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Urban Airshed Modeling of the Middle Tennessee Modeling Domain: Model Performance Evaluation

A thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Mark Anthony Kaminski

May, 1995

DEDICATION

This thesis is dedicated to my parents Mrs. Walentyna and Mr. Zdzislaw Kaminski who have provided me with encouragement and support to help me succeed in my academic endeavours.

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The preparation of emission inventories and the performance of Urban Airshed Model runs was a team effort and many thanks go out to the faculty, staff and students on the project that the author worked with including, but not limited to: Dr. Wayne Davis, Dr. Terry Miller, Mr. Robert Burns, Ms. Andrea Slaney and Ms. Reshmi Butala.

Finally, thanks is given to the Tennessee Division of Air Pollution Control and the U.S. Environmental Protection Agency for funding this project.

ABSTRACT

The Nashville Metropolitan Area has been designated as a moderate ozone nonattainment area by the U.S. EPA for failing to meet O_3 NAAQS standards in the 1980s. As part of the required reattainment process, the Civil & Environmental Engineering Department at the University of Tennessee has been contracted to perform photochemical modeling runs of ozone formation in the Middle Tennessee Modeling Domain. Validation runs of four meteorological episodes that occurred in 1988 are being performed with the use of the Urban Airshed Model to show applicability of the UAM in showing acceptable performance by EPA criteria. The model performance evaluation must satisfy this criteria before future year attainment demonstrations for selected episodes in 1996 will be accepted as demonstrating compliance. This master's thesis presents an analysis of the findings from the 1988 UAM validation runs along with a detailed discussion of the mixing height, regiontop, windfield and other inputs for the UAM model.

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LIST OF ABBREVIATIONS

3-D	Three Dimensional
CAAA	Clean Air Act Amendments
CB-IV	Carbon Bond IV
CO	Carbon Monoxide
CPU	Central Processing Unit
DWM	Diagnostic Wind Model
GMISS	Gridded Model Information Support System
EPA	U.S. Environmental Protection Agency
hr	hour
km	kilometer
m	meter
MTMD	Middle Tennessee Modeling Domain
NGM	Nested Grid Model
NO_x	Nitrogen Oxides
O_3	Ozone
OAQPS	Office of Air Quality Planning & Standards
ppb	parts per billion
ppm	parts per million
ROM	Regional Oxidant Model
TDAPC	Tennessee Division of Air Pollution Control
TVA	Tennessee Valley Authority
UAM	Urban Airshed Model
UTK	University of Tennessee at Knoxville
VOC	Volatile Organic Carbon

Section 1. UAM Validation Overview

1. Introduction

UAM modeling runs have been made in order to simulate ozone formation in the Middle Tennessee Modeling Domain (MTMD) for four meteorological episodes that occurred in 1988. This validation document and thesis functions to present the findings of the 1988 UAM runs in order to show acceptable performance within the constraints of the accuracy of the UAM-IV model as applied to the Nashville UAM Modeling Domain. Validation of the UAM basecase runs for 1988 is required in order to show the applicability of the model in predicting ozone formation in the MTMD before attainment can be demonstrated for 1996.

This document includes a detailed discussion of the meteorological alternatives considered, followed by a presentation of the graphical and statistical results for each individual episode. Finally, a discussion of the overall performance of the model with respect to all days is made to show the limitations of the UAM photochemical model in predicting ozone formation in 1988 in the Nashville UAM Modeling Domain. Required numerical results of the maximum predicted ozone concentration for each grid cell for all runs have been provided in the Appendices.

The level of effort made in these runs shows that substantial progress has been made towards eventual ozone reattainment of the Nashville area by deadlines prescribed in

the 1990 U.S. EPA Clean Air Act Amendments.

2. Clean Air Act Amendments of 1990

Title I of the 1990 Clean Air Act Amendments (CAAA) gave authority to the U.S. Environmental Protection Agency (EPA) to designate five counties in the Nashville Metropolitan Area as being moderate nonattainment for ozone because of violations of the ozone National Ambient Air Quality Standard (0.12 ppm - 1 hr. average) which occurred in the 1980s. Specifically, the five counties in the Nashville Metropolitan Area designated as being moderate nonattainment for ozone are Davidson, Rutherford, Sumner, Williamson and Wilson Counties (source: CFR40, part 81.344). As mandated by U.S. EPA Region IV, a total of 55 counties in Middle Tennessee and South Central Kentucky, including the original five nonattainment counties previously mentioned, were to be inventoried for ozone precursor pollutants and modeled photochemically for ozone formation. Figure 1-1 illustrates the 55 county MTMD centered on Nashville, Tennessee in Davidson County. The MTMD has dimensions of 200 km X 230 km; further being subdivided into (1,840) 5 km square grids (40 X 46).

The agency in the State of Tennessee responsible for complying with the CAAA requirements for ozone nonattainment areas is the Tennessee Department of Environment and Conservation's Air Pollution Control Division (TDAPC) with headquarters in Nashville, Tennessee. TDAPC contracted with the University of Tennessee at Knoxville's (UTK) Civil and

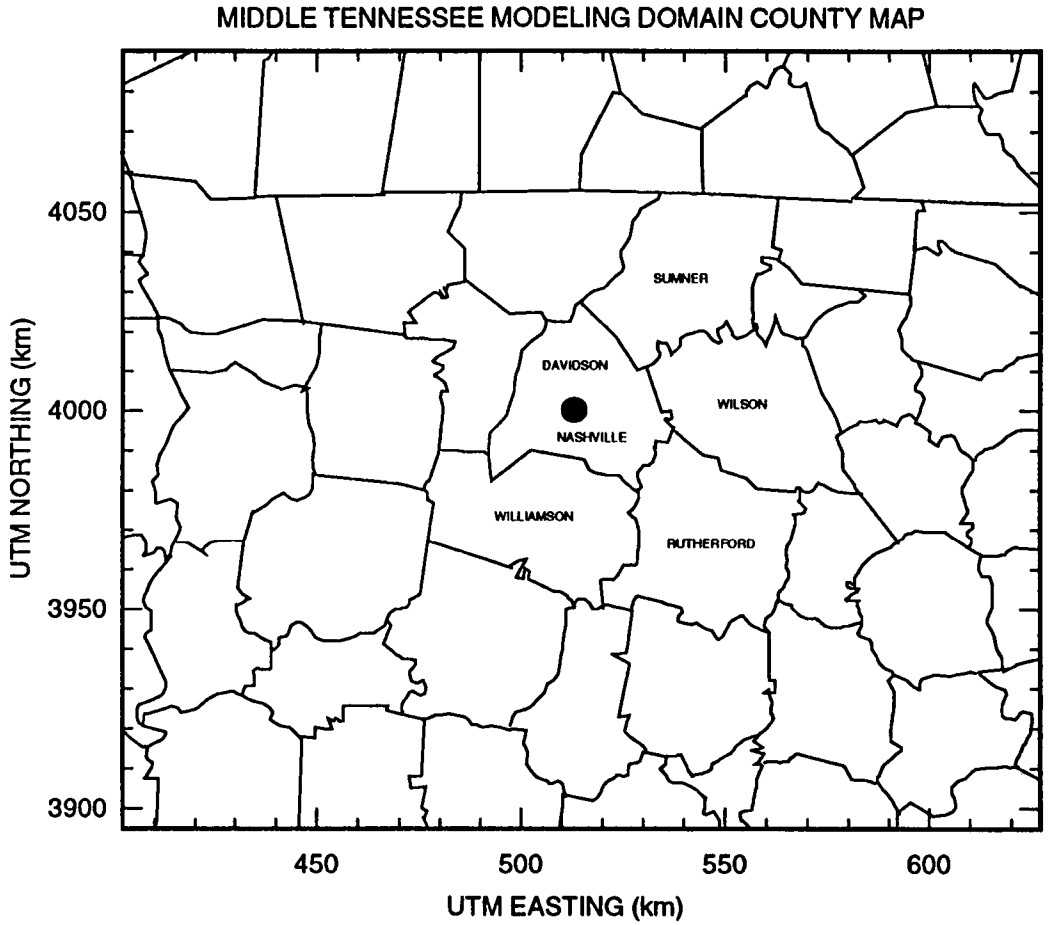


Figure 1-1. Middle Tennessee Modeling Domain map.

Environmental Engineering Dept. to administer the emissions inventory and modeling aspects of the CAAA requirements for the Nashville UAM Modeling Domain. As part of its contractual obligations, UTK, along with the Nashville Metropolitan Health Dept., submitted 1990 Baseline Ozone SIP Emission Inventories to account for all ozone precursor pollutants (VOCs, NO_x and CO) emitted in the 55 modeling domain counties for a typical ozone season day (June-August) in 1990.

A Technical Advisory Committee consisting of federal, state, state-university and private industrial representatives was organized. This committee then drafted a protocol document entitled *Protocol for Photochemical Air Quality Modeling of the Middle Tennessee (Nashville) Area* which specified the requirements and deliverable deadlines for the modeling process.

3. UAM Model Discussion

The UAM model is a 3-D Eulerian photochemical model used to simulate ozone formation in a gridded modeling domain. The UAM model uses gridded inputs such as initial and boundary air quality conditions plus preprocessed emissions from an emissions inventory in order to simulate ozone formation by the Carbon Bond-IV (CB-IV) mechanism. The CB-IV mechanism estimates the ozone forming potential of air pollutants by classifying ozone precursors into one of 23 species based on functional groups. The time rate of change of ozone concentration is then estimated by a species continuity

equation which calculates the transport, diffusion, reaction, removal and emissions of air quality species in a modeling domain (source: *UAM Model Hands on Workshop Notebook*).

In 1986 the EPA Office of Air Quality Planning and Standards (OAQPS) finalized its recommendations in approving the UAM as a "recommended (preferred)" model for photochemical modeling in an entire urban area. Specifically, OAQPS in 1986 noted that the UAM model "is the most widely applied and evaluated photochemical dispersion model in existence" (source: *User's Guide for the Urban Airshed Model - Volume I: User's Manual for UAM (CB-IV)*, p. 5-7).

4. UAM Validation Process

When the final 1990 emission inventories for the MTMD were submitted to the EPA, work at UTK began to backcast the non-day specific 1990 emissions data into day-specific emissions data for the four meteorological episodes which occurred in 1988. The first of these tasks was the spatial allocation of the 1990 emissions to 1988 grid-specific locations. The spatial allocation of the inventory emissions was performed primarily by Ms. Jo Ellen Cawlfield and was submitted to the Graduate School at UTK for her master's thesis (source: *Spatial Resolution of Ozone Precursor Emissions for the Middle Tennessee Modeling Domain, 1990*). The next task was to take these spatially gridded emissions and create hourly temporal profiles resolved for each of the four meteorological episodes in 1988. The temporal allocation

of the spatially gridded inventory emissions data was performed primarily by Ms. Reshmi Butala and was submitted to the Graduate School at UTK for her master's thesis (source: *Temporal Resolution of Ozone Precursor Emissions for the Middle Tennessee Modeling Domain, 1990*).

Simultaneously with preparation of the emission files, work was performed to prepare the other UAM input files such as windfields and mixing height profiles required by the UAM model. In addition to the 1988 modeling results, this thesis will also discuss specific details for the mixing height, regiontop and windfield inputs for the UAM model, as well as a brief summary of the other UAM inputs which were obtained from the Regional Oxidant Model (ROM). ROM provided all 1988 data for building UAM input files with the exception of the emissions inventory and the mixing height data. UAM modeling runs commenced at UTK in Fall 1993. The UAM runs were performed on a Digital Equipment Corporation workstation using an Alpha-AXP processor running on a VAX-VMS platform. The UAM runs were run for a 24 hr. period with output from the day preceding the primary day used as air quality input for the first hour of the primary day. This requirement meant that a one day UAM run of the primary day necessitated running the model for 48 hours as two separate 24 hour runs. Each one day run consumed approximately 2 hours of workstation CPU time.

5. Statistical Methodology

The performance of the model was evaluated by the

recommended performance measures outlined in the document entitled *Guideline for Regulatory Application of the Urban Airshed Model*. The recommended performance measures consist of the unpaired highest-prediction accuracy, the normalized bias test and the gross error of all pairs >60 ppb. The recommended performance measures from this document in equation form (pp. 81-83) are:

1. Unpaired Highest-Prediction Accuracy (A_u)

$$A_u = \frac{C_o - C_p}{C_o} \times 100\%$$

where

A_u = unpaired highest-prediction accuracy

C_o = maximum 1-hour observed concentration over all hours and monitoring stations

C_p = maximum 1-hour predicted concentration over all hours and surface grid squares

2. Normalized Bias Test (D^*)

$$D^* = \frac{1}{N_T} \sum_{i=1}^{N} \sum_{j=1}^{H_i} \frac{C_o(i,j) - C_p(i,j)}{C_o(i,j)}$$

where

D^* = normalized bias obtained from all hourly prediction-observation pairs

N = number of monitoring stations

H_i = number of hourly prediction-observation pairs for monitoring station i

N_T = total number of station-hours

$C_o(i,j)$ = observed value at monitoring station i for hour j

$$= \sum_{i=1}^{N} H_i$$

$C_p(i,j)$ = predicted value at monitoring station i for hour j

3. Gross Error of All Pairs >60 ppb (E_d^*)

$$E_d^* = \frac{1}{N_T} \sum_{i=1}^{N} \sum_{j=1}^{H_i} \frac{|C_o(i,j) - C_p(i,j)|}{C_o(i,j)}$$

where

E_d^* = normalized gross error for all hourly prediction-observation pairs for hourly observed values >60 ppb

N_T = total number of station hours

N = number of monitoring stations

H_i = number of hourly prediction-observation pairs for monitoring station i

$C_o(i, j)$ = observed value >60 ppb at monitoring station i for hour j

$C_p(i, j)$ = predicted value at monitoring station i for hour j

UTK received in mid-November, 1994 a copy of a memorandum from Edwin L. Meyer, Jr., Chief, Model Application Section, SRAB, TSD (MD-14), July 30, 1993 (a copy of this memorandum has been placed in the Appendices). The memorandum provides guidance to UAM modelers that "the comparison of normalized bias with past performance of the UAM is best done if the data pairs only include observations where ozone is ≥0.06 ppm". To address this memorandum, the normalized bias performance was performed for both all prediction-observation pairs and for

prediction-observation pairs where the observed value is ≥0.06 ppm. The former stipulation satisfies the regulatory guidance, and the latter addresses the above memorandum.

In addition to the above recommended performance measures, the hourly bias of the data in ppm was also calculated and graphed for each episode as a "other suggested performance measure". The bias test is a variant of the bias of all station peaks test (p. 86) which yields only one value per run. The equation for the hourly bias is:

$$D=\frac{1}{N}\sum_{i=1}^{N}(C_o(i,t_i)-C_p(i,t_i)$$

where

D	=	hourly bias
N	=	number of monitoring stations
$C_o(i, t_i)$	=	observed value at monitoring station i for hour t_i
$C_p(i, t_i)$	=	predicted value at monitoring station i for hour t_i
t_i	=	individual hour for the bias calculation

The predicted values for the normalized bias, gross error and bias tests were determined by a bilinear interpolation method as suggested in the guidance. The bilinear interpolation method was performed by weighting the predicted values of the four nearest grids surrounding a monitoring station according to guidelines for bilinear interpolation outlined in the document entitled Volume VII: User's Manual for the Performance Evaluation System.

6. Summary

The modeling of the four 1988 meteorological episodes was but one step of the overall validation process. A flowchart of the main tasks included in the overall validation process is illustrated in Figure 1-2. Figure 1-2 illustrates the main tasks of the validation process specific to the Nashville UAM Modeling Domain. This flowchart was adapted from EPA guidance to modelers performing UAM modeling (source: *Urban Airshed Model Hands-On Workshop - Proceedings Notebook*, p. I-7). It should be noted that Figure 1-2 shows a validation process comprising the performance of emission inventories through the simulation of future attainment runs. The work in this thesis was primarily concerned with simulating ozone prediction and determining performance for 1988. In reality, it took several theses, additional reports and many man-hours on behalf of multiple individuals working as a team at the university and local/state/federal government levels in order to complete the validation process for the MTMD.

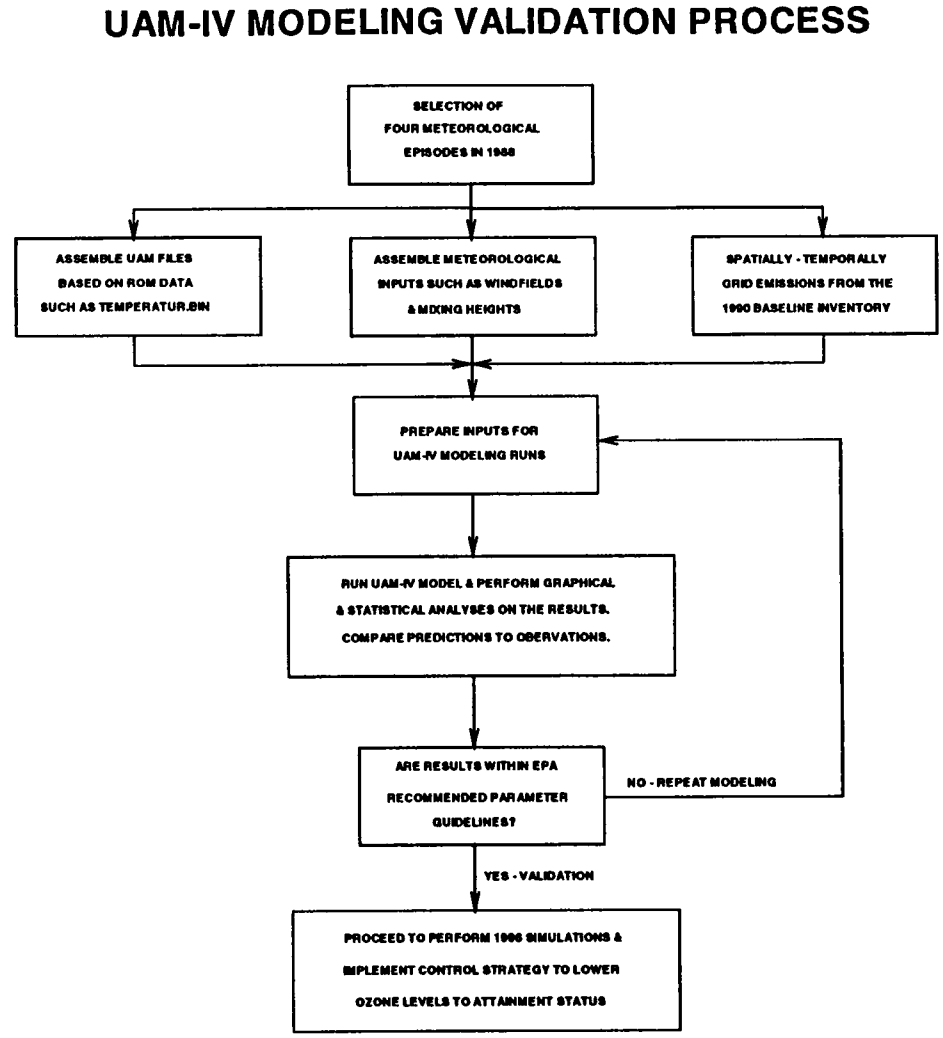


Figure 1-2. Flowchart of the UAM validation process.

Section 2. Wind Models

1. Introduction

The 1988 validation runs were made using both a Regional Oxidant Model (ROM) derived windfield retrieved from the Gridded Model Information Support System (GMISS) and a Diagnostic Wind Model (DWM) derived windfield. The input files to run DWM were independently developed and supplied to UTK by the Tennessee Valley Authority (TVA).

For a one day run of the UAM-IV model, 13 input files were used. When a different wind model was to be run, two of the 13 input files changed. The first input file that changed was the binary, gridded wind file (WDBIN) that was either ROM or DWM derived. The second input file that changed was the elevated point source emissions file (PTSOURCE). The elevated point source preprocessor used the wind file WDBIN as one of its inputs requiring that it be rerun for each daily simulation involving a different wind model.

2. ROM Discussion

ROM wind files for the four modeling episodes were obtained through GMISS retrievals of ROM data. Retrieval methodology of ROM data is documented in the manual entitled *Gridded Model Information Support System (GMISS) User's Guide - Volume II: UAM Subsystem*. A brief writeup on ROM wind methodology is available in the document entitled User's Guide for the Urban Airshed Model - Volume V: Description and Operation of the ROM-UAM Interface Program System.

ROM structure consists of three vertical layers, but ROM layer 3 winds were considered to flow above the UAM domain, and were therefore not retrievable from the GMISS database. ROM layer 1 winds were generated from surface observations at National Weather Service (NWS) surface-data sites located throughout the ROM SuperDomain. Although the methodology stated that some weight was given to surface wind data in the generation of ROM layer 2 winds, ROM layer 2 winds were generated mainly from NWS upper-air observations. In the Middle Tennessee Modeling Domain (MTMD) one NWS surface-data site and one NWS upper-air site were located within the modeling domain in 1988. The NWS surface-data site is located at the Nashville airport, and the NWS upper-air radiosonde site is located approximately 20 km northeast of downtown Nashville.

Once ROM layer 1-2 winds were retrieved from GMISS, it was then necessary to convert the 2 layer ROM winds into a 5 level UAM format wind. This data transformation was made with the ROM-UAM windfield interface processor named (IWIND).

Generation of a UAM format wind file from ROM data was therefore made by a two step procedure consisting of GMISS retrieval of ROM layer 1-2 winds followed by execution of the IWIND interface to generate a 5 level UAM format windfield.

3. DWM Discussion

The generation of a UAM format windfield from a DWM windfield was a more elaborate process than ROM and will only be

briefly summarized in this section. The DWM is documented by EPA in the manual entitled *User's Guide for the Urban Airshed Model - Volume III: User's Manual for the Diagnostic Wind Model*. The methodology of the generation of DWM input files used in the Nashville UAM runs is documented by TVA in a report entitled *Procedures Used to Develop Wind Fields Covering the Nashville Urban Airshed Model Domain*.

The DWM algorithm uses a two step procedure to generate hourly, gridded windfields. This two step procedure is accomplished by running the model once. The first procedural step is the parameterization of a domain-mean wind for terrain effects. The second procedural step of the DWM is an objective analysis procedure in which observational information is added to the terrain-adjusted (e.g., domain-mean wind adjusted to land features such as hills) flow field derived from the first step.

The domain-mean wind consists of one u/v pair (direction) and one wind speed value per hour input into the DWM control file. The domain-mean wind was generated by running the DWM in a preliminary run to perform an objective analysis of predicted wind data output from another wind model. Data used for the preliminary run were an output of the Nested Grid Model (NGM) which is a NWS predictive model.

DWM windfields were generated by running the DWM model twice. The first run was performed in an objective analysis mode in order to determine the domain mean wind components.

The second run was performed in order to generate a windfield from a merging of the terrain-adjusted domain mean wind and surface/upper air observations.

Data from nine NGM gridpoints that surrounded the (MTMD) were processed in a DWM objective analysis scheme to produce 30 NGM gridpoints within the Middle Tennessee Modeling Domain. The resulting 30 NGM wind profiles were divided into two sets of data. The bottom four vertical grid cells (0-200 m above ground level (agl)) were used for computing the domain mean wind. The remaining vertical cells (above 200 m agl) were merged with upper-air data. The wind components from the bottom four vertical cells were averaged over all levels and gridpoints in order to obtain a domain averaged (average of 120 wind vector values) u and v vector component for each hour. The resulting u and v vector component was the domain mean wind for that hour.

Surface observations were obtained from sources such as the NWS surface-air site located at the Nashville Airport and a military air base located in the domain.

Upper-air observations from the NWS radiosonde site were supplemented with data from TVA tower observations and the upper levels (above 200 m agl) of the 30 NGM profiles. It should be noted that although there was greater spatial resolution with the NGM gridpoints than with upper-air radiosonde sites in the U.S., NGM gridpoint data were predictions unlike the upper-air radiosonde data which were

observations.

Multiple-level observations from TVA towers were treated as upper-air data because the surface wind data preprocessor (PRESFC) was not able to process multiple-level wind observations. It is interesting to note that the tower data were assigned as upper-air data considering the elevations at which the tower data were measured. For instance, wind speed and directional data were measured at two tower levels at the Gallatin Steam Plant located in Sumner County, Tennessee. Observations at Gallatin were recorded at levels of 15 m and 61 m agl. It has been shown in the previous section that the top of UAM layer 1 was above 61 m for all primary modeling days at all times. A 61 m observation is more representative of surface than upper-air data.

After the second run of the DWM, a 15 level windfield was generated. It was necessary to convert the 15 level DWM windfield into a 5 level UAM format windfield. In order to accomplish this task, the UAM preprocessor UAMWND was run. UAMWND is documented by EPA in the User's Guide for the Urban Airshed Model - Volume II: User's Manual for the UAM (CB-IV) Modeling System.

4. Data Analysis

Analyses were made of the wind speed data in order to see what differences existed between ROM and DWM winds.

The first data analysis compared NWS wind speed and directional data to ROM and DWM predictions. ROM and DWM data

were calculated from the wind vector components located within the domain grid cell that corresponded to the Nashville Airport NWS site. In addition, observations from the Gallatin tower and the predicted domain-mean wind component were also included. The Gallatin tower is located approximately 40 km northeast of the Nashville Airport location and was the nearest surface station to the NWS site. Tables 2-1 through 2-4 present the wind data for all four primary days.

Overall for all days, the wind speed data show that ROM predictions came closer in value to the NWS speed than DWM did for all days. The ROM wind speed on average was 84% of the NWS value, while the DWM wind speed on average was only 49% of the NWS value. It is interesting to note that the average 61 m Gallatin tower (located 40 km the NWS site) wind speed was 99% of the NWS value. However, Gallatin tower data were processed as upper-air data. The DWM User's Guide states that "Unless otherwise specified, all surface wind observations are incorporated into the lowest model level." This meant that the Gallatin data were not processed as surface data even though the 61 m tower data agreed quite well with NWS surface data and were recorded from surface-level observations.

Deviations from the NWS directional data are presented in Tables 2-5 through 2-8. In these tables the last row contains a value termed the absolute average. This value represents the absolute value of the summation of the hourly differences between NWS and the wind model predictions for directional

data predicted at the NWS site. The results show that on average for all four primary modeling days, DWM was 29 degrees off of the NWS value, while ROM was 67 degrees off of the NWS value.

Tables 2-1 through 2-8 show that the DWM domain-mean wind varied considerably from NWS observations, most notably for speed. On average for all 4 days, the domain-mean wind speed only approached 24% of the NWS value. Since the domain-mean wind speed was domain-averaged through the four lowest layers of NGM profiles, it seems apparent that the NGM considerably underpredicted surface wind speeds.

The low DWM wind speeds were not reflective of data made in the domain. On average, the domain-mean wind speed was only 43% of the value measured at the lowest level of the Gallatin tower (lower speed of the 2 tower levels).

In the DWM input control card the maximum radius of influence (RMAX1) in the domain at the surface was set at 29.0 km for all days. This meant that surface wind components for all cells located more than 29.0 km from a surface observation were essentially weighted to the terrain-adjusted, domain-mean wind that was derived in the first processing step of the DWM. Since the MTMD in 1988 had a sparse observational network, much of the gridded, DWM winds therefore showed very slow wind speeds. The choice of a low value for the radius of influence in the DWM model produced DWM windfields that exhibited discontinuities in the flow field because the greater

Table 2-1. Wind speed and directional data for June 24, 1988.

HOUR	DWM v(m/s)	DWM direction	ROM v(m/s)	ROM direction	NWS v(m/s)	NWS direction	GALT(15m) v(m/s)	GALT(15m) direction	GALT (61m) v(m/s)	GALT (61m) direction	DOMAIN MEAN v(m/s)	DOMAIN MEAN direction
0-1	1.2	81	3.4	101	2.6	80	1.5	56	1.8	80	0.1	270
1-2	1.1	123	3.3	95	2.1	130	1.7	197	2.5	170	0.1	90
2-3	1.5	98	2.3	122	2.6	100	1.1	38	1.7	79	0.3	108
3-4	1.4	93	3.1	105	2.6	100	1.3	38	3.6	82	0.5	101
4-5	1.7	70	2.9	73	2.6	40	1.8	58	5.0	77	0.8	97
5-6	2.3	79	2.6	67	3.6	50	1.4	42	4.2	59	1.0	96
6-7	1.8	88	3.1	82	2.1	70	1.7	42	4.2	59	1.2	99
7-8	2.3	103	3.4	112	3.1	100	0.6	20	1.5	56	1.0	107
8-9	3.0	87	3.9	106	5.1	80	1.7	72	2.5	73	0.9	117
9-10	2.6	84	4.4	107	4.6	80	1.8	93	2.6	119	0.7	124
10-11	2.2	122	3.8	102	4.1	120	1.8	79	2.4	88	0.7	135
11-12	2.0	86	3.3	114	4.1	80	2.0	81	3.0	94	0.7	153
12-13	1.2	50	3.2	107	3.1	40	1.9	86	2.8	93	0.7	172
13-14	1.8	116	2.0	78	3.6	110	2.1	88	3.0	93	0.7	146
14-15	1.9	123	2.3	122	3.6	120	2.3	101	3.4	96	0.8	130
15-16	1.2	165	2.1	130	2.1	190	2.7	131	4.3	132	0.9	108
16-17	2.7	55	2.1	154	6.2	40	2.4	103	3.5	111	1.1	100
17-18	2.0	166	2.7	75	4.6	190	2.2	95	3.4	103	1.4	94
18-19	2.0	58	2.7	162	7.7	10	2.4	85	4.4	94	1.6	90
19-20	1.8	77	3.6	49	3.1	20	2.4	24	5.5	29	1.5	86
20-21	2.0	74	1.0	78	3.1	20	1.7	24	4.4	33	1.4	86
21-22	2.5	82	2.2	105	3.6	70	2.0	78	4.7	59	1.3	81
22-23	2.3	80	3.2	108	3.1	70	1.3	256	1.5	92	1.2	81
23-24	0.4	333	2.6	107	2.1	290	2.5	317	4.2	338	1.0	73
	AVG (v)= 1.9		AVG (v)= 2.9		AVG (v)= 3.5		AVG (v)= 1.8		AVG (v)= 3.3		AVG (v)= 0.9	

THESE VALUES ARE AVERAGE FLOW VECTORS.

Table 2-2. Wind speed and directional data for July 9, 1988.

HOUR	DWM v(m/s)	DWM direction	ROM v(m/s)	ROM direction	NWS v(m/s)	NWS direction	GALT(15m) v(m/s)	GALT(15m) direction	GALT (61m) v(m/s)	GALT (61m) direction	DOMAIN MEAN v(m/s)	DOMAIN MEAN direction
0-1	2.2	106	2.2	69	3.6	90	1.4	179	2.8	193	1.2	160
1-2	2.1	105	1.4	73	3.6	90	1.2	32	1.9	96	1.0	163
2-3	1.3	115	1.3	73	2.1	90	1.7	88	3.3	113	1.0	169
3-4	1.6	100	0.6	39	3.1	80	1.7	125	3.8	153	0.9	180
4-5	0.9	113	1.4	51	2.6	70	1.3	136	3.4	196	0.8	187
5-6	1.3	170	0.6	356	2.1	100	1.2	132	3.4	189	0.8	194
6-7	1.9	156	1.3	248	3.1	130	1.5	222	3.9	210	0.8	210
7-8	1.8	174	2.5	211	2.6	160	1.3	202	3.6	215	0.6	189
8-9	1.0	237	2.9	178	2.1	260	1.0	272	1.4	245	0.4	166
9-10	1.1	252	2.1	241	2.6	270	1.3	272	1.7	276	0.4	135
10-11	1.0	349	2.2	261	3.1	330	1.2	269	1.4	298	0.6	108
11-12	0.6	259	2.0	308	2.6	280	1.4	265	1.7	319	0.8	97
12-13	0.4	203	2.1	283	2.1	260	1.3	276	1.7	282	1.0	84
13-14	0.5	177	1.9	287	1.5	230	2.1	262	2.9	276	0.8	83
14-15	1.3	89	1.7	279	2.1	90	1.6	79	2.3	78	0.6	72
15-16	1.9	37	2.3	24	3.6	40	1.2	254	1.6	263	0.5	53
16-17	4.0	347	2.7	350	10.3	340	3.1	130	5.3	128	0.3	18
17-18	3.6	24	5.8	339	8.2	30	4.5	306	7.8	302	0.4	346
18-19	1.1	341	4.9	9	5.1	180	2.6	144	5.3	281	0.6	329
19-20	0.9	58	2.2	289	3.1	130	2.5	146	5.2	157	0.6	351
20-21	2.3	30	2.4	22	4.6	80	2.2	209	4.7	211	0.8	0
21-22	1.8	39	5.0	11	3.1	110	1.8	91	3.8	101	0.9	13
22-23	2.3	16	3.6	12	3.1	0	1.7	100	3.9	120	1.2	20
23-24	1.7	14	4.1	349	2.6	0	1.4	318	2.0	331	1.3	27
	AVG (v)= 1.6		AVG (v)= 2.5		AVG (v)= 3.4		AVG (v)= 1.8		AVG (v)= 3.3		AVG (v)= 0.8	

THESE VALUES ARE AVERAGE FLOW VECTORS.

Table 2-3. Wind speed and directional data for August 1, 1988.

HOUR	DWM		ROM		NWS		GALT(15m)		GALT (61m)		DOMAIN MEAN	
	v(m/s)	direction	v(m/s)	direction	v(m/s)	direction	v(m/s)	direction	v(m/s)	direction	v(m/s)	direction
0-1	1.1	55	1.6	123	1.5	50	1.4	38	3.6	55	0.5	37
1-2	1.4	18	1.2	80	2.6	0	1.3	29	3.7	46	0.6	45
2-3	0.9	26	1.6	25	1.5	0	1.1	24	3.2	38	0.5	53
3-4	0.5	142	1.1	18	1.5	190	0.9	106	1.9	94	0.6	59
4-5	0.5	60	0.7	178	0.0	180	0.8	246	0.6	160	0.5	68
5-6	0.7	70	0.9	32	0.0	180	1.7	328	0.5	355	0.6	81
6-7	0.8	78	1.6	47	0.0	180	1.6	299	1.6	326	0.6	81
7-8	1.2	5	2.1	43	2.6	340	1.0	244	1.7	309	0.6	81
8-9	0.7	40	2.0	30	1.0	350	0.8	317	1.2	328	0.6	81
9-10	0.9	34	1.7	38	1.5	10	1.2	37	1.7	47	0.6	81
10-11	1.0	56	1.4	32	1.5	40	1.9	46	2.9	59	0.6	81
11-12	0.7	46	1.6	34	1.0	10	1.3	64	2.0	54	0.6	81
12-13	0.7	222	1.1	12	2.1	240					0.6	81
13-14	1.6	39	0.3	307	3.1	30	0.9	250	1.3	248	0.4	76
14-15	1.0	316	0.9	4	2.6	310	1.5	206	1.8	191	0.2	63
15-16	0.7	198	1.6	327	1.5	200	1.5	134	2.1	136	0.1	0
16-17	0.7	86	1.1	264	1.5	90	1.3	225	1.5	235	0.1	315
17-18	0.2	286	1.6	339	0.0	180	0.9	231	1.3	231	0.3	288
18-19	1.7	247	2.4	310	3.6	240	1.1	214	1.5	213	0.4	284
19-20	1.1	275	2.9	289	2.6	270	1.0	202	1.5	205	0.4	284
20-21	0.5	348	2.8	294	2.6	40	0.9	169	1.3	193	0.3	288
21-22	0.4	266	1.8	359	0.0	180	1.7	228	3.6	234	0.2	297
22-23	0.8	98	0.4	294	4.1	90	1.4	264	3.5	262	0.3	315
23-24	0.9	77	3.0	93	2.6	70	1.0	254	2.7	277	0.2	333
	AVG (v)= 0.9		AVG (v)= 1.6		AVG (v)= 1.7		AVG (v)= 1.2		AVG (v)= 2.0		AVG (v)= 0.4	

THESE VALUES ARE AVERAGE FLOW VECTORS.

Table 2-4. Wind speed and directional data for August 3, 1988.

HOUR	DWM v(m/s)	DWM direction	ROM v(m/s)	ROM direction	NWS v(m/s)	NWS direction	GALT(15m) v(m/s)	GALT(15m) direction	GALT (61m) v(m/s)	GALT (61m) direction	DOMAIN MEAN v(m/s)	DOMAIN MEAN direction
0-1	0.4	96	1.3	319	0.0	180	1.0	72	2.8	67	0.5	68
1-2	0.8	42	0.5	333	1.5	20	0.6	8	2.2	46	0.4	76
2-3	1.3	20	1.4	356	3.1	10	1.3	305	1.6	345	0.3	90
3-4	0.8	357	2.5	0	2.1	350	1.1	280	0.8	13	0.2	117
4-5	0.7	19	1.5	337	2.1	10	1.4	267	1.3	312	0.2	153
5-6	0.7	258	1.7	3	2.1	290	1.6	292	2.6	314	0.3	180
6-7	1.0	260	1.4	268	2.1	280	1.6	274	3.1	285	0.4	194
7-8	0.4	193	2.0	251	0.0	180	0.4	303	1.0	295	0.4	194
8-9	1.0	66	1.1	222	2.1	60	0.9	96	1.2	82	0.4	214
9-10	0.6	351	0.5	228	1.5	0	1.0	72	1.7	82	0.4	214
10-11	0.6	139	0.8	300	1.5	120	1.0	224	1.3	269	0.4	236
11-12	0.6	175	1.2	229	1.5	150	1.3	271	1.3	283	0.3	252
12-13	0.9	333	1.9	228	2.1	350					0.4	256
13-14	0.6	337	2.1	285	1.5	0					0.4	243
14-15	0.7	128	1.8	287	2.1	110					0.5	233
15-16	1.2	238	1.6	286	1.5	240					0.6	231
16-17	0.8	172	2.8	264	2.1	130					0.7	225
17-18	2.1	281	1.7	277	5.1	300					0.8	220
18-19	1.3	255	3.0	275	3.1	310					0.9	216
19-20	0.8	279	2.7	288	2.6	350					0.7	225
20-21	1.3	281	3.2	305	3.1	310					0.6	239
21-22	1.2	308	2.6	301	3.1	340					0.4	243
22-23	1.2	322	2.3	316	2.6	350					0.4	270
23-24	1.3	309	2.2	341	2.1	310					0.4	297
	AVG (v)= 0.9		AVG (v)= 1.8		AVG (v)= 2.1				AVG (v)= 1.8		AVG (v)= 0.5	

THESE VALUES ARE AVERAGE FLOW VECTORS.

Table 2-5. Wind speed and directional differences for June 24, 1988.

HOUR	DWM vs. NWS direction	ROM vs. NWS direction	GALT(15m) vs. NWS direction	GALT(61m) vs. NWS direction	DOMAIN MEAN vs. NWS direction	DWM vs. GALT(15m) direction	DWM vs. NWS AVG ERROR(V)	ROM vs. NWS AVG ERROR(V)
0-1	1	21	-24	0	-170	25	1.4	-0.8
1-2	-7	-35	67	40	-40	-74	1.0	-1.2
2-3	-2	22	-62	-21	8	60	1.1	0.3
3-4	-7	5	-62	-18	1	55	1.2	-0.5
4-5	30	33	18	37	57	12	0.9	-0.4
5-6	29	17	-8	9	46	37	1.3	1.0
6-7	18	12	-28	-11	29	46	0.2	-1.1
7-8	3	12	-80	-44	7	83	0.8	-0.3
8-9	7	26	-8	-7	37	15	2.1	1.2
9-10	4	27	13	39	44	-9	2.1	0.2
10-11	2	-18	-41	-32	15	43	1.9	0.3
11-12	6	34	1	14	73	5	2.1	0.8
12-13	10	67	46	53	132	-36	1.8	-0.1
13-14	6	-32	-22	-17	36	28	1.8	1.6
14-15	3	2	-19	-24	10	22	1.7	1.3
15-16	-25	-60	-59	-58	-82	34	0.8	-0.0
16-17	15	114	63	71	60	-48	3.5	4.0
17-18	-24	-115	-95	-87	-96	71	2.6	2.0
18-19	48	152	75	84	80	-27	5.7	5.1
19-20	57	29	4	9	66	53	1.3	-0.6
20-21	54	58	4	13	66	50	1.1	2.1
21-22	12	35	8	-11	11	4	1.1	1.4
22-23	10	38	-174	22	11	-176	0.8	-0.1
23-24	43	177	27	48	143	16	1.6	-0.6
	AVG= 12.2	AVG= 26	AVG= -15	AVG= 5	AVG= 23	AVG= 12	AVG= 1.7	AVG= 0.7
	ABSOL.AVG= 17.7	ABSOL.AVG= 48	ABSOL.AVG= 42	ABSOL.AVG= 32	ABSOL.AVG= 55	ABSOL.AVG= 43		

Table 2-6. Wind speed and directional differences for July 9, 1988.

HOUR	DWM vs. NWS direction	ROM vs. NWS direction	GALT(15m) vs. NWS direction	GALT(61m) vs. NWS direction	DOMAIN MEAN vs. NWS direction	DWM vs. GALT(15m) direction	DWM vs. NWS AVG ERROR(V)	ROM vs. NWS AVG ERROR(V)
0-1	16	-21	89	103	70	-73	1.4	1.4
1-2	15	-17	-58	6	73	73	1.5	2.2
2-3	25	-17	-2	23	79	27	0.7	0.8
3-4	20	-41	45	73	100	-25	1.5	2.5
4-5	43	-19	66	126	117	-23	1.7	1.1
5-6	70	-104	32	89	94	38	0.7	1.4
6-7	26	118	92	80	80	-66	1.2	1.8
7-8	14	51	42	55	29	-28	0.8	0.1
8-9	-23	-82	12	-15	-94	-35	1.0	-0.8
9-10	-18	-29	2	6	-135	-20	1.5	0.5
10-11	19	-69	-61	-32	138	80	2.0	0.9
11-12	-21	28	-15	39	177	-6	2.0	0.6
12-13	-57	23	16	22	-176	-73	1.7	-0.1
13-14	-53	57	32	46	-147	-85	1.1	-0.3
14-15	-1	-171	-11	-12	-18	10	0.7	0.4
15-16	-3	-16	-146	-137	13	143	1.7	1.3
16-17	7	10	150	148	38	-143	6.3	7.6
17-18	-6	-51	-84	-88	-44	78	4.7	2.5
18-19	161	-171	-36	101	149	-163	4.1	0.3
19-20	-72	159	16	27	-139	-88	2.2	0.9
20-21	-50	-58	129	131	-80	-179	2.3	2.2
21-22	-71	-99	-19	-9	-97	-52	1.3	-1.9
22-23	16	12	100	120	20	-84	0.8	-0.5
23-24	14	-11	-42	-29	27	56	0.9	-1.5
	AVG= 3	AVG= -22	AVG= 15	AVG= 36	AVG= 11	AVG= -27	AVG= 1.8	AVG= 1.0
	ABSOL.AVG= 34.3	ABSOL.AVG= 60	ABSOL.AVG= 54	ABSOL.AVG= 63	ABSOL.AVG= 89	ABSOL.AVG= 69		

Table 2-7. Wind speed and directional differences for August 1, 1988.

HOUR	DWM vs. NWS direction	ROM vs. NWS direction	GALT(15m) vs. NWS direction	GALT(61m) vs. NWS direction	DOMAIN MEAN vs. NWS direction	DWM vs. GALT(15m) direction	DWM vs. NWS AVG ERROR(V)	ROM vs. NWS AVG ERROR(V)
0-1	5	73	-12	5	-13	17	0.4	-0.1
1-2	18	80	29	46	45	-11	1.2	1.3
2-3	26	25	24	38	53	2	0.6	-0.1
3-4	-48	-172	-84	-96	-131	36	1.0	0.5
4-5	-120	-2	66	-20	-112	174	-0.5	-0.7
5-6	-110	-148	148	175	-99	102	-0.7	-0.9
6-7	-102	-133	119	146	-99	139	-0.8	-1.6
7-8	25	63	-96	-31	101	121	1.4	0.5
8-9	50	40	-33	-22	91	83	0.4	-1.0
9-10	24	28	27	37	71	-3	0.6	-0.2
10-11	16	-8	6	19	41	10	0.5	0.1
11-12	36	24	54	44	71	-18	0.4	-0.6
12-13	-18	132	120	120	-159	-138	1.3	1.0
13-14	9	-83	-140	-142	46	149	1.5	2.8
14-15	6	54	-104	-119	113	110	1.6	1.6
15-16	-2	127	-66	-64	160	64	0.8	-0.0
16-17	-4	174	135	145	-135	-139	0.9	0.5
17-18	106	159	51	51	108	55	-0.2	-1.6
18-19	7	70	-26	-27	44	33	1.9	1.2
19-20	5	19	-68	-65	14	73	1.4	-0.3
20-21	-52	-106	129	153	-112	179	2.1	-0.2
21-22	86	179	48	54	117	38	-0.4	-1.8
22-23	8	-156	174	172	-135	-166	3.3	3.7
23-24	7	23	-176	-153	-97	-177	1.7	-0.4
	AVG= -1	AVG= 19	AVG= 14	AVG= 19	AVG= -1	AVG= 30	AVG= 0.9	AVG= 0.1
	ABSOL.AVG= 37	ABSOL.AVG= 87	ABSOL.AVG= 81	ABSOL.AVG= 81	ABSOL.AVG= 90	ABSOL.AVG= 85		

Table 2-8. Wind speed and directional differences for August 3, 1988.

HOUR	DWM vs. NWS direction	ROM vs. NWS direction	GALT(15m) vs. NWS direction	GALT(61m) vs. NWS direction	DOMAIN MEAN vs. NWS direction	DWM vs. GALT(15m) direction	DWM vs. NWS AVG ERROR(V)	ROM vs. NWS AVG ERROR(V)
0-1	-84	139	-108	-113	-112	24	-0.4	-1.3
1-2	22	-47	-12	26	56	34	0.7	1.1
2-3	10	-14	-65	-25	80	75	1.8	1.7
3-4	7	10	-70	23	127	77	1.3	-0.4
4-5	9	-33	-103	-58	143	112	1.3	0.6
5-6	-32	73	2	24	-110	-34	1.3	0.4
6-7	-20	-12	-6	5	-86	-14	1.0	0.6
7-8	13	71	123	115	14	-110	-0.4	-2.0
8-9	6	162	36	22	154	-30	1.1	1.0
9-10	-9	-132	72	82	-146	-81	0.9	1.1
10-11	19	180	104	149	116	-85	0.9	0.7
11-12	25	79	121	133	102	-96	0.9	0.3
12-13	-17	-122			-94	-27	1.1	0.2
13-14	-23	-75			-117	-23	0.9	-0.6
14-15	18	177			123	128	1.3	0.3
15-16	-2	46			-9	-122	0.3	-0.0
16-17	42	134			95	172	1.2	-0.8
17-18	-19	-23			-80	-79	3.0	3.4
18-19	-55	-35			-94	-105	1.8	0.1
19-20	-71	-62			-125	-81	1.8	-0.1
20-21	-29	-5			-71	-79	1.8	-0.1
21-22	-32	-39			-97	-52	1.9	0.5
22-23	-28	-34			-80	-38	1.4	0.3
23-24	-1	31			-13	-51	0.7	-0.2
	AVG= -10	AVG= 19	AVG= 7.8	AVG= 16	AVG= -9	AVG= -20	AVG= 1.2	AVG= 0.3
	ABSOL.AVG= 24.7	ABSOL.AVG= 72	ABSOL.AVG= 69	ABSOL.AVG= 65	ABSOL.AVG= 93	ABSOL.AVG= 72		

areal portion of the domain would be weighted to a slower domain-mean wind while a lesser portion would be weighted to much faster observations.

In order to visually confirm the discrepancy in wind speeds for the entire modeling domain, wind vector plots of ROM and DWM were made for all four primary days. The hour chosen in which to present the results was the highest hour of observed ozone in the domain which happened to occur at the Hendersonville monitoring station for all four primary days. The plots for all four primary days are presented in Figures 2-1 through 2-8. In the legend of each plot is a reference vector representing a wind speed of 4.6 m/s. In addition, the reference vector has been positioned at an angle to show the predominant direction of the strongest flow for each plot.

For all days, ROM showed an overall flow pattern much higher in speed than DWM. DWM wind flows only began to approach ROM values where discontinuities in the DWM flow occurred through the merging of higher speed observational data with the slower terrain-adjusted, domain-mean wind. An example of this is illustrated in Figure 2-2 for June 24, 1988 DWM winds. In this figure, Davidson County is the county centrally located in the modeling domain. The winds in eastern Davidson County appeared to flow at a speed of at least twice the wind speed just outside of the radius of influence. In addition, the winds inside the radius of influence appear to flow at an angle of 45 degrees counter-

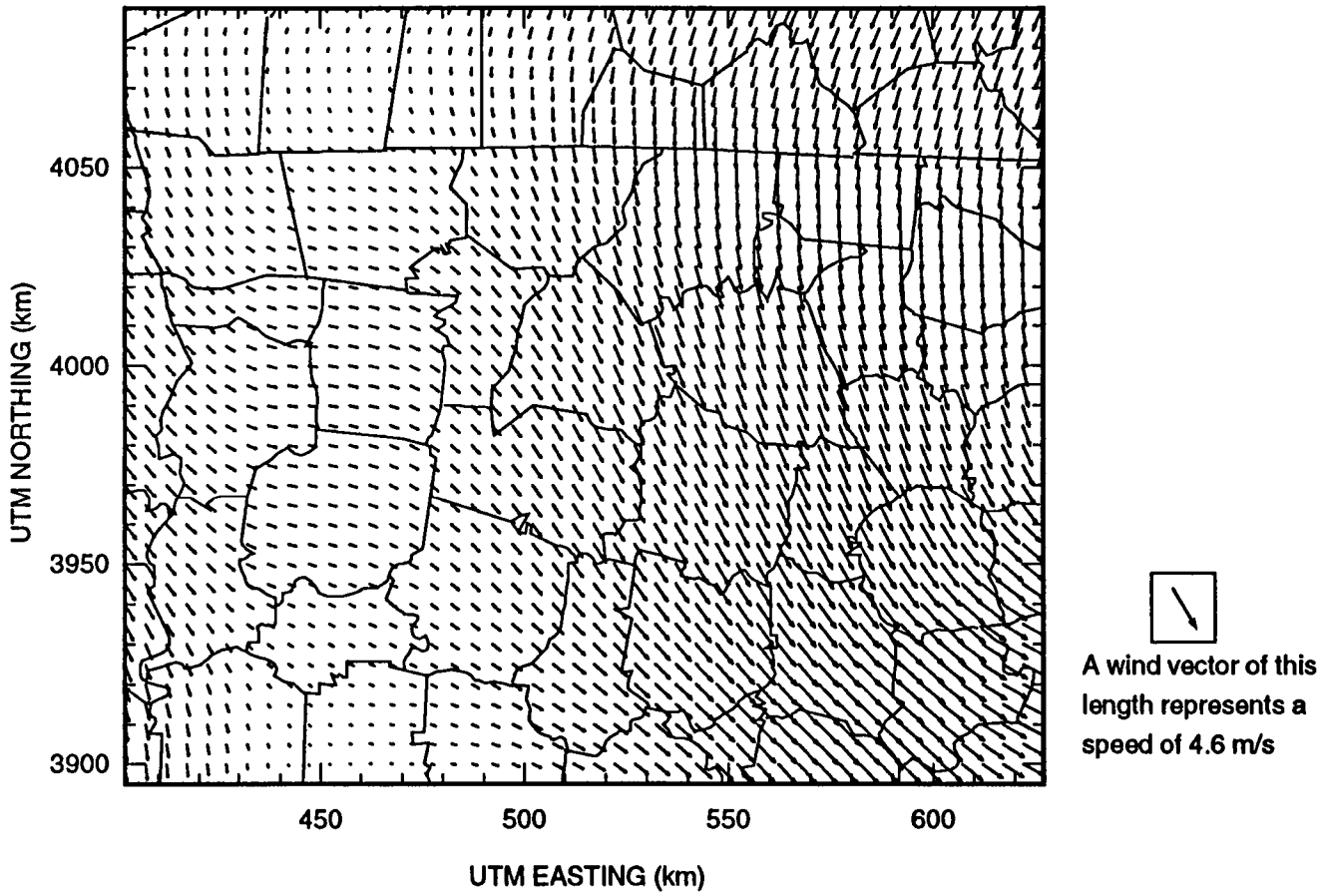


Figure 2-1. UAM-ROM wind vector plot for 4 PM on June 24, 1988.

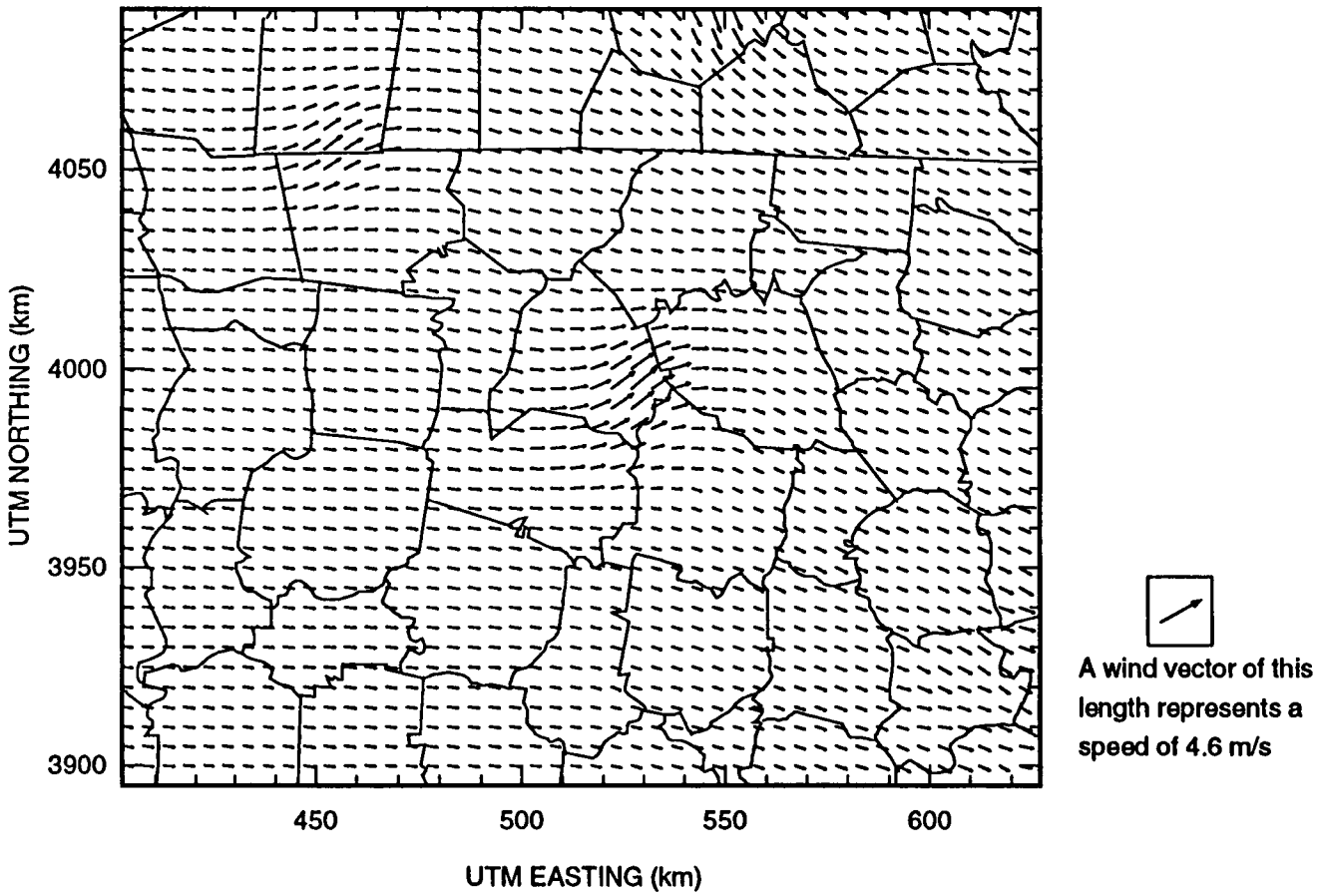


Figure 2-2. UAM-DWM wind vector plot for 4 PM on June 24, 1988.

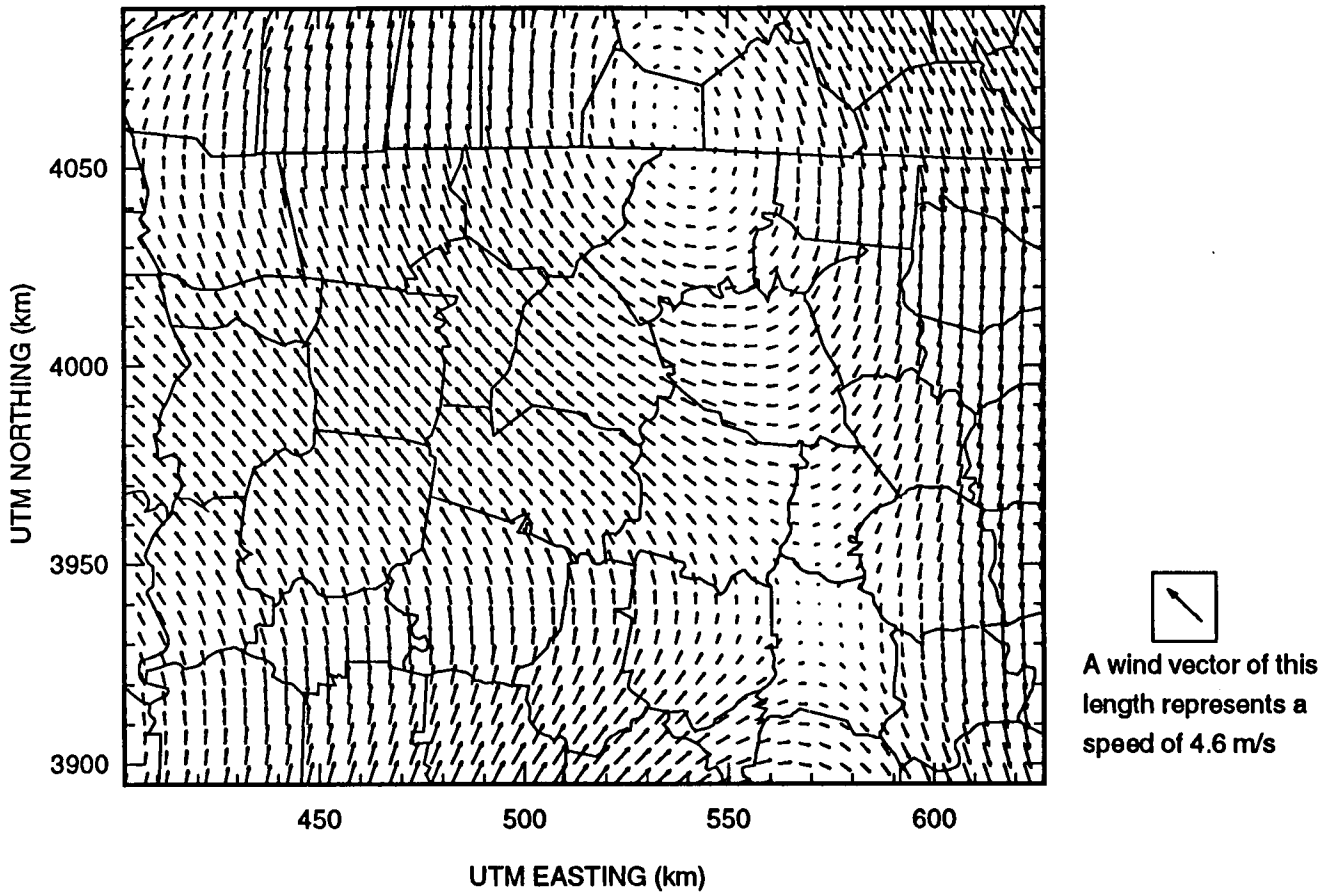


Figure 2-3. UAM-ROM wind vector plot for 11 AM on July 9, 1988.

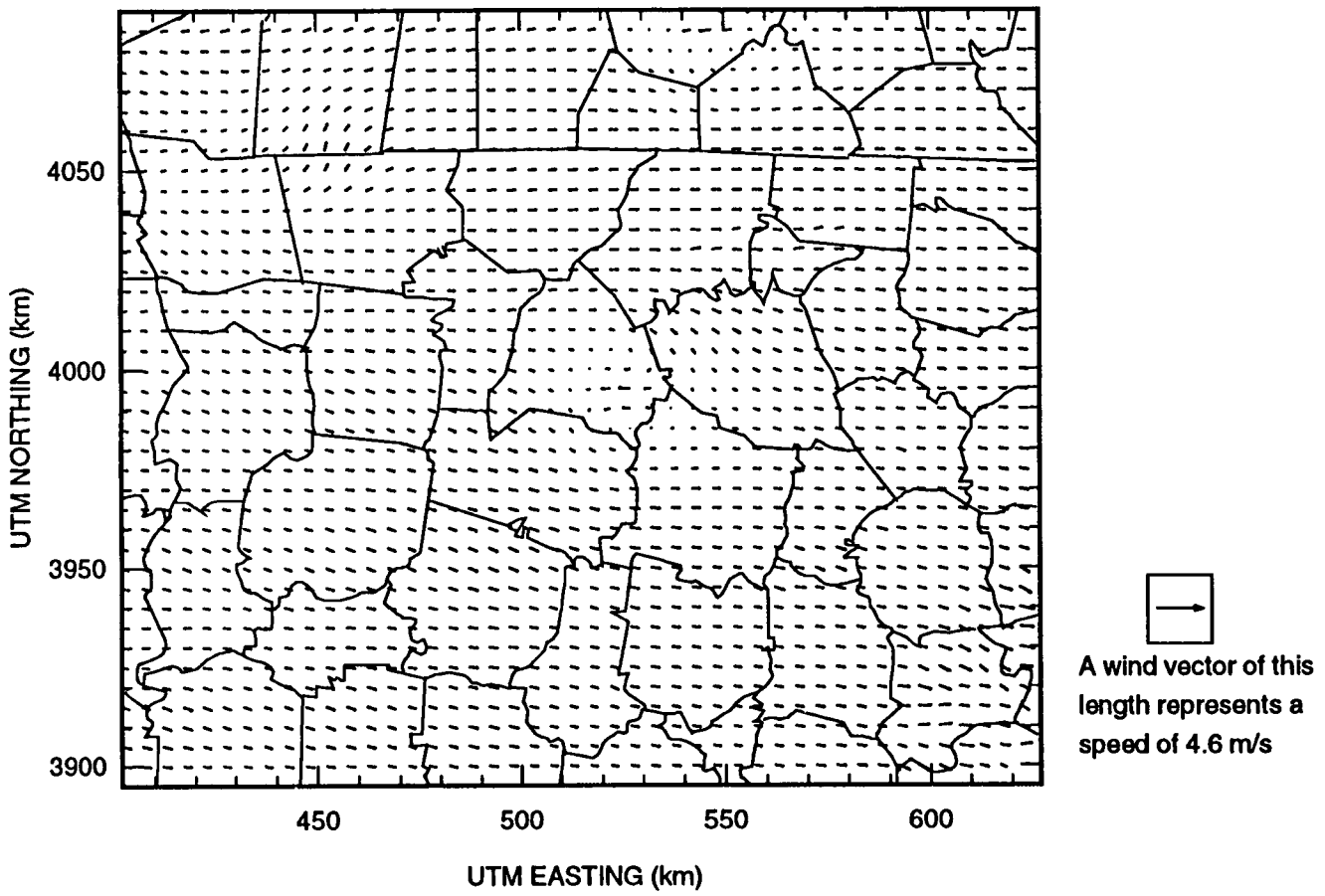


Figure 2-4. UAM-DWM wind vector plot for 11 AM on July 9, 1988.

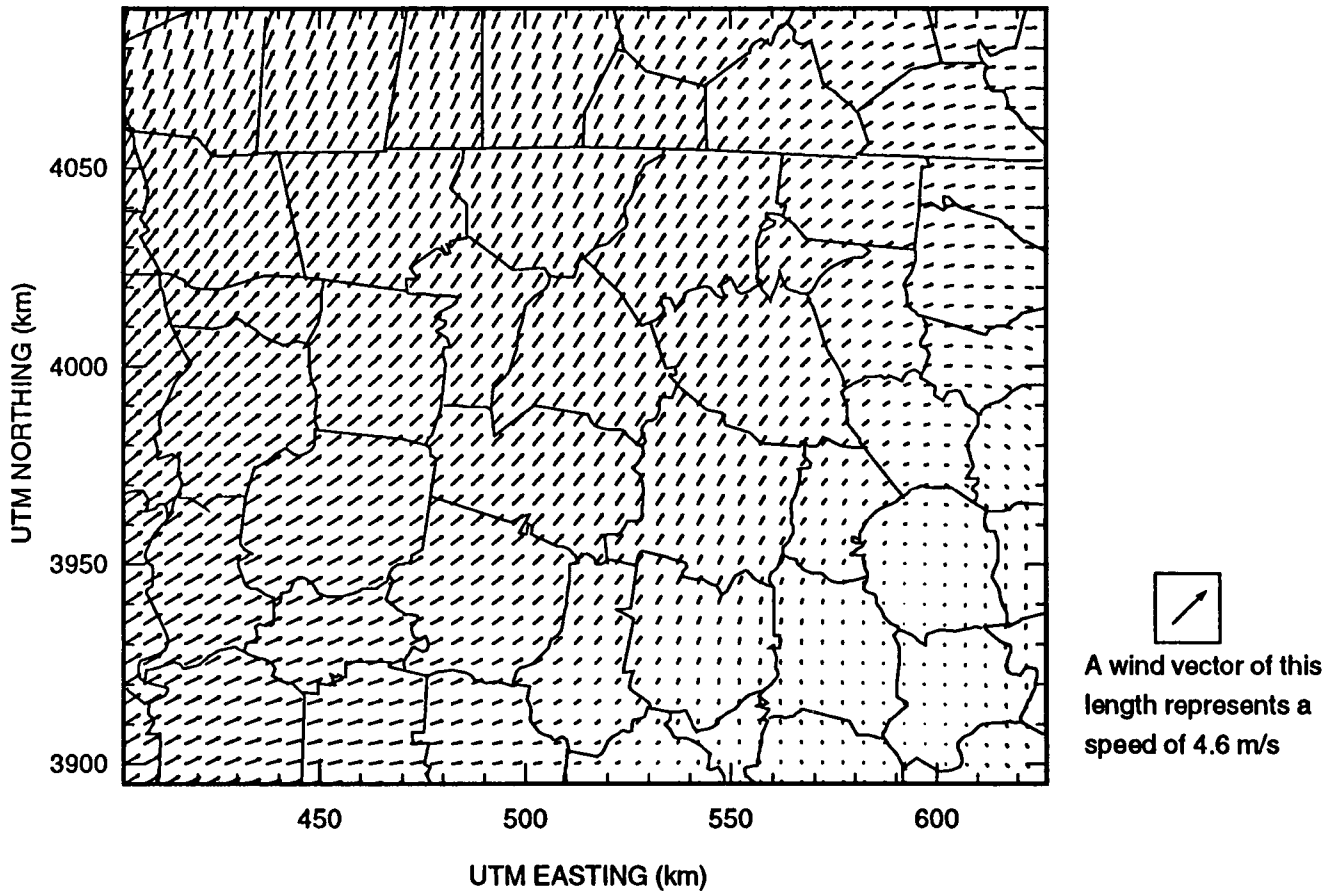


Figure 2-5. UAM-ROM wind vector plot for 11 AM on August 1, 1988.

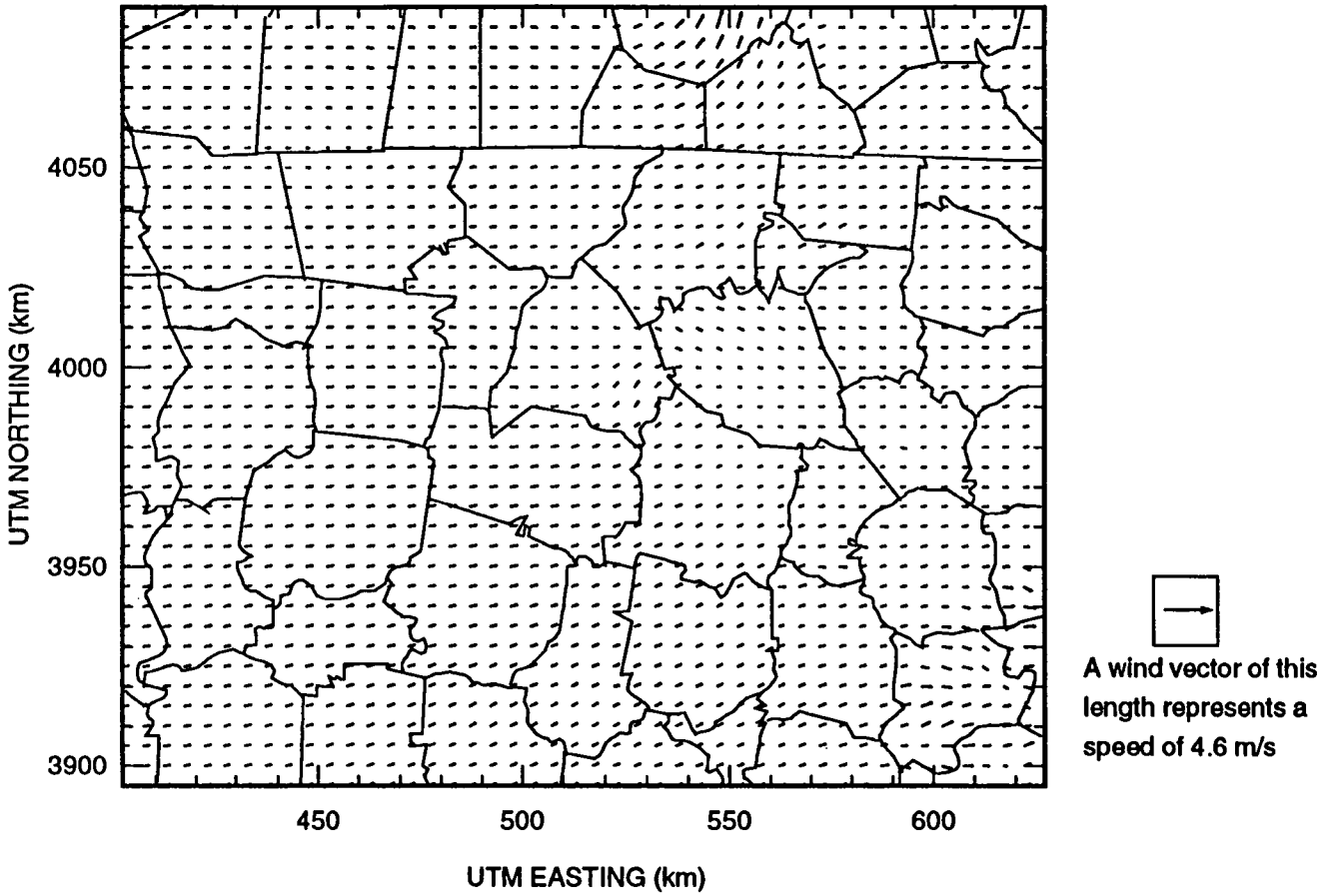


Figure 2-6. UAM-DWM wind vector plot for 11 AM on August 1, 1988.

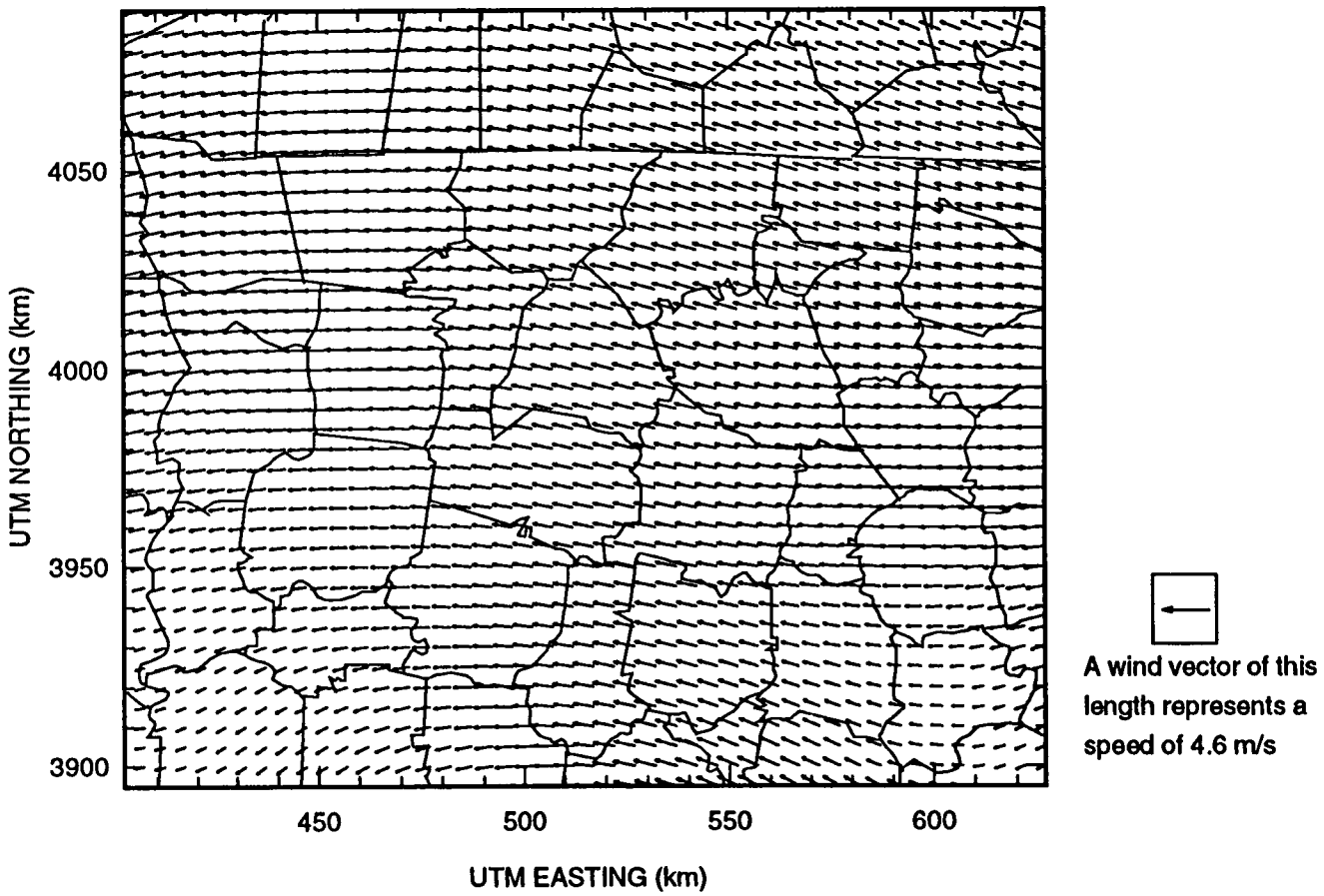


Figure 2-7. UAM-ROM wind vector plot for 1 PM on August 3, 1988.

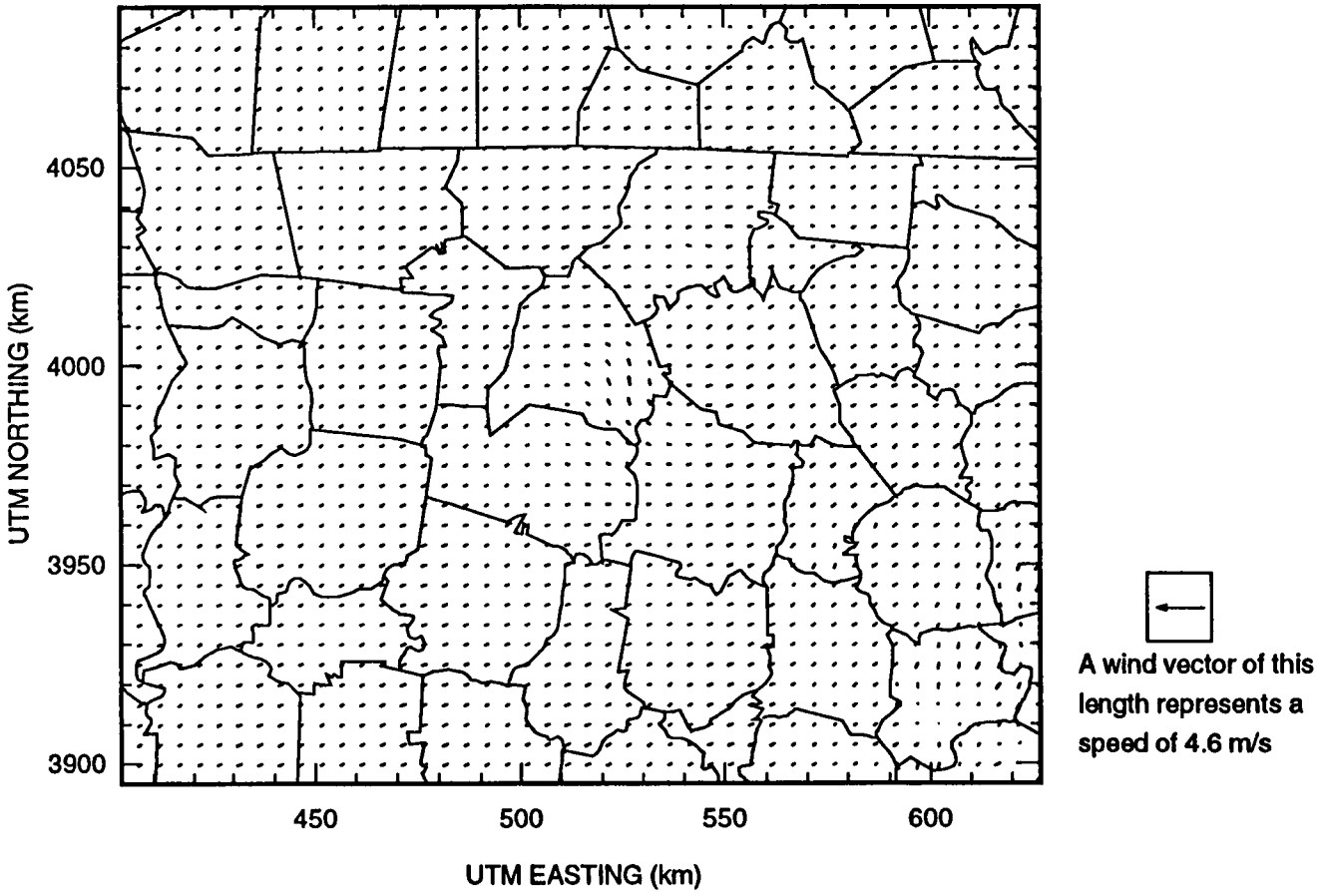


Figure 2-8. UAM-DWM wind vector plot for 1 PM on August 3, 1988.

clockwise from winds just outside of the radius of influence. The discontinuities in the DWM windfields illustrate that the NGM did not predict well the surface wind speed due to the marked difference in wind speeds between NGM predictions and observations.

ROM wind flows in general showed more meteorological influence from such occurrences as low and high pressure systems. The DWM wind flows appeared to be heavily weighted to an essentially nonvarying wind except where observations were merged in. One shortcoming of the DWM model is that in large domains (1,840 grids in Nashville), only one wind speed and directional value is input for each hour as the domain-mean wind value. It appears that in the averaging process to determine the domain mean wind from NGM data, any circular low or high pressure flows would tend to cancel out because averaging of wind data (vector components) moving in a circular path in a high or low pressure system would result in an net zero value for that hour.

It is important to note that on July 9, 1988, the 11 AM ROM winds flowed in a predominantly southeast to northwest pattern, while the 11 AM DWM winds flowed nearly opposite to this in a predominantly west to east pattern! The discrepancy between ROM and DWM was determined to be the result of the domain-mean wind direction being approximately 180 degrees off the NWS value at 11 AM on July 9, 1988.

A final analysis was made to see whether ROM and DWM wind

speeds varied as much in the upper levels as they did in the surface level. A plot of the wind speed by level was made for each of the four primary days at the hour corresponding to the hour of highest observed ozone in the domain. The wind speed was plotted at the closest grid location within downtown Nashville. The plots for all four primary days are shown in Figures 2-9 through 2-12.

