush

Date: November 20, 2005

Re: PM_{10} Saturation Study Data Review

I have completed a detailed review of the data processing of the PM_{10} Saturation network data. This included tracing data throughout the entire data processing procedure, including the application of flow factors and K-factors.

Only one processing problem was noted. Based on the master database spreadsheet that you provided, the flow history for Star Nursery was inadvertently created using the Henderson flow rates. Consequently, incorrect flow factors were applied to the Star Nursery data. No other problems were noted.

In reviewing the Clark County PM_{10} Saturation Study data, I have become somewhat concerned about the K-factor used to correct the DustTrak data, specifically the intercept of 19 $\mu g/m^3$ that was derived from the comparison made at Joe Neal. This high intercept is somewhat problematic in that it brings into question the response of the sampler at low PM concentrations, since a normally operating sampler with its zero set to zero can never produce corrected readings less than 19 $\mu g/m^3$. In addition, the high intercept goes against our findings from the sampler evaluation conducted in November 2004. One of the reasons that we chose the DustTrak was because we consistently got a near-zero intercept when compared against the County data.

One concern was that the DustTrak sampler used at Joe Neal during the saturation study might indeed have had some sort of offset. However, looking at the data from June 7 – June 22, 2005, when all of the saturation samplers were operating together, the possibility arises that the County's Joe Neal data may have had a problem. Below are the averages for the period in question for all of the sites:

County Network

CC	BS	MC	GV	PL	JD	JN	**JO**	LO	OR	PM	PV	WJ
29	36	25	22	27	27	20	37	19	25	27	13	19

Network Average = 24 $\mu g/m^3$

Saturation Network

013	021	031	043	052	064	072	082	091	101	112	**120**
36	37	43	42	32	42	34	47	47	38	49	36

Network Average = 41 μg/m^3

Note that all County data is derived from the hourly data presented on the Internet.

Looking at the two Joe Neal samplers (JO and 120), one can see good agreement, which should be expected given that the derived K-factor was designed to do just that. However, for the County Network, the Joe Neal sampler recorded the highest readings of the network, whereas for the Saturation Network, the concentrations at the Joe Neal site are the second lowest of the network. Despite the fact that both networks are spatially similar, the network averages are significantly different (17 μg/m^3), notably by almost exactly the K-factor intercept.

The situation cannot be explained simply by stating that the County Joe Neal site has a significant offset, since the County sampler regularly reads near-zero readings and has low concentration 24-hour averages that agree with other County sites. However, there are clearly times when the sampler response drifts high (two such instances were noted when you did your comparison, and you removed the days' data from the comparison). Thus, simply ignoring the intercept doesn't seem appropriate. However, I do feel that, at a minimum, we should have a second database that is adjusted based on these observations. The most appropriate approach in my opinion, given the information that we have, is to use a composite value based on the data that we obtained during the 2004 evaluation.

Further review of the comparison data supports the preferred use of the 2004 evaluation data. The following table is an expanded version of the statistics for the County nework presented above, including data for both the 2004 evaluation and the 2005 study. The data show an obvious shift in the County Joe Neal site between the 2004 and 2005 data, relative to both the DustTrack measurements and measurements from the other sites in the network.

Year	CC	BS	MC	GV	PL	JD	JN	JO	LO	OR	PM	PV	WJ
2005	29	36	25	22	27	27	20	37	19	25	27	13	19
2004	29	35	30	23	29	26	13	27	16	20	16	13	14

Year	Avg (w/o JO)	JO	DustTrak
2005	24	37	13
2004	22	27	18

Reviewing again the K-factors obtained during the 2004 evaluation (below), one sees intercepts much closer to zero and slopes more in the 1.5 range, especially during highly correlated days. These may be more appropriate than those derived during the actual study.

Daily R criteria	Slope	Intercept	Correlation (R)	Comparison Days
>0.9	1.61	2 μg/m^3	0.916	13
>0.8	1.40	5 μg/m^3	0.833	19
All days	1.25	5 μg/m^3	0.762	26

APPENDIX B

INSTRUMENT ZERO RECORDS

The following page contains the results of the zero checks performed. When the zero check was outside of the check criteria, the manufacturers procedure was followed to rezero the instrument. The results of the new zero calibration show up in the table on the day following the flow adjustment.

Date/Time	13 Kyle	21 Blue D	31 Speed	43 Mtn Cr	52 NLV	64 Aliante	72 Lamb	82 Alto	91 Wetl	101 Hend	112 Star	120 Joe N
15-Apr												
16-Apr												
17-Apr												
18-Apr												
19-Apr												
20-Apr												
21-Apr												
22-Apr												
23-Apr		0						1	0	1	0	
24-Apr					0		3					
25-Apr												
26-Apr												
27-Apr		0	1					0	1	2	-3	
28-Apr	0			0		0	1					
29-Apr												
30-Apr												
1-May					3							
2-May												
3-May												
4-May												
5-May							3					
6-May												
7-May	0			1		3						
8-May		0	1		0			1	1	1	5	
9-May												
10-May												
11-May												
12-May												
13-May												
14-May												
15-May												
16-May		-1									-3	
17-May	2				2	0	6	0	0	0		
18-May		0	3	2								
19-May												1
20-May												
21-May												
22-May												
23-May												
24-May	1			2				4				0
25-May			1				0					
26-May		0				0	0	2		4	37	
27-May			2		0					2		
28-May												
29-May		0									-25	
30-May	2		1	3			0	2			0	
31-May		3				10			3	0	5	0
1-Jun					1	0						0
2-Jun												
3-Jun												
4-Jun												
5-Jun	2	-1		0				1		0	6	
6-Jun			3		5		2		0			
7-Jun						-9						-1
8-Jun						0						
9-Jun				0			1		0			
10-Jun				1			0		0			
11-Jun												
12-Jun												
13-Jun	3		2			1	-1					0
14-Jun	0	-3			1			27	10	0	10	
15-Jun		0						0	0		0	
16-Jun			3	2								
17-Jun			0									
18-Jun												
19-Jun												
20-Jun		2							-26	0	0	
21-Jun	0		1					-24	0			
22-Jun								0				
23-Jun												
24-Jun												
25-Jun				3		11	0					
26-Jun					0	0						1
27-Jun												
28-Jun												
29-Jun												
30-Jun												
1-Jul												
2-Jul				4		5	1					6
3-Jul	0	5	1		3			0	17	1	1	
4-Jul												

APPENDIX C

INSTRUMENT FLOW RECORDS

The following page contains the results of the flow checks performed. When a sampler was replaced due to low flow, the results of the flow check on the new sampler shows up on the following day.

Date/Time	13 Kyle	21 Blue D	31 Speed	43 Mtn Cr	52 NLV	64 Aliante	72 Lamb	82 Alto	91 Wetl	101 Hend	112 Star	120 Joe N
15-Apr												
16-Apr												
17-Apr												
18-Apr												
19-Apr												
20-Apr												
21-Apr												
22-Apr												
23-Apr		1.5						1.4	1.5	1.3	1.5	
24-Apr					1.6		1.7					
25-Apr												
26-Apr												
27-Apr		1.6	1.6					1.5	1.6	1.2	1.7	
28-Apr	1.6			1.6		1.3	1.7					
29-Apr												
30-Apr												
1-May					1.7							
2-May												
3-May												
4-May												
5-May							1.2					
6-May												
7-May	1.5			1.7		1.7						
8-May		1.6	1.7		1.7			1.6	1.6	0.9	1.7	
9-May												
10-May												
11-May												
12-May												
13-May												
14-May												
15-May												
16-May		1.7									1.6	
17-May	0.6				1.7	1.7	0.7	1.3	1.5	0.7		
18-May		1.7	1.7	0.6								
19-May												1.7
20-May												
21-May												
22-May												
23-May												
24-May	0.4			0.3				1.4				1.5
25-May			1.7				0.5					
26-May		0.6				1.5	0.4	0.8		0.6	0.5	
27-May			1.6		1.6					0.5		
28-May												
29-May		0.6									0.6	
30-May	0.3		1.6	0.3			0.4	0.8			1.6	
31-May		0.6				1.6			0.7	0.5		1.6
1-Jun						1.7						1.6
2-Jun												
3-Jun												
4-Jun												
5-Jun	0.4	0.3		0.3				0.6		0.4	1.6	
6-Jun			0.7		1.7		0.3		0.7			
7-Jun						1.6						1.6
8-Jun												
9-Jun				0.2			0.3		0.8			
10-Jun				1.7			0.7		0.6			
11-Jun												
12-Jun												
13-Jun	0.3		0.3			1.3	0.7					1.6
14-Jun		0.2			1.7			0.4	0.3	0.5	1.6	
15-Jun												
16-Jun			0.3	1.7								
17-Jun												
18-Jun												
19-Jun												
20-Jun		0.2							0.3	0.4	1.5	
21-Jun	0.2		0.3					0.4				
22-Jun												
23-Jun												
24-Jun												
25-Jun				1.7		0.7	0.2					
26-Jun					1.7							1.6
27-Jun												
28-Jun												
29-Jun												
30-Jun												
1-Jul												
2-Jul				1.7		0.6	0.2					1.7
3-Jul	0.2	0.2	0.3		1.6			0.4	0.2	0.3	1.4	
4-Jul												

APPENDIX D

SATURATION NETWORK PM_{10} DATA VALUES

APPENDIX D

SATURATION NETOWRK 1-HOUR AND 24-HOUR PM_{10} DATA VALUES

The hourly average database is summarized by month in the following tables, along with the calculated minimum, maximum and average PM_{10} concentration for each day. Also provided are the minimum, maximum and average concentration by hour of the day. The indicated averages at the far right and bottom of the tables are based on all available valid data points and does not require a minimum number of valid values to calculate the average. Thus, if only two hours of valid data were present on a given day, a 24-hour average was calculated. The order of the sites in the tables is as follows:

- Kyle Canyon (13)
- Blue Diamond (21)
- Speedway (31)
- Mountain Crest (43)
- North Las Vegas Airport (52)
- Aliante (64)
- Lamb (72)
- Alto (82)
- Wetlands (91)
- Henderson (101)
- Star Nursery (112)
- Joe Neal (120)

Kyle Canyon (13)
Validation Level: B

Variable: Kyle Canyon (13)
Units: ug/m3
Channel: 5

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:16:59
Output File Name: PM1B0405.5

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	30	29	26	24	25	23	22	22	30	26
16	20	19	18	18	19	19	22	25	29	34	33	34	35	38	40	40	38	45	33	28	29	28	26	25	18	45	29
17	28	35	34	31	32	40	33	36	41	46	54	56	54	55	49	47	53	64	50	48	43	42	43	42	28	64	44
18	39	33	28	25	30	30	30	36	37	39	40	39	41	40	38	33	32	28	28	28	30	27	26	25	25	41	33
19	29	25	26	25	31	22	16	12	11	15	19	11	14	16	19	15	18	11	12	11	11	11	10	10	10	31	17
20	10	9	9	9	11	9	9	10	11	14	16	16	17	16	16	16	17	14	15	10	9	9	9	9	9	17	12
21	9	9	9	9	9	9	9	11	19	22	20	20	20	20	21	21	20	19	16	14	12	11	11	9	9	22	15
22	9	10	9	9	9	10	10	12	15	19	19	20	22	24	23	24	22	21	17	17	16	13	12	12	9	24	16
23	13	14	15	15	13	18	20	22	29	28	19	19	18	17	14	14	13	14	15	15	12	12	11	11	11	29	16
24	10	10	10	18	14	15	15	20	20	24	24	24	23	22	23	20	17	13	13	16	14	11	12	11	10	24	17
25	11	11	10	10	11	12	15	15	17	20	20	19	18	17	17	17	16	13	15	12	10	10	10	10	10	20	14
26	10	10	9	10	10	10	10	10	12	14	19	18	17	16	18	18	18	15	12	11	12	11	11	10	9	19	13
27	11	12	14	18	14	21	20	28	41	34	29	32	29	29	30	29	31	36	34	33	22	17	14	12	11	41	25
28	12	10	12	13	17	16	9	11	9	10	16	16	11	12	15	13	12	10	9	9	9	9	9	9	9	17	12
29	9	9	9	10	9	9	9	9	10	13	14	15	16	15	16	16	16	15	12	11	9	10	9	9	9	16	12
30	9	9	9	9	9	9	9	13	17	23	35	25	17	17	17	17	16	15	13	11	10	9	10	11	9	35	14
Min	9	9	9	9	9	9	9	9	9	10	14	11	11	12	14	13	12	10	9	9	9	9	9	9	9		
Max	39	35	34	31	32	40	33	36	41	46	54	56	54	55	49	47	53	64	50	48	43	42	43	42		64	
Avg	15	15	15	15	16	17	16	18	21	24	25	24	23	24	24	23	23	23	20	19	17	16	15	15			19

Total Data Records Possible: 720
Total Valid Data Records: 367
Percent Data Recovery: 51.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Kyle Canyon (13)
Units: ug/m3
Channel: 5

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:03
Output File Name: PM1B0505.5

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	10	11	13	15	19	16	17	19	20	19	19	20	20	21	20	21	20	17	15	17	15	13	13	12	10	21	17
2	10	10	9	9	10	10	10	11	13	15	16	17	16	21	23	26	16	16	11	10	9	10	10	9	9	26	13
3	9	9	9	9	10	10	10	12	14	16	17	17	18	17	18	18	22	16	16	14	13	12	12	12	9	22	14
4	12	11	11	11	11	11	14	22	25	27	31	30	28	27	26	24	24	25	24	26	25	26	24	23	11	31	22
5	23	24	25	25	27	28	32	44	26	24	27	32	26	26	27	28	25	21	18	17	19	12	9	9	9	44	24
6	9	9	9	9	10	9	10	12	14	15	14	13	11	11	11	11	11	10	12	9	10	9	9	9	9	15	11
7	9	9	9	9	9	9	9	10	13	14	15	14	16	15	15	14	13	13	12	10	9	9	9	9	9	16	11
8	9	9	9	9	10	10	11	15	18	24	25	20	19	19	21	21	21	20	20	20	20	25	33	37	9	37	19
9	36	36	44	54	43	36	32	28	23	24	25	24	21	20	19	18	19	20	19	14	17	16	12	10	10	54	25
10	10	9	9	10	12	12	10	11	11	18	16	16	18	16	16	15	15	12	12	10	9	9	9	9	9	18	12
11	9	9	9	9	9	9	9	9	10	12	12	13	13	13	13	16	14	11	11	9	9	9	9	9	9	16	11
12	9	9	9	9	9	9	9	10	11	12	12	13	14	14	14	15	15	21	14	11	9	9	9	10	9	21	12
13	10	10	10	9	9	9	12	15	17	17	20	23	23	22	21	24	27	24	23	22	20	17	16	15	9	27	17
14	14	13	12	13	12	12	16	20	23	24	22	22	21	21	22	23	25	25	23	20	22	18	17	17	12	25	19
15	16	16	15	14	16	15	19	22	23	24	28	31	30	29	27	28	31	31	30	30	31	31	33	32	14	33	25
16	31	31	28	29	30	27	17	15	18	17	20	18	17	34	40	71	27	37	21	17	22	15	12	10	10	71	25
17	10	10	10	10	10	11	13	12	16	19	15	15	15	16	20	22	23	23	22	22	14	13	17	15	10	23	16
18	13	12	12	10	11	10	15	19	22	32	30	27	24	21	22	20	16	13	12	10	10	10	10	10	10	32	16
19	12	11	11	11	15	12	14	24	26	23	19	13	12	11	10	11	11	14	13	12	19	11	10	10	10	26	14
20	10	10	11	12	15	10	10	14	23	27	24	12	11	12	14	12	12	13	12	12	11	10	10	11	10	27	13
21	12	12	11	10	11	13	14	15	15	15	14	14	15	17	19	21	21	22	22	20	20	20	18	17	10	22	16
22	17	17	16	15	14	17	20	26	28	28	29	31	31	31	30	28	26	22	27	25	24	23	19	16	14	31	23
23	15	13	12	13	16	20	21	22	24	23	29	33	27	18	18	16	17	22	20	19	19	18	16	13	12	33	19
24	10	9	11	12	15	13	19	21	21	22	23	27	23	19	16	16	34	20	21	18	16	13	14	11	9	34	18
25	11	10	10	9	9	10	14	19	20	21	25	26	24	24	23	24	26	29	26	28	21	20	21	20	9	29	20
26	21	20	18	17	17	22	21	26	25	27	27	26	27	27	29	29	29	27	29	23	22	22	20	18	17	29	24
27	18	17	17	16	15	17	21	27	28	27	27	29	31	29	27	30	31	32	33	28	23	23	22	22	15	33	25
28	21	19	14	20	14	26	35	39	39	43	41	40	42	37	36	35	36	33	34	36	34	33	32	33	14	43	32
29	23	21	22	24	31	28	29	26	52	38	33	33	35	36	34	35	31	28	21	18	19	25	21	37	18	52	29
30	51	44	27	12	10	10	12	17	20	20	20	20	21	20	20	20	23	21	23	17	14	13	11	-980	10	51	20
31	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
Min	9	9	9	9	9	9	9	9	10	12	12	12	11	11	10	11	11	10	11	9	9	9	9	9	9		
Max	51	44	44	54	43	36	35	44	52	43	41	40	42	37	40	71	36	37	34	36	34	33	33	37		71	
Avg	16	15	14	14	15	15	17	19	21	22	23	22	22	21	22	23	22	21	20	18	18	16	16	16			19

Total Data Records Possible: 744
Total Valid Data Records: 719
Percent Data Recovery: 96.6

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Kyle Canyon (13)
Units: ug/m3
Channel: 5

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:06
Output File Name: PM1B0605.5

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
2	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
3	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
4	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
5	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	31	37	34	32	27	22	21	20	20	37	28
6	18	17	17	31	26	21	27	33	34	37	38	36	34	33	30	42	45	34	19	20	22	20	16	16	16	45	28
7	16	15	19	21	17	20	23	27	28	24	24	26	27	29	34	36	35	32	26	25	22	20	19	17	15	36	24
8	17	15	14	14	18	18	22	26	28	29	32	35	33	32	32	31	27	22	19	18	20	17	15	14	14	35	23
9	12	11	11	10	10	11	11	13	15	16	14	14	16	15	16	17	24	13	12	11	11	10	11	10	10	24	13
10	10	10	10	10	10	10	10	12	14	15	18	19	23	24	23	23	23	23	22	21	15	13	13	12	10	24	16
11	12	10	11	11	11	13	12	14	15	16	17	18	21	19	20	19	18	54	31	15	14	14	13	11	10	54	17
12	11	11	12	12	14	13	17	20	20	22	22	21	23	23	23	25	26	27	62	52	24	20	18	16	11	62	22
13	15	14	14	14	14	15	17	18	20	21	21	20	16	16	17	19	19	22	23	21	19	18	17	17	14	23	18
14	16	15	12	11	11	12	12	14	15	31	19	18	22	21	22	21	21	20	19	17	16	17	16	21	11	31	17
15	27	32	33	33	31	28	39	49	51	42	27	23	25	25	24	25	24	23	26	24	24	24	21	22	21	51	29
16	25	27	29	28	30	36	40	39	39	33	26	23	20	19	22	21	21	21	22	21	21	16	14	14	14	40	25
17	14	14	13	15	24	19	15	15	17	18	16	18	19	26	19	17	15	13	13	12	12	12	10	10	10	26	16
18	10	10	12	10	10	12	16	18	18	18	19	18	16	16	14	13	15	15	12	12	12	13	12	12	10	19	14
19	12	12	14	12	12	12	18	19	22	25	23	18	17	18	18	19	17	20	20	20	16	18	18	23	12	25	18
20	27	23	22	21	22	22	27	29	29	35	45	43	43	44	44	41	38	40	42	42	37	35	37	38	21	45	34
21	39	38	38	36	34	38	39	44	49	51	52	54	48	42	39	37	36	37	45	43	40	40	41	40	34	54	42
22	40	40	39	41	43	49	43	45	47	52	52	55	52	50	52	52	55	56	116	102	49	47	44	44	39	116	53
23	44	42	36	33	33	32	34	36	40	47	55	59	60	68	81	56	21	24	26	23	23	25	23	21	21	81	39
24	24	22	26	30	24	26	43	54	63	47	76	179	143	76	22	19	18	20	25	22	20	20	20	23	18	179	43
25	27	35	45	39	53	202	87	57	35	27	20	19	19	18	17	18	20	19	17	15	14	14	14	14	14	202	35
26	14	13	13	12	13	13	17	20	23	26	29	30	32	33	31	26	25	26	24	21	20	20	17	16	12	33	21
27	15	15	16	16	18	21	29	35	38	28	23	21	17	15	16	17	18	21	24	22	21	19	17	21	15	38	21
28	22	21	23	33	39	35	39	48	52	50	41	35	31	27	25	24	26	27	29	24	23	30	22	22	21	52	31
29	21	20	20	19	19	21	27	24	24	24	48	112	133	114	119	135	141	152	156	149	117	89	84	75	19	156	77
30	67	69	76	71	66	72	89	148	156	173	165	202	183	176	148	161	159	139	134	111	72	60	62	48	48	202	117
Min	10	10	10	10	10	10	10	12	14	15	14	14	16	15	14	13	15	13	12	11	11	10	10	10	10		
Max	67	69	76	71	66	202	89	148	156	173	165	202	183	176	148	161	159	152	156	149	117	89	84	75		202	
Avg	22	22	23	23	24	31	30	34	36	36	37	45	43	39	36	37	35	36	38	34	27	25	24	23			32

Total Data Records Possible: 720
Total Valid Data Records: 608
Percent Data Recovery: 84.4

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Kyle Canyon (13)
Units: ug/m3
Channel: 5

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:10
Output File Name: PM1B0705.5

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	41	43	42	39	43	41	69	60	51	54	56	60	60	46	38	35	34	32	33	39	30	27	28	28	27	69	43
2	31	30	34	31	32	34	41	46	49	52	52	46	40	37	38	35	33	33	31	27	24	31	32	30	24	52	36
3	29	27	27	25	26	30	35	34	40	40	44	43	42	35	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	25	44	34
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	29	27	27	25	26	30	35	34	40	40	44	43	40	35	38	35	33	32	31	27	24	27	28	28	24		
Max	41	43	42	39	43	41	69	60	51	54	56	60	60	46	38	35	34	33	33	39	30	31	32	30		69	
Avg	34	33	34	32	34	35	48	47	47	49	51	50	47	39	38	35	34	33	32	33	27	29	30	29			38

Total Data Records Possible: 744
Total Valid Data Records: 62
Percent Data Recovery: 8.3

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Blue Diamond (21)
Validation Level: B

Variable: Blue Diamond (21)
Units: ug/m3
Channel: 6

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:16:59
Output File Name: PM1B0405.6

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	12	30	21	20	21	21	22	21	19	16	24	12	11	11	12	12	11	30	18
22	12	12	12	12	12	13	13	15	20	21	19	20	22	22	23	19	17	17	13	21	17	12	11	14	11	23	16
23	11	11	12	13	13	14	18	19	15	14	13	14	16	14	13	12	13	12	12	11	12	13	22	15	11	22	14
24	14	14	13	13	14	14	14	16	16	19	21	21	20	18	18	15	11	11	11	14	15	15	16	17	11	21	15
25	17	16	16	16	17	18	16	18	21	24	23	16	15	14	16	15	13	12	14	13	11	12	12	12	11	24	16
26	11	11	11	11	11	10	12	14	18	18	18	16	17	18	18	14	12	11	13	10	10	10	10	10	10	18	13
27	10	14	17	18	20	20	23	29	28	27	26	25	28	26	33	29	29	32	34	23	14	13	11	11	10	34	23
28	14	16	14	14	13	13	12	11	11	11	11	12	13	11	13	12	12	11	11	11	11	11	11	11	11	16	12
29	11	11	11	11	11	11	14	13	14	21	22	19	17	16	14	14	13	12	13	11	11	11	11	11	11	22	13
30	11	11	11	11	12	11	15	16	18	18	15	16	17	18	18	17	15	14	12	11	12	11	11	11	11	18	14
Min	10	11	11	11	11	10	12	11	11	11	11	12	13	11	13	12	11	11	11	10	10	10	10	10	10		
Max	17	16	17	18	20	20	23	29	28	30	26	25	28	26	33	29	29	32	34	23	17	15	22	17		34	
Avg	12	13	13	13	14	14	15	17	17	20	19	18	19	18	19	17	15	15	16	14	12	12	13	12			15

Total Data Records Possible: 720
Total Valid Data Records: 232
Percent Data Recovery: 32.2

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Blue Diamond (21)
Units: ug/m3
Channel: 6

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:03
Output File Name: PM1B0505.6