Figures 2-9 through 2-12 show that for three of the four days, the upper level wind speeds were higher for ROM than for DWM. It appears that the NWS upper-air observations were generally higher in speed than the upper-air NGM predictions. Figures 2-9 through 2-12 also show that the ROM-UAM upper level winds were approximately identical showing essentially no difference in speed or direction through levels 2-5 for all four days. It seems that upon running the IWIND processor interface, ROM layer 1 winds were assigned to the 1st UAM level, while ROM layer 2 winds were assigned to each of the 2nd-5th UAM levels with no difference in between for any of the upper levels. One shortcoming of the IWIND interface seems to be that no upward velocity adjustment was made for an increase in height. One author presents the concept that due to frictional forces very near to the ground, the urban surface wind speed increases with height until the gradient wind speed is reached (source: Turner's *Workbook of Atmospheric Dispersion Estimates* - 1970). It should be noted that DWM winds for June 24, 1988 showed a marked decrease in

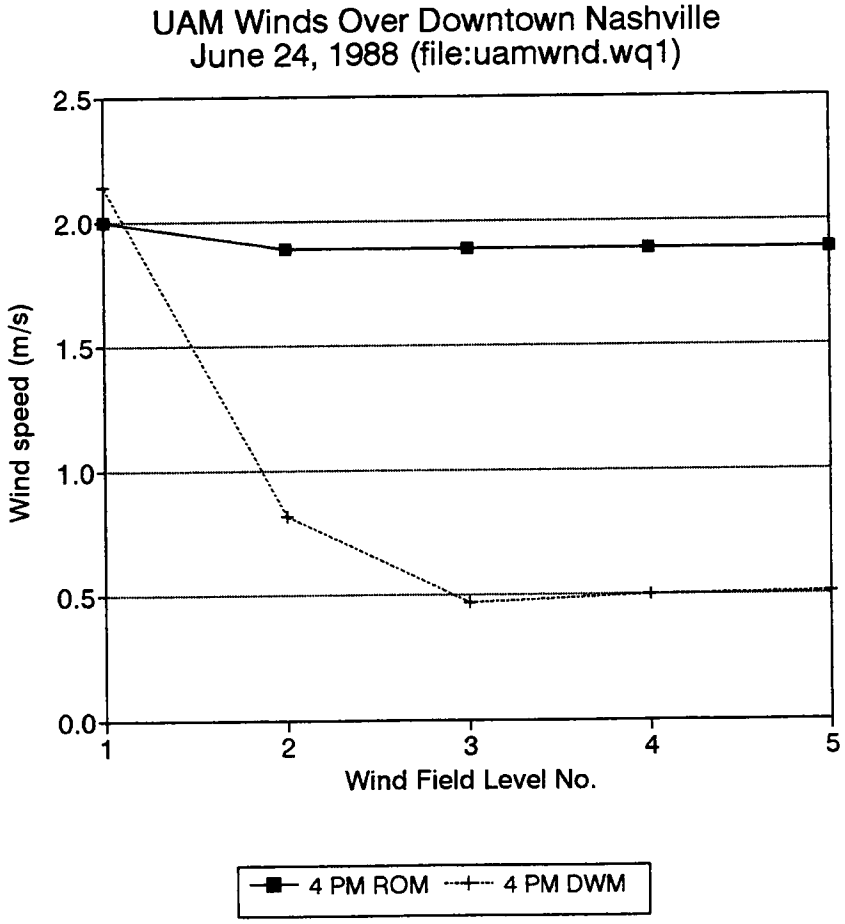


Figure 2-9. **Upper level winds over downtown Nashville on June 24, 1988.**

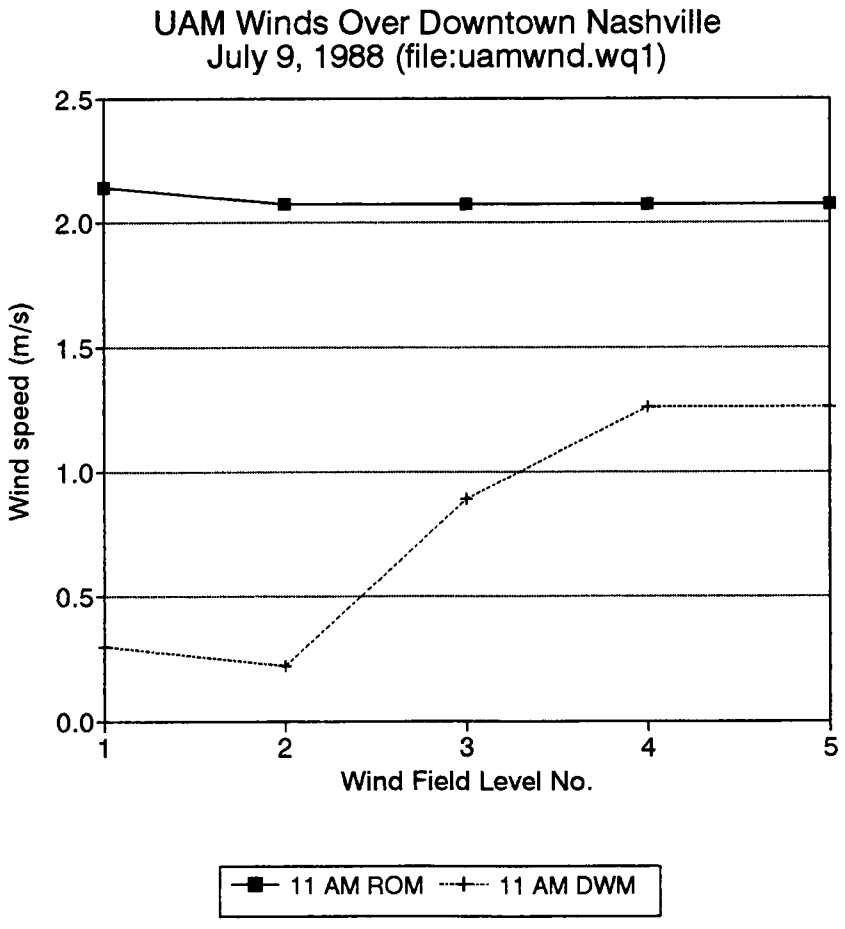


Figure 2-10. Upper level winds over downtown Nashville on July 9, 1988.

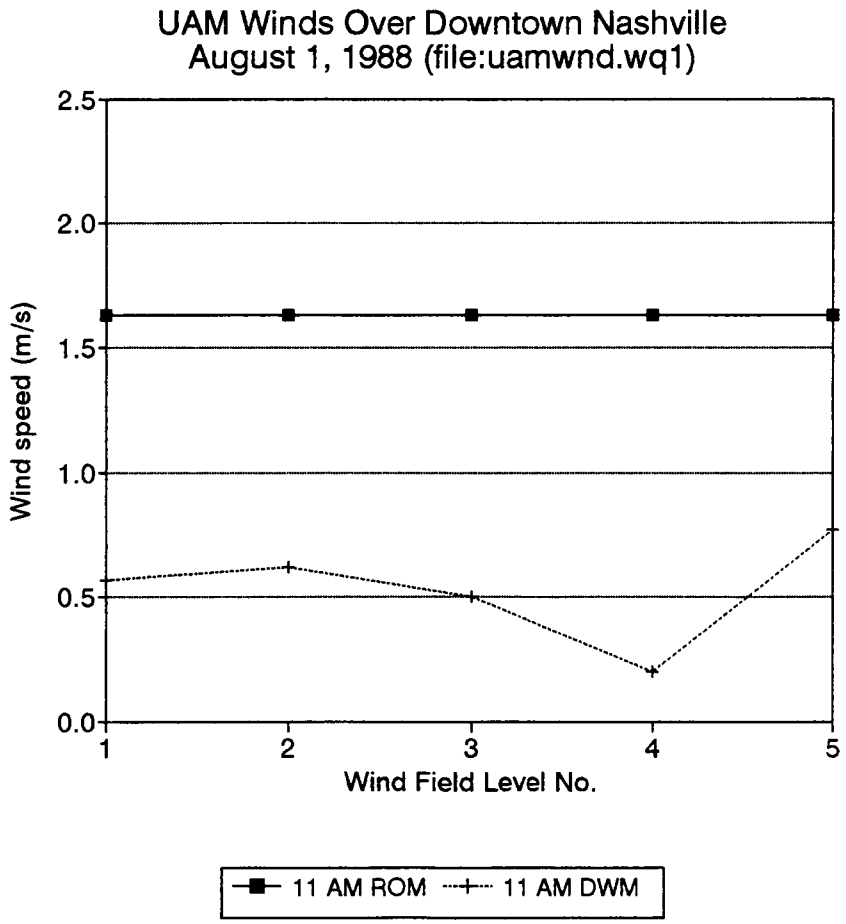


Figure 2-11. Upper level winds over downtown Nashville on August 1, 1988.

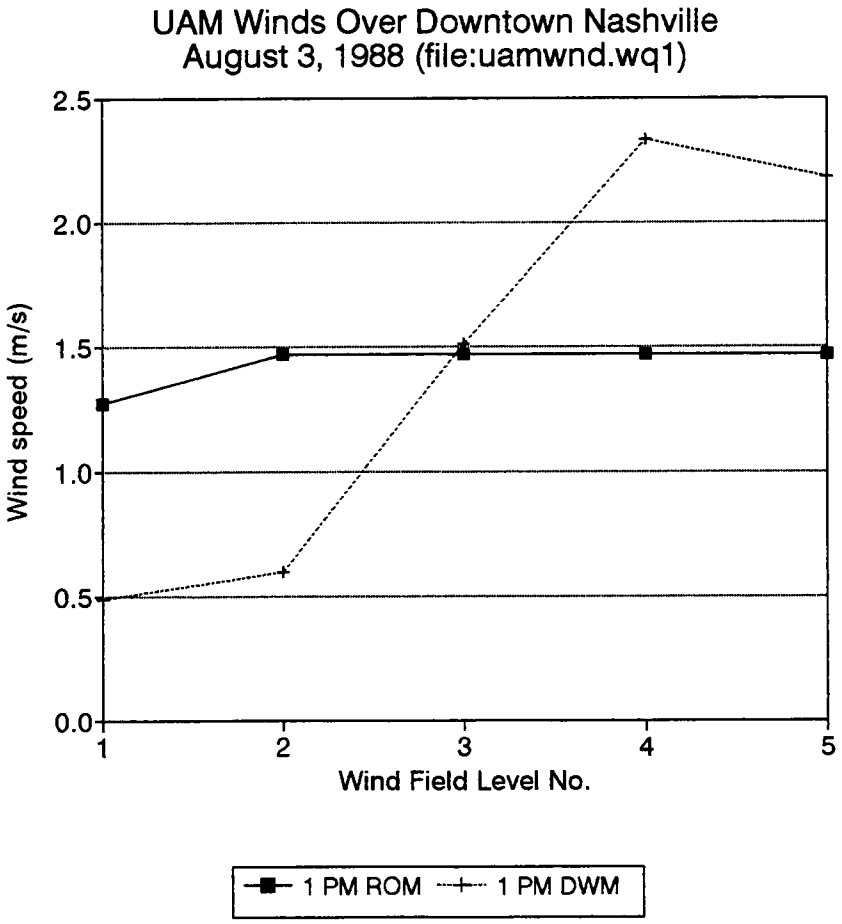


Figure 2-12. Upper level winds over downtown Nashville on August 3, 1988.

velocity in going from the surface to the upper levels. The NGM upper-air predictions over downtown Nashville on this date conflict with Turner's findings because the DWM winds decreased in velocity moving upwards from the surface on June 24, 1988.

5. Wind Trajectories

Wind trajectories of 1988 NWS observations were previously made in order to select four 1988 meteorological episodes as candidates for modeling. These trajectories were part of the original modeling protocol document entitled *Protocol for Photochemical Air Quality Modeling of the Middle Tennessee (Nashville) Area*. At the time the protocol trajectories were made in 1992, no wind model predictions were available.

For each of the four primary days, a backward wind trajectory was made starting from the hour of highest observed ozone in the modeling domain. For all four days the Hendersonville site recorded the highest observed ozone concentration in the modeling domain. Starting at the Hendersonville site, the wind was then stepped backward in time until the air parcel left the modeling domain or stagnated with no net appreciable movement. All wind components for the ROM and DWM trajectories were taken from the grid cell nearest to the Nashville Airport NWS site. Although the predicted ROM and DWM windfields varied spatially, back-trajectories using the same reference cell

location served as a simple exercise to show how the violation may have occurred. The back trajectories are presented in Figures 2-13 through 2-16.

The June 24, 1988 trajectory showed good agreement spatially with respect to all three winds. The ROM and NWS air parcels each took 12 hours to leave the modeling domain, while the DWM air parcel required an additional nine hours owing to the lower velocity in DWM. This day was selected for modeling as the NWS trajectory exhibited defined flow or transport.

The August 3rd trajectory showed better spatial agreement between DWM and NWS than between ROM and NWS. The reason is that DWM directional data were nearer to the NWS observations than ROM data were for this scenario. This episode was selected for modeling because the NWS trajectory exhibited poor flow or stagnation.

Overall, the wind trajectories show somewhat similar agreement for all three winds spatially with better temporal agreement between ROM and NWS because of slow DWM wind speeds.

6. Conclusions

Analyses of ROM and DWM windfields were undertaken in order to know before any modeling began, what shortcomings and advantages existed for each wind model.

ROM winds were easily generated but somewhat simplistic in that upper-level winds were found to not differentiate in speed or direction through any of the upper layers. ROM winds

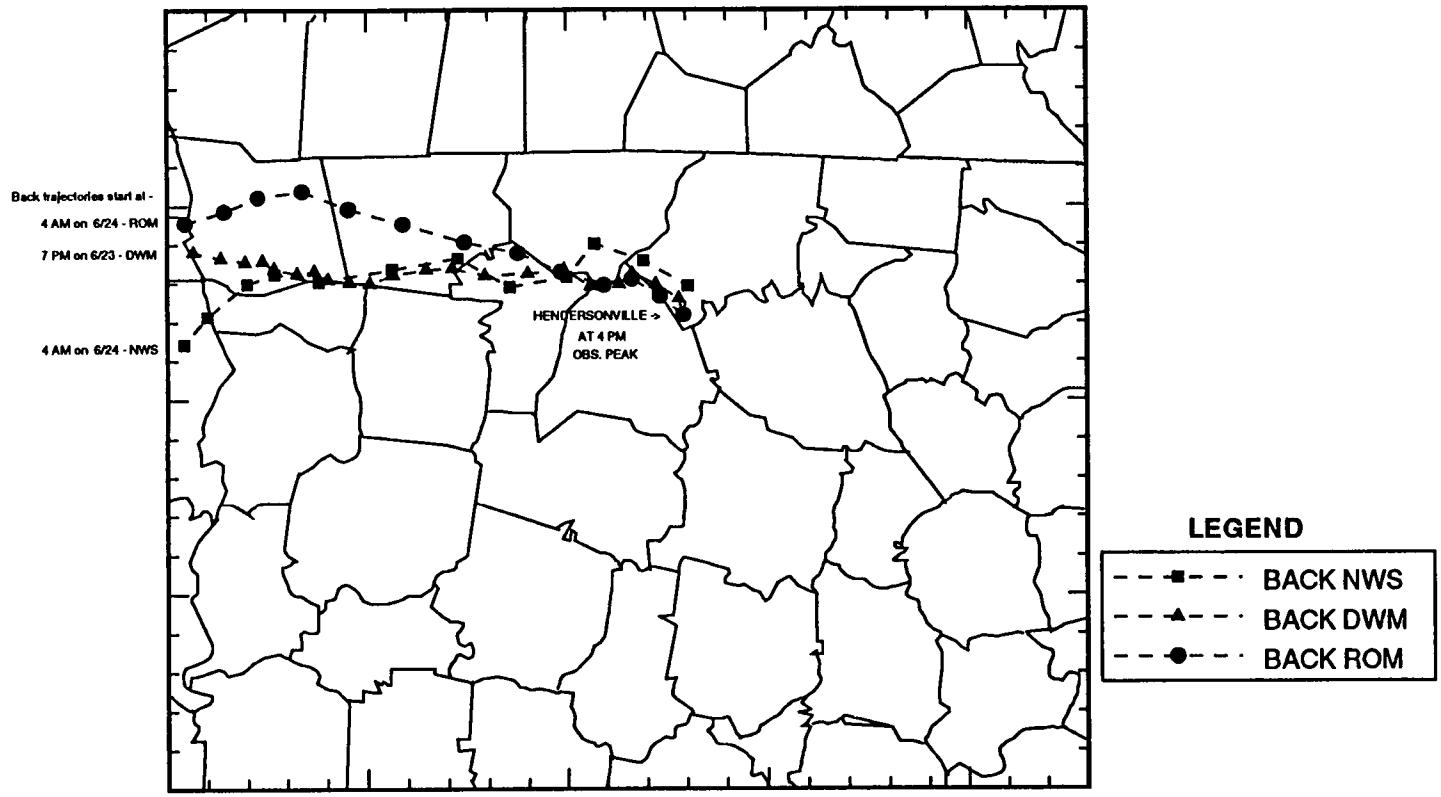


Figure 2-13. Backward wind trajectory for June 24, 1988.

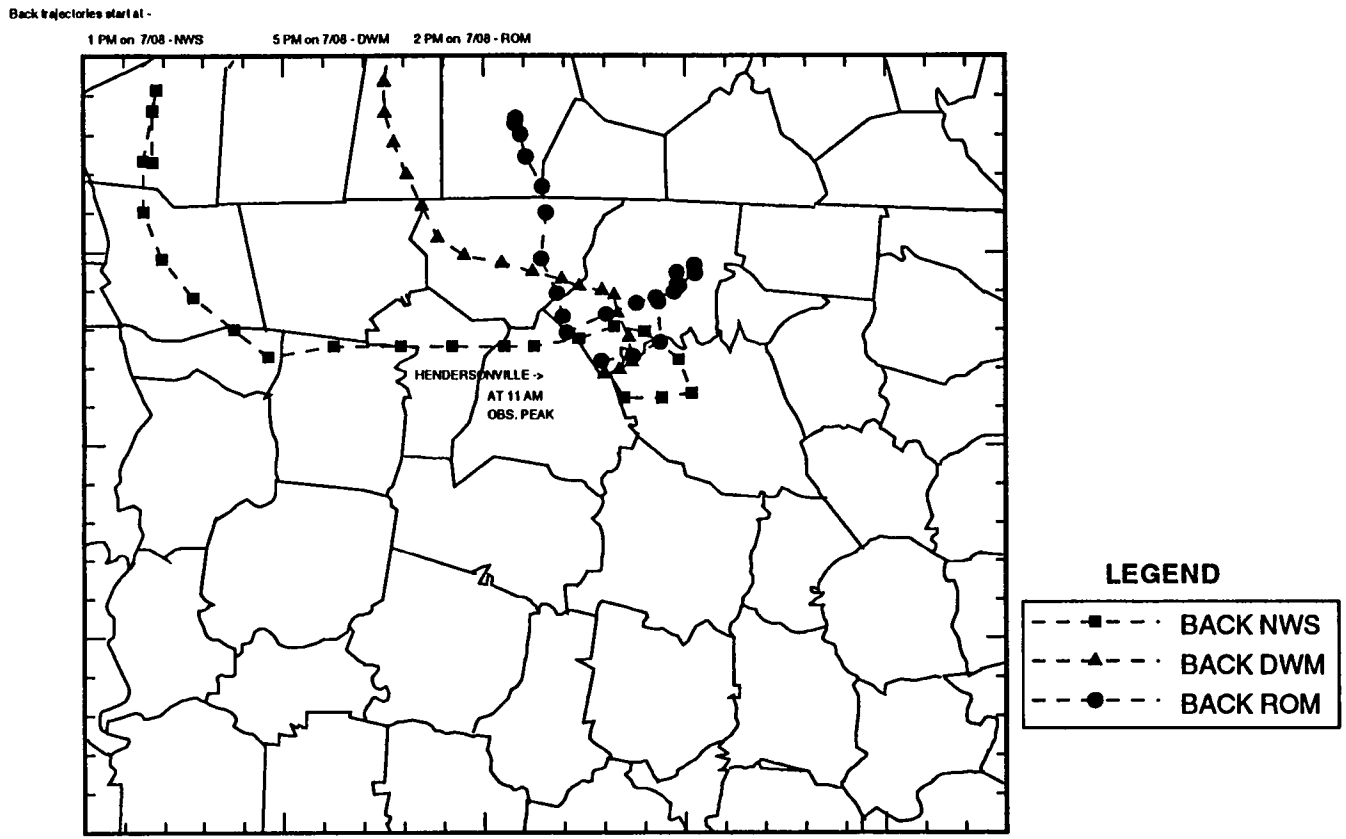


Figure 2-14. Backward wind trajectory for July 9, 1988.

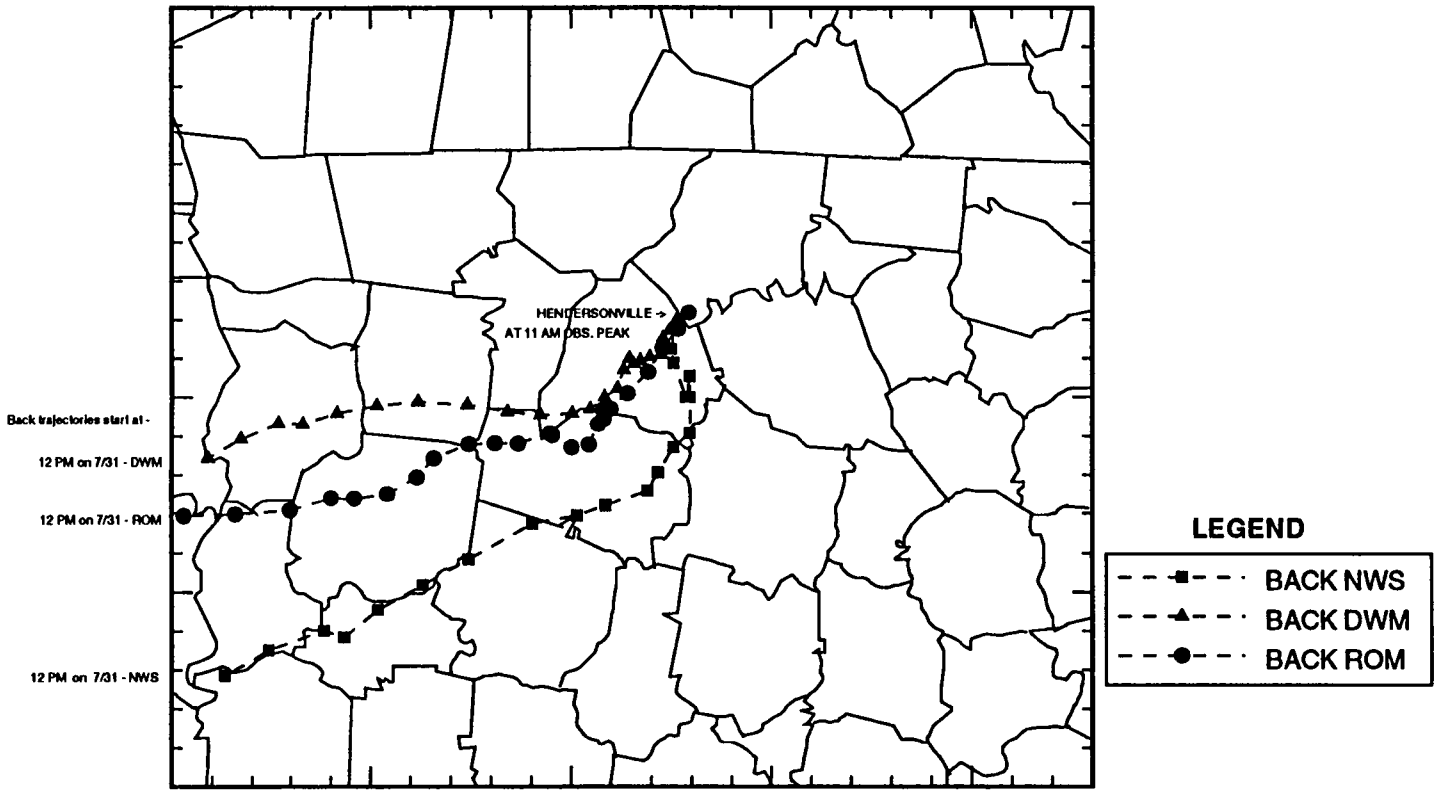


Figure 2-15. Backward wind trajectory for August 1, 1988.

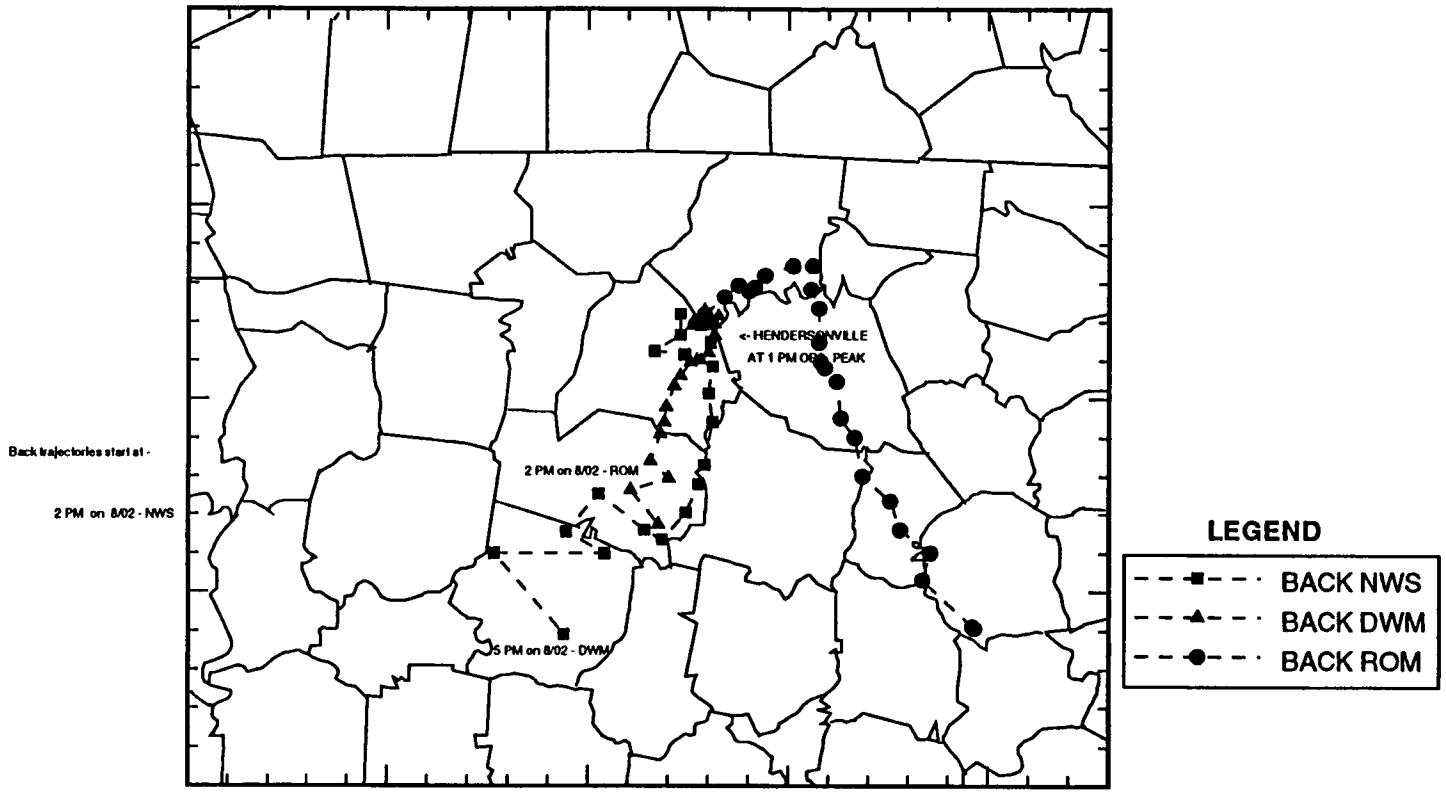


Figure 2-16. Backward wind trajectory for August 3, 1988.

were found to agree much closer to the NWS in speed than DWM at the NWS site since ROM wind generation was mentioned in the EPA methodology to be derived from observations.

DWM directional data were found to agree better with the NWS data than ROM at the NWS site, but there existed a large discrepancy in DWM and NWS speeds. The NGM predictions used to generate the domain-mean wind and to supplement the upper-air data were considerably lower in speed than any of the surface observations.

The resulting DWM windfields, therefore, appeared to be weighted heavily to a terrain-adjusted domain-mean wind that is rather nonvarying outside of the radius of influence of an observation and does not compare well to the flow patterns predicted in the ROM windfields.

One shortcoming of the DWM appears to be the domain-mean wind, which initially is spatially invariant. In a large modeling domain with sparse observational sites such as the Nashville UAM domain, the wind across the domain will tend to be uniform except where it has been terrain-adjusted. This is especially apparent where a low radius of influence is used for both ground level and upper-air stations. If the domain-mean wind is not comparable to NWS observations, then DWM winds will vary considerably from ROM and show discontinuities in the windfield which have been shown by graphical analyses such as wind vector plots in this section.

The comparison of the ROM and DWM winds in this section

have led UTK to the conclusion that the DWM winds must be incorrect due to the large difference in wind speed values between NGM predictions and NWS observations. It should be noted that the DWM windfields for this modeling domain were independently developed by an outside organization. UTK was provided with the inputs to run the DWM model but did not participate in the development or critique of any of these inputs prior to their release. The decision by UTK to use DWM windfields in addition to ROM provided a good sensitivity comparison between windfields that were too slow in speed (DWM), and windfields which were based on observations (ROM).

Section 3. Mixing Heights and Other UAM Inputs

1. Mixing Heights

Calculation of hourly mixing heights was one of the first priorities of the Middle Tennessee Modeling Domain (MTMD) project. The mixing height or Diffusion Break Data Processor (PDFSNBK) was run first since other ROM-UAM interface processors required mixing height (diffusion break) data.

1988 twice-daily Nashville mixing height data were obtained in electronic format (3.5" diskette) from the National Climatic Data Center (NCDC) in Asheville, North Carolina. Twice-daily mixing height data consisted primarily of the computation of a minimum and maximum mixing height reported in meters above ground level at a radiosonde site located approximately 20 km northeast of downtown Nashville. The Nashville upper-air radiosonde site is a part of the upper-air site network of the Gridded Model Information Support System (GMISS) used to generate Regional Oxidant Model (ROM) data retrievals.

NCDC used the method of Holzworth (1972) to calculate an AM and PM daily mixing height from the twice daily radiosonde data. For modeling purposes, it was necessary to develop hourly profiles from the twice-daily mixing height data.

The EPA preprocessor RAMMETX was used to calculate the hourly mixing height profiles for the eight modeling days. The two functions of RAMMETX are hourly interpolations of the mixing height and hourly estimates of the atmospheric stab-

ility. The atmospheric stability estimation was performed according to the method of Turner (1964). Atmospheric stability estimates were necessary when running the UAMWND preprocessor program to generate UAM format wind files from the Diagnostic Wind Model (DWM) wind file inputs supplied by the Tennessee Valley Authority (TVA).

The RAMMETX processor was run with each of its three options for calculating hourly mixing heights for each of the eight modeling days. All three options were run so that a decision could be made on the most appropriate mixing height profile for use in the MTMD.

The 3 options of RAMMETX documented in The UAM User's Guide - Volume II: User's Manual for the UAM (CB-IV) Modeling System are described below as follows:

a. Option 0:

This option calculated hourly mixing height data by the original RAMMET interpolation procedure prepared by EPA (1977). The method used minimum and maximum mixing height data from the previous day, the computational day and the following day to calculate a mixing height for the urban Nashville site.

b. Option 1:

Option 1 used hourly surface data from the Nashville NWS surface data site to make modifications to the stability class. In addition, the hourly growth and decline of the mixing height was interpolated as a

function of the surface temperature.

c. Option 2:

Option 2 was a slight variant of option 1. Option 2 adjusted the mixing height slightly by modifying the surface temperature field with data from the minimum and maximum daily temperatures which the modeling guidance assumed to occur at sunrise and 2 PM, respectively. This temperature correction was needed because the twice daily mixing heights were based on radiosonde data generated at 6 AM and 6 PM. The release time for the upper air soundings usually differed from the time of minimum and maximum surface temperature.

Figures 3-1 through 3-4 depict the 3 RAMMETX options for each of the 4 primary episodic days in 1988. These figures show a marked difference between option 0 and options 1-2.

Option 0 generated an hourly interpolation of the mixing from the daily minimum (sunrise) to a period of constant maximum mixing height followed by decay to the next day's minimum mixing height value.

Options 1-2 were quite similar to each other and were interpolated as a function of the surface temperature using the daily minimum and maximum mixing height values. Figures 3-1 through 3-4 show periods in which the mixing height in options 1-2 increased even during evening hours. This night-time increase in the mixing height was determined to be caused

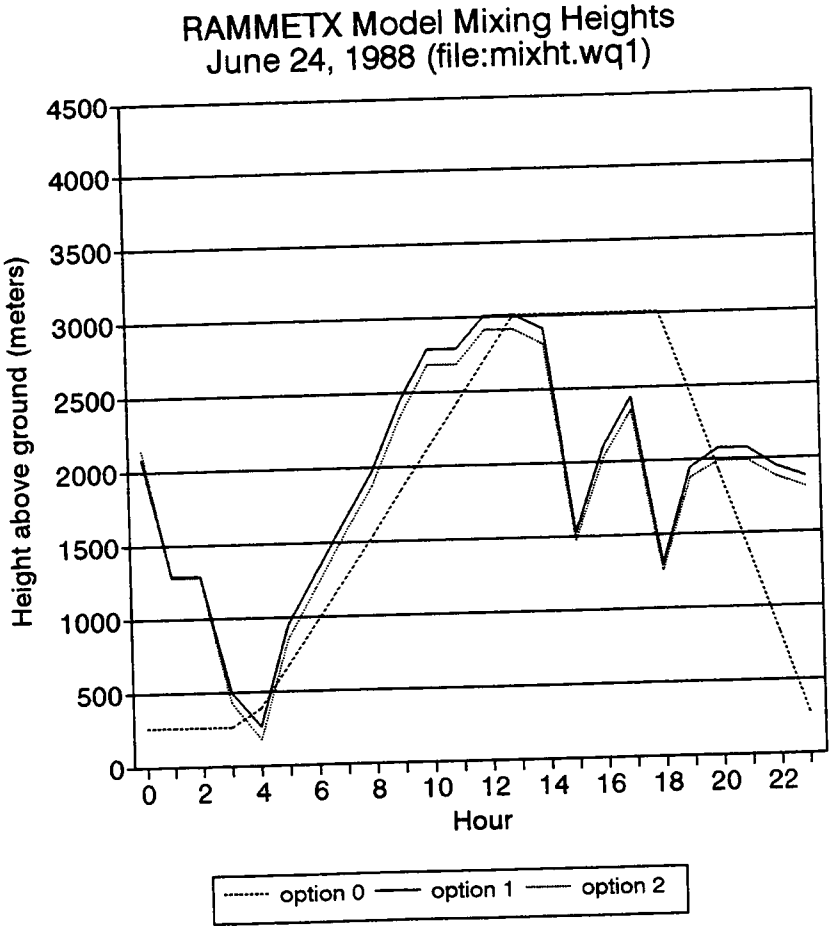


Figure 3-1. **Hourly mixing heights for June 24, 1988.**

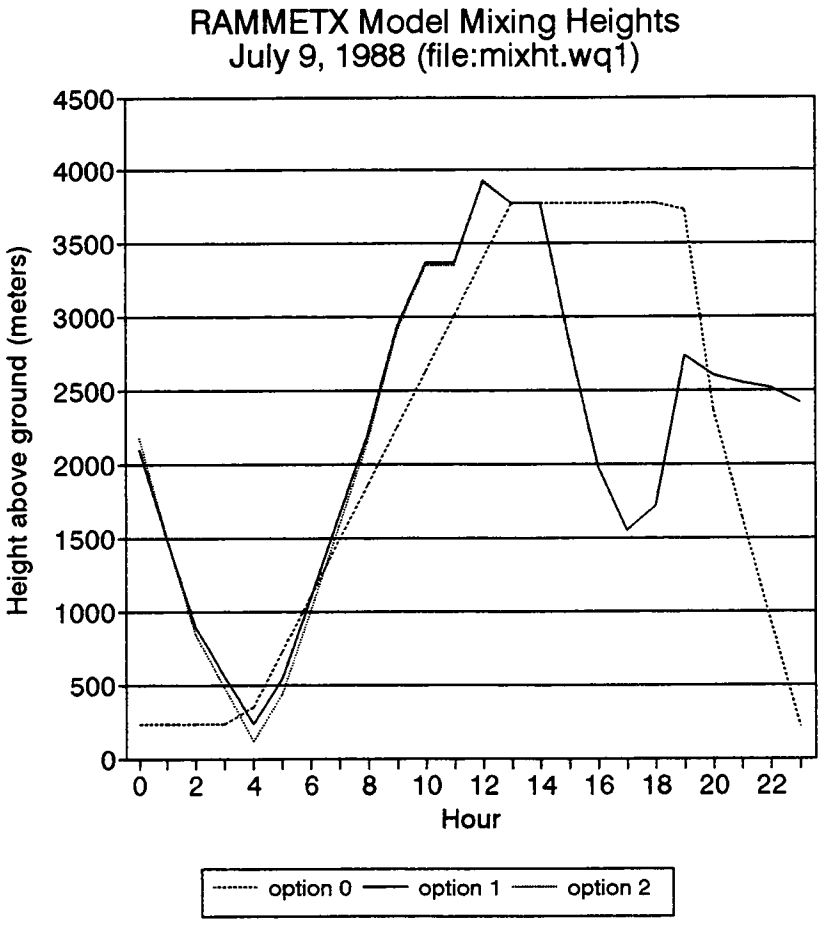


Figure 3-2. Hourly mixing heights for July 9, 1988.

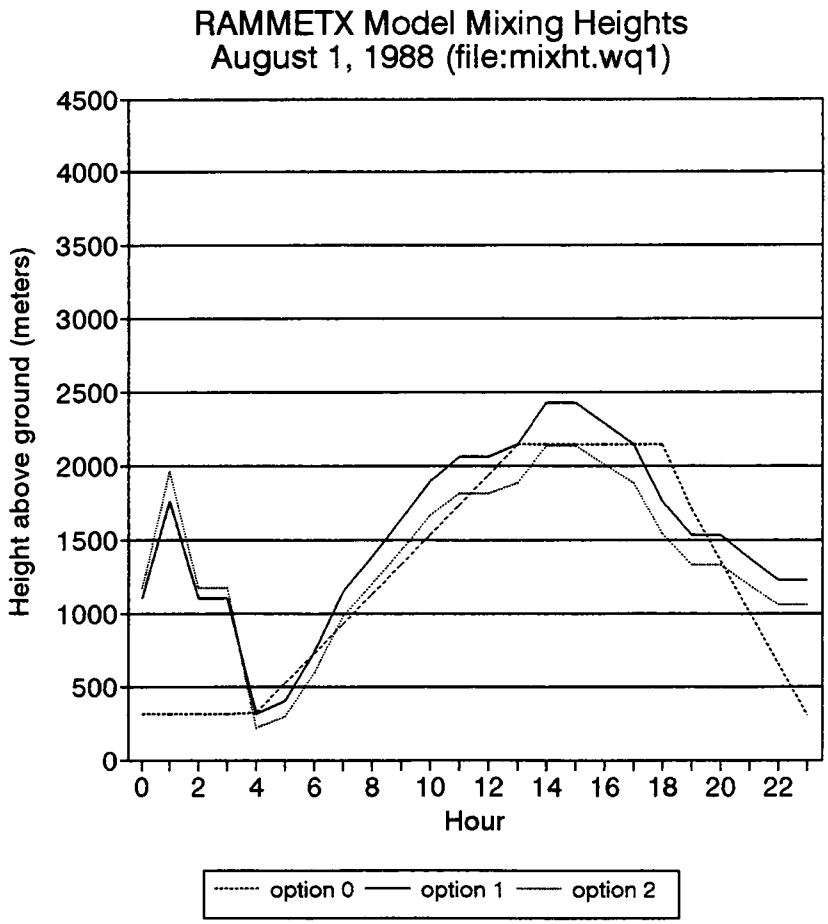


Figure 3-3. Hourly mixing heights for August 1, 1988.

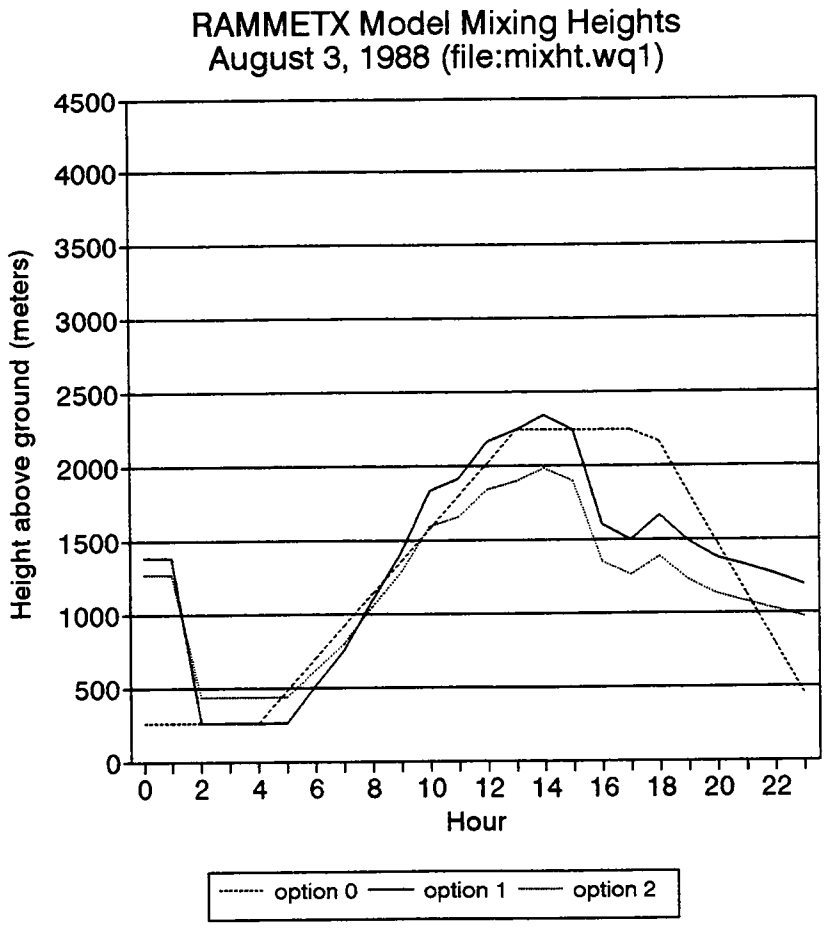


Figure 3-4. Hourly mixing heights for August 3, 1988.

by an increase in the surface temperature. An increase in the surface temperature at night from advection or frontal activity should not have caused a growth in the mixing height because the driving force for convection (solar energy) had ceased.

Options 1-2 were determined to be less appropriate than option 0 because the mixing height is formed by thermal convection resulting from solar heating of the earth's surface. The actual hour at which ground based thermals cease is a function of many meteorological parameters, but after sunset there will be no incoming solar energy available to generate an increase in the mixing height. Options 1-2 exhibited evening increases in the mixing height whenever the air temperature increased.

Option 0 was determined to be the better of the RAMMETX options because option 0 was the only option to decrease the mixing height in the evening with no intervals of growth occurring during the decay period.

Option 0 is not an "ideal" algorithm though, in that the mixing height was seen to increase each day prior to actual sunrise. A more accurate algorithm would be one in which the mixing height would begin to grow only after some period after the sun rose producing convection at the ground. In addition, the actual collapse of the mixing height probably was steeper and occurred earlier in the afternoon than that predicted by the RAMMETX algorithm. Conceptually, the mixing height did

not actually decrease as suggested by the algorithm, rather, the mixing height reestablished itself at the ground shortly after the maximum daily surface temperature peaked. A more refined mixing algorithm would therefore, grow the mixing potential sometime after sunrise (approx. 6-7 AM) and re-establish it to ground level in midafternoon (approx. 2-3 PM).

The mixing height will affect the performance of the model in that nighttime downward mixing to the ground of NO_x from combustion sources scavenges ozone to cause nighttime ozone levels of a few ppm to be observed. By collapsing the first UAM layer sooner and closer to the ground the ozone should therefore decrease in the afternoon until the next day after sunrise. In the daytime, narrowing the height of the first layer to reflect the true mixing potential would concentrate the ozone precursors and perhaps form more ozone to explain the peak observations. Currently all that there is available in the MTMD is twice daily mixing height minima and maxima suggesting the need for further study of the daily profile which could be developed through highly resolved temperature profiles (within meters) of the boundary layer in the MTMD.

However, due to the lack of actual hourly mixing height data measured within the study area, it was not possible to refine the mixing height algorithm beyond that defined by RAMMETX option 0. Although other mixing height algorithms such as CALMET and MIXEMUP were considered for validation

purposes, no scientific basis exists to select one algorithm over another since measured hourly mixing height profiles for the eight episodic days in 1988 are not available. Therefore the EPA RAMMETX option 0 was chosen as the mixing height algorithm for the validation runs.

Prior to running any validation runs, several research UAM runs were made to judge the effect of the mixing height on ozone formation. These research modeling runs used all of the 1988 UAM input files except for the area and point source emission files. These emission files were generated by preprocessing emissions data from the 1990 Nashville Ozone Precursors SIP Emissions Inventory without day specific 1988 adjustments. The runs showed that the choice of mixing height influenced ground level ozone concentrations during daylight hours in which the photochemistry mechanism is reactive.

Figure 3-5 illustrates the increase in predicted ground level ozone concentrations for the grid exhibiting the highest ozone concentration in the domain for any one hour resulting from a hypothetical decrease in the mixing height. In these three modeling runs, the basecase mixing height was the August 3rd, 1988 mixing height generated by RAMMETX option 0. A second run was made using 75% of the basecase mixing height value for each hour followed by a third run at 50% of the basecase mixing height value. In both cases, the mixing heights were decreased by the specified amount for all 24 hours. Figure 3-5 shows that at the peak hour, the maximum

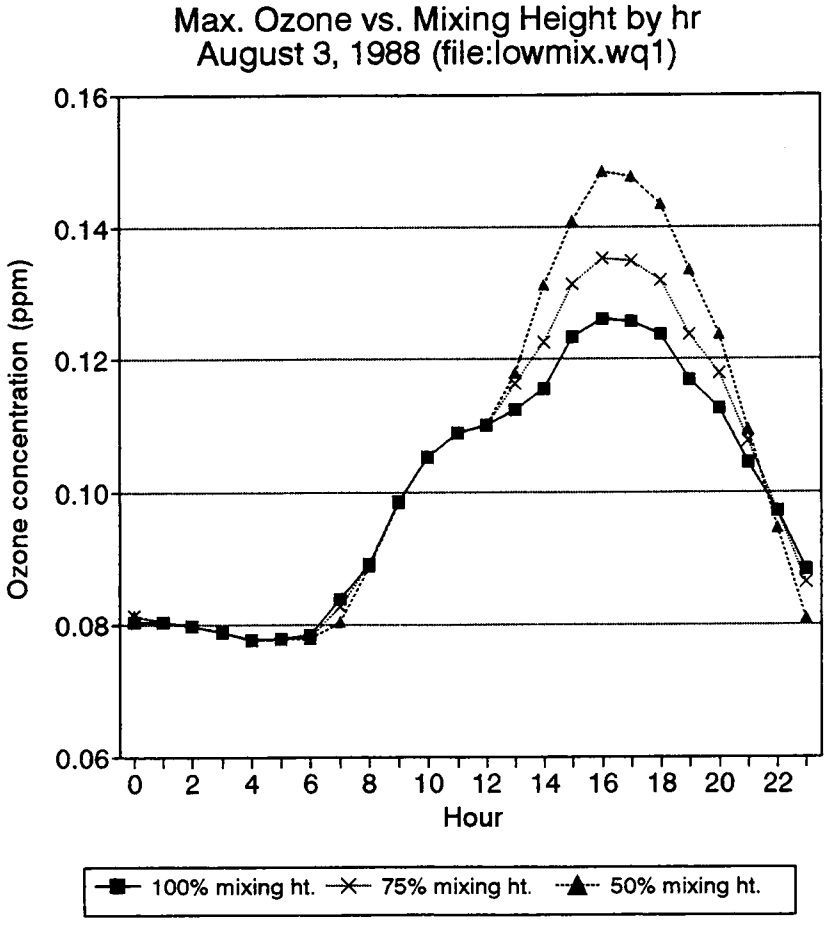


Figure 3-5. Maximum domain ozone vs. mixing height.

ground level ozone concentration in the domain increased by approximately 20 ppb when the mixing height was cut in half.

Figure 3-6 shows the results for this same study, but this time the ozone concentration was plotted for only one specific location in the domain, the grid containing Hendersonville. Figure 3-6 shows that by cutting the mixing height in half, by 4 AM the ozone was scavenged completely which was seen to occur in the MTMD at multiple monitoring stations from a review of the ozone monitor data from 1988. Figures 3-5 and 3-6 show that the model is sensitive to the mixing heights as the daytime domain maximum can be increased while the nighttime minimum at a monitoring station can be decreased showing the need for further study of mixing heights in the MTMD.

2. Elevated Plume Heights

After the mixing height profiles were generated, it was then necessary to define the model regiontop. The regiontop is the uppermost extent of the modeling domain or the top of the modeling "box".

The regiontop was generated by running the ROM-UAM Region Top Interface processor (IREGNTP) referenced in The UAM User's Guide - Volume V: Description and Operation of the ROM-UAM Interface Program System.

Before running the IREGNTP processor, it was first necessary to determine such parameters as the number of levels and the minimum cell thicknesses of the lower and upper levels

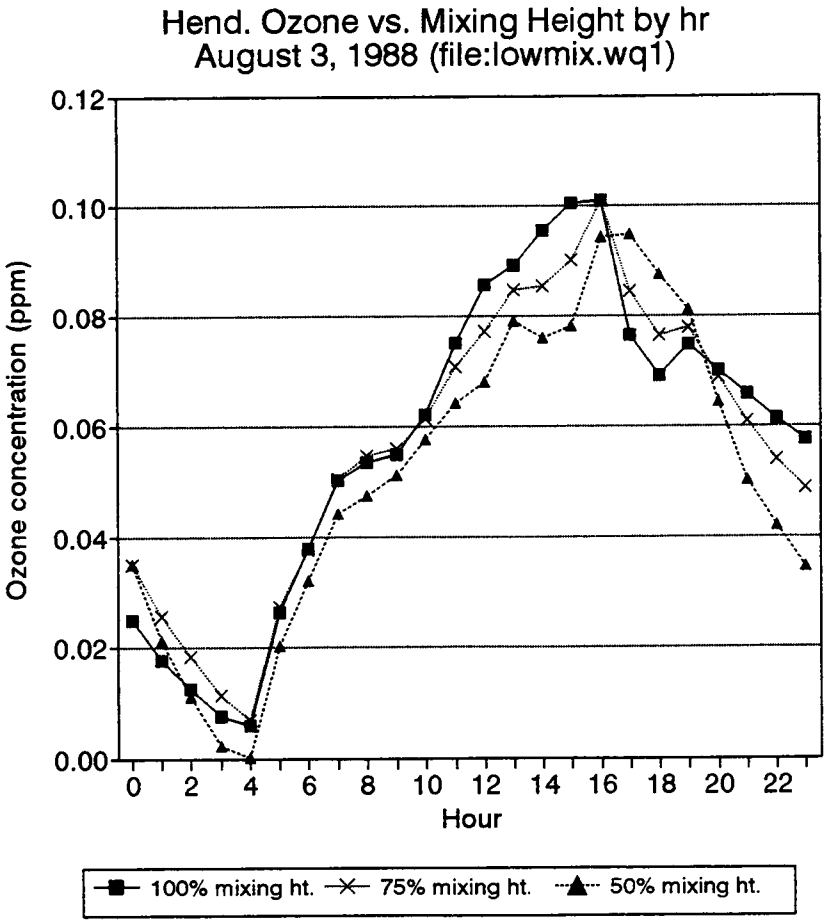


Figure 3-6. **Ozone vs. mixing height for Hendersonville on August 3, 1988.**

which the model would use. Using the Guideline for Regulatory Application of the Urban Airshed Model document as a reference, the following modeling parameters were chosen:

a. Number of levels above the diffusion break: 3

b. Number of levels below the diffusion break: 2

c. Total number of levels: 3 + 2 = 5

d. Minimum cell thickness of the 3 upper levels: 150 m

e. Minimum cell thickness of the 2 lower levels: 50 m

Note: The last parameter was used for all modeling days with the exception of July 8, 1988. On that day the daily minimum mixing height value was predicted to be 70 m such that the cell thicknesses of levels 1 and 2 would each be one-half of this value or 35 m. Thus on July 8, 1988 it was necessary to use a minimum cell thickness for the lower 2 levels at 35 m instead of 50 m.

Figure 3-7 depicts the 5 level structure of the modeling domain for June 24, 1988 using RAMMETX option 0 to determine the hourly mixing height values. This figure shows that as the mixing height increased, the lower levels swelled while the upper levels compressed. At the maximum mixing height value, IREGNTP set each upper level thickness to 150 m so that the minimum approach of the diffusion break to the regiontop was 450 m, or three times 150 m.

As a QA/QC check, the height of the highest elevated plume in the modeling domain for each hour was compared to the

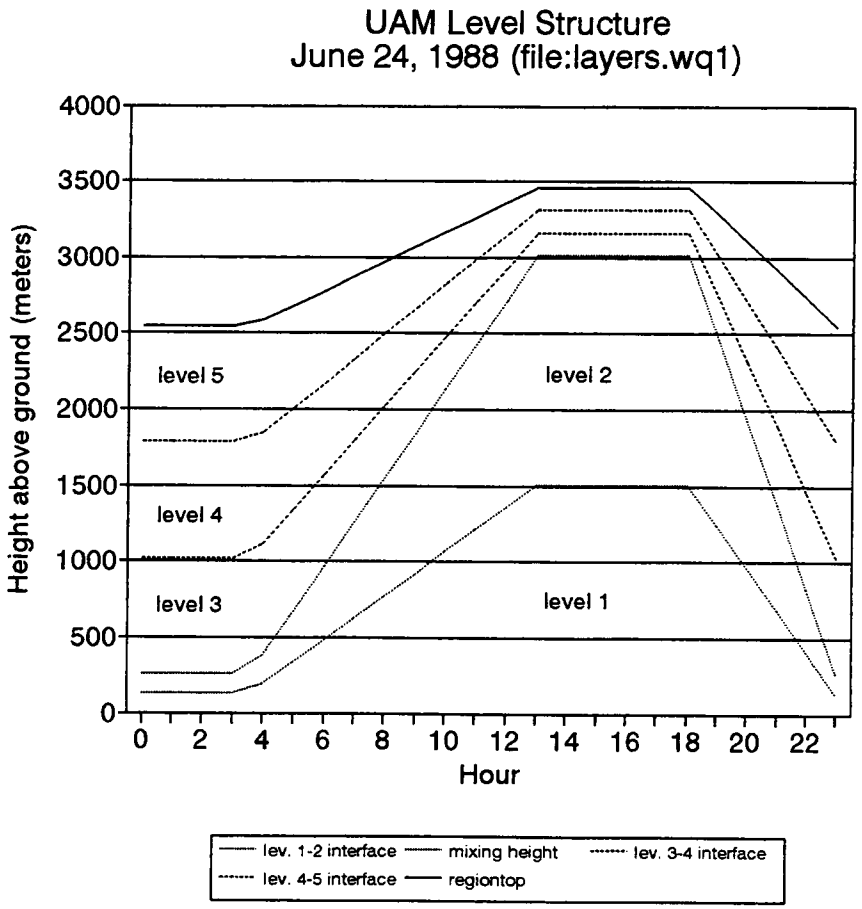


Figure 3-7. UAM Layer Structure for June 24, 1988.

regiontop value for each of the eight modeling days. This check was performed to insure that all of the elevated point source emissions were contained within the vertical upper boundary of the topmost UAM cell at all hours.

Figures 3-8 through 3-11 depict the highest hourly maximum plume height value determined for all elevated point sources in the modeling domain. Estimated plume rise is included for the stack with the greatest hourly final plume height for both ROM and DWM generated windfields. As shown in the figures, the highest hourly plume heights were below the regiontop in all cases. For most of the daytime hours, the elevated point source emissions were contained in the lowest level (level 1) except on July 9, 1988. On that day the increase in plume height into the 2nd level was due to a three hour period in which the atmospheric stability was predicted to be class 1 (highly unstable). While uncommon, class 1 conditions are predicted to occur on only the warmest of summer days (maximum incoming solar radiation), and cause maximum dispersion of emissions. It is of interest to note that the plume rise predicted by ROM and DWM were similar in magnitude, although DWM tended to predict a slightly higher plume rise during daytime conditions. The larger plume rise predicted when using DWM windfields was primarily a result of lower wind speeds predicted by DWM.

3. Other UAM Inputs

Besides the mixing height and emissions data, all other

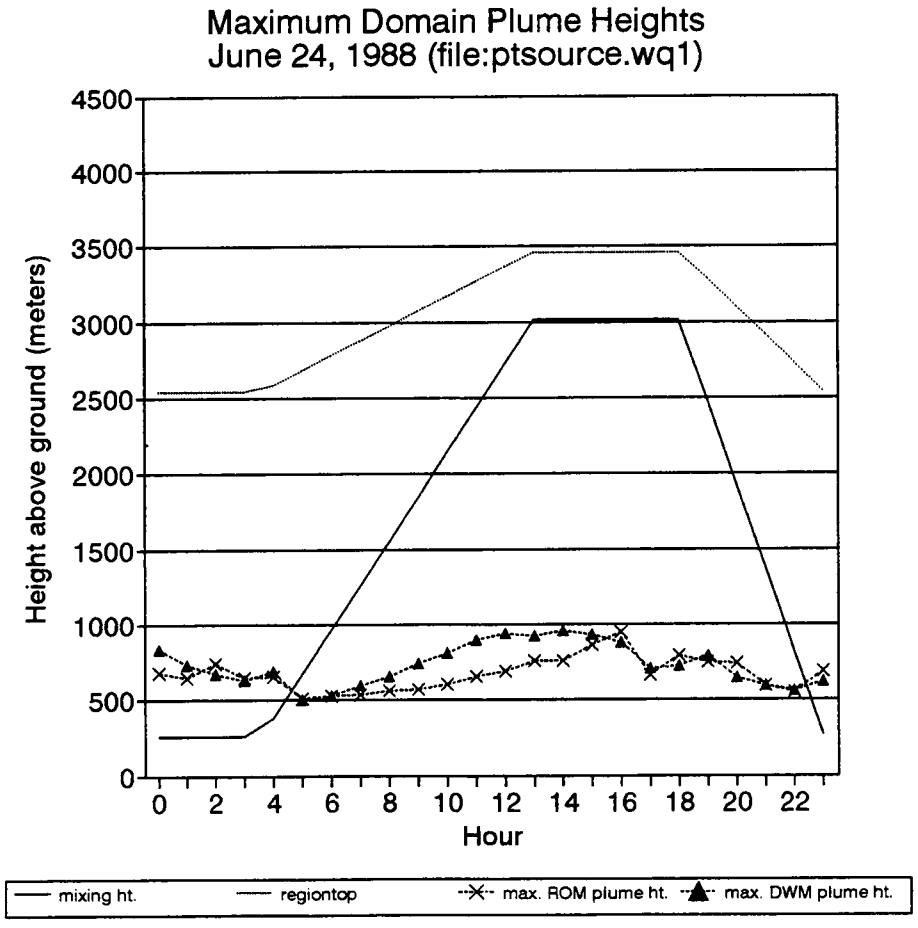


Figure 3-8. Hourly maximum plume heights for June 24, 1988.

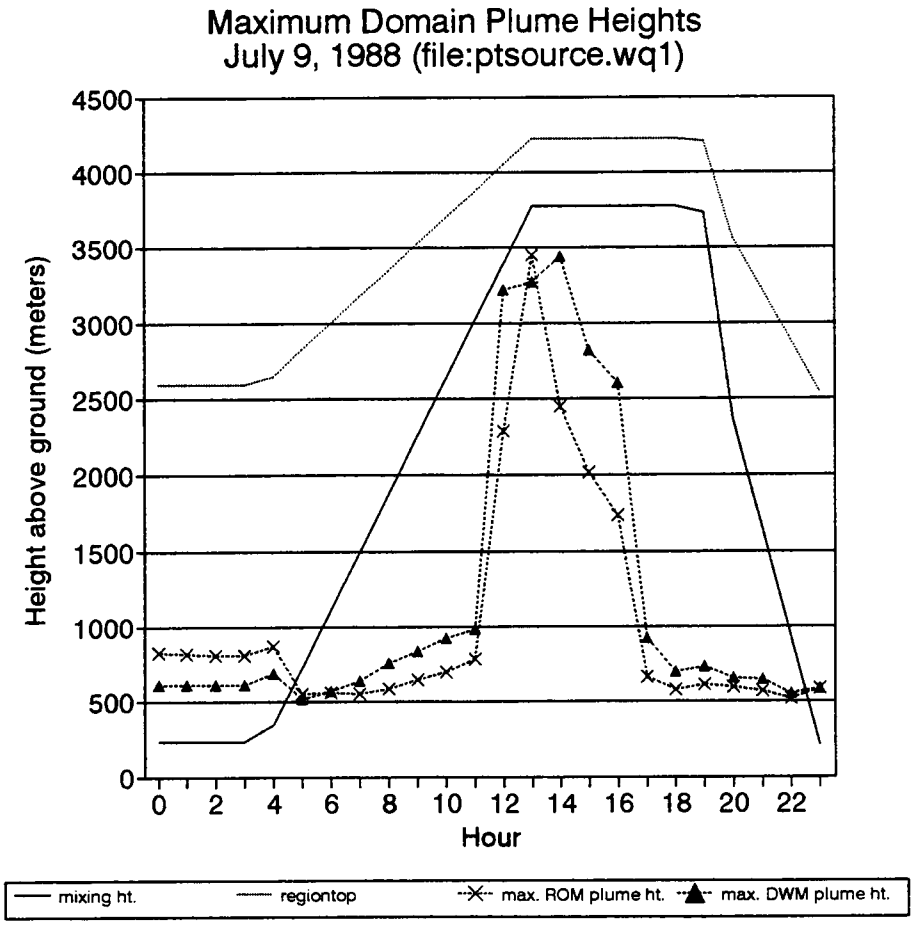


Figure 3-9. Hourly maximum plume heights for July 9, 1988.

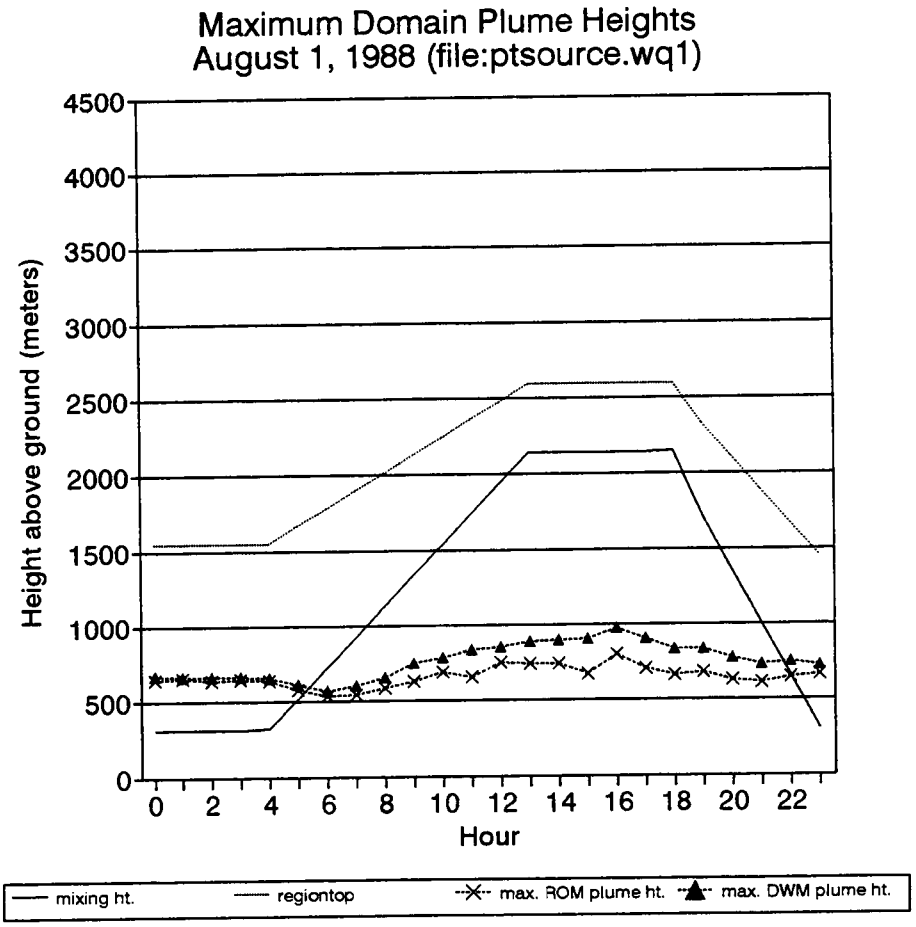


Figure 3-10. Hourly maximum plume heights for August 1, 1988.

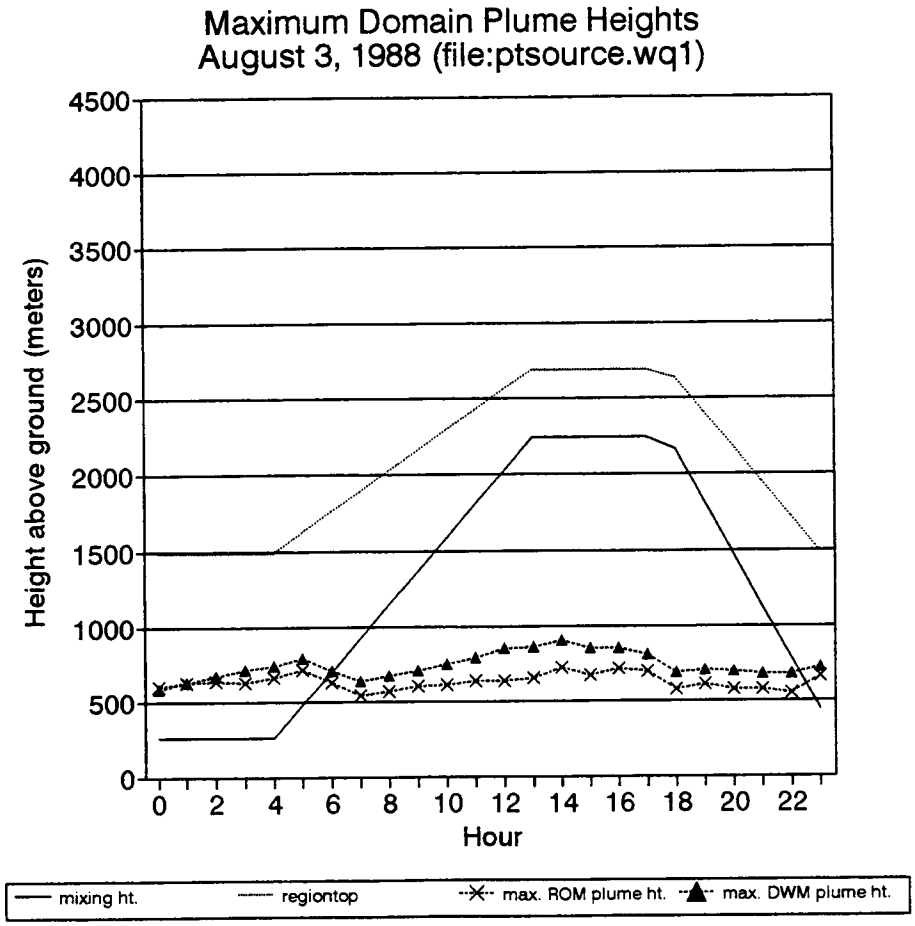


Figure 3-11. Hourly maximum plume heights for August 3, 1988.

domain specific UAM input files were ROM derived. Specifically, the files in binary form are: MSBIN, meteorological parameters and the photolysis rate; TPBIN, temperature field; CRBIN, surface roughness and vegetation fraction; AQBIN, initial concentration fields; BCBIN, lateral boundary concentrations; TCBIN, top boundary concentrations; and EMBIN, biogenic emissions (merged in EPS2.0). The methodology for the creation of these files by executing the respective ROM-UAM interface programs is documented in the *User's Guide for the Urban Airshed Model - Volume V: Description and Operation of the ROM-UAM Interface Program System*.

UAM parameters such as temperature fields were developed by EPA for specific 1988 modeling dates for an area termed the ROM Super Domain which comprises approximately the eastern half of the United States. A GMISS retrieval then partitions this data for the specific modeling coordinates requested into a Nashville ROM domain which overlaps the MTMD by approximately two ROM cells on all sides (the ROM cells are mentioned in the guidance to be approximately four times longer on a side than the standard 5 km UAM cell). Finally, execution of the specific ROM-UAM interface such as ITMPRTR partitions the ROM data to UAM cells matching the UTM coordinates of the MTMD. This interpolation involves assigning the ROM data from a 210 cell Nashville ROM domain into a five-level UAM format 1,840 cell MTMD.

Section 4. June 24, 1988 Episode

1. Introduction

The June 23-24, 1988 episode represents in chronological order the first of the four 1988 modeling protocol episodes that were modeled. According to guidance from the document entitled Guideline for Regulatory Application of the Urban Airshed Model, this scenario was chosen from the 1988 candidates because it met the conditions of defined flow or transport.

The June 24, 1988 UAM-ROM run results when viewed as a 24 hour RASTER image file using the Tecplot FRAMER graphical display showed an ozone plume being formed downwind from a Stewart County point source (power plant) with subsequent transport to the Nashville urban core from a northwest to southeast direction. Figure 4-2 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-ROM run. The highest predicted ozone concentration of 0.113 ppm in Figure 4-2 occurred at 5 PM. Figure 4-1 is the ozone isopleth plot of the time period (1 PM) 4 hours before the predicted maximum, and Figure 4-3 is the ozone isopleth plot of the time period (9 PM) 4 hours after the predicted maximum.

The highest predicted grid value was a result of a transported plume which entered the MTMD from the north and occurred in UTM grid 557 km, 4,085 km.

A RASTER image file of the ROM domain approximately four

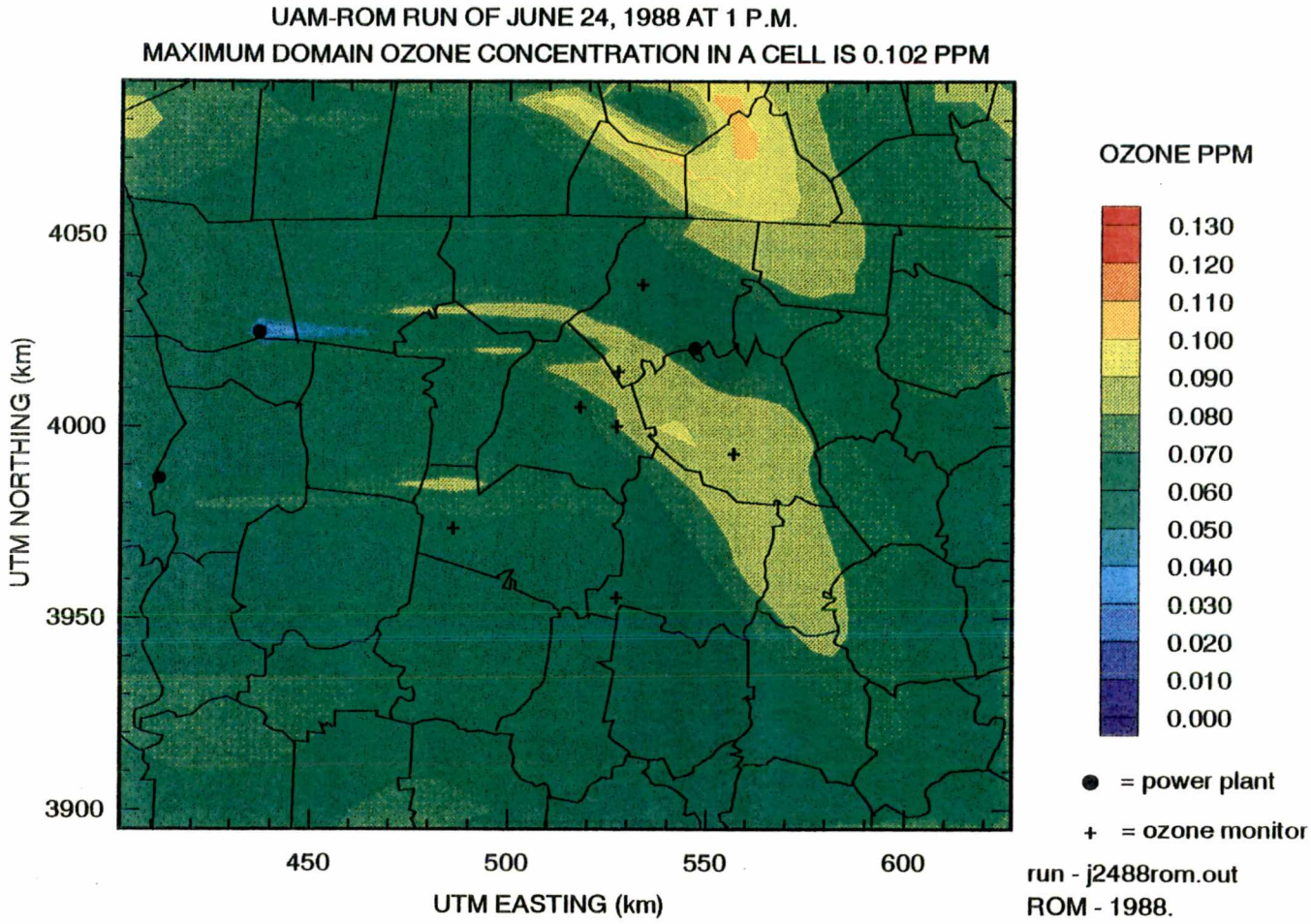


Figure 4-1. UAM-ROM ozone isopleth plot for June 24, 1988 at 1 PM.

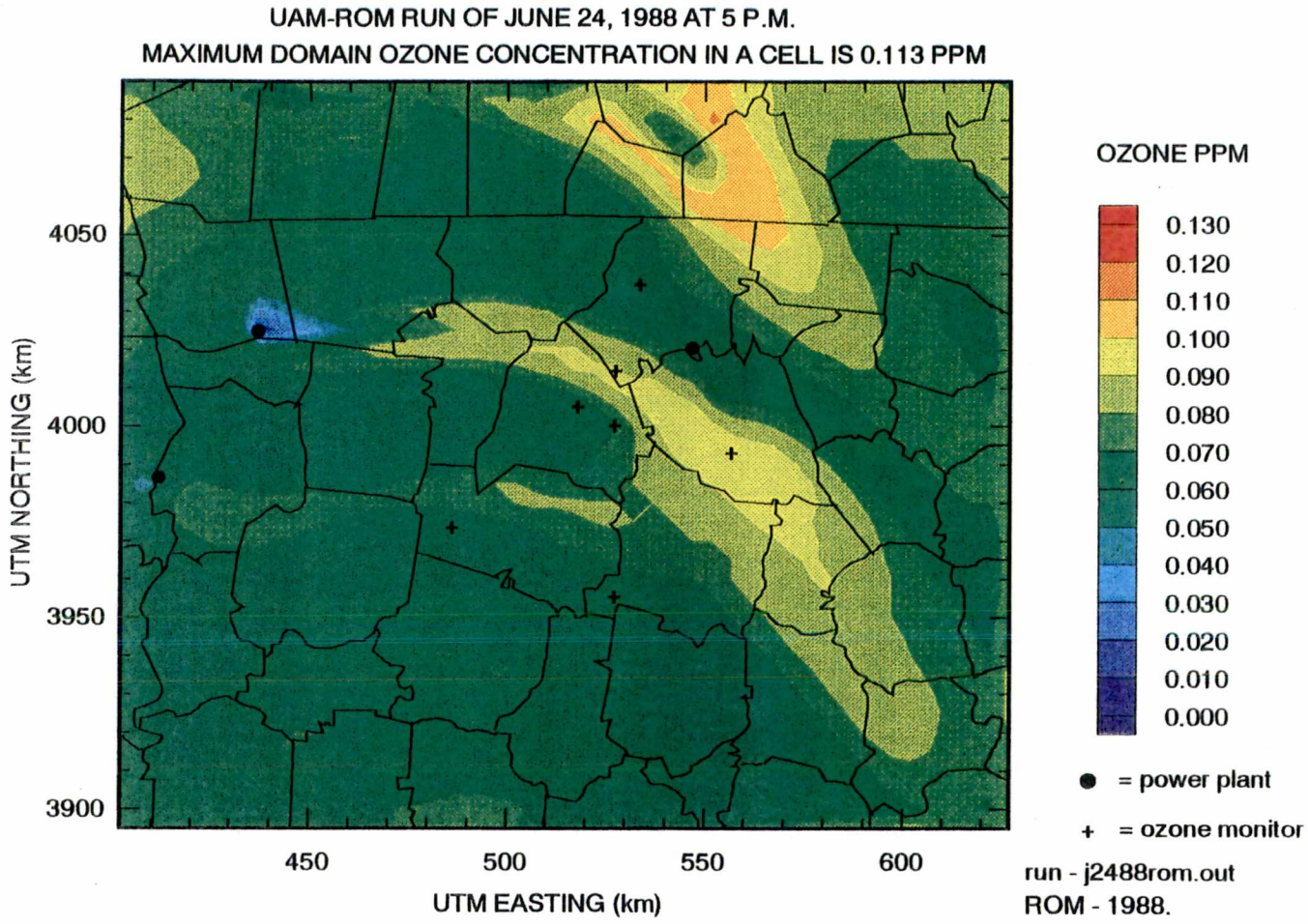


Figure 4-2. UAM-ROM ozone isopleth plot for June 24, 1988 at 5 PM.

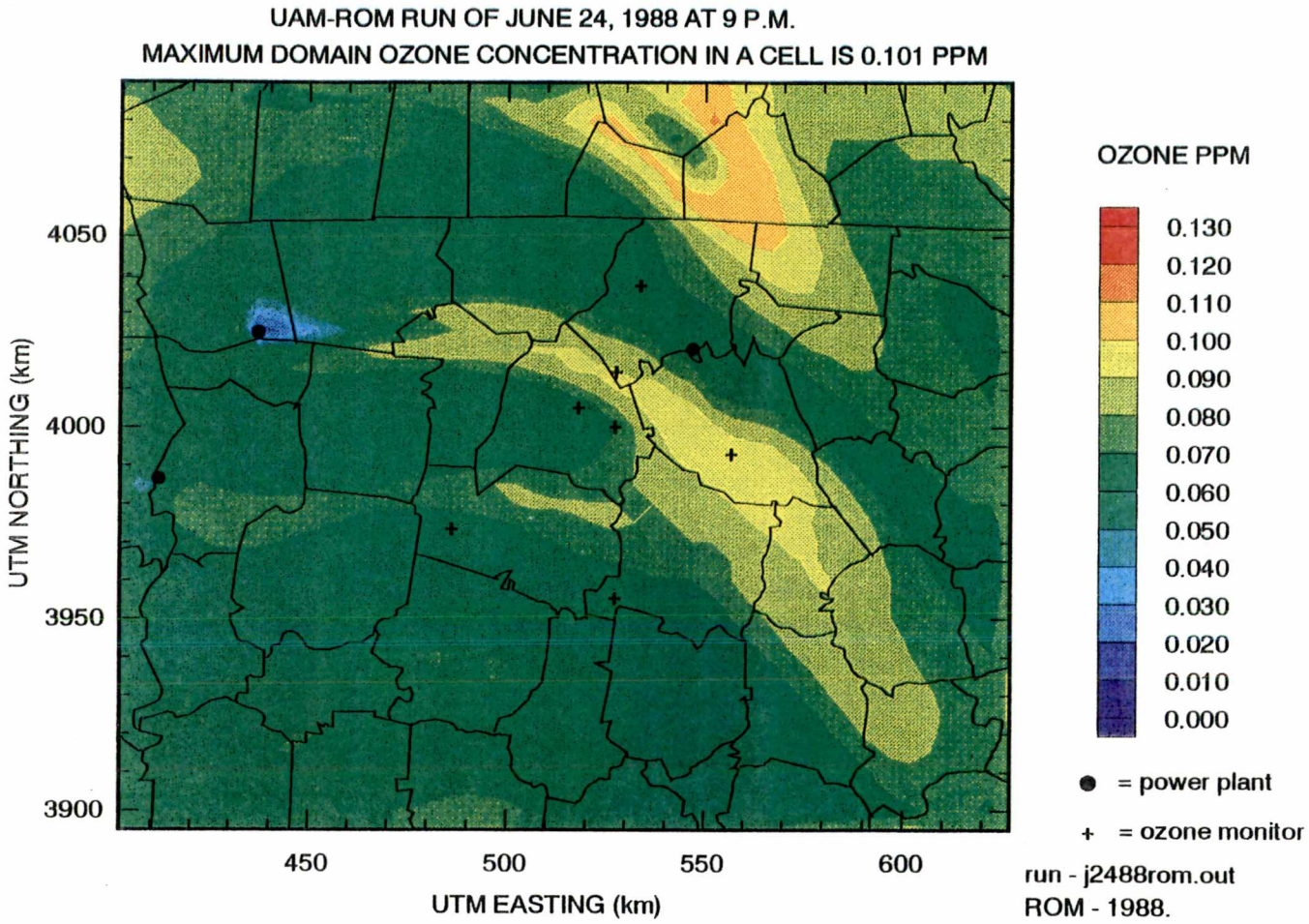


Figure 4-3. UAM-ROM ozone isopleth plot for June 24, 1988 at 9 PM.

times the area of the MTMD centered on the MTMD was viewed, and the transport plume appears to have originated from a Kentucky point source (power plant) located just north of the MTMD boundary.

Figure 4-4 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-ROM run. A tabulation of the numerical values used to generate this plot is given in the Appendix. The maximum grid value of 0.113 ppm occurred in UTM grid 557 km, 4,085 km.

The June 24, 1988 UAM-DWM run results when viewed as a 24 hour RASTER image file using the Tecplot FRAMER graphical display showed an ozone plume being formed downwind from a Stewart County point source (power plant) with subsequent transport to the Nashville urban core from a northwest to southeast direction. Figure 4-6 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-DWM run. The highest predicted ozone concentration of 0.115 ppm in Figure 4-6 occurred at 5 PM. Figure 4-5 is the ozone isopleth plot of the time period (1 PM) 4 hours before the predicted maximum, and Figure 4-7 is the ozone isopleth plot of the time period (9 PM) 4 hours after the predicted maximum.

The highest predicted grid value was a result of a transported plume which entered the MTMD from the north and occurred in UTM grid 552 km, 4,065 km. Since both UAM runs used the same ROM boundary file, the transport plume appears

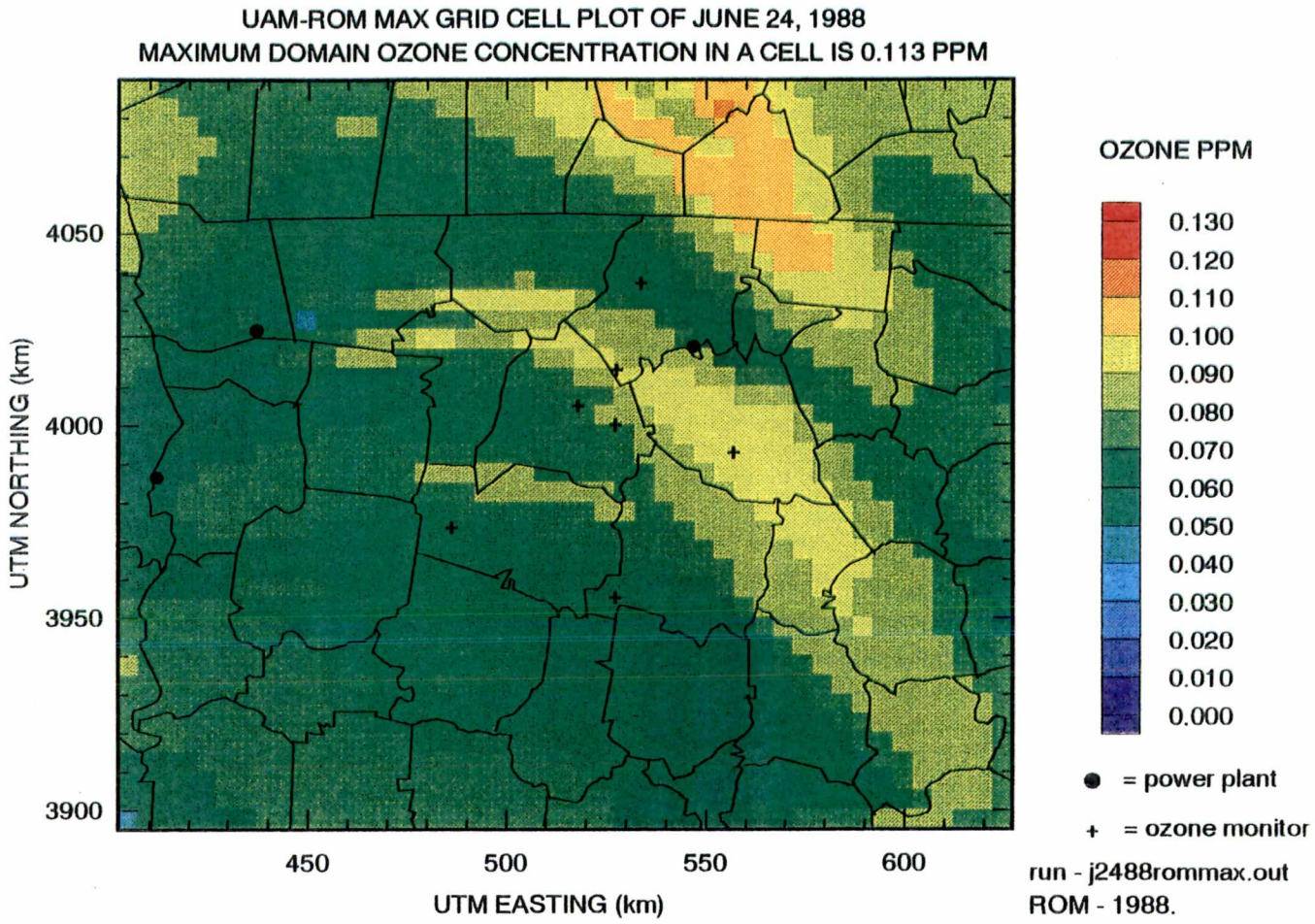


Figure 4-4. UAM-ROM maximum grid value tile plot for June 24, 1988.

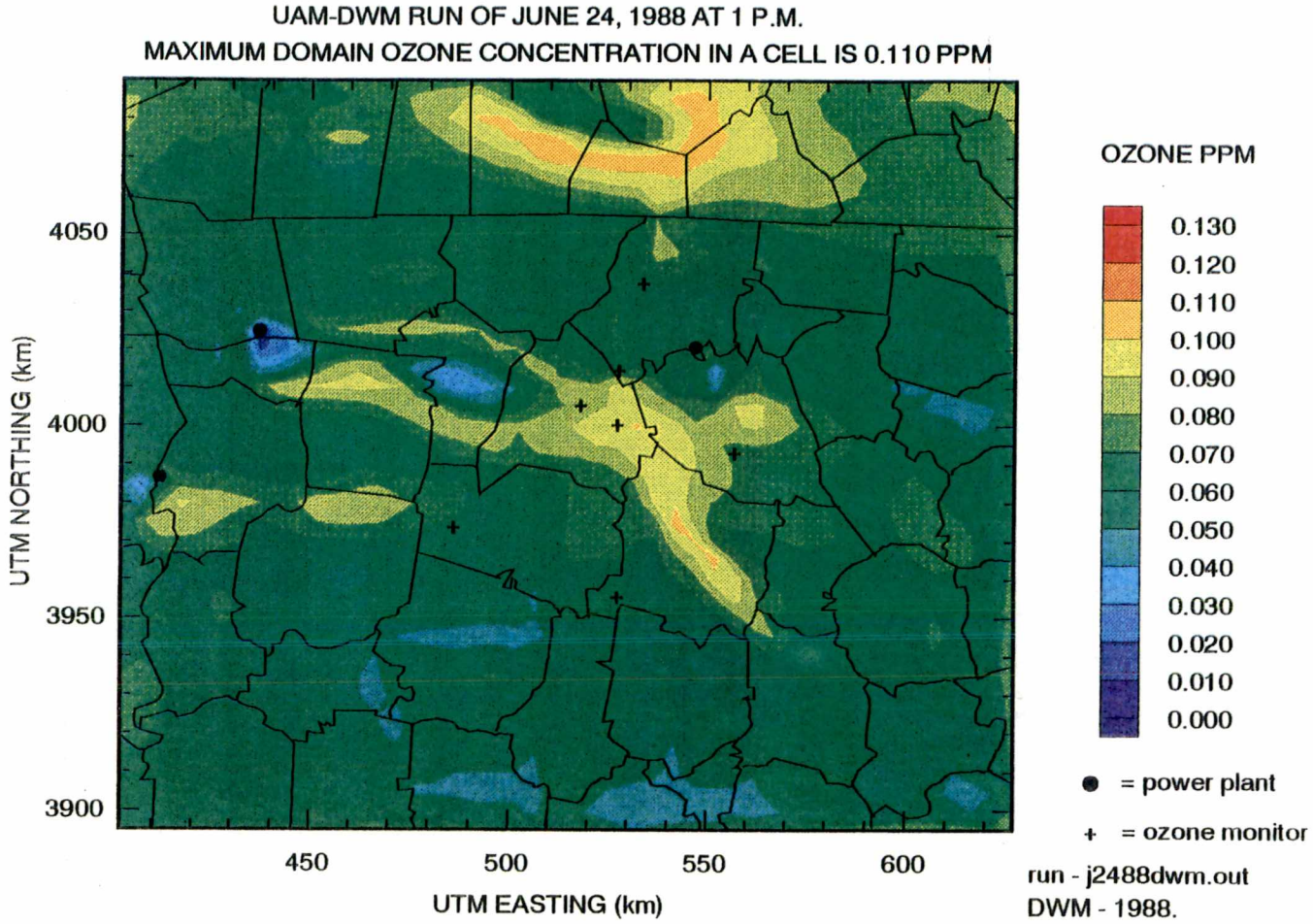


Figure 4-5. UAM-DWM ozone isopleth plot for June 24, 1988 at 1 PM.

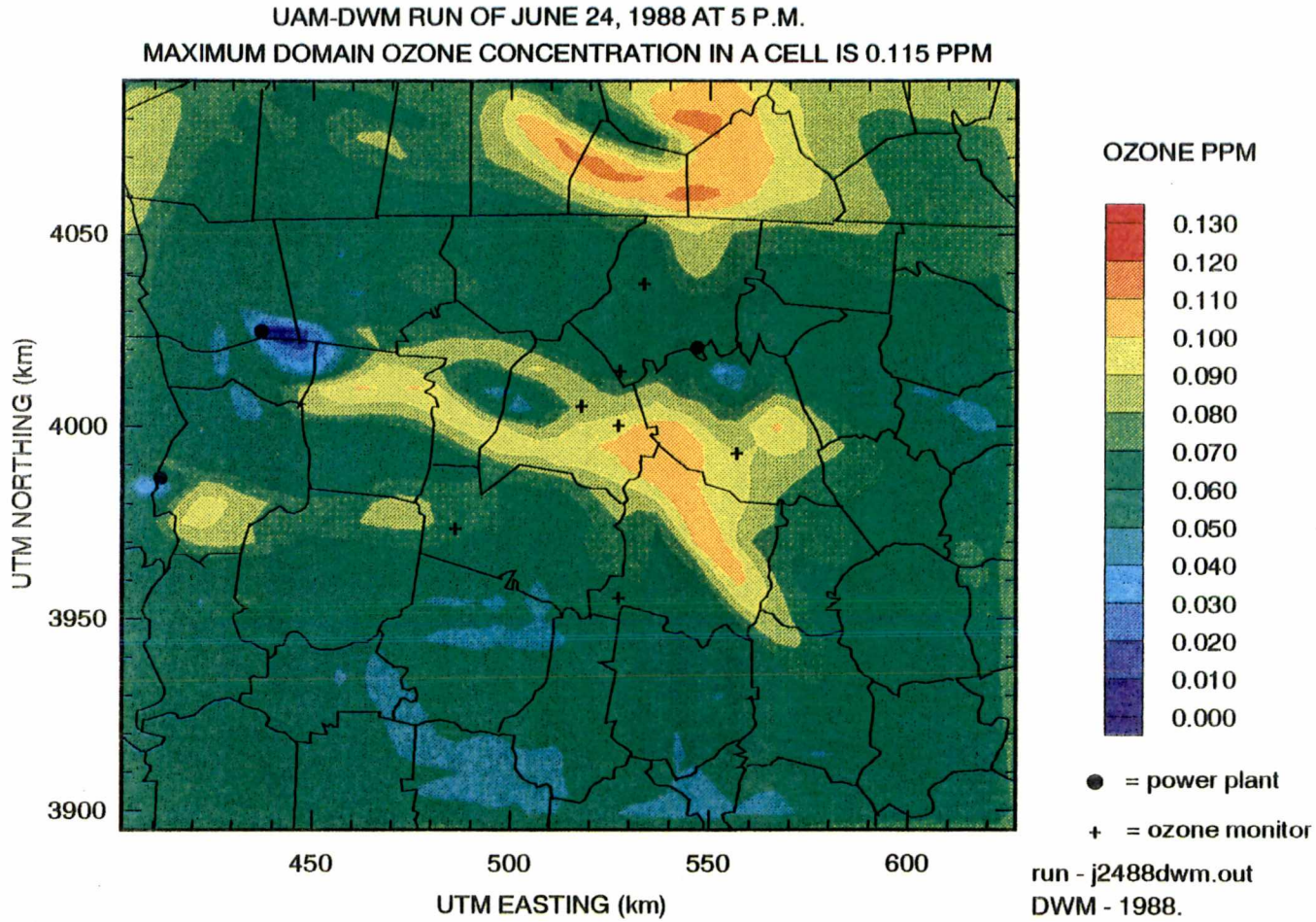


Figure 4-6. UAM-DWM ozone isopleth plot for June 24, 1988 at 5 PM.

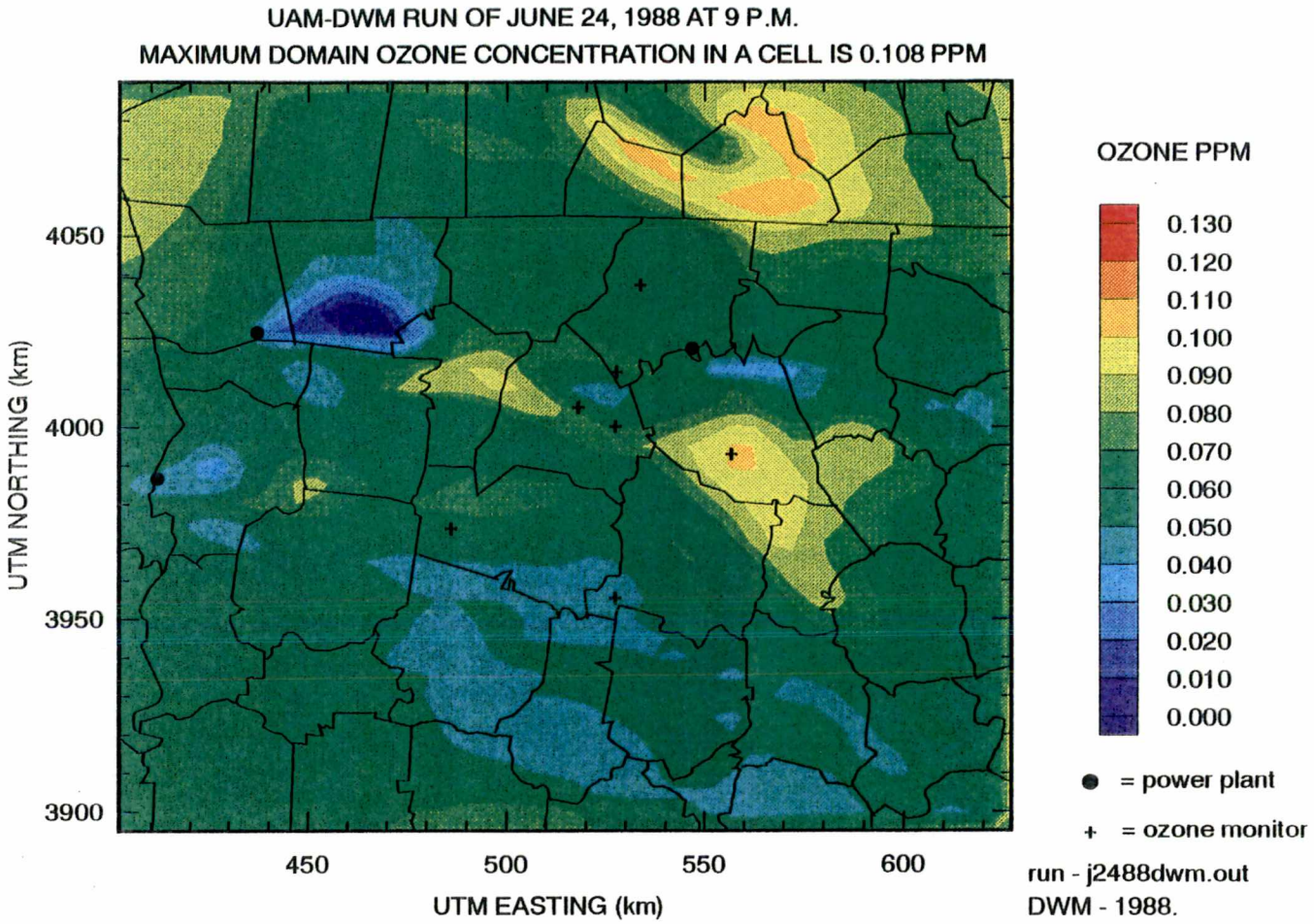


Figure 4-7. UAM-DWM ozone isopleth plot for June 24, 1988 at 9 PM.

to have originated from the same Kentucky point source (power plant) located just north of the MTMD boundary. However, neither of the two runs were able to predict close to the peak observed value. The meteorological conditions prevalent during this episode appeared to rapidly advect emissions away from the urban core before a developed urban plume could be formed showing the sensitivity of the model to a windfield indicative of transport.

Figure 4-8 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-DWM run. The maximum grid value of 0.115 ppm occurred in UTM grid 552 km, 4,065 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

2. Graphical Results

A comparison was made between the station within the MTMD measuring the peak observed ozone value and the cell within the MTMD which had the highest predicted urban plume value. This comparison is shown in Figure 4-9. The legend of this graph shows the UTM location (given in parentheses) for both the UAM-ROM and DWM-ROM runs in which the highest grid value in the urban plume was predicted.

The purpose of this analysis was to show whether the model runs were predicting sufficient ozone formation to replicate the highest observed value regardless of a shift in the location of the urban plume caused by wind model uncertainty. Figure 4-9 shows that at the peak observed hour

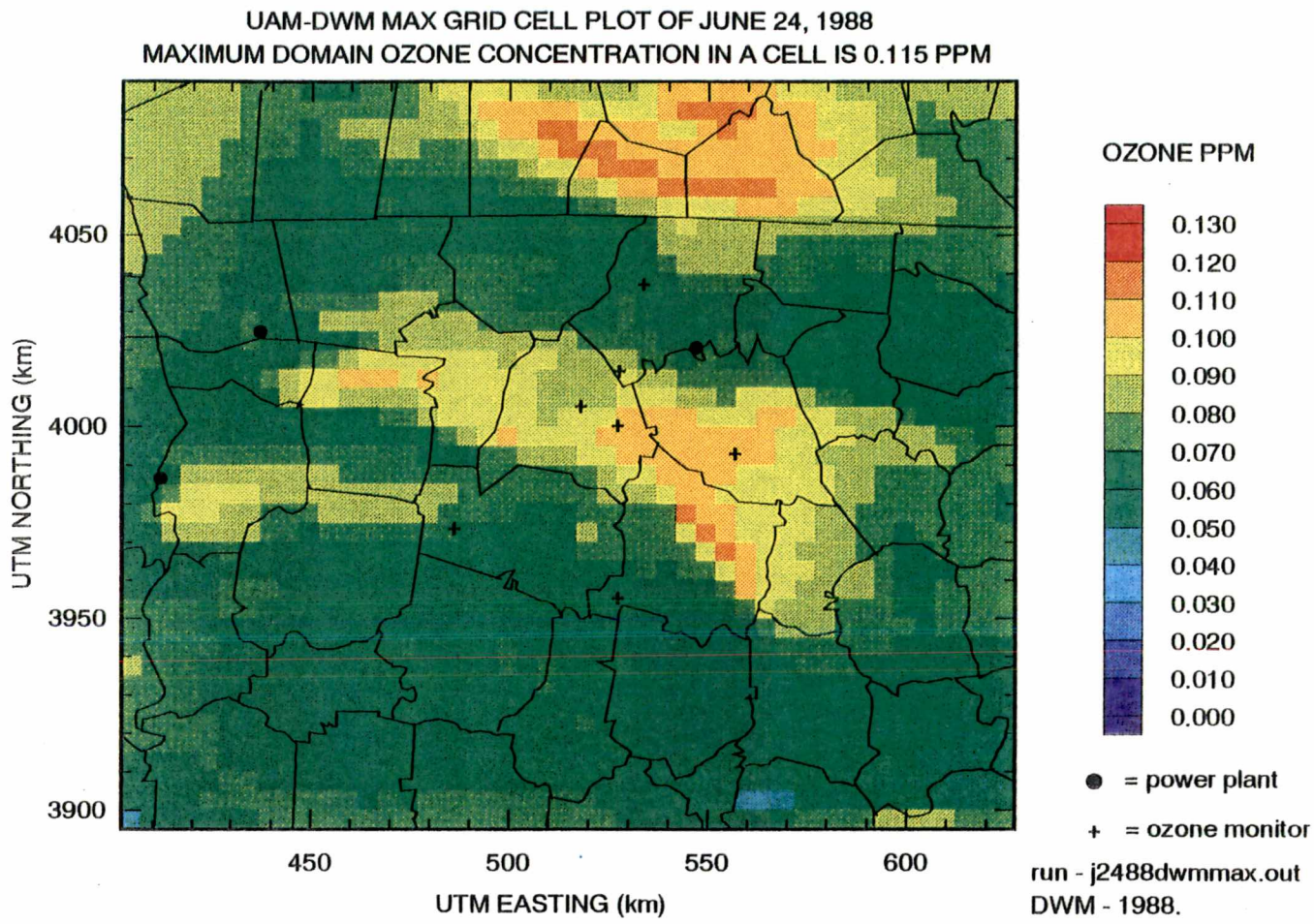


Figure 4-8. UAM-DWM maximum grid value tile plot for June 24, 1988.

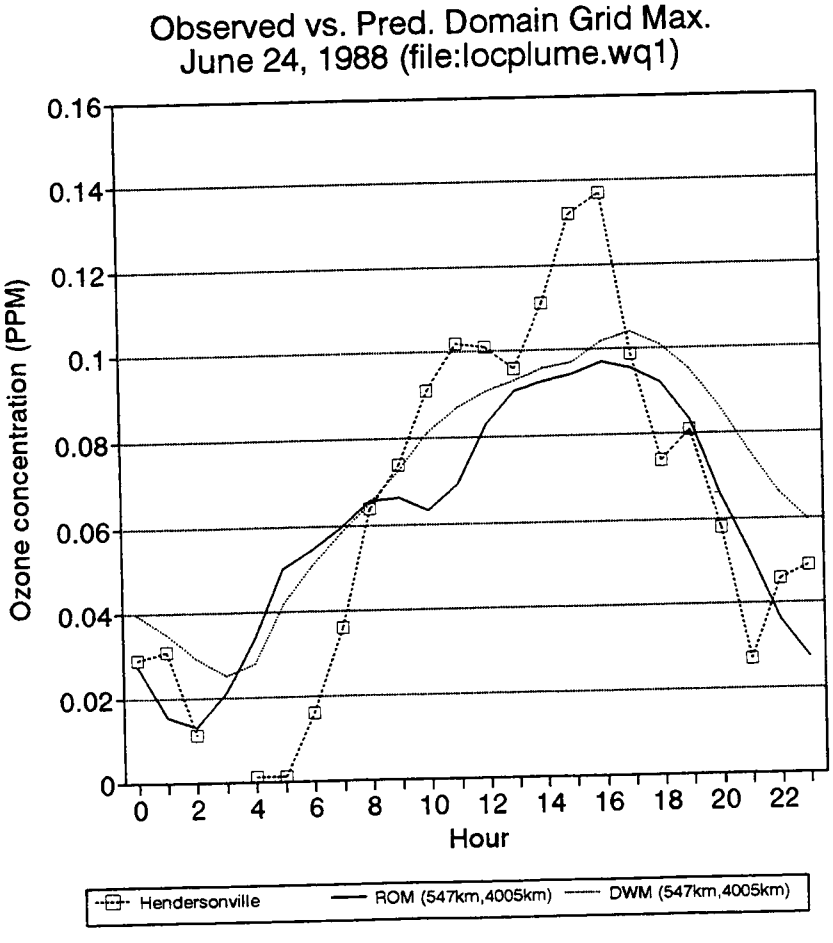


Figure 4-9. **Maximum observed vs. predicted ozone in the urban plume for June 24, 1988.**

in the domain which occurred at the Hendersonville site at 4 PM, both UAM runs were approximately 35-40 ppb lower than the peak monitored value. The UAM-DWM run predicted 5 ppb closer to the observed peak than the UAM-ROM run did, but neither UAM run generated sufficient ozone to replicate the Hendersonville observation peak.

The next set of graphical analyses performed were time series plots of the observed value recorded at each of the monitoring stations which were operational on June 24, 1988 vs. the predicted value at that site for each UAM model run. These time series plots are depicted in Figures 4-10 through 4-14. Analysis of these data shows that UAM-ROM and UAM-DWM predicted similar values for the Hendersonville, Cottontown and Fairview stations, however the predicted values were lower than the observed values at these stations.

At the East Health and Percy Priest stations UAM-DWM predicted values closer to the observed peak than UAM-ROM did by approximately 30 ppb. One reason that DWM predicted higher values at the East Health and Percy Priest stations was that slower UAM-DWM wind speeds decreased dispersion causing higher predicted ground level ozone concentrations in the urban core.

Figures 4-15 and 4-16 depict the correlation between the domain maximum observed value for each monitoring station vs. the domain maximum predicted value of a single grid cell for the UAM-ROM and UAM-DWM runs, respectively. Both figures show the best correlation occurred for the Percy Priest station

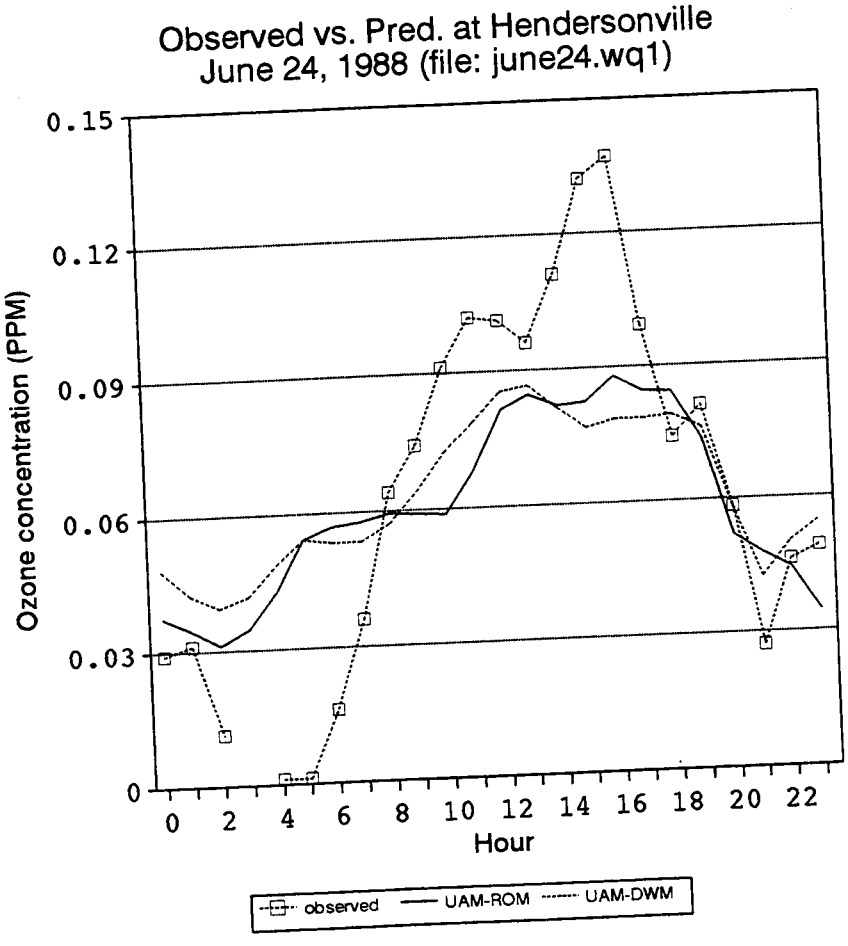


Figure 4-10. Predicted vs. observed ozone at Hendersonville for June 24, 1988.

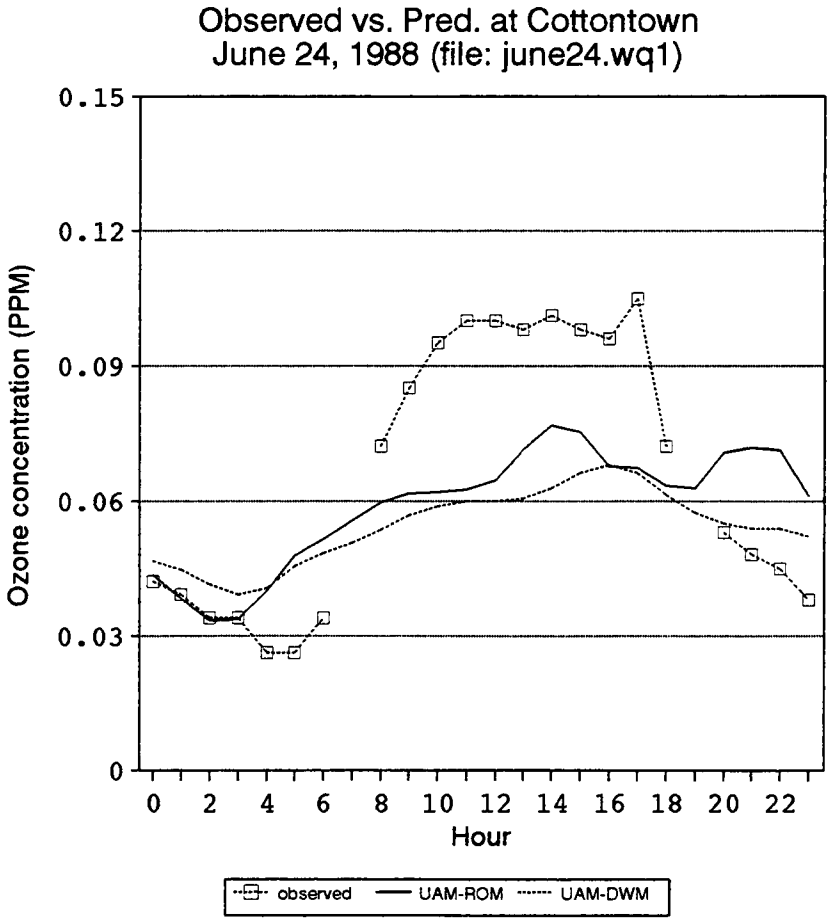


Figure 4-11. **Predicted vs. observed ozone at Cottontown for June 24, 1988.**

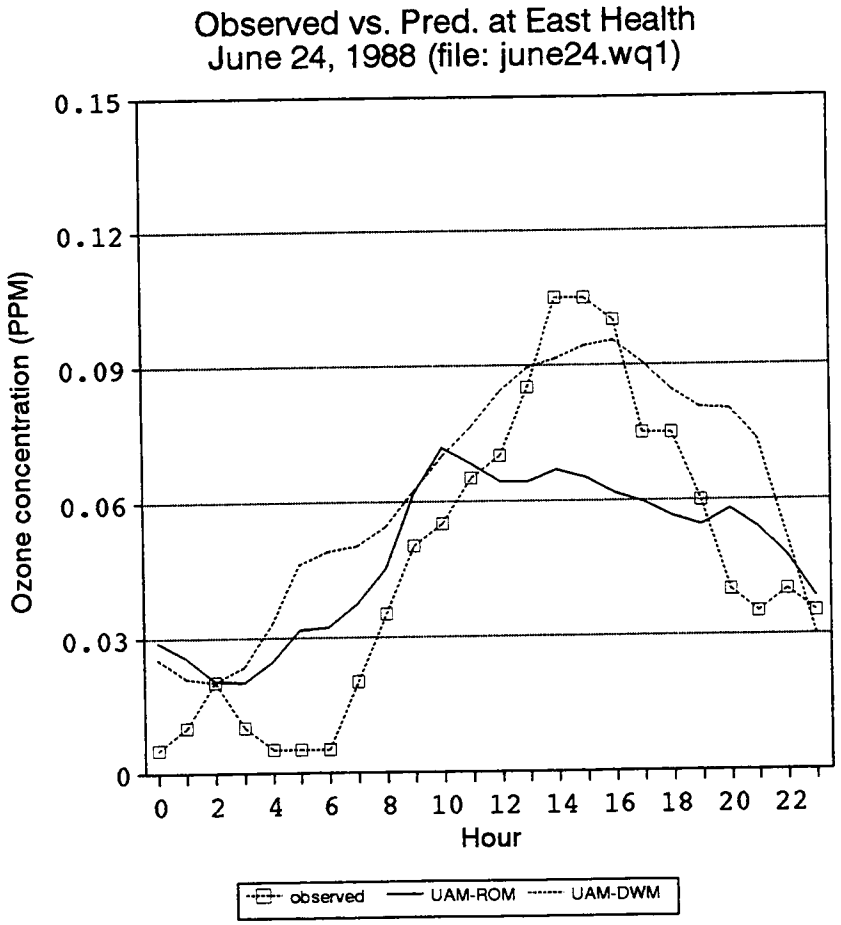


Figure 4-12. **Predicted vs. observed ozone at East Health for June 24, 1988.**

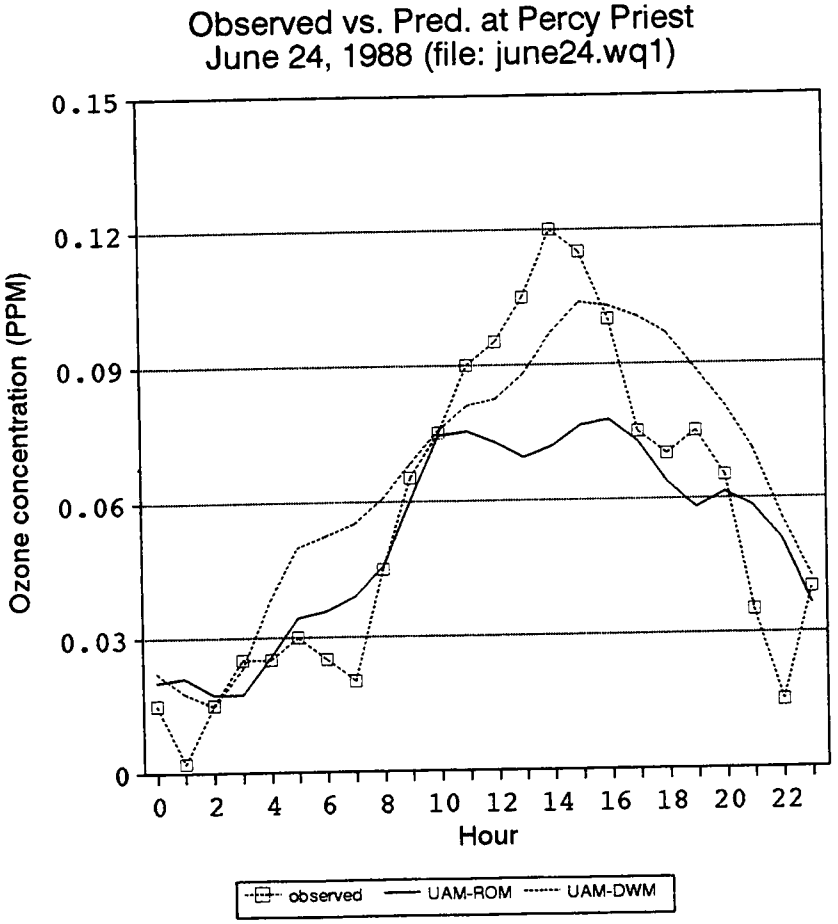


Figure 4-13. **Predicted vs. observed ozone at Percy Priest for June 24, 1988.**

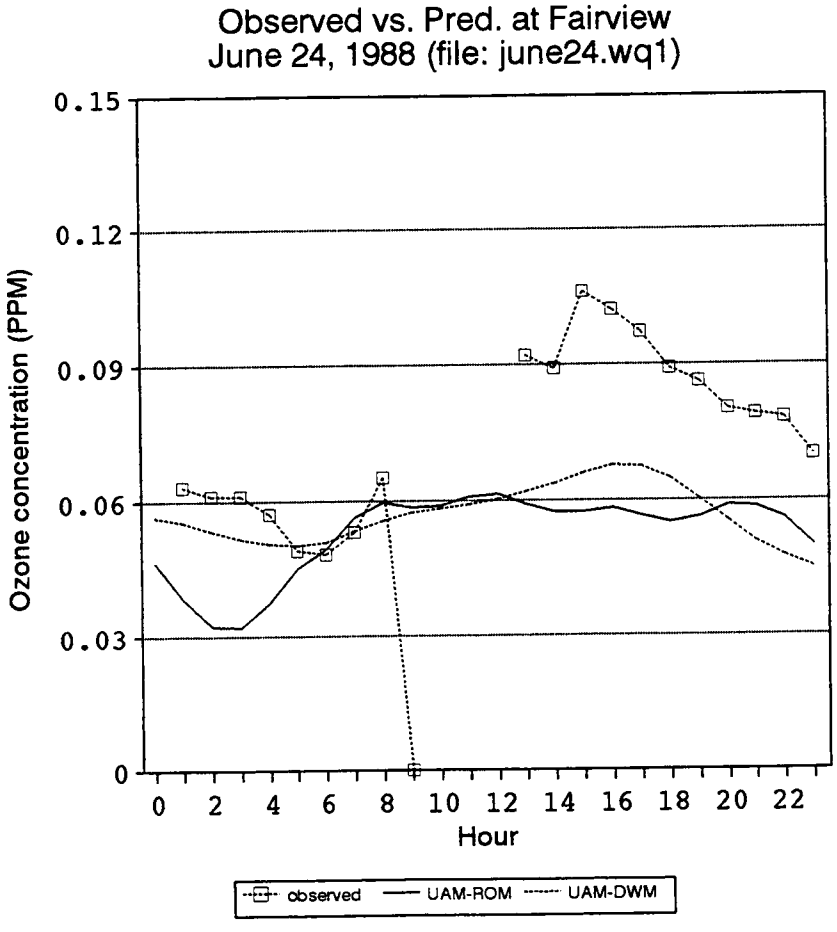


Figure 4-14. **Predicted vs. observed ozone at Fairview for June 24, 1988.**

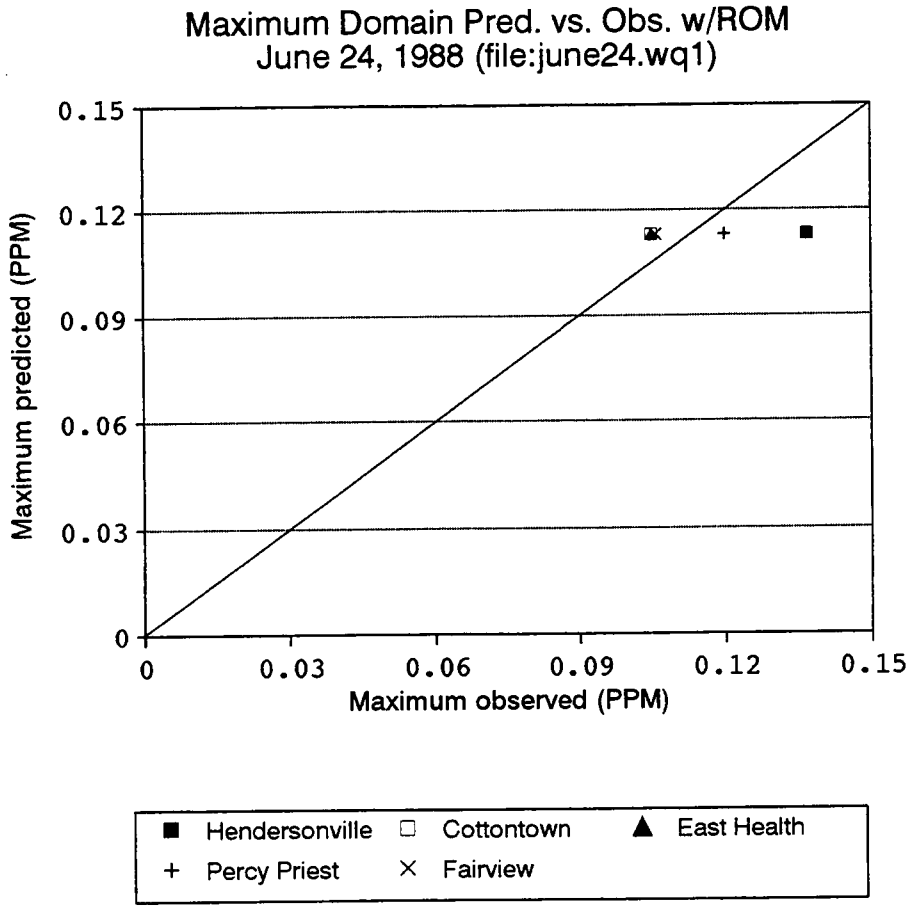


Figure 4-15. Maximum domain predicted vs. observed ozone for UAM-ROM on June 24, 1988.

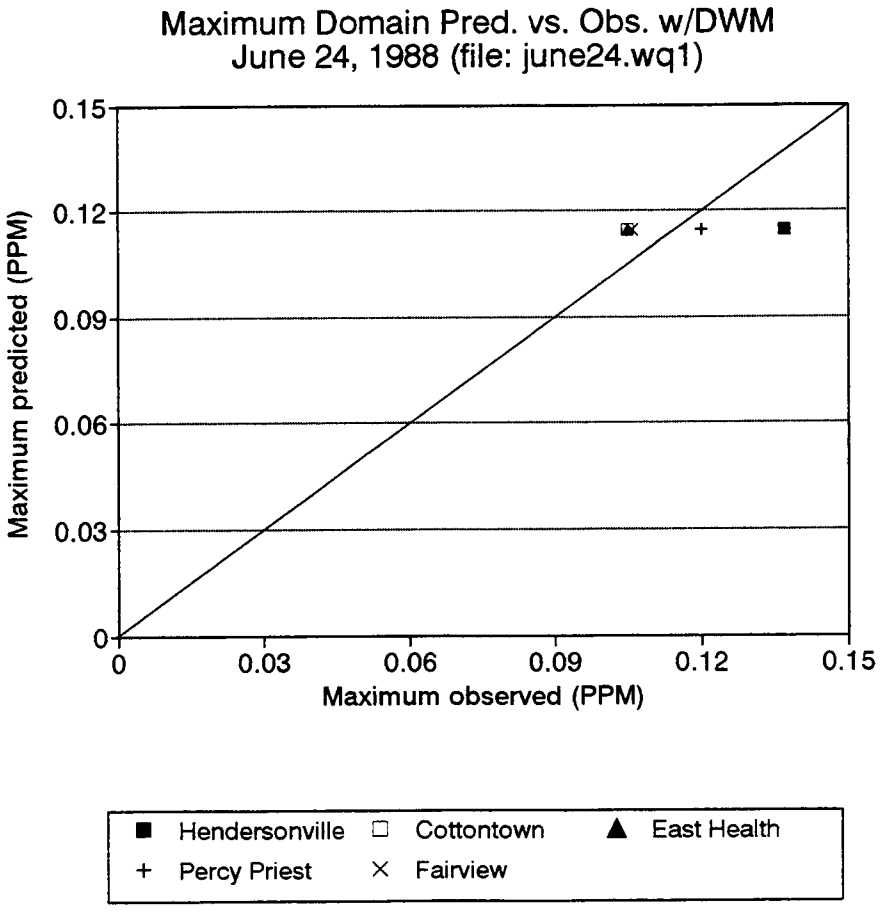


Figure 4-16. Maximum domain predicted vs. observed ozone for UAM-DWM on June 24, 1988.

with the difference between the UAM model runs being 2 ppb. These two figures illustrate that the UAM model was not generating sufficient ozone as the Percy Priest station observed a peak value which was 17 ppb less than the Hendersonville station.

Figures 4-17 and 4-18 are bias scatter plots showing the correlation between the predicted and observed values for all monitoring stations for the UAM-ROM and UAM-DWM model results, respectively. A best-fit line through the data is shown on each plot. The UAM-DWM scatter plot shows slightly higher predicted values for more of the daytime data than UAM-ROM does indicating that slowing down of the winds improved the ability of the model to form more ozone. However, it was determined previously that the DWM wind speeds could not have been correct for this episode due to the large difference between observations and DWM predictions.

3. Statistical Results

The recommended performance measures for the 24 hour primary date of June 24, 1988 are presented in Table 4-1. The 24 hour results for the primary date show that both UAM-ROM and UAM-DWM satisfy the recommended EPA criteria for the unpaired accuracy and gross error tests but not for the normalized bias test. However in both tests, the percentages are positive indicating that both model runs underpredicted the observed values by the respective percentages in error. The normalized bias for observed pairs ≥ 0.06 ppm shows much

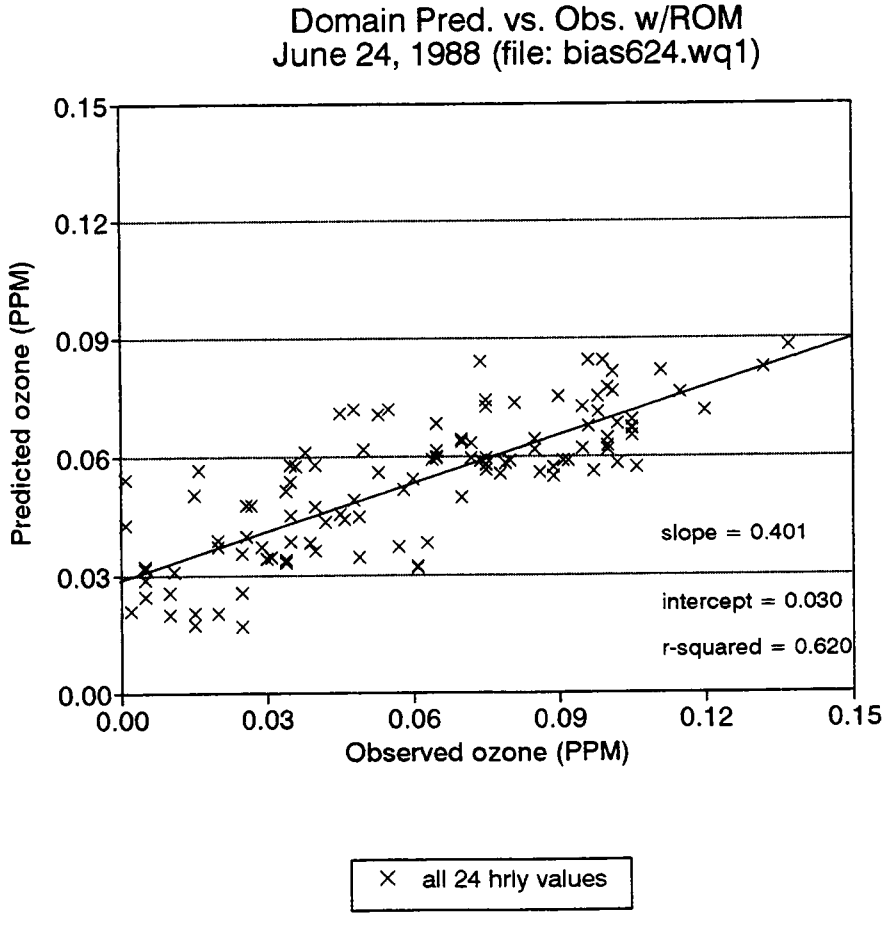


Figure 4-17. Bias scatter plot for UAM-ROM on June 24, 1988.

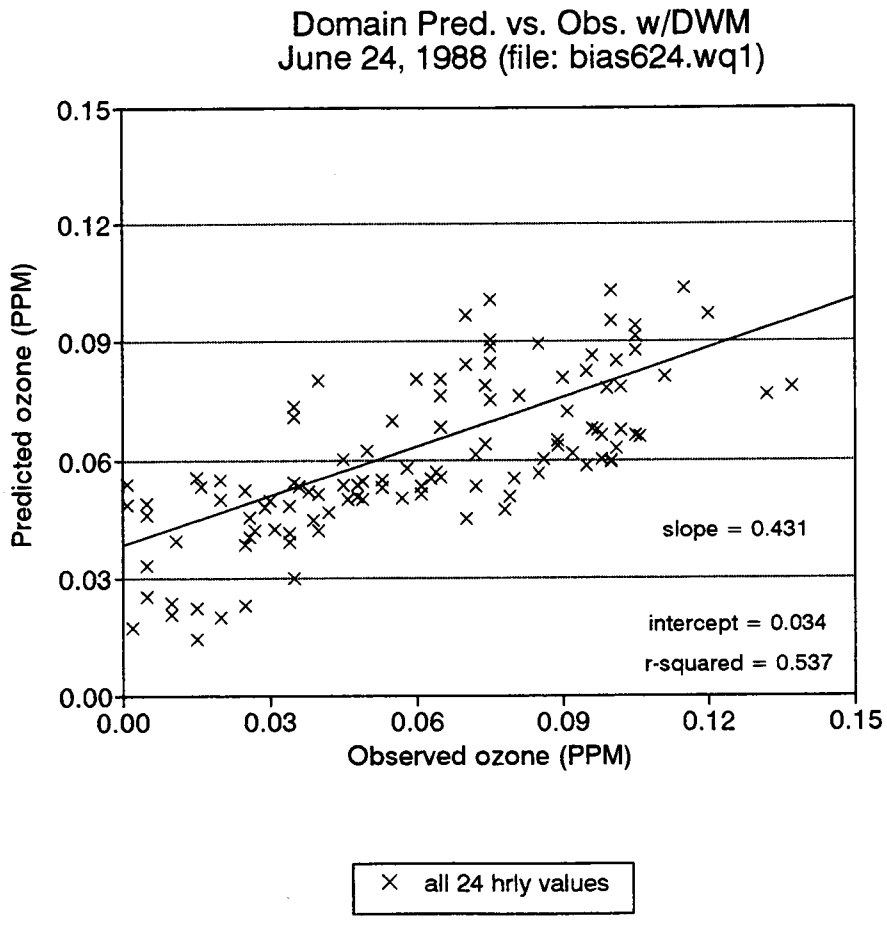


Figure 4-18. Bias scatter plot for UAM-DWM on June 24, 1988.

Table 4-1. **Recommended Performance Measures for the June 24, 1988 Episode Using a 24 Hour Averaging Period.**

Performance Test	UAM-ROM	UAM-DWM
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	17.5%	16.4%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-114.8%	-136.1%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	25.2%	14.8%
Gross error >60 ppb (recommended value of 30-35%).	26.1%	22.7%

better results for both runs but still shows underprediction for the primarily daytime data when observations were ≥0.06 ppm. The reason that the 24 hour normalized bias test value exceeded the recommended value is that at certain predawn hours there was poor correlation between some of the monitoring station observed values and their corresponding predicted values. Examples of this can be seen in Figures 4-10 and 4-12 for the Hendersonville and East Health stations, respectively. At hours 4 and 5 AM the Hendersonville monitor recorded 1 ppb of ozone while both UAM-ROM and UAM-DWM were predicting ozone concentrations in the 40-50 ppb range. The worst case 1 hour normalized bias value for a station with an

observed value of 1 ppb and a predicted value of 50 ppb would be -4,900%! Only one hour of this value out of a 24 hour average could cause a -4,900%/24 or -200% normalized bias. When several hours at more than one station have this type of bias, the result causes the overall normalized bias to be well outside of the recommended value. The gross error test tends to deemphasize these nighttime overpredictions since the gross error test only reflects pairs with an observed value >60 ppb (mainly daytime observations).

In order to understand why the model tended to over-predict the station sites in the predawn hours, one must consider the ROM boundary values provided by EPA. The 1988 ROM performance criteria were documented in an EPA document entitled *Preliminary Evaluation of ROM for Estimating UAM Boundary Concentrations - Protocol and Procedures for Presentation of Results*. This report contained an attachment report documenting ROM results specific to the Nashville UAM Domain. The Nashville UAM Domain attachment report contained an evaluation of three ROM subdomains in close proximity to the MTMD: nos. 13, 20 and 22. However, subdomain no. 22 contained no ozone monitors located in the UAM domain, and subdomains nos. 13 and 20 each contained only 1 ozone monitor located in the UAM domain. It should be noted that neither of these 2 UAM domain monitors were any of the same 5 ozone monitors evaluated for the MTMD performance evaluation for June 24, 1988. The 2 UAM domain ozone monitors located in

subregion nos. 13 and 20 are both located outside of the 5 Nashville nonattainment counties and were therefore not considered for model performance evaluation in the Nashville modeling protocol document. Figure 4-19 from this document shows the spatial location of the ROM evaluation domain nos. 13, 20 and 22 with respect to the Nashville UAM domain.

Figures 4-20 through 4-22 from the ROM evaluation document show that during predawn hours for the June 1988 episode, ROM at times showed poor agreement with the corresponding observed values most notably in subregion no. 13. Figure 4-20 for subregion no. 13 shows predawn minimum ozone observations in the 0-10 ppb range with corresponding predicted values of 50 ppb and above for several of the days evaluated.

One possible mechanism for the nighttime overpredictions is that during the UAM model execution, ROM boundary ozone values advecting through the modeling domain during predawn hours were much higher in concentration than the low observed values in the MTMD (40-60 ppb vs. 1-5 ppb). Figure 4-23 shows that for UAM-ROM at 4 AM, the ROM boundary concentrations were in the range of 40-60 ppb of ozone, except where a high concentration NO_x plume from a ROM point source (power plant) was transported through the northern boundary of the modeling domain. Since UAM-DWM used the same ROM boundary values as UAM-ROM, UAM-DWM would have similar ozone boundary concentration values as UAM-ROM. In addition, as discussed

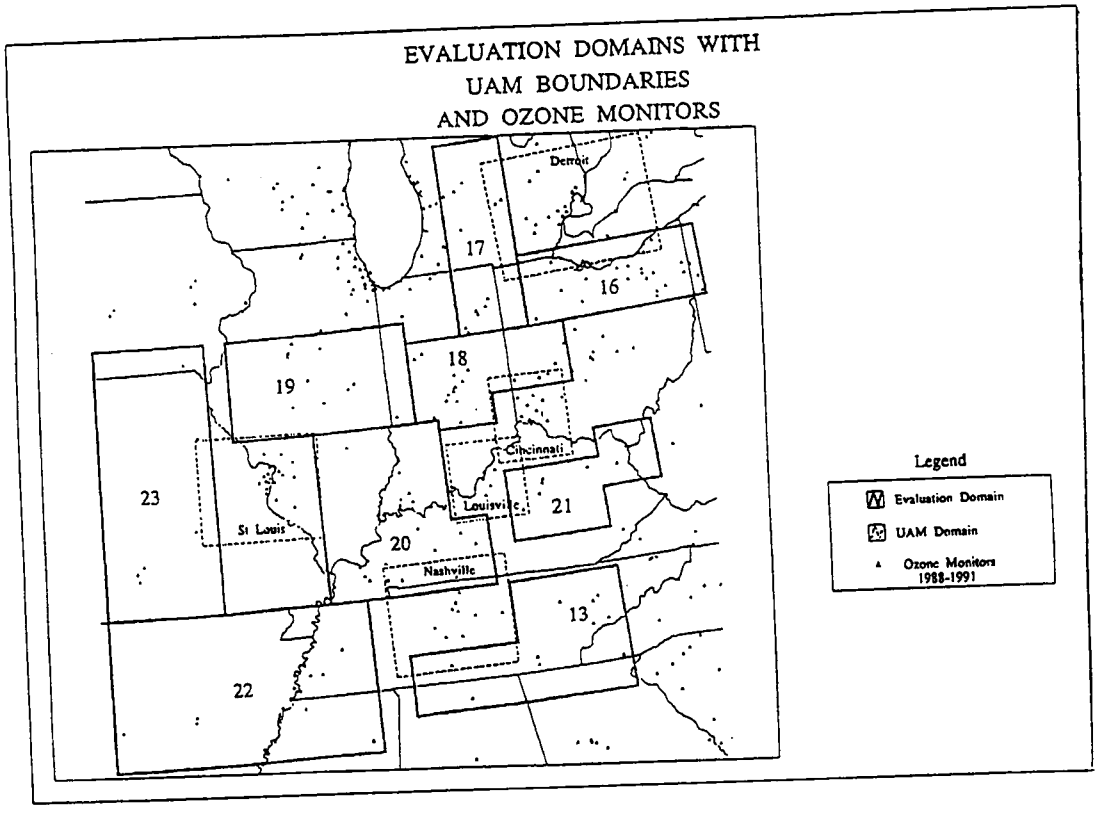


Figure 4-19. Spatial location of ROM subregions nos. 13, 20 and 22.

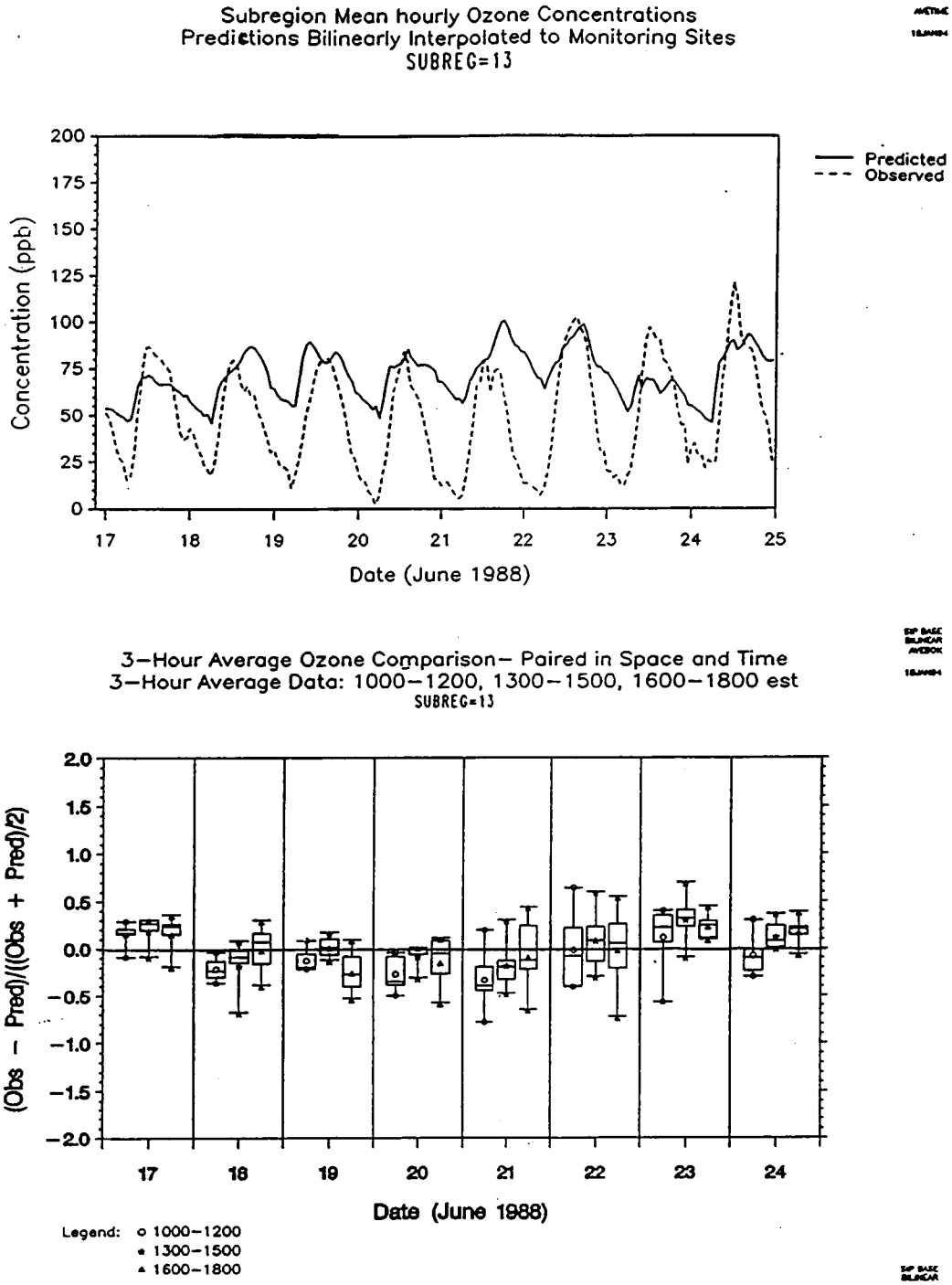


Figure 4-20. ROM performance results for subregion no. 13 on June 24, 1988.

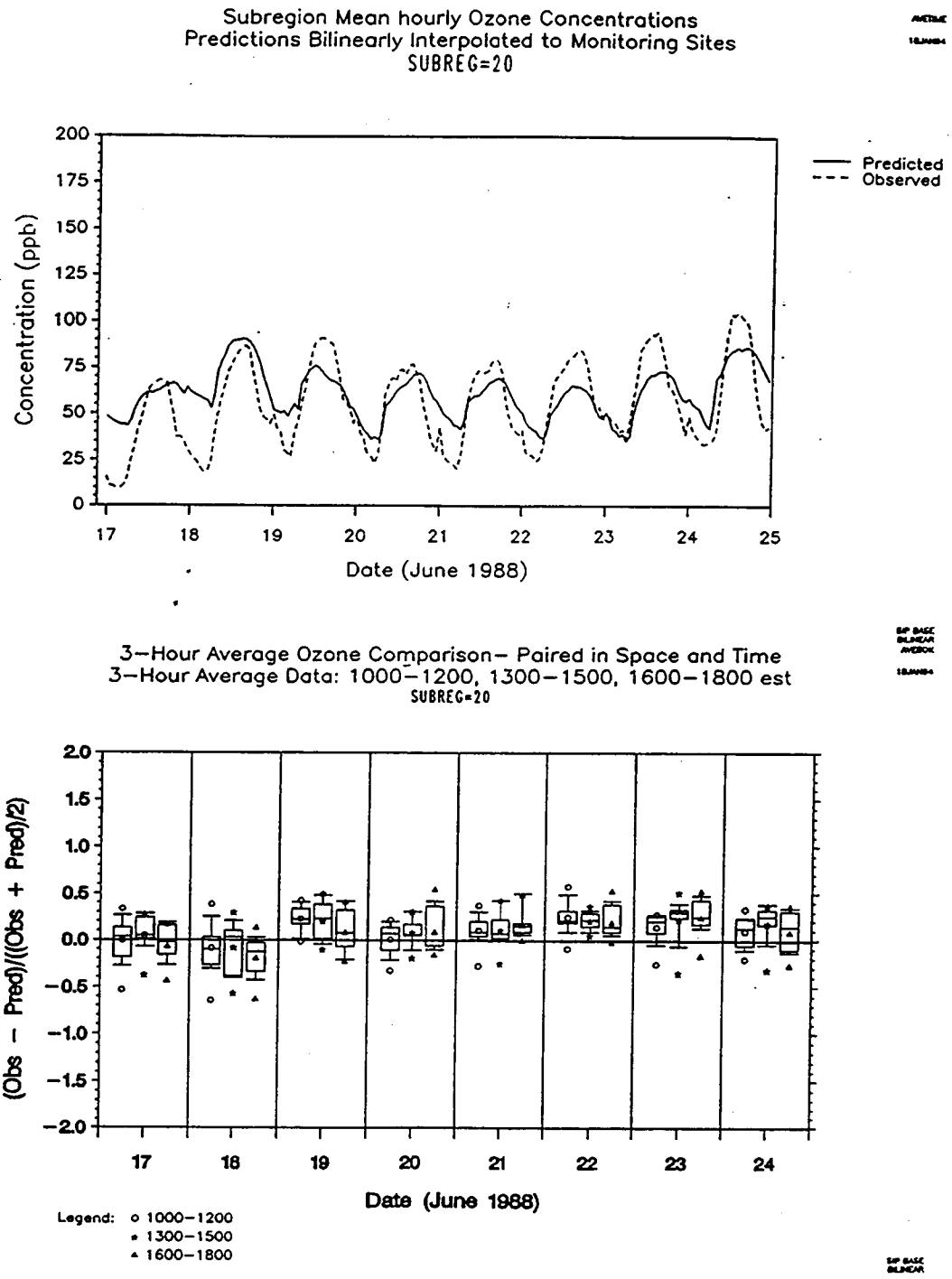


Figure 4-21. ROM performance results for subregion no. 20 on June 24, 1988.

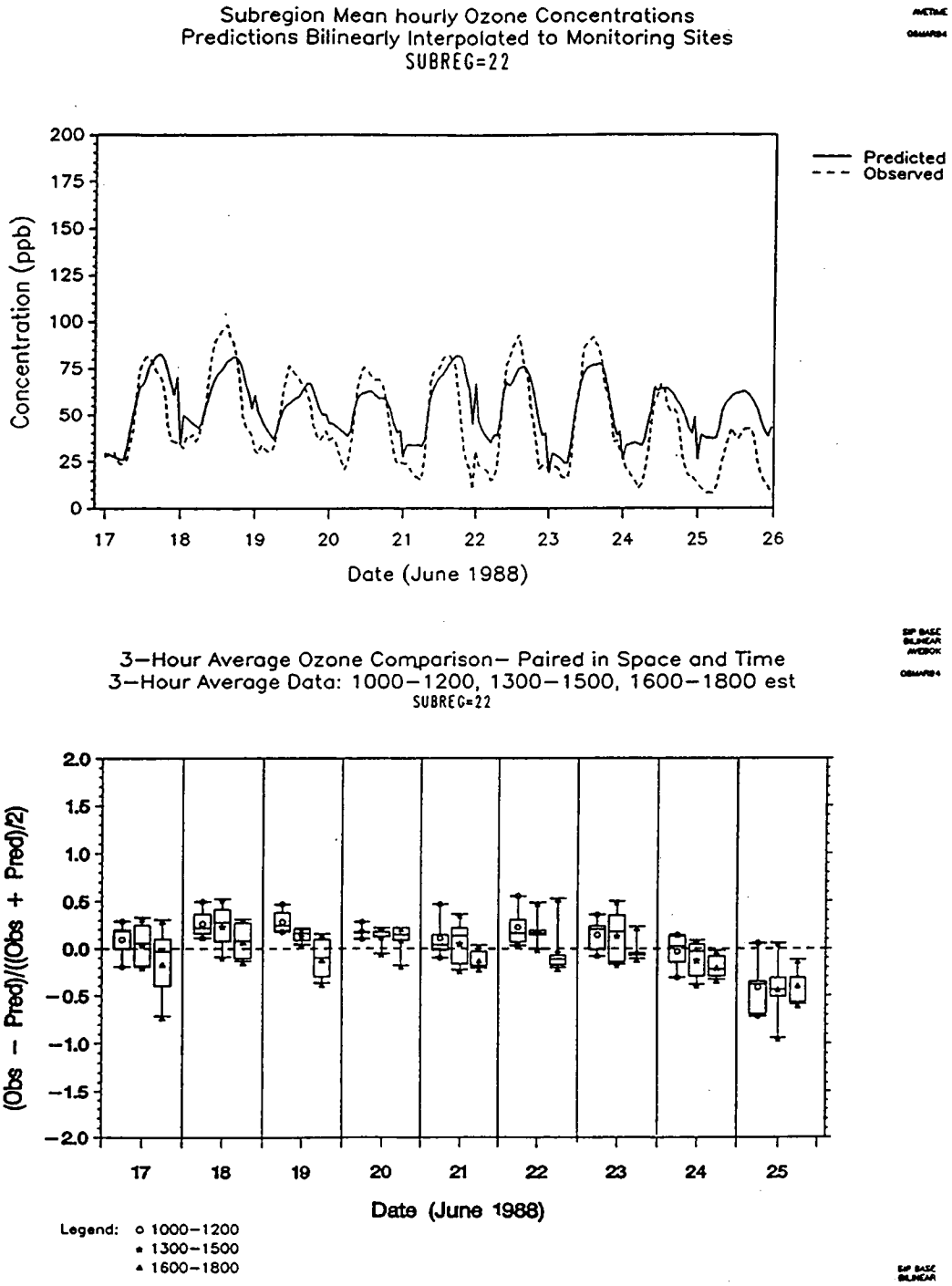


Figure 4-22. ROM performance results for subregion no. 22 on June 24, 1988.

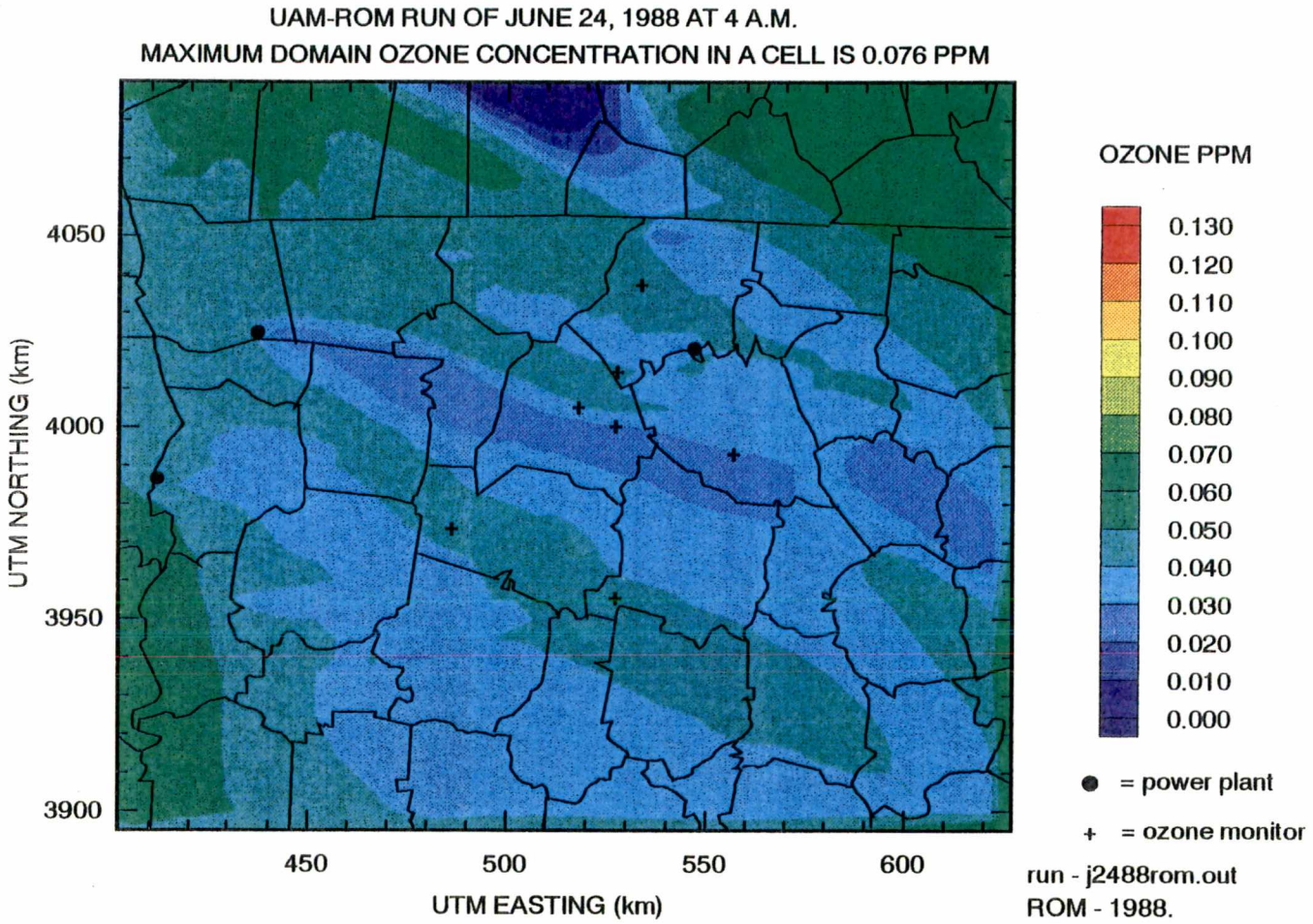


Figure 4-23. Ozone isopleth plot of UAM-ROM for June 24, 1988 at 4 AM.

previously, a mixing height that is not reestablished quickly to the ground in the afternoon cannot scavenge ozone as well as can one that collapses sooner and nearer to the ground. The RAMMETX mixing algorithm used in this model appeared to effectively scavenge residual nighttime ozone only in areas saturated with anthropogenic NO_x emissions (e.g., downwind from a power plant).

Analysis of the NWS wind data for June 24, 1988 showed that the general direction of the observed wind at the Nashville NWS site tracked in agreement with the windfield for both UAM model runs. The wind flow pattern from the northwest to the southeast caused several of the monitoring stations to be in the downwind influence of a large Stewart county point source (power plant) plume with resultant ozone scavenging and low predawn observed ozone values. Such discrepancies between the early morning ROM boundary concentration values and the observed values at the monitoring stations resulted in causing several very large negative normalized bias values indicative of model overprediction in early morning hours.

It should be noted in the ROM performance evaluation document that the authors chose to present their statistical results in the three averaging periods of 1000-1200, 1300-1500 and 1600-1800. The averaging period of 10 AM - 6 PM would generate a better correlation between ROM predicted/observed value pairs than a 24 hr averaging period would because predawn higher predicted/lower observed pairs would not be

figured into the statistical results.

An analysis of the UAM runs using the same 10 AM - 6 PM time frame as the ROM performance evaluation was made for the hourly gross error and normalized bias averages for the MTMD to show when the model performed poorly. The hourly gross error values for the 24 hour period are shown in Figure 4-24, and the 8 hour period values for a 10 AM - 6 PM time frame are shown in Figure 4-25. Figure 4-24 shows that at 4 and 5 AM the hourly gross error average was above 1000%, but by 8 AM the hourly values dropped off eventually stabilizing in a 20-40% value range as shown in Figure 4-25.

Since the regulatory guidance states that all observed pairs <60 ppb are not considered in the gross error statistical evaluation, essentially all predawn large gross error values will not be weighted in the 24 hr average. But Figures 4-24 and 4-25 clearly show that the model performance during nondaytime hours will at times be unsatisfactory because of the discrepancy between relatively higher ROM boundary ozone concentration values and their relatively lower observed ozone values.

The hourly normalized bias values for the 24 hour period are shown in Figure 4-26, and the 8 hour period values for the 10 am - 6 PM time frame are shown in Figure 4-27. Figure 4-26 shows that at 4 and 5 AM the hourly normalized bias values were more negative than -1000%, but by 8 AM the hourly values increased eventually stabilizing to a 5-35% value range

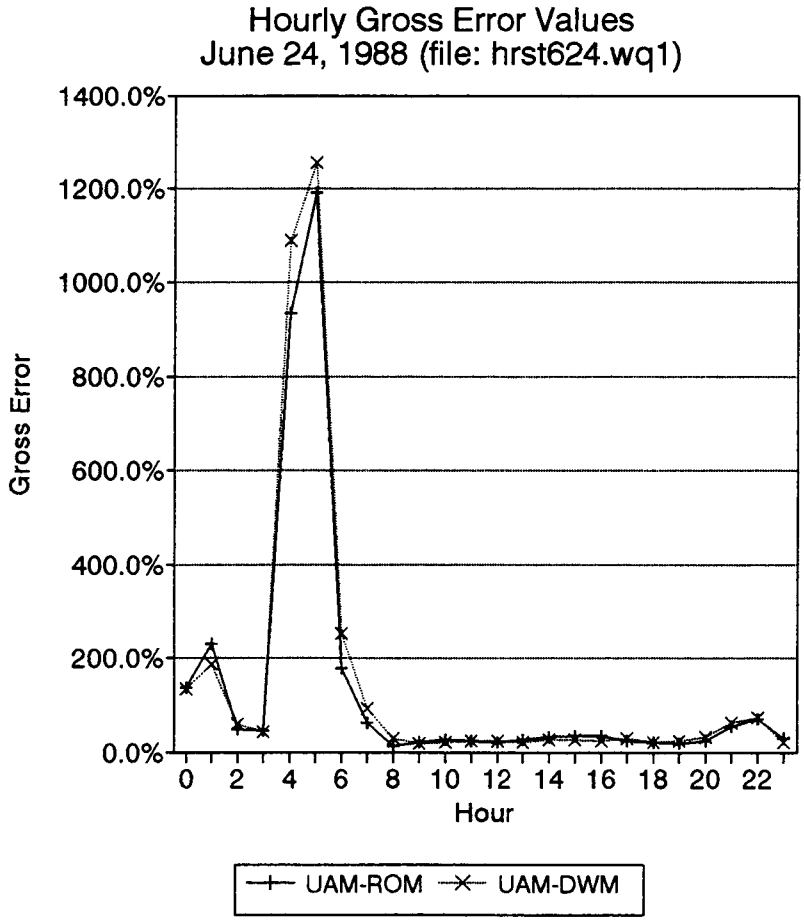


Figure 4-24. **Hourly gross error values for a 24 hour period on June 24, 1988.**

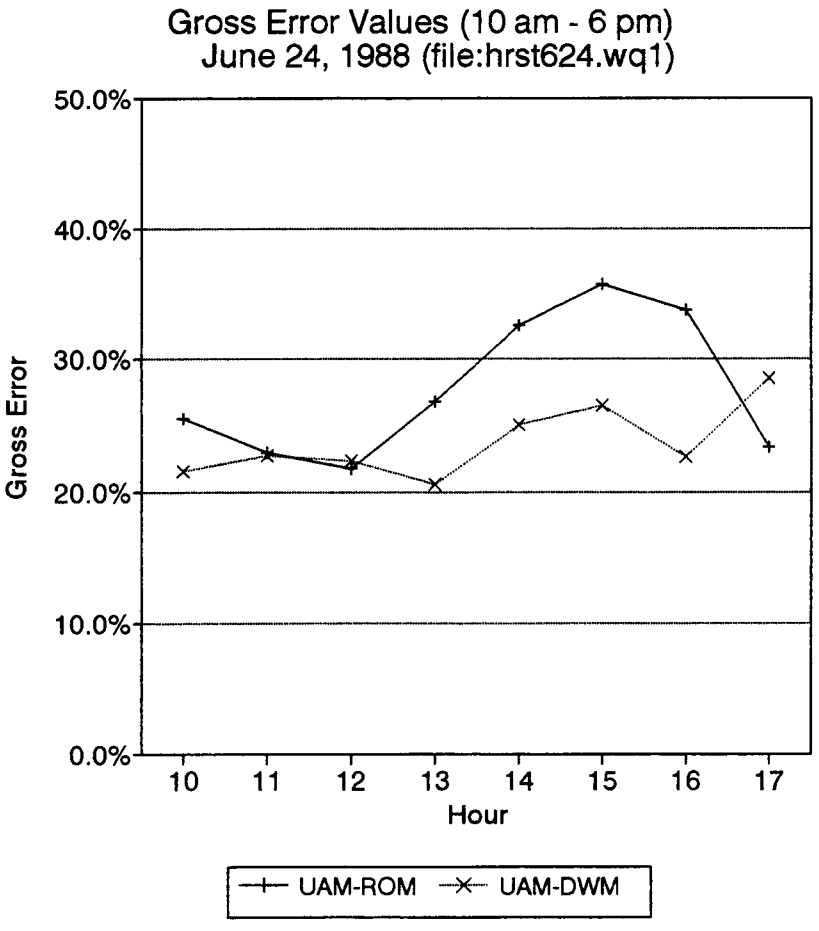


Figure 4-25. Hourly gross error values for 10 AM - 6 PM on June 24, 1988.

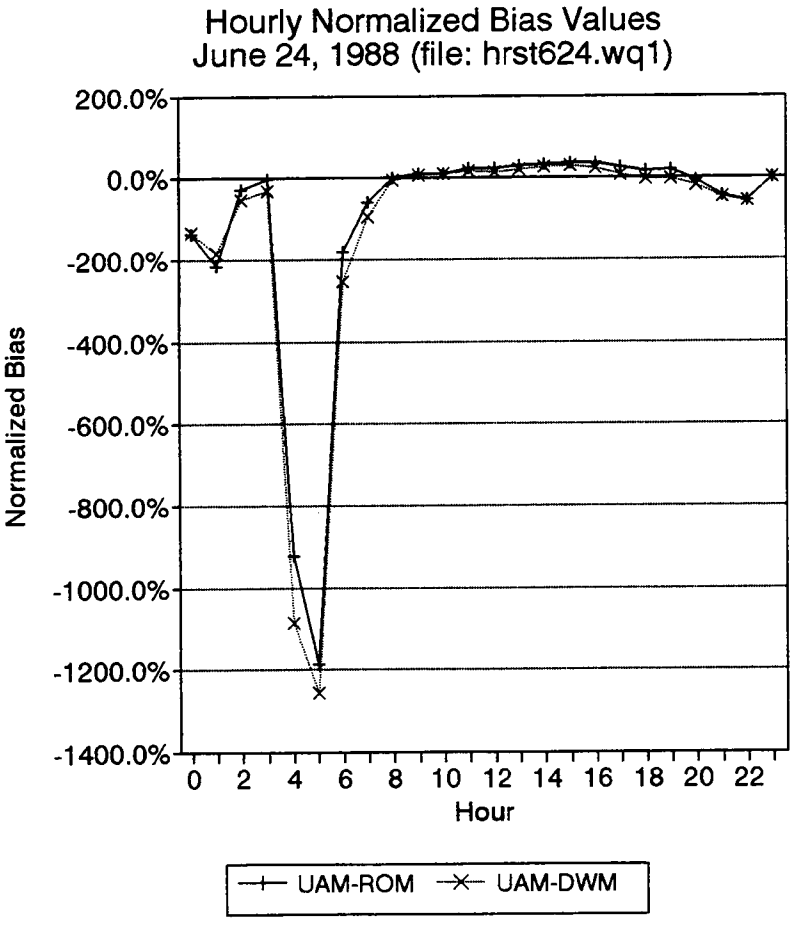


Figure 4-26. **Hourly normalized bias values for a 24 hour period on June 24, 1988.**

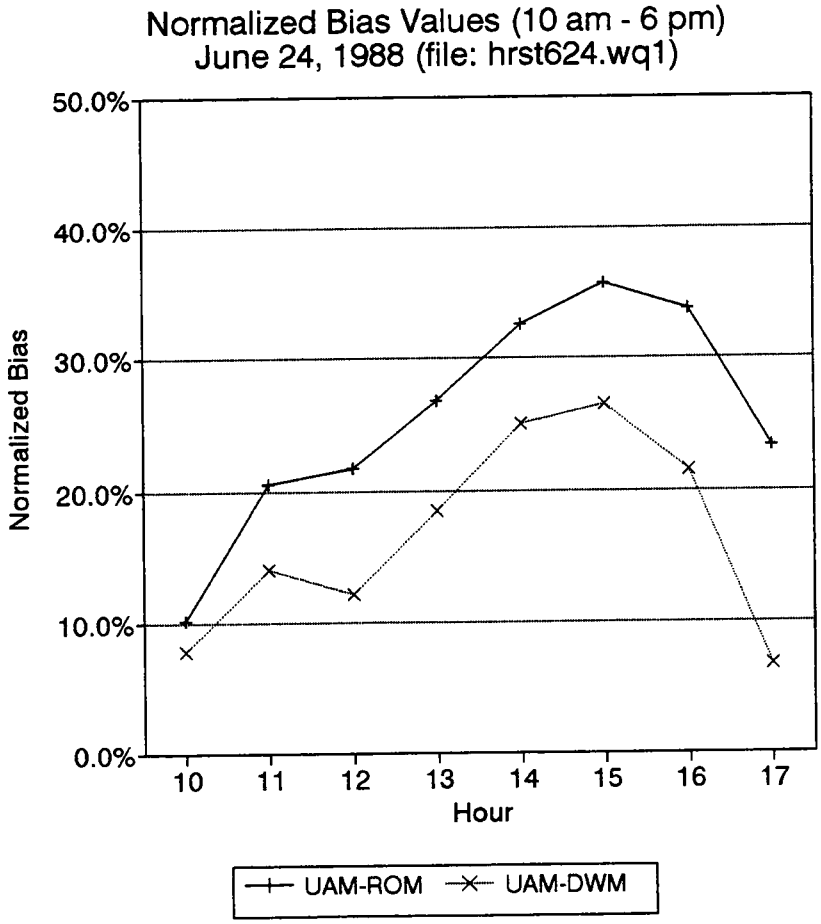


Figure 4-27. **Hourly normalized bias values for 10 AM - 6 PM on June 24, 1988.**

as shown in Figure 4-27. Since the recommended normalized bias value range is ±5-15%, the results show that neither UAM run tested satisfactorily for normalized bias even during some of the daytime hours. The reason for this as mentioned earlier was the inability of either UAM run to predict sufficient ozone during daytime hours. The underprediction of ozone for some daytime hours caused the normalized bias values to be larger (more positive) than the recommended value. Overprediction at nondaytime hours caused lower (more negative) than recommended values. However, when guidance from the memorandum that suggests using only observed values ≥0.06 ppm was used, the results were found to be more in line with the EPA recommended criteria with the slower windfield (DWM) meeting the EPA recommended criteria.