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	11	12	12	12	15	15	15	18	20	23	25	27	26	23	20	19	17	15	14	13	12	12	12	13	11	27	17
2	12	12	11	11	11	12	11	18	20	22	23	22	22	22	22	21	27	19	13	11	11	11	11	11	11	27	16
3	11	11	11	12	13	13	17	25	24	19	20	21	21	21	20	20	18	15	14	14	13	12	11	12	11	25	16
4	11	11	11	11	12	12	18	23	22	24	32	27	26	24	22	24	24	23	21	22	22	21	20	18	11	32	20
5	18	19	21	21	22	31	30	33	23	24	22	26	29	23	27	26	20	17	15	17	15	10	10	10	10	33	21
6	10	11	10	10	10	10	10	10	10	12	11	12	10	10	12	10	10	10	10	10	10	10	10	10	10	12	10
7	10	10	10	10	10	10	11	12	14	13	12	13	11	12	11	11	11	11	10	10	10	10	10	10	10	14	11
8	10	10	10	10	11	10	11	13	16	15	14	16	16	19	25	17	17	15	13	13	12	19	31	31	10	31	16
9	28	26	26	31	33	35	34	30	23	19	20	20	21	21	17	16	13	11	12	11	10	9	9	10	9	35	20
10	10	9	9	9	9	9	10	10	12	12	12	12	12	10	11	11	10	10	9	9	9	9	9	9	9	12	10
11	9	9	9	9	9	10	10	12	13	11	10	12	11	11	10	9	9	9	9	9	9	9	9	9	9	13	10
12	9	9	9	9	9	9	13	13	12	13	15	15	15	14	13	13	11	9	9	12	11	9	9	9	9	15	11
13	9	9	9	9	10	9	10	11	15	19	19	19	19	18	19	19	18	16	16	17	17	14	13	12	9	19	14
14	12	12	15	12	10	10	13	17	17	20	21	24	25	24	22	21	19	17	30	36	16	13	12	11	10	36	18
15	11	10	10	10	10	10	12	16	16	18	21	49	55	26	31	27	24	21	20	22	21	20	20	19	10	55	21
16	17	19	18	15	16	14	14	13	18	18	24	33	36	34	30	18	21	21	24	18	13	12	13	12	12	36	20
17	11	11	10	9	10	16	12	17	18	17	16	18	20	20	20	19	17	14	11	10	10	11	9	9	9	20	14
18	9	9	9	10	9	11	15	20	21	21	17	15	15	21	14	15	13	13	10	10	10	10	10	9	9	21	13
19	9	9	9	9	9	12	10	10	10	11	13	14	16	17	18	15	16	13	11	10	11	9	9	9	9	18	12
20	9	9	9	9	9	10	12	15	17	16	17	18	54	62	24	17	14	13	11	9	9	9	9	9	9	62	16
21	9	9	9	9	9	9	10	13	15	19	35	70	74	75	75	61	30	24	25	17	15	13	12	14	9	75	27
22	14	11	9	9	8	8	15	17	23	28	56	80	59	80	75	63	29	25	22	18	12	11	9	9	8	80	29
23	8	8	9	9	11	9	16	34	44	35	66	86	84	82	79	31	24	22	18	14	10	8	8	7	7	86	30
24	7	7	7	7	7	8	17	21	25	30	64	87	87	77	27	25	22	18	17	18	-980	-980	-980	-980	7	87	29
25	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
26	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
27	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
28	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
29	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	38	41	39	44	49	39	37	32	21	17	16	14	18	21	14	49	30
30	18	16	16	15	19	18	22	22	23	23	26	28	29	31	29	28	25	23	18	14	12	11	29	13	11	31	21
31	13	12	11	11	11	11	18	29	29	24	26	24	28	29	23	20	19	16	14	11	10	10	10	10	10	29	17
Min	7	7	7	7	7	8	10	10	10	11	10	12	10	10	10	9	9	9	9	9	9	8	8	7	7		
Max	28	26	26	31	33	35	34	34	44	35	66	87	87	82	79	63	37	32	30	36	22	21	31	31		87	
Avg	12	12	12	11	12	13	15	18	19	19	25	31	32	31	28	23	19	17	15	15	13	12	13	12			18

Total Data Records Possible: 744
Total Valid Data Records: 634
Percent Data Recovery: 85.2

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Blue Diamond (21)
Units: ug/m3
Channel: 6

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:06
Output File Name: PM1B0605.6

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	10	12	14	15	16	20	18	19	20	25	23	27	29	30	31	28	25	24	21	21	21	25	29	28	10	31	22
2	28	27	29	28	25	31	39	38	42	41	34	28	30	30	33	33	30	29	24	23	22	24	28	61	22	61	32
3	44	19	12	14	14	14	15	11	12	11	13	14	16	18	18	18	19	16	14	14	15	13	11	11	11	44	16
4	10	10	10	10	10	16	25	26	32	36	34	30	22	21	20	19	18	18	15	11	10	10	10	12	10	36	18
5	13	18	19	19	20	20	22	23	26	30	30	34	31	34	30	27	25	24	22	18	15	14	15	14	13	34	23
6	18	14	13	13	11	12	15	17	20	21	22	24	23	21	19	17	14	12	11	11	11	11	12	10	10	24	16
7	11	10	11	10	11	11	19	20	18	22	26	25	25	26	25	22	17	15	14	14	12	13	11	11	10	26	17
8	10	10	10	10	10	10	12	20	21	24	24	23	24	21	16	13	11	10	11	10	10	10	10	10	10	24	14
9	10	10	10	10	10	11	11	15	14	11	10	11	10	11	11	10	10	10	10	10	10	10	10	10	10	15	11
10	10	10	10	10	10	10	11	11	13	14	16	17	20	17	15	12	11	11	10	10	11	10	10	11	10	20	12
11	11	11	11	11	11	11	11	11	11	13	13	15	19	22	19	15	13	12	12	13	11	11	11	11	11	22	13
12	11	11	11	11	11	11	11	11	11	12	15	20	31	30	25	25	23	20	18	17	14	12	11	11	11	31	16
13	11	11	11	11	11	14	18	21	16	15	19	35	85	86	35	27	24	20	18	31	16	12	12	11	11	86	24
14	11	13	11	11	11	11	13	18	24	27	48	99	106	88	38	35	31	27	26	26	28	21	18	24	11	106	32
15	28	30	31	32	32	33	38	38	37	37	40	45	102	102	91	46	39	34	31	28	26	26	22	25	22	102	41
16	27	28	28	30	28	33	29	29	31	31	31	31	33	36	35	32	31	29	27	25	21	19	17	18	17	36	28
17	19	17	18	17	16	20	15	18	16	18	19	21	25	24	20	19	18	17	13	12	12	12	13	12	12	25	17
18	13	12	11	11	11	11	12	12	14	20	20	19	21	21	22	20	18	16	14	13	11	11	11	11	11	22	15
19	11	12	12	12	11	13	19	23	22	22	22	24	27	30	30	30	27	25	21	21	22	21	17	17	11	30	20
20	17	19	19	20	23	30	27	43	51	50	79	116	113	89	52	51	49	44	45	42	39	39	38	37	17	116	47
21	36	36	33	33	38	35	41	76	68	79	119	119	80	103	91	47	47	45	41	39	39	38	37	34	33	119	56
22	34	32	33	46	37	38	39	47	49	60	78	48	54	59	58	58	73	55	50	53	47	47	51	58	32	78	50
23	55	54	56	57	56	57	45	38	40	46	56	84	118	284	282	154	253	229	30	24	40	30	24	52	24	284	90
24	106	72	78	34	32	39	53	52	26	95	261	352	172	83	64	130	53	38	146	30	38	99	139	125	26	352	97
25	46	221	336	150	125	48	44	43	27	27	24	25	29	49	53	26	22	31	31	31	17	17	29	16	16	336	61
26	18	30	23	16	12	13	16	28	31	30	33	34	35	38	34	32	31	32	24	21	17	14	13	13	12	38	25
27	13	13	14	13	13	16	17	19	20	22	24	27	30	29	26	26	27	25	22	21	19	15	17	18	13	30	20
28	27	33	42	39	36	29	28	30	32	33	32	37	41	41	38	35	33	29	26	23	21	20	18	17	17	42	31
29	17	17	19	17	25	24	31	35	48	92	189	222	249	179	204	212	146	113	127	140	127	114	67	65	17	249	103
30	58	39	34	33	64	57	76	134	282	428	403	334	186	209	226	180	129	81	87	65	45	53	77	47	33	428	139
Min	10	10	10	10	10	10	11	11	11	11	10	11	10	11	11	10	10	10	10	10	10	10	10	10	10		
Max	106	221	336	150	125	57	76	134	282	428	403	352	249	284	282	212	253	229	146	140	127	114	139	125		428	
Avg	24	28	32	25	25	23	26	31	36	46	59	65	60	61	55	47	42	36	32	27	25	26	26	27			37

Total Data Records Possible: 720
Total Valid Data Records: 720
Percent Data Recovery: 100.0

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Blue Diamond (21)
Units: ug/m3
Channel: 6

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:10
Output File Name: PM1B0705.6

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	48	33	29	27	40	65	61	50	73	108	141	108	85	73	114	106	74	42	36	28	25	26	24	27	24	141	60
2	29	28	30	30	30	30	37	40	48	46	77	106	114	112	106	93	42	38	28	25	25	31	32	30	25	114	50
3	30	29	26	28	27	28	33	44	44	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	26	44	32
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	29	28	26	27	27	28	33	40	44	46	77	106	85	73	106	93	42	38	28	25	25	26	24	27	24		
Max	48	33	30	30	40	65	61	50	73	108	141	108	114	112	114	106	74	42	36	28	25	31	32	30		141	
Avg	36	30	28	28	32	41	44	45	55	77	109	107	100	93	110	100	58	40	32	27	25	29	28	29			52

Total Data Records Possible: 744
Total Valid Data Records: 57
Percent Data Recovery: 7.7

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Speedway (31)
Validation Level: B

Variable: Speedway (31)
Units: ug/m3
Channel: 7

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:00
Output File Name: PM1B0405.7

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	14	17	18	15	15	15	14	13	13	13	13	13	12	15	16	12	18	14
20	16	15	15	15	17	18	26	19	13	14	14	14	14	15	15	14	14	13	14	61	18	19	23	26	13	61	18
21	18	19	20	25	36	38	37	38	27	17	18	18	17	16	16	17	16	16	14	15	21	30	31	26	14	38	23
22	22	23	21	25	23	39	41	36	38	45	21	23	21	22	23	19	19	22	21	22	21	27	23	21	19	45	26
23	22	22	22	22	24	45	26	23	21	18	18	18	17	16	16	17	17	17	18	20	30	16	15	15	15	45	21
24	14	14	24	22	21	18	18	18	20	22	22	23	22	22	21	22	19	15	17	18	20	19	18	17	14	24	19
25	17	17	19	20	22	26	27	28	22	22	22	23	23	25	26	25	23	21	23	15	13	15	13	14	13	28	21
26	13	14	13	14	21	22	25	15	15	15	14	12	13	11	11	11	12	12	11	12	18	13	11	13	11	25	14
27	14	14	16	20	23	30	31	29	27	28	29	30	28	31	33	31	31	32	34	38	34	22	24	20	14	38	27
28	21	24	22	18	19	21	22	20	22	22	15	18	19	18	17	16	16	16	13	12	11	11	12	13	11	24	17
29	13	16	17	29	21	41	20	16	17	14	15	15	12	12	13	15	17	15	14	13	14	14	15	15	12	41	17
30	14	15	15	15	21	25	19	19	16	15	15	15	15	15	15	16	17	17	20	21	20	19	19	20	14	25	17
Min	13	14	13	14	17	18	18	15	13	14	14	12	12	11	11	11	12	12	11	12	11	11	11	13	11		
Max	22	24	24	29	36	45	41	38	38	45	29	30	28	31	33	31	31	32	34	61	34	30	31	26		61	
Avg	17	18	19	20	23	29	27	24	22	21	18	19	18	18	18	18	18	17	18	22	19	18	18	18			20

Total Data Records Possible: 720
Total Valid Data Records: 279
Percent Data Recovery: 38.8

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Speedway (31)
Units: ug/m3
Channel: 7

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:03
Output File Name: PM1B0505.7

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	19	18	19	19	20	20	21	21	20	20	21	21	23	25	24	24	23	21	20	17	24	18	15	14	14	25	20
2	14	13	13	13	14	14	20	15	16	18	16	17	16	17	20	23	31	20	15	14	13	14	15	15	13	31	17
3	15	16	18	29	26	20	23	18	15	16	15	14	15	18	18	18	19	20	20	19	18	16	15	16	14	29	18
4	16	16	18	20	29	43	32	24	23	23	20	18	19	19	19	22	24	26	27	27	27	28	28	29	16	43	24
5	28	27	27	28	49	41	47	42	42	39	33	28	27	27	30	29	41	29	25	24	26	26	19	16	16	49	31
6	16	19	27	15	15	18	17	17	17	18	18	18	17	18	16	17	15	14	18	15	15	13	12	11	11	27	17
7	11	11	16	17	17	19	19	17	17	21	19	19	19	19	19	19	18	17	16	16	17	17	19	20	11	21	17
8	18	17	17	17	16	17	19	18	28	18	18	18	19	21	20	21	23	24	24	25	24	20	20	29	16	29	20
9	41	43	40	38	41	44	51	57	39	31	29	32	30	28	28	27	26	26	32	29	31	22	33	26	22	57	34
10	20	20	19	18	19	18	18	22	15	16	17	16	16	18	16	16	16	19	15	12	13	12	12	12	12	22	16
11	13	13	14	20	28	39	28	16	13	14	16	17	19	18	17	15	15	13	12	11	13	15	14	14	11	39	17
12	11	11	11	11	33	23	33	18	17	17	16	16	15	13	12	14	14	14	22	14	13	13	14	12	11	33	16
13	14	14	14	18	19	23	19	18	21	23	22	19	17	20	18	19	19	19	22	22	22	19	19	22	14	23	19
14	28	37	20	18	18	20	19	20	22	23	21	19	19	19	18	18	19	20	21	30	25	22	20	20	18	37	22
15	23	27	27	28	24	22	25	23	23	22	19	18	45	25	57	23	22	23	23	30	30	30	33	33	18	57	27
16	32	32	34	30	25	25	31	29	36	37	29	33	36	37	55	44	38	29	39	27	27	30	22	18	18	55	32
17	13	12	13	13	18	17	20	16	18	19	19	20	20	22	22	24	25	23	20	22	40	47	53	17	12	53	22
18	16	15	16	19	-980	-980	-980	-980	-980	-980	-980	23	20	32	20	23	25	25	21	19	17	26	14	12	12	32	20
19	11	11	17	21	30	59	54	28	24	21	19	19	16	19	17	17	18	18	20	20	20	18	18	17	11	59	22
20	15	13	11	11	71	104	49	24	26	21	17	20	27	23	19	19	18	18	21	21	21	19	18	17	11	104	26
21	16	16	15	14	15	32	36	32	23	21	20	31	21	23	26	25	38	21	22	37	25	27	29	29	14	38	25
22	31	29	25	25	25	29	32	35	29	25	34	29	30	31	30	29	40	23	24	25	28	31	31	31	23	40	29
23	30	29	27	106	88	72	37	36	30	28	45	34	34	35	29	33	17	19	21	26	25	24	25	24	17	106	36
24	26	26	23	34	59	87	42	33	29	30	23	47	29	32	28	29	17	18	20	22	22	22	23	27	17	87	31
25	24	25	24	24	37	37	42	27	30	28	27	30	39	27	26	25	35	21	37	42	37	35	25	33	21	42	31
26	25	22	21	21	29	23	26	27	30	28	27	48	29	28	27	28	39	20	28	91	55	29	49	37	20	91	33
27	25	32	21	24	36	35	38	32	30	23	25	40	30	30	36	41	34	25	31	32	27	29	30	24	21	41	30
28	24	24	40	40	40	38	36	35	34	34	33	31	29	29	29	29	31	32	34	35	32	31	30	33	24	40	33
29	35	35	35	34	31	31	30	29	28	28	34	36	69	79	66	55	43	49	45	43	32	26	26	34	26	79	40
30	36	24	20	20	21	23	23	21	22	21	19	30	18	19	19	19	21	23	24	25	25	25	23	18	18	36	22
31	19	18	17	17	23	24	41	36	27	20	17	27	41	24	27	41	22	22	22	22	21	31	33	57	17	57	27
Min	11	11	11	11	14	14	17	15	13	14	15	14	15	13	12	14	14	13	12	11	13	12	12	11	11		
Max	41	43	40	106	88	104	54	57	42	39	45	48	69	79	66	55	43	49	45	91	55	47	53	57		106	
Avg	21	21	21	25	31	34	31	26	25	23	23	25	26	26	26	25	25	22	24	26	25	24	24	23			25

Total Data Records Possible: 744
Total Valid Data Records: 737
Percent Data Recovery: 99.1

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Speedway (31)
Units: ug/m3
Channel: 7

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:07
Output File Name: PM1B0605.7

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	22	36	76	53	55	64	47	38	33	30	34	29	26	29	32	28	29	31	31	35	34	34	36	45	22	76	38
2	44	45	43	56	56	51	51	48	45	44	43	38	32	33	35	34	36	37	37	42	42	40	39	76	32	76	44
3	151	91	26	21	25	26	25	23	28	26	23	21	22	20	20	20	22	22	23	23	30	37	36	43	20	151	34
4	38	39	49	48	51	53	47	44	40	36	36	29	24	21	22	22	26	24	25	26	26	27	29	29	21	53	34
5	26	25	28	29	31	32	38	43	43	44	45	42	36	35	36	37	35	37	35	40	44	45	38	34	25	45	37
6	36	41	34	33	34	36	39	80	40	46	38	36	35	30	31	33	33	30	31	28	30	32	36	31	28	80	36
7	31	29	41	50	45	58	55	33	32	33	30	27	27	31	34	31	32	28	29	30	32	33	35	33	27	58	35
8	31	27	25	27	26	30	33	32	32	29	30	30	27	26	24	24	24	26	25	23	24	27	28	29	26	23	33	28
9	23	20	21	21	26	58	29	26	26	18	18	17	17	23	17	17	18	18	20	19	19	19	18	15	15	58	22
10	14	14	14	14	16	24	26	25	21	18	16	14	14	15	18	20	22	25	24	19	18	19	18	16	14	26	19
11	16	13	14	14	13	16	17	24	21	19	18	17	17	18	20	20	20	41	22	20	19	20	19	19	13	41	19
12	17	16	19	21	21	23	24	23	19	16	15	15	35	28	51	45	24	29	31	32	34	32	31	29	15	51	26
13	30	45	56	35	26	23	23	31	26	24	22	23	31	29	25	51	25	19	20	35	60	27	28	24	19	60	31
14	25	35	39	35	27	36	30	23	31	27	19	34	29	30	29	37	34	23	24	26	27	30	30	32	19	39	30
15	27	29	35	86	66	57	45	41	71	42	37	53	76	74	73	38	30	32	31	30	29	29	29	32	27	86	46
16	32	33	34	51	91	56	38	42	33	33	29	31	30	25	26	28	29	29	27	28	30	28	26	26	25	91	35
17	27	29	30	26	26	24	42	44	39	20	19	21	26	34	28	26	25	23	22	19	19	22	20	22	19	44	26
18	22	23	23	21	19	20	20	18	17	23	19	16	15	16	16	16	17	17	17	19	19	20	19	20	15	23	19
19	21	19	19	20	19	21	19	18	20	19	18	39	63	50	15	18	20	20	22	26	25	26	26	34	15	63	25
20	35	29	33	38	43	78	64	81	36	31	29	55	40	42	61	44	39	37	40	43	47	47	51	60	29	81	46
21	55	49	48	47	51	103	84	57	48	47	58	46	44	40	42	41	57	32	34	39	40	43	47	63	32	103	51
22	65	49	49	49	48	70	63	46	48	45	45	38	41	46	39	42	47	46	48	45	40	34	37	43	34	70	47
23	41	46	49	46	50	53	38	35	35	38	40	73	51	50	69	154	135	80	26	25	32	40	41	57	25	154	54
24	77	76	144	169	176	189	165	115	62	92	128	149	134	191	243	50	91	97	47	78	40	35	68	73	35	243	112
25	49	62	37	32	24	23	20	18	17	18	18	17	17	22	31	31	21	28	25	28	35	26	19	23	17	62	27
26	26	27	22	24	26	25	24	26	27	25	21	46	37	32	32	41	21	22	24	29	26	26	27	25	21	46	28
27	20	20	20	46	55	51	47	24	24	22	17	17	18	16	14	14	15	17	20	22	26	37	27	29	14	55	26
28	28	28	29	32	36	45	38	32	29	27	25	25	25	26	28	26	26	26	24	27	26	30	30	33	24	45	29
29	28	28	29	32	43	51	44	132	151	225	192	192	235	197	190	247	273	261	236	185	226	231	289	257	28	289	166
30	251	222	188	197	186	176	179	173	254	351	329	243	116	89	96	123	139	160	182	187	170	168	171	87	87	351	185
Min	14	13	14	14	13	16	17	18	17	16	15	14	14	15	14	14	15	17	17	19	18	19	18	15	13		
Max	251	222	188	197	186	189	179	173	254	351	329	243	235	197	243	247	273	261	236	187	226	231	289	257		351	
Avg	44	42	42	46	47	52	47	47	45	49	47	48	45	44	47	45	46	44	40	41	42	42	45	45			45

Total Data Records Possible: 720
Total Valid Data Records: 720
Percent Data Recovery: 100.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Speedway (31)
Units: ug/m3
Channel: 7

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:10
Output File Name: PM1B0705.7

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	135	72	68	53	67	66	65	71	67	31	49	38	36	38	33	33	46	21	23	25	24	26	26	30	21	135	48
2	27	27	28	28	96	51	28	32	31	31	31	54	40	40	38	59	30	25	28	26	27	33	27	35	25	96	36
3	38	37	38	39	40	38	41	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	37	41	39
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	27	27	28	28	40	38	28	32	31	31	31	38	36	38	33	33	30	21	23	25	24	26	26	30	21		
Max	135	72	68	53	96	66	65	71	67	31	49	54	40	40	38	59	46	25	28	26	27	33	27	35		135	
Avg	67	45	45	40	68	52	45	52	49	31	40	46	38	39	36	46	38	23	26	26	26	30	27	33			42

Total Data Records Possible: 744
Total Valid Data Records: 55
Percent Data Recovery: 7.4

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Mountain Crest (43)
Validation Level: B

Variable: Mountain Crest (43)
Units: ug/m3
Channel: 8

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:00
Output File Name: PM1B0405.8

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	53	19	25	16	18	15	15	14	14	13	13	22	20	21	51	47	37	13	53	24
21	24	20	23	23	22	26	34	41	24	22	20	19	20	19	18	18	19	19	27	78	85	57	57	113	18	113	35
22	57	29	41	33	47	69	91	64	36	43	40	28	24	23	24	24	25	26	24	19	23	21	18	22	18	91	35
23	23	27	26	27	29	48	40	34	29	25	20	20	20	19	17	16	18	18	19	21	19	20	18	17	16	48	24
24	17	20	23	20	19	23	24	21	22	23	25	24	27	23	23	21	18	15	16	18	20	18	18	25	15	27	21
25	28	32	20	22	28	59	62	26	27	29	28	22	22	19	19	18	22	22	28	17	18	18	18	22	17	62	26
26	23	20	23	35	44	35	36	15	21	19	16	16	16	15	16	16	16	17	19	25	26	20	17	19	15	44	22
27	21	22	23	42	34	38	42	46	45	33	29	38	30	31	30	29	29	31	35	39	29	20	17	16	16	46	31
28	15	16	17	18	21	26	31	25	17	16	16	15	12	13	17	15	16	14	13	12	11	11	11	11	11	31	16
29	11	11	11	12	12	16	16	17	16	15	15	15	17	16	16	16	15	15	16	19	16	23	18	17	11	23	15
30	18	18	18	18	20	26	22	20	23	29	25	18	16	16	16	18	16	17	22	17	21	24	21	22	16	29	20
Min	11	11	11	12	12	16	16	15	16	15	15	15	12	13	14	14	13	13	13	12	11	11	11	11	11		
Max	57	32	41	42	47	69	91	64	45	43	40	38	30	31	30	29	29	31	35	78	85	57	57	113		113	
Avg	24	22	23	25	28	37	40	33	25	25	23	21	20	19	19	19	19	19	22	26	26	26	24	29			25

Total Data Records Possible: 720
Total Valid Data Records: 257
Percent Data Recovery: 35.7

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Mountain Crest (43)
Units: ug/m3
Channel: 8

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:03
Output File Name: PM1B0505.8

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	22	19	20	27	26	30	27	30	28	23	22	22	21	22	24	24	22	22	21	19	18	20	17	18	17	30	23
2	18	19	17	67	135	49	27	22	17	17	20	20	22	22	22	54	34	21	15	15	14	15	15	14	14	135	29
3	14	14	14	14	15	20	20	19	23	26	20	21	20	20	18	18	20	20	21	24	24	24	84	93	14	93	25
4	28	33	24	35	30	40	62	26	26	28	28	25	26	25	24	24	26	28	29	31	32	33	31	32	24	62	30
5	34	31	34	35	41	56	66	58	35	29	28	33	36	26	30	31	28	25	22	23	25	22	16	14	14	66	32
6	14	14	13	13	17	22	24	23	19	18	19	14	15	15	14	13	12	14	15	10	10	10	9	9	9	24	15
7	10	16	18	19	14	21	17	16	16	16	16	18	18	22	16	16	15	16	22	21	24	21	22	28	10	28	18
8	22	20	17	17	22	23	20	21	25	30	23	22	26	25	21	21	23	23	24	25	23	24	41	45	17	45	24
9	44	45	42	42	43	48	51	49	39	33	31	32	35	27	22	22	23	24	28	22	17	16	18	25	16	51	32
10	17	16	16	16	17	18	19	23	29	38	33	29	20	27	17	15	15	15	18	19	11	11	11	10	10	38	19
11	10	10	10	10	15	16	24	28	15	13	13	15	14	18	18	16	13	12	14	26	19	28	10	9	9	28	16
12	9	9	9	9	11	12	19	21	24	19	15	15	16	22	16	13	14	15	15	17	21	30	51	74	9	74	20
13	46	34	24	16	20	28	27	22	19	21	24	22	23	25	26	25	29	24	29	35	64	75	99	78	16	99	35
14	26	35	39	30	32	39	37	29	26	26	27	27	24	27	26	25	25	24	44	46	39	34	35	32	24	46	31
15	26	27	29	33	38	33	28	25	26	27	30	31	30	30	29	30	30	31	30	35	34	35	34	34	25	38	31
16	32	35	38	37	33	34	32	27	24	26	30	29	34	36	41	57	38	54	41	29	37	26	19	17	17	57	34
17	15	15	14	16	19	20	21	19	19	19	19	24	21	23	26	27	29	30	33	32	36	46	45	32	14	46	25
18	28	28	27	26	34	63	36	33	36	28	28	26	25	26	24	24	22	16	17	19	19	17	14	14	14	63	26
19	15	16	15	15	17	28	32	32	30	22	19	18	18	19	18	17	18	17	17	17	22	23	14	19	14	32	20
20	18	19	17	19	22	31	28	36	29	30	19	18	18	17	17	17	17	16	17	17	17	17	16	21	16	36	21
21	20	21	19	19	20	21	19	22	22	19	21	22	22	47	43	27	25	24	26	35	31	28	27	24	19	47	25
22	23	28	30	28	33	28	25	26	28	32	34	62	86	55	53	29	26	24	27	31	33	35	45	39	23	86	36
23	53	54	45	41	51	68	58	39	38	33	34	68	63	49	38	21	21	22	23	24	27	28	28	50	21	68	41
24	36	24	25	27	30	27	30	31	31	33	29	38	47	71	42	19	19	30	22	27	26	22	23	21	19	71	30
25	24	27	25	20	23	30	28	24	29	28	28	28	28	60	43	26	26	27	37	58	86	111	60	73	20	111	40
26	45	29	23	20	22	41	33	31	30	31	28	29	32	62	53	29	27	26	35	65	72	48	71	55	20	72	39
27	35	35	35	37	40	53	45	44	32	28	29	33	35	62	49	31	30	27	29	27	29	36	28	25	25	62	36
28	28	30	24	27	39	45	38	41	42	39	46	38	36	35	35	34	32	31	33	37	41	33	32	30	24	46	35
29	30	31	32	40	38	31	29	30	31	32	33	30	35	35	39	35	34	31	24	25	26	28	27	48	24	48	32
30	48	37	29	21	18	17	17	20	22	22	20	20	21	20	19	15	15	14	19	23	26	20	23	24	14	48	22
31	17	19	36	16	17	21	21	19	17	17	18	20	21	23	22	20	20	20	19	18	16	22	21	21	16	36	20
Min	9	9	9	9	11	12	17	16	15	13	13	14	14	15	14	13	12	12	14	10	10	10	9	9	9		
Max	53	54	45	67	135	68	66	58	42	39	46	68	86	71	53	57	38	54	44	65	86	111	99	93		135	
Avg	26	25	25	26	30	33	31	29	27	26	25	27	29	32	29	25	23	23	25	27	30	30	32	33			28