The average gross error and normalized bias values for the 10 AM - 6 PM time frame have been calculated and are presented in Table 4-2.

Finally, the average bias for each hour was calculated. The hourly bias for both runs is shown in Figure 4-28. This plot shows the trend of daytime underpredictions/nighttime overpredictions for this episode with UAM-DWM showing better results because the transport has been slowed down, albeit, too slow allowing the model to form more ozone, and hence reduce the amount of underprediction. The bias plot is perhaps a better way to illustrate the hourly relative error because, for instance, a relative error of 10 ppb would be

Table 4-2. **Recommended Performance Measures for the June 24, 1988 Episode Using a 10 AM - 6 PM Hour Averaging Period.**

Performance Test	UAM-ROM	UAM-DWM
Normalized Bias (recommended value of ±5-15%, for all observed values).	26.2%	17.0%
Normalized Bias (recommended value of ±5-15% for observations values ≥0.06 ppm).	29.4%	19.3%
Gross error >60 ppb (recommended value of 30-35%).	28.1%	23.8%

equivalent to a worst case ±1,000% normalized bias or gross error showing that the hourly normalized bias and gross error plots tend to overexaggerate the error (e.g., a worst case relative error of 10 ppb: (1 ppb - 11 ppb)/1 ppb = -1,000% or 1,000% normalized bias or gross error, respectively!).

4. Conclusions for June 24, 1988

UAM validation runs have been made for an episodic event defined as a transport condition with defined flow. The UAM-ROM and UAM-DWM runs showed acceptable performance by EPA criteria for the unpaired highest-prediction accuracy and the gross error tests. UAM-DWM performed slightly better than ROM for these two tests because UAM-DWM predicted overall higher observed values than UAM-ROM for daytime hours at the East Health and Percy Priest stations improving these statistical tests in the favor of the UAM-DWM run. The higher predictions

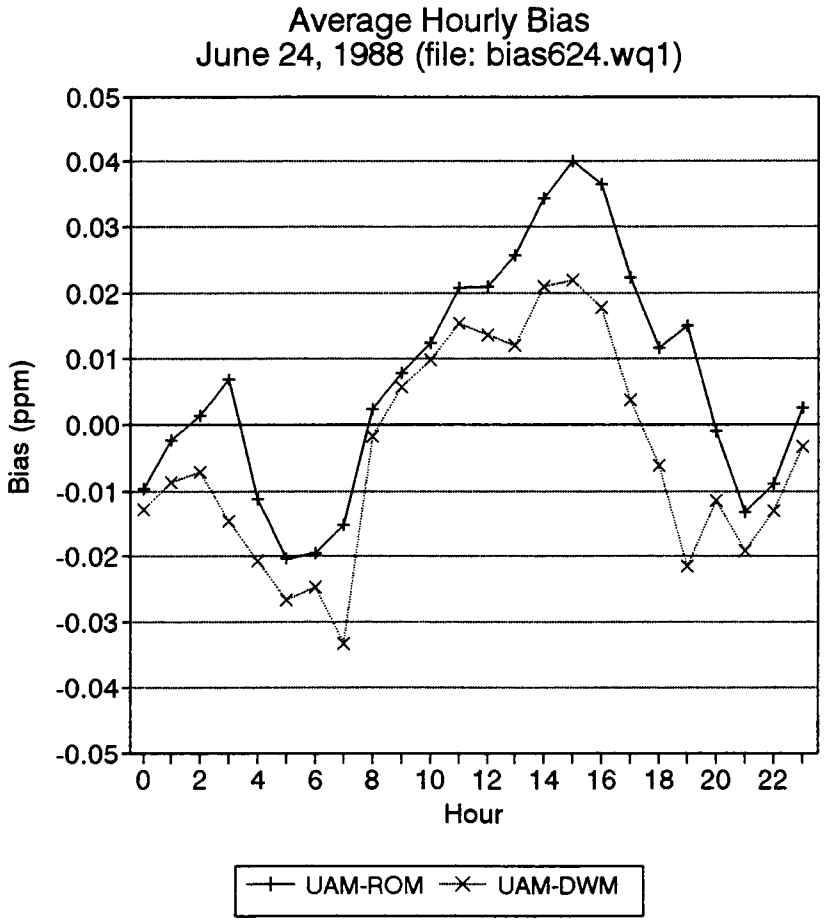


Figure 4-28. Hourly bias values for June 24, 1988.

for UAM-DWM seem to have been the result of the UAM-DWM model incorporating a domain mean wind, that on average for June 24, 1988, was approximately one-quarter the wind speed value recorded at the Nashville Airport NWS site. More confidence is given to the UAM-ROM results because the UAM-DWM domain mean wind speed was found to be not reflective of wind observations made in the Nashville UAM domain. A slower wind speed model would cause higher ground level predictions improving the statistics, but such a model (DWM) must be considered as less reliable than the UAM-ROM windfield because UAM-ROM winds were generated from NWS observations.

The normalized bias error 24 hour test did not meet EPA criteria for either UAM run. However, the normalized bias for UAM-ROM for observed values ≥ 0.06 ppm was much closer to the recommended criteria with UAM-DWM meeting the criteria value of ± 5-15%. It has been shown that the ROM boundary concentrations supplied by EPA generally were not reflective of predawn observations in the MTMD. It has also been mentioned that a mixing algorithm more reflective of actual convection processes is needed to minimize nighttime overpredictions and daytime underpredictions.

Section 5. July 9, 1988 Episode

1. Introduction

The July 8-9, 1988 episode represents in chronological order the second of the four 1988 modeling protocol episodes that were modeled.

The July 9, 1988 UAM-ROM run results when viewed as a 24 hour RASTER image file showed a ROM boundary ozone plume transported in through the northeastern corner of the modeling domain in a clockwise fashion. The path of this plume carried it over downtown Nashville with subsequent departure through the northcentral boundary of the modeling domain. Figure 5-2 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-ROM run. The highest predicted ozone concentration of 0.139 ppm in Figure 5-2 occurred at 3 PM. Figure 5-1 is the ozone isopleth plot of the time period (11 AM) 4 hours before the predicted maximum, and Figure 5-3 is the ozone isopleth plot of the time period (7 PM) 4 hours after the predicted maximum.

The highest predicted grid value was a combination of the overlap between the transport plume and perhaps some contributions from the urban core. The peak grid value occurred in UTM grid 537 km, 4,020 km.

A RASTER image of the ROM domain approximately four times the area of the MTMD centered on the MTMD was viewed, and the transport plume was seen to enter in from the north-eastern corner of the modeling domain. It should be noted

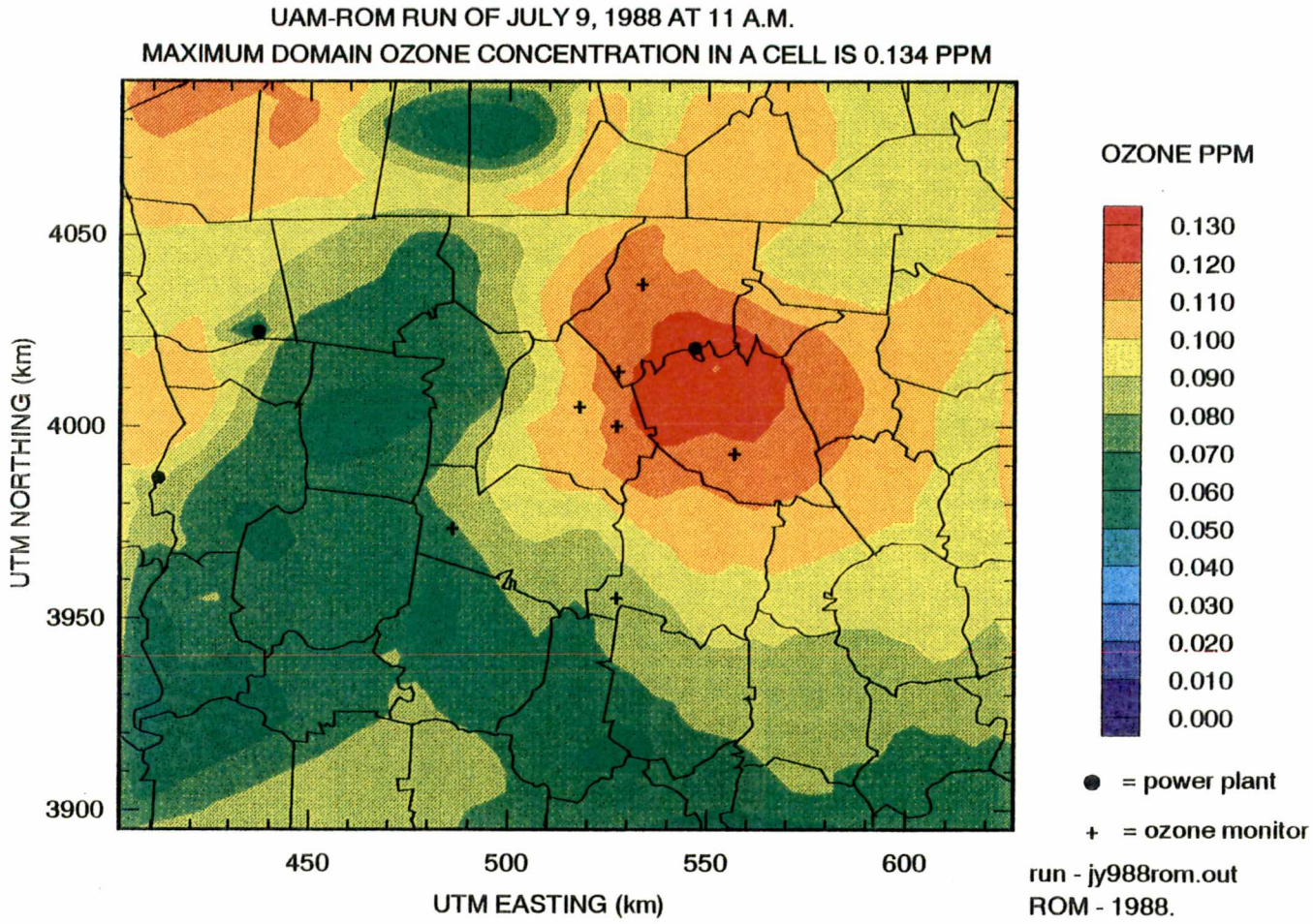


Figure 5-1. UAM-ROM ozone isopleth plot for July 9, 1988 at 11 AM.

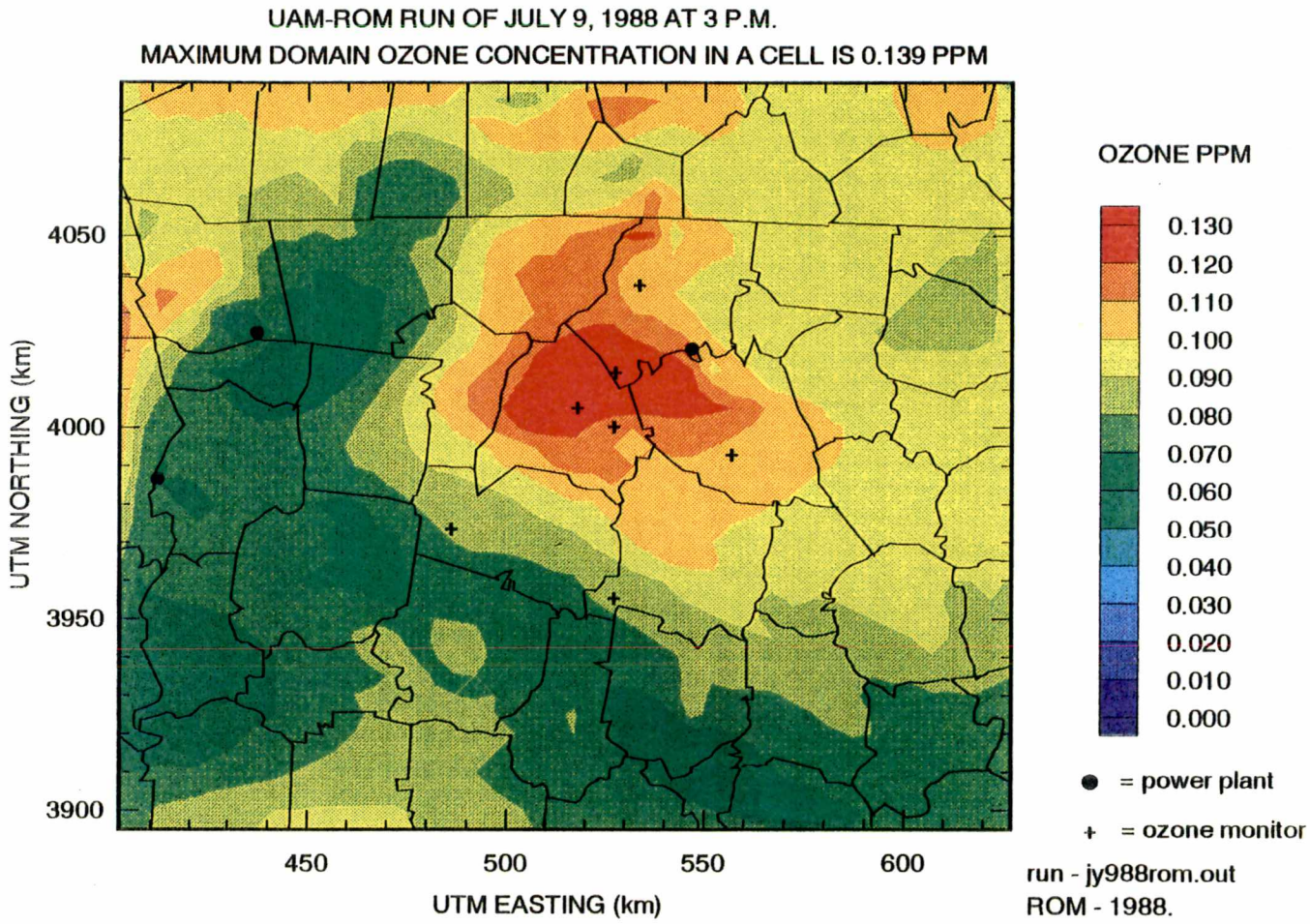


Figure 5-2. UAM-ROM ozone isopleth plot for July 9, 1988 at 3 PM.

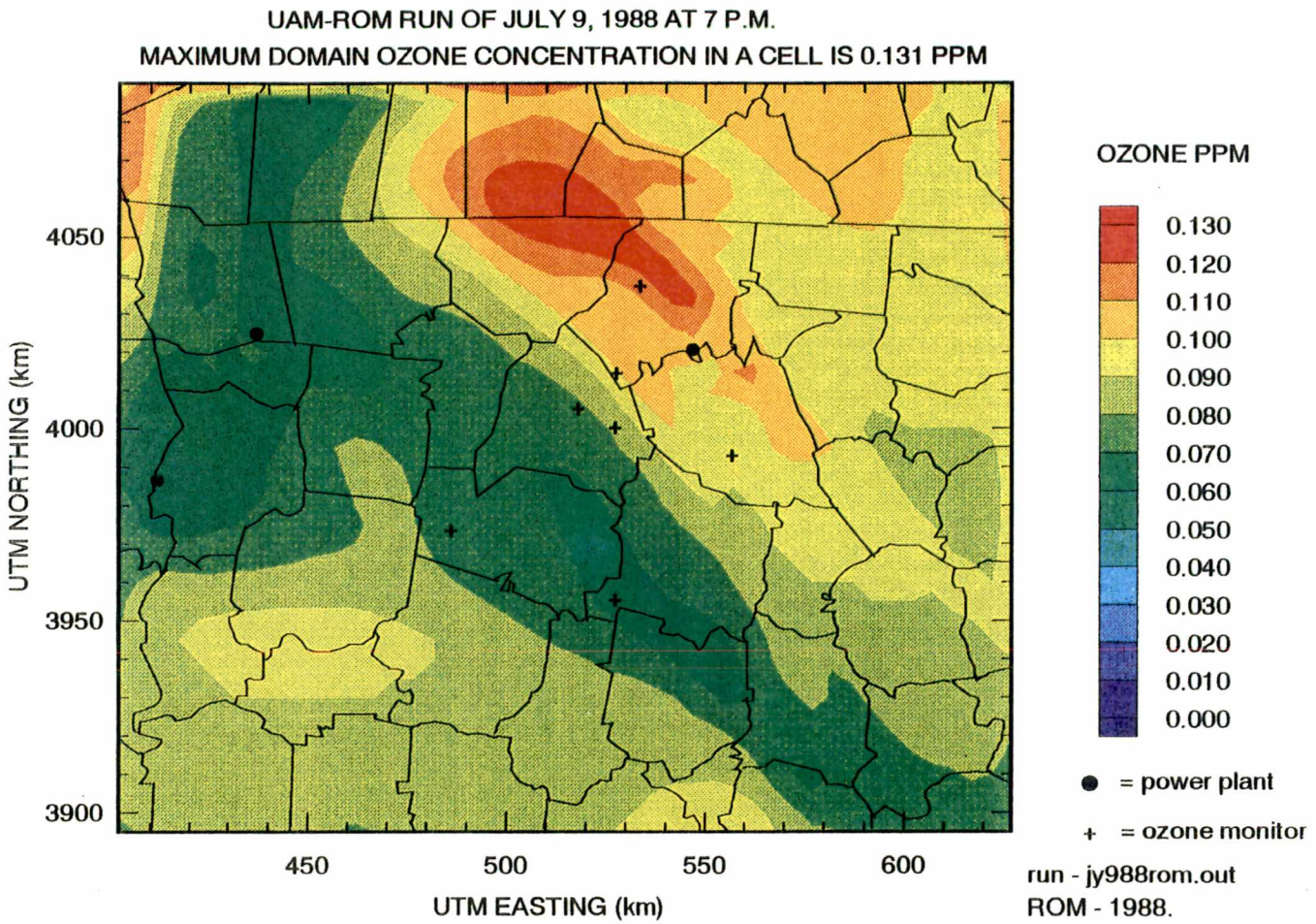


Figure 5-3. UAM-ROM ozone isopleth plot for July 9, 1988 at 7 PM.

that the ROM simulation showed ozone concentrations in the transport plume already ≥120 ppb on the morning of July 9, 1988, before even passing over and through downtown Nashville. The ROM simulation showed the transport plume leaving the Nashville area in a northwest direction in the late afternoon. Further examination of the ROM simulation for the two day period of July 8-9, 1988 showed a complex meteorological system showing high presssure flow (clock-wise circulation) with the axis of rotation in the MTMD located approximately on the Tennessee-Kentucky border. Although this simulation has been viewed many times, it cannot be determined where the exact origin of the transport plume may have been, or where the plume went to after passing through Nashville. This shows that transport of elevated ozone levels into the MTMD will have to be taken into account when making an attainment demonstration for the 1996 simulation of this episode.

Figure 5-4 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-ROM run. The highest grid value of 0.139 ppm occurred in UTM grid 537 km, 4,020 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

The July 9, 1988 UAM-DWM run results when viewed as a 24 hour RASTER image file appeared similar to the UAM-ROM run up to the point where the ROM boundary ozone plume was transported through the northeastern corner of the modeling domain and began approaching downtown Nashville (approximately

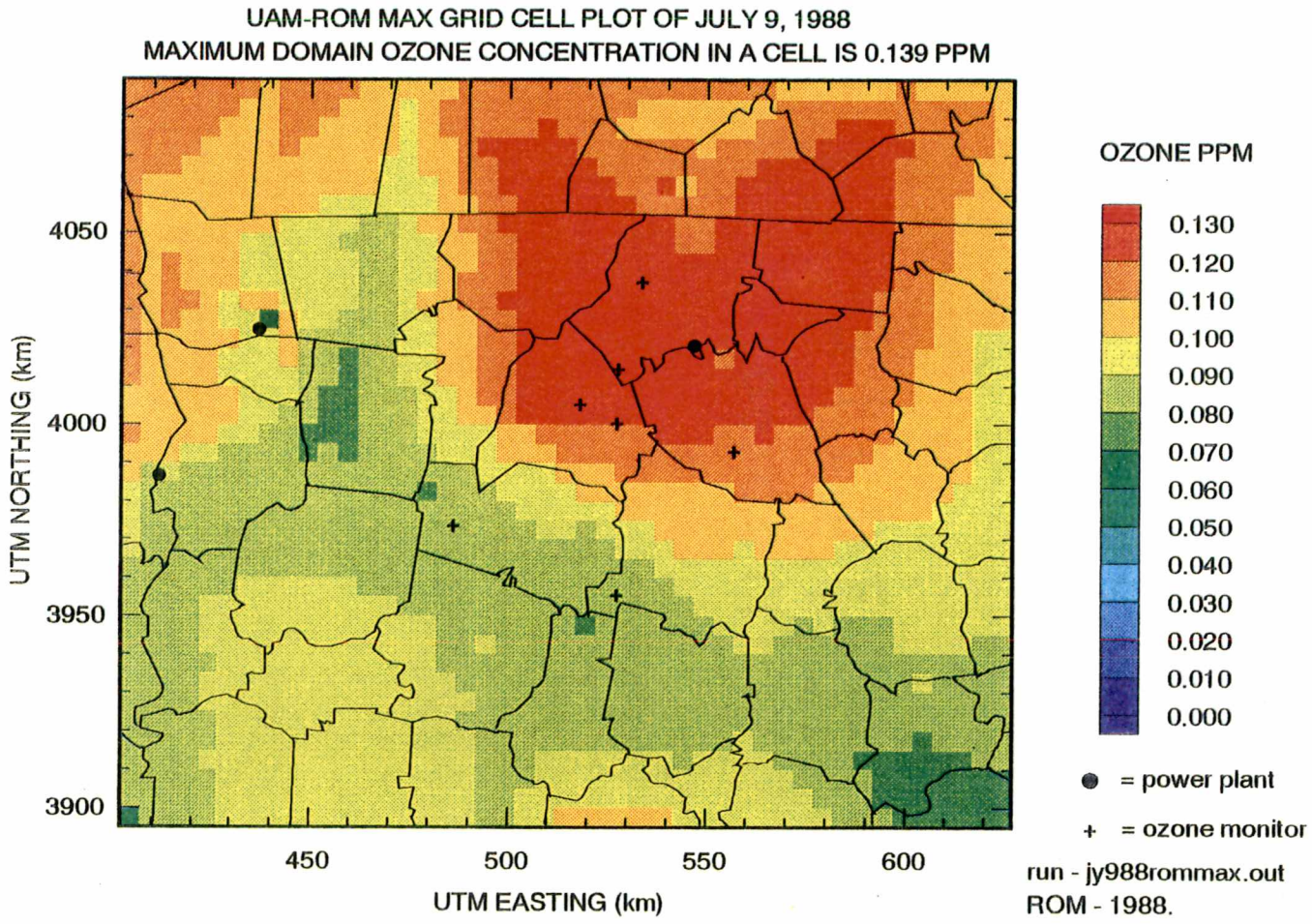


Figure 5-4. UAM-ROM maximum grid value tile plot for July 9, 1988.

9 AM). Prior to the point where the ROM transport plume would have been transported over downtown Nashville, a change in the DWM wind direction worked to effectively reverse the transport plume path, eventually moving it out of the modeling domain in a southwest to northeast fashion. Simultaneously, a small urban ozone plume began to develop over the urban core which was transported away from downtown Nashville in a slow northward fashion.

The difference in plume movement for UAM-DWM can be explained by a wind analysis for July 9, 1988 (see section 2). By 11 AM the direction of the DWM-predicted domain mean wind at the Nashville Airport location was approximately 180 degrees off of the NWS value. Thus, NWS and UAM-ROM winds over Nashville were moving primarily westward while UAM-DWM winds were moving just opposite or eastward! This change in direction for the UAM-DWM run prevented the transport plume from ever reaching the urban core.

Figure 5-6 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-DWM run. The highest predicted ozone concentration of 0.139 ppm in Figure 5-6 occurred at 2 PM. Figure 5-5 is the ozone isopleth plot of the time period (10 AM) 4 hours before the predicted maximum, and Figure 5-7 is the ozone isopleth plot of the time period (6 PM) 4 hours after the predicted maximum. The highest predicted grid value in the urban plume occurred in UTM grid 527 km, 4,005 km.

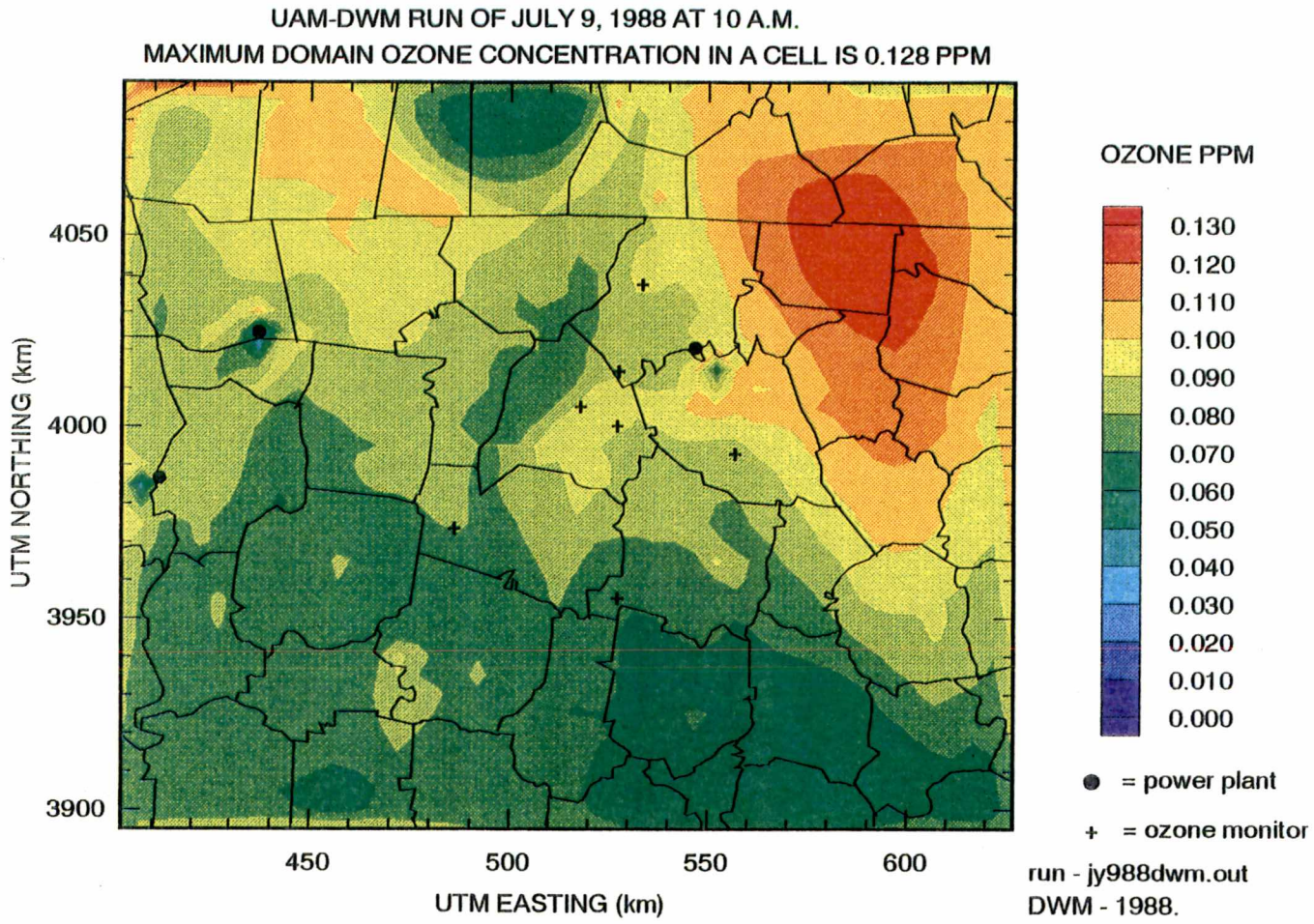


Figure 5-5. UAM-DWM ozone isopleth plot for July 9, 1988 at 10 AM.

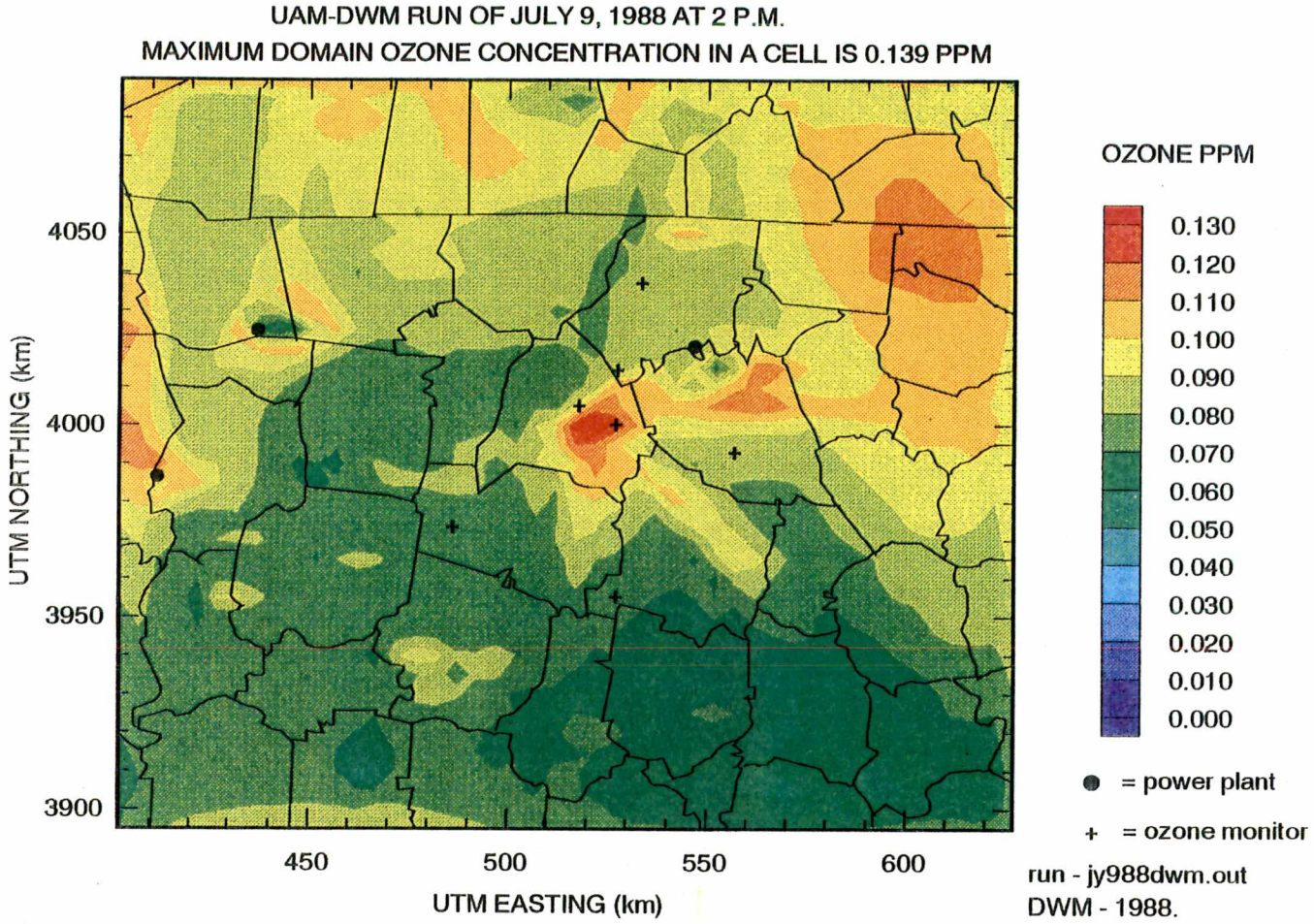


Figure 5-6. UAM-DWM ozone isopleth plot for July 9, 1988 at 2 PM.

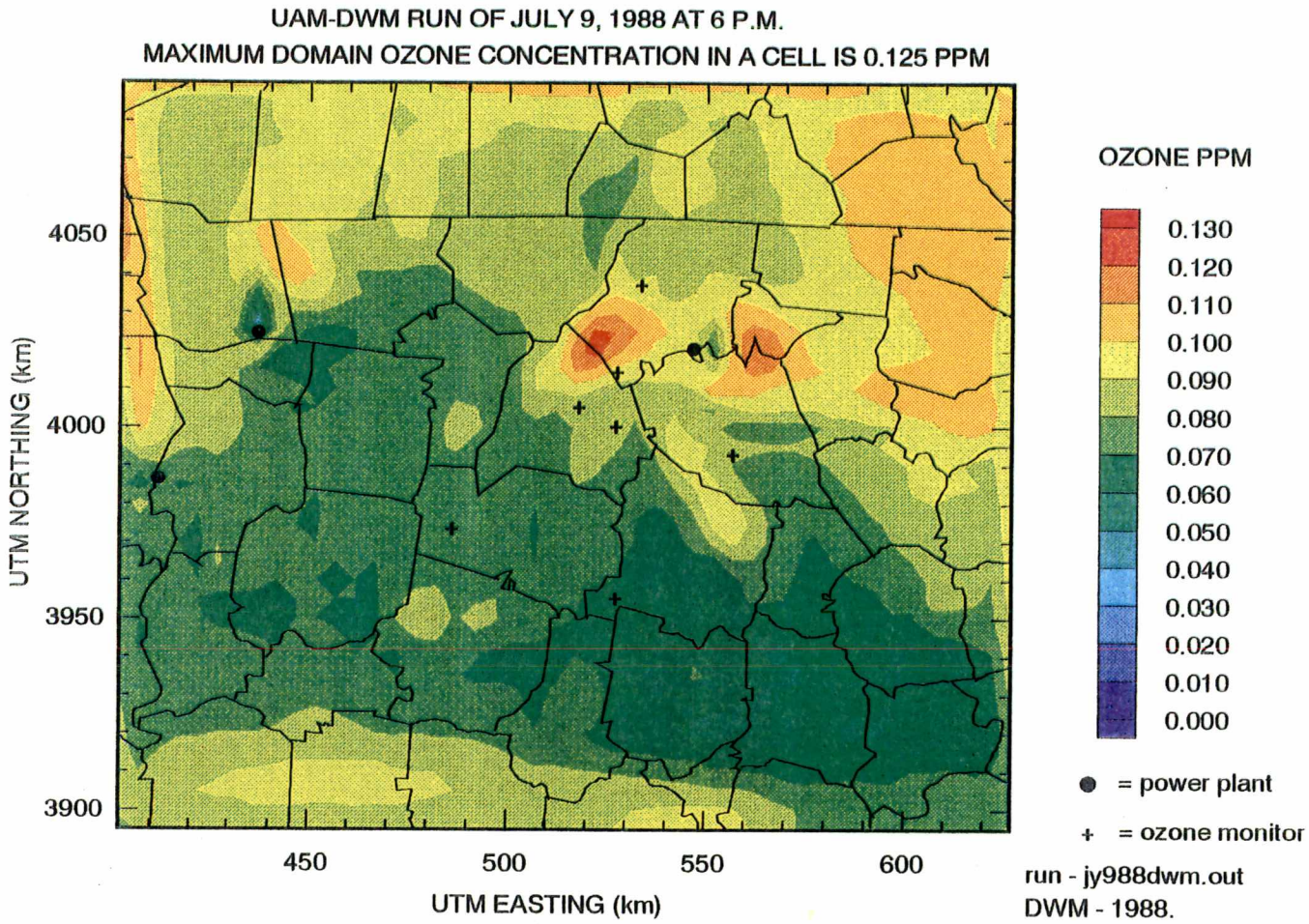


Figure 5-7. UAM-DWM ozone isopleth plot for July 9, 1988 at 6 PM.

Figure 5-8 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-DWM run. The highest grid value of 0.139 ppm occurred in UTM grid 527 km, 4,005 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

2. Graphical Results

A comparison was made between the station within the MTMD measuring the peak observed ozone value and the cell within the MTMD which had the highest predicted urban plume O_3 value. This comparison is shown in Figure 5-9. The legend of this graph shows the UTM location (given in parentheses) for both the UAM-ROM and DWM-ROM runs in which the highest grid value in the urban plume was predicted.

The purpose of this analysis was to show whether the model runs were predicting sufficient ozone formation to replicate the highest observed value regardless of a shift in the location of the urban plume caused by wind model uncertainty. Figure 5-9 shows that at the peak observed hour in the domain which occurred at the Hendersonville site at 11 AM, both of the UAM runs overpredicted the observed peak by only 1 ppb showing sufficient ozone formation by both models in a shifted urban plume.

The next set of graphical analyses performed were time series plots of the observed value recorded at each of the monitoring stations which were operational on July 9, 1988 vs. the predicted value at that site for each UAM model run. The

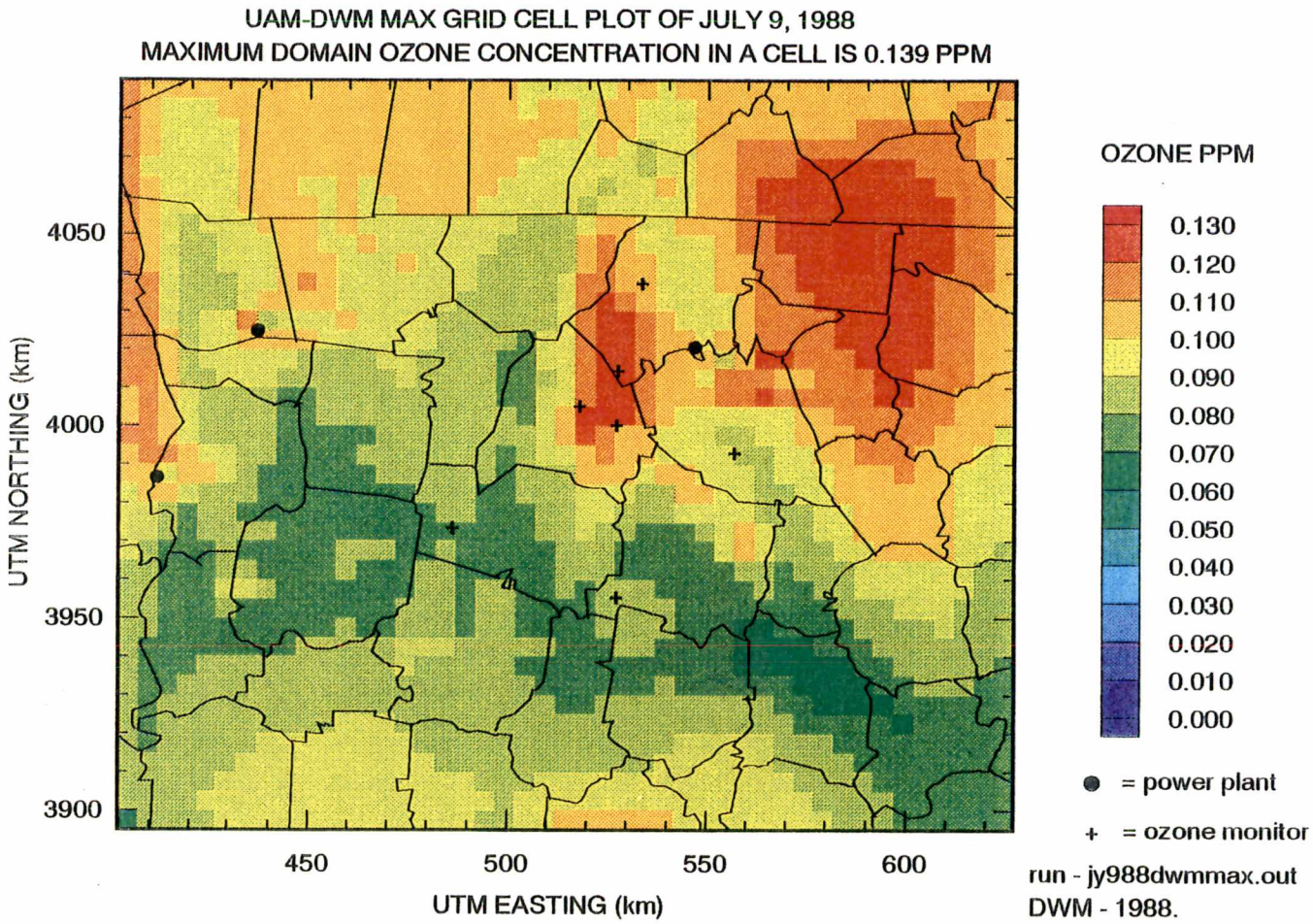


Figure 5-8. UAM-DWM maximum grid value tile plot for July 9, 1988.

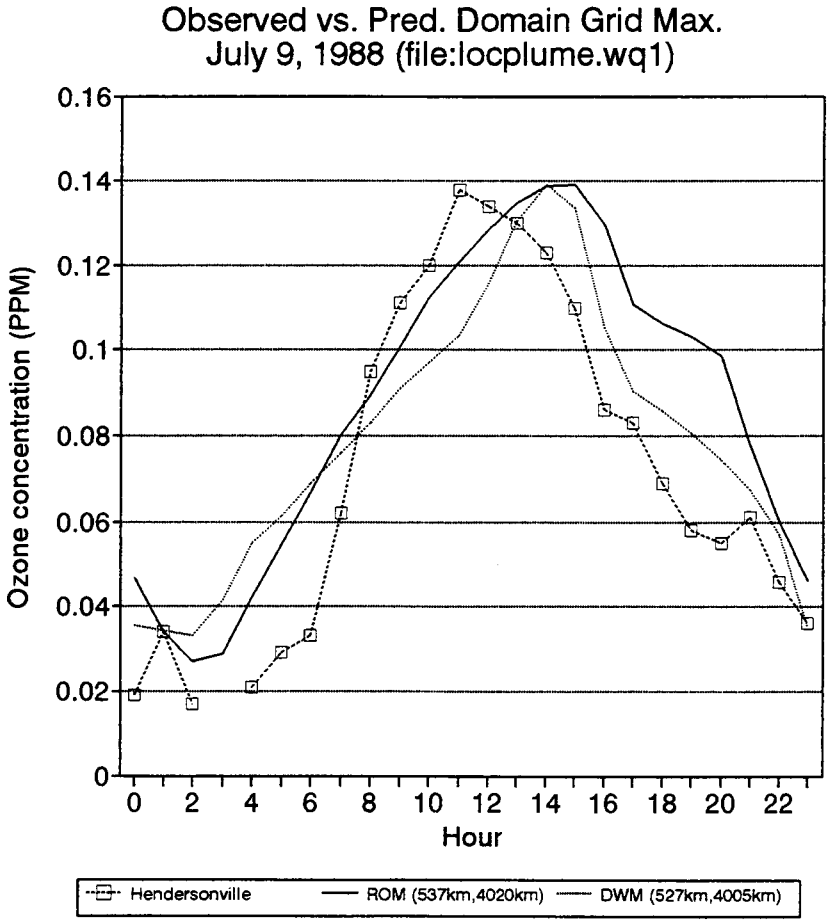


Figure 5-9. **Maximum observed vs. predicted ozone in the urban plume for July 9, 1988.**

predicted values plotted in these time series plots were determined through the bilinear interpolation method. These time series plots are depicted in Figures 5-10 through 5-15. Analysis of these data shows that UAM-ROM predicted somewhat higher and better correlation values in the first four figures while both models tended to underpredict at Fairview and Eagleville.

Figures 5-16 and 5-17 depict the correlation between the domain maximum observed value for each monitoring station vs. the domain maximum predicted value of a single grid cell for the UAM-ROM and UAM-DWM runs, respectively. Both figures show the best correlation occurred at the Hendersonville showing excellent agreement with the empirical data.

Figures 5-18 and 5-19 are bias scatter plots showing the correlation between the predicted and observed values for all monitoring stations for the UAM-ROM and UAM-DWM model results, respectively. A best-fit line through the data is shown on each plot. The UAM-ROM scatter plot shows better agreement with the observed data.

3. Statistical Results

The recommended performance measure results for the July 9, 1988 episode are presented in Table 5-1.

The 24 hour results for the primary date show that both UAM-ROM and UAM-DWM satisfy the recommended EPA criteria for the unpaired accuracy and gross error tests, but not for the normalized bias test of all observed values. The normalized

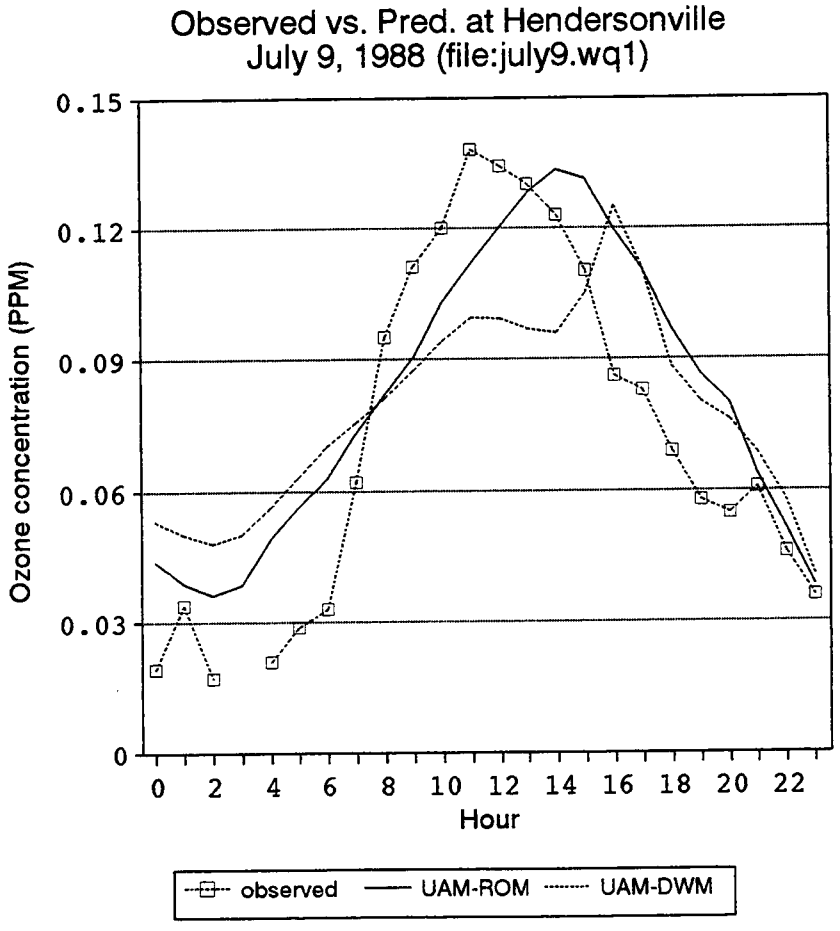


Figure 5-10. Observed vs. predicted ozone at Hendersonville for July 9, 1988.

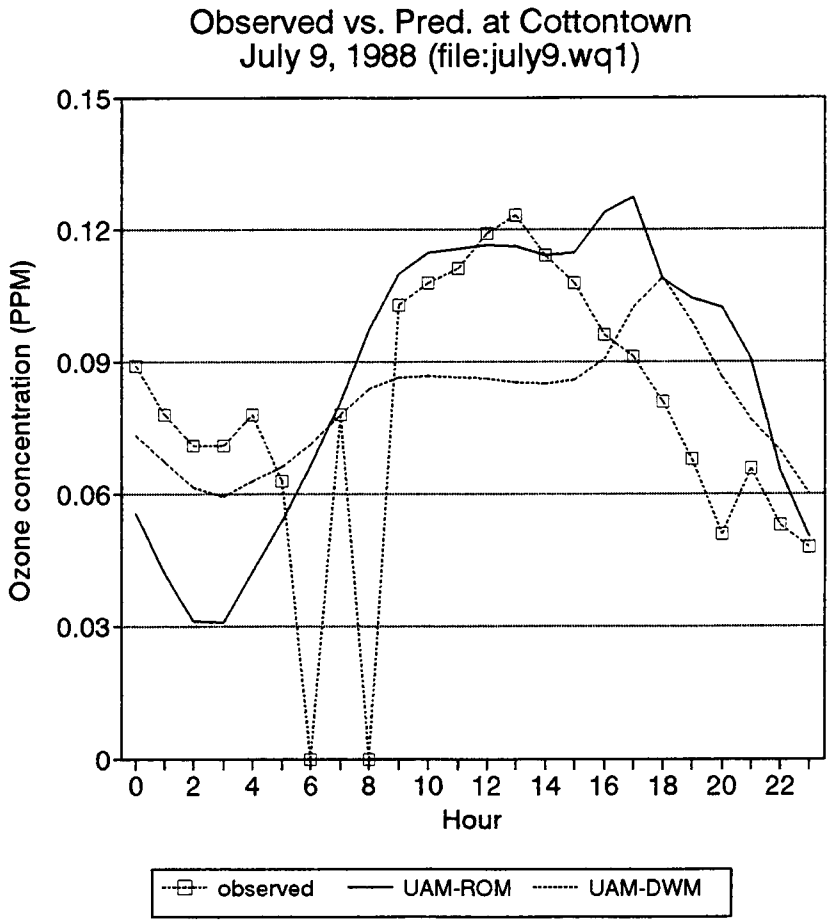


Figure 5-11. Observed vs. predicted ozone at Cottontown for July 9, 1988.

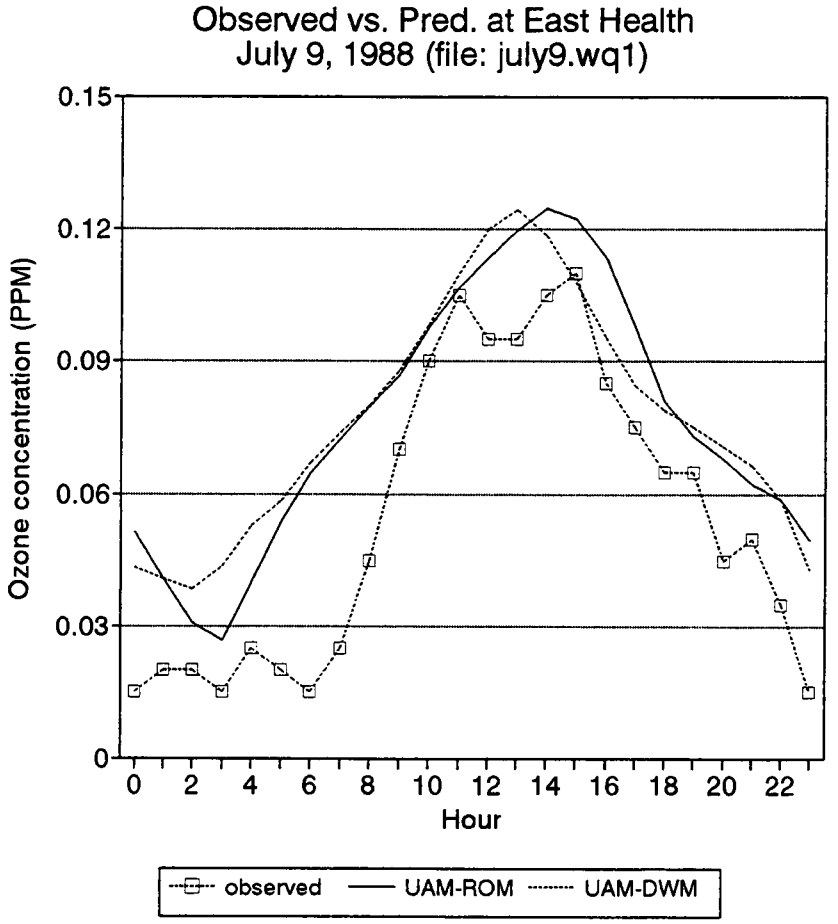


Figure 5-12. Observed vs. predicted ozone at East Health for July 9, 1988.

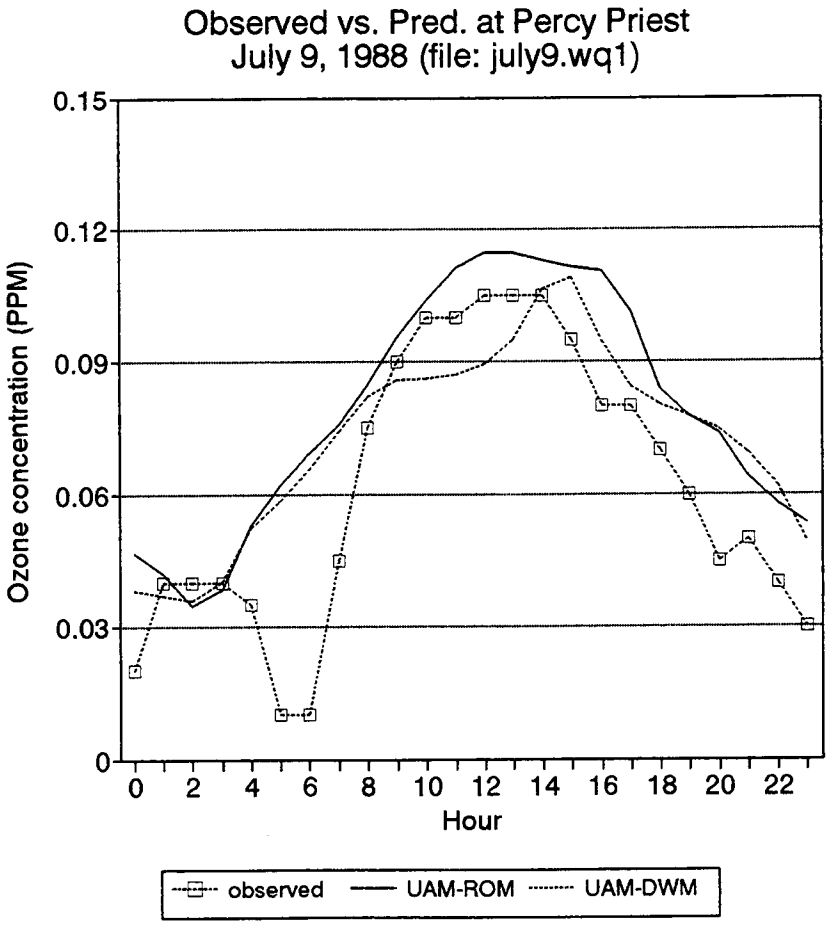


Figure 5-13. Observed vs. predicted ozone at Percy Priest for July 9, 1988.

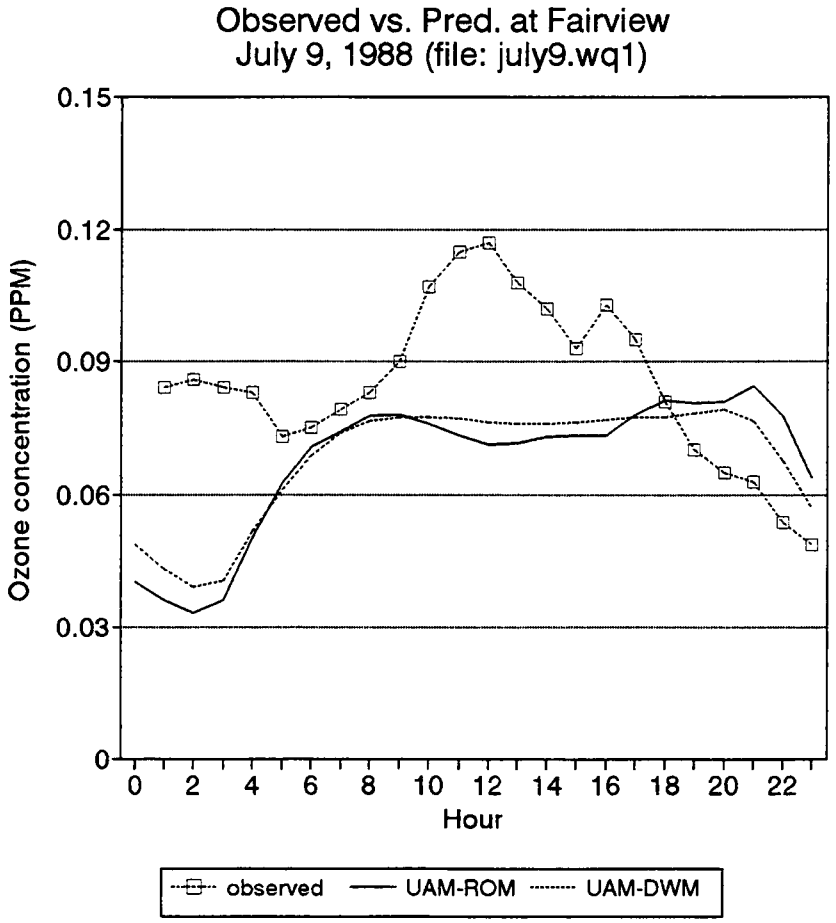


Figure 5-14. Observed vs. predicted ozone at Fairview for July 9, 1988.

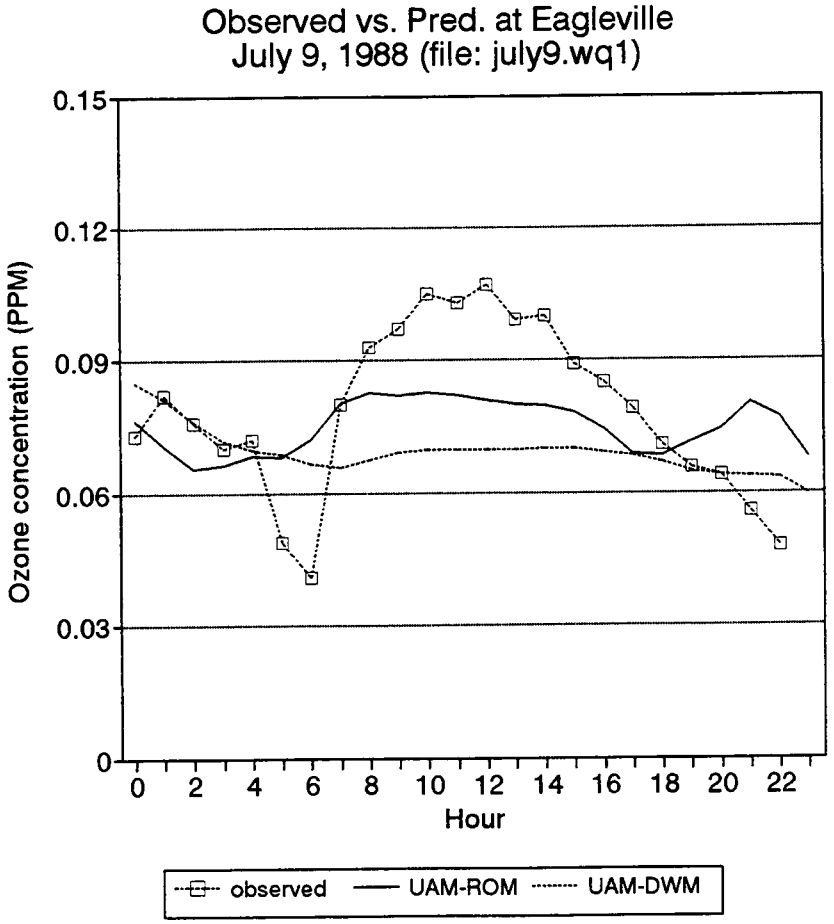


Figure 5-15. **Observed vs. predicted ozone at Eagleville for July 9, 1988.**

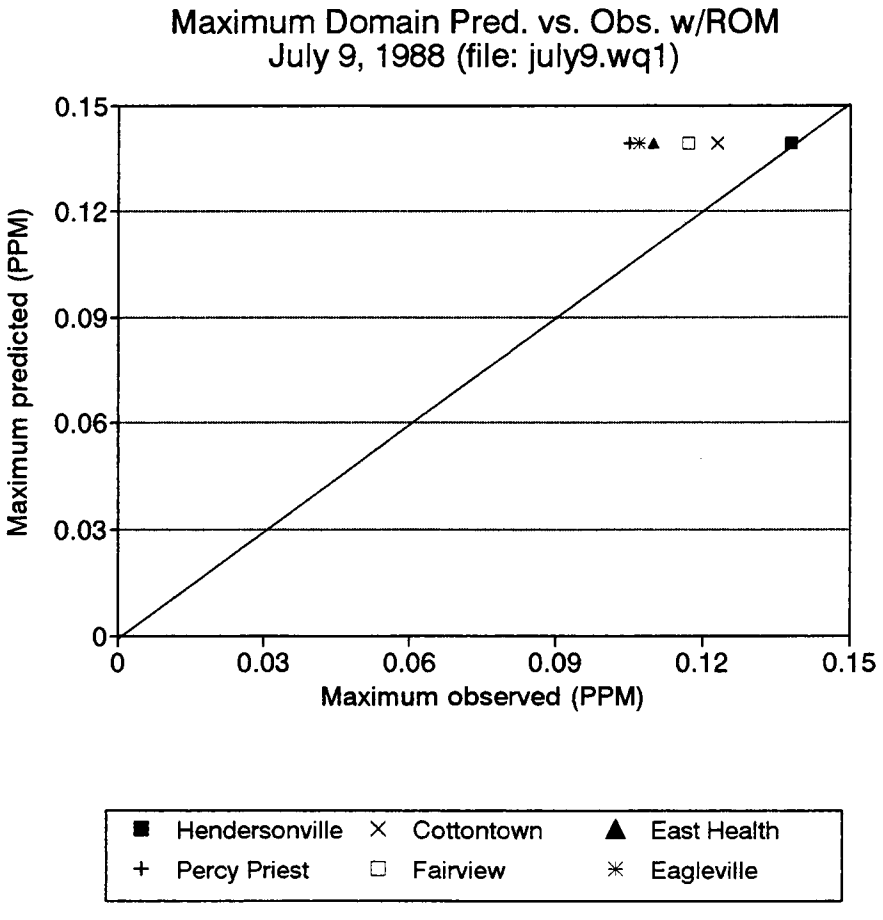


Figure 5-16. Maximum domain predicted vs. observed ozone for UAM-ROM on July 9, 1988.

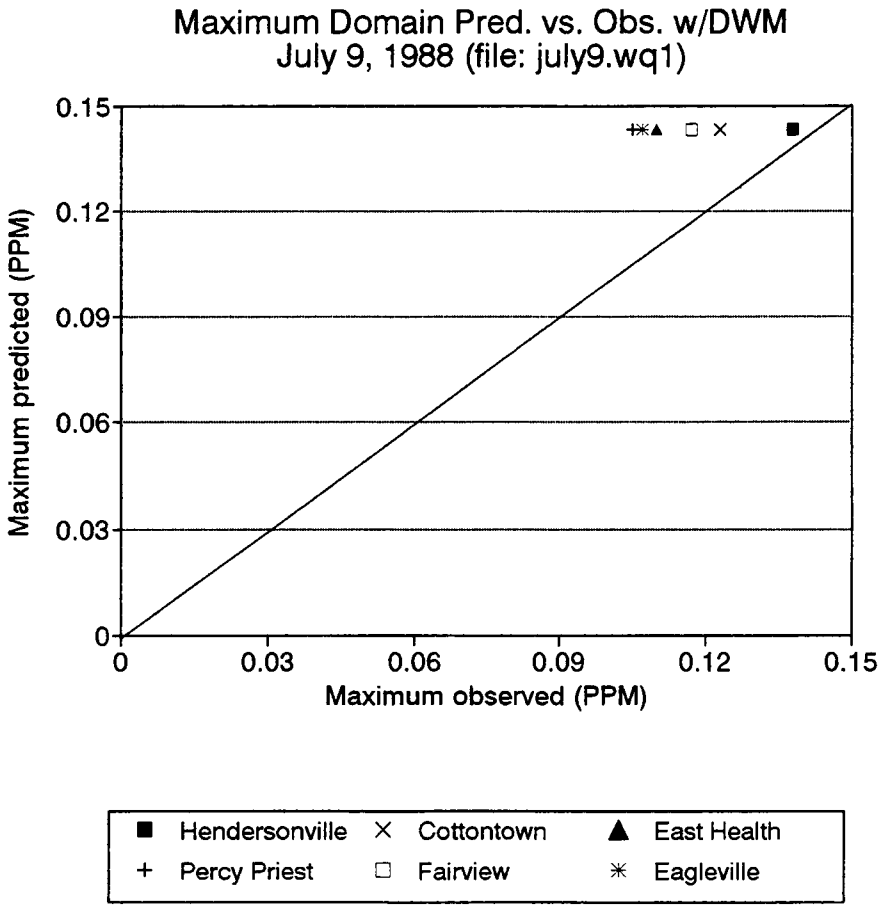


Figure 5-17. Maximum domain predicted vs. observed ozone for UAM-DWM on July 9, 1988.

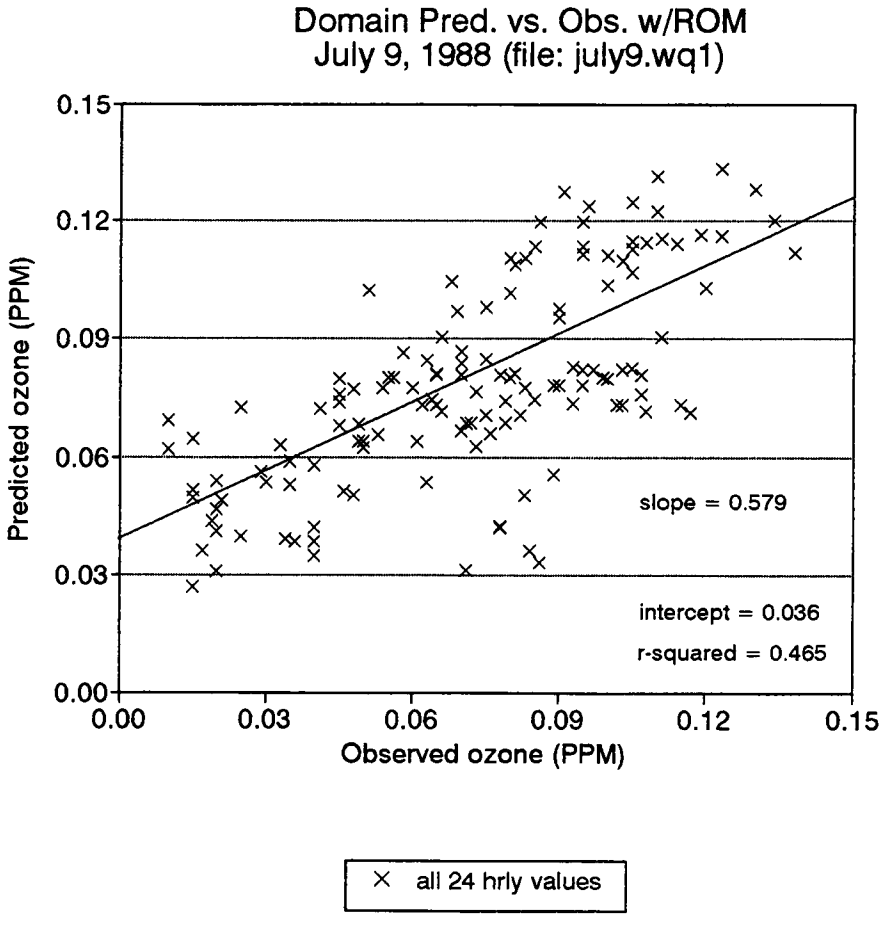


Figure 5-18. Bias scatter plot for UAM-ROM on July 9, 1988.

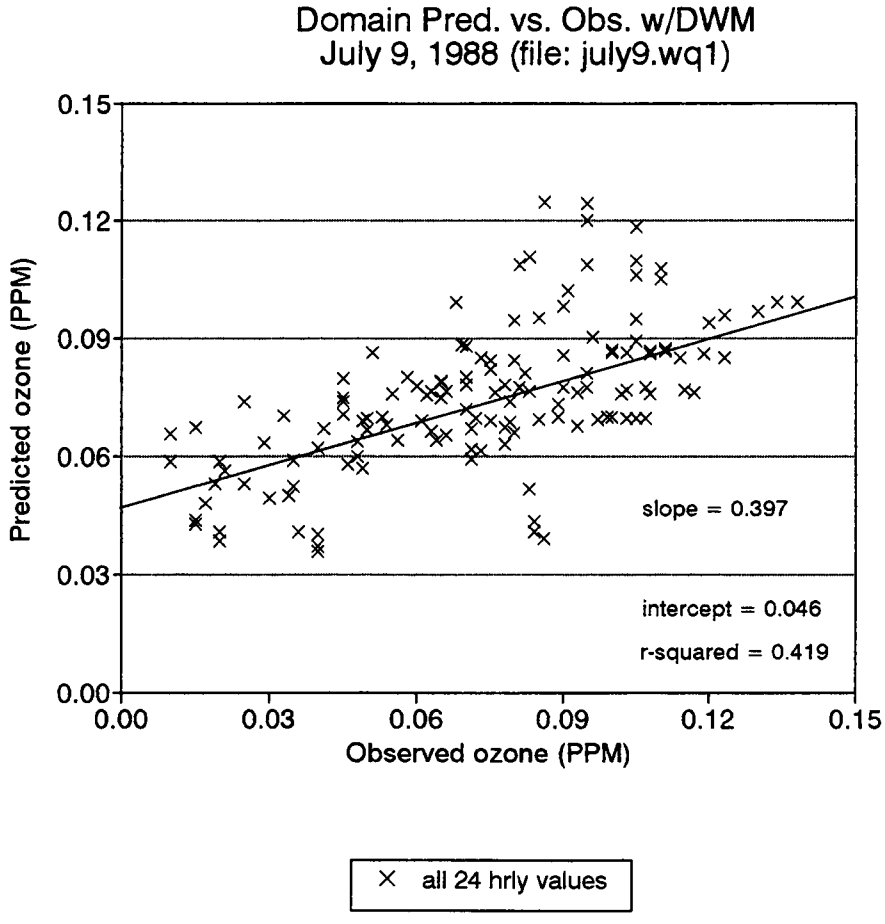


Figure 5-19. Bias scatter plot for UAM-DWM on July 9, 1988.

Table 5-1. **Recommended Performance Measures for the July 9, 1988 Episode Using a 24 Hour Averaging Period.**

Performance Test	UAM-ROM	UAM-DWM
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	-0.9%	-3.7%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-30.3%	-28.2%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	9.0%	8.7%
Gross error >60 ppb (recommended value of 30-35%).	20.3%	19.1%

bias results for observed values ≥0.06 ppm, however show excellent agreement for both UAM-ROM and UAM-DWM.

The small percentage in error for the unpaired accuracy test showed that both models predicted sufficient ozone formation in the urban core.

The reason that the 24 hour normalized bias test value exceeded the recommended value is that at certain predawn hours there was poor correlation between some of the monitoring station observed values and their corresponding predicted values. Examples of this can be seen in Figures 5-12 and 5-13 for the East Health and Percy Priest stations, respectively. For instance at 6 AM the Percy Priest monitor recorded 10 ppb of ozone while both UAM-ROM and UAM-DWM were

predicting ozone concentrations in the 70 ppb range. The one hour normalized bias value for a station with an observed value of 10 ppb and a predicted value of 70 ppb is -600%! It is then clear to see how the 24 hr normalized bias was exceeded after considering that several other large normalized bias values of this magnitude were also calculated for July 9, 1988. This is not a problem for the ≥0.06 ppm normalized bias since low ozone nighttime pairs are not considered in the the calculation. The gross error test tends to deemphasize these early morning overpredictions since the gross error test only reflects pairs with an observed value >60 ppb (mainly daytime observations).

Just like the June 24, 1988 episode, results from the ROM performance document are presented here to show that ROM at times predicted poorly for the monitors surrounding the Nashville nonattainment counties. Although none of the ozone monitors in the MTMD were evaluated in the ROM performance evaluation, an understanding of ROM's tendency to overpredict in the morning hours near the MTMD helps to explain the exceedance of the recommended criteria in the normalized bias test during some of the early morning hours. The ROM performance evaluation results for the July 9, 1988 episode are shown in Figures 5-20 through 5-22.

Figure 5-23 shows for UAM-ROM that at 4 AM the ROM boundary concentrations were in the range of 40-60 ppb of ozone except for the ROM transport plume entering in from the

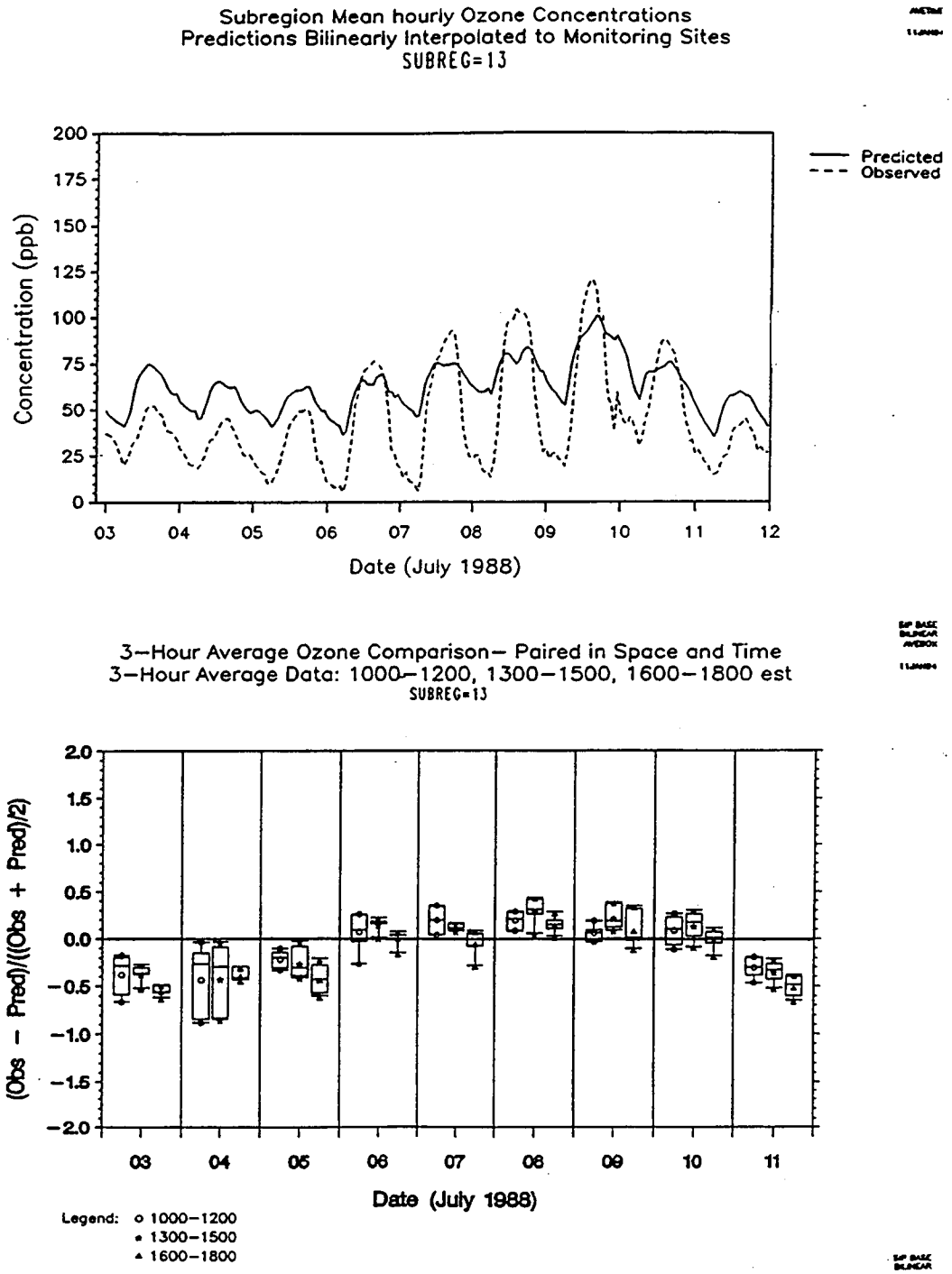


Figure 5-20. ROM performance results for subregion no. 13 on July 9, 1988.

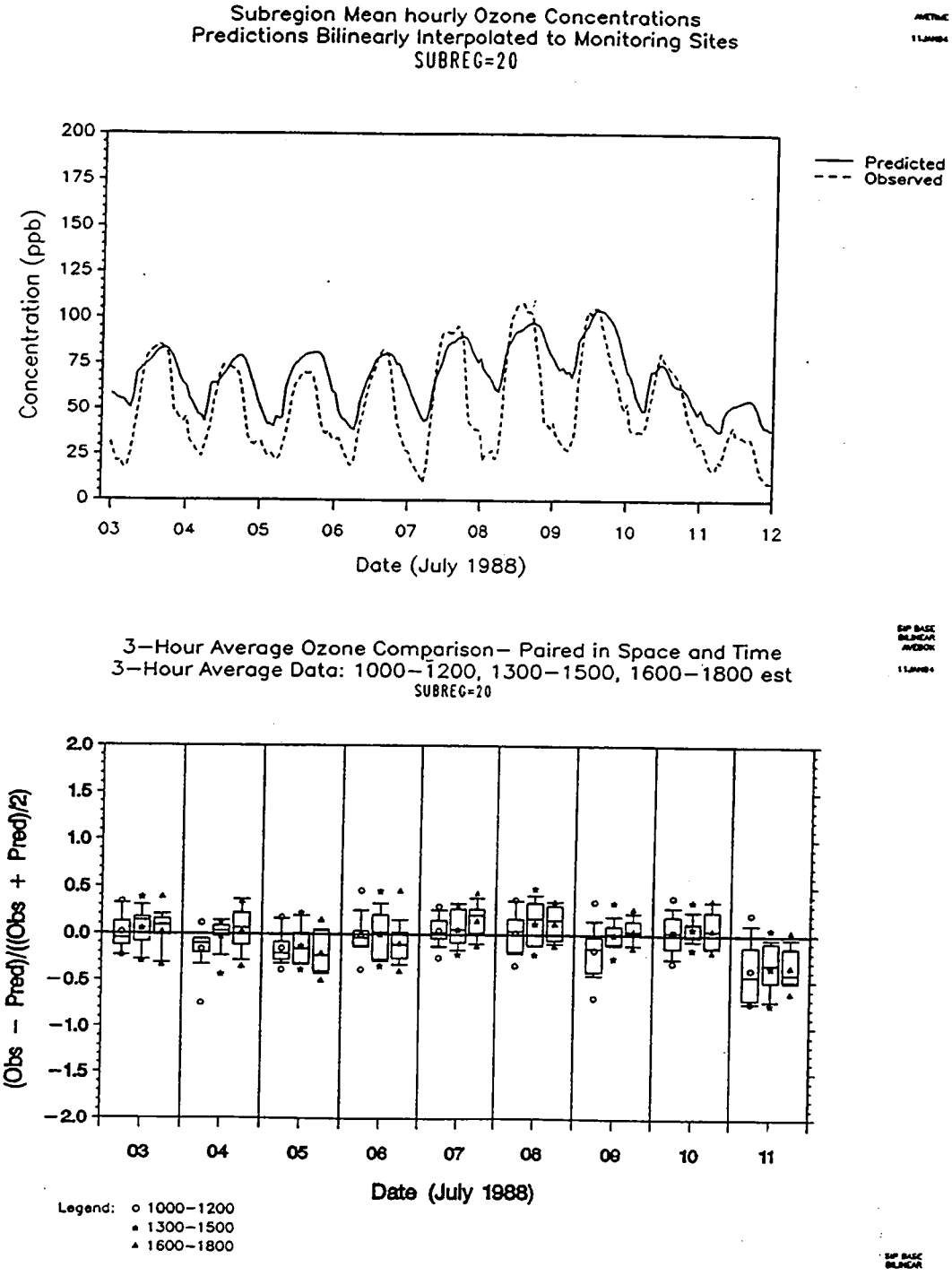


Figure 5-21. ROM performance results for subregion no. 20 on July 9, 1988.

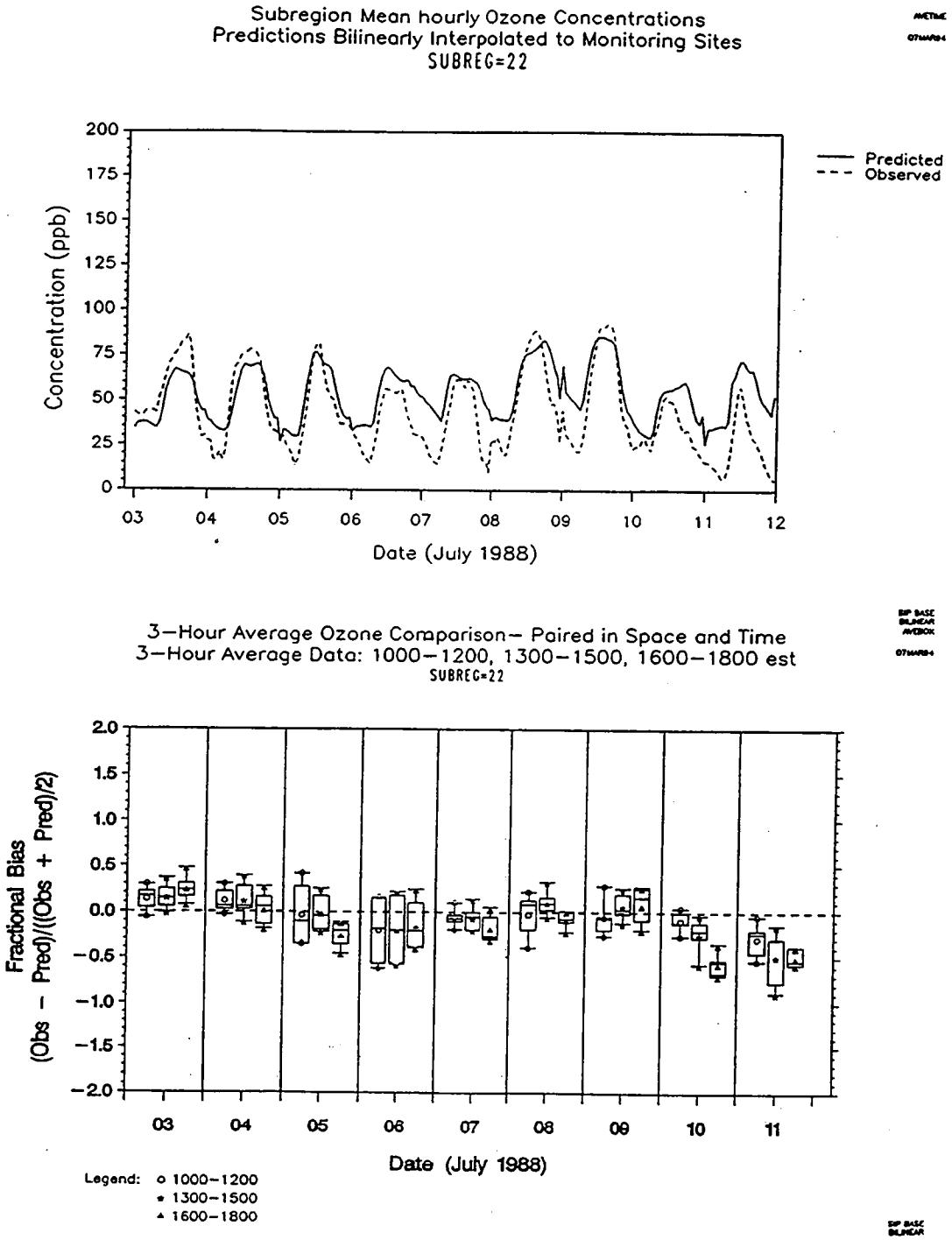


Figure 5-22. ROM performance results for subregion no. 22 on July 9, 1988.