Total Data Records Possible: 744
Total Valid Data Records: 744
Percent Data Recovery: 100.0

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Mountain Crest (43)
Units: ug/m3
Channel: 8

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:07
Output File Name: PM1B0605.8

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	37	22	19	20	25	31	30	41	40	39	27	25	24	25	26	24	24	24	24	24	24	24	27	31	19	41	27
2	32	34	35	39	39	41	43	43	40	41	39	41	31	27	24	25	31	30	28	29	29	28	21	20	20	43	33
3	31	30	15	16	24	20	23	27	20	18	15	17	16	18	16	15	15	14	16	21	16	19	24	32	14	32	20
4	32	22	23	25	28	35	35	32	35	31	30	28	24	22	19	21	24	20	19	20	18	18	20	24	18	35	25
5	25	22	20	20	25	24	27	26	25	27	29	31	28	29	28	27	26	26	27	26	22	21	19	19	19	31	25
6	18	18	17	19	21	21	20	23	23	25	25	25	25	23	21	20	19	17	15	15	16	16	15	15	15	25	20
7	16	15	22	17	15	15	16	17	16	14	16	18	19	24	25	22	20	16	16	18	19	18	22	28	14	28	19
8	26	24	20	18	23	23	23	27	31	26	26	26	25	26	25	26	23	17	17	18	19	20	27	13	13	31	23
9	14	17	14	11	11	13	-960	-960	15	17	18	17	16	17	21	26	15	14	16	24	14	13	14	15	11	26	16
10	15	11	11	14	30	38	39	18	15	18	22	23	24	24	24	22	24	23	26	24	20	33	56	19	11	56	24
11	21	14	9	9	11	9	13	18	17	14	17	23	21	20	20	18	17	16	18	17	15	14	13	16	9	23	16
12	16	18	16	16	19	25	27	15	16	19	24	27	48	78	63	25	24	25	27	42	35	30	29	19	15	78	28
13	28	31	27	30	25	20	20	21	18	23	23	54	91	59	51	32	23	24	25	39	114	62	82	94	18	114	42
14	55	19	18	66	95	89	23	19	24	23	24	68	56	49	58	25	23	22	22	22	24	23	22	22	18	95	37
15	27	28	28	33	42	45	51	55	53	37	37	47	94	71	56	43	28	27	28	27	28	28	25	25	25	94	40
16	26	29	32	35	42	48	42	38	41	35	29	25	24	25	30	23	23	23	24	24	24	21	20	21	20	48	29
17	18	19	19	29	24	16	14	19	14	17	18	18	19	21	23	19	18	17	15	15	17	16	15	13	13	29	18
18	12	13	12	20	19	15	14	11	16	15	15	18	19	19	19	18	15	14	14	14	14	15	14	18	11	20	16
19	22	23	23	20	20	22	27	21	22	24	23	22	23	58	89	21	20	19	19	20	26	24	26	29	19	89	27
20	27	27	29	29	100	72	37	38	38	37	39	40	39	41	41	37	35	34	35	37	36	49	57	42	27	100	42
21	49	42	48	57	60	143	83	66	51	56	95	62	62	60	74	46	33	33	32	38	44	85	74	64	32	143	61
22	65	51	41	49	50	55	58	61	72	47	44	40	38	44	44	46	42	49	105	85	42	40	38	34	34	105	52
23	32	37	37	41	34	32	30	34	35	35	43	79	47	49	60	71	26	21	22	28	52	33	31	49	21	79	40
24	31	41	45	42	50	47	55	54	48	44	83	178	242	201	143	32	19	19	19	21	27	41	23	25	19	242	64
25	31	24	25	41	56	91	68	35	22	46	36	44	30	27	26	17	16	16	15	17	22	16	23	17	15	91	32
26	19	17	17	21	22	19	15	17	22	23	23	53	88	98	97	24	22	22	22	21	21	19	17	21	15	98	31
27	22	23	23	22	29	34	40	44	36	23	20	40	80	67	53	18	16	18	19	19	21	33	28	34	16	80	32
28	24	21	22	27	35	48	55	44	44	40	38	97	61	61	51	45	25	24	25	36	33	42	26	36	21	97	40
29	35	39	22	21	21	25	32	31	23	63	135	182	198	148	128	146	112	115	137	181	225	175	174	155	21	225	105
30	116	103	101	103	75	113	125	103	102	179	297	284	193	138	122	166	103	90	100	133	159	116	157	157	75	297	139
Min	12	11	9	9	11	9	13	11	14	14	15	17	16	17	16	15	15	14	14	14	14	13	13	13	9		
Max	116	103	101	103	100	143	125	103	102	179	297	284	242	201	143	166	112	115	137	181	225	175	174	157		297	
Avg	31	28	26	30	36	41	37	34	32	35	44	55	57	52	49	37	29	28	31	35	39	36	38	37			37

Total Data Records Possible: 720
Total Valid Data Records: 718
Percent Data Recovery: 99.7

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Mountain Crest (43)
Units: ug/m3
Channel: 8

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:11
Output File Name: PM1B0705.8

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	111	100	98	107	122	111	84	62	46	46	94	74	66	60	57	60	31	27	29	38	34	36	36	42	27	122	65
2	31	32	32	32	36	38	38	36	42	41	87	58	56	54	57	65	32	29	36	-910	-910	-910	-910	-910	29	87	44
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	31	32	32	32	36	38	38	36	42	41	87	58	56	54	57	60	31	27	29	38	34	36	36	42	27		
Max	111	100	98	107	122	111	84	62	46	46	94	74	66	60	57	65	32	29	36	38	34	36	36	42		122	
Avg	71	66	65	70	79	75	61	49	44	44	91	66	61	57	57	63	32	28	33	38	34	36	36	42			56

Total Data Records Possible: 744
Total Valid Data Records: 43
Percent Data Recovery: 5.8

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

North Las Vegas Airport (52)
Validation Level: B

Variable: North Las Vegas Airport (52)
Units: ug/m3
Channel: 9

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:00
Output File Name: PM1B0405.9

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	26	25	28	25	27	25	26	26	33	25	33	27
19	40	33	33	24	28	29	20	19	13	15	13	14	14	12	11	11	10	10	10	9	9	10	10	10	9	40	17
20	11	7	7	7	10	18	27	12	11	12	13	13	14	14	14	12	10	9	10	15	16	16	12	12	7	27	13
21	13	11	13	18	23	21	31	18	15	13	15	16	16	16	16	16	15	13	14	26	35	31	28	17	11	35	19
22	14	20	16	13	27	37	35	30	44	51	25	16	15	15	17	17	16	14	15	12	16	16	12	12	12	51	21
23	15	21	21	23	24	23	29	20	18	17	16	15	14	11	10	9	10	11	12	23	10	11	10	9	9	29	16
24	8	8	9	11	13	16	16	13	15	19	19	19	17	16	17	15	11	12	9	11	13	12	12	13	8	19	14
25	10	10	13	15	21	26	29	27	22	25	24	23	22	23	15	14	16	15	15	9	9	7	9	11	7	29	17
26	11	12	15	18	31	18	11	19	16	11	11	11	11	11	11	12	11	10	9	10	12	15	10	12	9	31	13
27	18	17	15	16	21	35	46	32	29	26	31	32	43	52	45	30	33	36	28	29	20	11	9	8	8	52	28
28	10	13	13	14	16	27	24	17	17	11	17	19	18	18	17	14	11	10	10	12	11	9	9	10	9	27	14
29	10	12	13	14	23	24	38	35	24	19	14	16	17	14	13	12	12	10	8	8	11	19	15	21	8	38	17
30	24	21	20	19	26	22	24	29	26	24	14	13	12	13	14	12	12	12	9	9	10	12	14	14	9	29	17
Min	8	7	7	7	10	16	11	12	11	11	11	11	11	11	10	9	10	9	8	8	9	7	9	8	7		
Max	40	33	33	24	31	37	46	35	44	51	31	32	43	52	45	30	33	36	28	29	35	31	28	33		52	
Avg	15	15	16	16	22	25	28	23	21	20	18	17	18	18	17	15	15	15	13	15	15	15	14	14			17

Total Data Records Possible: 720
Total Valid Data Records: 297
Percent Data Recovery: 41.3

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: North Las Vegas Airport (52)
Units: ug/m3
Channel: 9

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:04
Output File Name: PM1B0505.9

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	16	15	17	19	22	23	25	24	24	22	22	21	17	17	17	16	13	11	10	11	9	16	8	9	8	25	17
2	11	15	15	13	19	23	20	23	18	14	12	12	15	15	15	14	29	9	7	9	8	9	12	14	7	29	15
3	13	12	11	10	10	14	16	18	18	16	13	13	15	15	13	11	9	8	8	14	17	16	19	22	8	22	14
4	17	16	24	20	24	21	26	32	27	23	17	16	17	16	15	14	18	16	18	22	25	25	23	34	14	34	21
5	26	29	30	30	48	52	47	42	40	28	30	31	66	30	22	32	66	18	17	19	20	19	13	11	11	66	32
6	9	9	7	7	8	9	16	15	16	23	22	12	16	10	12	11	8	8	13	9	7	6	5	5	5	23	11
7	5	6	9	11	10	11	14	15	16	19	12	12	11	9	8	8	6	5	7	11	12	17	19	16	5	19	11
8	12	12	12	12	10	14	15	24	31	21	21	15	10	12	12	12	12	12	17	18	21	20	26	35	10	35	17
9	37	36	32	35	42	45	45	41	34	28	30	77	44	42	21	21	15	15	24	15	17	11	12	18	11	77	31
10	20	11	10	10	11	14	12	13	14	16	21	19	20	22	17	14	13	15	14	11	7	7	7	6	6	22	14
11	6	5	6	11	9	8	9	12	14	13	15	13	11	11	8	6	7	9	10	12	15	14	8	6	5	15	10
12	5	6	6	6	9	16	12	17	15	20	16	14	12	10	8	8	7	6	8	12	18	20	15	27	5	27	12
13	40	30	19	25	18	19	21	25	18	23	19	18	16	16	15	11	10	12	13	15	21	33	38	42	10	42	22
14	34	25	22	26	28	27	25	26	26	23	19	18	18	17	16	15	15	12	13	19	33	38	33	28	12	38	23
15	32	32	27	25	23	20	23	26	25	24	18	19	18	18	18	18	21	19	17	22	29	34	28	28	17	34	24
16	25	24	30	26	25	29	45	21	27	31	31	83	52	144	235	93	30	43	36	24	20	23	12	9	9	235	47
17	9	9	9	9	15	16	17	27	16	17	15	19	11	11	14	15	16	17	18	18	20	23	25	23	9	27	16
18	25	23	22	25	31	28	49	30	26	22	20	21	14	12	11	11	15	10	9	14	14	14	11	9	9	49	19
19	9	10	9	10	15	14	38	23	18	14	15	13	8	9	11	15	9	13	15	13	14	10	9	9	8	38	13
20	9	8	10	16	25	24	38	36	27	23	14	26	26	35	13	15	13	10	13	16	12	11	13	12	8	38	19
21	10	10	15	14	27	28	17	16	18	18	16	14	37	16	16	15	14	17	20	24	23	28	23	24	10	37	19
22	20	17	17	19	19	21	22	25	28	27	25	24	45	26	23	19	17	14	19	25	23	23	22	24	14	45	23
23	28	27	23	27	42	41	38	40	34	29	29	38	26	27	18	12	13	18	19	17	21	19	20	23	12	42	26
24	18	23	24	25	35	28	38	40	36	31	28	16	15	11	16	21	18	19	16	16	18	25	22	13	11	40	23
25	15	16	17	16	21	21	24	21	25	23	22	23	25	23	18	18	21	24	22	26	46	45	42	25	15	46	24
26	19	21	24	22	38	46	24	29	32	25	22	26	24	20	20	21	21	22	24	30	45	30	36	30	19	46	27
27	23	25	26	26	44	39	35	27	29	24	27	28	21	22	23	20	25	27	24	26	29	30	25	17	17	44	27
28	14	15	14	23	31	38	36	37	33	34	32	33	30	31	30	31	30	37	30	30	31	30	29	30	14	38	30
29	28	28	30	29	29	28	28	27	28	30	32	49	265	124	64	58	63	47	28	24	23	21	21	40	21	265	48
30	59	44	21	19	19	18	17	17	17	17	20	20	20	20	19	20	19	18	18	20	25	18	23	26	17	59	22
31	19	13	16	19	22	30	22	24	19	21	22	24	24	24	24	22	23	21	20	20	20	25	26	23	13	30	22
Min	5	5	6	6	8	8	9	12	14	13	12	12	8	9	8	6	6	5	7	9	7	6	5	5	5		
Max	59	44	32	35	48	52	49	42	40	34	32	83	265	144	235	93	66	47	36	30	46	45	42	42		265	
Avg	20	18	18	19	24	25	26	26	24	23	21	25	31	26	25	20	19	17	17	18	21	21	20	21			22

Total Data Records Possible: 744
Total Valid Data Records: 744
Percent Data Recovery: 100.0

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: North Las Vegas Airport (52)
Units: ug/m3
Channel: 9

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:07
Output File Name: PM1BO605.9

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	24	27	28	28	30	33	-910	48	44	33	47	28	33	37	43	52	34	29	26	25	26	28	30	33	24	52	33
2	38	35	38	37	46	52	49	49	51	48	46	45	32	33	35	39	50	43	35	39	33	32	30	21	21	52	40
3	30	34	19	18	29	27	24	16	18	17	20	20	20	21	20	20	18	18	15	34	14	20	25	27	14	34	22
4	30	30	35	29	30	44	39	36	35	31	32	28	27	24	22	23	21	18	17	17	18	23	20	20	17	44	27
5	22	25	24	25	29	33	33	32	30	34	52	37	38	46	66	55	54	52	32	30	30	32	27	22	22	66	36
6	24	29	24	23	33	26	28	29	28	28	30	32	30	32	36	32	71	114	14	11	13	17	17	12	11	114	31
7	15	13	19	17	18	19	20	17	16	15	14	18	20	24	23	21	19	16	14	15	13	13	13	12	12	24	17
8	16	14	10	12	33	22	26	25	24	22	21	20	19	20	20	15	13	10	12	8	10	9	9	11	8	33	17
9	10	13	13	9	8	8	11	8	8	9	8	8	7	10	11	10	6	5	5	7	5	6	6	7	5	13	8
10	9	7	5	5	18	14	15	13	11	14	12	14	13	14	16	17	15	11	9	8	8	8	9	10	5	18	11
11	9	6	5	5	7	6	7	7	8	10	14	16	14	12	14	17	16	13	18	8	6	5	8	7	5	18	10
12	9	8	9	12	12	15	13	11	12	12	13	14	14	15	17	18	19	18	18	19	23	24	22	19	8	24	15
13	13	8	7	7	8	10	12	16	12	14	16	18	18	17	16	15	16	14	14	15	23	22	25	28	7	28	15
14	32	35	26	19	22	37	26	29	22	17	14	14	16	18	16	16	15	15	13	15	15	15	13	13	13	37	20
15	16	22	21	23	34	48	37	36	33	27	27	26	26	23	33	35	25	21	21	19	20	20	18	17	16	48	26
16	18	20	23	25	26	27	27	30	30	28	24	23	21	30	44	22	18	19	17	17	18	17	16	14	14	44	23
17	21	18	15	17	19	22	23	19	35	47	24	44	47	123	79	48	44	24	12	12	10	9	9	10	9	123	30
18	10	10	9	9	9	9	11	11	9	11	14	12	17	13	12	14	9	9	8	7	8	10	15	13	7	17	11
19	11	17	18	13	13	16	16	15	15	16	18	16	16	18	16	16	14	14	12	12	16	16	14	12	11	18	15
20	14	16	19	20	28	36	38	25	36	28	26	28	29	29	31	31	30	27	27	29	34	32	30	31	14	38	28
21	30	28	37	34	35	43	51	45	46	40	41	38	35	34	33	31	28	29	26	30	35	33	35	30	26	51	35
22	29	33	27	32	42	38	51	61	43	39	37	29	32	35	36	31	37	45	100	37	36	32	34	40	27	100	40
23	45	40	39	40	48	51	51	41	30	32	38	40	42	44	51	70	74	28	17	19	24	20	25	24	17	74	39
24	35	40	31	34	42	48	43	35	30	40	87	91	137	104	65	96	99	65	40	22	21	22	25	18	18	137	53
25	24	51	93	98	78	43	17	15	15	17	19	17	22	37	34	40	17	13	10	11	19	12	11	10	10	98	30
26	10	22	16	10	11	12	16	18	19	23	20	22	24	23	22	21	21	28	16	15	14	14	14	13	10	28	18
27	12	12	13	17	19	30	36	34	20	23	19	20	22	21	17	22	15	16	14	13	14	20	20	18	12	36	19
28	21	23	25	28	34	40	39	35	28	27	30	30	42	33	46	28	23	20	18	16	16	13	16	14	13	46	27
29	15	23	25	19	23	20	24	28	77	125	135	137	125	119	113	115	126	136	145	145	166	147	131	124	15	166	93
30	118	103	101	87	76	116	104	87	114	210	280	246	156	84	109	111	93	82	82	98	113	124	123	99	76	280	122
Min	9	6	5	5	7	6	7	7	8	9	8	8	7	10	11	10	6	5	5	7	5	5	6	7	5		
Max	118	103	101	98	78	116	104	87	114	210	280	246	156	123	113	115	126	136	145	145	166	147	131	124		280	
Avg	24	25	26	25	29	32	31	29	30	35	39	38	36	36	37	36	35	32	27	25	27	27	26	24			30

Total Data Records Possible: 720
Total Valid Data Records: 719
Percent Data Recovery: 99.9

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: North Las Vegas Airport (52)
Units: ug/m3
Channel: 9

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:11
Output File Name: PM1B0705.9

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	82	53	56	73	93	67	70	54	52	45	42	42	38	30	29	28	25	23	24	24	26	29	24	21	21	93	44
2	23	32	33	32	33	35	39	40	35	34	31	31	28	26	33	31	28	26	22	18	22	34	29	28	18	40	30
3	26	25	29	34	36	34	25	33	37	36	36	42	32	30	29	28	-910	-910	-910	-910	-910	-910	-910	-910	25	42	32
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	23	25	29	32	33	34	25	33	35	34	31	31	28	26	29	28	25	23	22	18	22	29	24	21	18		
Max	82	53	56	73	93	67	70	54	52	45	42	42	38	30	33	31	28	26	24	24	26	34	29	28		93	
Avg	44	37	39	46	54	45	45	42	41	38	36	38	33	29	30	29	27	25	23	21	24	32	27	25			36

Total Data Records Possible: 744
Total Valid Data Records: 64
Percent Data Recovery: 8.6

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Aliante (64)
Validation Level: B

Variable: Aliante (64)
Units: ug/m3
Channel: 10

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:00
Output File Name: PM1B0405.10

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	9	9	9	10	10	13	15	10	9	8	8	8	15	10
21	7	7	6	6	7	18	24	22	16	13	14	13	12	13	14	13	16	16	21	27	23	19	14	13	6	27	15
22	12	11	10	10	12	28	46	35	28	27	47	33	26	21	20	29	19	21	19	17	18	18	16	16	10	47	22
23	18	18	21	21	20	20	22	25	20	18	17	14	15	14	15	14	14	16	20	24	16	15	11	10	10	25	17
24	9	9	9	10	14	17	13	14	17	18	20	20	20	18	19	19	16	13	13	15	16	15	15	15	9	20	15
25	14	12	12	15	16	27	35	29	27	25	24	28	25	27	20	20	20	19	16	12	12	14	14	16	12	35	20
26	14	10	9	9	9	19	24	18	19	12	10	11	10	10	11	11	13	14	16	16	11	11	14	13	9	24	13
27	13	13	15	16	23	52	37	30	35	38	29	28	29	29	24	27	28	29	34	36	29	17	16	14	13	52	27
28	14	17	17	16	15	27	27	23	20	22	15	13	12	9	12	9	12	11	9	8	6	6	5	5	5	27	14
29	5	5	5	6	11	20	24	22	16	14	13	12	14	14	13	13	14	16	16	19	13	15	16	15	5	24	14
30	15	15	13	10	9	14	20	12	12	12	13	14	14	14	14	14	15	17	21	19	19	23	24	15	9	24	15
Min	5	5	5	6	7	14	13	12	12	12	10	11	10	9	9	9	10	10	9	8	6	6	5	5	5		
Max	18	18	21	21	23	52	46	35	35	38	47	33	29	29	24	29	28	29	34	36	29	23	24	16		52	
Avg	12	12	12	12	14	24	27	23	21	20	20	19	18	16	16	16	16	17	18	19	16	15	14	13			17

Total Data Records Possible: 720
Total Valid Data Records: 251
Percent Data Recovery: 34.9

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Aliante (64)
Units: ug/m3
Channel: 10

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:04
Output File Name: PM1B0505.10

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	18	20	19	18	18	19	20	20	22	21	21	21	18	18	19	19	19	19	19	19	19	14	13	15	13	22	19
2	17	16	14	12	12	19	20	19	16	17	15	15	17	18	20	21	105	19	15	14	13	13	13	13	12	105	20
3	12	10	10	10	13	18	23	24	24	17	15	16	17	16	16	16	17	18	19	19	16	17	16	16	10	24	16
4	15	15	15	15	16	27	39	37	25	21	21	21	24	22	22	21	26	33	30	28	30	34	29	30	15	39	25
5	34	31	30	32	33	47	76	69	42	30	33	37	36	28	25	29	28	23	26	21	21	21	16	12	12	76	33
6	12	11	10	10	11	20	17	20	14	16	17	14	12	12	15	12	11	11	21	9	8	6	5	5	5	21	12
7	5	5	6	6	6	8	10	8	11	9	10	11	14	13	16	45	12	11	9	13	14	16	17	21	5	45	12
8	12	11	8	6	6	7	10	10	12	12	13	12	12	12	12	13	15	17	16	19	17	16	18	33	6	33	13
9	35	34	31	29	33	38	48	49	42	26	24	25	21	19	19	17	16	16	18	16	12	9	10	15	9	49	25
10	11	9	9	7	9	12	21	25	15	20	55	17	28	15	11	9	10	11	20	9	5	6	5	5	5	55	14
11	3	2	2	2	2	4	8	7	5	5	5	5	6	6	8	11	9	8	7	12	9	6	6	5	2	12	6
12	5	5	5	4	6	9	19	15	11	9	7	9	9	9	9	7	9	8	8	11	7	9	14	9	4	19	9
13	8	7	5	8	8	14	26	23	13	15	14	12	13	13	14	14	13	13	12	21	19	22	29	18	5	29	15
14	13	11	12	15	22	17	21	15	13	13	15	14	14	14	14	18	21	22	19	24	22	18	18	16	11	24	17
15	17	17	14	12	13	14	16	14	16	14	14	17	17	17	19	23	27	30	28	26	28	32	32	26	12	32	20
16	23	21	28	26	25	29	35	29	24	26	24	24	51	30	26	21	25	50	33	20	21	25	18	11	11	51	27
17	9	7	7	7	9	14	19	13	9	12	11	22	13	13	15	17	21	21	20	20	19	16	15	15	7	22	14
18	16	14	14	16	20	50	52	38	20	19	19	17	18	18	17	20	24	23	12	19	16	14	17	18	12	52	21
19	15	11	10	10	15	39	32	21	18	20	14	11	15	15	15	20	24	22	20	16	18	13	11	9	9	39	17
20	12	11	11	9	18	41	26	30	20	18	16	16	16	16	18	19	17	16	17	16	12	16	14	15	9	41	18
21	12	12	13	11	13	17	16	19	12	13	12	14	16	18	22	28	32	32	35	34	35	24	25	24	11	35	20
22	21	20	23	24	22	24	26	24	23	22	23	25	25	27	30	36	36	33	30	32	32	29	34	28	20	36	27
23	20	18	18	18	17	27	40	38	37	34	40	36	31	30	27	30	33	31	29	27	28	27	26	24	17	40	29
24	23	20	21	20	33	43	60	34	33	31	27	23	22	26	23	29	30	29	27	25	30	27	19	16	16	60	28
25	15	14	14	16	19	39	59	34	26	23	24	23	24	24	28	34	36	35	36	42	36	30	24	21	14	59	28
26	20	20	21	23	29	58	51	45	59	27	22	24	26	27	31	34	37	34	33	33	29	27	24	25	20	59	32
27	26	24	25	18	31	75	58	41	54	29	24	27	31	31	35	41	45	44	38	35	34	32	23	17	17	75	35
28	16	17	22	33	37	41	34	32	32	32	32	31	32	35	36	39	42	38	37	38	38	36	32	32	16	42	33
29	33	31	33	33	30	32	34	31	29	30	29	34	49	40	40	50	61	44	31	28	30	29	26	66	26	66	36
30	61	47	26	21	19	19	16	16	13	13	14	15	15	17	16	22	25	24	23	23	21	18	16	15	13	61	21
31	13	14	15	12	15	23	27	20	19	21	15	17	20	22	22	30	35	-930	-930	-930	-930	-930	-930	-930	12	35	20
Min	3	2	2	2	2	4	8	7	5	5	5	5	6	6	8	7	9	8	7	9	5	6	5	5	2		
Max	61	47	33	33	37	75	76	69	59	34	55	37	51	40	40	50	105	50	38	42	38	36	34	66		105	
Avg	18	16	16	16	18	27	31	26	23	20	20	20	21	20	21	24	28	25	23	22	21	20	19	19			21

Total Data Records Possible: 744
Total Valid Data Records: 737
Percent Data Recovery: 99.1

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Aliante (64)
Units: ug/m3
Channel: 10

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:07
Output File Name: PM1B0605.10

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
2	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
3	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
4	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
5	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
6	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
7	-930	-930	-930	-930	-930	-930	-930	74	98	77	64	32	21	24	28	35	37	32	24	24	25	23	20	22	20	98	39
8	20	20	21	20	26	58	41	36	31	31	26	24	23	23	25	32	36	29	23	21	21	17	18	21	17	58	27
9	22	21	18	16	19	28	30	28	19	17	25	19	18	13	21	16	15	15	12	12	10	10	15	15	10	30	18
10	14	13	11	10	12	21	22	16	15	16	14	12	13	18	20	24	25	23	22	16	11	11	10	12	10	25	16
11	13	12	16	12	10	12	19	17	11	9	10	12	14	16	19	25	27	28	37	20	15	13	15	17	9	37	17
12	15	22	19	16	16	16	14	13	14	13	14	14	15	19	22	30	34	35	32	33	34	31	27	20	13	35	22
13	17	15	15	14	27	28	41	28	17	18	18	21	20	21	25	31	33	32	27	35	21	22	31	25	14	41	24
14	24	21	19	19	21	30	46	37	38	29	24	21	25	28	33	40	39	36	35	31	31	29	26	26	19	46	30
15	27	26	41	37	37	49	71	54	49	44	43	42	37	37	40	50	55	43	39	41	38	34	30	33	26	71	42
16	33	33	35	35	40	57	54	46	45	47	41	44	45	37	34	32	32	32	31	32	31	27	30	24	24	57	37
17	23	26	23	24	26	30	45	30	25	17	18	22	22	20	28	30	31	38	23	18	18	18	18	17	17	45	25
18	17	17	16	17	16	16	16	17	16	14	17	16	16	17	19	26	28	25	20	20	17	24	18	24	14	28	19
19	24	21	20	18	21	21	19	19	19	20	20	20	20	20	24	31	33	33	29	28	30	30	33	25	18	33	24
20	27	24	36	31	32	48	84	51	57	40	36	41	44	48	48	55	52	46	46	51	52	50	37	43	24	84	45
21	42	44	47	43	48	59	63	71	83	60	59	57	60	59	57	60	58	55	63	58	66	57	47	47	42	83	57
22	46	44	44	54	63	70	87	86	55	55	56	58	56	67	63	62	66	66	77	89	56	42	39	41	39	89	60
23	47	51	53	56	61	62	70	79	52	44	52	59	57	61	68	87	94	40	37	43	33	29	31	33	29	94	54
24	59	72	67	58	82	78	81	52	45	68	145	131	177	144	94	157	73	42	44	46	42	49	34	29	29	177	78
25	28	28	41	57	69	36	40	30	25	27	26	33	48	52	45	51	36	34	14	8	11	14	10	11	8	69	32
26	12	7	4	2	3	6	6	6	6	5	7	9	11	14	18	25	27	26	22	16	14	11	12	11	2	27	12
27	14	7	6	6	9	25	35	32	18	11	11	9	8	9	13	16	17	20	17	18	17	16	21	11	6	35	15
28	13	12	13	15	25	49	65	46	40	27	19	18	17	19	23	30	47	28	25	39	18	17	11	11	11	65	26
29	10	11	7	7	15	27	31	29	35	92	98	151	166	161	146	197	213	218	190	216	237	171	111	84	7	237	109
30	89	75	70	78	73	93	105	107	130	231	294	259	172	98	116	162	179	146	117	146	150	125	86	62	62	294	132
Min	10	7	4	2	3	6	6	6	6	5	7	9	8	9	13	16	15	15	12	8	10	10	10	11	2		
Max	89	75	70	78	82	93	105	107	130	231	294	259	177	161	146	197	213	218	190	216	237	171	111	84		294	
Avg	28	27	28	28	33	40	47	42	39	42	47	47	46	43	43	54	54	47	42	44	42	36	30	28			40

Total Data Records Possible: 720
Total Valid Data Records: 569
Percent Data Recovery: 79.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Aliante (64)
Units: ug/m3
Channel: 10

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:11
Output File Name: PM1B0705.10

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	56	62	61	53	55	58	74	76	42	40	38	35	36	30	33	62	78	51	38	33	43	48	30	26	26	78	48
2	24	23	18	16	22	34	37	19	19	21	23	26	27	26	31	63	71	59	-910	-910	-910	-910	-910	-910	16	71	31
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	24	23	18	16	22	34	37	19	19	21	23	26	27	26	31	62	71	51	38	33	43	48	30	26	16		
Max	56	62	61	53	55	58	74	76	42	40	38	35	36	30	33	63	78	59	38	33	43	48	30	26		78	
Avg	40	43	40	35	39	46	56	48	31	31	31	31	32	28	32	63	75	55	38	33	43	48	30	26			41

Total Data Records Possible: 744
Total Valid Data Records: 42
Percent Data Recovery: 5.6

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Lamb (72)
Validation Level: B

Variable: Lamb (72)
Units: ug/m3
Channel: 11

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:00
Output File Name: PM1B0405.11

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	38	37	32	32	32	32	29	29	29	33	29	38	32
19	37	39	37	28	22	22	13	11	11	14	15	14	14	17	17	16	15	14	12	11	11	13	14	13	11	39	18
20	11	10	10	9	9	9	9	12	12	16	17	16	16	18	18	18	17	17	17	14	12	11	9	9	9	18	13
21	10	10	9	11	9	11	14	23	44	37	28	21	21	22	22	21	21	19	19	17	14	18	15	14	9	44	19
22	15	12	13	15	12	14	24	28	21	46	60	31	20	21	22	23	38	25	22	20	21	20	18	17	12	60	23
23	18	17	18	21	22	21	22	24	25	23	23	22	21	20	19	18	18	20	20	20	19	15	14	14	14	25	20
24	13	12	14	15	20	15	18	19	24	26	31	25	25	23	24	25	20	18	17	17	19	19	19	17	12	31	20
25	17	15	14	15	16	23	20	25	29	27	25	25	27	28	25	21	20	21	15	11	11	11	14	13	11	29	20
26	10	9	8	8	8	7	9	29	20	11	12	13	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	7	29	12
27	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
28	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	17	18	15	11	11	10	8	8	10	8	18	12
29	10	11	11	11	11	11	12	14	16	16	16	16	16	18	19	19	20	17	18	14	12	13	14	13	10	20	15
30	13	13	10	10	9	9	13	15	18	17	18	19	19	19	19	18	20	22	20	20	20	23	20	18	9	23	17
Min	10	9	8	8	8	7	9	11	11	11	12	13	14	17	17	16	15	14	11	11	10	8	8	9	7		
Max	37	39	37	28	22	23	24	29	44	46	60	31	27	28	38	37	38	32	32	32	29	29	29	33		60	
Avg	15	15	14	14	14	14	15	20	22	23	25	20	20	21	22	21	22	20	18	17	16	16	16	16			18

Total Data Records Possible: 720
Total Valid Data Records: 247
Percent Data Recovery: 34.3

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Lamb (72)
Units: ug/m3
Channel: 11

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:04
Output File Name: PM1B0505.11

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	18	19	18	19	20	20	22	26	24	25	26	27	28	23	23	23	23	22	22	23	17	15	13	13	13	28	21
2	15	14	13	14	14	13	33	28	21	17	18	18	19	21	25	26	25	21	17	13	13	14	15	14	13	33	18
3	15	14	13	12	12	12	19	30	22	22	21	20	21	23	22	21	22	21	21	21	18	15	16	14	12	30	19
4	15	16	19	18	15	19	21	25	31	23	22	22	25	26	25	24	27	28	29	30	31	33	35	34	15	35	25
5	29	28	27	27	26	27	34	44	46	38	37	30	30	28	29	29	44	30	21	20	24	19	17	13	13	46	29
6	14	13	11	12	11	16	18	19	20	22	22	20	19	17	18	18	17	16	15	11	11	9	9	8	8	22	15
7	8	9	9	13	15	19	18	16	19	22	21	20	22	22	22	21	19	18	18	19	19	18	17	17	8	22	18
8	16	15	13	13	13	15	18	19	22	21	23	23	24	23	23	23	23	24	24	25	24	22	21	32	13	32	21
9	40	39	38	35	40	46	51	47	40	35	31	34	29	25	24	26	24	23	24	20	18	16	15	17	15	51	31
10	16	13	12	11	11	11	10	12	13	15	17	18	19	18	18	17	17	18	13	12	13	11	9	8	8	19	14
11	8	8	8	8	8	8	12	14	15	18	17	17	19	18	18	16	15	15	15	12	11	10	9	10	8	19	13
12	11	11	11	10	9	10	13	15	18	17	17	20	19	20	19	18	19	17	17	18	15	13	12	12	9	20	15
13	13	13	11	12	11	13	16	26	30	22	23	21	21	22	22	22	23	22	21	23	22	18	17	17	11	30	19
14	18	18	20	22	19	19	21	23	29	32	29	28	28	28	29	27	29	27	27	25	25	24	22	20	18	32	25
15	22	20	20	21	23	22	27	33	30	30	31	31	31	32	34	40	34	31	32	33	33	36	41	45	20	45	31
16	40	34	37	37	36	35	41	41	42	37	40	40	48	42	37	33	31	38	41	29	30	36	33	27	27	48	37
17	20	15	14	11	11	12	31	31	26	29	25	25	19	22	21	24	22	20	18	20	16	14	12	12	11	31	20
18	12	13	12	11	12	22	30	21	20	20	20	20	20	18	17	18	19	19	14	16	21	14	13	12	11	30	17
19	10	10	9	14	13	13	16	17	16	17	14	15	15	16	16	16	14	13	16	20	19	18	13	12	9	20	15
20	10	11	9	9	10	10	14	15	14	14	14	16	16	17	16	15	13	17	15	15	14	15	15	13	9	17	14
21	14	10	10	10	9	10	12	19	22	17	23	20	19	23	62	25	24	23	27	22	19	21	19	19	9	62	20
22	19	24	19	19	17	18	22	26	28	27	26	29	51	81	87	81	41	26	24	22	23	25	25	22	17	87	33
23	20	19	20	19	19	19	23	33	31	26	31	31	32	30	23	21	21	18	19	25	30	26	24	22	18	33	24
24	19	20	19	19	16	18	25	29	28	31	29	23	22	22	17	18	16	16	18	22	22	19	18	15	15	31	21
25	13	14	14	16	15	22	33	30	18	19	18	21	19	20	20	22	22	21	20	19	17	18	19	19	13	33	20
26	18	16	16	18	19	18	21	41	38	20	18	20	22	24	24	24	25	23	21	21	20	20	22	23	16	41	22
27	19	21	19	19	18	20	21	34	41	19	20	24	25	27	31	31	30	25	25	24	22	24	21	18	18	41	24
28	17	16	25	36	32	30	31	31	28	31	32	30	27	26	27	27	28	30	30	37	32	28	27	28	16	37	29
29	30	32	32	30	28	25	26	27	29	26	26	30	47	44	38	41	36	34	29	24	22	20	18	23	18	47	30
30	25	23	19	14	15	15	18	17	17	17	18	18	18	18	18	18	18	18	20	21	18	14	11	10	10	25	17
31	11	12	12	13	15	16	30	42	22	19	15	18	19	21	25	23	21	20	22	22	19	15	12	12	11	42	19
Min	8	8	8	8	8	8	10	12	13	14	14	15	15	16	16	15	13	13	13	11	11	9	9	8	8		
Max	40	39	38	37	40	46	51	47	46	38	40	40	51	81	87	81	44	38	41	37	33	36	41	45		87	
Avg	18	17	17	17	17	18	23	27	26	23	23	24	25	26	27	25	24	22	22	21	21	19	18	18			22

Total Data Records Possible: 744
Total Valid Data Records: 744
Percent Data Recovery: 100.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Lamb (72)
Units: ug/m3
Channel: 11

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:08
Output File Name: PM1B0605.11

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	12	14	17	18	20	24	21	29	28	28	27	29	28	28	29	29	27	26	28	27	31	32	33	40	12	40	26
2	40	40	42	39	40	41	43	44	43	43	49	44	29	27	30	30	34	38	34	35	35	35	32	38	27	49	38
3	16	14	13	12	12	12	16	16	16	14	16	17	17	17	17	17	17	18	15	16	18	19	19	22	12	22	16
4	26	37	34	26	25	24	34	44	38	33	32	27	24	23	21	23	21	20	19	19	22	26	24	20	19	44	27
5	21	19	18	25	26	25	29	35	33	35	36	37	39	33	35	34	34	34	29	32	33	42	27	26	18	42	31
6	25	31	27	22	23	28	36	32	28	30	35	32	31	27	26	25	24	23	27	35	39	23	25	22	22	39	28
7	20	19	18	17	15	15	18	22	23	23	21	23	25	28	32	29	26	22	23	24	22	25	23	19	15	32	22
8	14	14	13	12	14	15	25	27	29	25	27	26	25	24	25	21	21	20	17	20	18	19	18	21	12	29	20
9	15	14	12	9	10	16	27	20	13	10	12	10	11	12	11	10	10	10	10	10	10	10	10	10	9	27	12
10	11	11	10	11	12	13	21	24	14	10	10	10	11	13	15	17	17	17	12	11	10	10	10	11	10	24	13
11	11	11	11	11	12	11	10	10	10	11	10	12	16	18	18	17	15	14	13	11	10	11	10	11	10	18	12
12	15	15	13	13	16	15	15	15	15	15	14	16	18	20	21	22	23	22	24	25	23	22	21	20	13	25	18
13	20	19	18	15	20	19	31	28	18	15	14	15	16	17	17	17	16	15	15	14	12	11	11	12	11	31	17
14	11	11	11	11	12	22	48	59	33	17	15	17	20	20	19	21	23	22	20	21	23	24	21	19	11	59	22
15	21	30	29	29	34	38	35	34	35	34	34	36	33	27	26	26	26	26	26	27	29	22	21	26	21	38	29
16	26	27	28	29	31	31	30	27	27	28	27	26	24	24	25	23	22	22	21	23	21	20	23	24	20	31	25
17	21	21	20	21	21	25	42	22	20	24	21	24	25	29	28	30	23	16	14	12	13	13	14	15	12	42	21
18	15	15	16	14	14	15	14	12	12	12	13	14	13	13	13	12	12	11	11	11	11	11	11	12	11	16	13
19	14	14	13	13	14	14	13	12	17	17	17	17	16	15	15	17	17	16	15	17	20	25	19	21	12	25	16
20	19	27	19	19	19	24	28	28	30	25	30	32	33	32	34	37	37	35	38	36	35	36	32	37	19	38	30
21	44	42	38	36	32	36	45	46	43	38	38	36	36	35	33	33	32	33	33	33	31	32	31	31	31	46	36
22	33	40	36	37	34	31	54	39	32	34	35	36	36	34	34	37	40	63	47	39	39	31	31	32	31	63	38
23	36	36	37	40	43	42	44	41	29	34	40	42	41	40	50	62	74	44	20	18	16	19	18	39	16	74	38
24	62	67	104	123	140	115	139	140	69	109	128	93	107	165	108	59	93	86	50	27	16	16	17	18	16	165	85
25	20	36	38	37	28	20	16	13	14	15	16	16	16	29	36	52	22	26	14	16	17	12	11	13	11	52	22
26	17	23	20	18	21	22	22	20	20	20	20	22	23	24	24	22	20	20	20	20	19	19	20	21	17	24	21
27	18	17	17	16	18	18	18	20	21	19	19	19	19	18	17	16	16	17	18	17	16	18	16	18	16	21	18
28	20	20	24	24	38	47	39	30	26	25	25	26	25	27	26	27	26	23	22	20	21	19	17	18	17	47	26
29	20	21	24	23	22	25	27	84	149	118	124	147	146	146	146	158	161	196	221	201	198	187	151	148	20	221	118
30	147	161	180	143	151	145	140	133	162	216	264	195	131	83	117	122	107	106	122	134	124	121	108	86	83	264	142
Min	11	11	10	9	10	11	10	10	10	10	10	10	11	12	11	10	10	10	10	10	10	10	10	10	9		
Max	147	161	180	143	151	145	140	140	162	216	264	195	146	165	146	158	161	196	221	201	198	187	151	148		264	
Avg	26	29	30	29	31	31	36	37	35	36	39	37	34	35	35	35	35	35	33	32	31	30	27	28			33

Total Data Records Possible: 720
Total Valid Data Records: 720
Percent Data Recovery: 100.0

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Lamb (72)
Units: ug/m3
Channel: 11

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:11
Output File Name: PM1B0705.11

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	44	37	32	35	33	38	40	43	56	48	32	34	33	30	28	27	27	24	25	25	23	22	24	26	22	56	33
2	26	24	23	27	27	26	19	21	25	28	29	30	31	31	30	29	-910	-910	-910	-910	-910	-910	-910	-910	19	31	27
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	26	24	23	27	27	26	19	21	25	28	29	30	31	30	28	27	27	24	25	25	23	22	24	26	19		
Max	44	37	32	35	33	38	40	43	56	48	32	34	33	31	30	29	27	24	25	25	23	22	24	26		56	
Avg	35	31	28	31	30	32	30	32	41	38	31	32	32	31	29	28	27	24	25	25	23	22	24	26			30

Total Data Records Possible: 744
Total Valid Data Records: 40
Percent Data Recovery: 5.4

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Alto (82)
Validation Level: B

Variable:	Alto (82)	Site:	Clark County PM10 Saturation Study	Validation Level:	B
Units:	ug/m3	Month:	April	Printout Date:	11-23-2005
Channel:	12	Year:	2005	Printout Time:	16:17:01
		Time Zone:	PST	Output File Name:	PM1B0405.12

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	36	40	51	57	51	53	52	46	45	46	51	49	39	44	45	36	57	47
18	50	51	61	49	42	46	46	53	42	41	39	43	43	43	43	37	37	41	32	31	34	29	40	41	29	61	42
19	43	41	39	36	34	35	63	41	16	17	18	19	16	15	20	16	13	15	15	15	12	13	14	16	12	63	24
20	32	12	12	12	13	20	19	20	15	14	14	15	15	15	15	19	15	14	18	21	26	17	13	12	12	32	17
21	14	21	15	15	14	21	30	27	28	22	18	16	16	16	16	17	17	20	48	37	25	26	29	26	14	48	22
22	21	18	15	15	25	62	89	65	67	63	28	19	18	20	21	21	22	23	25	32	24	22	30	26	15	89	32
23	28	27	30	23	30	43	38	24	21	20	19	16	19	29	22	16	18	17	22	24	19	17	13	12	12	43	23
24	12	12	16	19	20	20	18	19	21	22	23	23	23	21	20	20	16	16	19	18	21	21	19	17	12	23	19
25	17	18	19	22	27	34	29	32	28	26	25	26	28	29	23	21	19	19	22	13	12	12	14	14	12	34	22
26	20	22	18	18	26	37	34	31	15	11	12	11	12	12	13	14	15	21	16	18	17	20	26	19	11	37	19
27	22	23	19	18	28	44	25	30	29	34	32	31	32	31	33	30	33	36	38	39	28	20	19	16	16	44	29
28	17	21	20	16	18	20	17	18	17	14	14	15	15	12	12	16	15	15	14	11	10	11	9	9	9	21	15
29	12	11	14	16	20	22	19	13	14	13	13	14	14	15	16	17	18	19	20	16	18	21	22	23	11	23	17
30	23	25	27	29	36	42	24	16	20	19	16	17	18	21	16	17	17	17	18	22	26	28	22	35	16	42	23
Min	12	11	12	12	13	20	17	13	14	11	12	11	12	12	12	14	13	14	14	11	10	11	9	9	9		
Max	50	51	61	49	42	62	89	65	67	63	40	51	57	51	53	52	46	45	48	51	49	39	44	45		89	
Avg	24	23	23	22	26	34	35	30	26	25	22	23	23	24	23	22	22	23	25	25	23	21	22	22			24

Total Data Records Possible: 720
Total Valid Data Records: 327
Percent Data Recovery: 45.4

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Alto (82)
Units: ug/m3
Channel: 12

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:04
Output File Name: PM1B0505.12

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	21	18	18	19	23	25	23	21	22	22	23	26	27	25	24	24	22	18	22	23	22	17	13	12	12	27	21
2	12	11	12	12	23	16	19	20	16	13	14	15	17	41	25	24	54	21	16	13	15	15	13	14	11	54	19
3	16	12	13	15	21	35	23	16	16	16	16	17	18	19	18	18	17	19	28	20	31	16	22	19	12	35	19
4	21	21	24	29	44	47	58	29	20	19	20	21	27	59	56	24	29	29	29	28	29	30	32	28	19	59	31
5	28	26	26	33	49	65	54	46	43	34	33	32	27	27	27	31	36	26	23	24	25	23	16	13	13	65	32
6	13	14	15	12	14	16	16	17	17	19	19	16	14	19	14	14	12	13	15	11	10	8	8	8	8	19	14
7	8	9	14	15	19	21	19	17	17	17	18	19	16	16	16	17	16	17	21	29	26	28	23	26	8	29	19
8	24	23	31	31	37	38	23	21	20	22	18	20	20	20	20	20	21	25	23	23	27	23	20	34	18	38	24
9	39	41	37	36	42	47	54	55	40	41	41	47	36	30	27	26	24	23	28	23	19	20	16	17	16	55	34
10	18	17	14	13	14	19	17	18	16	18	26	17	19	20	15	16	13	15	14	14	17	9	9	9	9	26	16
11	8	8	8	8	10	13	14	11	11	14	15	15	15	14	14	11	12	11	13	13	22	24	26	13	8	26	13
12	11	11	10	8	11	13	14	13	14	13	13	13	13	14	15	14	14	11	14	17	49	16	19	22	8	49	15
13	19	18	21	19	37	39	28	21	19	16	16	17	17	18	19	18	16	18	23	29	32	36	35	27	16	39	23
14	28	24	19	23	27	34	40	29	30	24	20	41	43	28	28	48	23	21	19	30	36	34	31	38	19	48	30
15	35	22	20	20	26	33	28	24	22	21	22	21	23	23	25	24	25	29	31	31	39	43	39	41	20	43	28
16	29	30	34	30	29	33	30	29	33	29	41	45	57	68	72	52	42	35	35	23	23	28	38	21	21	72	37
17	17	14	12	11	14	13	14	18	18	18	18	19	19	19	21	23	29	22	29	24	26	27	26	19	11	29	20
18	22	23	18	19	22	39	42	26	22	24	24	23	22	23	39	24	24	21	29	25	18	20	19	17	17	42	24
19	14	13	11	11	26	38	30	24	20	19	19	18	38	26	29	47	27	22	29	24	20	18	15	12	11	47	23
20	20	13	10	13	32	60	28	24	20	17	29	32	27	27	33	40	21	26	23	24	17	15	15	15	10	60	24
21	14	17	16	18	25	38	55	32	25	17	32	25	27	28	30	30	32	39	52	58	42	41	39	27	14	58	32
22	25	26	31	34	43	55	36	30	29	27	39	35	35	37	36	34	36	49	35	44	41	39	43	44	25	55	37
23	41	32	37	27	47	55	56	60	49	44	34	57	38	35	32	29	47	23	28	38	31	32	24	22	22	60	38
24	25	23	25	23	35	75	56	40	36	35	28	25	56	47	30	44	34	20	27	30	28	24	27	33	20	75	34
25	28	20	23	24	34	45	33	48	25	26	24	30	42	73	50	44	64	34	33	80	75	60	38	39	20	80	41
26	28	26	23	25	39	67	85	68	31	25	27	37	73	58	38	37	63	30	38	46	41	40	46	46	23	85	43
27	27	33	48	43	95	83	97	78	38	26	79	56	76	42	46	51	71	38	38	33	33	34	29	25	25	97	51
28	22	20	30	38	49	42	43	47	38	38	39	39	38	38	44	53	39	42	48	45	37	35	32	33	20	53	39
29	39	40	41	39	40	57	55	42	39	33	37	43	136	106	77	62	66	82	57	34	34	26	27	33	26	136	52
30	58	34	27	30	22	24	23	24	21	21	36	42	42	42	40	38	39	39	39	30	23	18	14	13	13	58	31
31	11	11	10	9	9	9	11	20	35	41	41	74	79	49	43	57	44	36	40	29	21	19	19	17	9	79	31
Min	8	8	8	8	9	9	11	11	11	13	13	13	13	14	14	11	12	11	13	11	10	8	8	8	8		
Max	58	41	48	43	95	83	97	78	49	44	79	74	136	106	77	62	71	82	57	80	75	60	46	46		136	
Avg	23	21	22	22	31	39	36	31	26	24	28	30	37	35	32	32	33	28	29	30	29	26	25	24			29

Total Data Records Possible: 744
Total Valid Data Records: 744
Percent Data Recovery: 100.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Alto (82)
Units: ug/m3
Channel: 12

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:08
Output File Name: PM1B0605.12

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	14	11	10	9	9	9	11	20	34	37	41	56	73	65	57	68	43	43	36	27	24	21	22	27	9	73	32
2	29	29	28	27	25	22	22	28	37	41	43	56	80	88	89	53	47	47	46	31	28	27	28	29	22	89	41
3	32	27	24	20	15	13	13	20	27	35	41	48	48	48	47	46	48	45	44	38	30	25	19	13	13	48	32
4	9	10	9	9	9	8	9	18	27	33	42	45	46	40	40	37	37	43	38	34	31	26	19	13	8	46	26
5	11	10	9	9	9	9	12	22	28	33	43	48	46	60	62	54	52	64	44	43	48	47	33	37	9	64	35
6	38	40	55	33	35	40	37	39	37	36	34	35	39	37	33	43	42	56	59	49	52	40	30	42	30	59	41
7	26	26	28	35	63	50	50	35	28	25	21	24	27	34	32	31	30	31	26	25	28	31	33	34	21	63	32
8	32	32	25	21	36	42	34	33	29	29	28	30	27	33	28	27	26	28	19	22	27	25	27	26	19	42	29
9	18	18	19	24	38	53	28	19	20	16	16	16	13	16	18	16	16	53	15	22	14	15	14	13	13	53	21
10	18	22	22	16	30	29	34	24	18	15	15	15	16	19	21	23	24	22	24	16	19	15	14	15	14	34	20
11	14	15	14	11	12	13	16	15	19	20	15	18	23	21	28	24	22	30	73	26	15	13	14	13	11	73	20
12	17	25	25	27	42	32	22	21	20	18	19	19	21	25	28	28	27	32	33	34	31	33	39	33	17	42	27
13	31	28	25	29	43	24	25	30	23	19	20	20	21	31	65	47	22	23	24	34	37	30	34	34	19	65	30
14	36	30	26	32	47	71	63	26	20	17	19	30	61	35	54	58	32	27	28	27	27	29	30	31	17	71	36
15	26	55	34	36	49	82	49	44	42	42	41	43	54	76	71	35	35	36	34	34	31	35	26	30	26	82	43
16	28	32	34	35	39	42	44	44	41	61	40	36	32	30	36	44	39	30	36	32	30	31	29	25	25	61	36
17	30	35	31	26	32	38	123	55	63	64	38	57	65	126	148	50	34	34	33	30	20	19	19	21	19	148	50
18	20	19	18	17	20	18	21	23	22	23	28	22	16	20	19	16	18	19	17	15	21	27	33	40	15	40	21
19	35	20	18	18	29	33	24	21	20	22	23	21	38	26	27	26	25	21	28	28	35	26	29	30	18	38	26
20	30	28	31	40	44	80	91	75	55	31	32	34	35	37	38	42	43	44	51	74	66	58	60	53	28	91	49
21	55	62	55	56	53	80	99	86	66	87	65	60	52	54	56	57	63	43	40	59	64	59	64	75	40	99	63
22	99	79	81	86	88	88	114	114	63	45	46	63	71	54	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	45	114	78
23	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
24	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
25	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
26	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
27	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
28	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
29	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
30	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-910	-	-	-
Min	9	10	9	9	9	8	9	15	18	15	15	15	13	16	18	16	16	19	15	15	14	13	14	13	8		
Max	99	79	81	86	88	88	123	114	66	87	65	63	80	126	148	68	63	64	73	74	66	59	64	75		148	
Avg	29	30	28	28	35	40	43	37	34	34	32	36	41	44	47	39	35	37	36	33	32	30	29	30			35