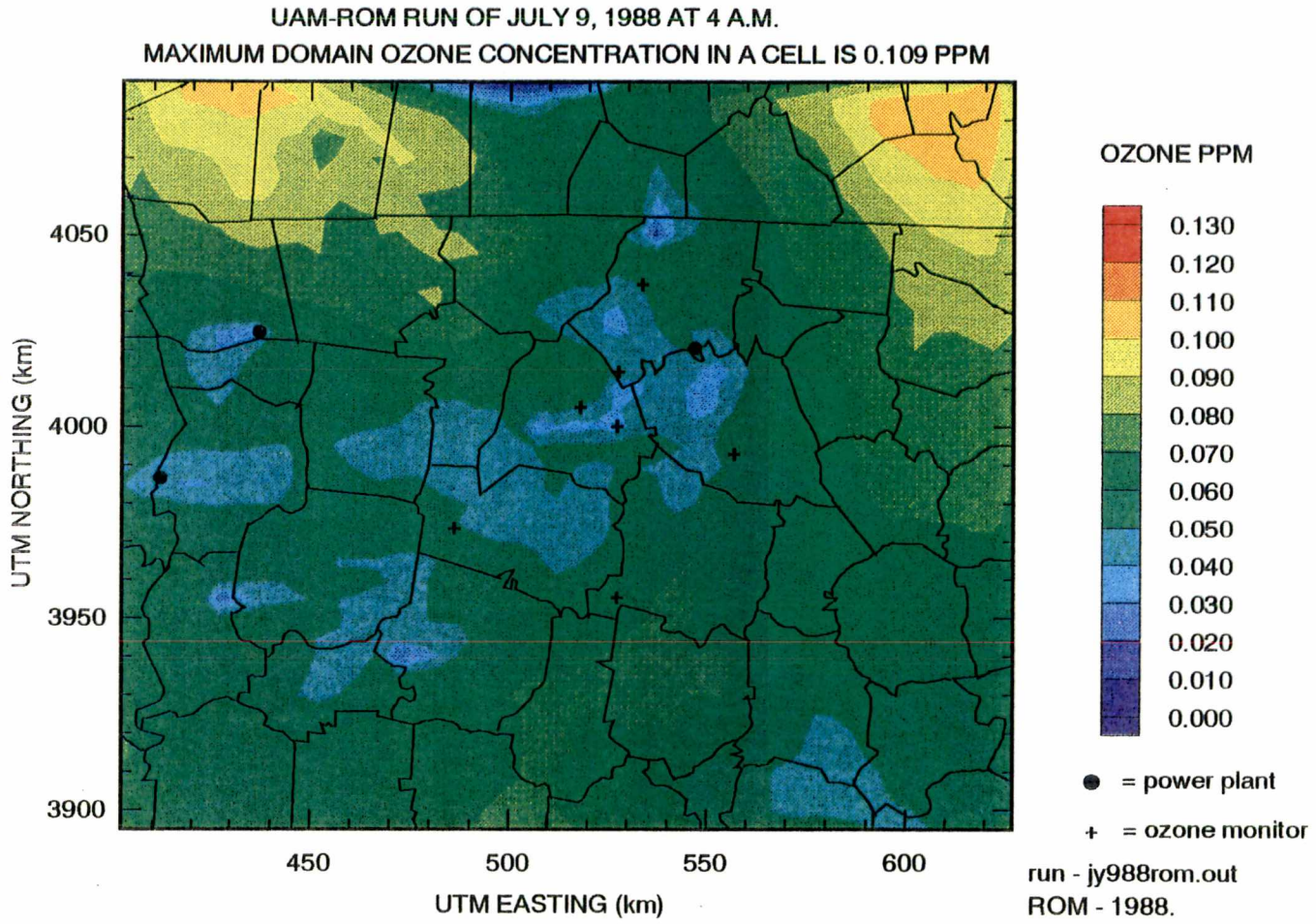


Figure 5-23. Ozone isopleth plot of UAM-ROM for July 9, 1988 at 4 AM.

northeast. Since UAM-DWM used the same ROM boundary values as UAM-ROM, both UAM runs would tend to have large negative normalized bias values during some of the predawn hours because the model does not appear to effectively scavenge ozone after sunset which may also be due to the mixing algorithm's inability to reform the mixing height quickly in the afternoon.

Hourly plots of the gross error and normalized bias values for July 9, 1988 were performed in order to determine when the model performed poorly. The hourly gross error values for the 24 hour period are shown in Figure 5-24, and the 8 hour period values for the 10 AM - 6 PM time frame are shown in Figure 5-25. Figure 5-24 shows that at 6 AM the hourly gross error average was above 200%, but by 8 AM the hourly values dropped off eventually stabilizing in a 10-30% value range as shown in Figure 5-25.

Since the regulatory guidance states that all observed pairs <60 ppb are not considered in the gross error statistical evaluation, essentially all predawn large gross error values will not be weighted in the 24 hr average. But Figures 5-24 and 5-25 clearly show that the model performance during nondaytime hours was at times unsatisactory because of the discrepancy between relatively higher ROM boundary ozone concentration values and their relatively lower observed ozone values.

The hourly normalized bias values for the 24 hour period

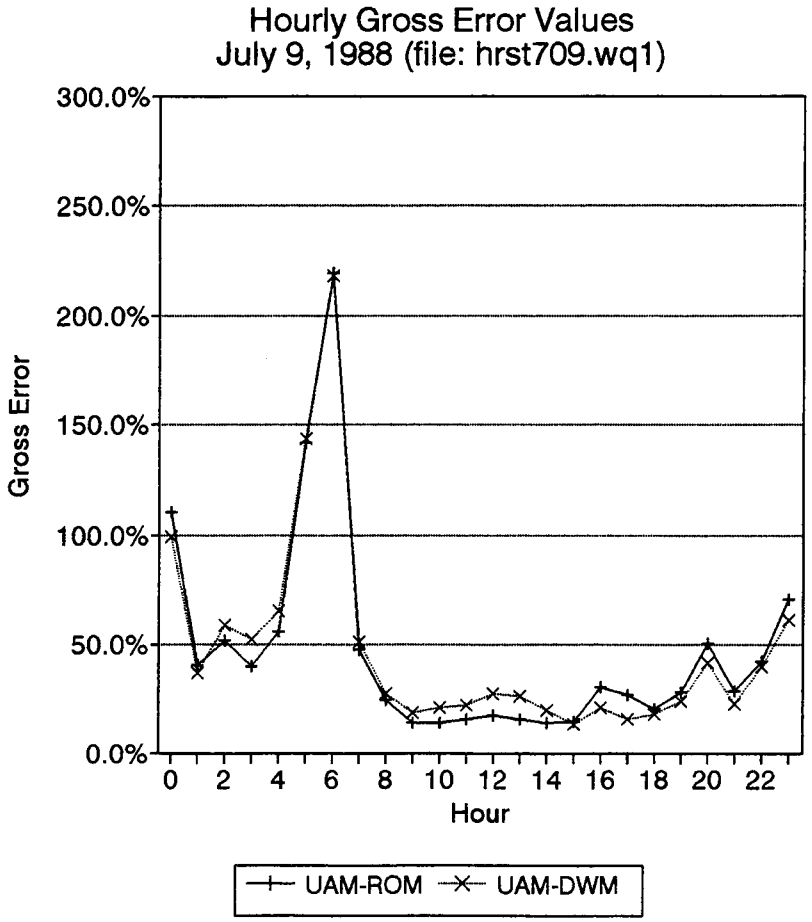


Figure 5-24. Hourly gross error values for a 24 hour period on July 9, 1988.

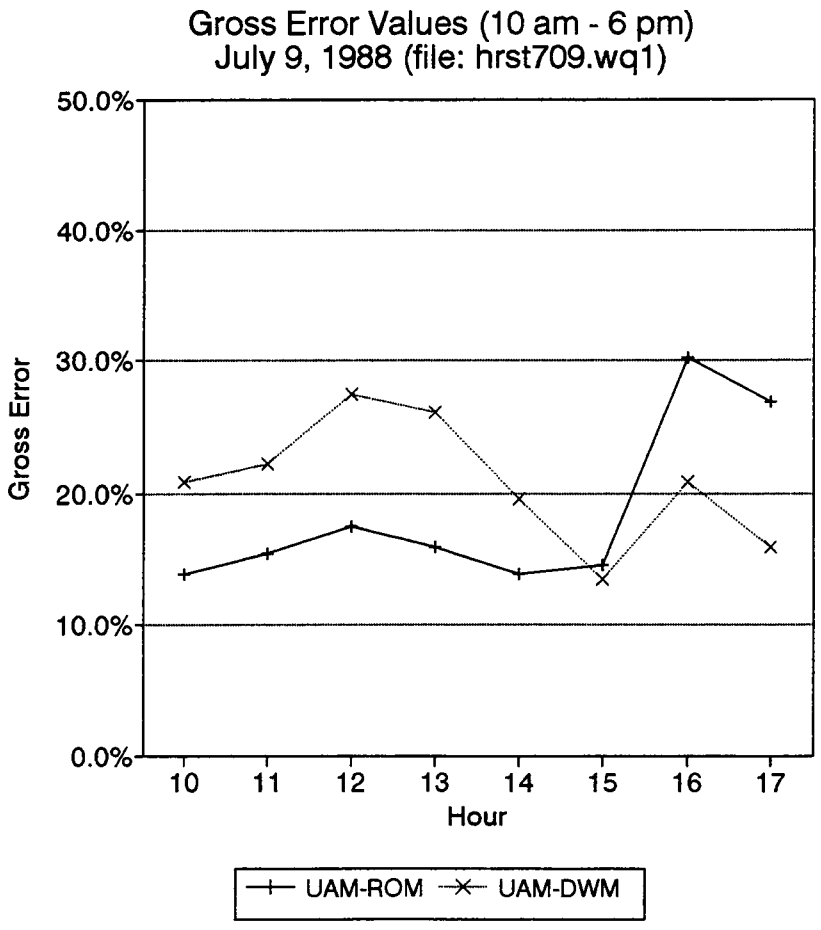


Figure 5-25. Hourly gross error values for 10 AM - 6 PM on July 9, 1988.

are shown in Figure 5-26, and the 8 hour period values for the 10 AM - 6 PM time frame are shown in Figure 5-27. Figure 5-26 shows that at 6 AM the hourly normalized bias value was more negative than -200%, but by 8 AM the hourly values increased eventually stabilizing to a -20 to +20% value range as shown in Figure 5-27. Since the recommended normalized bias value range is ±5-15%, the results show that neither UAM model run could meet the normalized bias recommended criteria for a 24 hour period due in large part to 1 hour in which the model considerably overpredicted. When guidance suggesting that only observed values of ozone ≥0.06 ppm is applied, the normalized bias criteria was met.

The recommended performance measure results for the 10 AM - 6 PM time frame are presented in Table 5-2. The results show once again that the model performed well on this episode for the daytime data using a similar averaging period as was used by the authors of the ROM performance evaluation.

The average hourly bias for both runs was determined and is shown in Figure 5-28. This bias plot shows that UAM-ROM performed well within the time frame exhibiting relative error of ≤10 ppb when the peak observation was made in the modeling domain (11 AM).

4. Conclusions for July 9, 1988

The UAM-ROM and UAM-DWM runs showed acceptable performance by EPA criteria for the unpaired highest-prediction accuracy, gross error and the normalized bias tests for observed

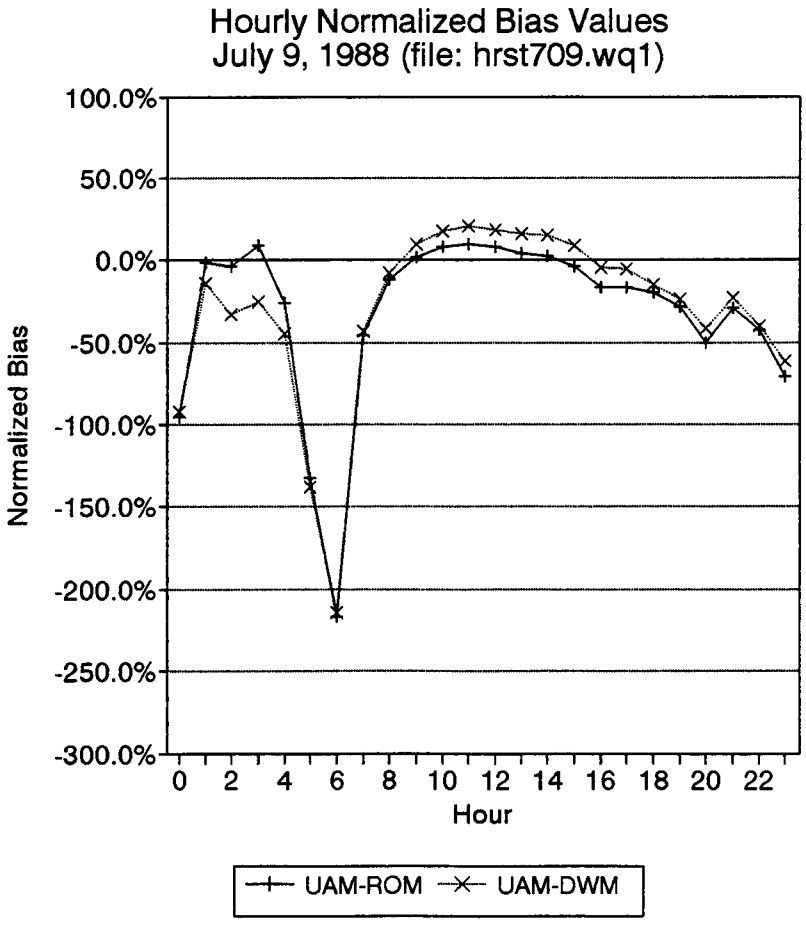


Figure 5-26. **Hourly normalized bias values for a 24 hour period on July 9, 1988.**

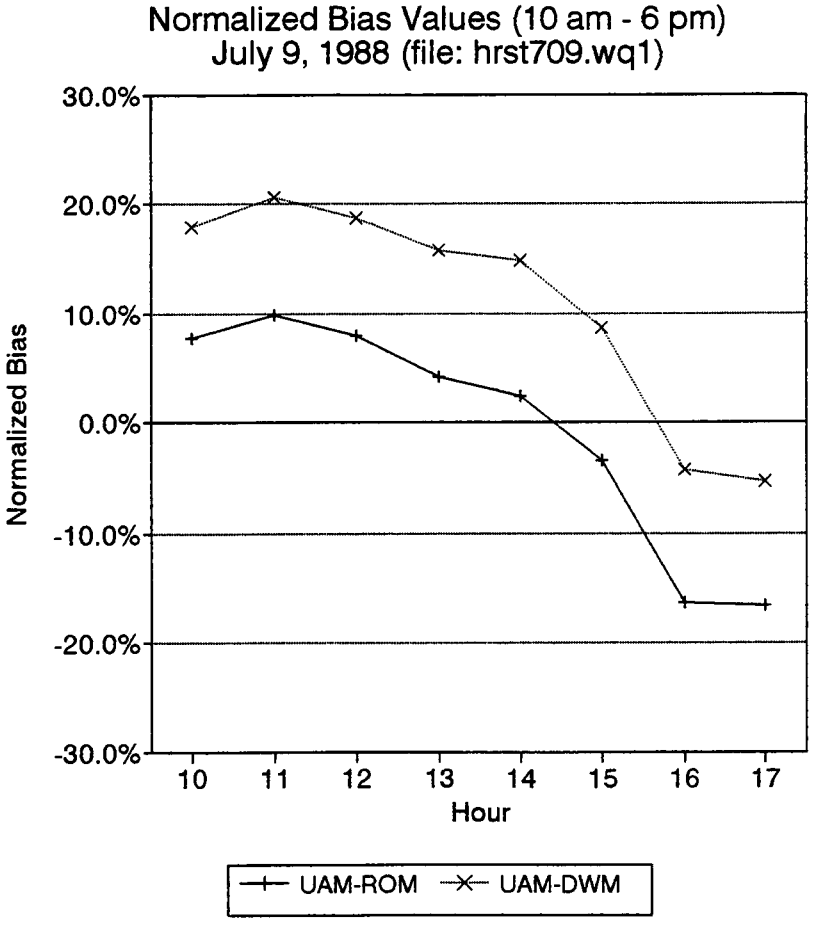


Figure 5-27. Hourly normalized bias values for 10 AM - 6 PM on July 9, 1988.

Table 5-2. **Recommended Performance Measures for the July 9, 1988 Episode Using a 10 AM - 6 PM Hour Averaging Period.**

Performance Test	UAM-ROM	UAM-DWM
Normalized Bias (recommended value of ±5-15%, for all observed values).	-0.6%	10.8%
Normalized Bias (recommended value of ±5-15% for observations values ≥0.06 ppm).	10.3%	10.2%
Gross error >60 ppb (recommended value of 30-35%).	18.5%	20.8%

values ≥0.06 ppm. It has been shown that the 24 hr normalized bias was skewed primarily by one hour of large overprediction in the model. In general, both models performed well statistically during the daytime and were able to predict sufficient ozone to explain the violation at Hendersonville.

However, the graphical 24 hour animation showed that the runs were not similar in that UAM-ROM was influenced by a combination of transport and urban effects, whereas UAM-DWM was influenced only by urban core effects. It can be said that transport was influential for the exceedance at Hendersonville on this date in the UAM-ROM run as the transport plume was seen to have ozone concentrations greater than the standard prior to passing through Nashville.

The wind analysis in section 2 showed that the DWM domain mean wind was much slower and for some hours was totally

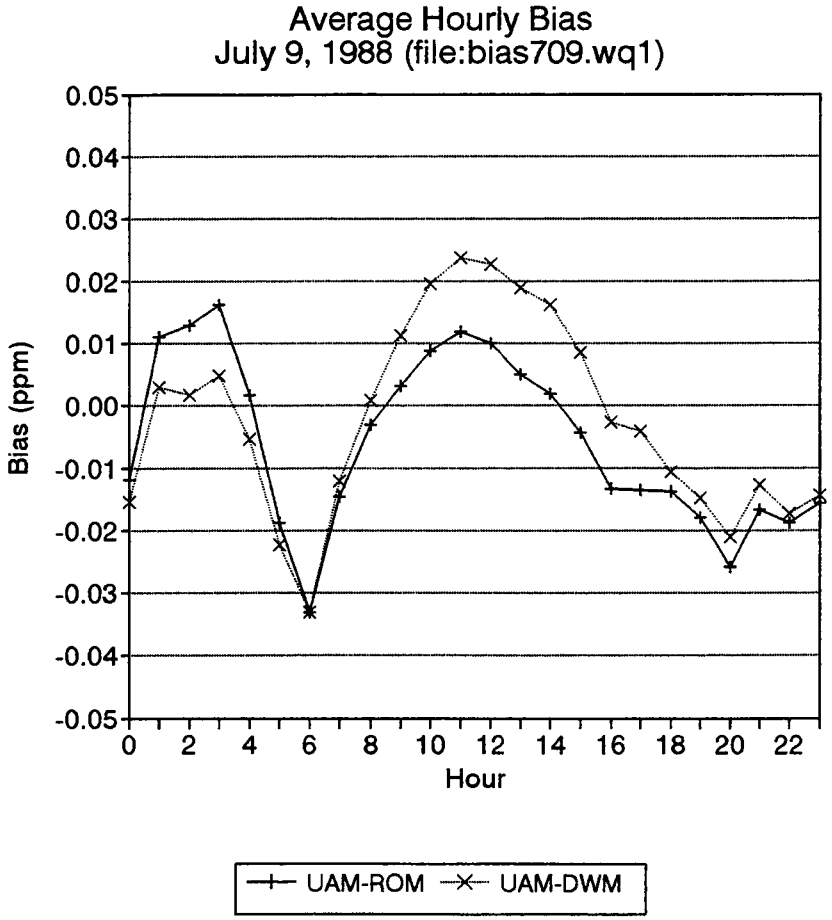


Figure 5-28. Hourly bias values for July 9, 1988.

opposite in direction to the NWS observations. This difference in UAM-DWM explains why the transport plume never reached the urban core as it did in UAM-ROM.

Section 6. August 1, 1988 Episode

1. Introduction

The July 31 - August 1, 1988 episode represents in chronological order the third of the four 1988 modeling protocol episodes that were modeled. The August 1, 1988 UAM-ROM run results when viewed as a 24 hour RASTER image file showed an urban plume being formed over the northwest Nashville metropolitan area with subsequent transport from a southeast to a northwest direction. Simultaneously, the animation sequence showed a smaller plume being formed north of a Sumner county point source (power plant) and transported parallel but separate from the urban plume. Figure 6-2 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-ROM run. The highest predicted ozone concen-tration of 0.115 ppm in Figure 6-2 occurred at 5 PM. Figure 6-1 is the ozone isopleth plot of the time period (1 PM) four hours before the predicted maximum, and Figure 6-3 is the ozone isopleth plot of the time period (9 PM) 4 hours after the predicted maximum. The highest predicted grid value was located in the urban plume and occurred in UTM grid 522 km, 4,020 km.

Figure 6-4 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-ROM run. The highest grid value of 0.115 ppm occurred in UTM grid 522 km, 4,020 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

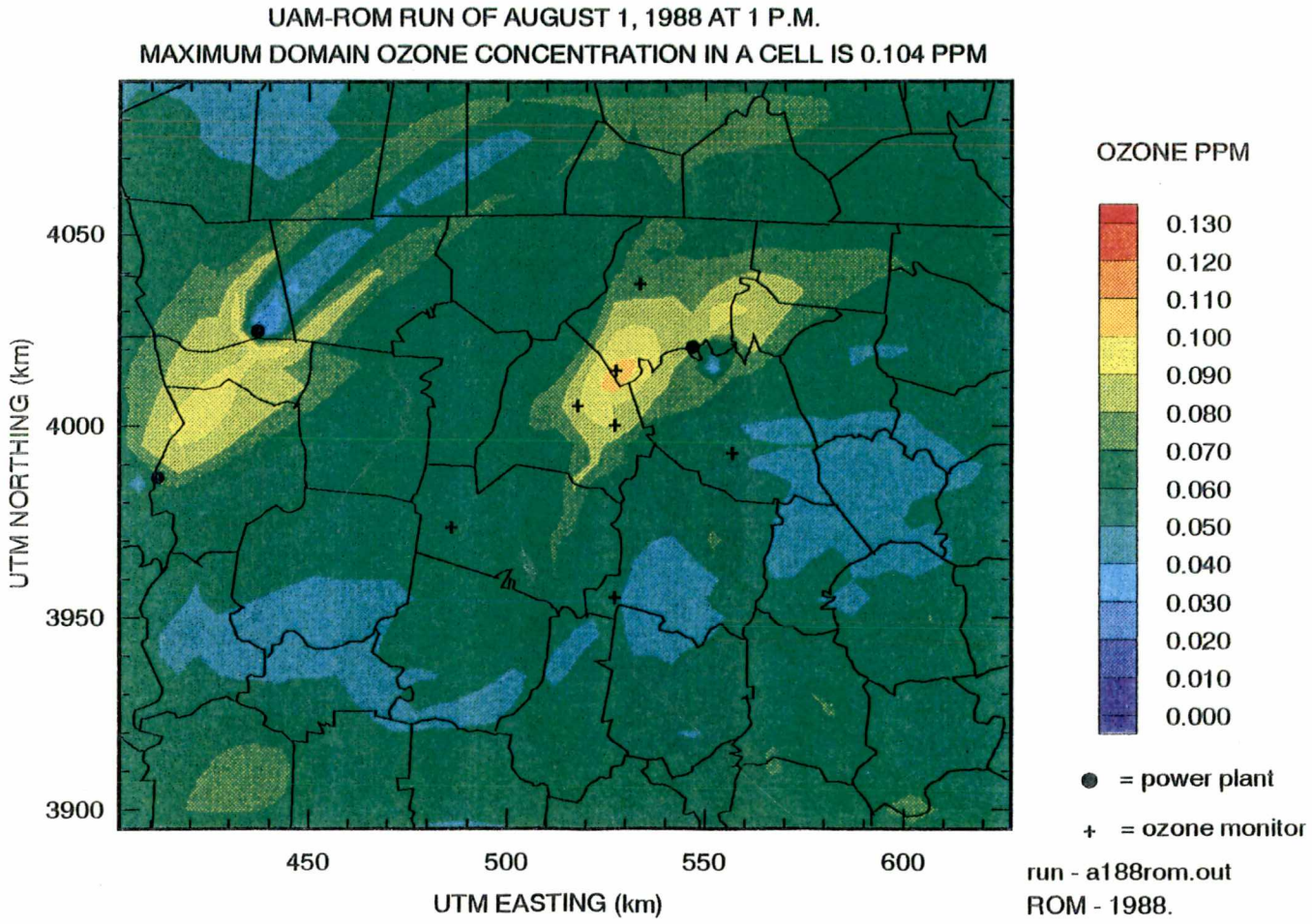


Figure 6-1. UAM-ROM ozone isopleth plot for August 1, 1988 at 1 PM.

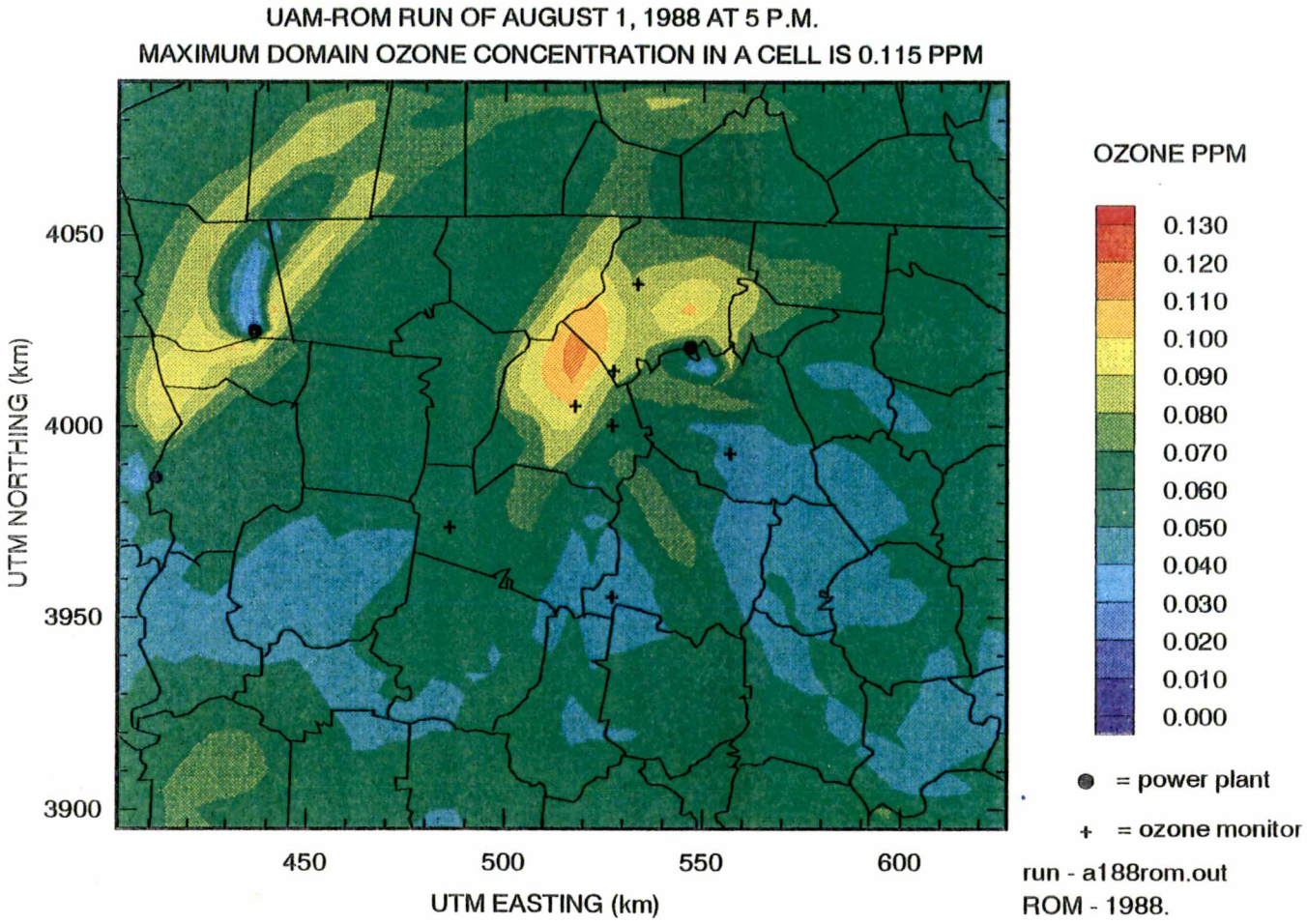


Figure 6-2. UAM-ROM ozone isopleth plot for August 1, 1988 at 5 PM.

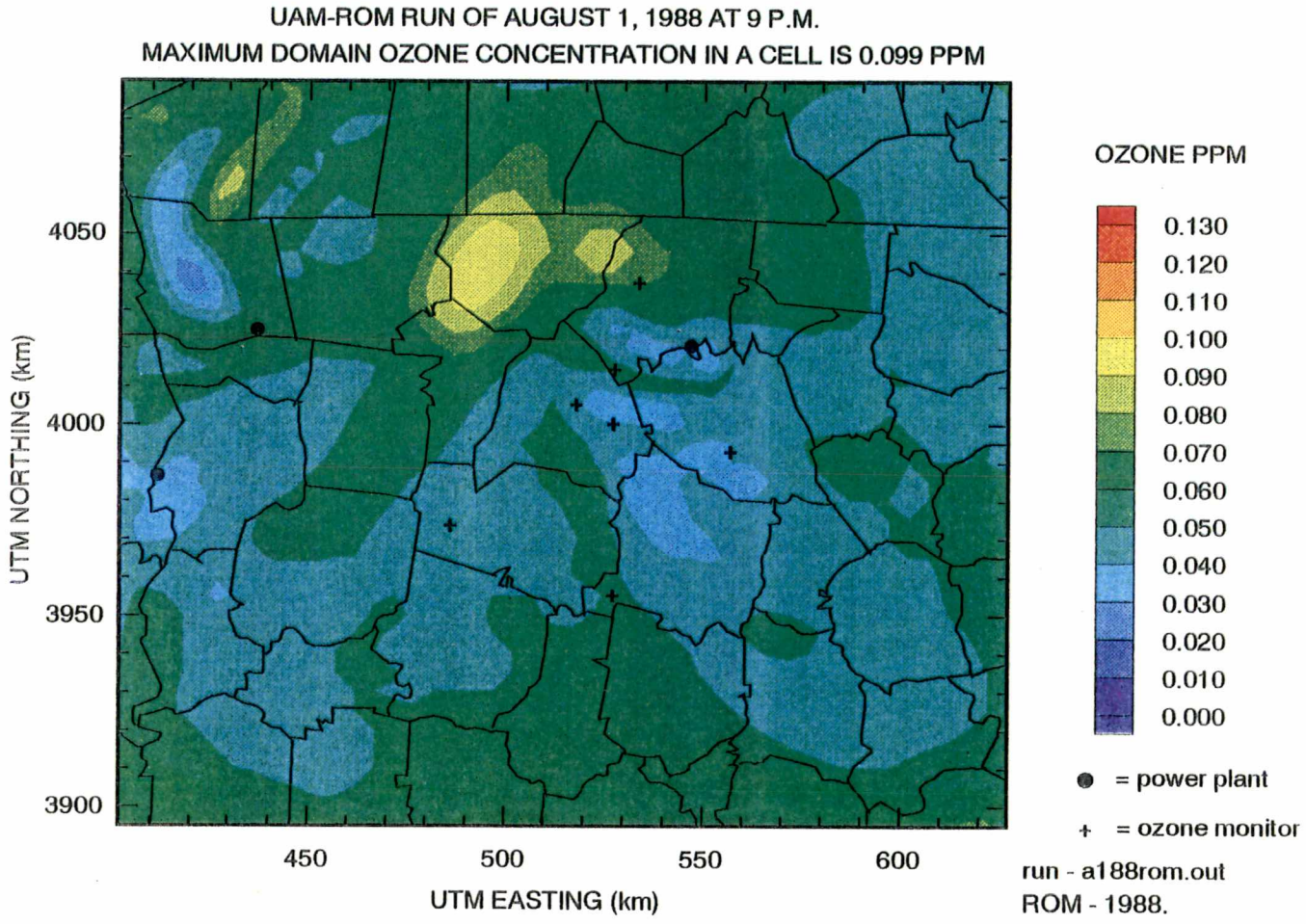


Figure 6-3. UAM-ROM ozone isopleth plot for August 1, 1988 at 9 PM.

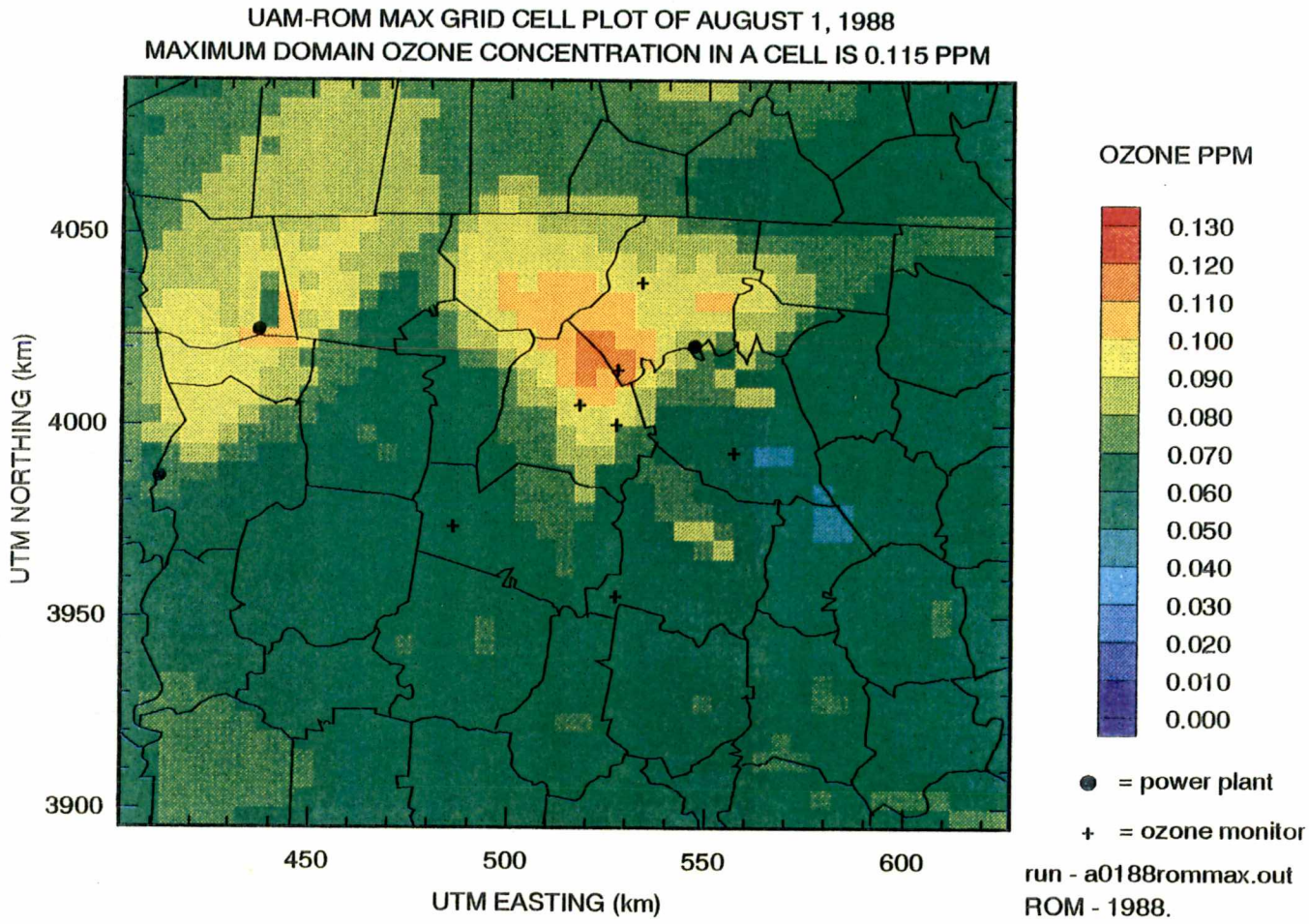


Figure 6-4. UAM-ROM maximum grid value tile plot for August 1, 1988.

The August 1, 1988 UAM-DWM run results when viewed as a 24 hour RASTER image file showed somewhat of a different pattern with the formation of a distinct urban plume minus the separate point source plume as was seen in the UAM-ROM run. The UAM-DWM urban plume subsequently was transported in a southeast to northwest direction but at a slower rate of speed than in the UAM-ROM scenario. Figure 6-6 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-DWM run. The highest predicted ozone concentration of 0.143 ppm in Figure 6-6 occurred at 5 PM. Figure 6-5 is the ozone isopleth plot of the time period (1 PM) 4 hours before the predicted maximum, and Figure 6-7 is the ozone isopleth plot of the time period (9 PM) 4 hours after the predicted maximum. The highest predicted grid value in the urban plume occurred in UTM grid 527 km, 4,010 km.

Figure 6-8 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-DWM run. The highest grid value of 0.143 ppm occurred in UTM grid 527 km, 4,010 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

2. Graphical Results

A comparison was made between the station within the MTMD measuring the peak observed ozone value and the cell within the domain which had the highest predicted urban plume value. This comparison is shown as a time series plot illustrated in

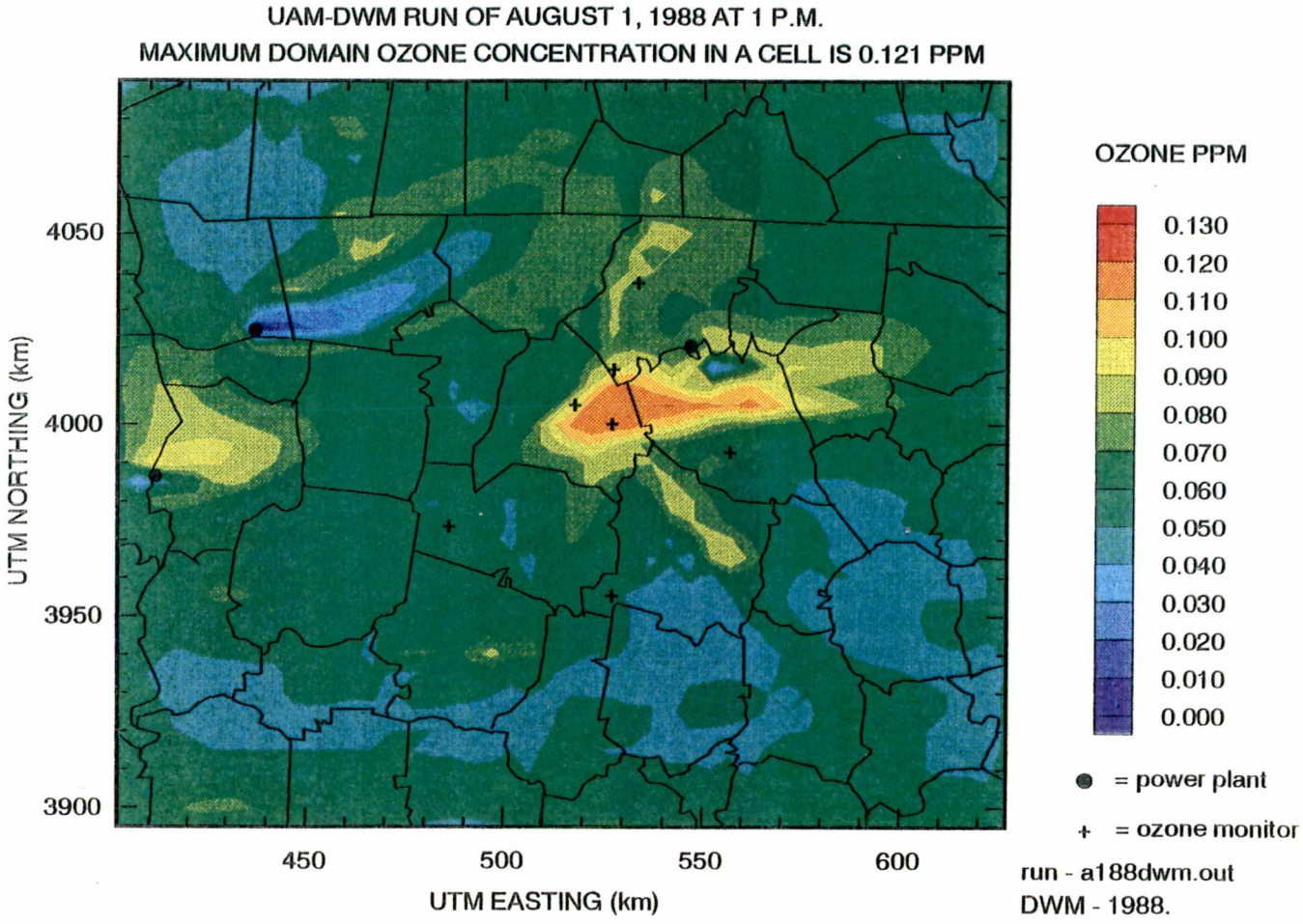


Figure 6-5. UAM-DWM ozone isopleth plot for August 1, 1988 at 1 PM.

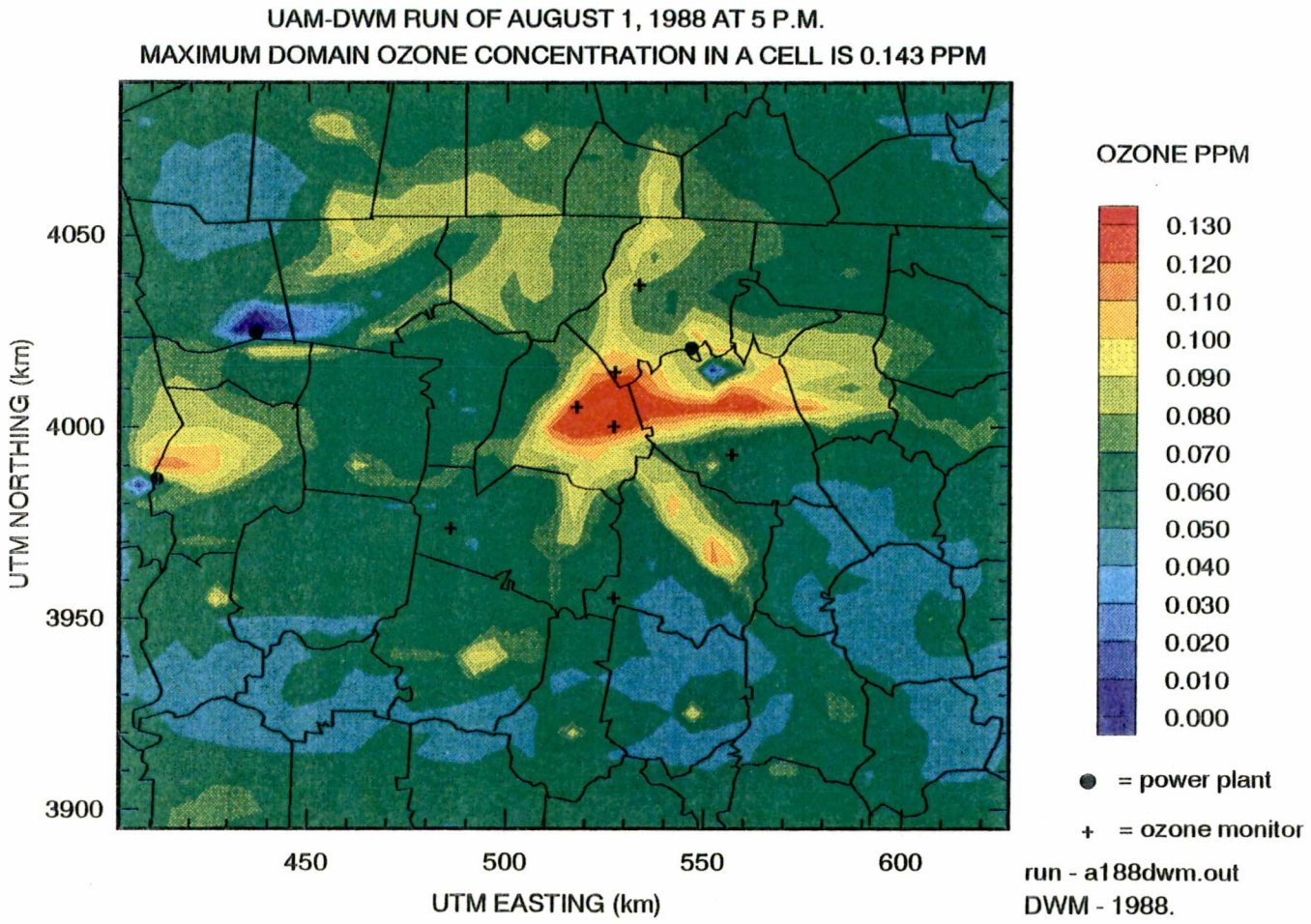


Figure 6-6. UAM-DWM ozone isopleth plot for August 1, 1988 at 5 PM.

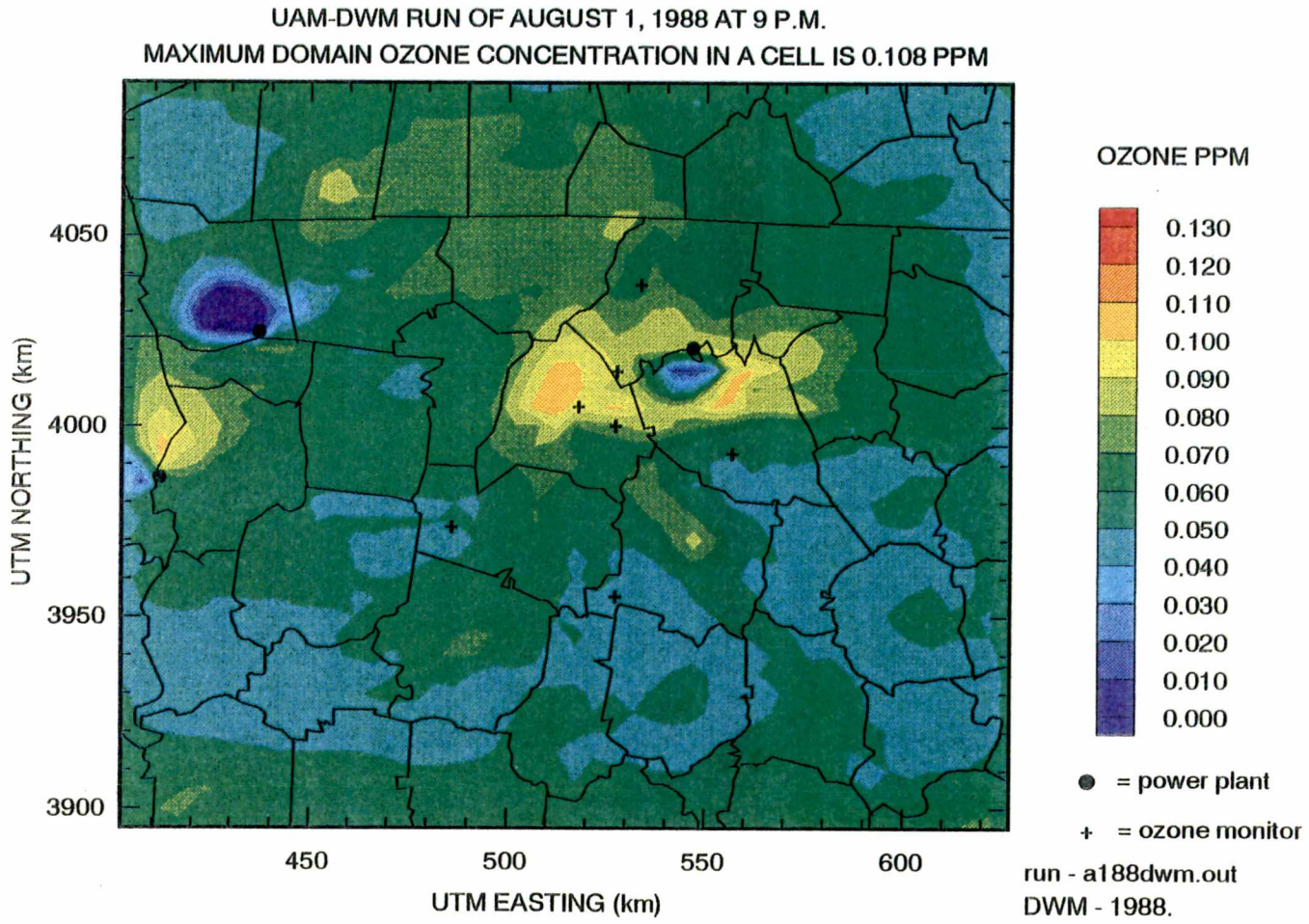


Figure 6-7. UAM-DWM ozone isopleth plot for August 1, 1988 at 9 PM.

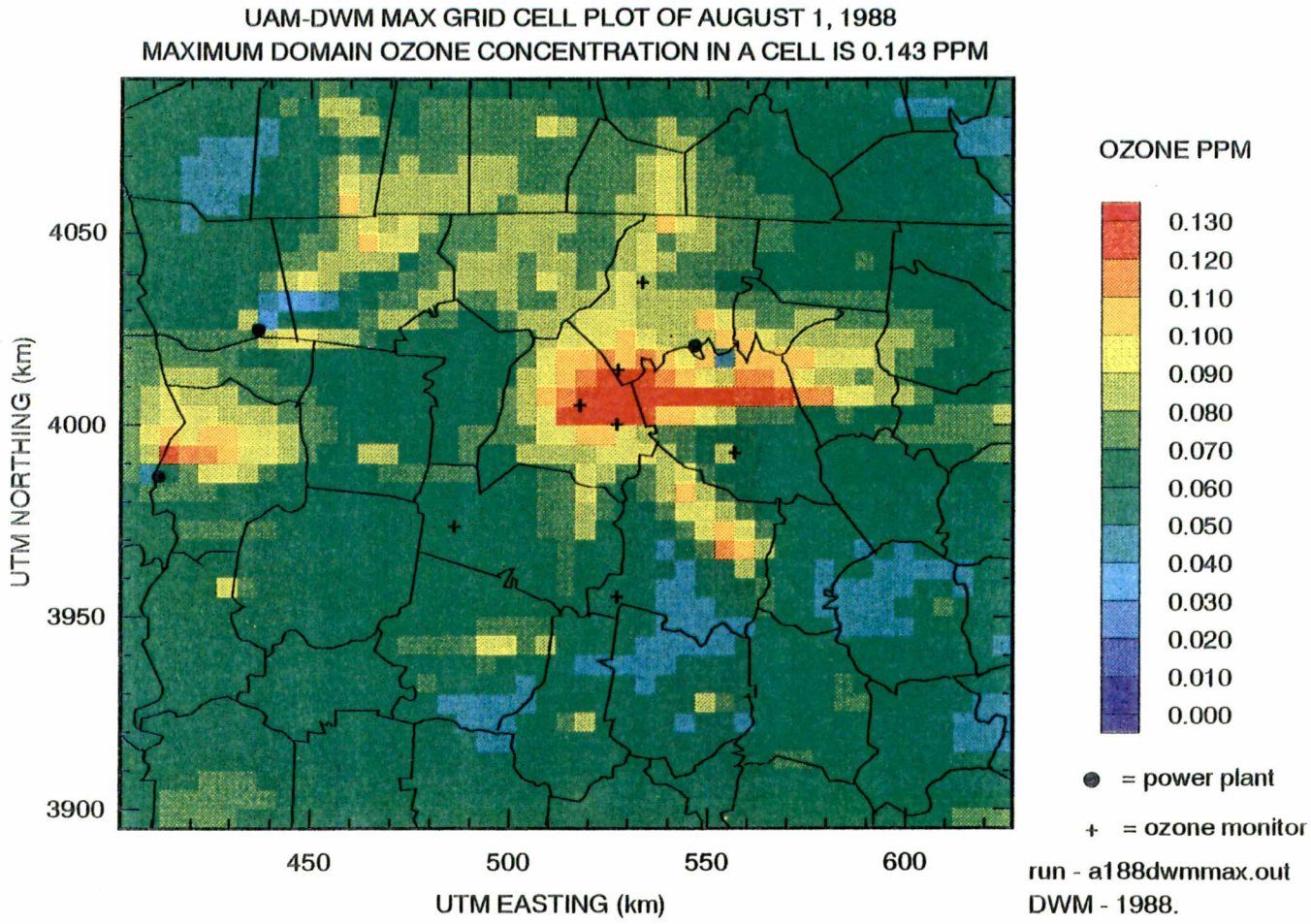


Figure 6-8. UAM-DWM maximum grid value tile plot for August 1, 1988.

Figure 6-9. The legend of shows the UTM location (given in parentheses) for both the UAM-ROM and DWM-ROM runs in which the highest grid value in the urban plume was predicted.

The purpose of this analysis was to show whether the model runs were predicting sufficient ozone formation to replicate the highest observed value regardless of a shift in the location of the urban plume caused by wind model uncertainty. Figure 6-9 shows that at the peak observed hour in the domain which occurred at the Hendersonville site at 11 AM, the UAM-ROM run underpredicted the observed peak by 23 ppb, while the UAM-DWM run overpredicted the observed peak by 5 ppb. This shows for this episode the sensitivity of the model to form more urban core ozone by slowing the wind speeds than those predicted by ROM.

Two explanations are possible why the UAM-ROM and UAM-DWM predicted maxima differed by 28 ppb. First, slower wind speeds in the UAM-DWM run would have caused less dispersion from ground level sources thereby increasing the ground level formation of ozone. Second, in the UAM-ROM run the meteorology (winds) caused the Sumner county point source plume (power plant) to be separated from the urban core plume. By decreasing the total amount of NO_x available in the urban core to form ozone, UAM-ROM formed a lower ozone concentration in the urban plume than UAM-DWM.

The next set of graphical analyses performed were time series plots of the observed value recorded at each of the

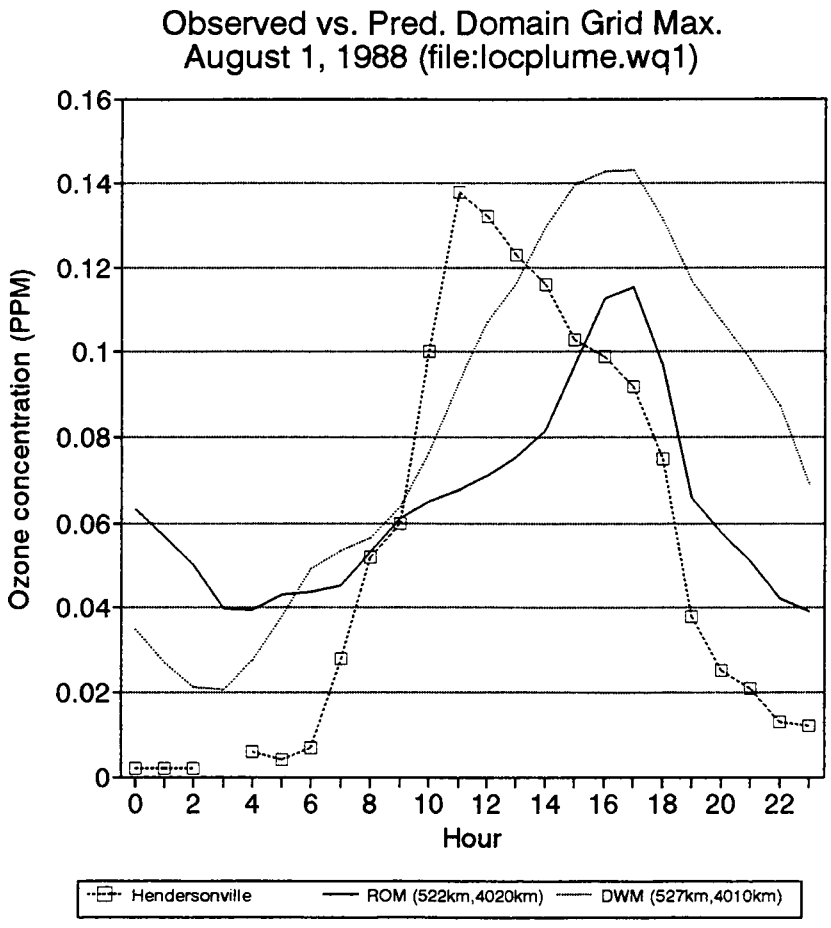


Figure 6-9. **Maximum observed vs. predicted ozone in the urban plume for August 1, 1988.**

monitoring stations which were operational on August 1, 1988 vs. the predicted value at that site for each UAM model run. The predicted values plotted in these time series plots were determined through the bilinear interpolation method. These time series plots are depicted in Figures 6-10 through 6-16.

Analysis of these data shows that UAM-DWM predicted overall higher predicted ozone values with overprediction at the East Health and Percy Priest stations. While UAM-ROM predicted less ozone than UAM-DWM, UAM-ROM in general predicted well for the stations, except at Hendersonville. The Hendersonville predicted peaks agree with each other in shape, but UAM-DWM was able to predict more ozone to better explain the violation at Hendersonville.

Figures 6-17 and 6-18 depict the correlation between the domain maximum observed value for each monitoring station vs. the domain maximum predicted value of a single grid cell for the UAM-ROM and UAM-DWM runs, respectively. The UAM-DWM run shows better agreement even considering its 5 ppb over-prediction.

Figures 6-19 and 6-20 are bias scatter plots showing the correlation between the predicted and observed values for all monitoring stations for the UAM-ROM and UAM-DWM model results, respectively. A best-fit line has been drawn through the data on both plots. The UAM-ROM scatter plot shows better agreement with the observed data, except for the Henderson-ville data where UAM-DWM performed better.

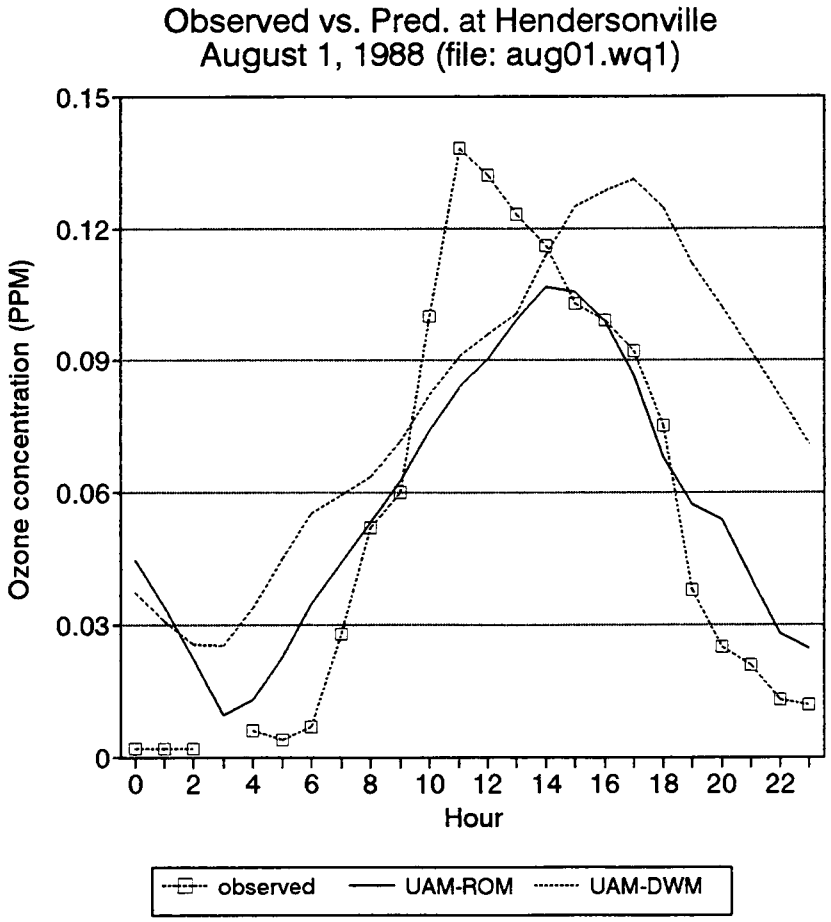


Figure 6-10. Observed vs. predicted ozone at Hendersonville for August 1, 1988.

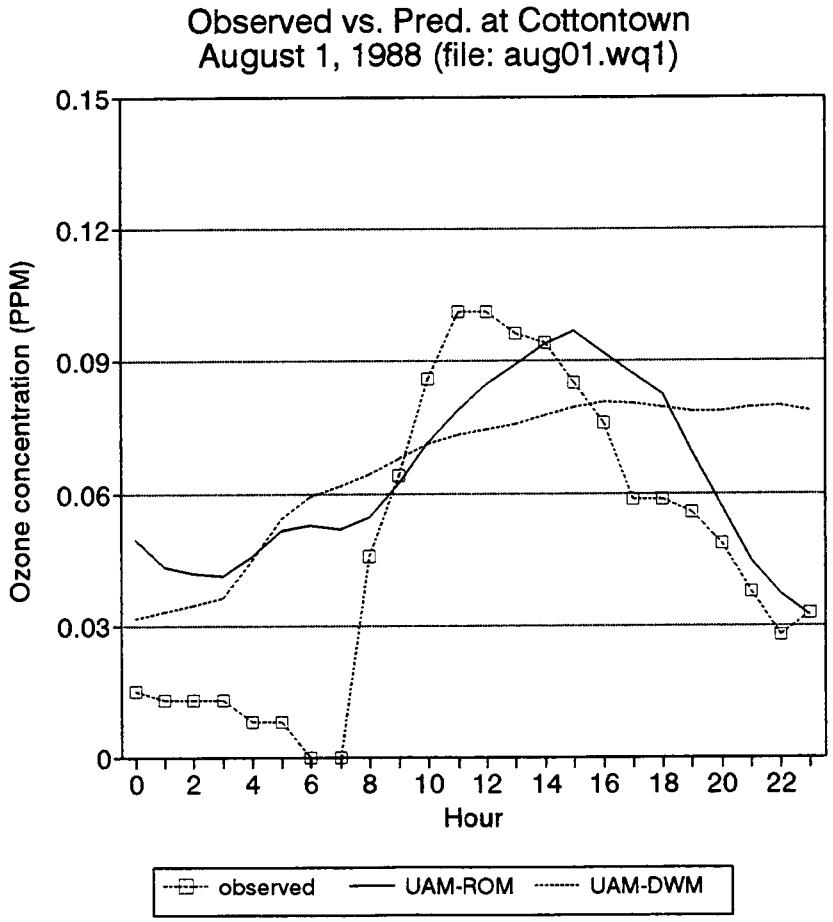


Figure 6-11. Observed vs. predicted ozone at Cottontown for August 1, 1988.

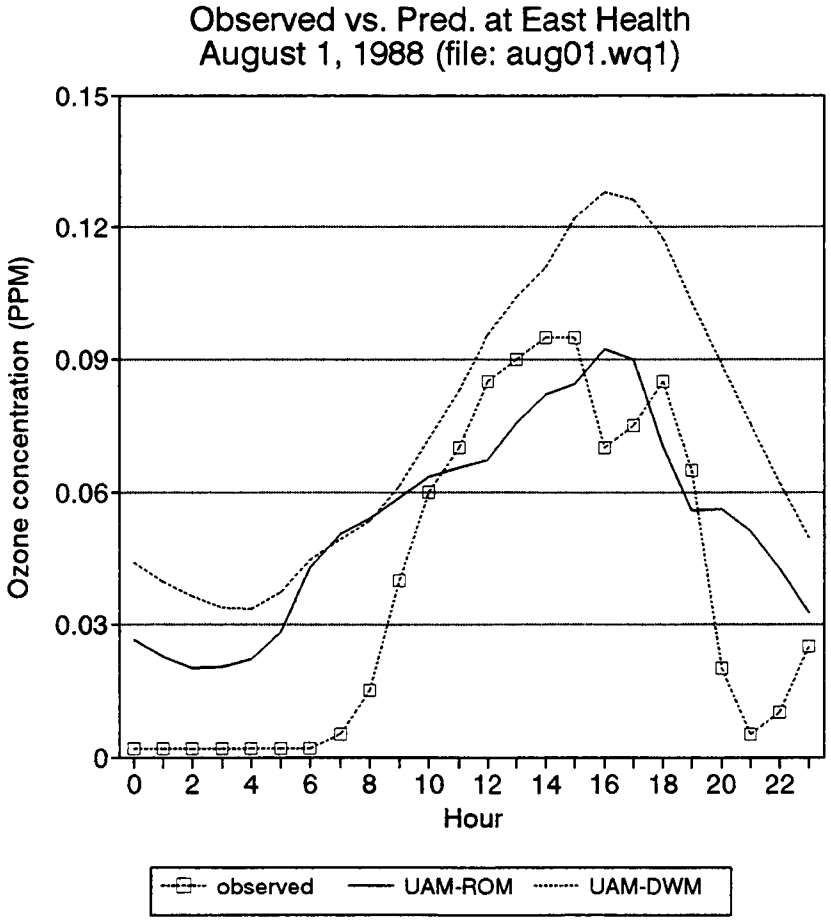


Figure 6-12. Observed vs. predicted ozone at East Health for August 1, 1988.

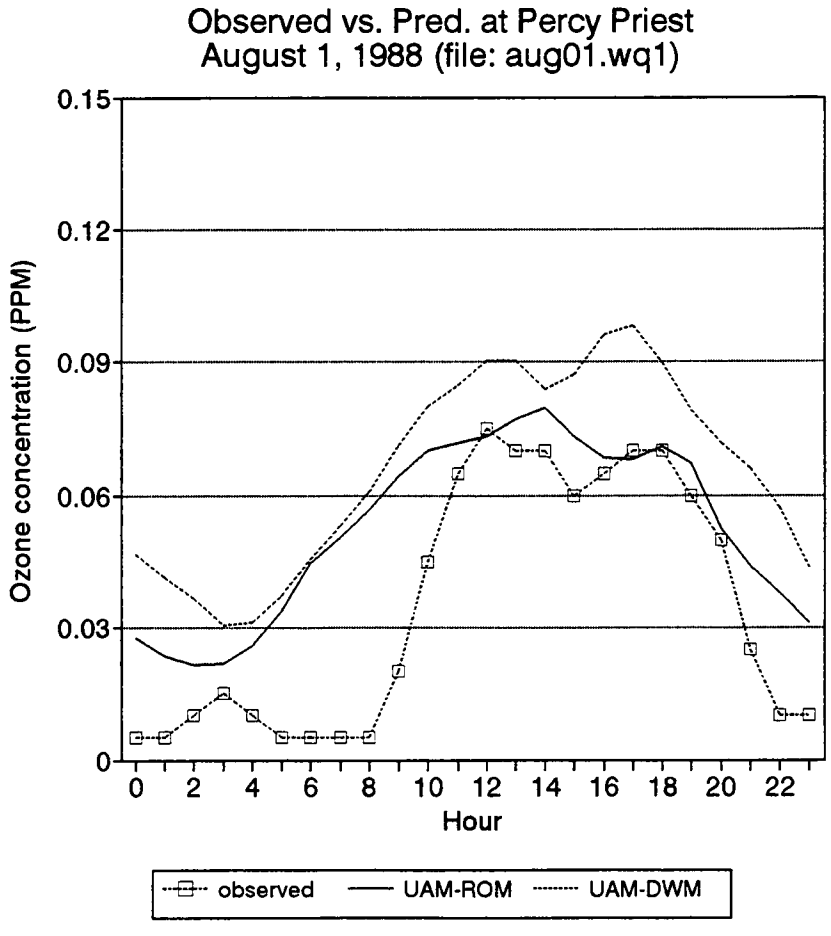


Figure 6-13. Observed vs. predicted ozone at Percy Priest for August 1, 1988.

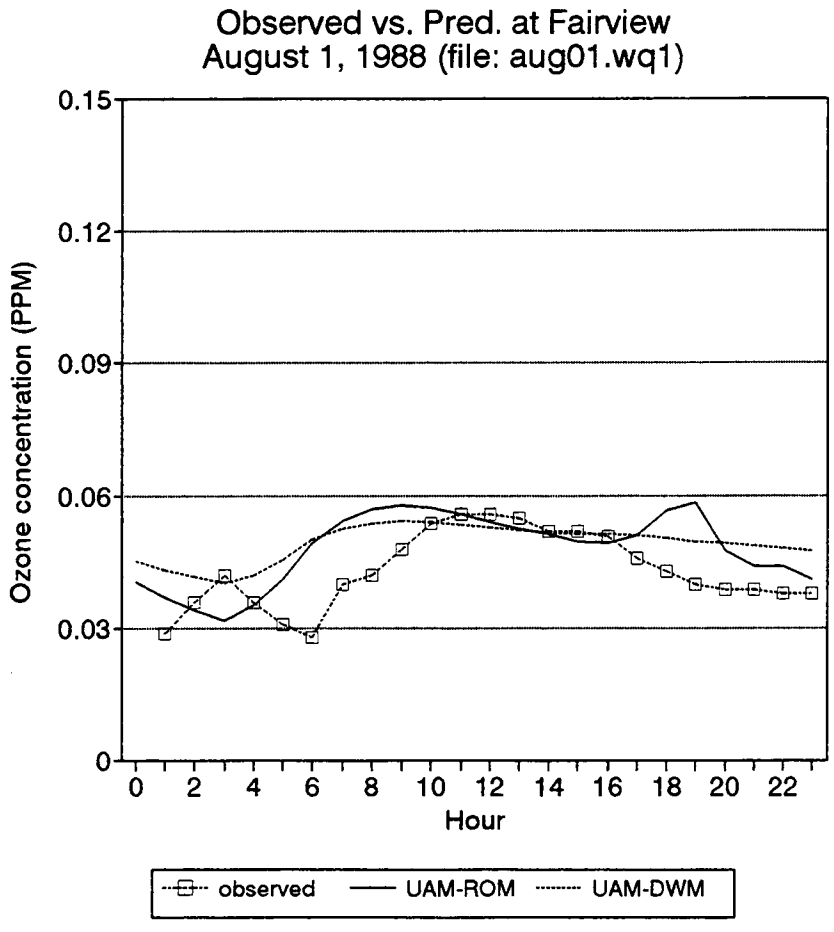


Figure 6-14. Observed vs. predicted ozone at Fairview for August 1, 1988.

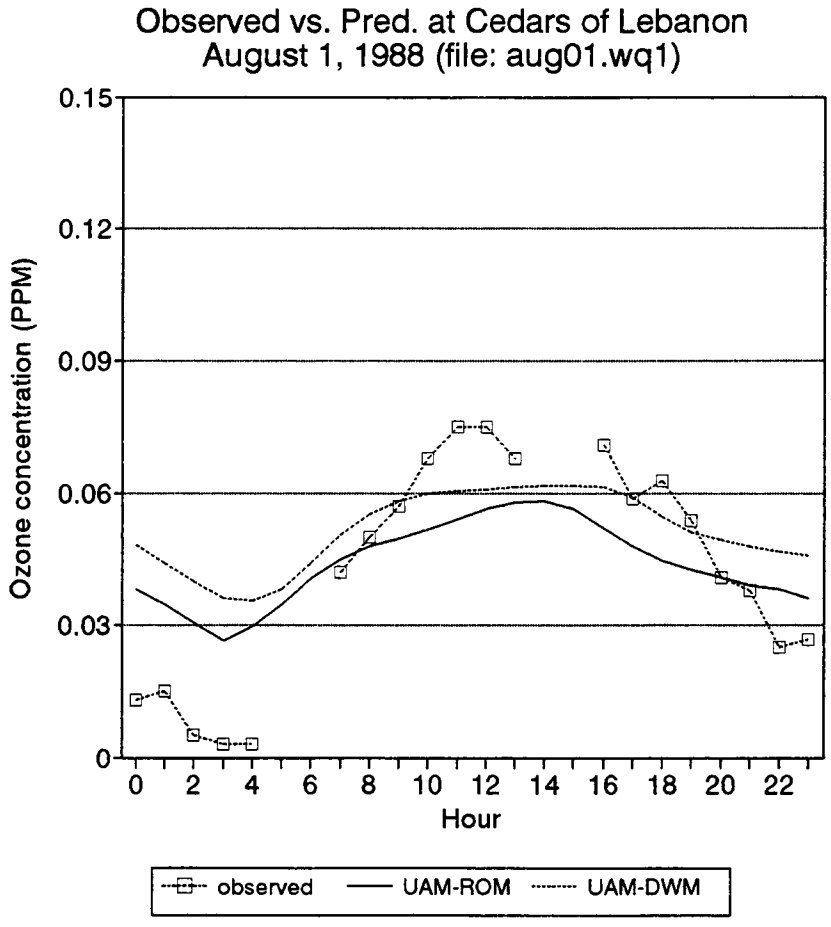


Figure 6-15. Observed vs. predicted ozone at Cedars of Lebanon for August 1, 1988.

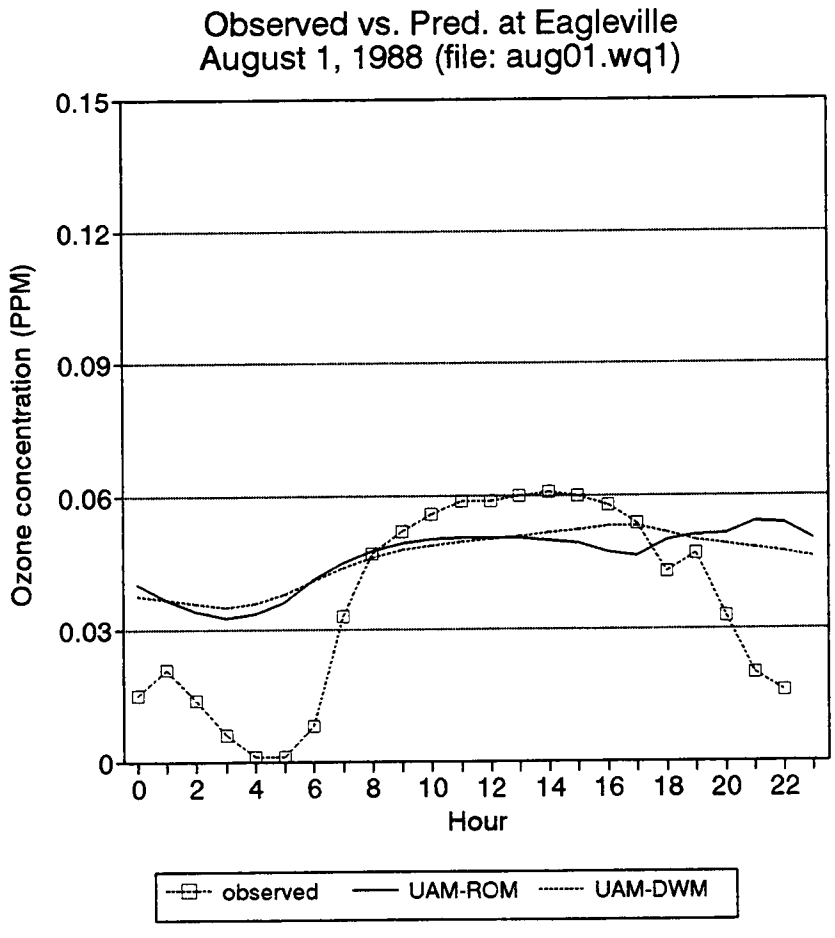


Figure 6-16. Observed vs. predicted ozone at Eagleville for August 1, 1988.

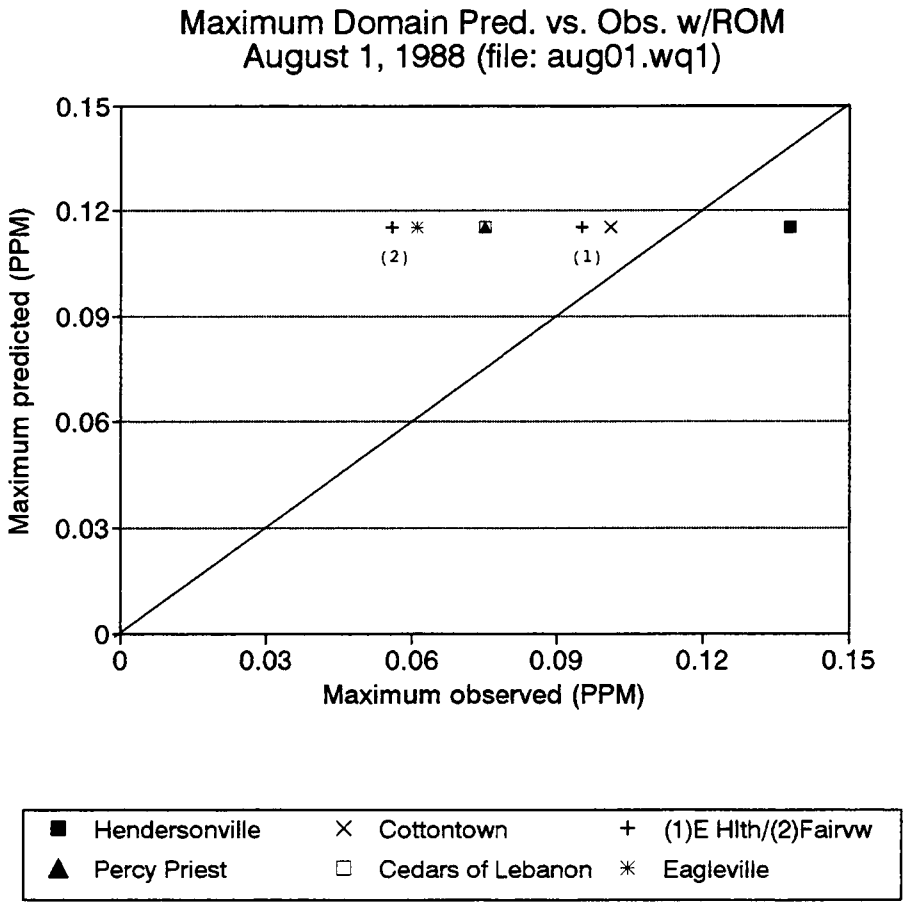


Figure 6-17. Maximum domain predicted vs. observed ozone for UAM-ROM on August 1, 1988.

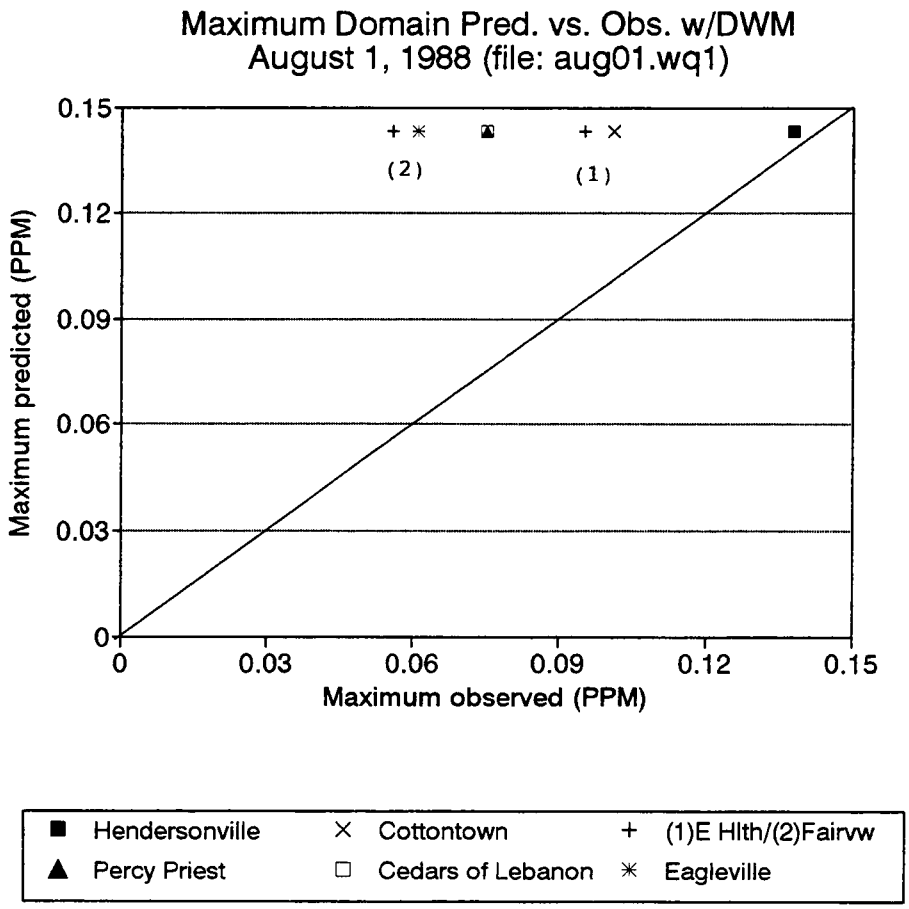


Figure 6-18. Maximum domain predicted vs. observed ozone for UAM-DWM on August 1, 1988.