Total Data Records Possible: 720
Total Valid Data Records: 518
Percent Data Recovery: 71.9

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Alto (82)
Units: ug/m3
Channel: 12

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:12
Output File Name: PM1B0705.12

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9999		
Max	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	
Avg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-

Total Data Records Possible: 744
Total Valid Data Records: 0
Percent Data Recovery: 0.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Wetlands (91)
Validation Level: B

Variable: Wetlands (91)
Units: ug/m3
Channel: 13

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:01
Output File Name: PM1B0405.13

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	19	22	21	22	20	19	15	23	20	34	32	29	15	34	23
22	25	26	29	37	32	34	53	61	53	42	35	32	37	20	20	19	18	16	19	24	23	22	45	26	16	61	31
23	27	28	26	24	25	25	34	23	20	19	25	30	25	20	18	15	16	16	18	22	16	17	15	15	15	34	22
24	15	17	33	22	19	19	19	20	20	21	22	24	30	29	21	20	18	16	24	28	21	37	27	24	15	37	23
25	22	22	22	23	23	31	28	30	33	29	29	31	32	32	27	21	19	19	21	15	15	12	12	13	12	33	23
26	14	21	30	48	26	33	35	32	18	15	16	19	19	21	18	16	15	13	10	11	11	11	13	14	10	48	20
27	15	18	18	21	21	25	23	31	29	38	46	39	36	41	36	38	34	34	36	38	28	30	22	22	15	46	30
28	27	28	22	18	20	22	24	23	20	18	17	16	15	13	13	16	15	13	14	13	13	14	15	15	13	28	18
29	14	14	13	12	12	14	17	14	13	12	12	15	15	16	17	17	17	14	13	13	15	19	19	18	12	19	15
30	16	15	15	18	18	30	45	33	16	15	16	17	16	16	15	16	16	15	15	17	22	36	25	18	15	45	20
Min	14	14	13	12	12	14	17	14	13	12	12	15	15	13	13	15	15	13	10	11	11	11	12	13	10		
Max	27	28	33	48	32	34	53	61	53	42	46	39	37	41	36	38	34	34	36	38	28	37	45	29		61	
Avg	19	21	23	25	22	26	31	30	25	23	24	25	24	23	21	20	19	18	19	20	18	23	23	19			22

Total Data Records Possible: 720
Total Valid Data Records: 228
Percent Data Recovery: 31.7

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Wetlands (91)
Units: ug/m3
Channel: 13

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:05
Output File Name: PM1B0505.13

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	17	19	18	19	20	22	22	20	20	22	23	25	26	24	23	22	19	19	18	19	19	17	14	13	13	26	20
2	13	12	12	16	22	31	34	21	14	16	15	23	23	22	25	22	54	24	16	14	13	13	15	14	12	54	20
3	16	17	17	18	18	20	29	17	13	15	18	20	22	24	23	22	19	18	17	16	12	15	16	17	12	29	18
4	23	25	26	26	30	37	60	46	42	30	20	22	22	21	23	23	26	27	32	30	29	27	29	27	20	60	29
5	27	27	28	29	31	34	42	45	47	36	33	32	33	26	26	31	37	26	23	23	26	21	18	18	18	47	30
6	25	60	17	12	14	17	19	20	23	23	26	23	19	20	18	13	11	17	13	13	13	12	11	12	11	60	19
7	12	17	17	16	16	18	19	18	18	17	17	18	21	18	17	16	16	16	28	26	20	19	21	23	12	28	19
8	19	21	16	16	20	22	21	18	17	19	20	23	21	23	23	22	21	22	22	22	22	19	22	39	16	39	21
9	44	43	38	39	42	49	68	62	59	62	41	50	38	36	25	24	23	20	20	22	20	32	19	17	17	68	37
10	19	19	17	16	17	24	24	23	24	41	31	14	21	20	13	12	11	12	12	12	13	12	20	11	11	41	18
11	10	11	13	12	12	18	21	24	29	17	16	16	16	15	15	18	11	11	10	13	14	14	14	14	10	29	15
12	13	14	13	13	15	16	18	18	16	12	14	15	15	15	15	16	15	12	15	11	11	12	13	15	11	18	14
13	18	20	22	20	20	21	41	27	17	14	15	16	18	17	17	16	16	17	15	18	30	18	25	30	14	41	20
14	31	30	33	33	30	33	40	27	27	20	21	22	23	22	22	22	21	24	20	27	20	25	33	39	20	40	27
15	42	33	33	33	32	35	30	30	26	28	28	27	27	25	24	24	23	25	26	28	29	29	32	30	23	42	29
16	30	36	31	26	26	31	31	28	33	47	34	57	80	72	60	73	43	67	32	28	29	29	27	24	24	80	41
17	20	19	17	15	15	16	18	18	15	17	20	20	25	23	23	23	22	20	20	21	22	21	19	21	15	25	20
18	20	20	22	25	25	47	45	31	25	28	24	27	24	23	25	25	25	22	18	23	22	21	18	13	13	47	25
19	13	14	18	17	20	26	35	24	23	30	25	20	23	23	24	24	26	21	21	18	16	14	12	12	12	35	21
20	12	12	13	12	14	18	17	17	19	20	24	23	27	24	21	20	25	21	19	17	16	17	25	15	12	27	19
21	15	15	16	16	16	29	38	31	27	21	21	22	23	24	25	24	22	22	34	36	32	25	28	24	15	38	24
22	26	30	30	35	35	38	36	32	33	32	35	55	39	39	45	34	27	26	26	28	30	32	33	31	26	55	34
23	32	28	34	33	34	42	53	57	53	35	46	49	67	63	30	24	22	25	24	26	24	21	20	21	20	67	36
24	21	23	22	23	23	37	29	35	30	31	27	30	42	30	28	20	21	23	22	24	29	19	28	30	19	42	27
25	25	34	34	37	44	51	83	63	38	30	33	52	52	33	31	27	27	27	29	70	47	35	31	31	25	83	40
26	38	42	43	38	39	45	63	63	44	27	29	54	48	44	58	47	26	27	27	25	25	23	24	26	23	63	39
27	25	22	27	30	42	57	73	80	62	36	29	35	40	38	34	37	34	34	34	23	25	33	58	37	22	80	39
28	24	49	29	39	38	41	39	39	37	38	39	39	38	38	44	42	38	39	35	35	32	28	29	32	24	49	37
29	35	38	37	65	36	41	35	34	34	49	70	94	81	52	60	48	49	58	46	27	27	32	37	40	27	94	47
30	35	32	26	24	30	31	26	26	27	27	26	26	28	28	27	28	30	28	30	23	21	23	20	-980	20	35	27
31	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	23	22	23	22	22	42	16	12	13	15	12	42	21
Min	10	11	12	12	12	16	17	17	13	12	14	14	15	15	13	12	11	11	10	11	11	12	11	11	10		
Max	44	60	43	65	44	57	83	80	62	62	70	94	81	72	60	73	54	67	46	70	47	35	58	40		94	
Avg	23	26	24	25	26	32	37	33	30	28	27	32	33	29	28	26	25	25	23	25	23	22	23	23			27

Total Data Records Possible: 744
Total Valid Data Records: 729
Percent Data Recovery: 98.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Wetlands (91)
Units: ug/m3
Channel: 13

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:08
Output File Name: PM1B0605.13

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	14	14	20	21	23	24	28	26	39	37	40	44	41	43	43	46	87	36	31	31	29	33	35	41	14	87	34
2	43	45	42	38	41	44	53	48	48	53	42	36	40	48	39	54	46	43	42	35	32	32	46	76	32	76	44
3	53	41	13	10	9	10	16	16	22	16	29	16	17	17	18	19	17	16	15	12	19	19	19	26	9	53	19
4	33	35	26	25	24	32	39	39	35	35	38	35	28	28	24	22	20	22	18	17	17	47	55	22	17	55	30
5	19	22	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	19	22	21
6	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	38	36	38	28	33	35	25	21	19	29	34	60	48	19	60	34
7	59	31	32	26	27	28	31	33	26	27	27	29	33	30	29	30	28	23	20	22	75	24	23	22	20	75	31
8	19	20	19	20	21	25	32	28	26	26	34	34	31	38	30	26	18	17	14	18	41	42	21	17	14	42	26
9	15	14	15	16	19	25	34	33	15	29	30	26	27	29	35	28	27	23	22	20	30	20	18	14	14	35	24
10	13	13	12	15	16	20	33	28	25	32	65	78	83	77	57	45	30	28	25	30	29	16	16	22	12	83	34
11	22	16	11	12	12	12	15	17	21	25	27	29	28	49	73	73	36	31	33	24	16	15	16	13	11	73	26
12	16	19	17	16	16	18	23	26	28	35	70	87	72	98	96	92	59	41	39	33	31	30	29	36	16	98	43
13	26	29	31	30	32	28	20	24	32	32	46	89	92	96	82	100	90	68	40	48	29	34	23	37	20	100	48
14	33	33	24	22	23	36	53	56	46	48	71	58	62	60	60	81	77	59	26	24	23	23	20	14	14	81	43
15	13	17	21	22	17	17	30	28	33	65	90	87	95	89	97	82	60	33	34	26	21	18	17	17	13	97	43
16	15	19	19	18	20	23	32	29	35	40	48	69	83	79	79	50	32	29	26	24	23	20	18	16	15	83	35
17	16	18	29	16	14	14	13	17	33	43	27	29	31	30	26	21	20	20	18	15	12	12	12	12	12	43	21
18	10	10	9	6	4	7	20	19	30	23	24	25	25	23	23	23	21	18	16	15	13	16	43	34	4	43	19
19	27	8	1	1	1	4	13	16	20	37	71	73	59	57	71	79	57	31	28	24	22	22	18	16	1	79	32
20	15	12	14	19	17	31	60	35	50	39	76	87	95	89	86	84	84	74	42	40	42	41	41	39	12	95	51
21	42	40	41	47	53	58	73	74	73	102	110	86	84	102	103	80	91	89	54	41	38	37	36	34	34	110	66
22	33	33	32	34	43	53	53	60	63	70	90	73	51	31	39	41	34	26	26	27	29	23	24	23	23	90	42
23	27	32	34	40	45	49	50	39	29	40	82	94	102	100	121	168	107	91	130	83	34	32	19	20	19	168	65
24	16	17	15	16	15	27	54	56	50	87	162	141	153	263	184	85	62	25	29	55	69	68	32	15	15	263	71
25	13	11	11	11	12	12	12	13	17	21	44	70	70	71	58	26	20	19	18	16	14	13	12	11	11	71	25
26	11	10	10	10	12	17	16	19	24	32	77	91	94	92	88	80	69	27	23	20	18	14	11	11	10	94	37
27	10	11	10	10	10	10	12	18	19	24	65	72	80	80	78	75	70	36	20	18	15	12	12	13	10	80	33
28	13	11	11	19	27	24	24	25	25	27	30	49	78	84	88	85	61	24	21	19	16	11	9	7	7	88	33
29	6	7	7	7	12	21	36	39	80	299	221	182	175	197	200	213	206	207	161	237	197	191	172	-980	6	299	134
30	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-910	-	-	-
Min	6	7	1	1	1	4	12	13	15	16	24	16	17	17	18	19	17	16	14	12	12	11	9	7	1		
Max	59	45	42	47	53	58	73	74	80	299	221	182	175	263	200	213	206	207	161	237	197	191	172	76		299	
Avg	23	21	19	20	21	25	32	32	35	50	64	65	67	73	70	66	56	42	35	35	34	32	31	24			41

Total Data Records Possible: 720
Total Valid Data Records: 662
Percent Data Recovery: 91.9

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Wetlands (91)
Units: ug/m3
Channel: 13

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:12
Output File Name: PM1B0705.13

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9999		
Max	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	
Avg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-

Total Data Records Possible: 744
Total Valid Data Records: 0
Percent Data Recovery: 0.0

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Henderson AP Storage (101)
Validation Level: B

Variable: Henderson (101)
Units: ug/m3
Channel: 14

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:01
Output File Name: PM1B0405.14

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
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13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	49	48	47	45	41	39	44	46	67	39	67	47
18	66	53	44	43	42	46	46	58	39	37	39	38	30	32	30	31	27	41	28	27	-980	-980	-980	-980	27	66	40
19	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
20	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
21	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	28	25	21	24	23	21	17	16	16	16	28	21
22	16	15	16	16	17	26	50	24	24	28	31	28	25	25	55	26	26	25	28	23	21	23	19	19	15	55	25
23	20	24	26	21	22	24	35	43	23	17	16	17	16	15	17	17	17	17	17	19	17	16	20	22	15	43	21
24	20	23	36	18	16	16	17	17	19	20	20	21	23	24	23	21	19	19	27	25	26	41	27	24	16	41	23
25	22	22	22	23	26	31	27	26	25	27	29	34	29	27	23	22	22	20	26	19	21	22	20	19	19	34	24
26	20	17	15	12	12	14	20	20	24	19	17	17	18	19	18	18	17	16	14	14	18	18	15	20	12	24	17
27	17	18	20	22	23	30	26	30	35	33	33	44	51	29	33	34	32	41	44	48	41	23	18	21	17	51	31
28	22	20	16	14	15	18	16	13	12	9	9	12	12	14	16	19	18	15	14	16	13	12	10	10	9	22	14
29	10	10	10	10	10	12	11	11	17	24	19	17	18	18	22	19	16	14	14	15	15	13	14	14	10	24	15
30	10	11	12	11	11	12	13	14	16	20	14	16	16	15	16	17	17	17	20	16	15	14	17	16	10	20	15
Min	10	10	10	10	10	12	11	11	12	9	9	12	12	14	16	17	16	14	14	14	13	12	10	10	9		
Max	66	53	44	43	42	46	50	58	39	37	39	44	51	32	55	49	48	47	45	48	41	44	46	67		67	
Avg	22	21	22	19	19	23	26	26	23	23	23	24	24	22	25	25	24	24	25	24	22	22	20	23			23

Total Data Records Possible: 720
Total Valid Data Records: 254
Percent Data Recovery: 35.3

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Henderson (101)
Units: ug/m3
Channel: 14

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:05
Output File Name: PM1B0505.14

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	18	17	18	19	19	21	21	21	20	20	21	23	20	24	20	18	18	19	18	17	17	17	14	13	13	24	19
2	14	15	12	12	13	12	23	24	17	17	18	18	21	33	25	23	31	29	20	15	15	14	14	13	12	33	19
3	13	14	13	13	16	26	28	19	21	18	22	21	24	22	23	23	21	20	20	20	22	20	16	18	13	28	20
4	19	20	22	20	19	23	43	61	48	34	34	29	29	32	27	31	31	31	30	30	31	30	29	29	19	61	31
5	28	32	38	35	37	40	48	49	44	31	29	27	26	34	30	37	52	33	29	28	32	25	19	23	19	52	34
6	78	52	11	11	12	14	16	15	13	19	15	18	18	22	19	15	14	17	19	14	18	16	12	13	11	78	20
7	14	15	15	14	15	18	21	18	17	14	24	16	17	16	16	16	15	13	14	16	18	13	14	14	13	24	16
8	11	11	12	16	23	22	23	22	21	21	19	29	22	20	22	22	29	26	25	25	22	22	31	48	11	48	23
9	50	47	43	43	49	56	56	47	37	31	30	35	35	33	27	25	23	21	20	20	19	21	19	19	19	56	34
10	17	17	15	14	14	14	14	15	16	20	24	18	20	19	18	15	14	15	15	14	12	13	11	11	11	24	16
11	11	11	10	10	11	10	14	15	16	17	16	12	14	18	16	17	13	13	14	17	13	10	11	11	10	18	13
12	11	12	11	11	14	15	12	16	19	20	19	19	20	29	19	19	18	17	15	12	13	16	20	13	11	29	16
13	11	11	12	13	15	20	32	27	26	22	20	18	19	22	21	22	22	21	19	20	23	22	26	18	11	32	20
14	16	16	16	17	19	26	28	23	23	27	28	27	25	28	26	27	26	26	25	31	28	25	24	25	16	31	24
15	28	23	21	22	22	21	21	21	23	24	26	27	27	27	30	31	31	31	29	31	36	37	36	34	21	37	27
16	36	37	35	29	25	27	30	27	26	26	22	25	34	38	45	86	93	57	48	32	37	33	31	25	22	93	38
17	18	19	15	14	13	15	18	20	19	22	23	28	28	27	28	27	24	22	26	24	22	22	21	20	13	28	21
18	22	21	20	20	22	25	23	21	21	20	20	41	22	28	21	18	17	16	17	23	18	15	14	13	13	41	21
19	13	13	14	14	16	16	18	17	19	15	15	15	17	18	20	20	19	18	17	18	18	19	18	14	13	20	17
20	13	13	13	12	12	14	15	14	14	15	16	17	17	22	19	19	18	18	23	17	16	13	13	13	12	23	16
21	15	14	14	13	11	11	15	17	21	23	30	24	26	26	27	29	27	30	35	30	28	24	26	27	11	35	23
22	25	22	22	21	21	22	24	30	32	31	32	34	32	50	64	34	33	32	29	32	39	49	-980	-980	21	64	32
23	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
24	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
25	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
26	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	34	31	35	37	32	25	22	20	20	23	23	26	26	20	37	27
27	22	28	28	27	25	27	28	26	25	27	26	40	28	31	31	32	28	26	26	23	27	25	27	28	22	40	28
28	28	27	31	33	29	35	34	32	30	30	33	32	32	43	34	34	30	31	32	34	36	30	33	35	27	43	32
29	35	34	34	30	30	32	33	37	39	39	44	39	31	34	38	36	36	42	31	25	30	30	38	40	25	44	35
30	29	29	34	42	45	42	37	30	26	20	21	21	22	24	26	26	24	22	19	19	18	17	18	18	17	45	26
31	17	16	18	19	21	20	26	26	24	19	18	21	21	21	21	20	20	23	25	26	20	17	19	20	16	26	21
Min	11	11	10	10	11	10	12	14	13	14	15	12	14	16	16	15	13	13	14	12	12	10	11	11	10		
Max	78	52	43	43	49	56	56	61	48	39	44	41	35	50	64	86	93	57	48	34	39	49	38	48		93	
Avg	23	22	20	20	21	23	26	26	24	23	24	25	24	28	27	27	27	25	24	23	23	22	21	22			24

Total Data Records Possible: 744
Total Valid Data Records: 659
Percent Data Recovery: 88.6

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Henderson (101)
Units: ug/m3
Channel: 14

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:08
Output File Name: PM1B0605.14

	Hour Ending																								
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	20	23	28	30	31	34	36	31	26	26	26	29	31	32	41	32	30	31	31	33	32	33	47	49	20	49	32
2	51	54	47	43	44	48	50	45	43	45	39	30	28	30	37	40	37	34	34	38	40	40	93	74	28	93	44
3	77	47	25	15	17	30	27	26	21	21	22	21	22	23	21	22	21	23	22	17	19	15	19	28	15	77	25
4	22	22	19	18	20	25	34	37	40	38	35	33	29	26	24	27	19	19	20	24	18	22	24	21	18	40	26
5	20	28	33	33	36	36	36	35	37	38	37	37	38	33	33	29	30	30	29	41	31	28	32	37	20	41	33
6	40	32	38	27	30	29	28	27	29	30	28	29	29	27	29	28	24	20	19	23	34	33	45	31	19	45	30
7	25	45	25	26	28	27	28	29	35	33	31	31	31	28	28	24	26	25	25	28	26	25	24	22	22	45	28
8	18	18	19	20	20	24	24	23	24	25	25	24	23	23	24	20	19	18	18	23	61	26	18	16	16	61	23
9	15	15	17	16	23	23	18	27	21	22	19	17	22	19	18	17	15	14	19	14	13	14	14	14	13	27	18
10	14	15	12	11	15	22	12	17	15	14	16	15	19	19	18	17	15	16	19	13	11	22	19	21	11	22	16
11	22	20	18	12	12	14	14	13	13	16	15	25	15	17	20	20	24	16	23	20	14	12	11	12	11	25	17
12	16	16	14	13	13	12	13	14	13	14	17	19	21	24	23	26	30	29	27	27	26	22	21	22	12	30	20
13	24	24	28	25	28	26	36	22	19	22	21	22	22	24	24	25	24	24	24	24	22	31	25	20	19	36	24
14	18	20	18	20	23	29	45	29	24	19	20	23	26	25	25	24	21	20	21	23	25	24	23	23	18	45	24
15	36	37	37	39	40	40	39	40	39	33	36	32	29	28	28	28	29	29	28	30	30	28	26	29	26	40	33
16	32	35	34	34	38	40	38	32	30	32	29	28	28	26	28	30	27	25	27	27	25	22	21	22	21	40	30
17	25	27	23	24	23	25	19	19	18	16	15	20	23	16	19	19	20	23	19	20	20	17	20	20	15	27	20
18	21	20	16	13	13	14	13	14	14	15	15	17	16	15	15	15	15	15	17	43	15	14	14	13	13	43	16
19	15	16	17	18	20	21	18	19	21	22	21	18	18	18	21	22	21	19	20	22	23	24	24	24	15	24	20
20	27	28	25	26	24	30	26	36	36	38	41	40	40	40	41	41	40	52	56	44	46	50	46	52	24	56	39
21	52	44	44	45	46	45	49	42	53	62	55	51	51	42	40	37	38	35	38	40	48	47	40	39	35	62	45
22	39	37	36	36	44	49	83	65	57	55	60	58	59	51	48	50	46	44	45	52	51	43	42	49	36	83	50
23	52	55	56	54	58	54	54	64	45	46	54	57	56	76	162	95	32	41	99	92	59	29	33	33	29	162	61
24	31	32	34	34	31	28	32	25	37	87	96	128	229	141	41	20	19	22	24	26	23	39	30	29	19	229	52
25	29	29	26	23	23	21	15	14	14	16	16	17	20	22	21	18	17	21	18	20	17	19	17	18	14	29	20
26	19	21	26	27	29	34	38	35	27	26	28	29	27	24	23	24	24	23	22	25	22	20	22	20	19	38	26
27	27	21	22	22	25	23	25	21	20	20	19	19	19	20	19	19	19	21	21	20	19	21	24	25	19	27	21
28	27	30	38	52	45	37	29	28	25	22	23	23	23	29	32	28	24	25	26	26	23	22	25	26	22	52	29
29	26	28	28	29	30	43	51	34	99	107	232	213	158	138	179	157	137	140	160	176	165	130	69	54	26	232	108
30	84	67	55	44	44	48	90	158	228	173	151	129	118	133	149	141	98	65	46	28	24	24	28	31	24	228	90
Min	14	15	12	11	12	12	12	13	13	14	15	15	15	15	15	15	15	14	17	13	11	12	11	12	11		
Max	84	67	56	54	58	54	90	158	228	173	232	213	229	141	179	157	137	140	160	176	165	130	93	74		232	
Avg	31	30	29	28	29	31	34	34	37	38	41	41	42	39	41	37	31	31	33	35	33	30	30	29			34

Total Data Records Possible: 720
Total Valid Data Records: 720
Percent Data Recovery: 100.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Henderson (101)
Units: ug/m3
Channel: 14

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:12
Output File Name: PM1B0705.14

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	28	31	28	28	28	33	50	59	68	70	62	52	43	40	70	47	29	32	32	35	29	29	35	28	28	70	41
2	24	28	32	39	43	45	44	43	44	37	31	31	29	34	33	33	33	33	27	30	28	29	39	41	24	45	35
3	42	46	46	43	42	42	40	38	37	36	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	36	46	41
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	24	28	28	28	28	33	40	38	37	36	31	31	29	34	33	33	29	32	27	30	28	29	35	28	24		
Max	42	46	46	43	43	45	50	59	68	70	62	52	43	40	70	47	33	33	32	35	29	29	39	41		70	
Avg	31	35	35	37	38	40	45	47	50	48	47	42	36	37	52	40	31	33	30	33	29	29	37	35			38

Total Data Records Possible: 744
Total Valid Data Records: 58
Percent Data Recovery: 7.8

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Star Nursery (112)
Validation Level: B

Variable: Star Nursery (112)
Units: ug/m3
Channel: 15

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:01
Output File Name: PM1B0405.15