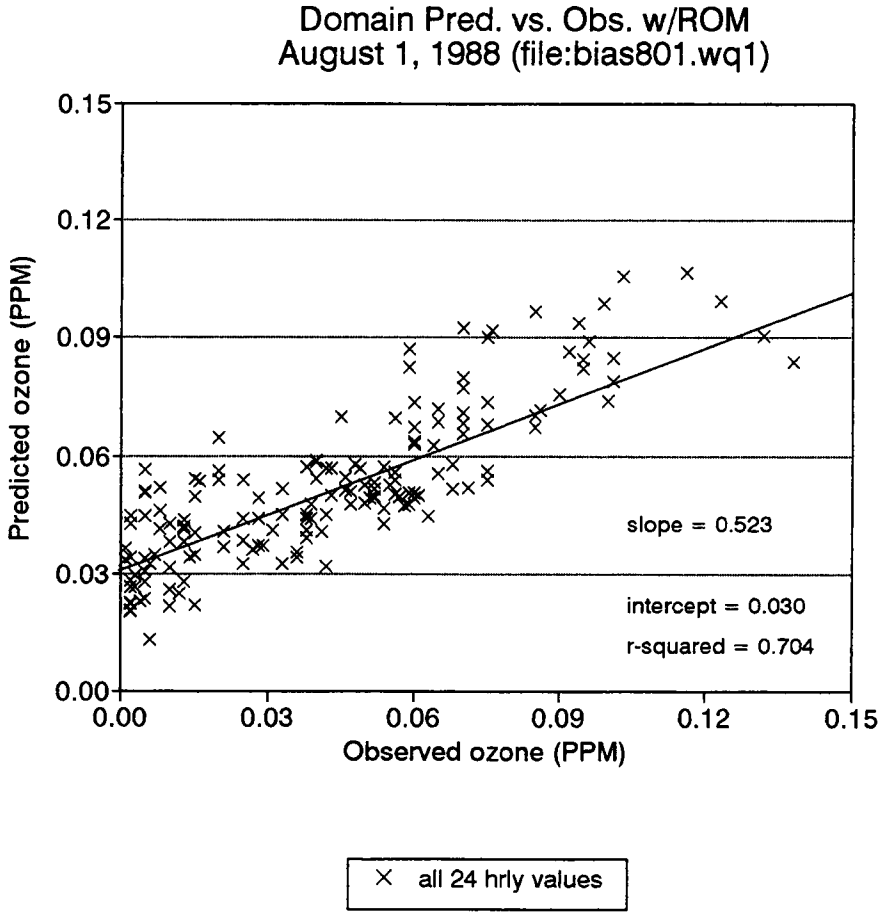


Figure 6-19. Bias scatter plot for UAM-ROM on August 1, 1988.

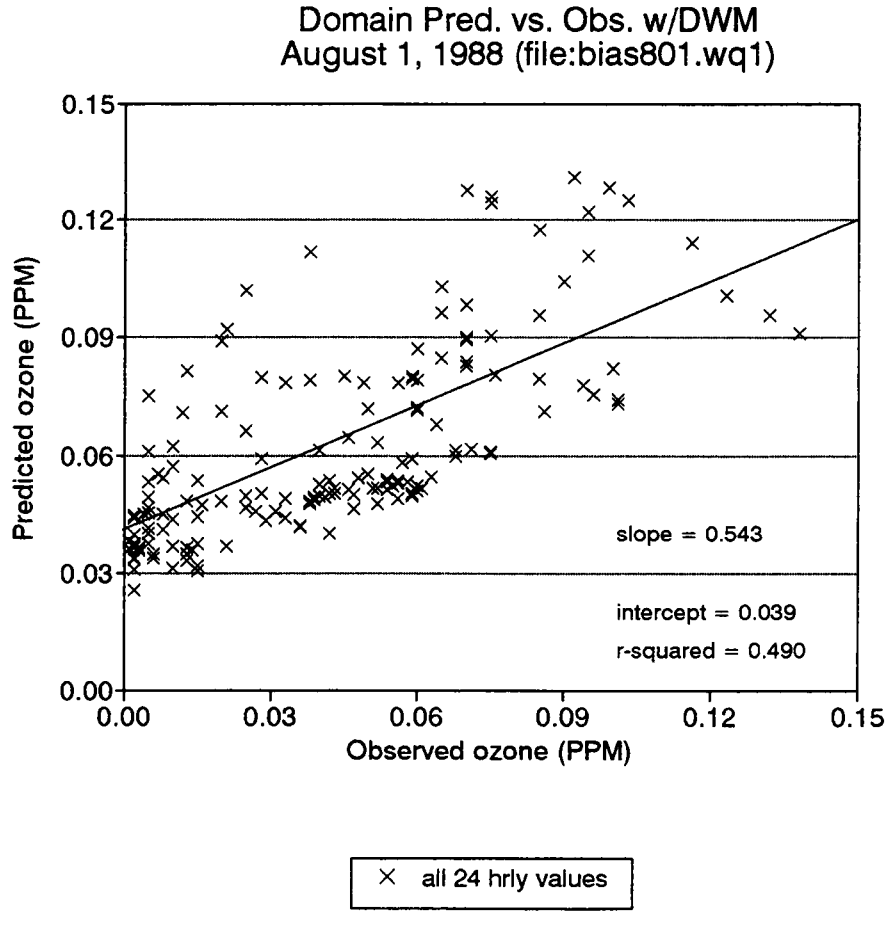


Figure 6-20. Bias scatter plot for UAM-DWM on August 1, 1988.

3. Statistical Results

The recommended performance measures results for the 24 hour primary date of August 1, 1988 are presented in Table 6-1.

Table 6-1. Recommended Performance Measures for the August 1, 1988 Episode Using a 24 Hour Averaging Period.

Performance Test	UAM-ROM	UAM-DWM
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	16.4%	-3.7%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-226.4%	-300.1%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	7.2%	-10.8%
Gross error >60 ppb (recommended value of 30-35%).	15.1%	26.1%

The 24 hour results for the primary date show that both UAM-ROM and UAM-DWM satisfy the recommended EPA criteria for the unpaired accuracy, gross error and the normalized bias (≥0.06 ppm) tests. The 24-hr normalized bias errors are large and negative indicating overprediction which was found to occur especially in the predawn hours.

Once again, the reason that the 24 hour normalized bias test value exceeded the recommended value is that at certain

predawn hours there was poor correlation between some of the monitoring station observed values and their corresponding predicted values. An example of this can be seen in Figure 6-12 for the East Health station. From midnight through 6 AM the East Health monitor recorded 2 ppb of ozone while both UAM-ROM and UAM-DWM were predicting ozone concentrations in a 20-45 ppb range with 30 ppb being the approximate average of the two. The 1 hour normalized bias value for a station with an observed value of 2 ppb and a predicted value of 30 ppb would be -1,400! Since this value would have been repeated seven times at one station alone, it is then clear to see how the normalized bias was exceeded for all seven stations in a 24 hour averaging period. However, the normalized bias for both runs falls within the EPA recommended range of ±5-15% for observed values ≥0.06 ppm. The gross error test tends to deemphasize these early morning overpredictions since the gross error test only reflects pairs with an observed value >60 ppb (mainly daytime observations).

Just like the July 9, 1988 episode, results from the ROM performance document are presented here to show that ROM at times predicted poorly for the monitors surrounding the Nashville nonattainment counties. Although none of the ozone monitors in the MTMD were evaluated in the ROM performance evaluation, an understanding of ROM's tendency to overpredict in the morning hours near the MTMD helps to explain the exceedance of the recommended criteria in the normalized bias

test. The ROM performance evaluation results for the August 1, 1988 episode are shown in Figures 6-21 through 6-23.

Figure 6-24 shows for UAM-ROM that at 4 AM the ROM boundary concentrations were generally in the range of 40-60 ppb of ozone. Since UAM-DWM used the same ROM boundary values as UAM-ROM, both UAM runs would tend to have large negative normalized bias values during some of the predawn hours.

Hourly plots of the gross error and normalized bias values for August 1, 1988 were performed in order to determine when the model performed poorly. The hourly gross error values for the 24 hour period are shown in Figure 6-25, and the 8 hour period values for the 10 AM - 6 PM time frame are shown in Figure 6-26. Figure 6-25 shows that at 6 AM the hourly gross error average was above 1000% for both UAM runs, but by 9 AM the hourly values dropped off eventually stabilizing in a 10-30% value range as shown in Figure 6-26.

Since the regulatory guidance states that all observed pairs <60 ppb are not considered in the gross error statistical evaluation, essentially all predawn large gross error values will not be weighted in the 24 hr average. But Figures 6-25 and 6-26 clearly show that the model performance during nondaytime hours was at times unsatisfactory because of the discrepancy between relatively higher ROM boundary ozone concentration values and their relatively lower observed ozone values.

The hourly normalized bias values for the 24 hour period

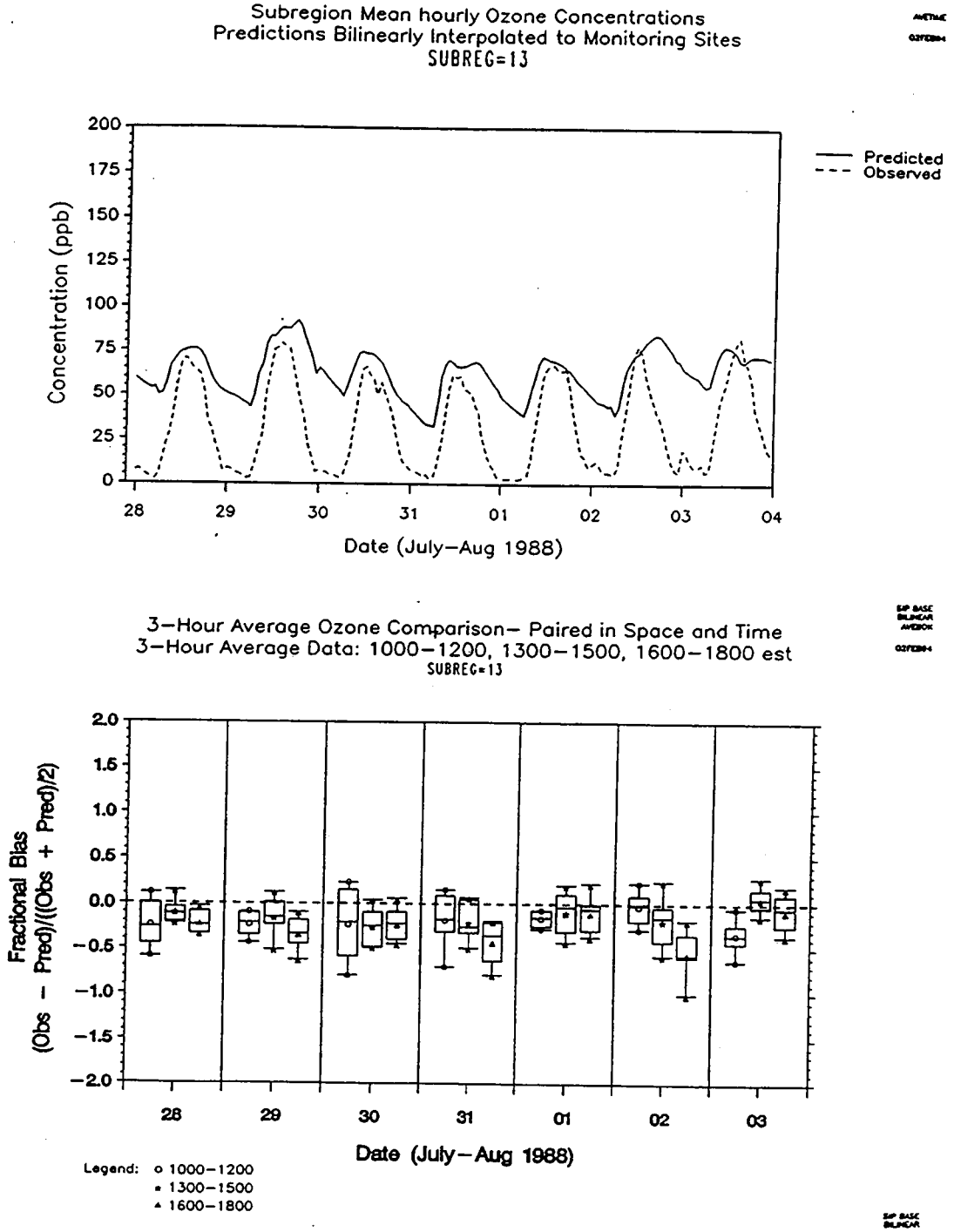


Figure 6-21. ROM performance results for subregion no. 13 on August 1, 1988.

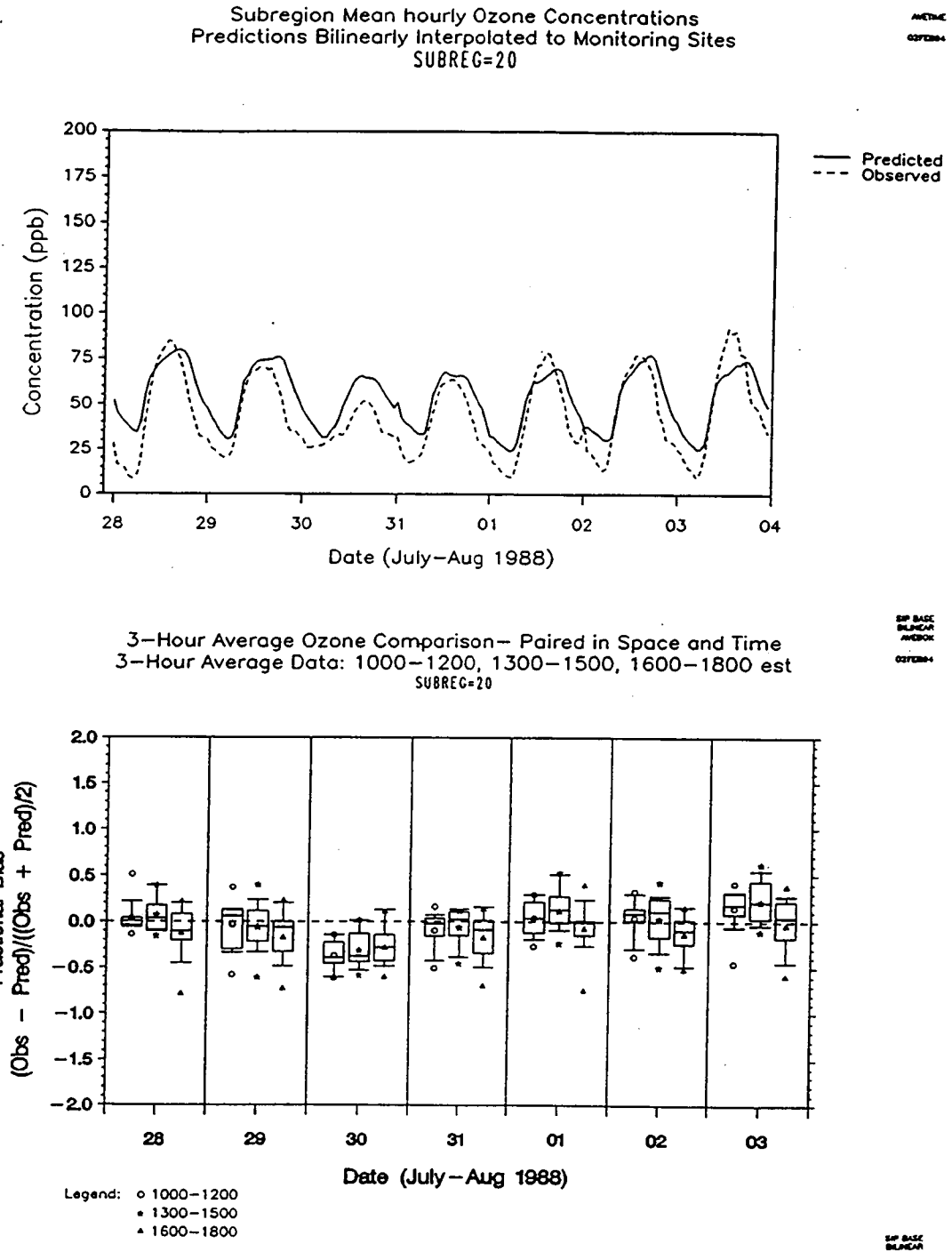


Figure 6-22. ROM performance results for subregion no. 20 on August 1, 1988.

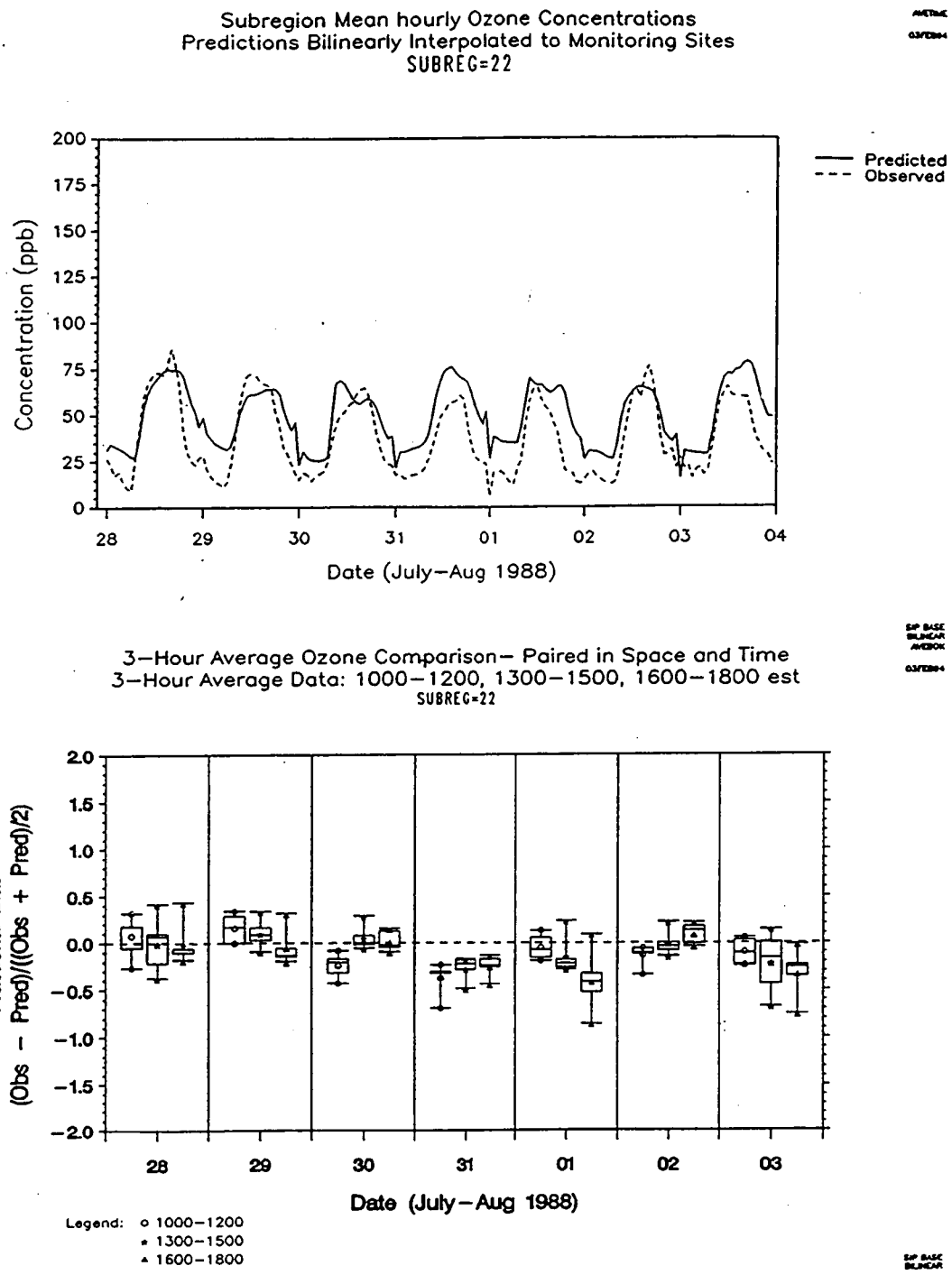


Figure 6-23. ROM performance results for subregion no. 22 on August 1, 1988.

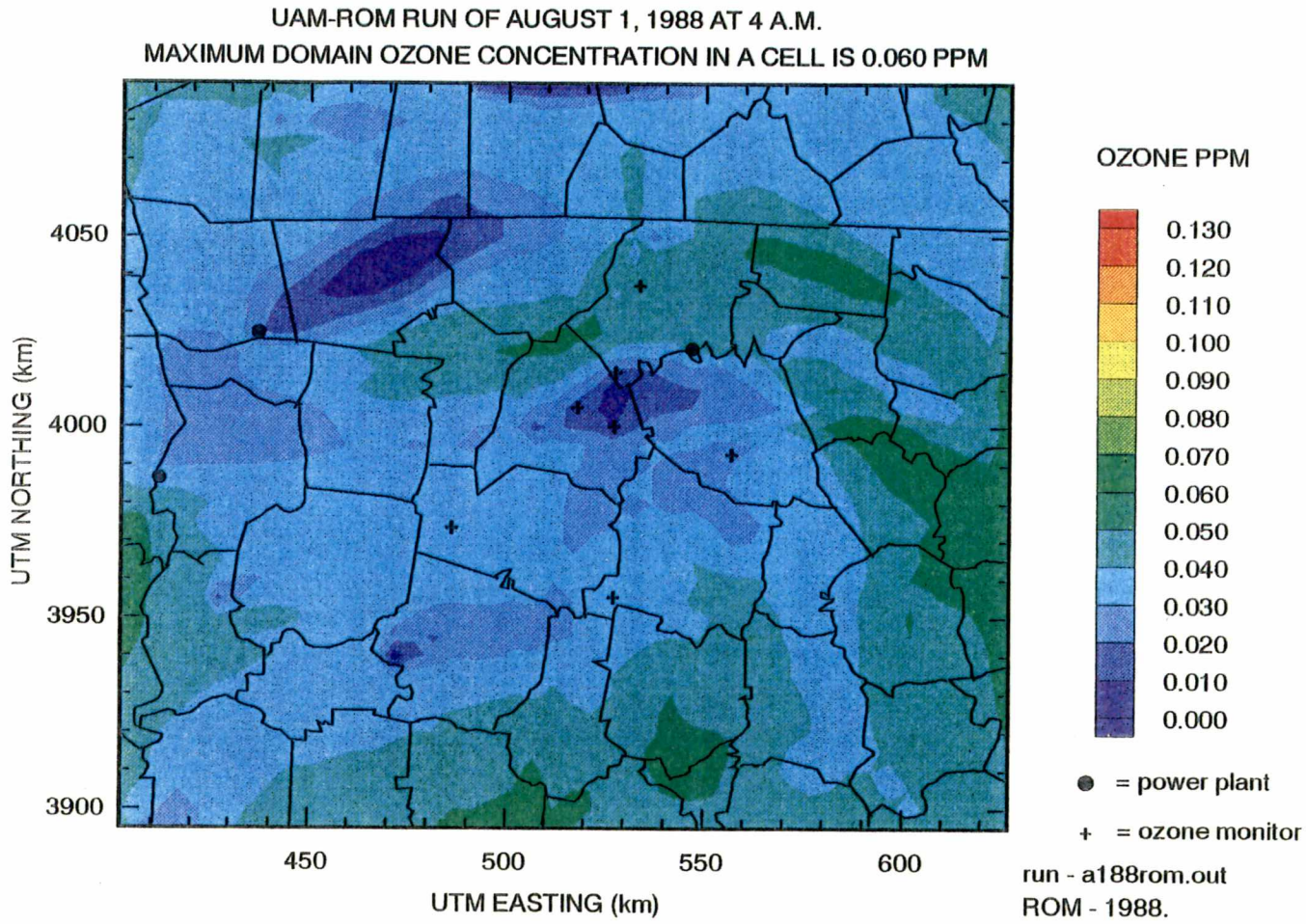


Figure 6-24. Ozone isopleth plot of UAM-ROM for August 1, 1988 at 4 AM.

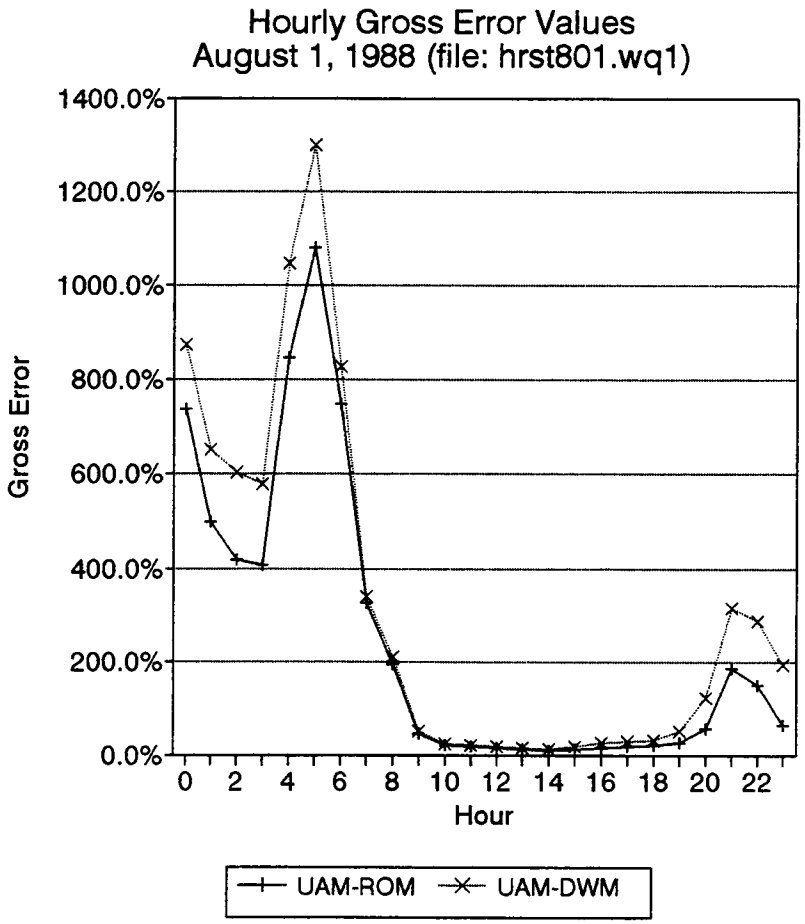


Figure 6-25. Hourly gross error values for a 24 hour period on August 1, 1988.

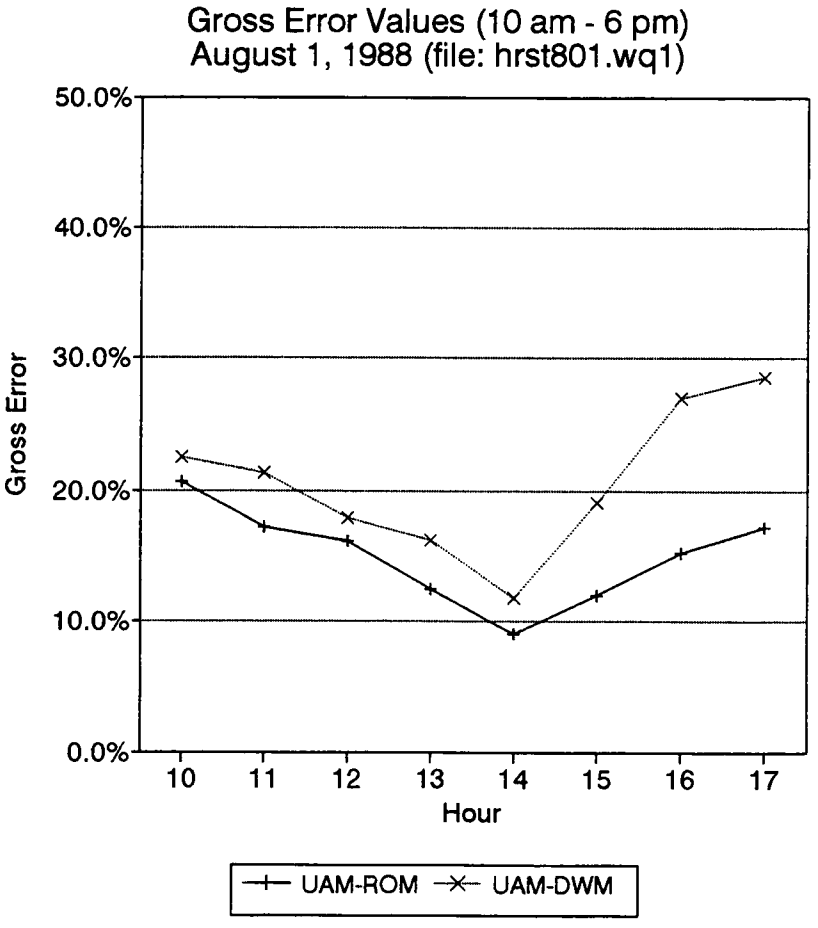


Figure 6-26. Hourly gross error values for 10 AM - 6 PM on August 1, 1988.

are shown in Figure 6-27, and the 8 hour period values for the 10 AM - 6 PM time frame are shown in Figure 6-28. Figure 6-27 shows that at 5 AM the hourly normalized bias value was more negative than -1,000% for both UAM runs, but by 9 AM the hourly values increased eventually stabilizing to a -30 to +20% value range as shown in Figure 6-28. Since the recommended normalized bias value range is ±5-15%, the results show that neither UAM model run could meet the normalized bias recommended criteria for a 24 hour period due to most of the prenoon hours in which the model overpredicted. This is not the case when observed values ≤59 ppb are discarded from the analysis.

The recommended performance measures results for the 10 AM - 6 PM period of August 1, 1988 are presented in Table 6-2.

Table 6-2. Recommended Performance Measures for the July 9, 1988 Episode Using a 10 AM - 6 PM Hour Averaging Period.

Performance Test	UAM-ROM	UAM-DWM
Normalized Bias (recommended value of ±5-15%, for all observed values).	4.9%	-6.0%
Normalized Bias (recommended value of ±5-15% for observations values ≥0.06 ppm).	7.3%	-6.9%
Gross error >60 ppb (recommended value of 30-35%).	15.6%	24.5%

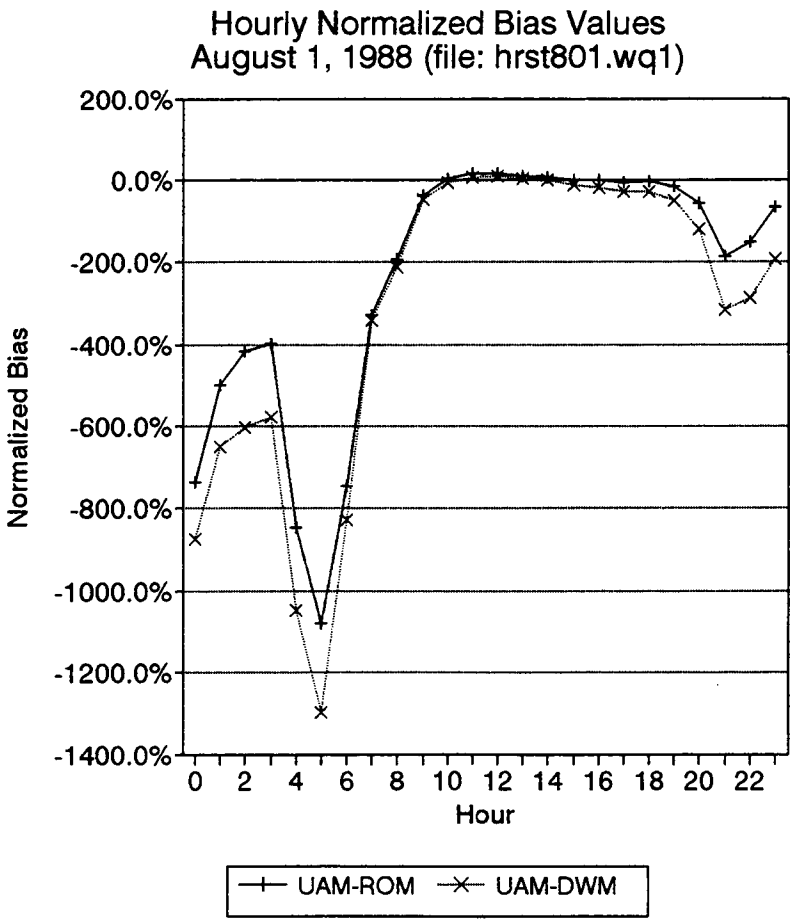


Figure 6-27. Hourly normalized bias values for a 24 hour period on August 1, 1988.

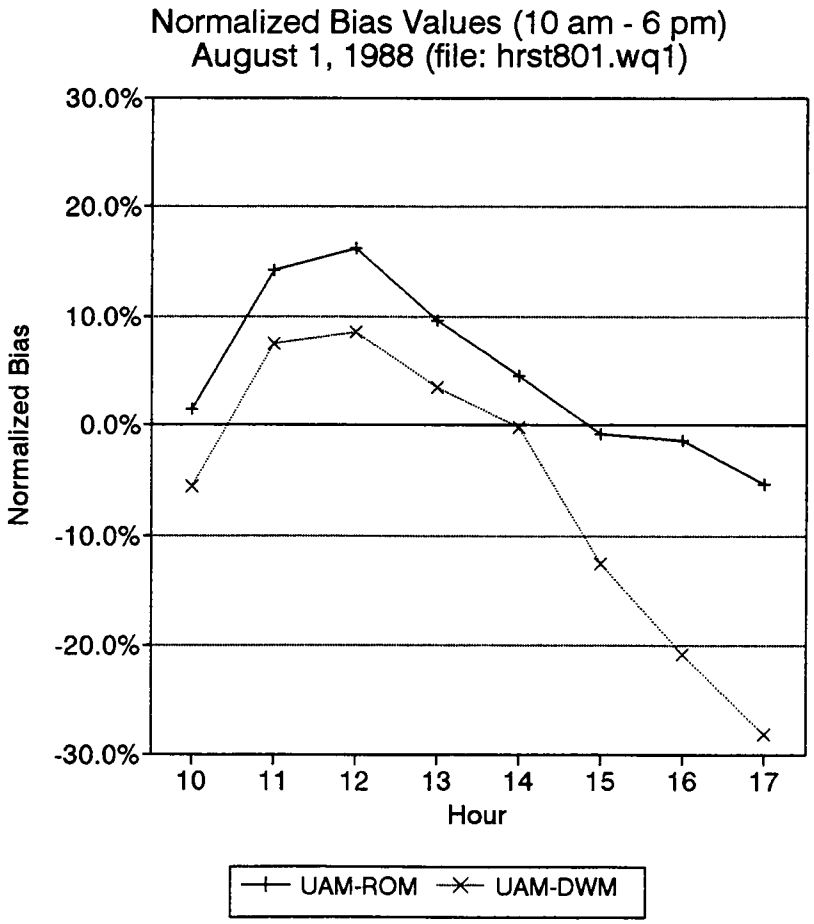


Figure 6-28. Hourly normalized bias values for 10 AM - 6 PM on August 1, 1988.

Finally, the average hourly bias was calculated and is presented in Figure 6-29 for both runs. It is of interest to note that both runs plotted a similar hourly profile of bias even though the urban core plume was split into two with the faster UAM-ROM winds. The average hourly bias plot is perhaps a better comparison than the hourly normalized bias plot because a 30 ppb relative error (6 AM) would appear much more severe plotting as a -1,000% error on a hourly normalized bias plot!

4. Conclusions for August 1, 1988

The UAM-ROM and UAM-DWM runs showed acceptable performance by EPA criteria for the unpaired highest-prediction accuracy, gross error and normalized bias (≥0.06 ppm) tests.

Overall, UAM-ROM generally performed better than UAM-DWM except at the Hendersonville station. UAM-DWM appeared to predict higher ozone concentration to account for the Hendersonville peak because of slow winds that tended to decrease the dispersion of ground level sources. Also, UAM-DWM winds kept a power plant's emissions merged in the urban plume unlike UAM-ROM where a split occurred. The split in the UAM-ROM urban plumes (two) resulted in lower predicted ozone values because less NO_x would have been available to form ozone. Using the DWM windfields for this episode provided the ability to see the sensitivity of the model to slower wind speeds not shearing off an urban plume into two plumes.

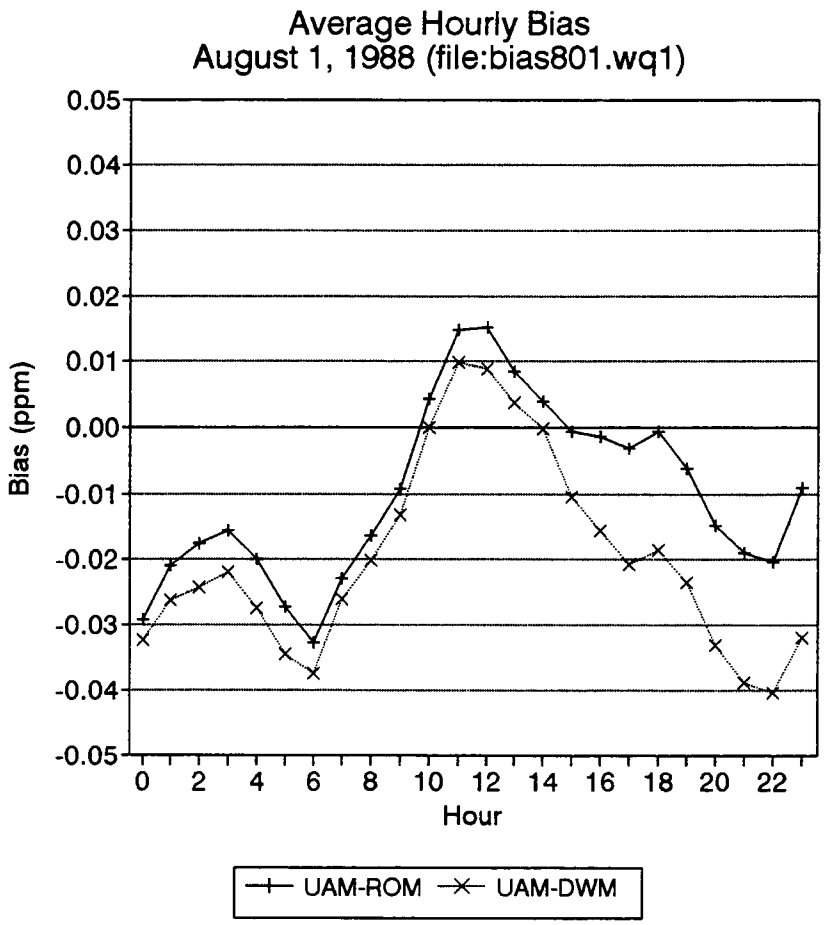


Figure 6-29. Hourly bias values for August 1, 1988.

Although UAM-DWM predicted sufficient ozone to account for the violation at Hendersonville, its average calculated wind speed was found to differ significantly from NWS observations made at the some location. Therefore, UAM-ROM is deemed to be the a more suitable candidate for validation consideration for the August 1, 1988 episode.

Section 7. August 3, 1988 Episode

1. Introduction

The August 2-3, 1988 episode represents in chronological order the fourth of the four 1988 modeling protocol episodes that were modeled. This episode was selected because it exhibited poorly defined flow or stagnation.

The August 3, 1988 UAM-ROM run results when viewed as a 24 hour RASTER image file initially showed a transport plume entering in from the eastern domain boundary moving westward towards Williamson county. Prior to noon, the transport plume diminished and began to retreat at which time the urban core plume formed over downtown Nashville. Eventually, the urban core plume moved away from downtown Nashville in a northeast to southwest direction. A ROM domain animation for this period showed that the transport plume appeared to originate from just west of the Knoxville area where two large point sources exist (power plants).

Figure 7-2 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-ROM run. The highest predicted ozone concentration of 0.132 ppm in Figure 7-2 occurred at 4 PM. Figure 7-1 is the ozone isopleth plot of the time period (12 PM) 4 hours before the predicted maximum, and Figure 7-3 is the ozone isopleth plot of the time period (8 PM) 4 hours after the predicted maximum.

The highest predicted grid value was located in the urban

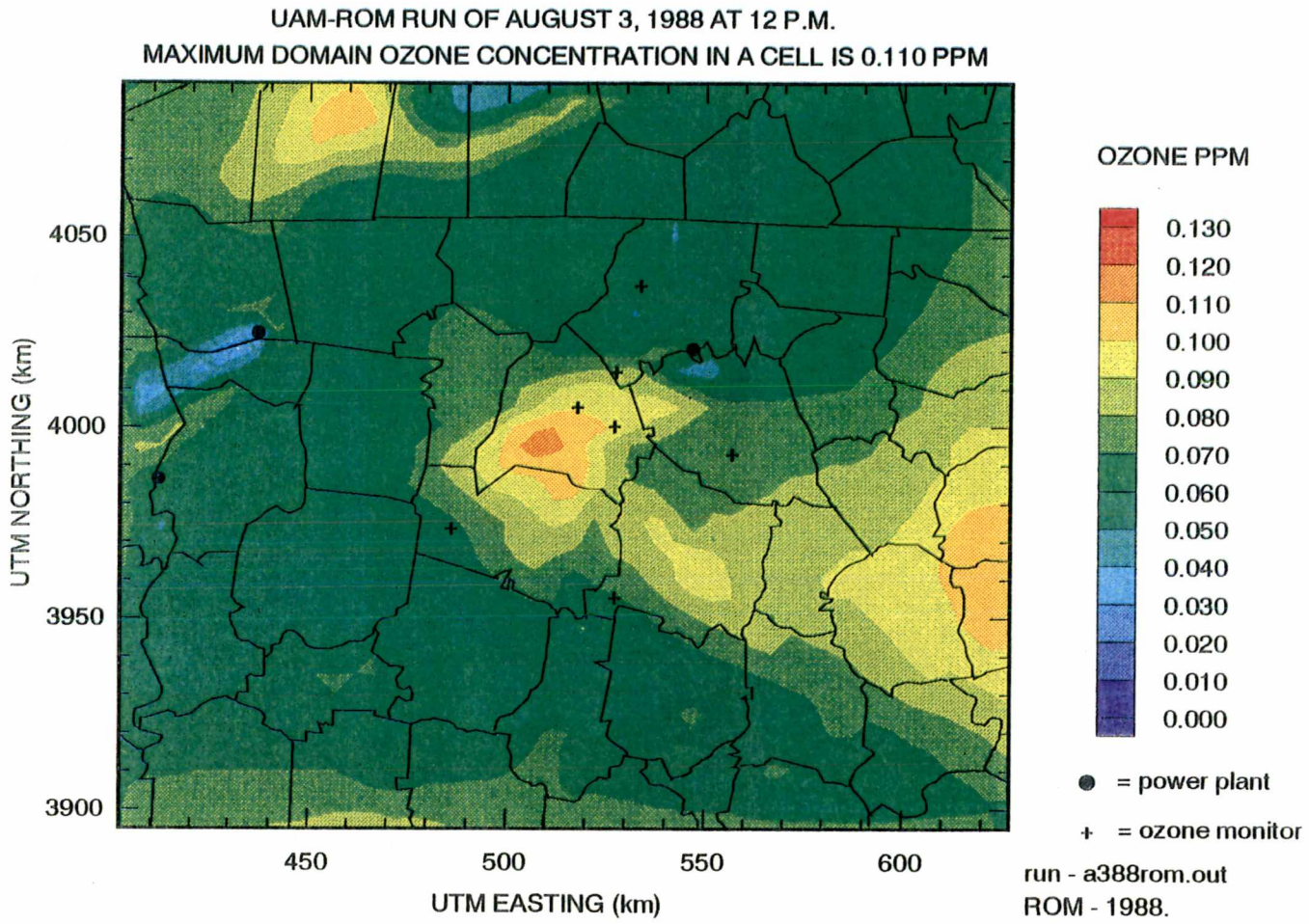


Figure 7-1. UAM-ROM ozone isopleth for August 3, 1988 at 12 PM.

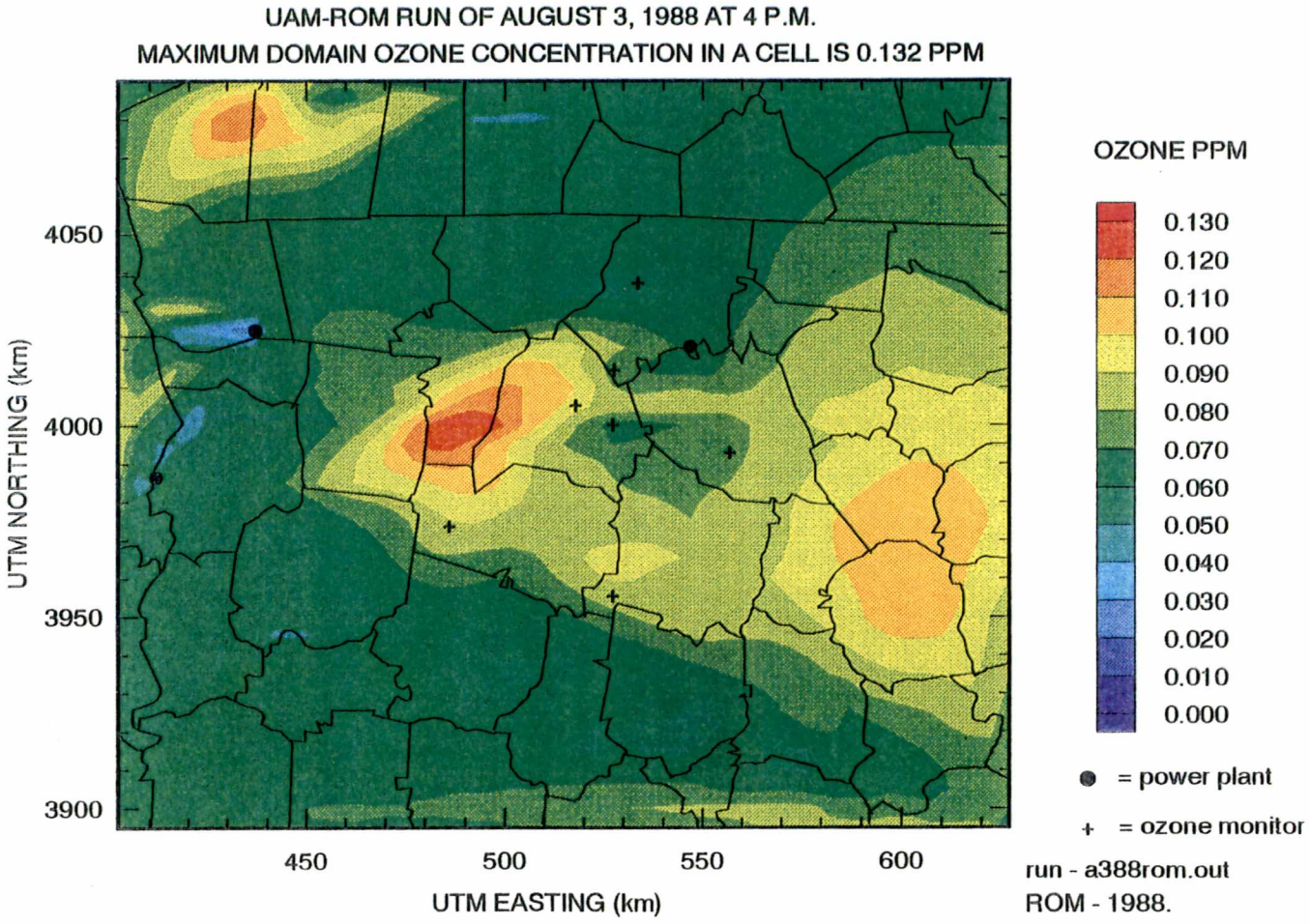


Figure 7-2. UAM-ROM ozone isopleth for August 3, 1988 at 4 PM.

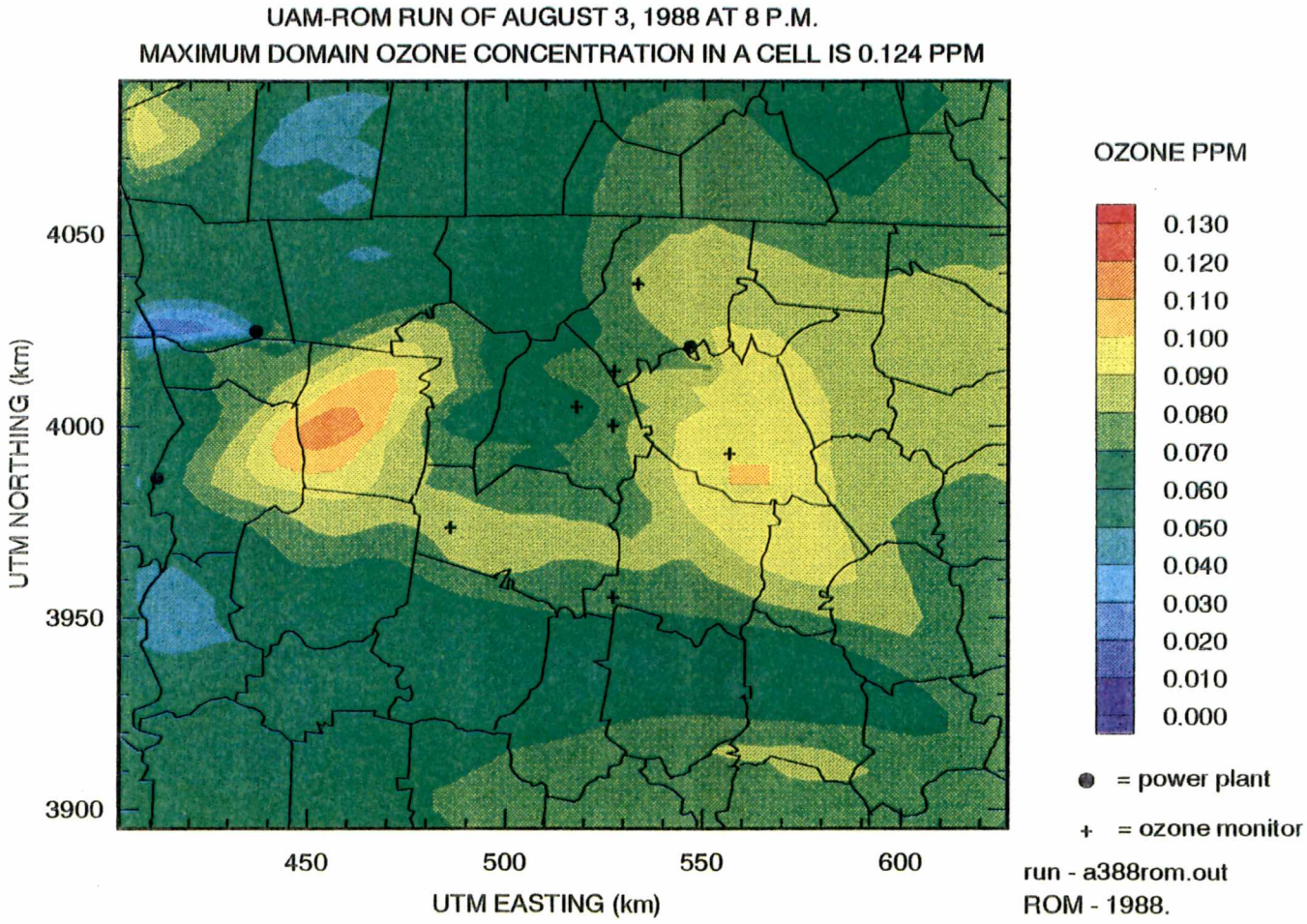


Figure 7-3. UAM-ROM ozone isopleth for August 3, 1988 at 8 PM.

plume and occurred in UTM grid 497 km, 4,005 km.

Figure 7-4 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-ROM run. The highest grid value of 0.132 ppm occurred in UTM grid 497 km, 4,005 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

The August 3, 1988 UAM-DWM run results when viewed as a 24 hour RASTER image file showed a similar sequence to UAM-ROM with the transport of a smaller ROM boundary plume in from the eastern boundary of the modeling domain moving towards southern Williamson county. Prior to noon, the transport plume diminished and began to retreat at which time the urban core plume formed over downtown Nashville. Eventually, the urban core plume moved away from downtown Nashville in a westward direction. Figure 7-6 is an ozone isopleth plot of the highest hour of predicted ground level ozone concentration in the MTMD for the UAM-DWM run. The highest predicted ozone concentration of 0.152 ppm in Figure 7-6 occurred at 5 PM. Figure 7-5 is the ozone isopleth plot of the time period (1 PM) 4 hours before the predicted maximum, and Figure 7-7 is the ozone isopleth plot of the time period (9 PM) 4 hours after the predicted maximum. The highest predicted grid value in the urban plume occurred in UTM grid 512 km, 4,000 km.

Figure 7-8 is a tile plot which shows the maximum 24-hour predicted value for each of the 1,840 grids in the MTMD for the UAM-DWM run. The highest grid value of 0.152 ppm occurred

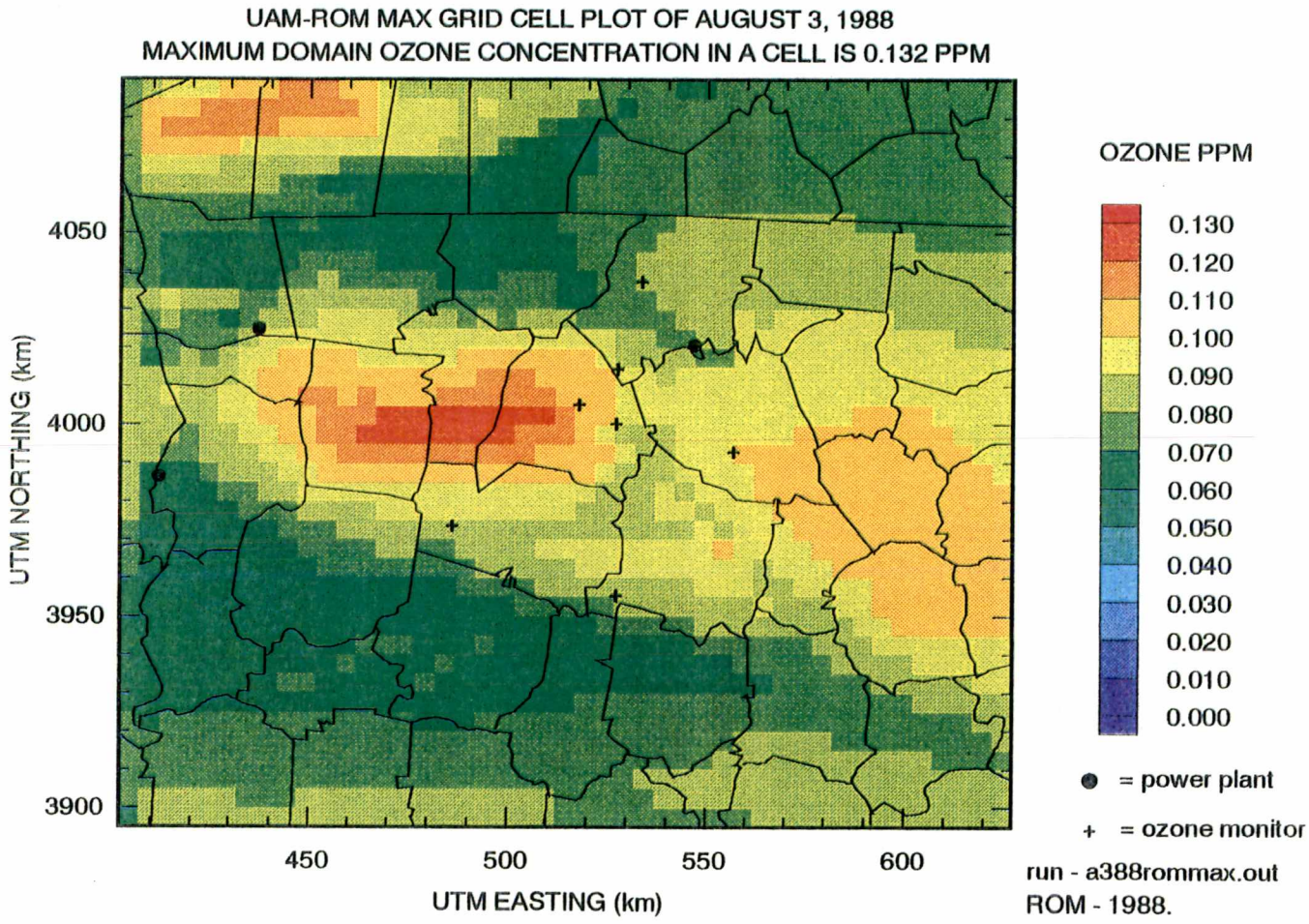


Figure 7-4. UAM-ROM maximum grid value tile plot for August 3, 1988.

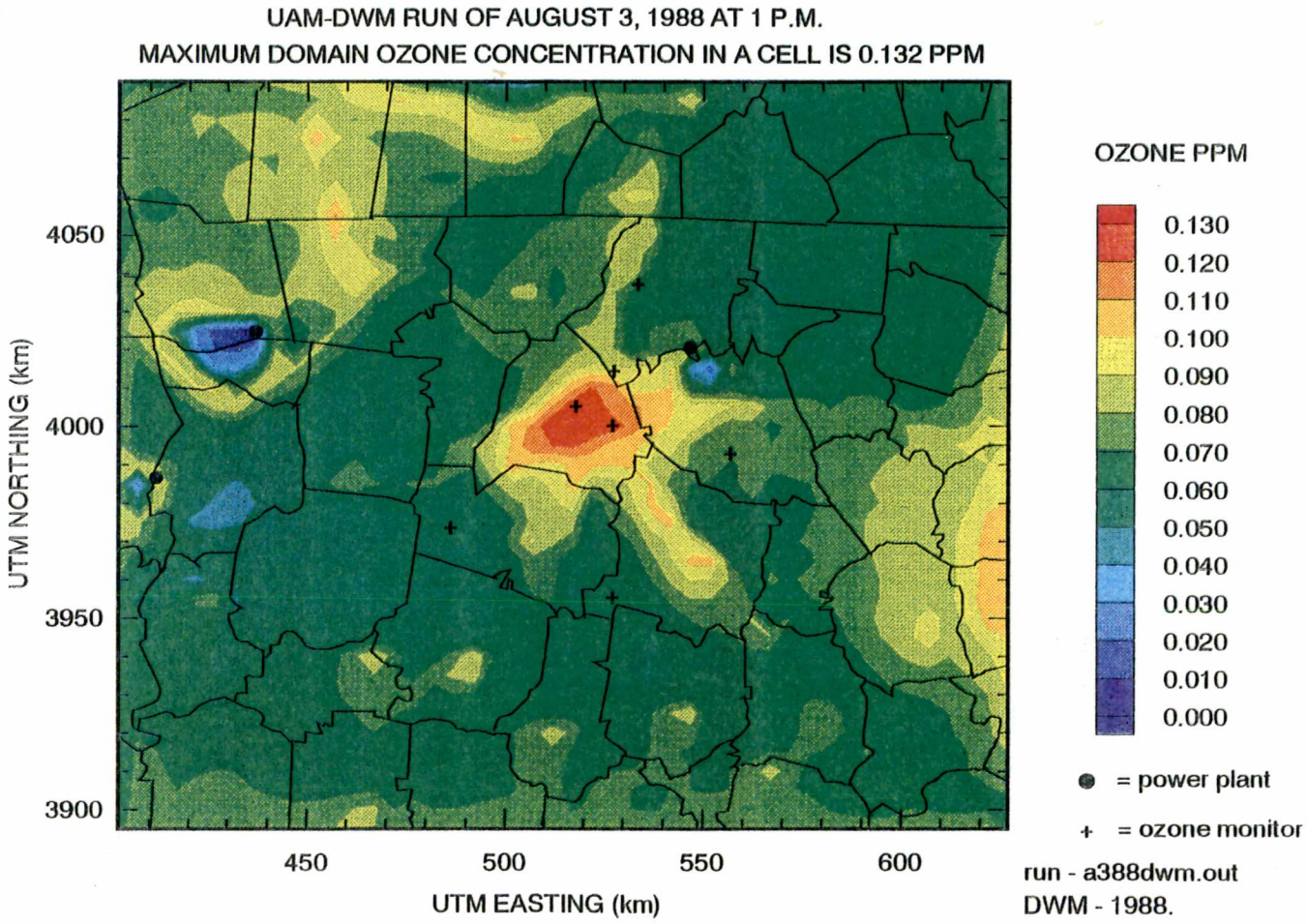


Figure 7-5. UAM-DWM ozone isopleth plot for August 3, 1988 at 1 PM.

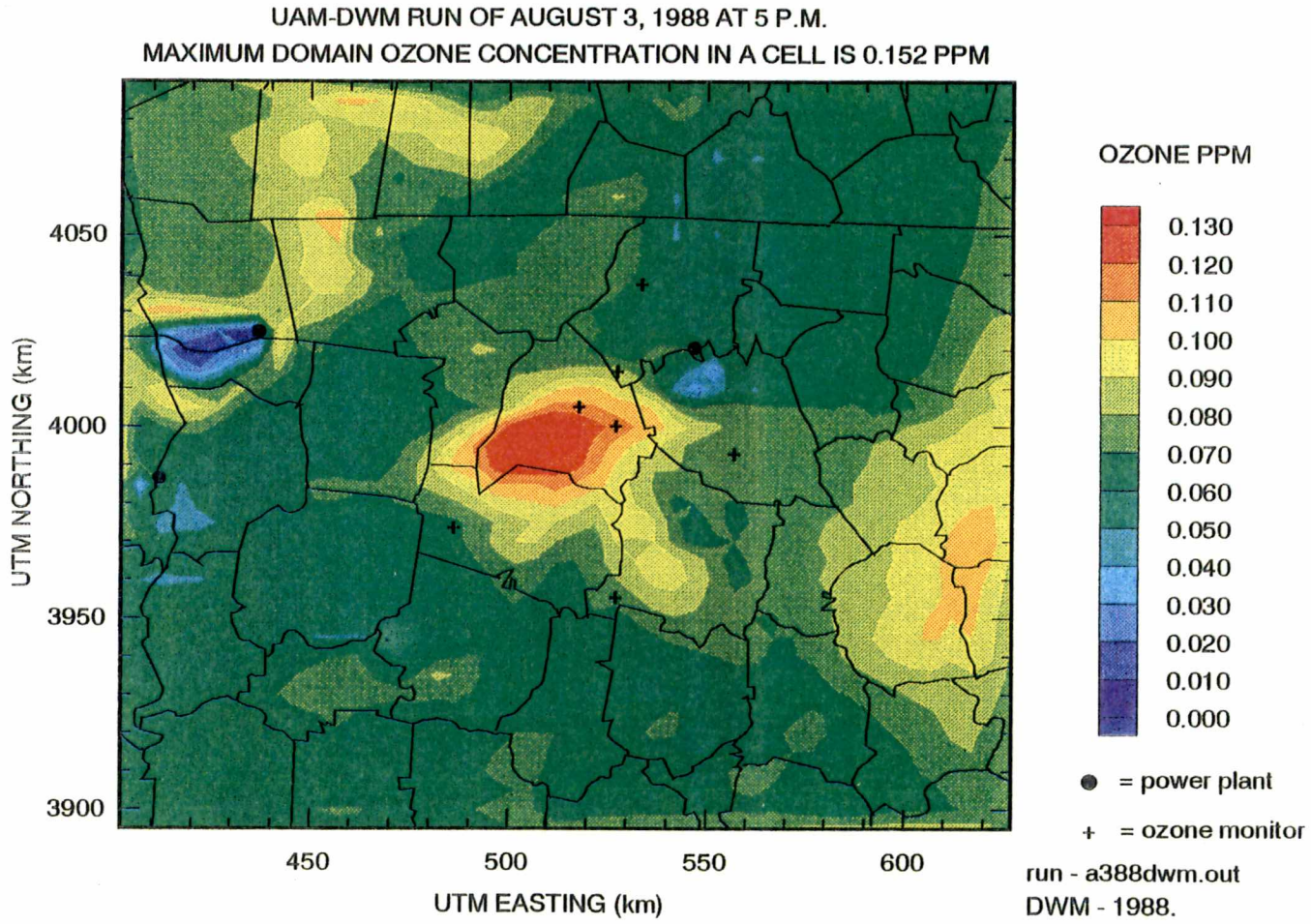


Figure 7-6. UAM-DWM ozone isopleth plot for August 3, 1988 at 5 PM.

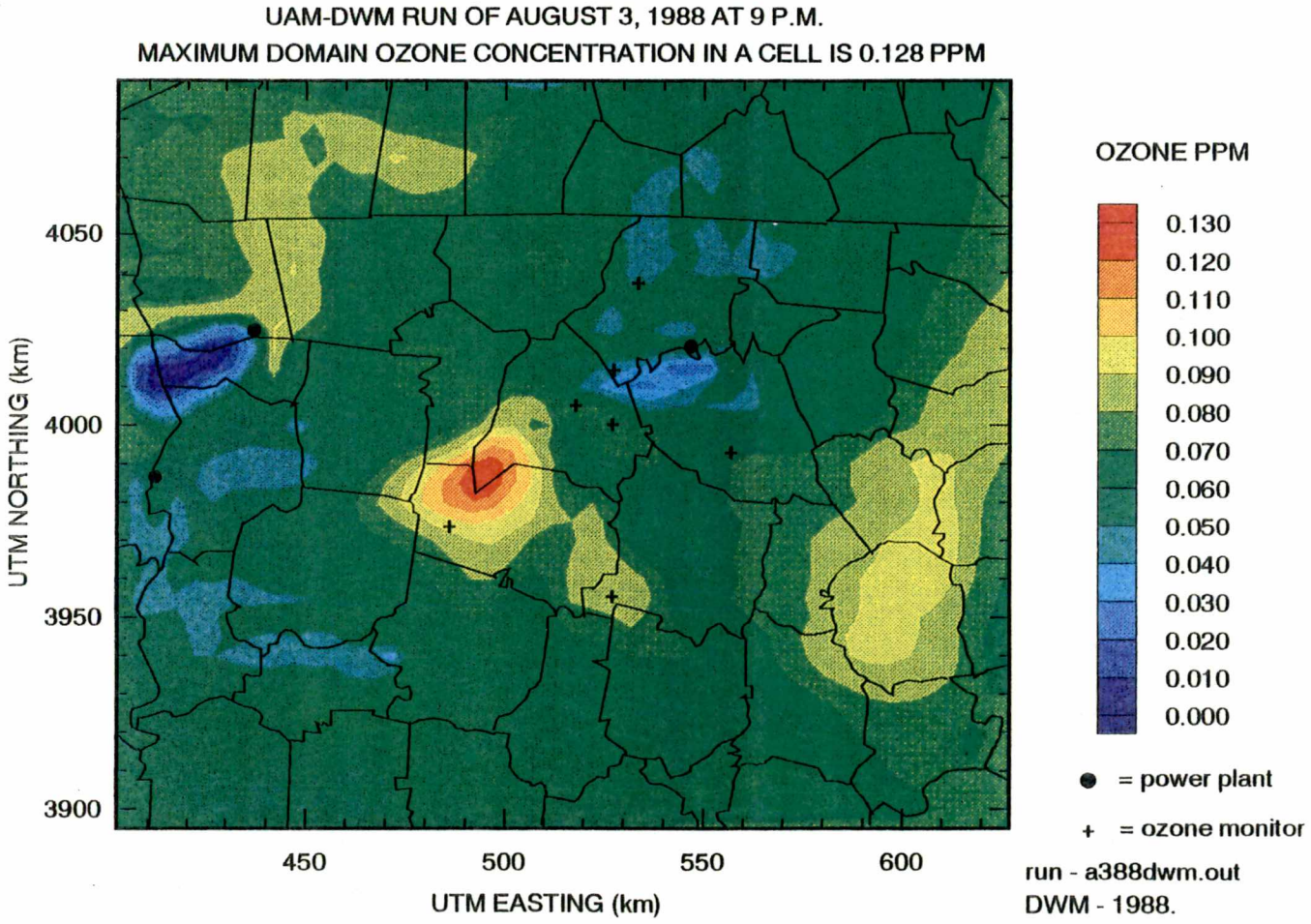


Figure 7-7. UAM-DWM ozone isopleth plot for August 3, 1988 at 9 PM.

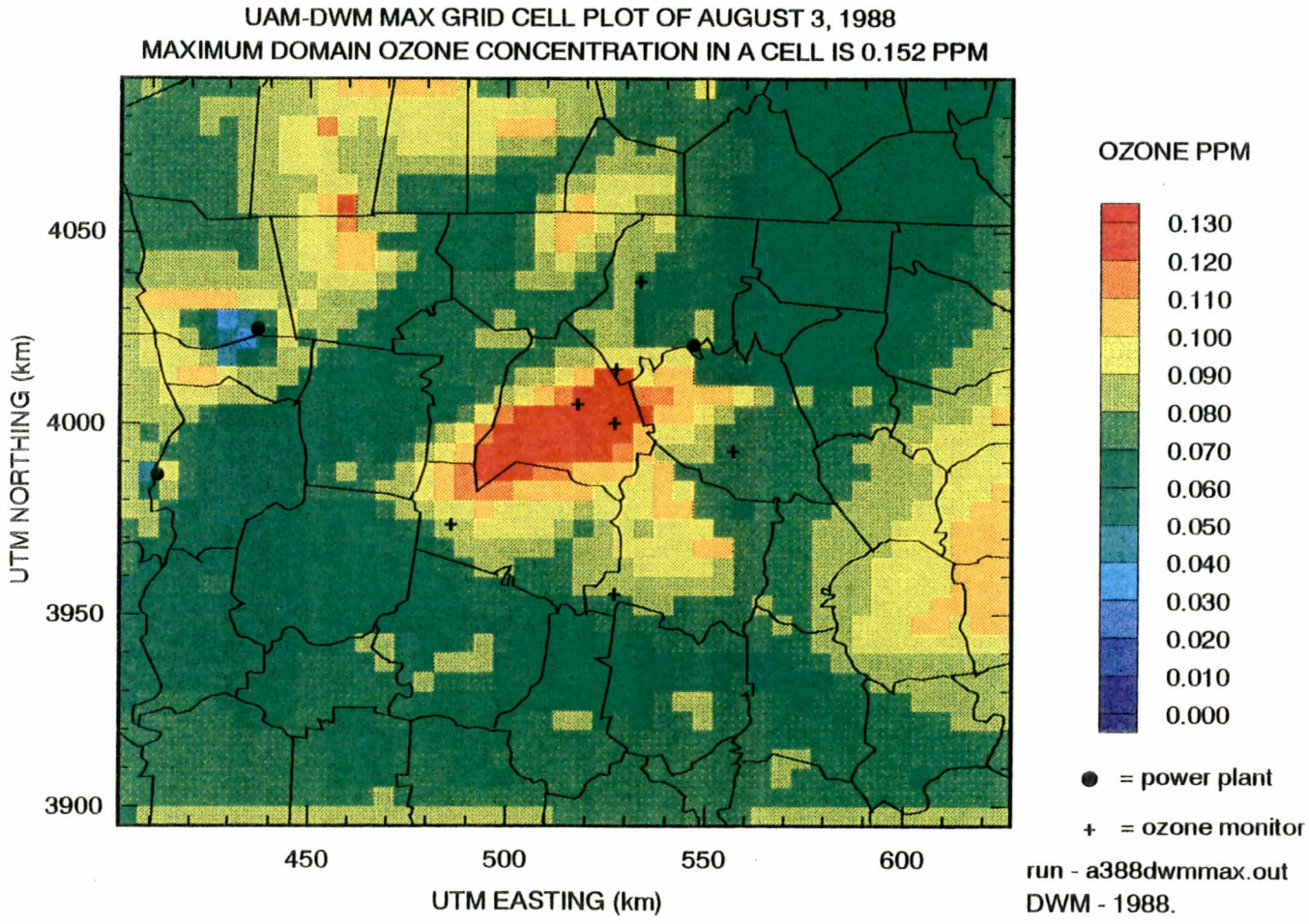


Figure 7-8. UAM-DWM maximum grid value tile plot for August 3, 1988.

in UTM grid 512 km, 4,000 km. A tabulation of the numerical values used to generate this plot is given in the Appendix.

2. Graphical Results

A comparison was made between the station within the MTMD measuring the peak observed ozone value and the cell within the MTMD which had the highest predicted urban plume value. This comparison is shown in Figure 7-9. The legend of this graph shows the UTM location (given in parentheses) for both the UAM-ROM and DWM-ROM runs in which the highest grid value in the urban plume was predicted.

The purpose of this analysis was to show whether the model runs were predicting sufficient ozone formation to replicate the highest observed value regardless of a shift in the location of the urban plume caused by wind model uncertainty. Figure 7-9 shows that at the peak observed hour in the domain which occurred at the Hendersonville site at 11 AM, UAM-ROM underpredicted the observed peak by 3 ppb, while UAM-DWM overpredicted the observed peak by 17 ppb showing that UAM-ROM was able to form sufficient ozone at a location in the urban plume.

The 20 ppb difference in the predicted maxima might be explained by the slower wind speeds in the UAM-DWM run. Overall, the average UAM-DWM wind speed predicted for the NWS site on August 3, 1988 was 50% of the UAM-ROM value. Slower wind speeds in the UAM-DWM run would have caused less dispersion from ground level sources thereby increasing the ground

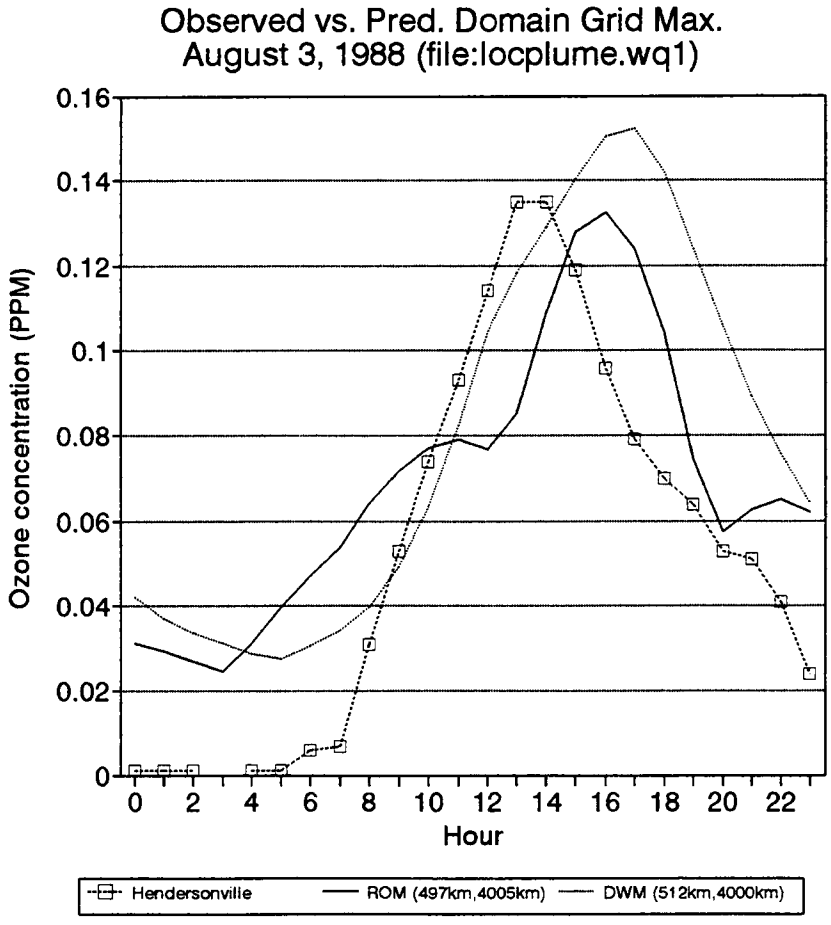


Figure 7-9. **Maximum observed vs. predicted ozone in the urban plume for August 3, 1988.**

level formation of ozone in the urban plume. Once again this shows the sensitivity to the model to wind speed.

The next set of graphical analyses performed were time series plots of the observed value recorded at each of the monitoring stations which were operational on August 3, 1988 vs. the predicted value at that site for each UAM model run. The predicted values plotted in these time series plots were determined through the bilinear interpolation method. These time series plots are depicted in Figures 7-10 through 7-16.

Analysis of these data shows that UAM-DWM predicted overall higher predicted ozone values at the Hendersonville, East Health and Percy Priest stations. The rest of the stations showed similar predictions for both UAM runs although the observed peaks were underpredicted. Both runs considerably overpredicted the East Health station. It is interesting to note that on August 3, 1988 East Health observed a peak ozone concentration noticeably lower than all other monitors on that day and less than half of the peak ozone concentration observed at Percy Priest even though East Health and Percy Priest have the smallest spatial separation of any two monitors in the modeling domain. The low ozone values recorded at East Health could have been the result of some microscale scavenging effect such as being situated to near to a combustion source providing NO_x fumes for scavenging.

Figures 7-17 and 7-18 depict the correlation between the domain maximum observed value for each monitoring station vs.

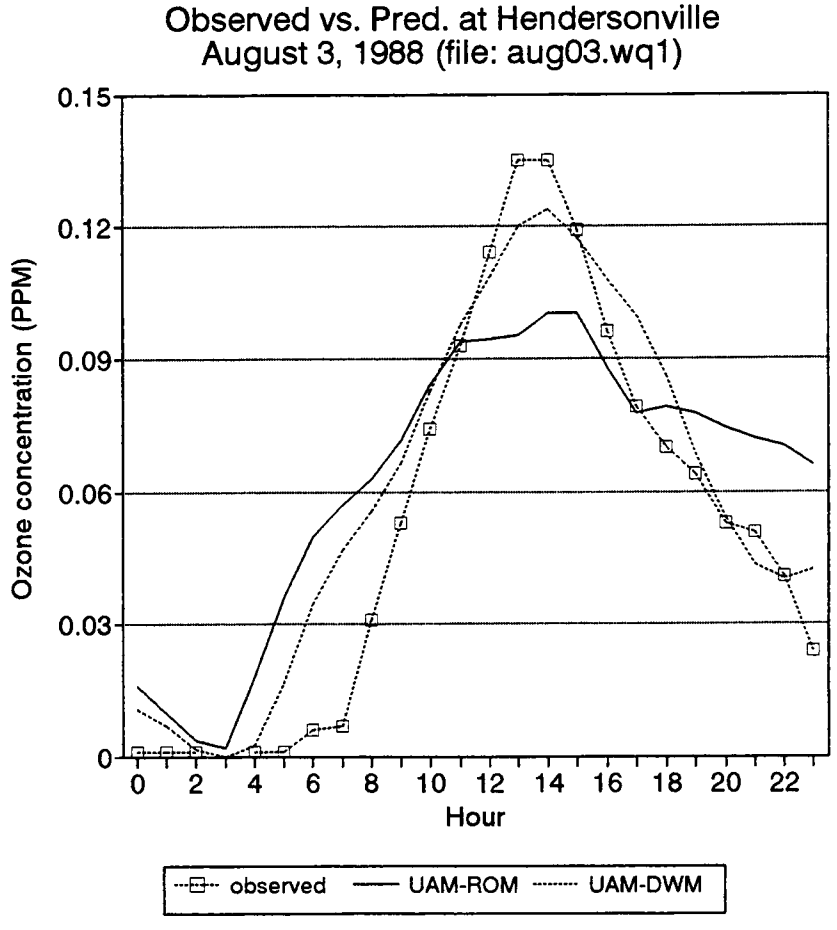


Figure 7-10. Observed vs. predicted ozone at Hendersonville for August 3, 1988.

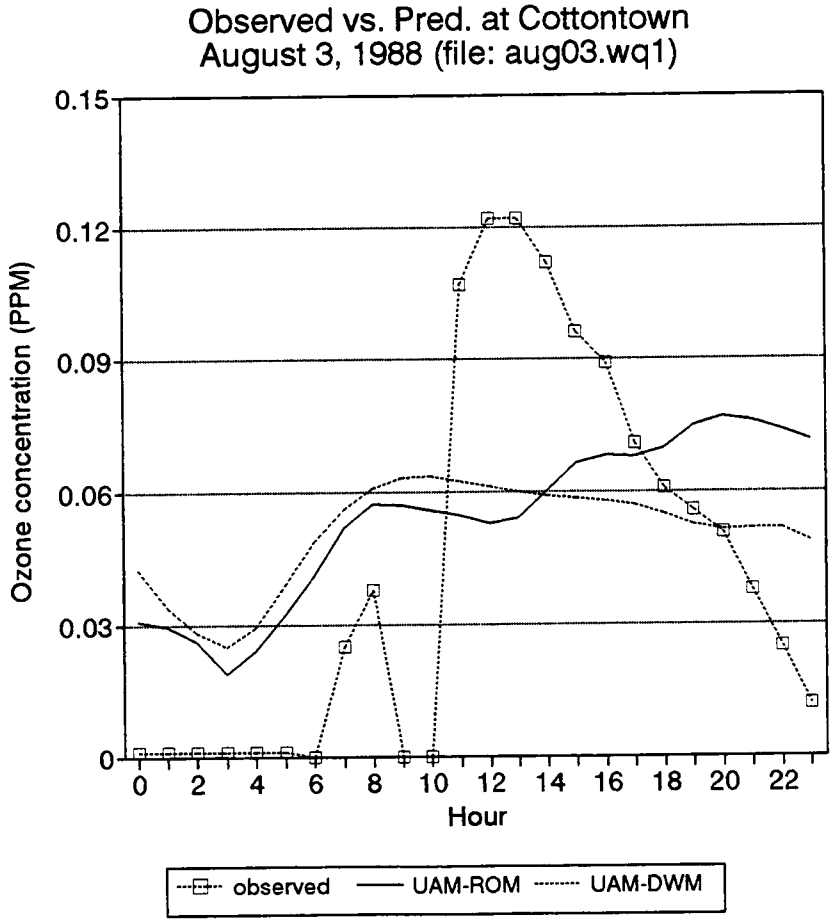


Figure 7-11. **Observed vs. predicted ozone at Cottontown for August 3, 1988.**

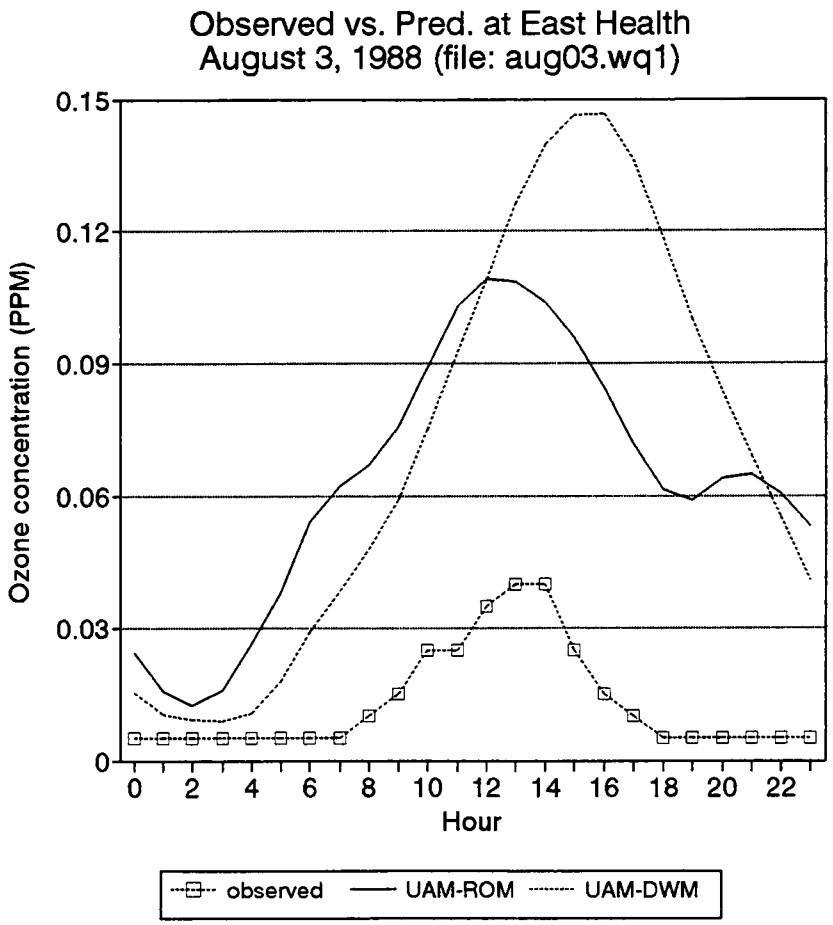


Figure 7-12. Observed vs. predicted ozone at East Health for August 3, 1988.

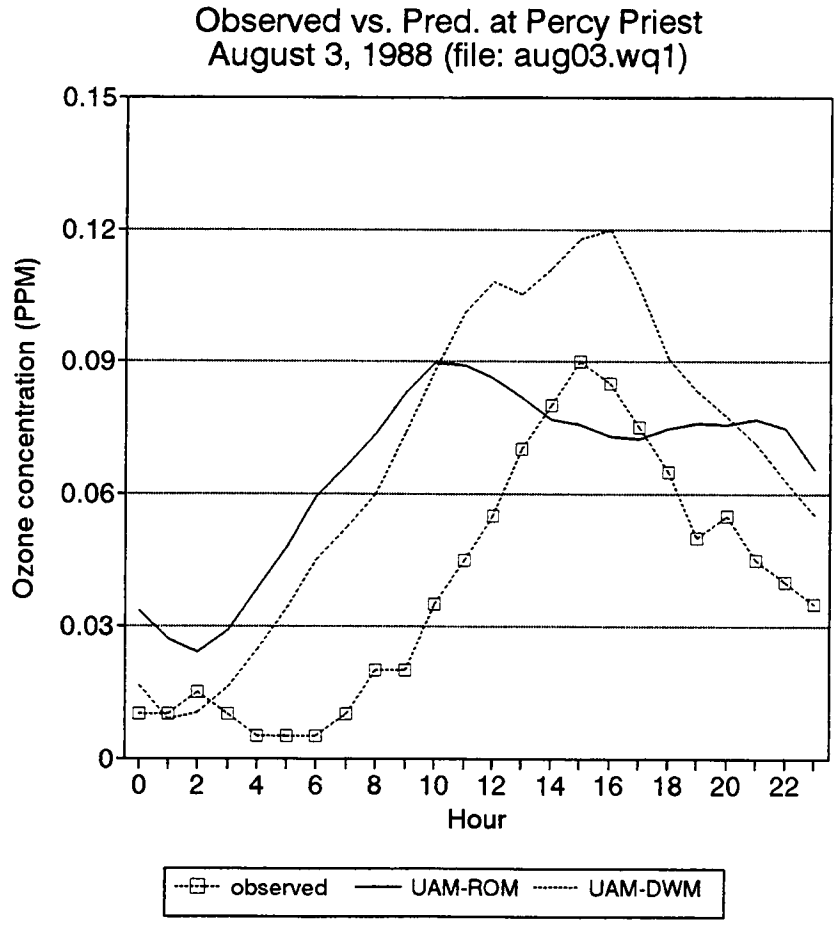


Figure 7-13. **Observed vs. predicted ozone at Percy Priest for August 3, 1988.**

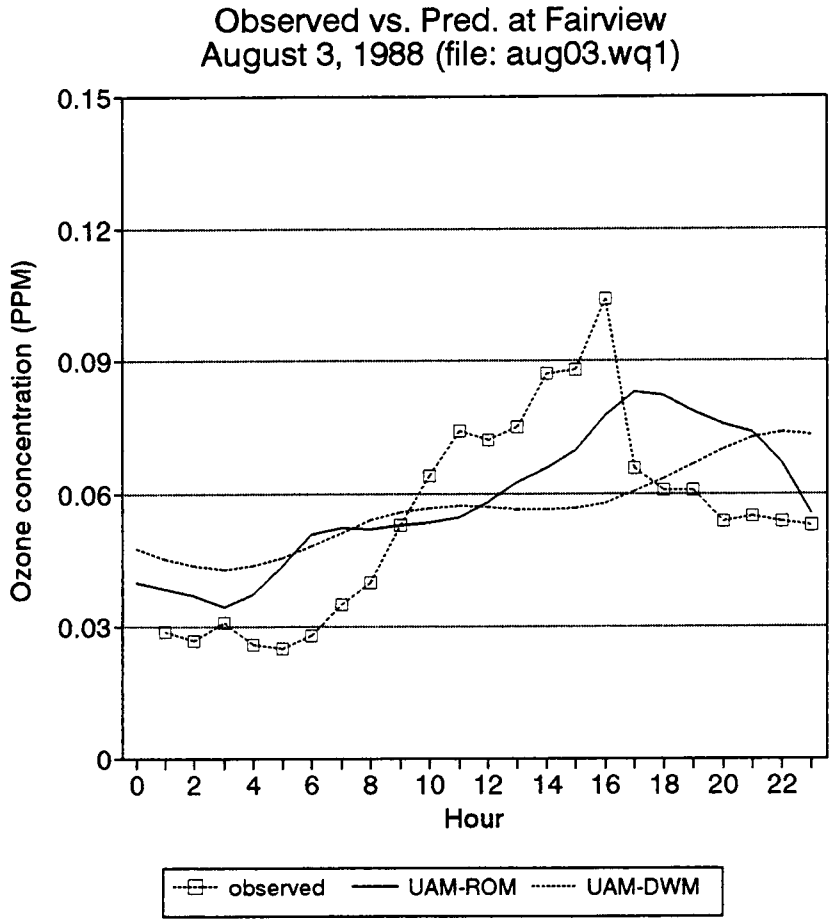


Figure 7-14. Observed vs. predicted ozone at Fairview for August 3, 1988.

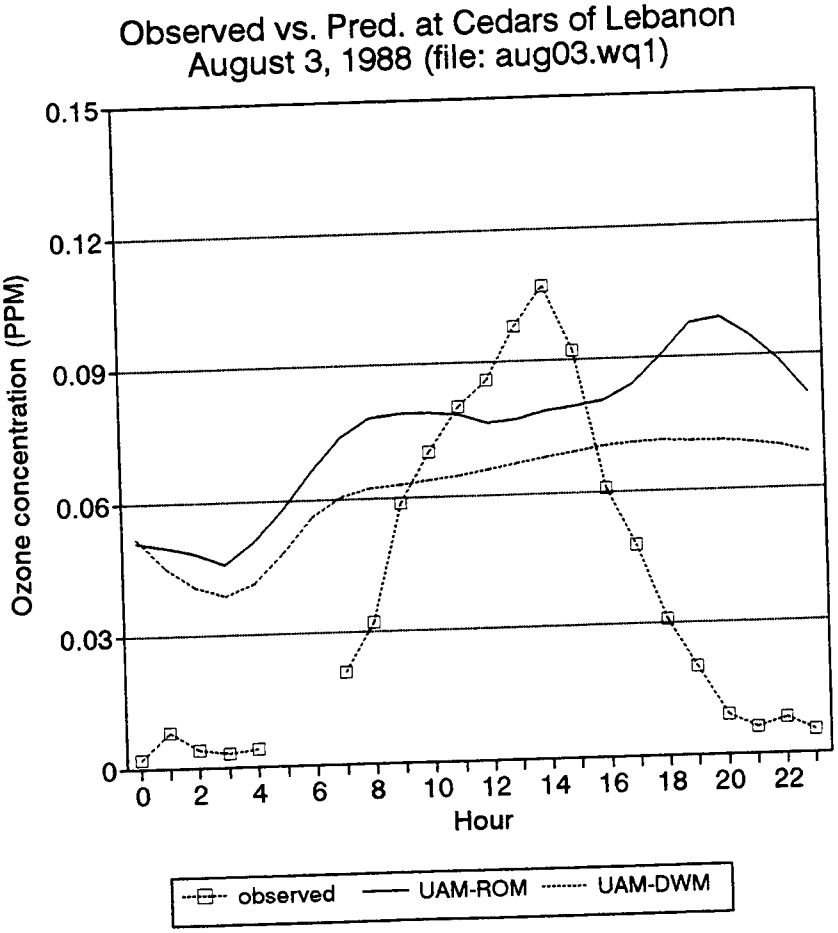


Figure 7-15. Observed vs. predicted ozone at Cedars of Lebanon for August 3, 1988.

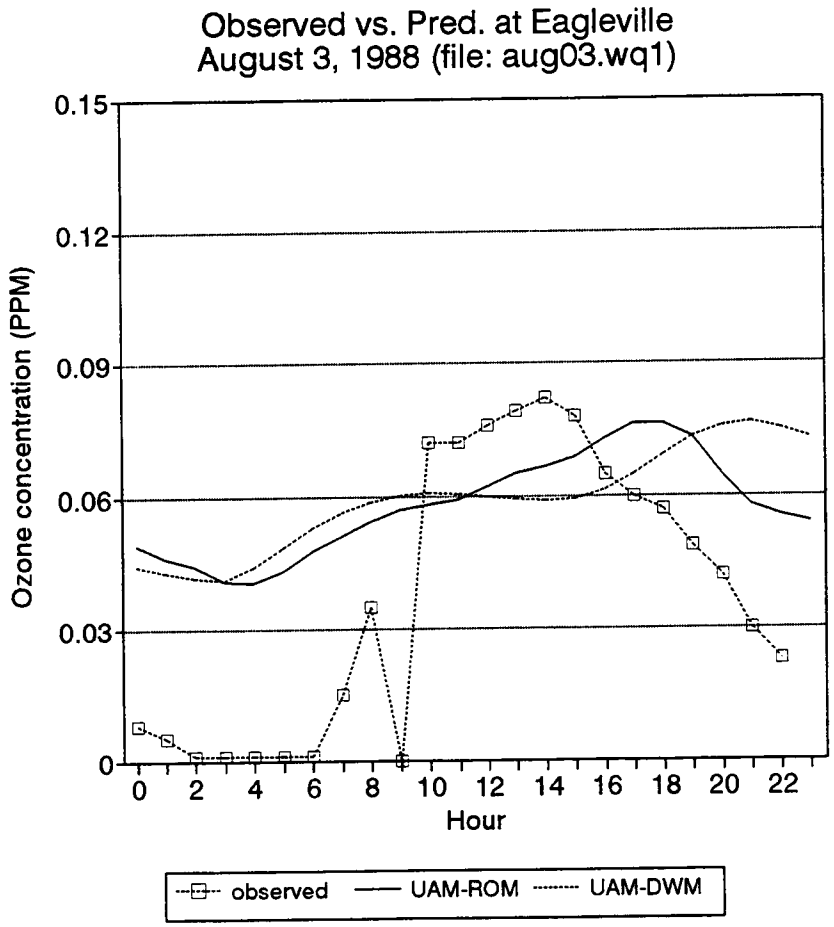


Figure 7-16. **Observed vs. predicted ozone at Eagleville for August 3, 1988.**

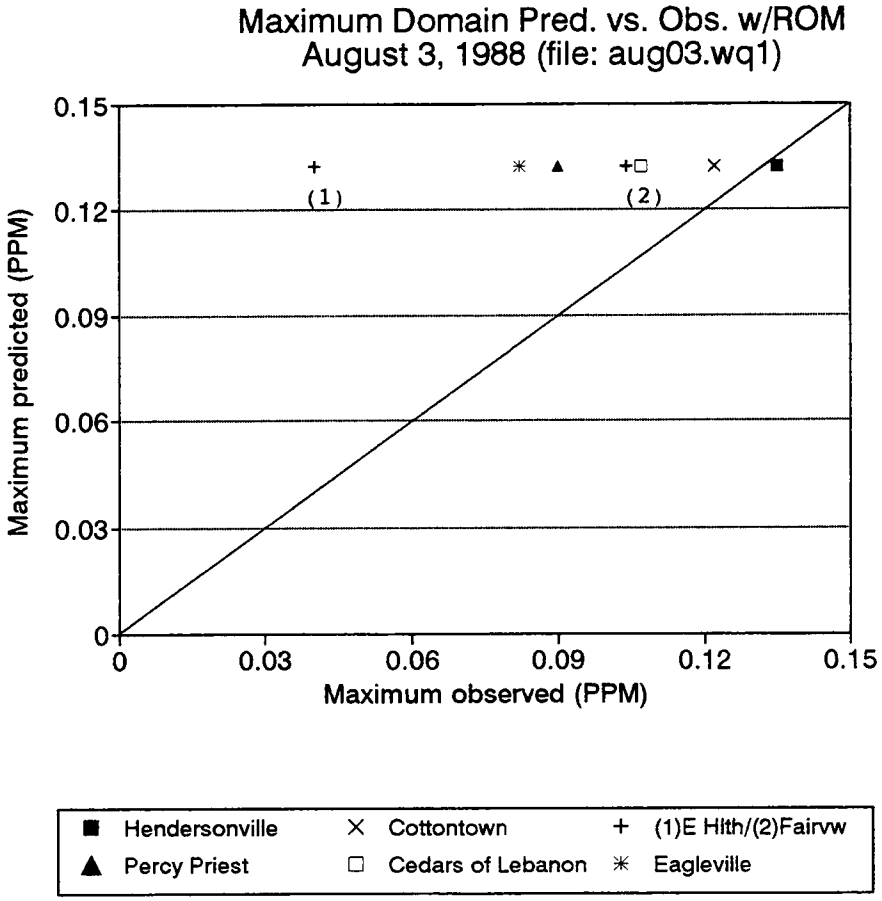


Figure 7-17. Maximum domain predicted vs. observed ozone for UAM-ROM on August 3, 1988.

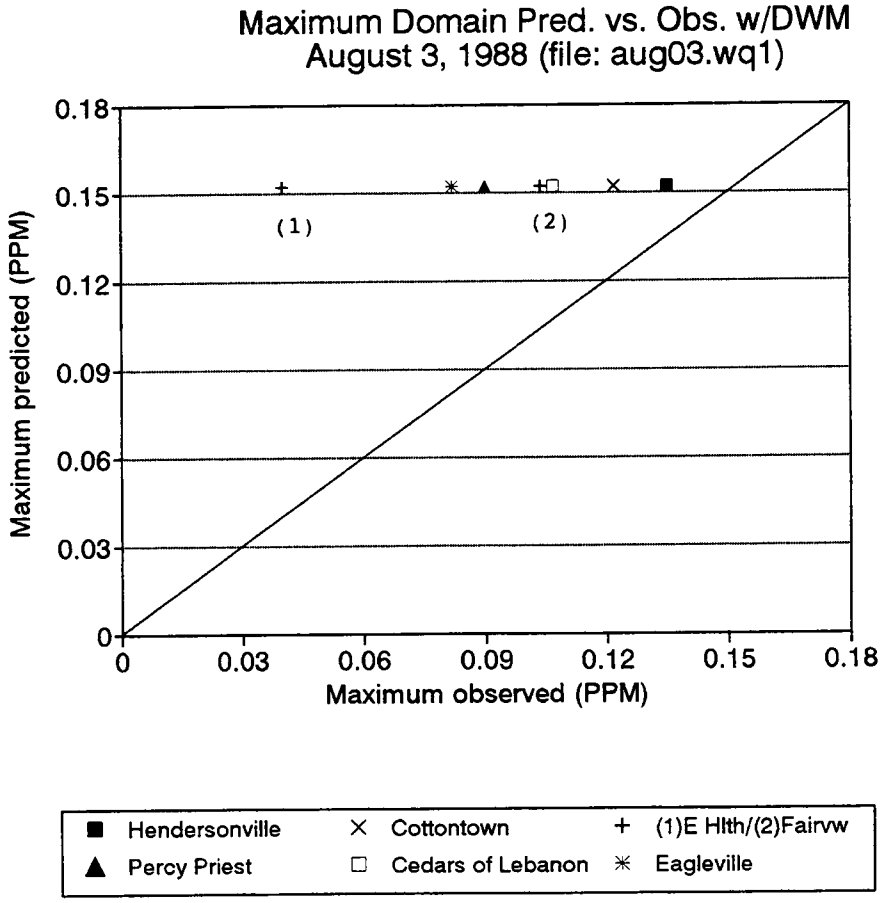


Figure 7-18. Maximum domain predicted vs. observed ozone for UAM-DWM on August 3, 1988.

the domain maximum predicted value of a single grid cell for the UAM-ROM and UAM-DWM runs, respectively. The UAM-ROM run shows better agreement in this analysis at the Hendersonville station.

Figures 7-19 and 7-20 are bias scatter plots showing the correlation between the predicted and observed values for all monitoring stations for the UAM-ROM and UAM-DWM model results, respectively. A best-fit line has been drawn through the data in both plots. UAM-ROM and UAM-DWM overpredictions at the East Health station are apparent in the upper-left portions of these plots.

3. Statistical Results

The recommended performance measures have been calculated for the August 3, 1988 episode and are presented in Table 7-1.

The 24 hour results for the primary date show that both UAM-ROM and UAM-DWM satisfy the recommended EPA criteria for the unpaired accuracy, gross error and normalized bias tests (≥60 ppb). The 24 hr normalized bias errors are large and negative indicating overprediction. By taking into the stipulation that only observed values ≥60 ppb were to be considered in the normalized bias calculation, overpredictions at monitors such as East Health are not considered.

An example of overprediction besides East Health can be seen in Figure 7-16 for the Eagleville station. From 2 AM through 6 AM the Eagleville monitor recorded 1 ppb of ozone

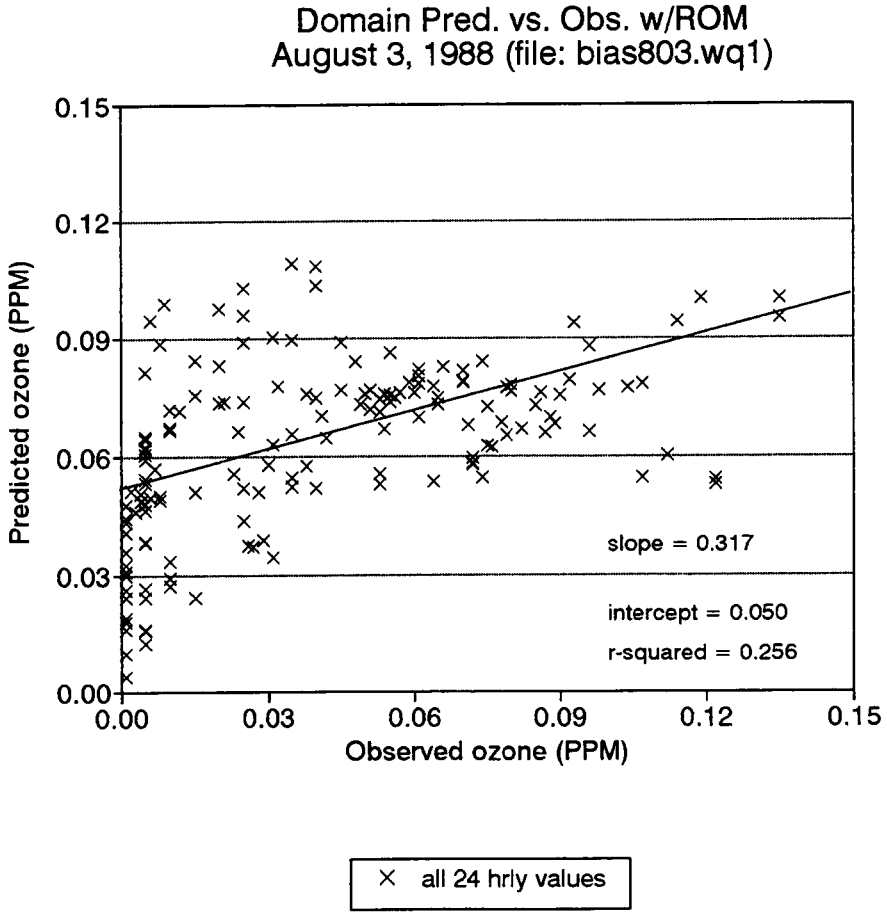


Figure 7-19. Bias scatter plot for UAM-ROM on August 3, 1988.

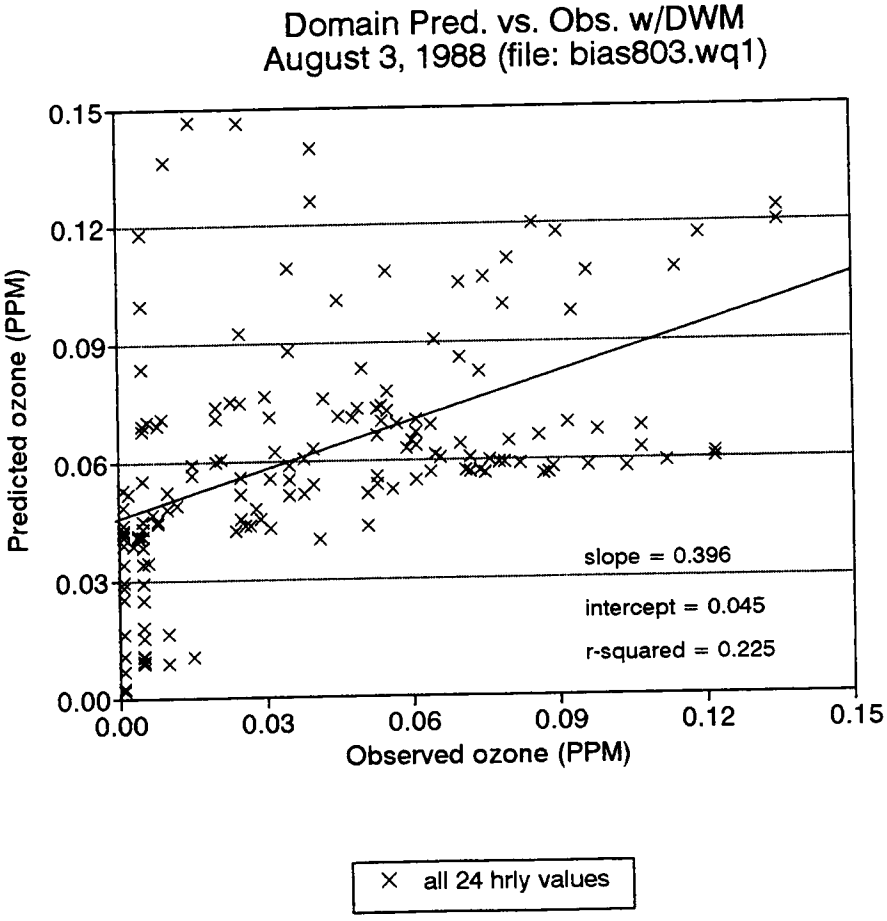


Figure 7-20. Bias scatter plot for UAM-DWM on August 3, 1988.

Table 7-1. **Recommended Performance Measures for the August 3, 1988 Episode Using a 24 Hour Averaging Period.**

Performance Test	UAM-ROM	UAM-DWM
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	2.0%	-12.7%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-515.0%	-492.2%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	9.4%	8.8%
Gross error >60 ppb (recommended value of 30-35%).	20.2%	24.1%

while both UAM-ROM and UAM-DWM were predicting ozone concentrations around 45 ppb. The 1 hour normalized bias value for a station with an observed value of 1 ppb and a predicted value of 45 ppb would be -4,400%! Since a value of this magnitude would have been repeated several times at more than one station, it is then clear to see how the normalized bias was exceeded for all seven stations in a 24 hour averaging period. This is not the case when the normalized bias is calculated with a more appropriate minimum value of observed ozone, mainly ≥60 ppb.

The gross error test tends to deemphasize these early morning overpredictions since the gross error test only reflects pairs with an observed value >60 ppb (mainly daytime

observations).

The ROM performance evaluation results for the August 3, 1988 episode were presented alongside of the ROM performance results for the August 1, 1988 episode (see section 6). These figures showed that ROM at times predicted poorly against observations made at monitors in proximity to the Nashville UAM modeling domain throughout the combined episodic periods of August 1-3, 1988. Figure 7-21 shows for UAM-ROM that at 4 AM the ROM boundary concentrations were generally in the range of 40-60 ppb of ozone. Since UAM-DWM used the same ROM boundary values as UAM-ROM, both UAM runs would tend to have large negative normalized bias values during some of the predawn hours.

Hourly plots of the gross error and normalized bias values for August 3, 1988 were performed in order to determine when the model performed poorly.

The hourly gross error values for the 24 hour period are shown in Figure 7-22, and the 8 hour period values for the 10 AM - 6 PM time frame are shown in Figure 7-23. Figure 7-22 shows that at 6 AM the hourly gross error average was above 1,7500% for both UAM runs, but by 10 AM the hourly values dropped off eventually stabilizing in a 50-200% value range as shown in Figure 7-23. Figures 7-22 and 7-23 clearly show that the model performance during nondaytime hours was at times unsatisfactory because of the discrepancy between relatively higher ROM boundary ozone concentration values and lower obs-

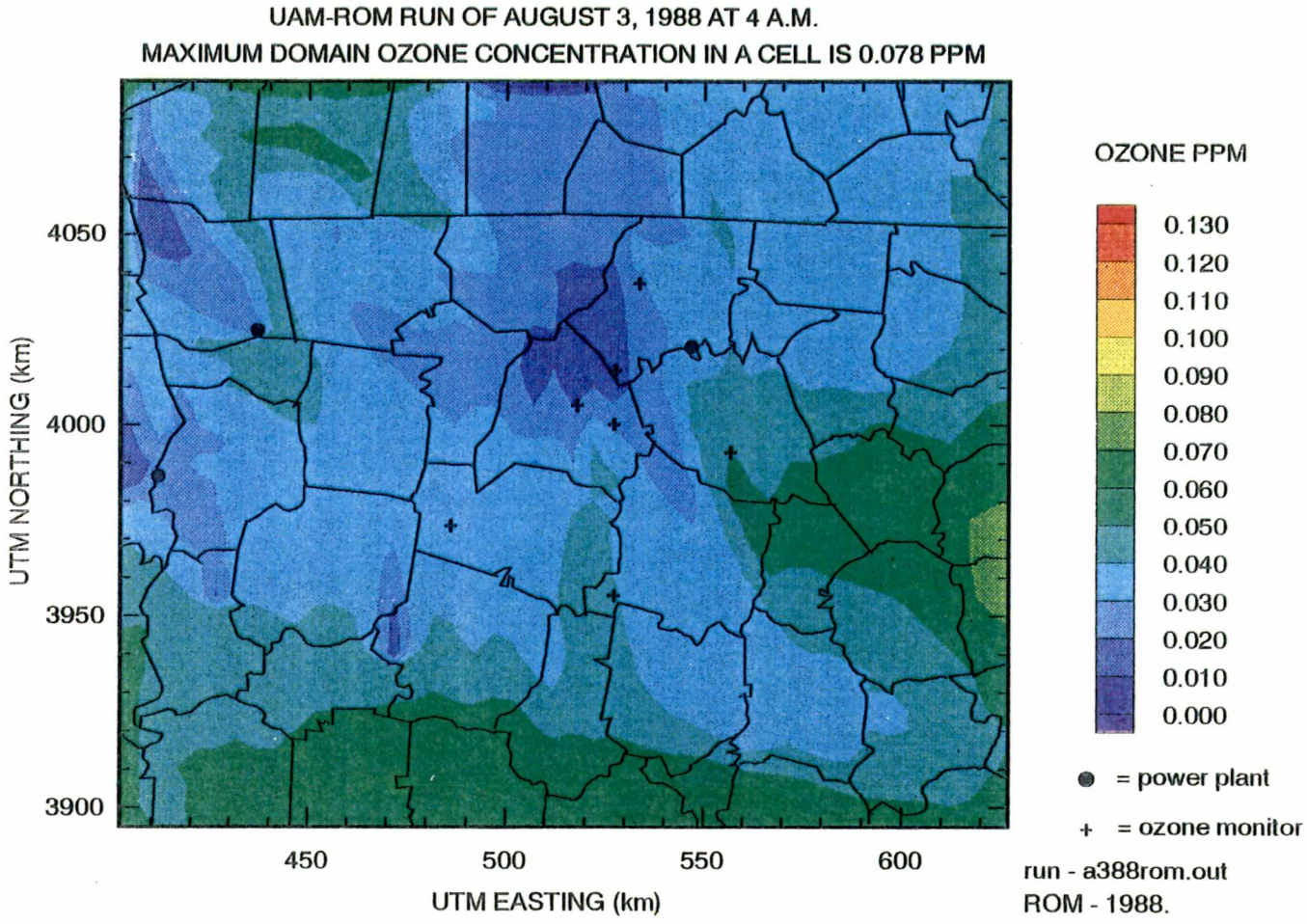


Figure 7-21. Ozone isopleth plot of UAM-ROM for August 3, 1988 at 4 AM.

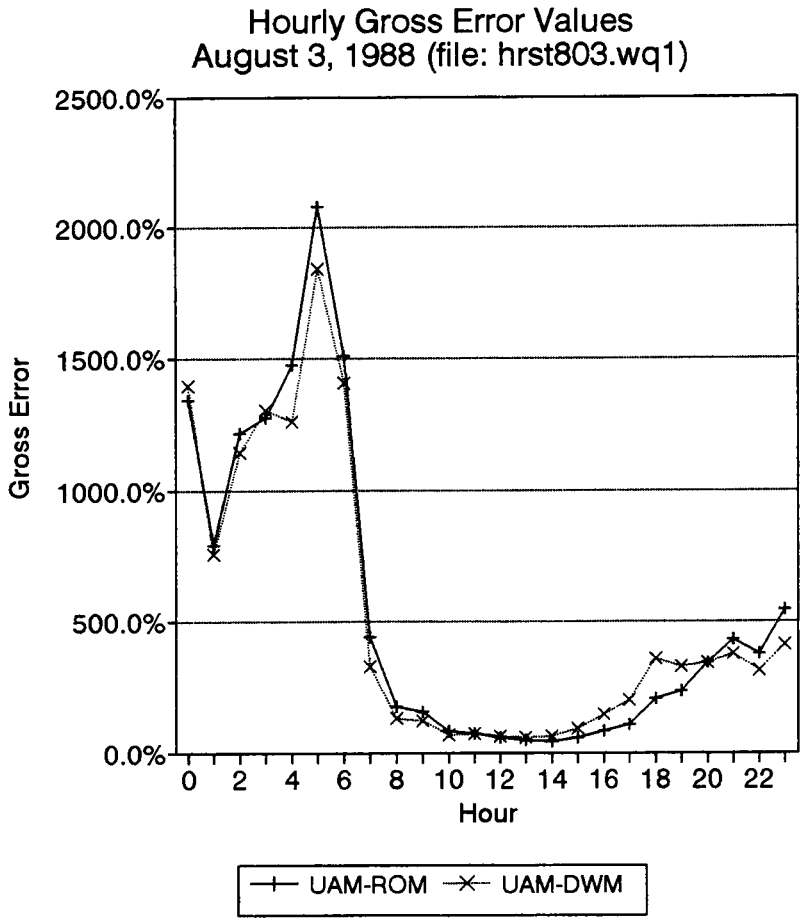


Figure 7-22. Hourly gross error values for a 24 hour period on August 3, 1988.

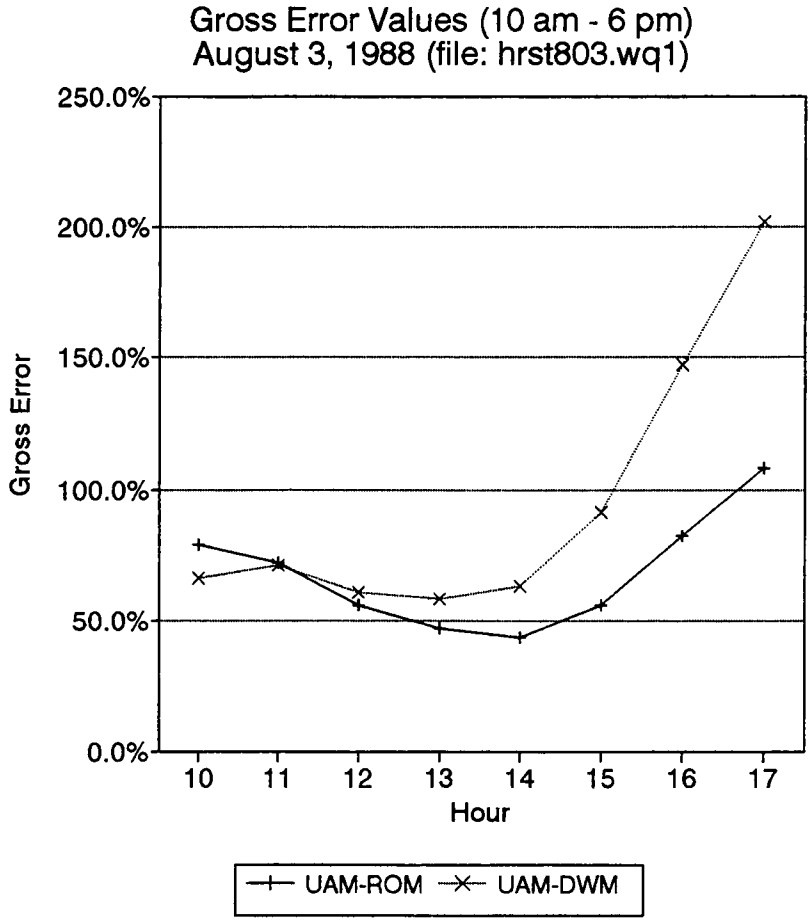


Figure 7-23. Hourly gross error values for 10 AM - 6 PM on August 3, 1988.

erved ozone values. In fact, of all the observations made on August 3, 1988, only about a third were above 60 ppb.

The hourly normalized bias values for the 24 hour period are shown in Figure 7-24, and the 8 hour period values for the 10 AM - 6 PM time frame are shown in Figure 7-25. Figure 7-24 shows that at 5 AM the hourly normalized bias value was more negative than -1,750% for both UAM runs, but by 10 AM the hourly values increased eventually stabilizing to a -50 to +200% value range as shown in Figure 7-25.

The recommended performance measures have been also been calculated for the August 3, 1988 episode for the time frame of 10 AM - 6 PM and are presented in Table 7-2.

Finally, the average hourly bias was calculated and is presented in Figure 7-26 for both runs. The bias for the most part is negative indicating overprediction on this date. This

Table 7-2. Recommended Performance Measures for the August 3, 1988 Episode Using a 10 AM - 6 PM Hour Averaging Period.

Performance Test	UAM-ROM	UAM-DWM
Normalized Bias (recommended value of ±5-15%, for all observed values).	-41.6%	-68.0%
Normalized Bias (recommended value of ±5-15% for observations values ≥0.06 ppm).	13.7%	11.8%
Gross error >60 ppb (recommended value of 30-35%).	20.0%	25.3%

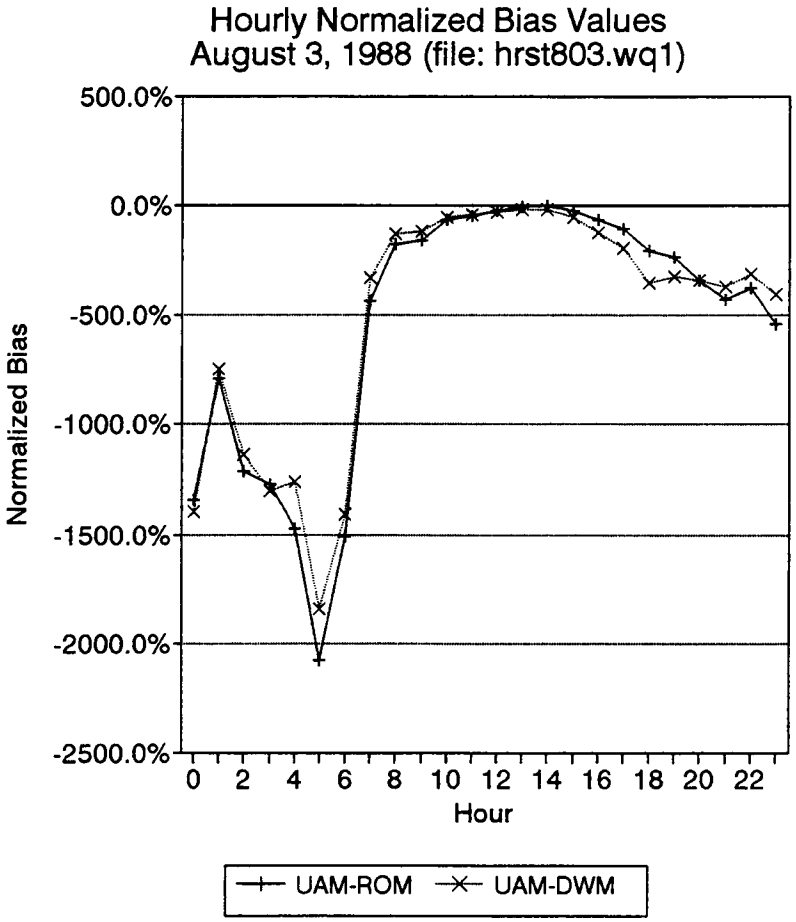


Figure 7-24. Hourly normalized bias values for a 24 hour period on August 3, 1988.

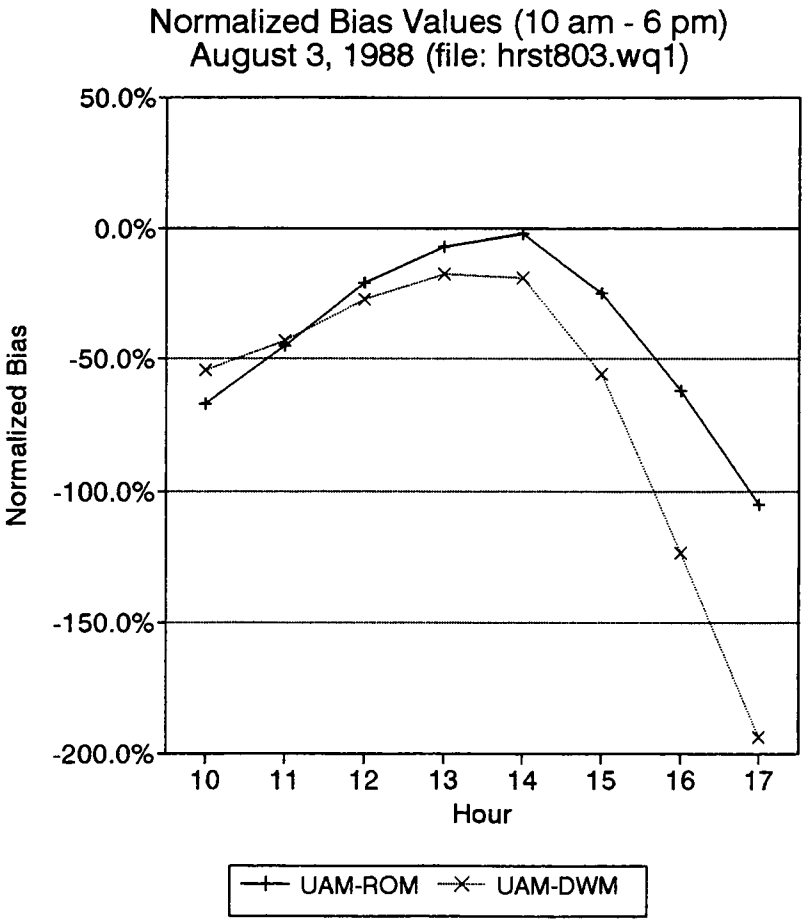


Figure 7-25. Hourly normalized bias values for 10 AM - 6 PM on August 3, 1988.

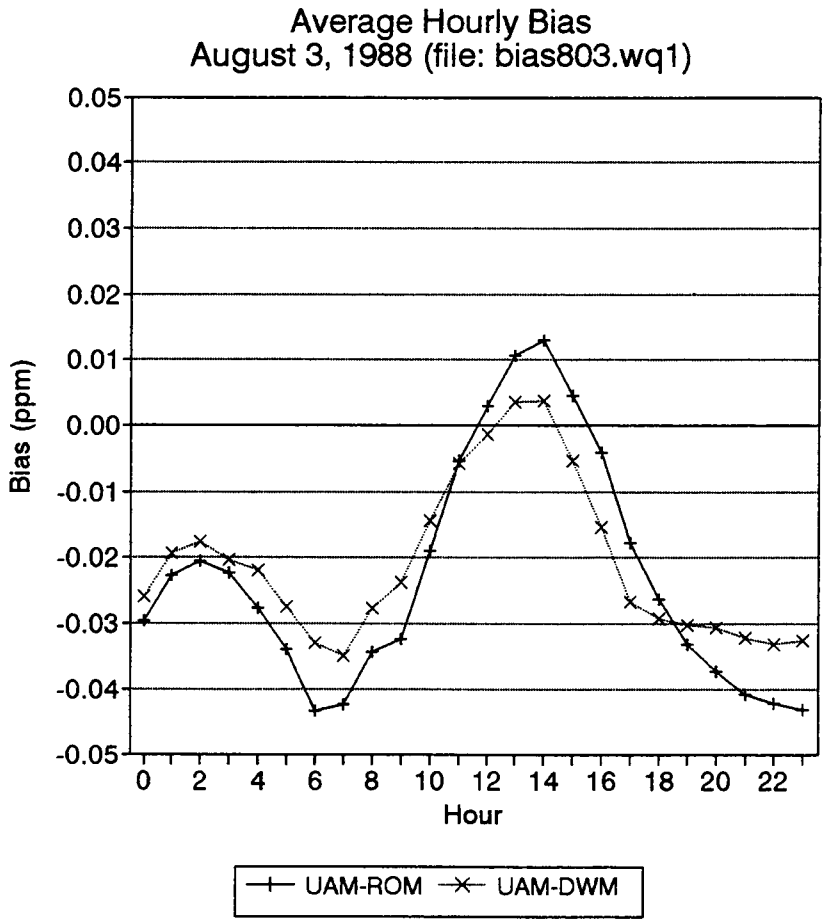


Figure 7-26. Hourly bias values for August 3, 1988.

episode exhibited meteorological conditions of stagnation. Stagnation of precursors in the urban area formed sufficient ozone in the model. From all four episodes it is evident that hourly bias plots are a better tool than the hourly plots of normalized bias to present data as the relative error tends to be overexxagerated in the hourly normalized bias and gross error plots.

4. Conclusions for August 3, 1988

The UAM-ROM and UAM-DWM runs showed acceptable performance by EPA criteria for the unpaired highest-prediction accuracy, gross error and normalized bias tests-(≥0.06 ppm).

East Health ozone concentrations were overpredicted for all hours by both UAM model runs, but EPA's decision to allow the consideration of observed values of ≥0.06 ppm in the normalized bias determination discarded all of the East health data from the statistical analyses. No definite conclusion can be stated why the East Health station recorded such low since any of a number of occurrences could have happened at the monitoring station.

Overall, UAM-ROM generally performed slightly better than UAM-DWM except at the Hendersonville station. UAM-DWM predicted higher ozone concentration at Hendersonville showing the sensitivity of the model to the wind speed.

Section 8. Combined Daily Results

1. Combined Results

The combined statistical results for all four 1988 primary days have been tabulated in Table 8-1 for the normalized bias and gross error tests. Table 8-1 does not list the unpaired highest-prediction accuracy results because this test is specific for one day only. The combined results show acceptable performance by EPA criteria for the latter two performance measures for both runs.

Table 8-1. Recommended Performance Measures for All Four Combined Days Using a 24 Hour Averaging Period.

Performance Test	UAM-ROM	UAM-DWM
Normalized Bias (recommended value of ±5-15%, for all observed values).	-237.2%	-255.1%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	9.8%	5.8%
Gross error >60 ppb (recommended value of 30-35%).	20.8%	22.1%

Section 9. Sensitivity Runs

1. Introduction

It has been shown that limitations to the UAM model runs include the tendency of the model to overpredict the monitoring stations at night and underpredict some of the observed peaks during the day. Several additional research runs were performed upon completion of the validation runs in order to see if methods were available to readily improve the overall model performance.

2. Soil NO_x Runs

The first set of sensitivity runs concerned recent research by TVA indicating that soil NO_x emissions may be underestimated in current modeling applications (source: On the Air - *Soil Emissions and Ozone Formation*, June 1994). Modeling runs incorporating increased soil NO_x emissions were performed for the June 23-24 and August 2-3, 1988 episodes to see if the model performance could be improved (these runs are hereafter referred to as soil NO_x runs). Soil NO_x runs, like ROM-UAM, used a ROM derived windfield and were modeled for both days of the particular episode (e.g., June 23-24 and August 2-3, 1988).

Based on data supplied by the principal author of the soil NO_x study, minimum and maximum soil NO_x emission factors were determined in order to see the impact that soil NO_x emissions could have in the modeling domain. The minimum emission factor was determined to be applicable for forested

lands, and the maximum emission factor was determined to be applicable for fertilized soil (agriculture). In order to model a "worst case" scenario, a ground temperature of 100 °F was chosen for fertilized soils in the modeling domain. Biogenic emissions were then recalculated for the 1988 land types present in the modeling domain using the increased soil NO_x emission factor. The recalculation increased the soil NO_x emissions by approximately one order of magnitude over basecase UAM-BEIS soil NO_x emissions. The gridded soil NO_x emissions in the basecase UAM-BEIS file were then increased by multiplication by an adjustment factor which was calculated to be the ratio of the increased soil NO_x emissions to the basecase UAM-BEIS emissions for that given day.

Modeling runs were then performed for the June 23-24 (transport) and August 2-3, (stagnation) 1988 episodes in order to show the effects of increased soil NO_x for episodes of widely varying meteorological conditions. If a substantial improvement in the model performance were seen, future runs could then incorporate the more conservative emission factors if an improvement in model performance were warranted.

3. Soil NO_x Results - June 24, 1988

Since isopleth plots for the soil NO_x run were similar to the basecase run, no net improvement or loss could be determined by comparing the soil NO_x and basecase isopleth plots alone. Because of this limitation, difference plots were constructed by subtracting basecase ozone concentrations

from soil NO_x ozone concentrations for each respective grid cell location in the modeling domain over the 24 hour period. Inspection of the model output before plotting, showed that for the daytime data, the increased soil NO_x runs showed ozone values generally higher than the basecase scenario. In the difference file for June 24, 1988, positive values show more ozone formation (production) for soil NO_x over the basecase, while negative values show less ozone formation (scavenging) for soil NO_x over the basecase.

Difference plots of a soil NO_x run made for June 24, 1988 are presented as Figures 9-1 and 9-2 for 3 AM and 5 PM, respectively. Figure 9-1 (peak scavenging hour) shows that a maximum of an additional 5 ppb of scavenging occurred in the modeling domain at 3 AM with lesser scavenging than this nearer to the monitors as a result of increased soil NO_x emissions. Figure 9-2 (peak production hour) shows that a maximum of 7 ppb of additional production occurred in the modeling domain at 5 PM with lesser production than this nearer to the monitors as a result of increased soil NO_x emissions.

Both figures show that the peak area of scavenging and production was generally located outside of the path of the transport plume originating from a Stewart county point source (power plant). It was previously shown that the June 24, 1988 episode was primarily dominated by transport from this point source since relatively fast winds flushed away most of the

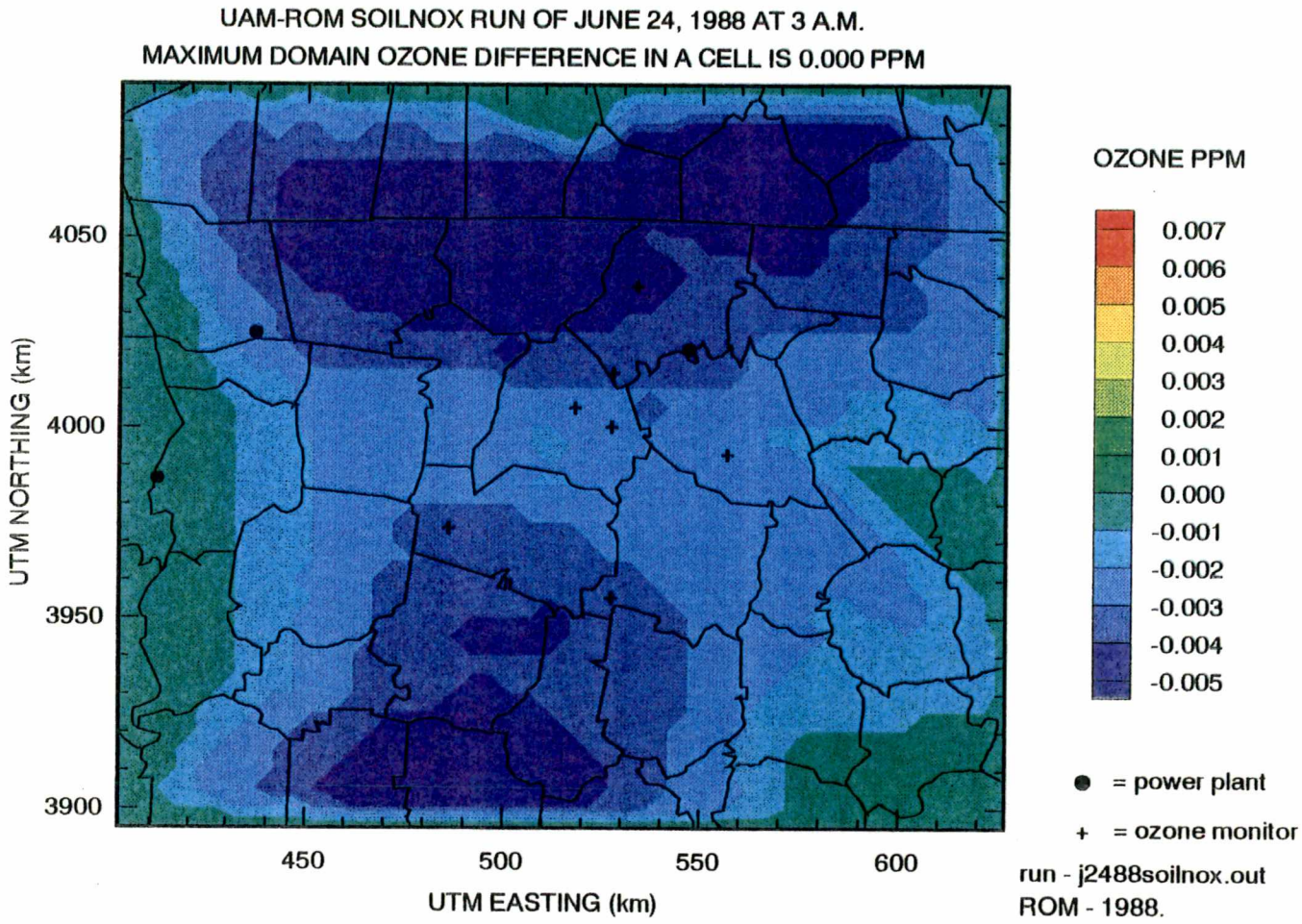


Figure 9-1. Difference plot at 3 AM for the soil NO_x run of June 24, 1988.

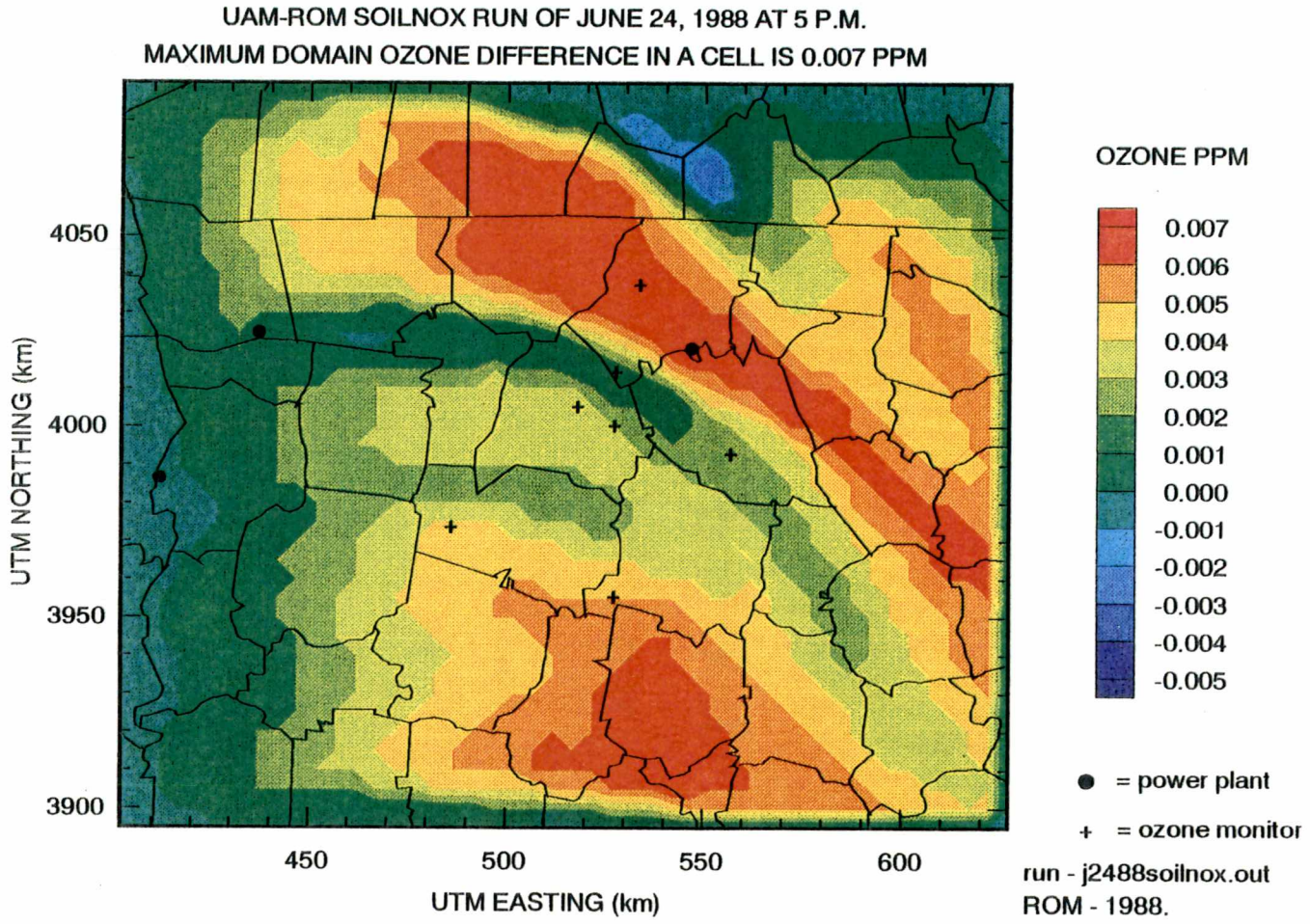


Figure 9-2. Difference plot at 5 PM for the soil NO_x run of June 24, 1988.

contribution from urban core sources. Figure 9-2 shows that increased soil NO_x emissions did not appear to increase production consid-erably over land areas already showing the most ozone production in the modeling domain for that day.

The statistical results determined for June 24, 1988 confirm this as the soil NO_x run showed only marginally better performance over the basecase run. These results are tabulated in Table 9-1.

Figures 9-3 through 9-7 show the comparison of predicted (bilinear) vs. observed hourly ozone values for each operational monitoring station for the basecase and sensitivity runs. The time-series plots show only small nighttime scavenging and daytime production improvements gained by

Table 9-1. Recommended Performance Measures for the June 24, 1988 Episode Using a 24 Hour Averaging Period.

Performance Test	UAM-ROM	Soil NO_x
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	17.5%	17.5%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-114.8%	-109.2%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	25.2%	23.1%
Gross error >60 ppb (recommended value of 30-35%).	26.1%	24.2%

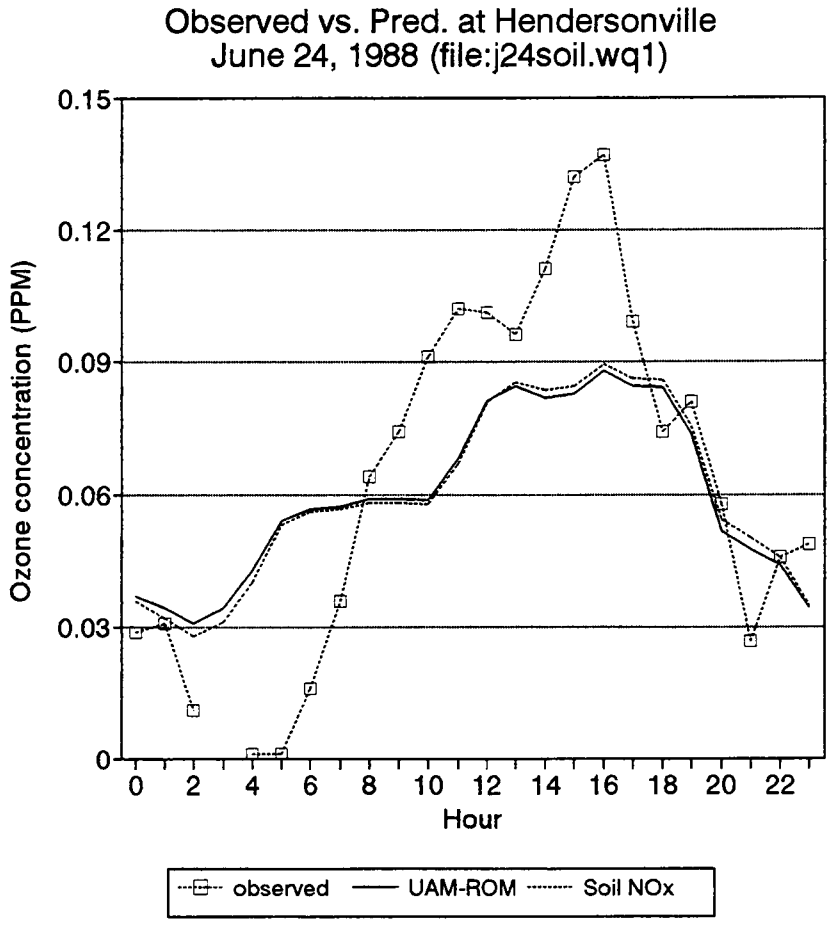


Figure 9-3. **Observed vs. predicted ozone at Hendersonville for the soil NO_x run of June 24, 1988.**

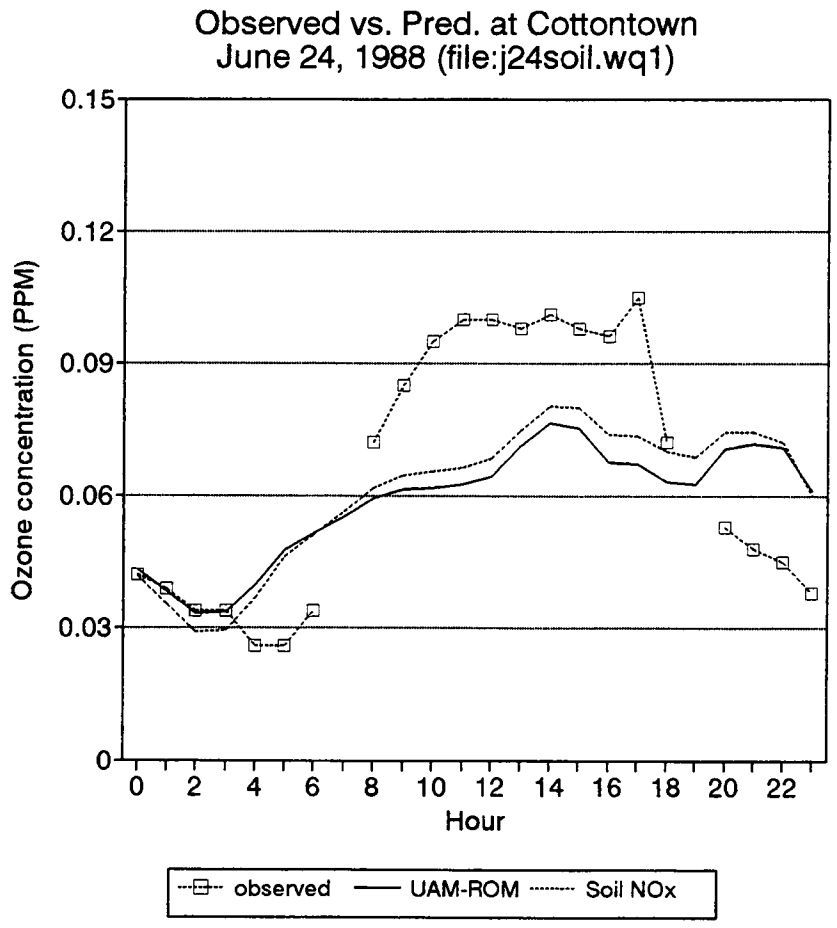


Figure 9-4. **Observed vs. predicted ozone at Cottontown for the soil NO_x run of June 24, 1988.**

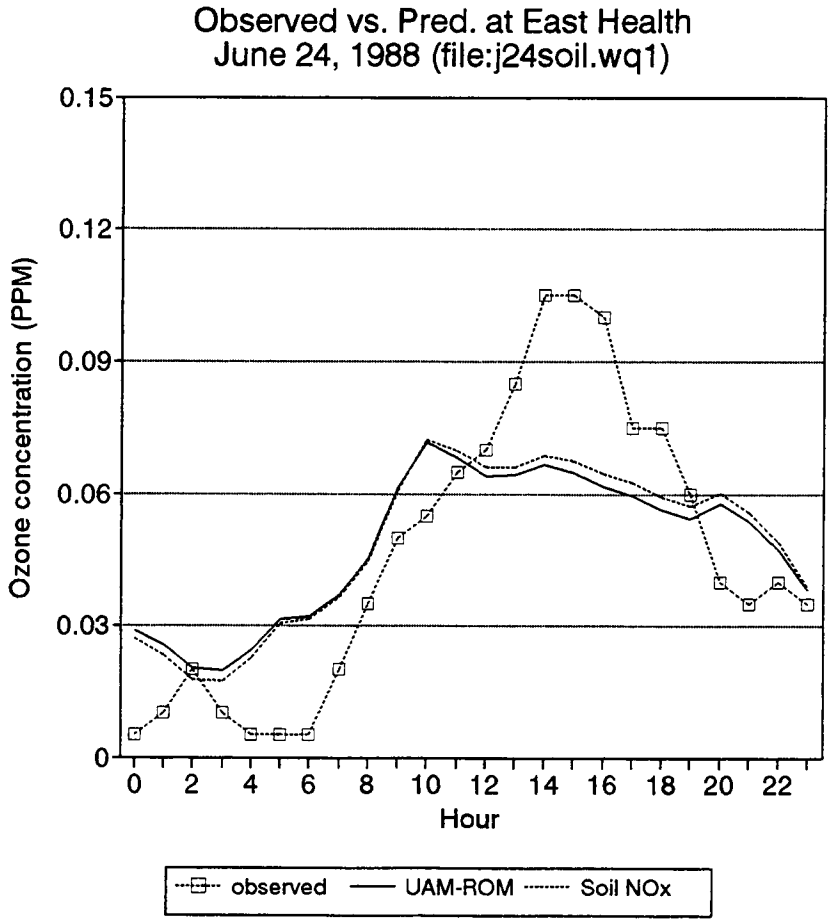


Figure 9-5. **Observed vs. predicted ozone at East Health for the soil NO_x run of June 24, 1988.**

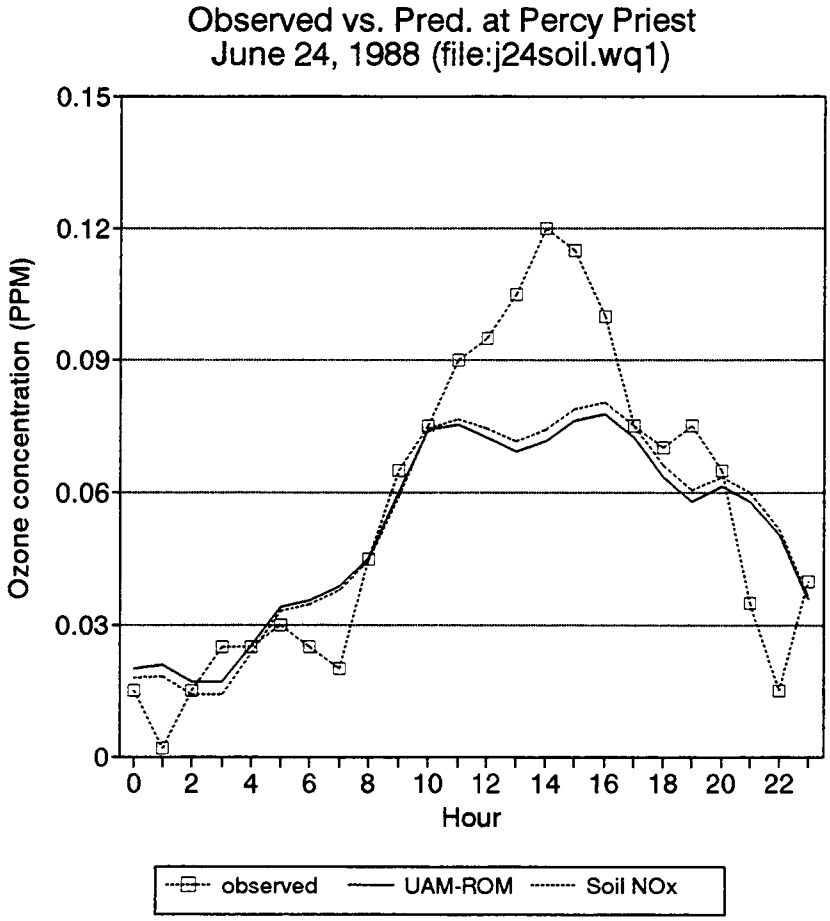


Figure 9-6. **Observed vs. predicted ozone at Percy Priest for the soil NO_x run of June 24, 1988.**

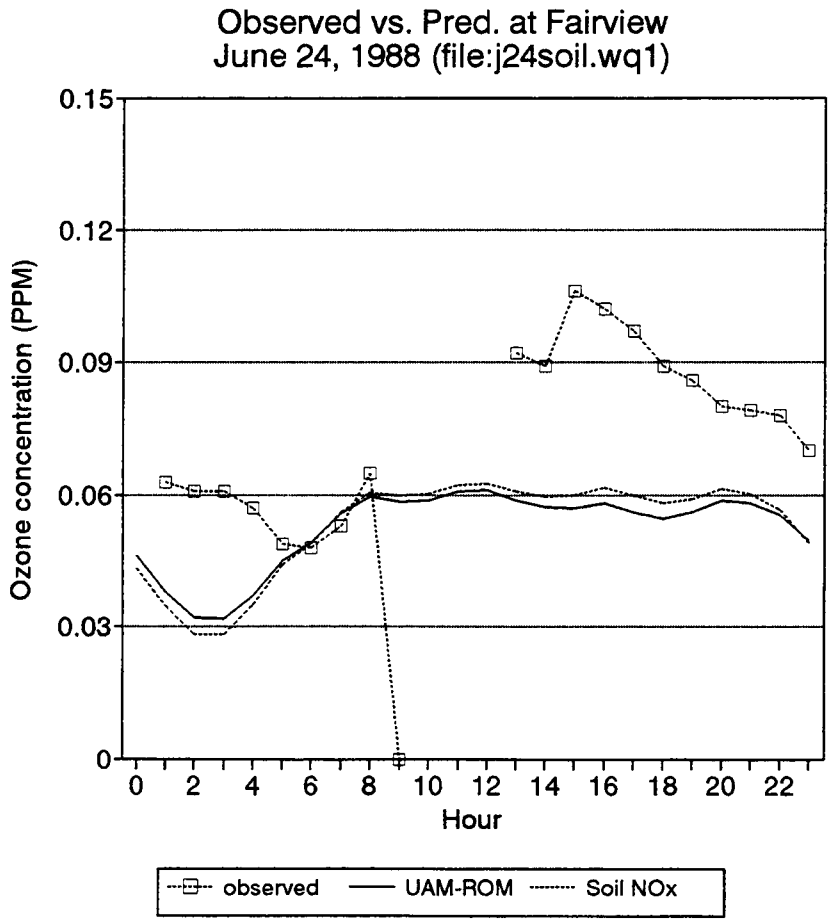


Figure 9-7. **Observed vs. predicted ozone at Fairview for the soil NO_x run of June 24, 1988.**

modeling with increased soil NO_x emissions. The increase in daytime ozone production from increased soil NO_x was not able to improve the statistics considerably since soil NO_x also exhibited the same pattern of nighttime over-prediction as did the basecase run.

4. Soil NO_x Results - August 3, 1988

Difference plots for August 3, 1988 were made by subtracting basecase ozone concentrations from soil NO_x ozone concentrations for each respective grid cell location in the modeling domain over the 24 hour period. In the difference file for August 3, 1988, positive values show more ozone formation (production) for soil NO_x over the basecase, while negative values show less ozone formation (scavenging) for soil NO_x over the basecase. Difference plots of a soil NO_x run made for August 3, 1988 are presented as Figures 9-8 and 9-9 for 3 AM and 5 PM, respectively. Figure 9-8 (peak scavenging hour) shows that a maximum of an additional 4 ppb of scavenging occurred in the modeling domain at 3 AM with lesser scavenging than this nearer to the monitors as a result of increased soil NO_x emissions. Figure 9-9 (peak production hour) shows that a maximum of 13 ppb of additional production occurred in the modeling domain at 5 PM with lesser production than this nearer to the monitors as a result of increased soil NO_x emissions.

Both figures show that the peak area of scavenging and production was generally seen to be located outside of the

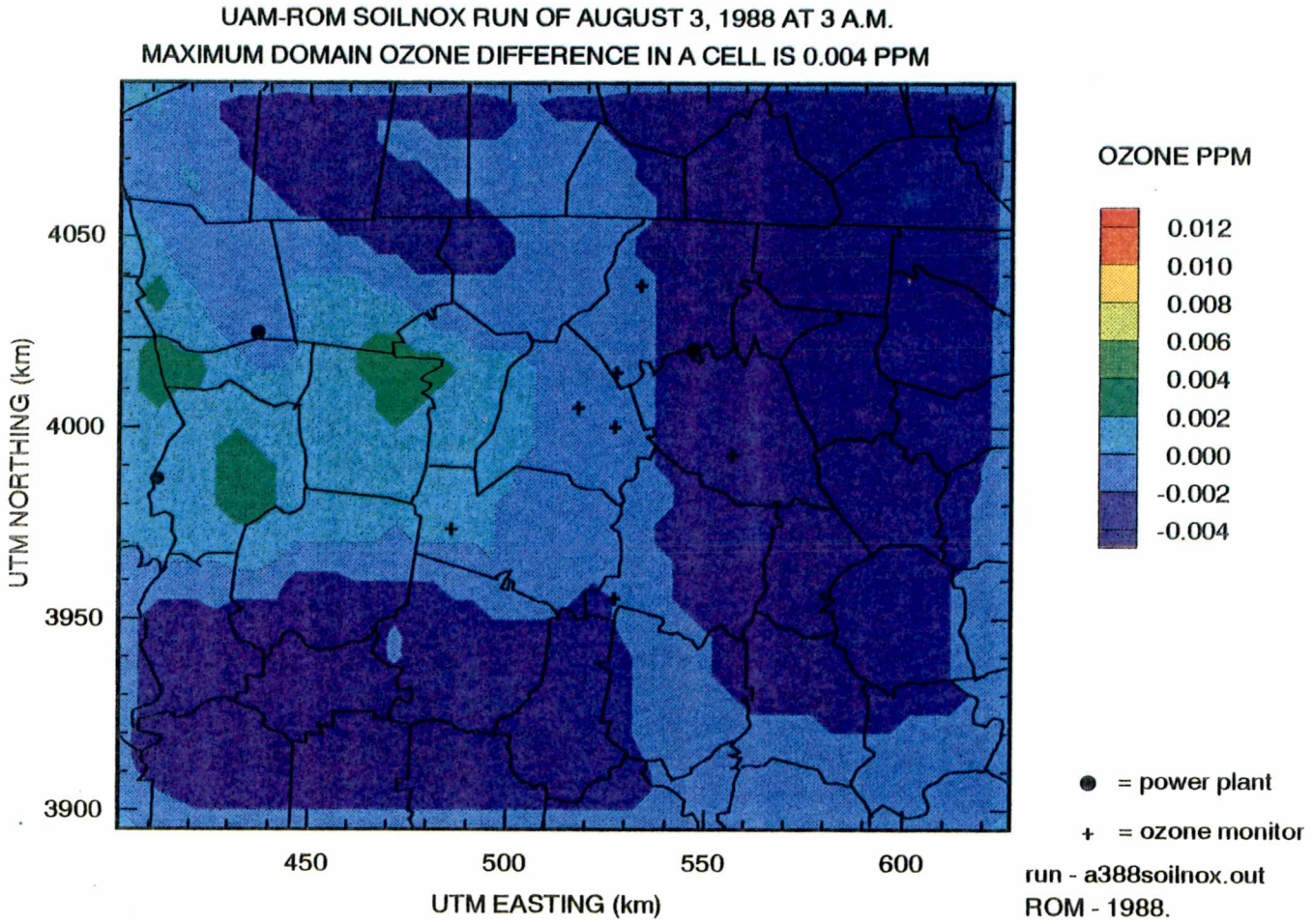


Figure 9-8. Difference plot at 3 AM for the soil NO_x run of August 3, 1988.

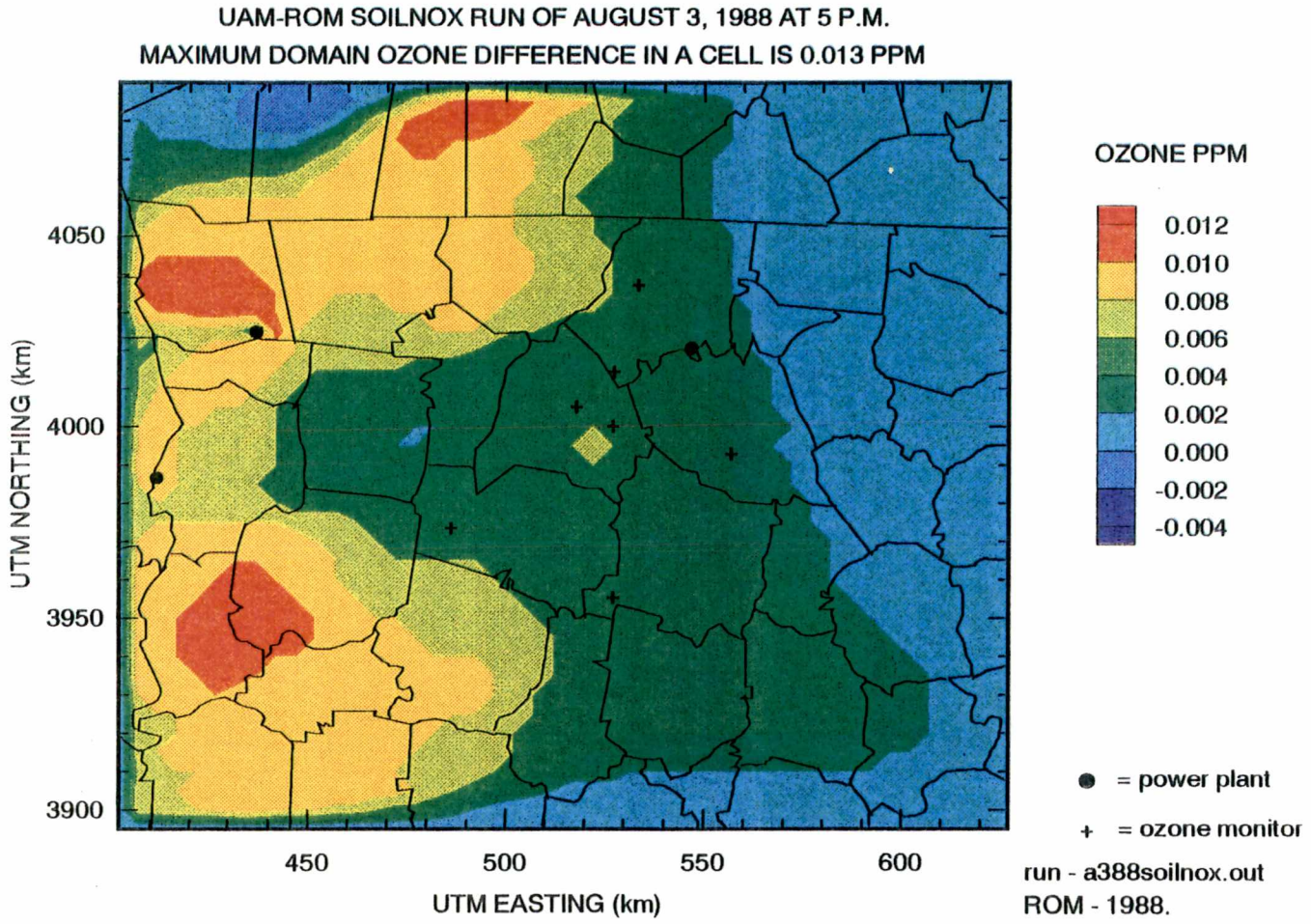


Figure 9-9. Difference plot at 5 PM for the soil NO_x run of August 3, 1988.

path of the urban core plume. It was previously shown that the August 3, 1988 episode was primarily dominated by urban core sources. Figure 9-9 shows that increased soil NO_x emissions did not appear to increase production considerably over land areas already showing the most ozone production in the modeling domain for that day.

The statistical results tabulated for August 3, 1988 confirm this as the soil NO_x run showed similar performance to the basecase run. These results are tabulated in Table 9-2. Figures 9-10 through 9-16 show the comparison of predicted (bilinear) vs. observed hourly ozone values for each operational monitoring station for the basecase and sensitivity runs. The August 3, 1988 time-series plots show

Table 9-2. Recommended Performance Measures for the August 3, 1988 Episode Using a 24 Hour Averaging Period.