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	40	52	28	28	27	22	25	26	59	24	19	20	19	59	31
17	18	17	17	19	20	20	22	25	33	59	81	86	69	70	54	46	43	39	38	38	29	35	35	39	17	86	40
18	47	43	35	34	31	37	73	50	81	47	62	63	58	49	40	34	36	26	23	26	24	20	33	45	20	81	42
19	53	37	33	32	30	34	23	14	12	10	17	28	20	20	13	11	10	11	11	10	10	10	10	10	10	53	20
20	12	12	10	10	47	55	35	13	15	14	20	22	28	26	19	17	11	10	11	11	10	10	10	10	10	55	18
21	10	11	10	10	10	12	35	26	23	24	23	27	28	27	24	20	18	16	19	21	14	12	11	12	10	35	18
22	11	10	10	10	13	32	31	55	24	26	24	27	24	23	22	22	22	23	19	18	39	15	15	13	10	55	22
23	12	13	26	19	12	14	18	28	24	21	21	24	23	84	52	21	18	14	16	27	11	10	13	13	10	84	22
24	10	11	10	11	10	10	10	11	17	20	23	31	26	25	24	19	14	11	13	14	13	14	16	16	10	31	16
25	15	13	23	13	37	19	24	20	33	34	35	29	28	33	18	16	14	14	19	14	14	12	12	10	10	37	21
26	10	10	10	10	10	17	38	18	19	19	22	27	58	43	21	15	12	13	17	18	16	12	12	13	10	58	19
27	13	23	28	47	32	54	61	41	45	66	55	59	51	48	54	46	34	33	36	29	17	18	17	20	13	66	39
28	13	16	37	21	24	15	15	13	10	10	10	16	23	25	20	19	21	12	10	10	10	10	10	11	10	37	16
29	14	12	10	10	23	62	26	16	13	22	21	21	24	27	30	14	18	16	13	16	10	10	11	10	10	62	19
30	10	11	11	10	10	14	14	14	18	20	31	31	33	31	23	26	23	15	14	15	13	14	13	11	10	33	18
Min	10	10	10	10	10	10	10	11	10	10	10	16	20	20	13	11	10	10	10	10	10	10	10	10	10		
Max	53	43	37	47	47	62	73	55	81	66	81	86	69	84	54	46	43	39	38	38	59	35	35	45		86	
Avg	18	17	19	18	22	28	30	25	26	28	32	35	36	39	29	24	21	18	19	20	19	15	16	17			24

Total Data Records Possible: 720
Total Valid Data Records: 348
Percent Data Recovery: 48.3

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Star Nursery (112)
Units: ug/m3
Channel: 15

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:05
Output File Name: PM1B0505.15

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	12	12	11	11	12	13	15	18	17	23	32	71	73	59	22	18	18	18	15	15	13	13	10	10	10	73	22
2	11	11	11	10	12	32	30	26	18	23	30	37	65	60	27	24	35	20	14	12	12	10	10	10	10	65	23
3	11	10	10	10	12	15	20	20	39	24	46	58	71	54	24	20	18	15	19	31	25	13	27	17	10	71	25
4	11	11	11	11	16	26	45	39	46	40	51	72	79	60	31	58	29	36	27	28	27	26	22	30	11	79	35
5	63	25	34	53	62	69	72	110	48	27	26	64	54	46	58	47	45	23	15	16	17	12	10	11	10	110	42
6	10	17	10	11	13	20	18	23	29	39	46	41	46	31	20	14	12	13	10	10	10	11	10	10	10	46	20
7	10	10	10	14	11	16	12	14	13	15	18	21	22	20	16	12	11	11	14	11	10	9	15	13	9	22	14
8	8	8	8	8	8	8	9	13	18	25	25	26	60	66	61	23	19	17	14	12	11	9	26	34	8	66	22
9	32	29	23	29	31	36	42	97	105	63	52	90	42	28	23	24	19	15	14	12	11	6	7	6	6	105	35
10	4	3	12	4	19	38	16	12	13	17	20	13	15	15	13	9	6	7	13	7	4	3	2	-980	2	38	12
11	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
12	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
13	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
14	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
15	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	24	24	21	24	27	22	23	25	21	27	24
16	18	26	55	8	5	5	5	5	5	43	66	107	98	64	80	150	156	43	41	30	30	23	18	13	5	156	46
17	16	11	13	12	19	31	29	19	21	24	28	32	38	35	60	27	26	22	24	23	25	21	26	24	11	60	25
18	27	22	20	24	31	44	85	35	36	41	38	67	71	43	32	34	25	27	24	32	18	24	16	21	16	85	35
19	17	16	15	15	17	26	30	31	34	41	37	64	70	53	39	32	32	30	31	39	29	25	18	17	15	70	32
20	14	13	13	13	16	21	31	34	38	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	13	38	21
21	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
22	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
23	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
24	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
25	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
26	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
27	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
28	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-	-	-
29	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	-920	116	132	123	117	69	79	77	58	58	53	50	57	60	50	132	81
30	58	49	49	52	56	57	63	50	34	31	36	23	24	42	42	44	45	46	45	49	48	48	45	47	23	63	45
31	47	46	47	43	87	77	73	55	39	50	28	21	22	38	39	35	39	42	43	42	40	43	93	60	21	93	48
Min	4	3	8	4	5	5	5	5	5	15	18	13	15	15	13	9	6	7	10	7	4	3	2	6	2		
Max	63	49	55	53	87	77	85	110	105	63	66	116	132	123	117	150	156	77	58	58	53	50	93	60		156	
Avg	22	19	21	19	25	31	35	35	33	33	36	54	58	49	41	38	35	27	25	25	23	20	24	24			31

Total Data Records Possible: 744
Total Valid Data Records: 413
Percent Data Recovery: 55.5

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Star Nursery (112)
Units: ug/m3
Channel: 15

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:08
Output File Name: PM1B0605.15

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	50	46	51	52	80	72	71	73	64	78	124	65	47	63	51	53	63	56	59	58	57	52	70	63	46	124	63
2	64	64	63	63	66	77	71	78	60	75	49	44	61	88	60	72	70	67	63	67	64	61	71	107	44	107	68
3	84	53	42	36	35	56	49	47	38	32	72	71	31	60	42	42	41	50	41	39	39	46	39	36	31	84	47
4	35	36	37	35	39	50	59	58	54	66	46	41	44	54	41	43	46	42	48	40	39	37	36	36	35	66	44
5	41	47	47	48	49	48	53	55	54	64	88	75	48	51	56	53	60	43	44	55	76	106	37	37	37	106	56
6	46	63	38	39	37	42	44	52	60	44	38	37	43	45	55	51	47	46	69	56	98	70	35	33	33	98	50
7	33	31	29	30	61	67	45	46	42	45	65	44	55	52	44	58	42	33	34	37	42	40	34	38	29	67	44
8	32	26	24	29	28	36	45	54	46	36	51	53	48	59	40	37	30	28	28	38	39	38	36	29	24	59	38
9	31	27	36	41	54	54	52	41	34	29	27	30	22	21	24	29	24	25	26	22	23	23	21	24	21	54	31
10	20	18	18	15	19	32	42	38	24	20	59	65	39	40	26	26	28	29	29	30	29	26	27	26	15	65	30
11	28	21	41	24	19	22	25	28	24	18	42	36	20	38	27	27	26	25	35	30	25	23	21	22	18	42	27
12	23	21	19	17	18	18	24	29	29	19	61	27	19	41	30	31	33	37	38	35	33	31	29	31	17	61	29
13	33	30	26	30	39	69	57	38	25	38	30	23	24	41	29	30	30	32	33	46	41	34	32	31	23	69	35
14	28	26	25	25	34	51	75	31	17	23	12	10	21	37	17	36	31	21	17	19	20	19	17	30	10	75	27
15	32	44	31	29	34	37	44	55	44	66	109	44	27	42	28	29	26	29	23	28	21	22	22	24	21	109	37
16	24	27	26	27	29	44	43	44	45	36	38	58	102	65	45	38	30	29	26	38	24	20	21	15	15	102	37
17	16	16	20	20	20	127	101	129	70	31	28	76	88	57	48	26	44	21	22	14	13	14	13	11	11	129	43
18	9	7	6	3	3	5	21	17	19	23	23	44	11	10	12	10	9	9	8	9	11	11	9	8	3	44	12
19	5	5	7	6	8	6	16	20	17	15	53	20	18	28	14	15	13	12	13	15	16	15	15	13	5	53	15
20	13	13	14	12	16	44	55	59	42	24	65	74	76	65	45	34	32	48	37	76	49	34	31	31	12	76	41
21	36	37	39	28	28	47	63	58	48	78	43	41	35	34	73	47	29	28	27	36	36	30	29	30	27	78	41
22	45	36	37	46	36	47	42	38	48	52	86	56	42	41	46	45	51	45	33	39	33	34	38	37	33	86	44
23	35	33	32	32	31	45	42	40	39	54	79	46	45	104	232	76	91	87	86	21	40	102	128	33	21	232	65
24	25	21	19	26	35	52	38	44	34	103	162	167	178	127	20	24	21	20	42	80	87	49	21	26	19	178	59
25	23	52	12	8	7	10	25	23	26	23	37	45	23	33	19	18	17	12	10	9	12	8	10	42	7	52	21
26	28	7	9	11	15	11	25	31	25	42	47	32	25	37	17	18	15	16	16	15	13	12	9	8	7	47	20
27	9	7	10	13	11	37	38	35	35	19	73	39	15	27	18	10	11	11	11	32	27	14	17	20	7	73	22
28	20	24	24	39	46	40	34	67	40	35	65	39	21	36	29	16	15	16	16	16	14	15	26	31	14	67	30
29	28	26	19	13	20	44	25	43	49	149	217	224	173	83	119	107	97	95	110	134	120	94	79	52	13	224	88
30	43	35	27	27	55	72	92	136	265	275	228	169	96	116	154	118	75	73	73	30	27	29	33	28	27	275	95
Min	5	5	6	3	3	5	16	17	17	15	12	10	11	10	12	10	9	9	8	9	11	8	9	8	3		
Max	84	64	63	63	80	127	101	136	265	275	228	224	178	127	232	118	97	95	110	134	120	106	128	107		275	
Avg	31	30	28	27	32	45	47	50	47	54	71	60	50	53	49	41	38	36	37	39	39	37	34	32			42

Total Data Records Possible: 720
Total Valid Data Records: 720
Percent Data Recovery: 100.0

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Star Nursery (112)
Units: ug/m3
Channel: 15

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:12
Output File Name: PM1B0705.15

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	23	22	23	20	37	63	63	49	84	90	71	50	38	34	51	34	21	26	26	22	16	17	21	16	16	90	38
2	22	24	23	26	29	30	34	38	58	35	28	32	28	37	75	32	33	25	22	21	18	24	29	27	18	75	31
3	31	29	27	26	24	23	31	35	57	55	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	23	57	34
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	22	22	23	20	24	23	31	35	57	35	28	32	28	34	51	32	21	25	22	21	16	17	21	16	16		
Max	31	29	27	26	37	63	63	49	84	90	71	50	38	37	75	34	33	26	26	22	18	24	29	27		90	
Avg	25	25	24	24	30	39	43	41	66	60	50	41	33	36	63	33	27	26	24	22	17	21	25	22			35

Total Data Records Possible: 744
Total Valid Data Records: 58
Percent Data Recovery: 7.8

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Joe Neal (120)
Validation Level: B

Variable: Joe Neal (120)
Units: ug/m3
Channel: 16

Site: Clark County PM10 Saturation Study
Month: April
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:02
Output File Name: PM1B0405.16

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Max	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	
Avg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-

Total Data Records Possible: 720
Total Valid Data Records: 0
Percent Data Recovery: 0.0

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Joe Neal (120)
Units: ug/m3
Channel: 16

Site: Clark County PM10 Saturation Study
Month: May
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:05
Output File Name: PM1B0505.16

	Hour Ending																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
2	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	19	20	15	12	10	12	25	10	25	16
10	24	10	9	9	10	10	9	10	11	19	47	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	9	47	15
11	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
12	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
13	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
14	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
15	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
16	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
17	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
18	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-980	-	-	-
19	-980	-980	-980	-980	-980	-980	-980	-980	21	16	11	13	15	13	16	13	15	15	11	10	17	18	9	12	9	21	14
20	11	15	12	11	15	25	33	28	23	21	14	20	24	16	13	13	13	13	15	9	10	11	11	8	8	33	16
21	11	11	12	9	11	10	10	12	12	9	10	11	12	14	16	17	19	21	19	27	45	24	20	17	9	45	16
22	16	15	18	20	21	22	21	21	23	23	22	22	23	22	22	22	18	17	22	21	32	27	32	34	15	34	22
23	29	20	22	11	14	25	41	27	33	26	23	32	27	16	14	15	16	35	25	21	19	27	17	21	11	41	23
24	20	18	20	21	30	21	26	26	22	23	20	23	17	14	19	11	12	14	14	16	30	17	17	12	11	30	19
25	15	12	9	9	14	14	17	14	15	18	17	16	15	16	20	20	19	20	31	67	56	51	30	22	9	67	22
26	19	23	24	22	33	49	33	27	25	24	19	20	19	18	23	19	20	35	31	44	52	43	30	25	18	52	28
27	18	20	15	16	30	33	78	43	26	24	20	21	24	23	22	24	26	29	26	27	36	28	17	12	12	78	27
28	16	19	23	28	34	33	33	33	30	29	33	29	27	25	27	28	26	26	28	28	31	30	35	26	16	35	28
29	30	25	26	28	31	28	25	23	26	26	30	31	37	37	35	33	36	37	23	24	28	22	27	55	22	55	30
30	54	27	19	17	15	16	14	15	12	10	9	9	9	9	10	10	10	14	17	21	28	29	26	20	9	54	18
31	15	11	11	8	9	10	11	10	15	15	12	13	17	14	17	16	16	22	19	23	19	22	14	19	8	23	15
Min	11	10	9	8	9	10	9	10	11	9	9	9	9	9	10	10	10	13	11	9	10	10	9	8	8		
Max	54	27	26	28	34	49	78	43	33	29	47	32	37	37	35	33	36	37	31	67	56	51	35	55		78	
Avg	21	17	17	16	21	23	27	22	21	20	21	20	20	18	20	19	19	23	22	25	30	26	21	22			21

Total Data Records Possible: 744
Total Valid Data Records: 322
Percent Data Recovery: 43.3

Missing Data Codes

-910	No data collected - system not set up
-920	Instrument Malfunction
-930	Data Logger Malfunction
-940	Calibration
-950	Audit
-960	Maintenance
-970	Data invalid - Does not meet consistency or an obvious problem
-971	Local Interference
-980	Power failure
-990	Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Joe Neal (120)
Units: ug/m3
Channel: 16

Site: Clark County PM10 Saturation Study
Month: June
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:09
Output File Name: PM1B0605.16

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	19	24	21	17	21	31	34	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	17	34	24
2	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
3	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
4	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
5	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
6	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-930	-	-	-
7	-930	-930	-930	-930	-930	-930	46	20	21	14	13	13	14	19	27	23	22	18	18	18	21	18	16	18	13	46	20
8	19	18	16	17	19	33	36	32	30	27	23	20	20	17	20	20	19	16	16	14	18	15	14	14	14	36	21
9	19	20	15	8	8	11	13	11	7	8	9	7	7	7	9	10	8	8	10	10	12	9	15	10	7	20	10
10	12	6	5	6	12	9	9	7	12	12	14	12	13	13	14	14	16	16	18	12	29	10	42	25	5	42	14
11	16	10	7	8	8	7	8	8	9	7	16	12	13	13	13	14	13	13	20	12	11	10	10	13	7	20	11
12	13	14	15	14	16	21	15	12	13	12	14	13	13	14	17	17	20	20	21	32	32	28	23	20	12	32	18
13	12	11	11	10	12	14	17	17	18	16	22	15	29	15	16	17	19	20	19	50	44	33	34	35	10	50	21
14	27	22	19	18	24	42	63	29	25	24	18	17	19	20	24	25	24	20	20	20	21	20	20	19	17	63	24
15	22	22	24	34	41	58	66	51	44	36	63	34	30	27	25	29	26	24	25	24	28	25	25	28	22	66	34
16	31	26	28	30	34	43	41	35	34	49	46	29	22	48	24	26	23	23	25	21	22	23	23	20	20	49	30
17	19	20	20	19	17	16	24	44	55	36	22	42	29	25	19	20	19	19	22	18	14	14	15	13	13	55	23
18	12	13	11	10	11	13	13	14	18	12	13	9	9	9	10	11	11	11	11	12	11	12	17	21	9	21	12
19	18	22	20	16	17	21	18	17	19	19	19	21	19	14	14	18	18	16	16	25	29	27	26	32	14	32	20
20	30	26	25	21	37	45	67	39	40	31	30	34	38	36	36	36	34	33	43	40	44	37	31	33	21	67	36
21	32	33	36	32	35	57	46	44	48	47	40	39	40	40	36	33	33	30	30	38	53	39	32	34	30	57	39
22	33	31	34	48	45	48	56	69	49	40	38	35	40	46	43	44	47	56	111	74	42	34	34	43	31	111	48
23	43	42	43	40	43	42	40	43	39	37	39	43	42	43	52	78	42	22	22	30	26	23	23	25	22	78	38
24	40	48	48	46	53	66	59	46	39	44	96	106	167	103	81	74	28	18	21	22	36	35	26	26	18	167	55
25	22	22	32	36	56	34	35	39	26	24	39	50	32	24	19	16	15	15	15	15	18	21	19	19	15	56	27
26	21	15	12	12	13	19	21	24	20	19	20	21	22	23	25	23	21	23	21	21	18	21	22	23	12	25	20
27	23	21	17	19	25	40	37	34	29	23	21	19	15	14	16	15	16	17	18	19	30	26	29	24	14	40	23
28	248	21	23	24	32	59	48	41	50	33	31	26	27	25	25	25	22	23	22	24	27	34	23	20	20	248	39
29	28	24	18	19	21	23	22	26	31	102	100	121	138	117	110	143	159	152	146	174	189	197	126	80	18	197	94
30	64	64	78	69	69	66	77	107	118	196	246	218	151	96	92	147	149	120	97	119	142	160	90	72	64	246	117
Min	12	6	5	6	8	7	8	7	7	7	9	7	7	7	9	10	8	8	10	10	11	9	10	10	5		
Max	248	64	78	69	69	66	77	107	118	196	246	218	167	117	110	147	159	152	146	174	189	197	126	80		248	
Avg	34	24	24	24	28	34	36	34	33	36	41	40	40	34	32	37	34	31	33	35	38	36	31	28			33

Total Data Records Possible: 720
Total Valid Data Records: 577
Percent Data Recovery: 80.1

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

Variable: Joe Neal (120)
Units: ug/m3
Channel: 16

Site: Clark County PM10 Saturation Study
Month: July
Year: 2005
Time Zone: PST

Validation Level: B
Printout Date: 11-23-2005
Printout Time: 16:17:13
Output File Name: PM1B0705.16

	Hour Ending																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Min	Max	Avg
1	56	48	47	45	47	63	62	69	53	55	51	46	41	37	38	58	69	42	45	35	53	54	41	98	35	98	52
2	41	38	39	44	37	41	45	39	41	37	35	35	33	31	35	37	39	40	-910	-910	-910	-910	-910	-910	31	45	38
3	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
4	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
5	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
6	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
7	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
8	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
9	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
10	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
11	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
12	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
13	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
14	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
15	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
16	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
17	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
18	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
19	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
20	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
21	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
22	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
23	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
24	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
25	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
26	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
27	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
28	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
29	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
30	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
31	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-910	-	-	-
Min	41	38	39	44	37	41	45	39	41	37	35	35	33	31	35	37	39	40	45	35	53	54	41	98	31		
Max	56	48	47	45	47	63	62	69	53	55	51	46	41	37	38	58	69	42	45	35	53	54	41	98		98	
Avg	49	43	43	45	42	52	54	54	47	46	43	41	37	34	37	48	54	41	45	35	53	54	41	98			46

Total Data Records Possible: 744
Total Valid Data Records: 42
Percent Data Recovery: 5.6

Missing Data Codes

-910 No data collected - system not set up
-920 Instrument Malfunction
-930 Data Logger Malfunction
-940 Calibration
-950 Audit
-960 Maintenance
-970 Data invalid - Does not meet consistency or an obvious problem
-971 Local Interference
-980 Power failure
-990 Reserved for future descriptor

Processed using: TABLE.EXE version 1.1

APPENDIX E

STANDARD OPERATING PROCEDURES

1. Inspect the station for any signs of vandalism or theft.
2. If the site has a CR10 data logger then skip to the next step, otherwise use the following procedure. Download the data from the DustTrak using the laptop computer and the TrakPro software. Use the following naming convention for the data file: SSSMMDD where SSS is the site number (always 3 digits e.g. 052 is site 52). When downloading data from the DustTrak, the recording mode must be turned off by pressing the sample button. Select File and Receive from the menu. Press the Select All button and then Receive. Press OK and Close the "Receive Tests from Instrument" window. Select File and Save As and name the file with the above naming convention. The file should be saved as the default TKP extension. If by some chance you need to save the file twice (you want to make sure it is downloaded) then use SSSMMDDa for the name. From the TrakPro display window, place the cursor over the last indicated Test and verify the indicated data start date and duration to see if the total data brings the readings up to date. Note the memory remaining on the DustTrak in the log. Close the TrakPro software and reenable the DustTrak sampling by pressing the Sample button. The display will show the Test number briefly before indicating the dust concentration. Skip the next step as it only applies to the CR10.
3. Using the Palm Pilot (Bob), connect to the CR10 data logger using the appropriate site number. Collect the data from the data logger (since last collection). View the data logger time and note the difference from the Palm time in the log.
4. Using the Statistics button on the DustTrak, cycle through the displays to verify the elapsed time since start and the memory available. After viewing the memory available press the Statistics button once more to display the concentration. Verify that the DustTrak is in Sample mode with Recording in Log 1 mode.
5. Perform a zero check on the DustTrak by CAREFULLY removing the sample line in the enclosure from the back of the DustTrak. Take care to not put stress on the tee on the water dropout bottle as it might break the Shoe-Goo seal. If the zero is ±.001 then all is well. Outside this range the system should be rezeroed using the TSI procedure (except DO NOT change the time constant). If the zero is out by more than ±.005 then call Bob.
6. Perform a flow check by placing the flow meter on the sampler inlet on the back of the DustTrak. Acceptable flow is 1.6 to 1.7 lpm. If the flow is not in this range then call Bob. This is especially important if the flow has dropped by 0.2 lpm or more.
7. Check the water dropout bottle for signs of water. The bottle should not need any servicing unless there has been rain and water is present. The bottle has been tightened and tape place around the lid to ensure a good seal. Do not open the bottle unless absolutely necessary to remove water. If it is opened then the tape should be replaced and not reused.
8. For the sites without the CR10, measure and note the terminal voltage on the deep cycle battery to make sure it is still charging. A voltage below 12 volts is a sign of problems in the charging.
9. For the sites with a CR10, the data stream should be reviewed (this can be done on-site or back at the office) for signs of a consistent battery drain indicating problems.
10. Clean any dust or debris from the solar panel.
11. Close and secure the lid. Place the lock through the case holes and security cable.

1. Open the lid of the sampler and carefully remove the copper sample line and sample head. The sample head will connect to the copper line by sliding the line all the way through the vinyl tubing until it meets the bottom of the sample head. This tubing has been heated and formed around the threaded end of the sample head and the black tape only serves to ensure a tight seal. Do not tie wrap the sample head end yet as a zero of the analyzer should be performed through the entire length of the tubing upon initial installation.
2. The sample head must be supported by tie wrapping to a pipe or board. It will not support itself if only the copper line is fastened.
3. The copper line should be extended to be as straight as possible with no sharp kinks or small diameter bends. It is OK to have gentle bends. Do not cut or shorten the length of the tubing. If a length is left over then leave a large diameter circle (> 1 foot) near the sampler case.
4. The sampler end of the tubing should be inserted into the short length of Tygon that exits the sampler. Place two tie wraps around the Tygon tubing to ensure a good seal. Place the tie wraps with the slip ends on opposite sides of the tubing.
5. The water drop out bottle on the inside of the enclosure should not need any servicing unless there has been rain. The bottle has been tightened and tape place around the lid to ensure a good seal. Do not open the bottle unless absolutely necessary. If it is opened then the tape should be replaced and not reused.
6. Open the lid of the deep cycle battery and remove the two wires that go to the sampler enclosure. One wire (barrel connector) is for the DustTrak power and the second (molex connector) is for power to the CR10 data logger. Place the wires through the hole in the side of the enclosure and connect both to their respective jacks. Make sure the molex pins connect as they can be tricky. Appropriately stuff the rag in the cable hole to “seal” it from critters. The porous nature of the rag will allow some air to escape from the pump system.
7. Measure and note the terminal voltage on the internal data logger battery. Carefully connect the terminal pins from the molex connector to the data logger battery noting the proper polarity. This **MUST** be done **BEFORE** connecting to the deep cycle battery/solar panel system.
8. Remove and mount the solar panel on the frame and use the adapter to place a cigarette lighter plug on the panel cable. This plug connects to the receptacle on the charger/regulator (white PVC pipe with wires) on the deep cycle battery. The charger/regulator has its own plug to connect to the receptacle on the battery. Once assembled, the deep cycle battery can be placed on the frame to help keep the frame in place in winds.
9. Measure and note the terminal voltage on the deep cycle battery. Place the 5 amp fuse in the fuse holder of the deep cycle battery. This connects power from the solar panel to the battery. Measure and note the terminal voltage on the deep cycle battery. It should start increasing with time if the sun is out and the solar panels are working properly. If the deep cycle battery voltage is 0.3 volts higher than the data logger starting voltage, then that battery should also show a charge starting. If the data logger battery charge cannot be verified this way then the plug connecting the charger/regulator should be temporarily disconnected and the data logger battery voltage checked again for charging. Once verified then the deep cycle battery should be reconnected and the charge voltage verified.
10. Using the two adapter cables, connect the “Bob” Palm Pilot to the data logger. Use PConnect to establish a connection to the data logger. Set the data logger time. Transfer

the appropriate program from the Palm Pilot to the data logger. The programs are named according to the site and you **MUST** use the proper program to ensure the site stamp is included in the data stream.

11. Select Measurements from the menu and make sure the date and time are correct, as are site and the data logger voltage.
12. Turn on the DustTrak and allow it to warm up for at least 5 minutes. Note the readings from the DustTrak display and the data logger display. The data logger values are typically about 4 ug/m3 higher. This is normal.
13. Place the flow meter on the end of the copper line and measure the flow. The acceptable range is 1.6 to 1.7 lpm. Only a small adjustment, if any, should be necessary, but be aware that a large adjustment upwards, and a pump that is working hard indicates a diaphragm or dampener bladder failure. If it requires a large adjustment then turn the flow back down to where it was initially and **CALL BOB IMMEDIATELY**.
14. Place the zero filter on the end of the copper tube and perform a zero, with any needed recalibration, making appropriate notes.
15. Insert the copper tubing into the sample head and place two tie wraps around the vinyl tubing with the slip ends on opposite sides to ensure a good seal.
16. Verify that at least 99% of the memory is available. Place the sampler into logging mode and ensure that “Log 1” is present on the display.
17. Verify the readings are within 5 ug/m3 between the DustTrak and CR10 values. Perform a download of data from the data logger (depending on the connect time, little if any data may be retrieved). Use the “Disconnect” command on the Palm Pilot and remove the serial cables.
18. Close and secure the lid. Place the lock through the case holes and security cable. To the extent possible, loop the cable through the handle and other components to make it as secure as possible.

APPENDIX F

PM10 FREQUENCY DISTRIBUTIONS AT THE DAQEM SITES

Apex - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	27	11	11	17	38
2	33.76 - 56.25	45.0	NE	10	11	11	14	38
3	56.26 - 78.75	67.5	ENE	10	11	13	17	15
4	78.76 - 101.25	90.0	E	10	11	13	10	14
5	101.26 - 123.75	112.5	ESE	11	12	17	14	14
6	123.76 - 146.25	135.0	SE	11	13	14	14	21
7	146.26 - 168.75	157.5	SSE	13	17	20	23	30
8	168.76 - 191.25	180.0	S	14	22	28	32	56
9	191.26 - 213.75	202.5	SSW	16	25	31	33	90
10	213.76 - 236.25	225.0	SW	18	25	28	25	58
11	236.26 - 258.75	247.5	WSW	16	21	28	24	38
12	258.76 - 281.25	270.0	W	15	17	21	21	26
13	281.26 - 303.75	292.5	WNW	11	13	17	10	38
14	303.76 - 326.25	315.0	NW	12	11	11	22	20
15	326.26 - 348.75	337.5	NNW	14	14	11	14	21
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Apex - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	8	76	105	95	62
2	33.76 - 56.25	45.0	NE	161	854	614	251	80
3	56.26 - 78.75	67.5	ENE	296	1074	365	107	54
4	78.76 - 101.25	90.0	E	395	781	143	62	42
5	101.26 - 123.75	112.5	ESE	469	625	70	67	48
6	123.76 - 146.25	135.0	SE	494	622	80	58	58
7	146.26 - 168.75	157.5	SSE	549	661	205	261	210
8	168.76 - 191.25	180.0	S	557	1470	2093	1177	376
9	191.26 - 213.75	202.5	SSW	693	2003	2591	1054	862
10	213.76 - 236.25	225.0	SW	953	2195	689	379	367
11	236.26 - 258.75	247.5	WSW	814	3052	307	57	26
12	258.76 - 281.25	270.0	W	430	1357	77	22	9
13	281.26 - 303.75	292.5	WNW	134	425	36	12	3
14	303.76 - 326.25	315.0	NW	41	348	41	18	8
15	326.26 - 348.75	337.5	NNW	3	55	25	20	3
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

East Craig Road - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	53	35	71	90	0
2	33.76 - 56.25	45.0	NE	53	42	62	128	497
3	56.26 - 78.75	67.5	ENE	52	48	51	175	0
4	78.76 - 101.25	90.0	E	54	37	38	103	266
5	101.26 - 123.75	112.5	ESE	50	37	40	67	383
6	123.76 - 146.25	135.0	SE	51	39	49	140	270
7	146.26 - 168.75	157.5	SSE	45	37	41	77	175
8	168.76 - 191.25	180.0	S	43	33	41	76	209
9	191.26 - 213.75	202.5	SSW	41	34	38	64	227
10	213.76 - 236.25	225.0	SW	40	33	33	64	192
11	236.26 - 258.75	247.5	WSW	36	32	33	61	205
12	258.76 - 281.25	270.0	W	42	28	37	49	273
13	281.26 - 303.75	292.5	WNW	42	30	27	29	122
14	303.76 - 326.25	315.0	NW	43	31	24	39	116
15	326.26 - 348.75	337.5	NNW	44	31	29	76	57
16	348.75 - 11.24	360.0	N	49	34	48	146	0

East Craig Road - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	630	440	92	11	0
2	33.76 - 56.25	45.0	NE	588	692	209	47	2
3	56.26 - 78.75	67.5	ENE	509	1152	316	33	0
4	78.76 - 101.25	90.0	E	523	1370	194	5	1
5	101.26 - 123.75	112.5	ESE	499	1532	139	3	1
6	123.76 - 146.25	135.0	SE	553	1950	365	50	4
7	146.26 - 168.75	157.5	SSE	447	1895	710	234	23
8	168.76 - 191.25	180.0	S	309	1233	596	200	21
9	191.26 - 213.75	202.5	SSW	238	666	528	344	64
10	213.76 - 236.25	225.0	SW	228	548	508	370	114
11	236.26 - 258.75	247.5	WSW	263	368	249	166	46
12	258.76 - 281.25	270.0	W	452	425	110	50	15
13	281.26 - 303.75	292.5	WNW	725	612	154	113	49
14	303.76 - 326.25	315.0	NW	1062	2383	311	297	274
15	326.26 - 348.75	337.5	NNW	1300	2592	128	44	4
16	348.75 - 11.24	360.0	N	478	517	29	2	0

City Center - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	108	30	0	0	0
2	33.76 - 56.25	45.0	NE	29	19	137	738	0
3	56.26 - 78.75	67.5	ENE	37	27	62	38	0
4	78.76 - 101.25	90.0	E	40	26	61	0	0
5	101.26 - 123.75	112.5	ESE	38	34	83	0	0
6	123.76 - 146.25	135.0	SE	39	35	84	204	0
7	146.26 - 168.75	157.5	SSE	41	32	59	251	0
8	168.76 - 191.25	180.0	S	42	34	68	151	0
9	191.26 - 213.75	202.5	SSW	43	35	88	511	0
10	213.76 - 236.25	225.0	SW	44	33	70	264	0
11	236.26 - 258.75	247.5	WSW	49	33	95	0	0
12	258.76 - 281.25	270.0	W	54	32	161	248	517
13	281.26 - 303.75	292.5	WNW	56	34	44	205	326
14	303.76 - 326.25	315.0	NW	55	21	46	86	360
15	326.26 - 348.75	337.5	NNW	0	0	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

City Center - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	1	1	0	0	0
2	33.76 - 56.25	45.0	NE	25	22	8	1	0
3	56.26 - 78.75	67.5	ENE	681	489	101	1	0
4	78.76 - 101.25	90.0	E	2118	658	15	0	0
5	101.26 - 123.75	112.5	ESE	2654	1311	30	0	0
6	123.76 - 146.25	135.0	SE	2436	1021	126	2	0
7	146.26 - 168.75	157.5	SSE	2097	906	95	2	0
8	168.76 - 191.25	180.0	S	2114	1196	138	7	0
9	191.26 - 213.75	202.5	SSW	1926	1329	182	4	0
10	213.76 - 236.25	225.0	SW	1916	1149	159	9	0
11	236.26 - 258.75	247.5	WSW	1636	575	72	0	0
12	258.76 - 281.25	270.0	W	1686	451	52	1	2
13	281.26 - 303.75	292.5	WNW	2521	1190	225	39	8
14	303.76 - 326.25	315.0	NW	215	307	366	70	6
15	326.26 - 348.75	337.5	NNW	0	0	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

East Flamingo - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	30	18	33	47	74
2	33.76 - 56.25	45.0	NE	31	19	39	158	355
3	56.26 - 78.75	67.5	ENE	28	20	40	62	0
4	78.76 - 101.25	90.0	E	27	26	69	0	0
5	101.26 - 123.75	112.5	ESE	29	24	52	0	83
6	123.76 - 146.25	135.0	SE	27	25	52	47	0
7	146.26 - 168.75	157.5	SSE	37	27	51	62	0
8	168.76 - 191.25	180.0	S	35	25	35	52	98
9	191.26 - 213.75	202.5	SSW	41	27	33	60	189
10	213.76 - 236.25	225.0	SW	44	25	27	52	181
11	236.26 - 258.75	247.5	WSW	44	22	31	50	317
12	258.76 - 281.25	270.0	W	43	24	44	114	0
13	281.26 - 303.75	292.5	WNW	41	19	34	77	0
14	303.76 - 326.25	315.0	NW	35	18	24	47	292
15	326.26 - 348.75	337.5	NNW	33	17	19	52	183
16	348.75 - 11.24	360.0	N	31	16	37	95	143

East Flamingo - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	602	391	77	17	1
2	33.76 - 56.25	45.0	NE	1008	566	78	10	1
3	56.26 - 78.75	67.5	ENE	1004	563	31	2	0
4	78.76 - 101.25	90.0	E	750	522	13	0	0
5	101.26 - 123.75	112.5	ESE	524	449	17	0	1
6	123.76 - 146.25	135.0	SE	464	312	20	1	0
7	146.26 - 168.75	157.5	SSE	478	377	51	2	0
8	168.76 - 191.25	180.0	S	686	747	331	28	1
9	191.26 - 213.75	202.5	SSW	1519	1325	662	192	19
10	213.76 - 236.25	225.0	SW	1398	1028	792	375	71
11	236.26 - 258.75	247.5	WSW	844	463	265	73	11
12	258.76 - 281.25	270.0	W	708	126	30	4	0
13	281.26 - 303.75	292.5	WNW	711	126	7	1	0
14	303.76 - 326.25	315.0	NW	632	191	90	34	4
15	326.26 - 348.75	337.5	NNW	447	269	267	102	12
16	348.75 - 11.24	360.0	N	289	190	95	15	4

Green Valley - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	0	13	13	0	0
2	33.76 - 56.25	45.0	NE	28	22	30	58	0
3	56.26 - 78.75	67.5	ENE	32	25	27	88	58
4	78.76 - 101.25	90.0	E	29	22	26	38	100
5	101.26 - 123.75	112.5	ESE	28	23	43	67	0
6	123.76 - 146.25	135.0	SE	28	27	37	65	96
7	146.26 - 168.75	157.5	SSE	28	26	38	67	163
8	168.76 - 191.25	180.0	S	28	29	37	81	174
9	191.26 - 213.75	202.5	SSW	29	27	32	61	197
10	213.76 - 236.25	225.0	SW	28	28	39	79	265
11	236.26 - 258.75	247.5	WSW	28	27	34	83	22
12	258.76 - 281.25	270.0	W	27	21	30	79	0
13	281.26 - 303.75	292.5	WNW	24	23	34	92	203
14	303.76 - 326.25	315.0	NW	18	17	25	71	274
15	326.26 - 348.75	337.5	NNW	22	0	0	0	0
16	348.75 - 11.24	360.0	N	21	13	0	0	0

Green Valley - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	0	4	7	0	0
2	33.76 - 56.25	45.0	NE	200	532	187	17	0
3	56.26 - 78.75	67.5	ENE	695	506	80	7	1
4	78.76 - 101.25	90.0	E	1106	508	80	19	12
5	101.26 - 123.75	112.5	ESE	1109	387	91	21	0
6	123.76 - 146.25	135.0	SE	1347	445	195	41	5
7	146.26 - 168.75	157.5	SSE	1279	452	398	339	162
8	168.76 - 191.25	180.0	S	1568	805	345	78	17
9	191.26 - 213.75	202.5	SSW	2496	1999	1349	360	39
10	213.76 - 236.25	225.0	SW	5295	2161	1038	295	31
11	236.26 - 258.75	247.5	WSW	3101	1770	124	25	1
12	258.76 - 281.25	270.0	W	621	249	53	6	0
13	281.26 - 303.75	292.5	WNW	133	151	51	5	1
14	303.76 - 326.25	315.0	NW	36	75	117	34	2
15	326.26 - 348.75	337.5	NNW	9	0	0	0	0
16	348.75 - 11.24	360.0	N	11	3	0	0	0

Note: Site has a wind direction issue

JD Smith - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	42	27	44	138	297
2	33.76 - 56.25	45.0	NE	40	24	53	146	0
3	56.26 - 78.75	67.5	ENE	41	22	35	62	0
4	78.76 - 101.25	90.0	E	40	23	33	82	0
5	101.26 - 123.75	112.5	ESE	39	28	49	144	0
6	123.76 - 146.25	135.0	SE	38	32	59	149	0
7	146.26 - 168.75	157.5	SSE	40	32	48	115	0
8	168.76 - 191.25	180.0	S	37	30	48	96	283
9	191.26 - 213.75	202.5	SSW	40	30	42	78	162
10	213.76 - 236.25	225.0	SW	43	27	35	67	346
11	236.26 - 258.75	247.5	WSW	46	24	32	58	425
12	258.76 - 281.25	270.0	W	53	33	36	169	0
13	281.26 - 303.75	292.5	WNW	56	33	44	104	102
14	303.76 - 326.25	315.0	NW	55	24	37	96	285
15	326.26 - 348.75	337.5	NNW	50	29	57	215	0
16	348.75 - 11.24	360.0	N	46	27	47	73	0

JD Smith - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	689	248	82	22	1
2	33.76 - 56.25	45.0	NE	798	401	130	16	0
3	56.26 - 78.75	67.5	ENE	1016	624	82	3	0
4	78.76 - 101.25	90.0	E	1418	620	17	1	0
5	101.26 - 123.75	112.5	ESE	1354	1073	109	3	0
6	123.76 - 146.25	135.0	SE	1151	1185	224	15	0
7	146.26 - 168.75	157.5	SSE	876	795	145	6	0
8	168.76 - 191.25	180.0	S	839	1007	263	13	2
9	191.26 - 213.75	202.5	SSW	634	831	746	178	20
10	213.76 - 236.25	225.0	SW	583	734	708	233	22
11	236.26 - 258.75	247.5	WSW	841	583	294	85	5
12	258.76 - 281.25	270.0	W	2227	309	42	7	0
13	281.26 - 303.75	292.5	WNW	3302	428	109	36	6
14	303.76 - 326.25	315.0	NW	2061	552	552	215	22
15	326.26 - 348.75	337.5	NNW	1162	378	138	22	0
16	348.75 - 11.24	360.0	N	582	192	31	7	0

Jean - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	9	11	11	11	14
2	33.76 - 56.25	45.0	NE	10	11	12	14	27
3	56.26 - 78.75	67.5	ENE	10	11	12	14	27
4	78.76 - 101.25	90.0	E	9	12	16	9	0
5	101.26 - 123.75	112.5	ESE	11	13	17	21	65
6	123.76 - 146.25	135.0	SE	10	12	14	20	17
7	146.26 - 168.75	157.5	SSE	10	12	15	18	7
8	168.76 - 191.25	180.0	S	9	12	16	17	20
9	191.26 - 213.75	202.5	SSW	9	13	16	16	21
10	213.76 - 236.25	225.0	SW	10	15	16	16	28
11	236.26 - 258.75	247.5	WSW	11	13	14	15	33
12	258.76 - 281.25	270.0	W	12	13	13	13	22
13	281.26 - 303.75	292.5	WNW	12	13	12	13	21
14	303.76 - 326.25	315.0	NW	12	11	12	13	26
15	326.26 - 348.75	337.5	NNW	10	10	12	11	13
16	348.75 - 11.24	360.0	N	10	10	13	9	11

Jean - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	260	751	366	199	128
2	33.76 - 56.25	45.0	NE	287	892	758	326	93
3	56.26 - 78.75	67.5	ENE	262	791	568	258	30
4	78.76 - 101.25	90.0	E	223	502	174	39	0
5	101.26 - 123.75	112.5	ESE	196	268	35	12	4
6	123.76 - 146.25	135.0	SE	245	267	25	3	3
7	146.26 - 168.75	157.5	SSE	299	419	45	12	2
8	168.76 - 191.25	180.0	S	380	1176	487	229	77
9	191.26 - 213.75	202.5	SSW	240	1144	969	402	91
10	213.76 - 236.25	225.0	SW	275	1118	927	464	251
11	236.26 - 258.75	247.5	WSW	280	1130	981	626	610
12	258.76 - 281.25	270.0	W	284	1209	795	444	207
13	281.26 - 303.75	292.5	WNW	317	1573	622	223	76
14	303.76 - 326.25	315.0	NW	559	2351	1078	188	26
15	326.26 - 348.75	337.5	NNW	312	1043	232	24	6
16	348.75 - 11.24	360.0	N	154	416	68	20	12

Joe Neal - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	44	18	0	0	0
2	33.76 - 56.25	45.0	NE	51	35	29	119	0
3	56.26 - 78.75	67.5	ENE	44	41	49	105	0
4	78.76 - 101.25	90.0	E	43	38	38	116	0
5	101.26 - 123.75	112.5	ESE	40	38	41	118	164
6	123.76 - 146.25	135.0	SE	40	36	41	81	75
7	146.26 - 168.75	157.5	SSE	37	29	45	112	162
8	168.76 - 191.25	180.0	S	38	27	37	81	214
9	191.26 - 213.75	202.5	SSW	39	26	33	63	245
10	213.76 - 236.25	225.0	SW	42	25	31	60	134
11	236.26 - 258.75	247.5	WSW	42	28	32	70	143
12	258.76 - 281.25	270.0	W	43	24	35	48	68
13	281.26 - 303.75	292.5	WNW	47	24	35	68	267
14	303.76 - 326.25	315.0	NW	45	22	22	49	208
15	326.26 - 348.75	337.5	NNW	52	27	18	56	286
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Joe Neal - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	4	6	0	0	0
2	33.76 - 56.25	45.0	NE	80	50	15	1	0
3	56.26 - 78.75	67.5	ENE	361	231	43	4	0
4	78.76 - 101.25	90.0	E	750	763	195	32	0
5	101.26 - 123.75	112.5	ESE	1112	1519	298	17	7
6	123.76 - 146.25	135.0	SE	1489	1605	263	23	4
7	146.26 - 168.75	157.5	SSE	1353	769	234	22	11
8	168.76 - 191.25	180.0	S	1218	588	394	101	14
9	191.26 - 213.75	202.5	SSW	1014	525	476	250	56
10	213.76 - 236.25	225.0	SW	1024	527	369	190	44
11	236.26 - 258.75	247.5	WSW	994	328	121	35	16
12	258.76 - 281.25	270.0	W	1144	344	96	9	4
13	281.26 - 303.75	292.5	WNW	1355	766	205	40	12
14	303.76 - 326.25	315.0	NW	1342	2231	1365	638	218
15	326.26 - 348.75	337.5	NNW	187	331	227	33	3
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

Lone Mountain - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	5	16	0	0	0
2	33.76 - 56.25	45.0	NE	42	30	41	25	0
3	56.26 - 78.75	67.5	ENE	28	28	54	78	8
4	78.76 - 101.25	90.0	E	35	30	31	28	0
5	101.26 - 123.75	112.5	ESE	30	26	32	44	0
6	123.76 - 146.25	135.0	SE	27	25	28	88	13
7	146.26 - 168.75	157.5	SSE	25	21	20	30	74
8	168.76 - 191.25	180.0	S	24	20	24	24	39
9	191.26 - 213.75	202.5	SSW	26	19	21	30	54
10	213.76 - 236.25	225.0	SW	25	18	19	27	67
11	236.26 - 258.75	247.5	WSW	25	20	21	32	59
12	258.76 - 281.25	270.0	W	26	20	28	24	40
13	281.26 - 303.75	292.5	WNW	28	19	25	38	30
14	303.76 - 326.25	315.0	NW	33	21	20	32	83
15	326.26 - 348.75	337.5	NNW	37	23	20	24	81
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Lone Mountain - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	1	1	0	0	0
2	33.76 - 56.25	45.0	NE	5	9	8	2	0
3	56.26 - 78.75	67.5	ENE	92	107	8	4	1
4	78.76 - 101.25	90.0	E	485	418	30	3	0
5	101.26 - 123.75	112.5	ESE	995	1331	134	6	0
6	123.76 - 146.25	135.0	SE	1299	1810	268	13	2
7	146.26 - 168.75	157.5	SSE	1297	1166	332	35	2
8	168.76 - 191.25	180.0	S	1348	1015	431	79	10
9	191.26 - 213.75	202.5	SSW	1427	986	558	90	15
10	213.76 - 236.25	225.0	SW	1757	1085	726	155	19
11	236.26 - 258.75	247.5	WSW	3033	880	385	106	29
12	258.76 - 281.25	270.0	W	3633	493	138	19	7
13	281.26 - 303.75	292.5	WNW	1409	512	182	23	9
14	303.76 - 326.25	315.0	NW	585	1042	996	498	83
15	326.26 - 348.75	337.5	NNW	21	41	66	39	14
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

East Sahara - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	31	19	59	182	0
2	33.76 - 56.25	45.0	NE	31	16	41	68	0
3	56.26 - 78.75	67.5	ENE	30	17	41	0	0
4	78.76 - 101.25	90.0	E	28	22	48	86	0
5	101.26 - 123.75	112.5	ESE	27	25	62	82	0
6	123.76 - 146.25	135.0	SE	25	27	59	120	0
7	146.26 - 168.75	157.5	SSE	25	22	41	64	0
8	168.76 - 191.25	180.0	S	27	22	28	145	0
9	191.26 - 213.75	202.5	SSW	26	20	28	75	242
10	213.76 - 236.25	225.0	SW	34	19	27	55	289
11	236.26 - 258.75	247.5	WSW	39	19	35	55	349
12	258.76 - 281.25	270.0	W	43	28	62	136	0
13	281.26 - 303.75	292.5	WNW	43	18	40	157	244
14	303.76 - 326.25	315.0	NW	40	17	28	80	303
15	326.26 - 348.75	337.5	NNW	36	19	35	269	345
16	348.75 - 11.24	360.0	N	37	23	88	107	0

East Sahara - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	1215	528	132	14	0
2	33.76 - 56.25	45.0	NE	975	386	63	1	0
3	56.26 - 78.75	67.5	ENE	776	112	5	0	0
4	78.76 - 101.25	90.0	E	1329	458	9	2	0
5	101.26 - 123.75	112.5	ESE	1796	987	108	6	0
6	123.76 - 146.25	135.0	SE	1497	512	144	8	0
7	146.26 - 168.75	157.5	SSE	1054	510	120	1	0
8	168.76 - 191.25	180.0	S	1037	907	233	11	0
9	191.26 - 213.75	202.5	SSW	1146	1216	735	92	7
10	213.76 - 236.25	225.0	SW	1446	907	738	173	10
11	236.26 - 258.75	247.5	WSW	2112	314	130	37	6
12	258.76 - 281.25	270.0	W	2074	108	8	2	0
13	281.26 - 303.75	292.5	WNW	1807	115	44	3	4
14	303.76 - 326.25	315.0	NW	2135	325	284	123	20
15	326.26 - 348.75	337.5	NNW	1930	357	115	14	1
16	348.75 - 11.24	360.0	N	990	196	39	13	0

Mesquite - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	31	18	23	113	400
2	33.76 - 56.25	45.0	NE	29	23	25	180	438
3	56.26 - 78.75	67.5	ENE	33	22	32	136	0
4	78.76 - 101.25	90.0	E	30	21	49	395	0
5	101.26 - 123.75	112.5	ESE	28	23	42	190	0
6	123.76 - 146.25	135.0	SE	24	18	31	129	0
7	146.26 - 168.75	157.5	SSE	27	24	18	74	106
8	168.76 - 191.25	180.0	S	28	24	40	63	0
9	191.26 - 213.75	202.5	SSW	25	20	30	83	118
10	213.76 - 236.25	225.0	SW	26	20	29	51	312
11	236.26 - 258.75	247.5	WSW	23	21	28	49	201
12	258.76 - 281.25	270.0	W	24	21	28	54	0
13	281.26 - 303.75	292.5	WNW	23	18	26	42	0
14	303.76 - 326.25	315.0	NW	24	22	23	64	0
15	326.26 - 348.75	337.5	NNW	27	22	25	165	212
16	348.75 - 11.24	360.0	N	30	19	32	125	610

Mesquite - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	294	142	66	19	2
2	33.76 - 56.25	45.0	NE	439	141	61	9	1
3	56.26 - 78.75	67.5	ENE	888	116	16	4	0
4	78.76 - 101.25	90.0	E	2387	162	12	2	0
5	101.26 - 123.75	112.5	ESE	2029	147	7	3	0
6	123.76 - 146.25	135.0	SE	599	54	20	6	0
7	146.26 - 168.75	157.5	SSE	320	50	28	6	2
8	168.76 - 191.25	180.0	S	286	89	23	3	0
9	191.26 - 213.75	202.5	SSW	254	138	67	34	11
10	213.76 - 236.25	225.0	SW	363	344	245	125	16
11	236.26 - 258.75	247.5	WSW	458	796	442	123	4
12	258.76 - 281.25	270.0	W	397	525	301	19	0
13	281.26 - 303.75	292.5	WNW	239	78	5	2	0
14	303.76 - 326.25	315.0	NW	190	75	14	3	0
15	326.26 - 348.75	337.5	NNW	199	147	41	10	2
16	348.75 - 11.24	360.0	N	177	100	50	10	1

Microscale - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	196	0	0	0	0
2	33.76 - 56.25	45.0	NE	31	25	45	0	0
3	56.26 - 78.75	67.5	ENE	22	26	85	385	0
4	78.76 - 101.25	90.0	E	32	25	68	0	0
5	101.26 - 123.75	112.5	ESE	41	33	59	278	0
6	123.76 - 146.25	135.0	SE	44	34	90	199	0
7	146.26 - 168.75	157.5	SSE	46	31	54	146	447
8	168.76 - 191.25	180.0	S	51	32	42	152	0
9	191.26 - 213.75	202.5	SSW	54	30	39	72	126
10	213.76 - 236.25	225.0	SW	56	30	37	80	292
11	236.26 - 258.75	247.5	WSW	56	34	41	93	345
12	258.76 - 281.25	270.0	W	53	41	134	762	0
13	281.26 - 303.75	292.5	WNW	45	30	214	839	0
14	303.76 - 326.25	315.0	NW	38	26	85	356	0
15	326.26 - 348.75	337.5	NNW	74	0	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Microscale - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	2	0	0	0	0
2	33.76 - 56.25	45.0	NE	15	12	3	0	0
3	56.26 - 78.75	67.5	ENE	264	525	76	1	0
4	78.76 - 101.25	90.0	E	837	408	13	0	0
5	101.26 - 123.75	112.5	ESE	2154	1019	57	1	0
6	123.76 - 146.25	135.0	SE	2958	766	122	7	0
7	146.26 - 168.75	157.5	SSE	2978	658	128	5	1
8	168.76 - 191.25	180.0	S	3151	893	175	2	0
9	191.26 - 213.75	202.5	SSW	2911	1329	797	178	25
10	213.76 - 236.25	225.0	SW	3026	1086	909	307	35
11	236.26 - 258.75	247.5	WSW	2993	618	267	64	6
12	258.76 - 281.25	270.0	W	1443	173	13	2	0
13	281.26 - 303.75	292.5	WNW	596	201	10	1	0
14	303.76 - 326.25	315.0	NW	210	280	94	8	0
15	326.26 - 348.75	337.5	NNW	6	0	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

OR - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	24	26	31	66	0
2	33.76 - 56.25	45.0	NE	24	20	18	0	0
3	56.26 - 78.75	67.5	ENE	24	14	9	101	30
4	78.76 - 101.25	90.0	E	24	21	43	135	0
5	101.26 - 123.75	112.5	ESE	23	19	27	0	0
6	123.76 - 146.25	135.0	SE	26	22	36	0	0
7	146.26 - 168.75	157.5	SSE	26	22	72	8	0
8	168.76 - 191.25	180.0	S	33	20	32	180	0
9	191.26 - 213.75	202.5	SSW	34	23	30	74	200
10	213.76 - 236.25	225.0	SW	39	18	29	40	111
11	236.26 - 258.75	247.5	WSW	43	13	22	35	27
12	258.76 - 281.25	270.0	W	41	21	36	70	32
13	281.26 - 303.75	292.5	WNW	36	15	52	0	90
14	303.76 - 326.25	315.0	NW	32	15	23	41	76
15	326.26 - 348.75	337.5	NNW	30	13	15	28	14
16	348.75 - 11.24	360.0	N	27	16	25	122	38

OR - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	347	100	33	9	0
2	33.76 - 56.25	45.0	NE	559	150	30	0	0
3	56.26 - 78.75	67.5	ENE	776	62	7	2	1
4	78.76 - 101.25	90.0	E	653	101	7	1	0
5	101.26 - 123.75	112.5	ESE	301	75	4	0	0
6	123.76 - 146.25	135.0	SE	250	82	17	0	0
7	146.26 - 168.75	157.5	SSE	229	93	14	1	0
8	168.76 - 191.25	180.0	S	402	253	68	3	0
9	191.26 - 213.75	202.5	SSW	666	399	206	18	1
10	213.76 - 236.25	225.0	SW	857	336	198	21	3
11	236.26 - 258.75	247.5	WSW	803	141	70	15	2
12	258.76 - 281.25	270.0	W	635	48	11	2	2
13	281.26 - 303.75	292.5	WNW	362	27	7	0	1
14	303.76 - 326.25	315.0	NW	286	91	55	16	5
15	326.26 - 348.75	337.5	NNW	267	122	72	4	1
16	348.75 - 11.24	360.0	N	203	49	14	3	1

Southeast Valley - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	36	26	31	55	100
2	33.76 - 56.25	45.0	NE	34	26	31	50	0
3	56.26 - 78.75	67.5	ENE	34	27	34	0	185
4	78.76 - 101.25	90.0	E	34	27	32	32	0
5	101.26 - 123.75	112.5	ESE	34	30	44	50	179
6	123.76 - 146.25	135.0	SE	35	27	34	45	104
7	146.26 - 168.75	157.5	SSE	35	24	28	40	115
8	168.76 - 191.25	180.0	S	34	22	27	37	79
9	191.26 - 213.75	202.5	SSW	33	22	31	53	156
10	213.76 - 236.25	225.0	SW	31	21	32	69	158
11	236.26 - 258.75	247.5	WSW	29	23	39	75	365
12	258.76 - 281.25	270.0	W	30	27	36	142	0
13	281.26 - 303.75	292.5	WNW	35	27	38	58	230
14	303.76 - 326.25	315.0	NW	39	28	38	61	259
15	326.26 - 348.75	337.5	NNW	41	28	39	92	390
16	348.75 - 11.24	360.0	N	39	28	39	79	136

Southeast Valley - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	978	844	298	127	19
2	33.76 - 56.25	45.0	NE	1295	820	142	30	0
3	56.26 - 78.75	67.5	ENE	1023	375	17	0	1
4	78.76 - 101.25	90.0	E	1126	341	12	2	0
5	101.26 - 123.75	112.5	ESE	1528	558	119	14	3
6	123.76 - 146.25	135.0	SE	2378	959	566	78	8
7	146.26 - 168.75	157.5	SSE	1951	1066	1073	482	79
8	168.76 - 191.25	180.0	S	1305	776	492	139	31
9	191.26 - 213.75	202.5	SSW	814	705	459	81	3
10	213.76 - 236.25	225.0	SW	759	1021	1112	342	21
11	236.26 - 258.75	247.5	WSW	752	743	523	102	9
12	258.76 - 281.25	270.0	W	734	428	58	6	0
13	281.26 - 303.75	292.5	WNW	711	303	33	9	5
14	303.76 - 326.25	315.0	NW	902	414	117	47	13
15	326.26 - 348.75	337.5	NNW	886	439	96	29	3
16	348.75 - 11.24	360.0	N	471	293	68	17	6

Paul Meyer - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	30	17	21	45	0
2	33.76 - 56.25	45.0	NE	25	18	32	68	0
3	56.26 - 78.75	67.5	ENE	24	22	29	6	28
4	78.76 - 101.25	90.0	E	25	25	28	0	0
5	101.26 - 123.75	112.5	ESE	26	23	39	92	56
6	123.76 - 146.25	135.0	SE	24	23	28	36	0
7	146.26 - 168.75	157.5	SSE	26	22	32	63	0
8	168.76 - 191.25	180.0	S	29	21	27	47	11
9	191.26 - 213.75	202.5	SSW	30	22	23	41	103
10	213.76 - 236.25	225.0	SW	36	20	23	38	67
11	236.26 - 258.75	247.5	WSW	43	23	33	60	136
12	258.76 - 281.25	270.0	W	44	35	47	113	0
13	281.26 - 303.75	292.5	WNW	39	25	27	36	0
14	303.76 - 326.25	315.0	NW	39	22	22	25	0
15	326.26 - 348.75	337.5	NNW	37	17	15	32	114
16	348.75 - 11.24	360.0	N	36	15	19	43	149

Paul Meyer - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	731	312	79	18	0
2	33.76 - 56.25	45.0	NE	1040	368	45	5	0
3	56.26 - 78.75	67.5	ENE	1085	250	13	1	1
4	78.76 - 101.25	90.0	E	1222	284	8	0	0
5	101.26 - 123.75	112.5	ESE	1087	395	17	3	1
6	123.76 - 146.25	135.0	SE	1033	379	53	4	0
7	146.26 - 168.75	157.5	SSE	1012	551	118	6	0
8	168.76 - 191.25	180.0	S	1117	954	444	55	1
9	191.26 - 213.75	202.5	SSW	1200	1165	788	252	33
10	213.76 - 236.25	225.0	SW	1698	1086	535	112	9
11	236.26 - 258.75	247.5	WSW	2912	619	287	93	8
12	258.76 - 281.25	270.0	W	4945	522	74	12	0
13	281.26 - 303.75	292.5	WNW	1815	114	17	3	0
14	303.76 - 326.25	315.0	NW	840	111	42	8	0
15	326.26 - 348.75	337.5	NNW	782	277	282	183	33
16	348.75 - 11.24	360.0	N	494	263	250	89	25

Pittman - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	33	16	32	103	0
2	33.76 - 56.25	45.0	NE	30	20	49	46	0
3	56.26 - 78.75	67.5	ENE	30	12	84	0	0
4	78.76 - 101.25	90.0	E	29	12	0	65	0
5	101.26 - 123.75	112.5	ESE	30	23	0	0	0
6	123.76 - 146.25	135.0	SE	33	16	0	0	0
7	146.26 - 168.75	157.5	SSE	33	21	11	0	0
8	168.76 - 191.25	180.0	S	36	23	23	374	0
9	191.26 - 213.75	202.5	SSW	30	25	45	236	0
10	213.76 - 236.25	225.0	SW	33	28	46	198	0
11	236.26 - 258.75	247.5	WSW	34	20	47	0	0
12	258.76 - 281.25	270.0	W	28	19	43	104	0
13	281.26 - 303.75	292.5	WNW	29	20	38	84	561
14	303.76 - 326.25	315.0	NW	30	25	37	62	192
15	326.26 - 348.75	337.5	NNW	34	22	43	48	0
16	348.75 - 11.24	360.0	N	37	22	76	220	0

Pittman - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	846	97	42	2	0
2	33.76 - 56.25	45.0	NE	687	95	7	1	0
3	56.26 - 78.75	67.5	ENE	373	35	5	0	0
4	78.76 - 101.25	90.0	E	256	19	0	1	0
5	101.26 - 123.75	112.5	ESE	199	16	0	0	0
6	123.76 - 146.25	135.0	SE	218	10	0	0	0
7	146.26 - 168.75	157.5	SSE	252	30	9	0	0
8	168.76 - 191.25	180.0	S	281	121	35	3	0
9	191.26 - 213.75	202.5	SSW	272	154	98	12	0
10	213.76 - 236.25	225.0	SW	244	120	75	12	0
11	236.26 - 258.75	247.5	WSW	191	70	12	0	0
12	258.76 - 281.25	270.0	W	245	124	49	7	0
13	281.26 - 303.75	292.5	WNW	416	184	218	63	6
14	303.76 - 326.25	315.0	NW	616	243	178	42	3
15	326.26 - 348.75	337.5	NNW	628	82	25	4	0
16	348.75 - 11.24	360.0	N	614	62	28	4	0

Palo Verde - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	27	28	20	24	53
2	33.76 - 56.25	45.0	NE	28	27	22	27	21
3	56.26 - 78.75	67.5	ENE	26	24	17	13	0
4	78.76 - 101.25	90.0	E	21	25	39	30	0
5	101.26 - 123.75	112.5	ESE	21	26	28	73	0
6	123.76 - 146.25	135.0	SE	21	24	28	38	0
7	146.26 - 168.75	157.5	SSE	21	22	27	36	0
8	168.76 - 191.25	180.0	S	21	20	25	46	0
9	191.26 - 213.75	202.5	SSW	23	20	25	44	120
10	213.76 - 236.25	225.0	SW	23	20	21	37	67
11	236.26 - 258.75	247.5	WSW	22	16	20	33	79
12	258.76 - 281.25	270.0	W	19	16	21	29	66
13	281.26 - 303.75	292.5	WNW	22	20	20	14	0
14	303.76 - 326.25	315.0	NW	23	21	17	29	93
15	326.26 - 348.75	337.5	NNW	23	18	13	24	58
16	348.75 - 11.24	360.0	N	26	18	16	19	41

Palo Verde - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	308	565	193	34	2
2	33.76 - 56.25	45.0	NE	348	591	76	4	1
3	56.26 - 78.75	67.5	ENE	441	565	22	4	0
4	78.76 - 101.25	90.0	E	759	913	11	5	0
5	101.26 - 123.75	112.5	ESE	831	1522	98	5	0
6	123.76 - 146.25	135.0	SE	550	1055	218	16	0
7	146.26 - 168.75	157.5	SSE	504	716	191	29	0
8	168.76 - 191.25	180.0	S	453	662	271	83	0
9	191.26 - 213.75	202.5	SSW	330	644	494	165	24
10	213.76 - 236.25	225.0	SW	410	879	902	586	121
11	236.26 - 258.75	247.5	WSW	652	3874	1009	514	226
12	258.76 - 281.25	270.0	W	950	3490	358	83	39
13	281.26 - 303.75	292.5	WNW	682	1375	63	8	0
14	303.76 - 326.25	315.0	NW	563	733	111	34	9
15	326.26 - 348.75	337.5	NNW	520	567	378	169	52
16	348.75 - 11.24	360.0	N	256	408	314	133	20

Walter Johnson - Average PM10

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	0	0	0	0	0
2	33.76 - 56.25	45.0	NE	20	15	17	28	0
3	56.26 - 78.75	67.5	ENE	25	18	24	0	0
4	78.76 - 101.25	90.0	E	24	21	20	15	0
5	101.26 - 123.75	112.5	ESE	22	27	22	0	0
6	123.76 - 146.25	135.0	SE	23	26	25	116	0
7	146.26 - 168.75	157.5	SSE	23	23	23	52	0
8	168.76 - 191.25	180.0	S	22	21	26	45	23
9	191.26 - 213.75	202.5	SSW	23	21	23	45	161
10	213.76 - 236.25	225.0	SW	24	19	20	29	80
11	236.26 - 258.75	247.5	WSW	23	20	21	41	113
12	258.76 - 281.25	270.0	W	25	23	15	29	108
13	281.26 - 303.75	292.5	WNW	29	18	16	31	212
14	303.76 - 326.25	315.0	NW	33	18	15	40	96
15	326.26 - 348.75	337.5	NNW	35	11	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Walter Johnson - Number of Hours

16 pt. WD Compass	Wind Direction	Midpoint WD	Dir	ws 0- 5 mph	ws 5 - 10	ws 10-15	ws 15-20	ws > 20
1	11.25 - 33.75	22.5	NNE	0	0	0	0	0
2	33.76 - 56.25	45.0	NE	39	59	20	3	0
3	56.26 - 78.75	67.5	ENE	354	199	15	0	0
4	78.76 - 101.25	90.0	E	1080	350	22	4	0
5	101.26 - 123.75	112.5	ESE	1848	488	29	0	0
6	123.76 - 146.25	135.0	SE	2107	737	40	3	0
7	146.26 - 168.75	157.5	SSE	2036	790	181	9	0
8	168.76 - 191.25	180.0	S	1920	939	452	53	1
9	191.26 - 213.75	202.5	SSW	1743	1132	624	109	9
10	213.76 - 236.25	225.0	SW	1929	1173	852	229	30
11	236.26 - 258.75	247.5	WSW	3554	1391	453	129	22
12	258.76 - 281.25	270.0	W	3104	1401	210	60	4
13	281.26 - 303.75	292.5	WNW	1151	216	195	95	11
14	303.76 - 326.25	315.0	NW	474	206	218	93	10
15	326.26 - 348.75	337.5	NNW	16	2	0	0	0
16	348.75 - 11.24	360.0	N	0	0	0	0	0

Note: Site has a wind direction issue

APPENDIX H

SITE DATA METAFILES

The following are the site metafiles that describe the data set.

Kyle Canyon (13)

Site name	Kyle Canyon
Site code	013
Operator	T&B Systems
Location latitude (dd.dddd)	36.3105
Location longitude (ddd.dddd)	-115.3957
Elevation (meters)	1129
Site description	Private residence (field)
Siting issues	none
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/15/05
End measurement date	07/03/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	±10 ug/m3 ±20% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.

Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Periods and explanations for secondary MQOs	The secondary objectives apply to the periods of time when the flow of the sampler was less than 0.3 lpm. The following is a listing of the periods applicable: 06/18/05 through 07/03/05 – secondary MQOs apply
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above. The secondary MQOs above apply to the periods when the flow rates of the samplers dropped below 0.3 lpm. This value was derived from the empirical tests.
Periods and explanations for significant periods of missing or invalid data	Power failure – 05/31/05 at 2400 through 06/05/05 1600 PST.
Additional comments	For this site, all data were processed from the CR10 data logger.

View to North

View to East

View to South (SSE)

View to West

View of Site

Blue Diamond (21)

Site name	Blue Diamond
Site code	021
Operator	T&B Systems
Location latitude (dd.dddd)	36.0259
Location longitude (ddd.dddd)	-115.3174
Elevation (meters)	897
Site description	Private residence (field)
Siting issues	none
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/21/05
End measurement date	07/03/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	±10 ug/m3 ±20% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need

	to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Periods and explanations for secondary MQOs	The secondary objectives apply to the periods of time when the flow of the sampler was less than 0.3 lpm. The following is a listing of the periods applicable: 06/11/05 through 07/03/05 – secondary MQOs apply
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above. The secondary MQOs above apply to the periods when the flow rates of the samplers dropped below 0.3 lpm. This value was derived from the empirical tests.
Periods and explanations for significant periods of missing or invalid data	Power failure – 05/24/05 at 2100 through 05/29/05 1000 PST.
Additional comments	For this site, all data were processed from the CR10 data logger.

View to North

View to East

View to South

View to West

View of Site

Speedway (31)

Site name	Speedway
Site code	031
Operator	T&B Systems
Location latitude (dd.dddd)	36.2759
Location longitude (ddd.dddd)	-115.0032
Elevation (meters)	607
Site description	Located on the roof of the facilities pumphouse at the Las Vegas Speedway.
Siting issues	No significant issues
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/19/05
End measurement date	07/03/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	

Periods and explanations for secondary MQOs	N/A
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.
Periods and explanations for significant periods of missing or invalid data	Power failure – 05/18/05 at 0500 through 05/18/05 1100 PST.
Additional comments	For this site, all data were processed from the CR10 data logger.

View to North

View to East

View to South

View to West

View of Site

Mountain Crest (43)

Site name	Mountain Crest
Site code	043
Operator	T&B Systems
Location latitude (dd.dddd)	36.2478
Location longitude (ddd.dddd)	-115.2835
Elevation (meters)	738
Site description	Public park
Siting issues	none
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/20/05
End measurement date	07/02/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	±10 ug/m3 ±20% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.

Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Periods and explanations for secondary MQOs	The secondary objectives apply to the periods of time when the flow of the sampler was less than 0.3 lpm. The following is a listing of the periods applicable: 06/08/05 0000 through 06/09/05 0800 – secondary MQOs apply
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above. The secondary MQOs above apply to the periods when the flow rates of the samplers dropped below 0.3 lpm. This value was derived from the empirical tests.
Periods and explanations for significant periods of missing or invalid data	N/A
Additional comments	For this site, all data were processed from the DustTrak internal data logger.

View to North

View to East

View to South

View to West

View of Site

North Las Vegas Airport (52)

Site name	North Las Vegas
Site code	052
Operator	T&B Systems
Location latitude (dd.dddd)	36.2170
Location longitude (ddd.dddd)	-115.1942
Elevation (meters)	669
Site description	Located on the roof of the T&B Systems North Las Vegas office at 4107 W. Cheyenne.
Siting issues	none
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/18/05
End measurement date	07/03/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
<u>Primary Monitoring Quality Objectives</u>	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
<u>Secondary Monitoring Quality Objectives (if applicable)</u>	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	
Periods and explanations for secondary MQOs	

Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.
Periods and explanations for significant periods of missing or invalid data	N/A
Additional comments	For this site, all data were processed from internal DustTrak data logger.

View to North

View to East

View to South

View to West

View of Site

Aliante (64)

Site name	Aliante
Site code	064
Operator	T&B Systems
Location latitude (dd.dddd)	36.2793
Location longitude (ddd.dddd)	-115.1885
Elevation (meters)	688
Site description	Public park
Siting issues	None
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/20/05
End measurement date	07/02/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	
Periods and explanations for secondary MQOs	

Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.
Periods and explanations for significant periods of missing or invalid data	Internal data logger programming error – 05/31/05 at 1800 through 06/07/05 0700 PST.
Additional comments	For this site, all data were processed from the internal DustTrak data logger.

View to North

View to East

View to South

View to West

View of Site

Lamb (72)

Site name	Lamb
Site code	072
Operator	T&B Systems
Location latitude (dd.dddd)	36.2918
Location longitude (ddd.dddd)	-115.0828
Elevation (meters)	648
Site description	Utility area
Siting issues	None
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/18/05
End measurement date	07/02/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	±10 ug/m3 ±20% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.

Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Periods and explanations for secondary MQOs	The secondary objectives apply to the periods of time when the flow of the sampler was less than 0.3 lpm. The following is a listing of the periods applicable: 06/20/05 through 07/02/05 – secondary MQOs apply
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above. The secondary MQOs above apply to the periods when the flow rates of the samplers dropped below 0.3 lpm. This value was derived from the empirical tests.
Periods and explanations for significant periods of missing or invalid data	Power failure – 04/26/05 at 1300 through 04/28/05 1500 PST. Solar panel was found to be wired incorrectly thus drawing down the deep cycle battery.
Additional comments	For this site, all data were processed from the CR10 data logger.

View to North

View to East

View to South

View to West

View of Site

Alto (82)

Site name	Alto
Site code	082
Operator	T&B Systems
Location latitude (dd.dddd)	36.2097
Location longitude (ddd.dddd)	-115.0861
Elevation (meters)	557
Site description	Private residence (backyard)
Siting issues	
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a 12-volt deep cycle battery charged using a 115 VAC adapter.
Begin measurement date	04/17/05
End measurement date	06/22/05 (power failure during last week of study)
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	
Periods and explanations for secondary MQOs	

Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.
Periods and explanations for significant periods of missing or invalid data	Power failure – 06/22/05 at 1500 PST through the end of the sampling period.
Additional comments	For this site, all data, except for the following were processed from the CR10 data logger. 6/14 11:35 to 6/21 09:00 PST – Data retrieved from the DustTrak internal data logger when the zero drifted negative (the DustTrak analog output voltage will not support negative numbers). The data from the DustTrak was then appropriately offset and merged back into the database.

View to North

View to East

View to South

View to West

View of Site (with ozone sampler)

Wetlands (91)

Site name	Wetlands
Site code	280
Operator	T&B Systems
Location latitude (dd.dddd)	36.1014
Location longitude (ddd.dddd)	-115.0230
Elevation (meters)	496
Site description	Located on the roof of the Wetlands Park visitor's center.
Siting issues	.
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/21/05
End measurement date	06/29/05 (power failure during last week of the program)
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	±10 ug/m3 ±20% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.

Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Periods and explanations for secondary MQOs	The secondary objectives apply to the periods of time when the flow of the sampler was less than 0.3 lpm. The following is a listing of the periods applicable: 06/28/05 through 06/29/05 – secondary MQOs apply
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above. The secondary MQOs above apply to the periods when the flow rates of the samplers dropped below 0.3 lpm. This value was derived from the empirical tests.
Periods and explanations for significant periods of missing or invalid data	Power failure – 05/30/05 at 2400 through 05/31/05 1400 PST. Power failure – 06/5/05 at 0300 through 06/6/05 1100 PST. Power failure – 06/29/05 at 2400 PST through program end.
Additional comments	For this site, all data, except for the following were processed from the CR10 data logger. 6/14 09:38 to 6/20 19:18 PST – Data retrieved from the DustTrak internal data logger when the zero drifted negative (the DustTrak analog output voltage will not support negative numbers). The data from the DustTrak was then appropriately offset and merged back into the database.

View to North

View to East

View to South

View to West

View of Site

Henderson AP Storage (101)

Site name	Henderson
Site code	101
Operator	T&B Systems
Location latitude (dd.dddd)	35.9918
Location longitude (ddd.dddd)	-115.1346
Elevation (meters)	710
Site description	All Storage, storage rental retailer
Siting issues	
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/17/05
End measurement date	07/03/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
<u>Primary Monitoring Quality Objectives</u>	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
<u>Secondary Monitoring Quality Objectives (if applicable)</u>	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	
Periods and explanations for secondary MQOs	
Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.

Periods and explanations for significant periods of missing or invalid data	Power failure – 04/18/05 at 2100 through 04/21/05 1500 PST. Power failure – 05/22/05 at 2300 through 05/26/05 1100 PST.
Additional comments	For this site, all data were processed from the CR10 data logger.

View to Northwest

View to East

View to South

View to West-Southwest

View of Site (toward north)

Star Nursery (112)

Site name	Star Nursery
Site code	112
Operator	T&B Systems
Location latitude (dd.dddd)	36.0312
Location longitude (ddd.dddd)	-115.2165
Elevation (meters)	743
Site description	Star Nursery retailer
Siting issues	
Parameter	PM
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged both in the internal data logger and to an external CR10 logger. Power was provided by a solar charged 12-volt deep cycle battery.
Begin measurement date	04/16/05
End measurement date	07/03/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	
Periods and explanations for secondary MQOs	

Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.
Periods and explanations for significant periods of missing or invalid data	Power failure – 05/10/05 at 2400 through 05/15/05 1600 PST. Instrument Malfunction – 05/20/2005 at 1000 through 05/29/2005 1100 PST. The instrument was replaced on 05/29/2005 with a unit that did not have an analog output.
Additional comments	For this site, all data were processed from the CR10 data logger until the replacement on 05/29/2005, after which the data were reduced from the internal data logger in the DustTrak.

View to North

View to East

View to South

View to West

View of Site

Joe Neal (120)

Site name	Joe Neal (QC Site)
Site code	120
Operator	T&B Systems
Location latitude (dd.dddd)	36.2706
Location longitude (ddd.dddd)	-115.2382
Elevation (meters)	709
Site description	Public park
Siting issues	
Parameter	PM10
Units	ug/m3
Monitoring equipment	TSI DustTrak 8520 with the data logged internally in the DustTrak. Power was provided by a 12-volt deep cycle battery charged from a 115 VAC wall adapter.
Begin measurement date	05/09/05
End measurement date	07/02/05
SOPs in effect	Standard Operating Procedures for the PM10 Saturation Sampler Deployment – April 12, 2005 Standard Operating Procedures for the PM10 Saturation Sampler Site Checks – April 20, 2005
Supporting QC documentation	PM10 Sampler Site Check Record log filled out during each site visit. Audit of site and instrumentation by independent T&B Systems auditor. Audit of data processing and validation.
Primary Monitoring Quality Objectives	It should be noted that the objectives below refer to the optical method and not necessarily the relationship between the optical and mass methods used by the DAQEM.
Accuracy	±10 ug/m3 ±10% based on the published temperature coefficient and the accuracy estimated from the flow testing.
Precision	N/A – Not available from the literature or manufacturer. From field observations, it is estimated to be better than 5% of the indicated value.
Resolution	1 ug/m3
Lower Quantifiable Limit	4 ug/m3 for the data recording on the external analog output. 1 ug/m3 for the data using the internal data logger.
Recoverability for valid average	For hourly averages, the entire 60-minute period would need to be valid. For the reporting of 24-hour averages, any number of the valid hourly values reported during the day would be averaged into the reported 24-hour average. However, for analysis, only those 24-hour values that had at least 75% of the possible values (18 of the 24 hours) reported would be used.
Secondary Monitoring Quality Objectives (if applicable)	
Accuracy	
Precision	
Resolution	
Lower Quantifiable Limit	
Recoverability for valid average	
Periods and explanations for secondary MQOs	

Basis for MQOs	The primary MQOs were derived using the manufacturers specifications and results from the field testing. This is detailed in each of the objectives above.
Periods and explanations for significant periods of missing or invalid data	Power failure – 05/10/05 at 1200 through 05/19/05 0800 PST. The main power connector became unplugged from the sampler. Data logging error – 06/01/2005 at 0800 through 06/07/2005 0600 PST.
Additional comments	For this site, all data were processed from the internal DustTrak data logger. The site was considered the QC site for comparison to the DAQEM BAM network.

View to North

View to East

View to South

View to West

View of Site