Performance Test	UAM-ROM	UAM-DWM
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	2.0%	0.6%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-515.0%	-515.7%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	9.4%	3.4%
Gross error >60 ppb (recommended value of 30-35%).	20.2%	18.4%

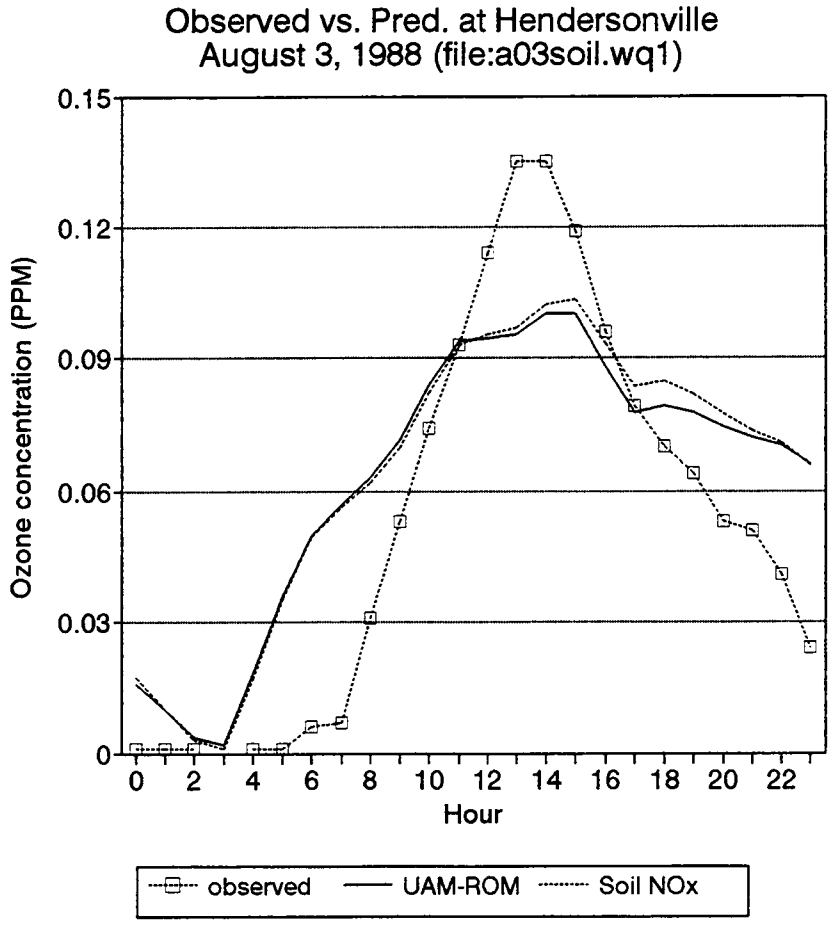


Figure 9-10. **Observed vs. predicted ozone at Hendersonville for the soil NO_x run of August 3, 1988.**

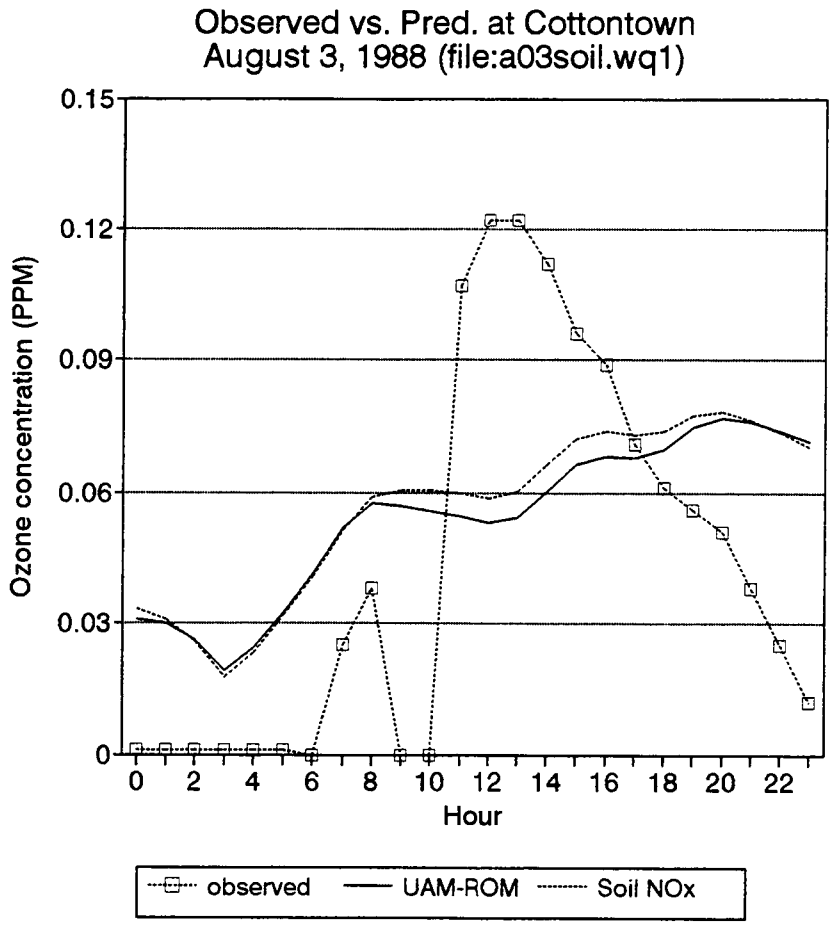


Figure 9-11. **Observed vs. predicted ozone at Cottontown for the soil NO_x run of August 3, 1988.**

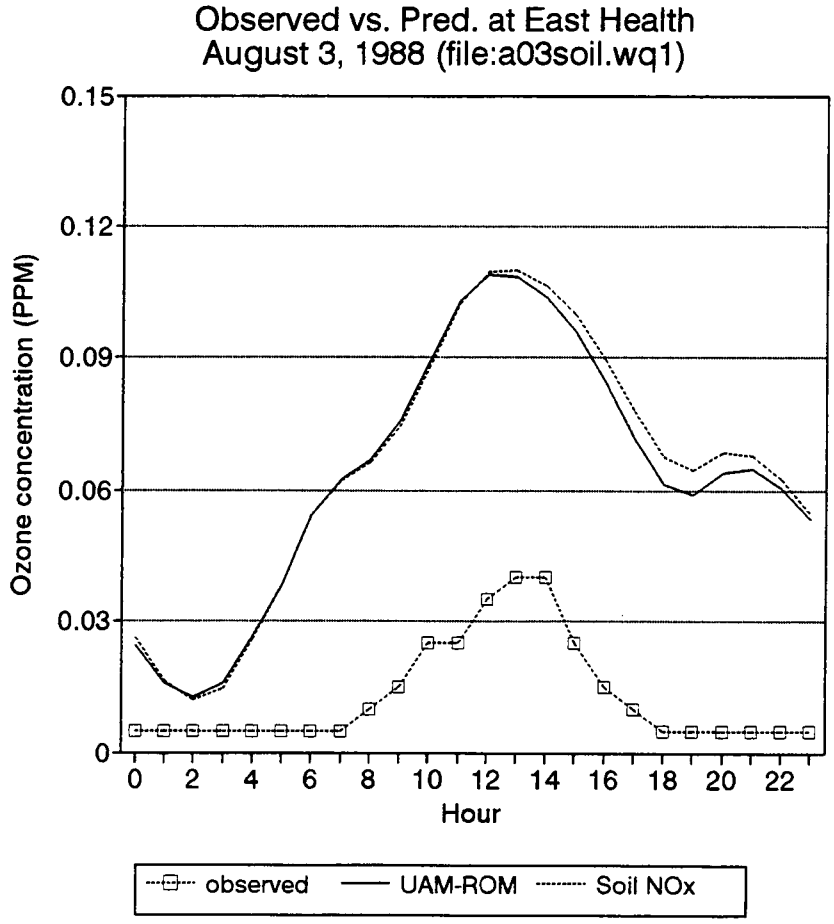


Figure 9-12. **Observed vs. predicted ozone at East Health for the soil NO_x run of August 3, 1988.**

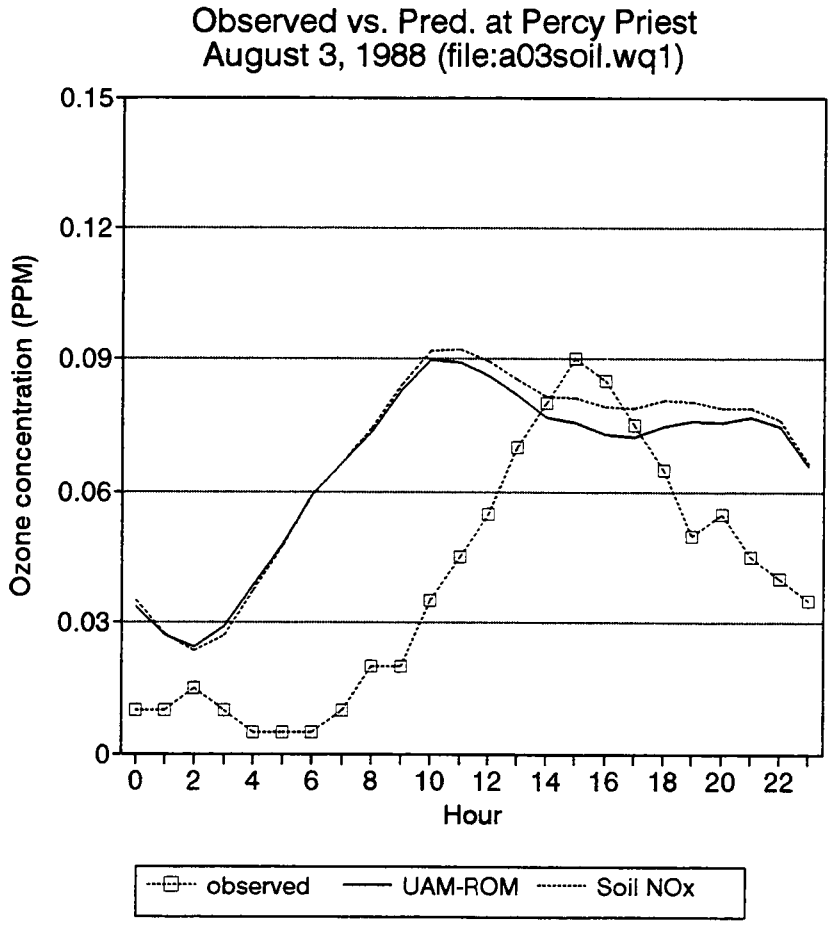


Figure 9-13. **Observed vs. predicted ozone at Percy Priest for the soil NO_x run of August 3, 1988.**

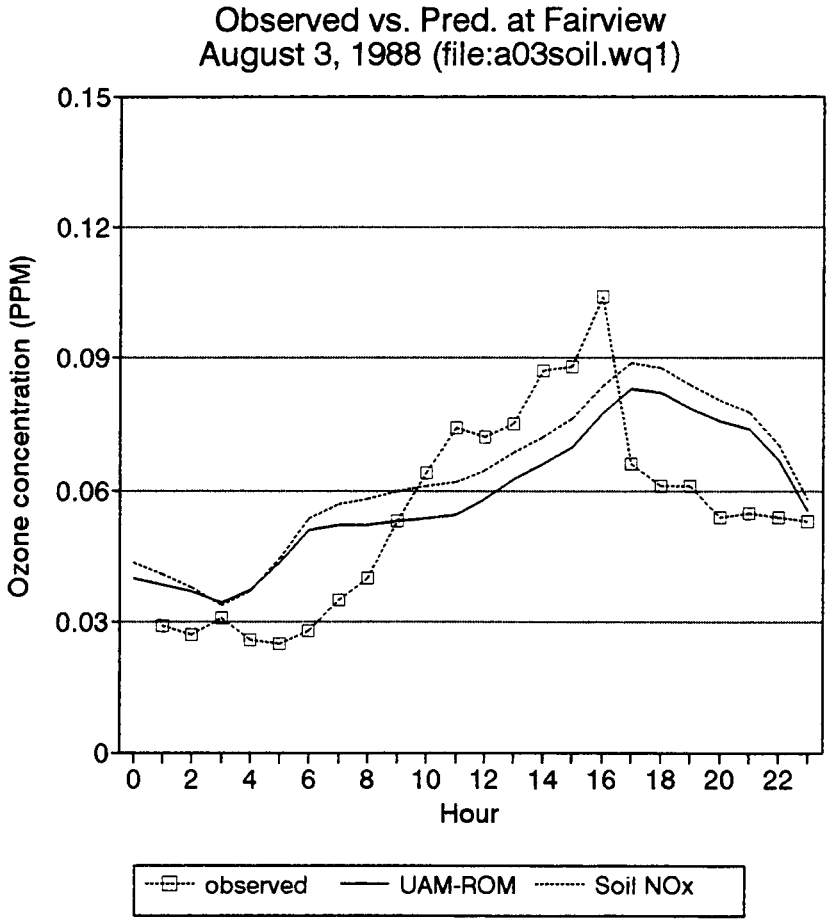


Figure 9-14. **Observed vs. predicted ozone at Fairview for the soil NO_x run of August 3, 1988.**

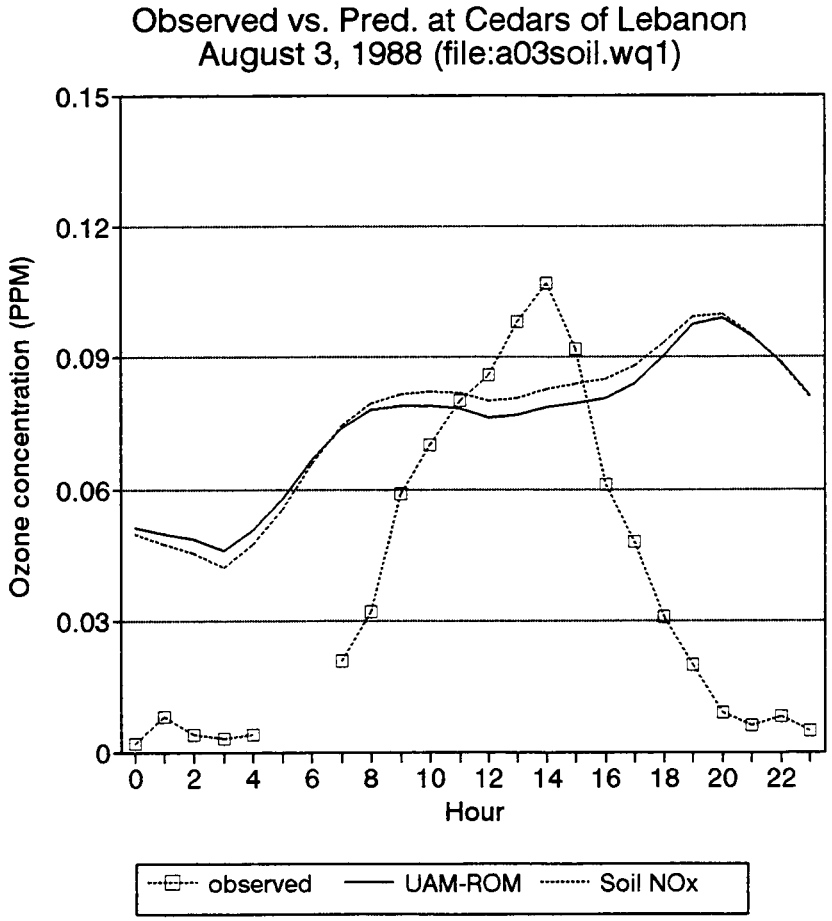


Figure 9-15. **Observed vs. predicted ozone at Cedars of Lebanon for the soil NO_x run of August 3, 1988.**

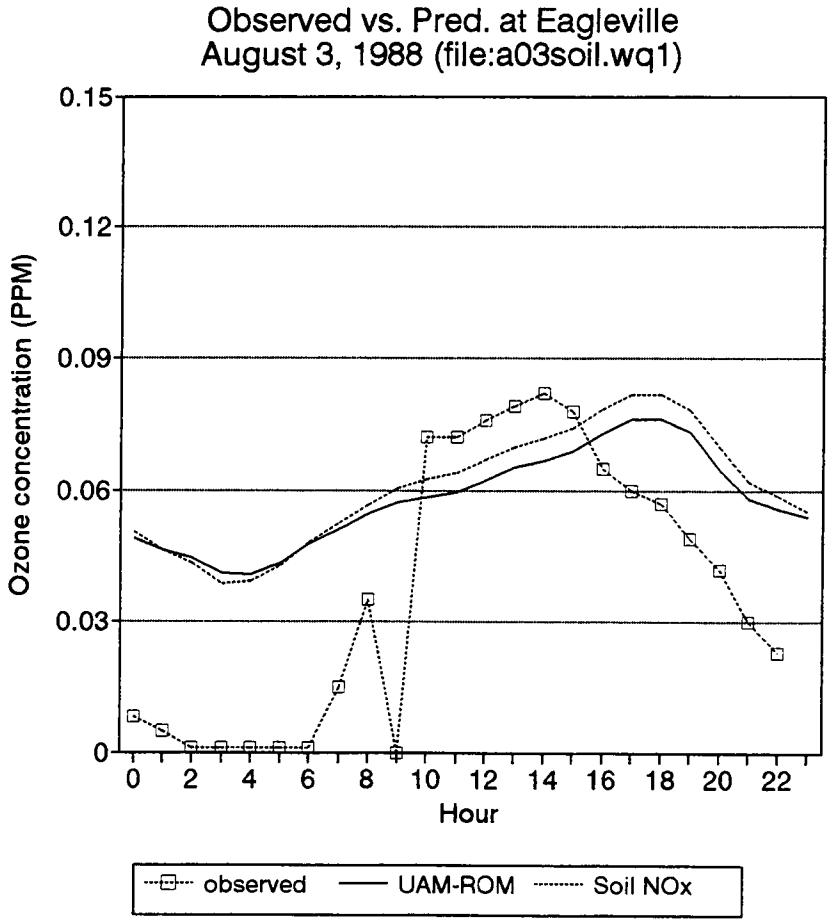


Figure 9-16. **Observed vs. predicted ozone at Eagleville for the soil NO_x run of August 3, 1988.**

higher relative increases in daytime production by modeling with increased soil NO_x emissions than the June 24th, 1988 episode showed. However, the increased ozone production was not able to improve the statistics considerably since the soil NO_x also exhibited a pattern of nighttime overprediction similar to the basecase run.

5. Soil NO_x Conclusions

Based on recent findings, sensitivity runs with increased soil NO_x emissions were conducted to see if the model performance could be improved by increasing nighttime scavenging and daytime production in the model over the basecase UAM-ROM runs. Results for the episodes of June 24 and August 3, 1988 show that even with "worst case" increased soil NO_x emissions, the model performance improved only slightly. In fact, the normalized bias test showed acceptable results for both runs only when considering observed values of ≥60 ppb.

One possible explanation for why the increased soil NO_x runs did not considerable improve the statistics is that maximum additional nighttime scavenging and daytime production occurred in the modeling domain only outside of those areas that already formed the highest concentration of ozone (already saturated with anthropogenic emissions). Since the monitors were located within these areas, the performance did not improve much for them. As an example, the June 24, 1988 soil NO_x difference plots show that for the Hendersonville monitor at 3 AM an additional 3-4 ppb of scavenging occurred

at 3 AM, while at 5 PM an additional 1 ppb of production occurred through increased soil NO_x emissions. In the previous section dealing with the June 24, 1988 episode, it was shown that for Hendersonville the model overpredicted in the morning by 40 ppb and underpredicted by 40 ppb in the daytime.

Hypothetically, the biggest performance gain would have occurred in monitors located far away from the urban metropolitan area for either episode. Although recent research efforts could one day confirm underprediction of soil NO_x emissions by UAM-BEIS, use of more appropriate emission factors (somewhere in between UAM-BEIS and soil NO_x) should not improve the model's performance considerably. Therefore it is shown that increasing soil NO_x emissions to "worst case" predictions did not improve the performance considerably in the MTMD for the 1988 UAM-ROM validation runs.

6. Six Layer Run

The second sensitivity run concerned increased vertical resolution (number of vertical layers) in the model. According to the document entitled *Guideline for Regulatory Application of the Urban Airshed Model*, "increased vertical resolution improves the simulation of when and where plumes are mixed to ground level... Users of the UAM should consider specifying greater detail for the horizontal and vertical grid cell size than the minimum recommended in this guidance document." To this end, runs were attempted in which the

validation parameter of using two levels below and three levels above the mixing height was modified. Attempts were made at increasing the number of levels below the mixing height since emissions from all sources were shown to be emitted below the mixing height for all episodes during daytime hours. By increasing the number of vertical barriers (levels), it was hoped that emissions would mix to the ground sooner forming more ozone in the daytime instead of dispersing upward into artificially large vertical layers where the occurrence of ground-emissions interactions would be decreased.

The IWIND interface was the third of the ROM-UAM interfaces to be rerun since it supplied input for other ROM-UAM interfaces. IWIND failed during its execution using either nine or eight vertical layers because of a divergence minimization error. The error occurred because IWIND attempted to distinguish too much vertical resolution from low vertical resolution data (nine or eight level UAM-ROM winds from two levels of GMISS ROM winds). Next, IWIND was run for a seven layer specification, but the output was not usable since the wind speed was calculated to be at least two orders of magnitude too high. Finally, IWIND was found to process properly for six vertical layers (three above and three below the mixing height) allowing the other ROM-UAM interfaces and the UAM model to be run.

In the six layer run, the minimum vertical cell

thicknesses of the three upper levels remained at 150 m, but the minimum vertical cell thickness of the three lower layers was changed from 50 m to 40 m. This was necessary because the minimum mixing height on June 23, 1988 was calculated by NCDC to be 129 m. One third of this value, (129 m)/3 = 43 m, is less than 50 m requiring that a value of 43 m or less be used.

7. Six Layer Results

Difference plots for the six layer run were constructed by subtracting the six layer ozone concentrations from the basecase ozone concentrations (five layer run) for each respective grid cell location in the modeling domain over the 24 hour period. In the difference file for June 24, 1988, positive values show more ozone formation (production) from the basecase over a six layer run, while negative values show less ozone formation (scavenging) from the basecase over a six layer run.

Difference plots of a six layer run made for June 24, 1988 are presented as Figures 9-17 and 9-18 for 1 AM and 1 PM, respectively. Figure 9-17 shows areas of both scavenging and production at this early morning hour. It was previously shown that this episode was dominated by transport from a Stewart County point source (power plant) to urban Nashville. In the early morning hours, since no ozone was being formed, NO_x emissions from the point source would eventually be mixed to the ground scavenging any residual ozone. Since Figure 9-17 shows more ozone concentration from the six layer run down-

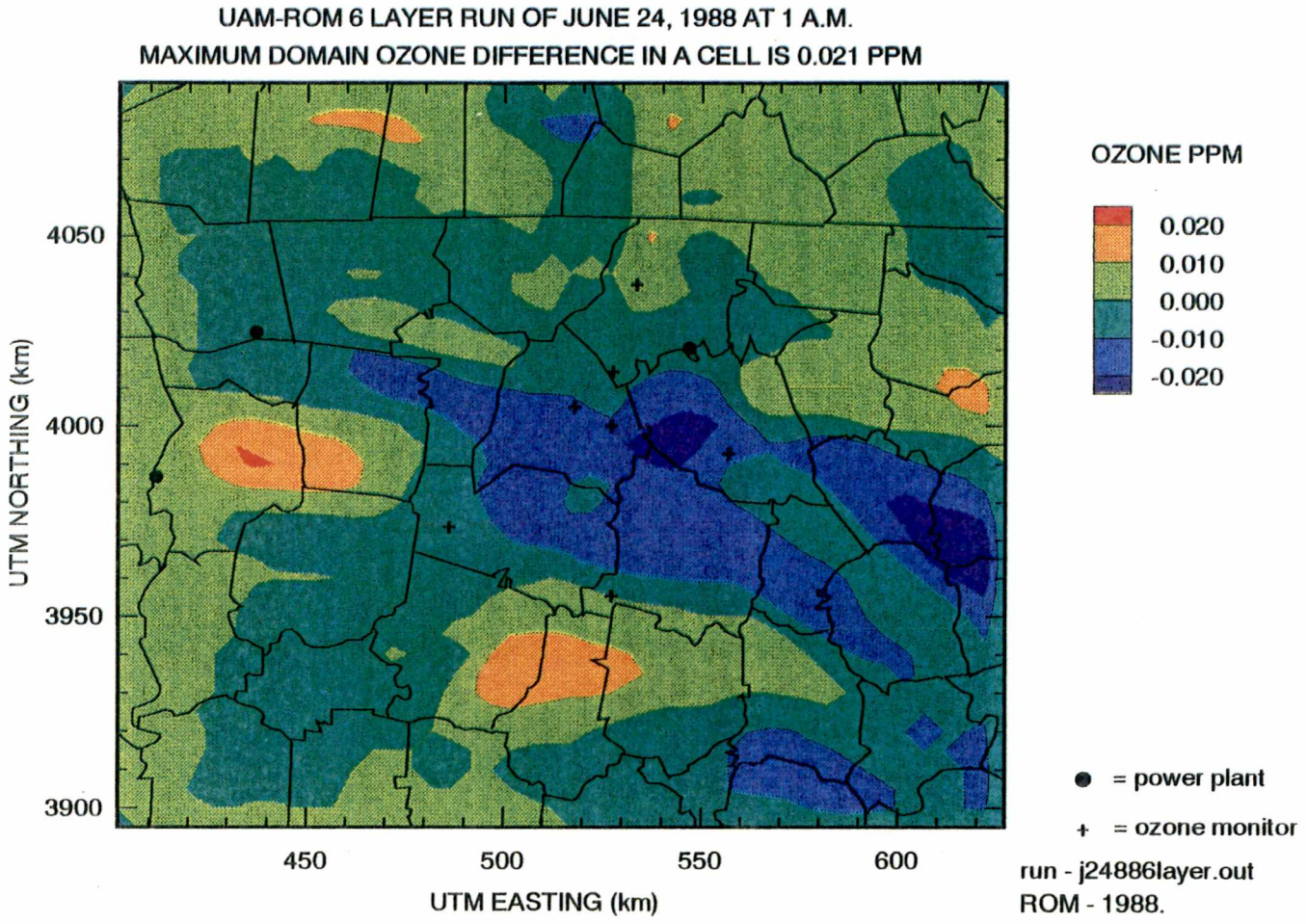


Figure 9-17. Difference plot at 1 AM for the six layer run of June 24, 1988.

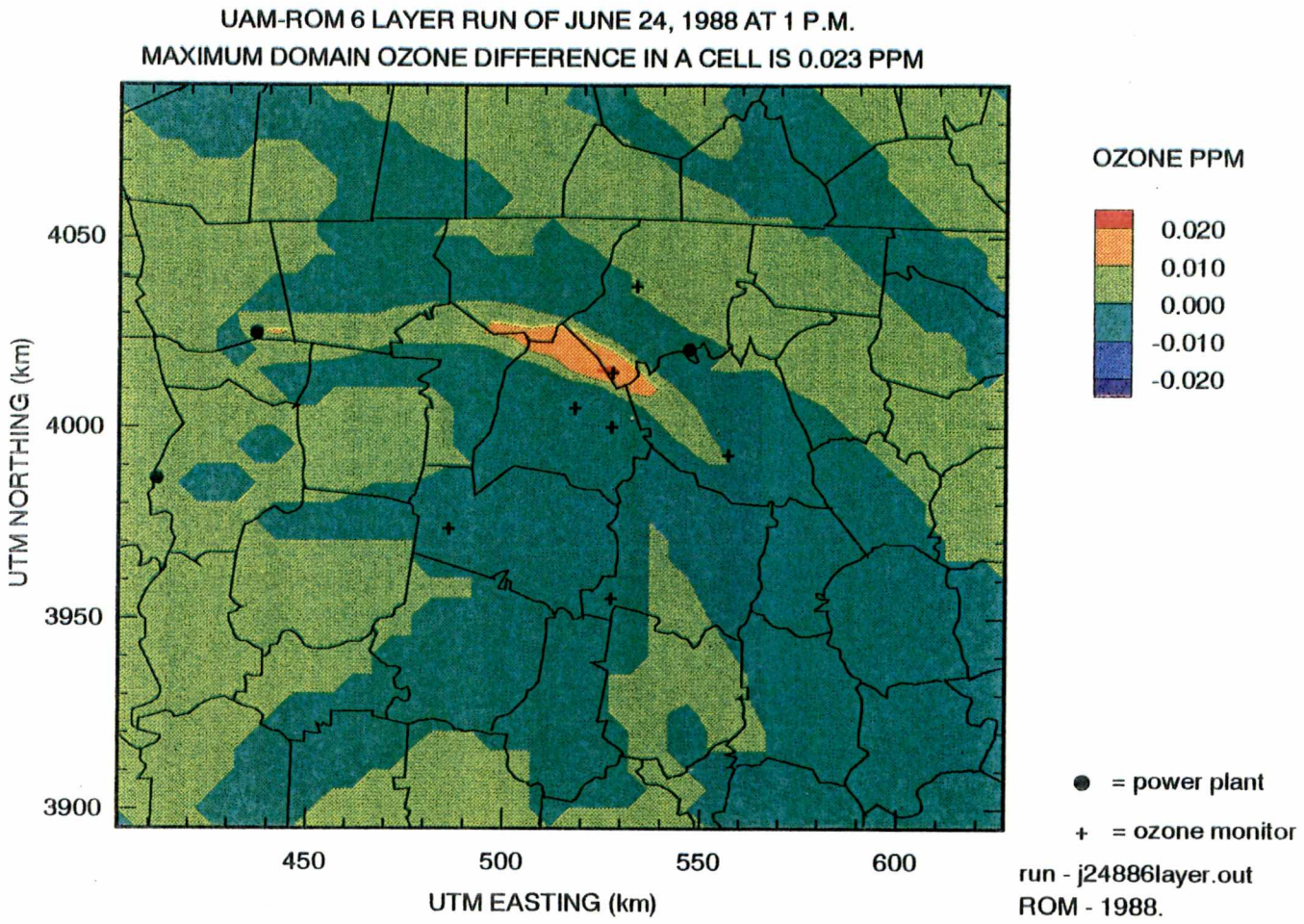


Figure 9-18. Difference plot at 1 PM for the six layer run of June 24, 1988.

wind of the power plant, it appears that downward mixing of elevated point source emissions to the ground was hindered by adding an additional vertical layer. It can be said that the early daytime data show that elevated NO_x point sources emitting pollutants above layer 1 will have reduced scavenging ability with increased vertical resolution because of an increase in the number of barriers (levels) for downward advection, dispersion and diffusion processes.

Figure 9-18 also shows areas of both scavenging and production at this early afternoon hour. Downwind of the power plant in a grid cell located close to the Hendersonville station, the five layer run shows a maximum of 23 ppb more ozone production over a six layer run! However right outside of the transport plume's influence (plume periphery), the difference plot shows negative values indicative of a five layer run forming less ground level ozone than the six layer run. This means that for ground level sources (mobile and area sources), adding an additional layer prevents upward dispersion of emissions thereby increasing ground level ozone formation from nonelevated sources.

Statistical results tabulated for the June 24, 1988 show approximately similar performance for the six and 5 layer runs. The more negative six layer bias error indicates that this run overpredicted more at night showing that groundward dispersion of NO_x from elevated point sources was slightly hindered with an additional vertical level. The smaller six

layer gross error indicates that this run predicted nearer to the stations in the daytime showing that the upward dispersion of NO_x from ground level sources was slightly hindered with an additional vertical level. These results are tabulated in Table 9-3.

Figures 9-19 through 9-23 depict time-series comparisons of predicted (bilinear) vs. observed hourly ozone values for the operational monitoring stations on this day. Since the monitoring station predicted values were determined bilinearly by weighting the concentrations at the four nearest cells, it was found that large daytime production differences for single cells (in the influence of the Stewart County point source plume) were cancelled out by averaging in negative and posi-

Table 9-3. Recommended Performance Measures for the June 24, 1988 Episode Using a 24 Hour Averaging Period.

Performance Test	5 Layers	6 Layers
Unpaired highest-prediction Accuracy (recommended value of ±15-20%).	17.5%	19.6%
Normalized Bias (recommended value of ±5-15%, for all observed values).	-114.8%	-129.8%
Normalized Bias (recommended value of ±5-15% for observed values ≥0.06 ppm).	25.2%	24.4%
Gross error >60 ppb (recommended value of 30-35%).	26.1%	25.5%

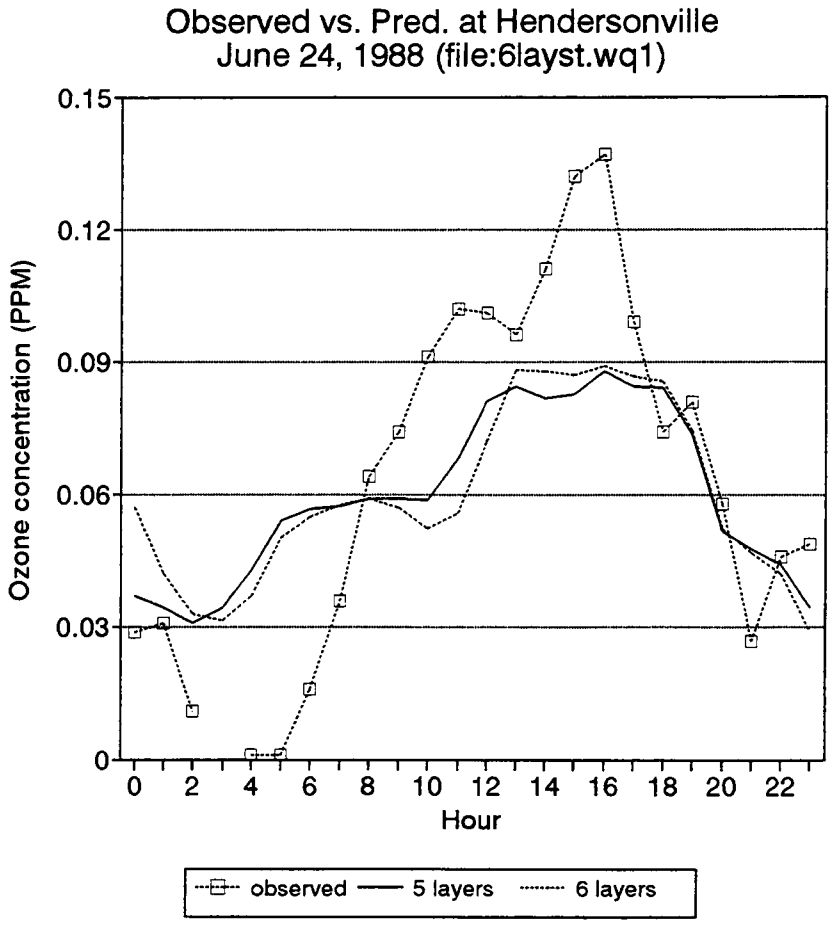


Figure 9-19. **Observed vs. predicted ozone at Hendersonville for the six layer run of June 24, 1988.**

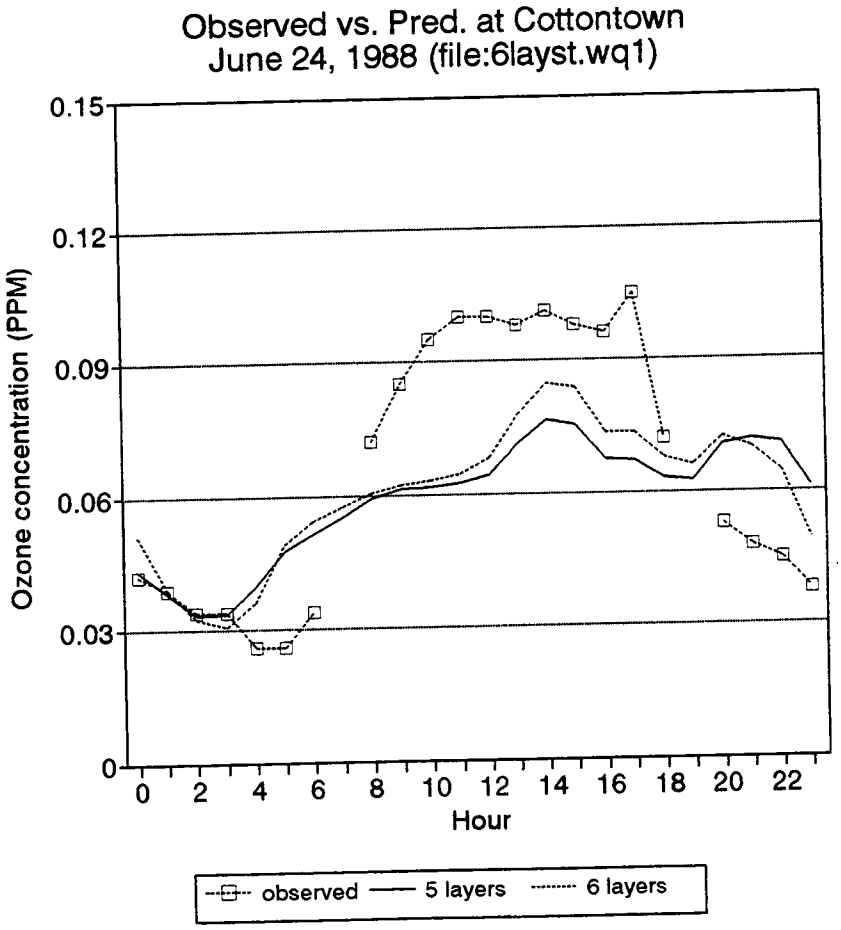


Figure 9-20. Observed vs. predicted ozone at Cottontown for the six layer run of June 24, 1988.

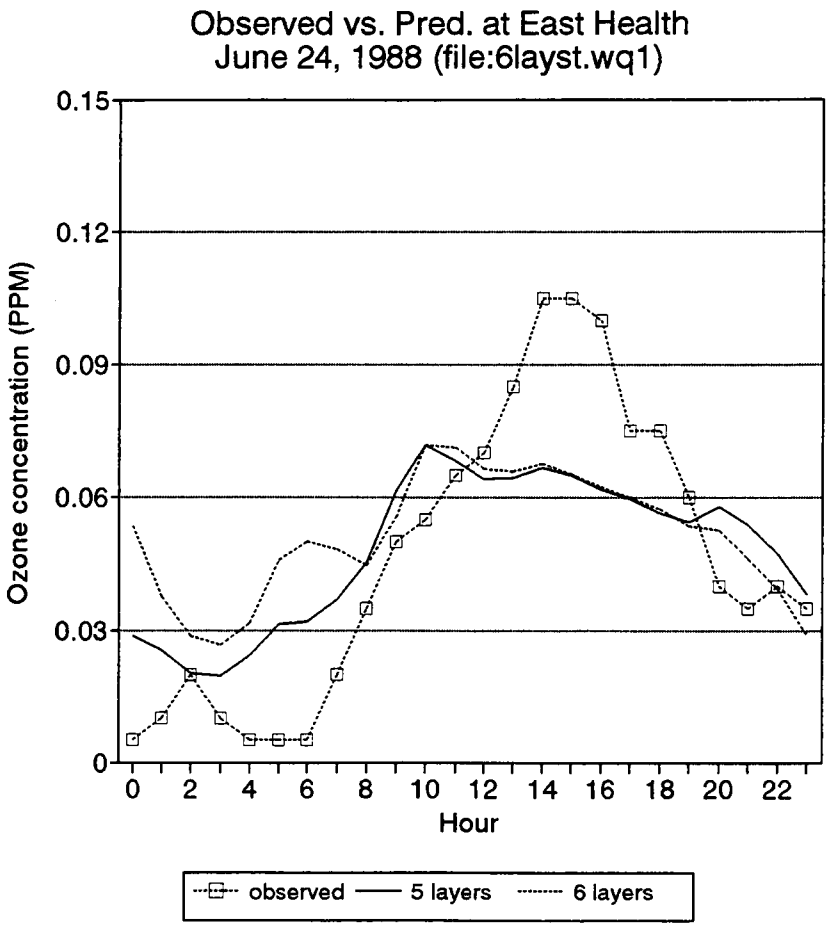


Figure 9-21. **Observed vs. predicted ozone at East Health for the six layer run of June 24, 1988.**

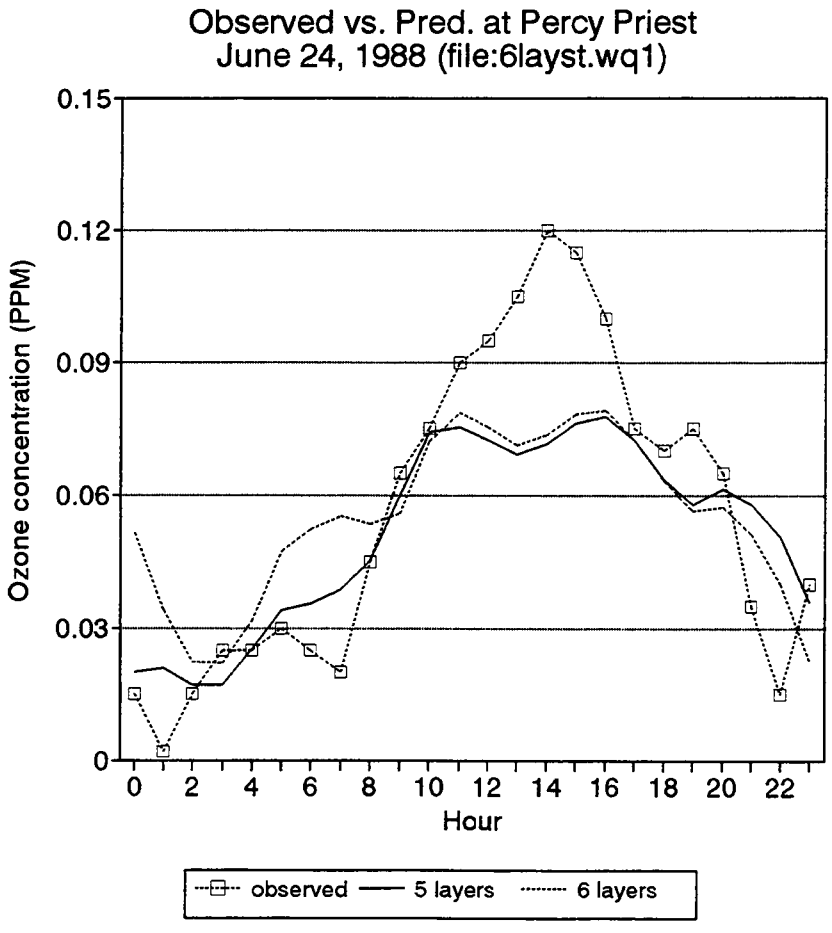


Figure 9-22. **Observed vs. predicted ozone at Percy Priest for the six layer run of June 24, 1988.**

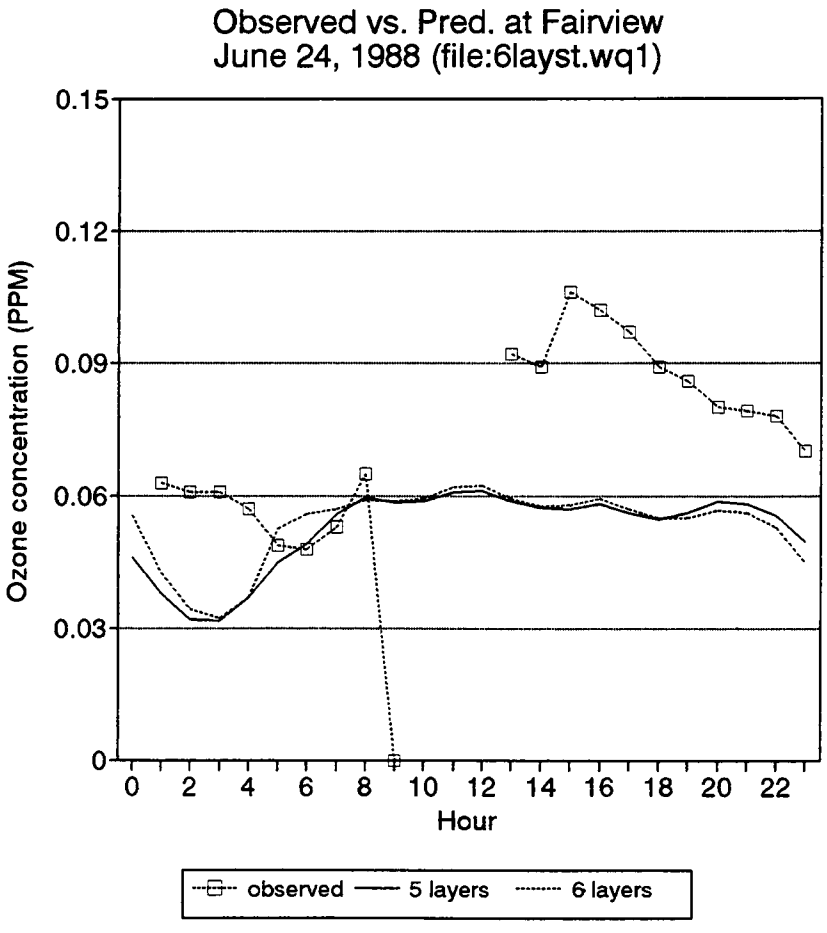


Figure 9-23. **Observed vs. predicted ozone at Fairview for the six layer run of June 24, 1988.**

tive values from the adjacent cells. The time-series plots show overall similar results. One run outperformed the other one depending on whether ground or elevated sources were more influential in forming or scavenging ground level ozone.

8. Six Layer Conclusions

Increasing the vertical resolution of levels in the modeling domain created more resistance to upward dispersion from ground level sources and more resistance to downward dispersion from elevated sources. The June 24, 1988 six layer sensitivity run showed similar performance to a standard five layer run. It can be said that since ozone formation in the MTMD is attributable to both ground and elevated sources, adding additional layers would only tend to improve the overall modeling performance in areas where ground level sources contributed more ozone production than elevated sources did. In the absence of any elevated sources, it would then appear that adding an additional vertical layer would improve the performance, but this scenario is not realistic for the MTMD as both ground and elevated sources contribute to ozone formation.

Perhaps what the runs do show from the ±20 ppb shifts from adding one layer is the sensitivity of the model to mixing processes both at the ground and aloft. In order to verify whether enhanced vertical resolution beyond the standard 5 levels would improve the overall mixing process, a successive series of runs would be needed each having 6, 7,

8 , 9... levels. However, to increase cell resolution at this point beyond 6 levels, a modification to the IWIND code or use of another wind model would be needed.

Section 10. Summary

1. Conclusions

In summary, an extensive effort was made to model the four episode dates of June 24, July 9, August 1, and August 3, 1988. In addition, sensitivity analyses were conducted to determine the degree to which the modeling results might be sensitive to parameters such as soil NO_x and the number of layers within the UAM cells.

Overall, the results of the model performance evaluation showed that the model was capable of meeting the recommended performance measures for all four episodes using two different wind models with the exception of the June 24, 1988 UAM-ROM normalized bias result. For this particular run, the calculated normalized bias was 25.2% with a maximum recommended normalized bias of 15% showing that UAM-ROM could have met all the required performance criteria for this date if it had only predicted higher ozone concentrations at the monitors, e.g., Hendersonville. It should be mentioned that by following the EPA guidance of only considering observed values of ≥60 ppb in the normalized bias and >60 ppb in the gross error calculations, some large relative errors in the nondaytime data would not be used in the calculations. Although the regulatory guidance and a memorandum from EPA allow modelers to exclude primarily nondaytime data in the calculation of the performance measures, no mention is given to why. If other nonattainment areas are similar to the Nashville modeling

domain, then perhaps the reason is in the inability of the model to perform well at night.

On June 24, 1988, the ozone formation in the MTMD was primarily due to transport from outside the modeling domain for concentrations in the northeastern portion of the domain, and an urban plume with a superimposed power plant plume interaction (from the Cumberland and Gallatin power plants) in the central portion of the domain near the urban Nashville area. On July 9, 1988, ozone was primarily transported into the domain from the northeast and moved in a clockwise fashion down through the Nashville area, where contributions were made by the urban core and the Gallatin power plant, after which the ozone plume tended to drift northward out of the urban area. On August 1, 1988, ozone formation slightly northwest of urban Nashville appeared to be result of the urban plume and the Gallatin power plant. On August 3, 1988, the primary ozone plume moved slowly away from the urban Nashville area toward the west and appeared to be the result of an urban plume and the Gallatin power plant.

Both graphical and statistical analyses were conducted to determine the degree to which the UAM model was able to simulate the formation of ozone in the MTMD. The inputs to the model included detailed spatially and temporally allocated emissions for each of the four episode days, and meteorological data based on ROM and DWM windfields. It was found that ROM windfields were more representative of the meteor-

ological conditions than the DWM windfields owing to DWM windspeeds that appeared to be too low to use with any degree of confidence. One major problem with the DWM windfields was the use of a domain-mean wind which did not correlate for wind speed with any meteorological stations in the domain. By selecting a rather low radius of influence in the DWM model, the resultant gridded DWM windfields were weighted heavily towards the slow domain-mean wind while higher speed observations showed up only as small but noticeable discontinuities in the flow field. It was decided to not use the DWM windfields when making 1996 simulation runs because of such findings as marked discontinuities between predicted and observed wind speeds/directions in the DWM wind vector plots. UTK did not generate the inputs to the DWM windfields and was only supplied the inputs in final form to run the DWM model. There was no way of knowing which portions of the data were unusable, so the decision was made to run the DWM windfields "as is". The advantage of using an alternate windfield was to see how the model responded in forming more ozone with slower wind speeds.

Although sensitivity analyses such as increased soil NO_x emissions were conducted, no scientifically defensible solution was able to be identified which would both decrease nighttime predicted concentrations and simultaneously increase daytime predicted concentrations. It would be possible to increase daytime background concentrations and decrease

nighttime background concentrations by an hourly factor that would correct the model to simply give higher values during the day and lower values at night, thus improving the statistics. However, this does not seem to be a scientifically sound approach. It may provide a better correlation, but not necessarily for the right reasons, leading to erroneous conclusions. For example, such corrections would make it virtually impossible to assess the contributions from transport. In addition, the background is not a simple mixture of ozone values, but consists of ozone content as well as all of the speciated VOCs and NO_x, creating a multitude of possible combinations that could arbitrarily be chosen. Several mixing height algorithms other than RAMMETX were also considered, but no mixing data existed in the MTMD for the four episodes in 1988 to discount the RAMMETX and NCDC results.

Given the above results, it was concluded that the values predicted by the model for daytime conditions were sufficiently reasonable that emission projections should be made to 1996, followed by UAM simulation runs for the four episodes in 1996 using a ROM windfield.

2. Recommendations for Future Improvement of Models

a. Mixing Height:

This study has raised questions regarding the adequacy of the RAMMETX Option 0 mixing height algorithm to interpolate a profile showing mixing after sunrise followed by the

reestablishment of the mixing height to the ground after ground-based convection peaks before sunset. There is a need for an improved algorithm to predict mixing height profiles. This algorithm would need to be based on actual data of the mixing taken at multiple times during the 24 hour modeling period to provide a more accurate representation of the mixing height with time.

b. Boundary Conditions:

Independent studies (e.g., ROM Performance Evaluation) have shown that the ROM boundary values generally over-predicted at night in and around the MTMD. The ROM boundary ozone concentration profiles for this modeling domain generally were too high in comparison with the nighttime data in the domain. Future modeling efforts in the domain may wish to pursue using default values such as those published in the regulatory guidance document if it is determined that a minimum nighttime ozone concentration must be used to produce better nighttime model performance. However, the use of default values obscures the effect of any deviations from the default values due to transport into the domain.

c. Hendersonville Monitor:

The Protocol document tabulated ozone maxima data that shows that of the highest ozone recorded in the MTMD, the Hendersonville station by far showed the highest frequency of recording ozone violations in 1988. It seems that it would be of some value to explore this occurrence in more detail. The

runs in this study plus other sensitivity runs have shown that predicted ozone formation is sensitive to many variables. It could be that unique meteorology, terrain features and/or precursor emissions in and around the Hendersonville area combine to form more ozone than can be predicted by this model. In future studies it would be of value to conduct mobile ozone monitoring studies in and around Hendersonville to help answer some of these questions since ozone nonattainment for Nashville was caused primarily by the observations from this one monitor.

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BIBLIOGRAPHY

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APPENDIX

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

AIR PROGRAMS BRANCH
RECEIVED
AUG 04 1993
EPA-REGION IV
ATLANTA, GA.

JUL 3 0 1993

MEMORANDUM

SUBJECT: Urban Airshed Model (UAM) Performance Reviews

FROM: Edwin L. Meyer, Jr., Chief
Model Application Section, SRAB, TSD (MD-14)

TO: Ozone Modeling Contact, Regions I-X

An issue has recently surfaced concerning how performance measures should be calculated when they are assessed against results obtained with past UAM performance tests noted on pages 55 and 57 of the Guideline for Regulatory Application of the UAM (Guideline). The usual practice in past performance tests involving paired statistics has been to only include events having observed (monitored) values which were greater than some minimum concentration. This minimum ozone concentration varied between 0.04-0.06 ppm. There is reason to believe that 0.06 ppm was the most commonly used minimum value. Therefore, in order to compare results of normalized bias and normalized gross error against past performance, it is most appropriate to only consider prediction/observations pairs where the observation is at least 0.06 ppm.

On pages 54 and 57 of the Guideline, we note that the normalized gross error which may be compared with past results should only consider pairs where the observation is ≥0.06 ppm. However, we fail to make this distinction for the normalized bias performance measure. We should have done so. Therefore, I would appreciate it if you would inform those States doing UAM performance evaluations, that the comparison of normalized bias with past performance of the UAM is best done if the data pairs only include observations where ozone is ≥0.06 ppm.

Grid Numbering Pattern

Figure A-1 shows the grid numbering pattern for the Middle Tennessee Modeling Domain used in the Appendix for tabulation of the maximum grid values for the 1988 validation runs. The layout illustrates several of the grid locations in the modeling domain.

The grids are numbered starting at the lower left hand corner. Grid numbers increase from left to right and bottom to top. All 1,840 grids are 5 X 5 km squares.

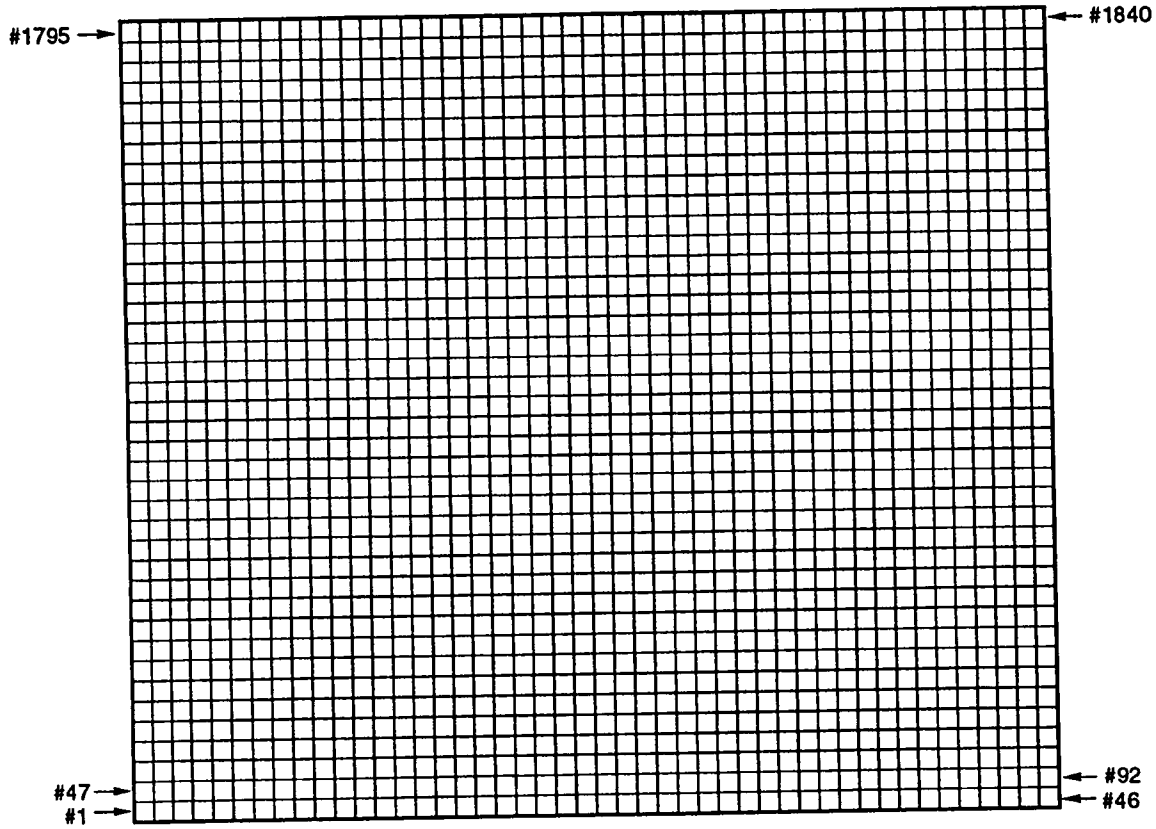


Figure A-1. Middle Tennessee Modeling Domain grid numbering pattern.

A-1. UAM-ROM max. values for June 24, 1988.

NO. 1 = 0.0458 PPM	NO. 51 = 0.0699 PPM	NO. 101 = 0.0776 PPM	NO. 151 = 0.0774 PPM
NO. 2 = 0.0623 PPM	NO. 52 = 0.0709 PPM	NO. 102 = 0.0793 PPM	NO. 152 = 0.0764 PPM
NO. 3 = 0.0627 PPM	NO. 53 = 0.0738 PPM	NO. 103 = 0.0799 PPM	NO. 153 = 0.0756 PPM
NO. 4 = 0.0632 PPM	NO. 54 = 0.0750 PPM	NO. 104 = 0.0798 PPM	NO. 154 = 0.0739 PPM
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A-1. continued.

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NO. 226 = 0.0859 PPM	NO. 276 = 0.0883 PPM	NO. 326 = 0.0777 PPM	NO. 376 = 0.0751 PPM
NO. 227 = 0.0857 PPM	NO. 277 = 0.0768 PPM	NO. 327 = 0.0770 PPM	NO. 377 = 0.0738 PPM
NO. 228 = 0.0836 PPM	NO. 278 = 0.0765 PPM	NO. 328 = 0.0765 PPM	NO. 378 = 0.0726 PPM
NO. 229 = 0.0780 PPM	NO. 279 = 0.0764 PPM	NO. 329 = 0.0755 PPM	NO. 379 = 0.0718 PPM
NO. 230 = 0.0881 PPM	NO. 280 = 0.0757 PPM	NO. 330 = 0.0746 PPM	NO. 380 = 0.0707 PPM
NO. 231 = 0.0749 PPM	NO. 281 = 0.0754 PPM	NO. 331 = 0.0739 PPM	NO. 381 = 0.0696 PPM
NO. 232 = 0.0749 PPM	NO. 282 = 0.0748 PPM	NO. 332 = 0.0731 PPM	NO. 382 = 0.0689 PPM
NO. 233 = 0.0746 PPM	NO. 283 = 0.0742 PPM	NO. 333 = 0.0723 PPM	NO. 383 = 0.0679 PPM
NO. 234 = 0.0742 PPM	NO. 284 = 0.0736 PPM	NO. 334 = 0.0714 PPM	NO. 384 = 0.0683 PPM
NO. 235 = 0.0737 PPM	NO. 285 = 0.0728 PPM	NO. 335 = 0.0702 PPM	NO. 385 = 0.0700 PPM
NO. 236 = 0.0731 PPM	NO. 286 = 0.0723 PPM	NO. 336 = 0.0692 PPM	NO. 386 = 0.0677 PPM
NO. 237 = 0.0727 PPM	NO. 287 = 0.0715 PPM	NO. 337 = 0.0679 PPM	NO. 387 = 0.0699 PPM
NO. 238 = 0.0722 PPM	NO. 288 = 0.0710 PPM	NO. 338 = 0.0700 PPM	NO. 388 = 0.0726 PPM
NO. 239 = 0.0717 PPM	NO. 289 = 0.0699 PPM	NO. 339 = 0.0712 PPM	NO. 389 = 0.0696 PPM
NO. 240 = 0.0715 PPM	NO. 290 = 0.0697 PPM	NO. 340 = 0.0685 PPM	NO. 390 = 0.0683 PPM
NO. 241 = 0.0710 PPM	NO. 291 = 0.0678 PPM	NO. 341 = 0.0679 PPM	NO. 391 = 0.0680 PPM
NO. 242 = 0.0709 PPM	NO. 292 = 0.0674 PPM	NO. 342 = 0.0697 PPM	NO. 392 = 0.0669 PPM
NO. 243 = 0.0704 PPM	NO. 293 = 0.0676 PPM	NO. 343 = 0.0668 PPM	NO. 393 = 0.0647 PPM
NO. 244 = 0.0693 PPM	NO. 294 = 0.0666 PPM	NO. 344 = 0.0668 PPM	NO. 394 = 0.0640 PPM
NO. 245 = 0.0688 PPM	NO. 295 = 0.0654 PPM	NO. 345 = 0.0655 PPM	NO. 395 = 0.0635 PPM
NO. 246 = 0.0678 PPM	NO. 296 = 0.0659 PPM	NO. 346 = 0.0647 PPM	NO. 396 = 0.0622 PPM
NO. 247 = 0.0665 PPM	NO. 297 = 0.0646 PPM	NO. 347 = 0.0645 PPM	NO. 397 = 0.0599 PPM
NO. 248 = 0.0664 PPM	NO. 298 = 0.0647 PPM	NO. 348 = 0.0628 PPM	NO. 398 = 0.0583 PPM
NO. 249 = 0.0678 PPM	NO. 299 = 0.0644 PPM	NO. 349 = 0.0623 PPM	NO. 399 = 0.0608 PPM
NO. 250 = 0.0688 PPM	NO. 300 = 0.0636 PPM	NO. 350 = 0.0617 PPM	NO. 400 = 0.0607 PPM

A-1. continued.

NO. 401 = 0.0622 PPM	NO. 451 = 0.0881 PPM	NO. 501 = 0.0836 PPM	NO. 551 = 0.0665 PPM
NO. 402 = 0.0702 PPM	NO. 452 = 0.0892 PPM	NO. 502 = 0.0795 PPM	NO. 552 = 0.0827 PPM
NO. 403 = 0.0778 PPM	NO. 453 = 0.0891 PPM	NO. 503 = 0.0765 PPM	NO. 553 = 0.0680 PPM
NO. 404 = 0.0819 PPM	NO. 454 = 0.0891 PPM	NO. 504 = 0.0740 PPM	NO. 554 = 0.0679 PPM
NO. 405 = 0.0852 PPM	NO. 455 = 0.0861 PPM	NO. 505 = 0.0696 PPM	NO. 555 = 0.0680 PPM
NO. 406 = 0.0872 PPM	NO. 456 = 0.0815 PPM	NO. 506 = 0.0833 PPM	NO. 556 = 0.0684 PPM
NO. 407 = 0.0888 PPM	NO. 457 = 0.0775 PPM	NO. 507 = 0.0713 PPM	NO. 557 = 0.0681 PPM
NO. 408 = 0.0891 PPM	NO. 458 = 0.0750 PPM	NO. 508 = 0.0710 PPM	NO. 558 = 0.0691 PPM
NO. 409 = 0.0883 PPM	NO. 459 = 0.0717 PPM	NO. 509 = 0.0709 PPM	NO. 559 = 0.0703 PPM
NO. 410 = 0.0844 PPM	NO. 460 = 0.0865 PPM	NO. 510 = 0.0708 PPM	NO. 560 = 0.0709 PPM
NO. 411 = 0.0795 PPM	NO. 461 = 0.0746 PPM	NO. 511 = 0.0706 PPM	NO. 561 = 0.0706 PPM
NO. 412 = 0.0759 PPM	NO. 462 = 0.0742 PPM	NO. 512 = 0.0703 PPM	NO. 562 = 0.0708 PPM
NO. 413 = 0.0727 PPM	NO. 463 = 0.0738 PPM	NO. 513 = 0.0697 PPM	NO. 563 = 0.0706 PPM
NO. 414 = 0.0887 PPM	NO. 464 = 0.0732 PPM	NO. 514 = 0.0694 PPM	NO. 564 = 0.0699 PPM
NO. 415 = 0.0780 PPM	NO. 465 = 0.0726 PPM	NO. 515 = 0.0689 PPM	NO. 565 = 0.0692 PPM
NO. 416 = 0.0774 PPM	NO. 466 = 0.0722 PPM	NO. 516 = 0.0681 PPM	NO. 566 = 0.0688 PPM
NO. 417 = 0.0766 PPM	NO. 467 = 0.0717 PPM	NO. 517 = 0.0675 PPM	NO. 567 = 0.0678 PPM
NO. 418 = 0.0760 PPM	NO. 468 = 0.0711 PPM	NO. 518 = 0.0670 PPM	NO. 568 = 0.0663 PPM
NO. 419 = 0.0754 PPM	NO. 469 = 0.0704 PPM	NO. 519 = 0.0661 PPM	NO. 569 = 0.0655 PPM
NO. 420 = 0.0747 PPM	NO. 470 = 0.0695 PPM	NO. 520 = 0.0656 PPM	NO. 570 = 0.0645 PPM
NO. 421 = 0.0737 PPM	NO. 471 = 0.0689 PPM	NO. 521 = 0.0651 PPM	NO. 571 = 0.0659 PPM
NO. 422 = 0.0727 PPM	NO. 472 = 0.0682 PPM	NO. 522 = 0.0644 PPM	NO. 572 = 0.0658 PPM
NO. 423 = 0.0721 PPM	NO. 473 = 0.0672 PPM	NO. 523 = 0.0639 PPM	NO. 573 = 0.0648 PPM
NO. 424 = 0.0714 PPM	NO. 474 = 0.0669 PPM	NO. 524 = 0.0656 PPM	NO. 574 = 0.0643 PPM
NO. 425 = 0.0704 PPM	NO. 475 = 0.0654 PPM	NO. 525 = 0.0660 PPM	NO. 575 = 0.0628 PPM
NO. 426 = 0.0693 PPM	NO. 476 = 0.0657 PPM	NO. 526 = 0.0655 PPM	NO. 576 = 0.0617 PPM
NO. 427 = 0.0685 PPM	NO. 477 = 0.0686 PPM	NO. 527 = 0.0654 PPM	NO. 577 = 0.0608 PPM
NO. 428 = 0.0680 PPM	NO. 478 = 0.0679 PPM	NO. 528 = 0.0656 PPM	NO. 578 = 0.0617 PPM
NO. 429 = 0.0704 PPM	NO. 479 = 0.0669 PPM	NO. 529 = 0.0655 PPM	NO. 579 = 0.0623 PPM
NO. 430 = 0.0723 PPM	NO. 480 = 0.0661 PPM	NO. 530 = 0.0646 PPM	NO. 580 = 0.0633 PPM
NO. 431 = 0.0720 PPM	NO. 481 = 0.0661 PPM	NO. 531 = 0.0630 PPM	NO. 581 = 0.0667 PPM
NO. 432 = 0.0705 PPM	NO. 482 = 0.0657 PPM	NO. 532 = 0.0613 PPM	NO. 582 = 0.0669 PPM
NO. 433 = 0.0690 PPM	NO. 483 = 0.0657 PPM	NO. 533 = 0.0618 PPM	NO. 583 = 0.0720 PPM
NO. 434 = 0.0706 PPM	NO. 484 = 0.0661 PPM	NO. 534 = 0.0623 PPM	NO. 584 = 0.0805 PPM
NO. 435 = 0.0707 PPM	NO. 485 = 0.0652 PPM	NO. 535 = 0.0629 PPM	NO. 585 = 0.0815 PPM
NO. 436 = 0.0691 PPM	NO. 486 = 0.0631 PPM	NO. 536 = 0.0642 PPM	NO. 586 = 0.0832 PPM
NO. 437 = 0.0668 PPM	NO. 487 = 0.0602 PPM	NO. 537 = 0.0657 PPM	NO. 587 = 0.0872 PPM
NO. 438 = 0.0659 PPM	NO. 488 = 0.0601 PPM	NO. 538 = 0.0746 PPM	NO. 588 = 0.0905 PPM
NO. 439 = 0.0649 PPM	NO. 489 = 0.0615 PPM	NO. 539 = 0.0811 PPM	NO. 589 = 0.0901 PPM
NO. 440 = 0.0648 PPM	NO. 490 = 0.0624 PPM	NO. 540 = 0.0818 PPM	NO. 590 = 0.0898 PPM
NO. 441 = 0.0632 PPM	NO. 491 = 0.0624 PPM	NO. 541 = 0.0850 PPM	NO. 591 = 0.0881 PPM
NO. 442 = 0.0602 PPM	NO. 492 = 0.0672 PPM	NO. 542 = 0.0892 PPM	NO. 592 = 0.0850 PPM
NO. 443 = 0.0587 PPM	NO. 493 = 0.0768 PPM	NO. 543 = 0.0907 PPM	NO. 593 = 0.0814 PPM
NO. 444 = 0.0607 PPM	NO. 494 = 0.0810 PPM	NO. 544 = 0.0894 PPM	NO. 594 = 0.0776 PPM
NO. 445 = 0.0618 PPM	NO. 495 = 0.0833 PPM	NO. 545 = 0.0887 PPM	NO. 595 = 0.0727 PPM
NO. 446 = 0.0614 PPM	NO. 496 = 0.0871 PPM	NO. 546 = 0.0859 PPM	NO. 596 = 0.0678 PPM
NO. 447 = 0.0690 PPM	NO. 497 = 0.0900 PPM	NO. 547 = 0.0822 PPM	NO. 597 = 0.0661 PPM
NO. 448 = 0.0771 PPM	NO. 498 = 0.0900 PPM	NO. 548 = 0.0787 PPM	NO. 598 = 0.0820 PPM
NO. 449 = 0.0812 PPM	NO. 499 = 0.0892 PPM	NO. 549 = 0.0754 PPM	NO. 599 = 0.0659 PPM
NO. 450 = 0.0846 PPM	NO. 500 = 0.0875 PPM	NO. 550 = 0.0717 PPM	NO. 600 = 0.0657 PPM

A-1. continued.

NO. 601 = 0.0664 PPM	NO. 651 = 0.0684 PPM	NO. 701 = 0.0692 PPM	NO. 751 = 0.0692 PPM
NO. 602 = 0.0667 PPM	NO. 652 = 0.0675 PPM	NO. 702 = 0.0665 PPM	NO. 752 = 0.0687 PPM
NO. 603 = 0.0667 PPM	NO. 653 = 0.0654 PPM	NO. 703 = 0.0639 PPM	NO. 753 = 0.0700 PPM
NO. 604 = 0.0667 PPM	NO. 654 = 0.0634 PPM	NO. 704 = 0.0634 PPM	NO. 754 = 0.0702 PPM
NO. 605 = 0.0666 PPM	NO. 655 = 0.0628 PPM	NO. 705 = 0.0633 PPM	NO. 755 = 0.0706 PPM
NO. 606 = 0.0668 PPM	NO. 656 = 0.0626 PPM	NO. 706 = 0.0630 PPM	NO. 756 = 0.0738 PPM
NO. 607 = 0.0666 PPM	NO. 657 = 0.0619 PPM	NO. 707 = 0.0636 PPM	NO. 757 = 0.0760 PPM
NO. 608 = 0.0658 PPM	NO. 658 = 0.0611 PPM	NO. 708 = 0.0634 PPM	NO. 758 = 0.0789 PPM
NO. 609 = 0.0655 PPM	NO. 659 = 0.0607 PPM	NO. 709 = 0.0633 PPM	NO. 759 = 0.0773 PPM
NO. 610 = 0.0653 PPM	NO. 660 = 0.0600 PPM	NO. 710 = 0.0653 PPM	NO. 760 = 0.0793 PPM
NO. 611 = 0.0645 PPM	NO. 661 = 0.0601 PPM	NO. 711 = 0.0669 PPM	NO. 761 = 0.0801 PPM
NO. 612 = 0.0633 PPM	NO. 662 = 0.0608 PPM	NO. 712 = 0.0725 PPM	NO. 762 = 0.0807 PPM
NO. 613 = 0.0628 PPM	NO. 663 = 0.0608 PPM	NO. 713 = 0.0721 PPM	NO. 763 = 0.0799 PPM
NO. 614 = 0.0616 PPM	NO. 664 = 0.0610 PPM	NO. 714 = 0.0750 PPM	NO. 764 = 0.0785 PPM
NO. 615 = 0.0607 PPM	NO. 665 = 0.0620 PPM	NO. 715 = 0.0763 PPM	NO. 765 = 0.0802 PPM
NO. 616 = 0.0628 PPM	NO. 666 = 0.0637 PPM	NO. 716 = 0.0777 PPM	NO. 766 = 0.0808 PPM
NO. 617 = 0.0640 PPM	NO. 667 = 0.0655 PPM	NO. 717 = 0.0797 PPM	NO. 767 = 0.0828 PPM
NO. 618 = 0.0639 PPM	NO. 668 = 0.0677 PPM	NO. 718 = 0.0790 PPM	NO. 768 = 0.0859 PPM
NO. 619 = 0.0629 PPM	NO. 669 = 0.0699 PPM	NO. 719 = 0.0777 PPM	NO. 769 = 0.0906 PPM
NO. 620 = 0.0622 PPM	NO. 670 = 0.0715 PPM	NO. 720 = 0.0801 PPM	NO. 770 = 0.0933 PPM
NO. 621 = 0.0608 PPM	NO. 671 = 0.0743 PPM	NO. 721 = 0.0803 PPM	NO. 771 = 0.0950 PPM
NO. 622 = 0.0616 PPM	NO. 672 = 0.0766 PPM	NO. 722 = 0.0825 PPM	NO. 772 = 0.0937 PPM
NO. 623 = 0.0629 PPM	NO. 673 = 0.0760 PPM	NO. 723 = 0.0860 PPM	NO. 773 = 0.0913 PPM
NO. 624 = 0.0640 PPM	NO. 674 = 0.0765 PPM	NO. 724 = 0.0901 PPM	NO. 774 = 0.0877 PPM
NO. 625 = 0.0666 PPM	NO. 675 = 0.0808 PPM	NO. 725 = 0.0922 PPM	NO. 775 = 0.0816 PPM
NO. 626 = 0.0695 PPM	NO. 676 = 0.0807 PPM	NO. 726 = 0.0938 PPM	NO. 776 = 0.0731 PPM
NO. 627 = 0.0720 PPM	NO. 677 = 0.0838 PPM	NO. 727 = 0.0923 PPM	NO. 777 = 0.0697 PPM
NO. 628 = 0.0725 PPM	NO. 678 = 0.0869 PPM	NO. 728 = 0.0889 PPM	NO. 778 = 0.0691 PPM
NO. 629 = 0.0786 PPM	NO. 679 = 0.0906 PPM	NO. 729 = 0.0854 PPM	NO. 779 = 0.0722 PPM
NO. 630 = 0.0815 PPM	NO. 680 = 0.0917 PPM	NO. 730 = 0.0791 PPM	NO. 780 = 0.0726 PPM
NO. 631 = 0.0824 PPM	NO. 681 = 0.0923 PPM	NO. 731 = 0.0710 PPM	NO. 781 = 0.0708 PPM
NO. 632 = 0.0852 PPM	NO. 682 = 0.0903 PPM	NO. 732 = 0.0683 PPM	NO. 782 = 0.0784 PPM
NO. 633 = 0.0888 PPM	NO. 683 = 0.0864 PPM	NO. 733 = 0.0696 PPM	NO. 783 = 0.0596 PPM
NO. 634 = 0.0908 PPM	NO. 684 = 0.0827 PPM	NO. 734 = 0.0719 PPM	NO. 784 = 0.0613 PPM
NO. 635 = 0.0907 PPM	NO. 685 = 0.0765 PPM	NO. 735 = 0.0701 PPM	NO. 785 = 0.0666 PPM
NO. 636 = 0.0904 PPM	NO. 686 = 0.0694 PPM	NO. 736 = 0.0792 PPM	NO. 786 = 0.0750 PPM
NO. 637 = 0.0877 PPM	NO. 687 = 0.0662 PPM	NO. 737 = 0.0631 PPM	NO. 787 = 0.0774 PPM
NO. 638 = 0.0839 PPM	NO. 688 = 0.0700 PPM	NO. 738 = 0.0630 PPM	NO. 788 = 0.0790 PPM
NO. 639 = 0.0800 PPM	NO. 689 = 0.0700 PPM	NO. 739 = 0.0681 PPM	NO. 789 = 0.0798 PPM
NO. 640 = 0.0744 PPM	NO. 690 = 0.0802 PPM	NO. 740 = 0.0755 PPM	NO. 790 = 0.0799 PPM
NO. 641 = 0.0684 PPM	NO. 691 = 0.0650 PPM	NO. 741 = 0.0788 PPM	NO. 791 = 0.0793 PPM
NO. 642 = 0.0666 PPM	NO. 692 = 0.0644 PPM	NO. 742 = 0.0787 PPM	NO. 792 = 0.0783 PPM
NO. 643 = 0.0687 PPM	NO. 693 = 0.0645 PPM	NO. 743 = 0.0793 PPM	NO. 793 = 0.0770 PPM
NO. 644 = 0.0811 PPM	NO. 694 = 0.0695 PPM	NO. 744 = 0.0785 PPM	NO. 794 = 0.0756 PPM
NO. 645 = 0.0655 PPM	NO. 695 = 0.0755 PPM	NO. 745 = 0.0772 PPM	NO. 795 = 0.0754 PPM
NO. 646 = 0.0650 PPM	NO. 696 = 0.0780 PPM	NO. 746 = 0.0758 PPM	NO. 796 = 0.0763 PPM
NO. 647 = 0.0653 PPM	NO. 697 = 0.0779 PPM	NO. 747 = 0.0745 PPM	NO. 797 = 0.0765 PPM
NO. 648 = 0.0652 PPM	NO. 698 = 0.0773 PPM	NO. 748 = 0.0728 PPM	NO. 798 = 0.0770 PPM
NO. 649 = 0.0654 PPM	NO. 699 = 0.0746 PPM	NO. 749 = 0.0705 PPM	NO. 799 = 0.0778 PPM
NO. 650 = 0.0682 PPM	NO. 700 = 0.0720 PPM	NO. 750 = 0.0686 PPM	NO. 800 = 0.0800 PPM

A-1. continued.

NO. 801 = 0.0817 PPM	NO. 851 = 0.0771 PPM	NO. 901 = 0.0828 PPM	NO. 951 = 0.0961 PPM
NO. 802 = 0.0825 PPM	NO. 852 = 0.0758 PPM	NO. 902 = 0.0840 PPM	NO. 952 = 0.0947 PPM
NO. 803 = 0.0820 PPM	NO. 853 = 0.0756 PPM	NO. 903 = 0.0883 PPM	NO. 953 = 0.0935 PPM
NO. 804 = 0.0825 PPM	NO. 854 = 0.0770 PPM	NO. 904 = 0.0928 PPM	NO. 954 = 0.0915 PPM
NO. 805 = 0.0808 PPM	NO. 855 = 0.0798 PPM	NO. 905 = 0.0963 PPM	NO. 955 = 0.0882 PPM
NO. 806 = 0.0806 PPM	NO. 856 = 0.0819 PPM	NO. 906 = 0.0967 PPM	NO. 956 = 0.0842 PPM
NO. 807 = 0.0805 PPM	NO. 857 = 0.0836 PPM	NO. 907 = 0.0959 PPM	NO. 957 = 0.0787 PPM
NO. 808 = 0.0800 PPM	NO. 858 = 0.0862 PPM	NO. 908 = 0.0945 PPM	NO. 958 = 0.0721 PPM
NO. 809 = 0.0789 PPM	NO. 859 = 0.0923 PPM	NO. 909 = 0.0913 PPM	NO. 959 = 0.0707 PPM
NO. 810 = 0.0802 PPM	NO. 860 = 0.0953 PPM	NO. 910 = 0.0856 PPM	NO. 960 = 0.0763 PPM
NO. 811 = 0.0814 PPM	NO. 861 = 0.0965 PPM	NO. 911 = 0.0821 PPM	NO. 961 = 0.0777 PPM
NO. 812 = 0.0826 PPM	NO. 862 = 0.0955 PPM	NO. 912 = 0.0765 PPM	NO. 962 = 0.0763 PPM
NO. 813 = 0.0857 PPM	NO. 863 = 0.0933 PPM	NO. 913 = 0.0713 PPM	NO. 963 = 0.0744 PPM
NO. 814 = 0.0913 PPM	NO. 864 = 0.0900 PPM	NO. 914 = 0.0716 PPM	NO. 964 = 0.0730 PPM
NO. 815 = 0.0942 PPM	NO. 865 = 0.0848 PPM	NO. 915 = 0.0757 PPM	NO. 965 = 0.0706 PPM
NO. 816 = 0.0959 PPM	NO. 866 = 0.0796 PPM	NO. 916 = 0.0761 PPM	NO. 966 = 0.0766 PPM
NO. 817 = 0.0954 PPM	NO. 867 = 0.0735 PPM	NO. 917 = 0.0742 PPM	NO. 967 = 0.0673 PPM
NO. 818 = 0.0931 PPM	NO. 868 = 0.0705 PPM	NO. 918 = 0.0733 PPM	NO. 968 = 0.0676 PPM
NO. 819 = 0.0894 PPM	NO. 869 = 0.0721 PPM	NO. 919 = 0.0711 PPM	NO. 969 = 0.0658 PPM
NO. 820 = 0.0834 PPM	NO. 870 = 0.0750 PPM	NO. 920 = 0.0771 PPM	NO. 970 = 0.0642 PPM
NO. 821 = 0.0765 PPM	NO. 871 = 0.0740 PPM	NO. 921 = 0.0660 PPM	NO. 971 = 0.0627 PPM
NO. 822 = 0.0710 PPM	NO. 872 = 0.0732 PPM	NO. 922 = 0.0669 PPM	NO. 972 = 0.0626 PPM
NO. 823 = 0.0693 PPM	NO. 873 = 0.0716 PPM	NO. 923 = 0.0667 PPM	NO. 973 = 0.0635 PPM
NO. 824 = 0.0726 PPM	NO. 874 = 0.0775 PPM	NO. 924 = 0.0650 PPM	NO. 974 = 0.0640 PPM
NO. 825 = 0.0736 PPM	NO. 875 = 0.0643 PPM	NO. 925 = 0.0635 PPM	NO. 975 = 0.0642 PPM
NO. 826 = 0.0729 PPM	NO. 876 = 0.0688 PPM	NO. 926 = 0.0649 PPM	NO. 976 = 0.0647 PPM
NO. 827 = 0.0717 PPM	NO. 877 = 0.0666 PPM	NO. 927 = 0.0662 PPM	NO. 977 = 0.0651 PPM
NO. 828 = 0.0779 PPM	NO. 878 = 0.0669 PPM	NO. 928 = 0.0669 PPM	NO. 978 = 0.0651 PPM
NO. 829 = 0.0618 PPM	NO. 879 = 0.0647 PPM	NO. 929 = 0.0676 PPM	NO. 979 = 0.0649 PPM
NO. 830 = 0.0506 PPM	NO. 880 = 0.0675 PPM	NO. 930 = 0.0696 PPM	NO. 980 = 0.0652 PPM
NO. 831 = 0.0607 PPM	NO. 881 = 0.0692 PPM	NO. 931 = 0.0708 PPM	NO. 981 = 0.0650 PPM
NO. 832 = 0.0683 PPM	NO. 882 = 0.0729 PPM	NO. 932 = 0.0714 PPM	NO. 982 = 0.0644 PPM
NO. 833 = 0.0723 PPM	NO. 883 = 0.0752 PPM	NO. 933 = 0.0712 PPM	NO. 983 = 0.0642 PPM
NO. 834 = 0.0733 PPM	NO. 884 = 0.0757 PPM	NO. 934 = 0.0704 PPM	NO. 984 = 0.0639 PPM
NO. 835 = 0.0743 PPM	NO. 885 = 0.0747 PPM	NO. 935 = 0.0692 PPM	NO. 985 = 0.0633 PPM
NO. 836 = 0.0757 PPM	NO. 886 = 0.0742 PPM	NO. 936 = 0.0678 PPM	NO. 986 = 0.0635 PPM
NO. 837 = 0.0761 PPM	NO. 887 = 0.0757 PPM	NO. 937 = 0.0670 PPM	NO. 987 = 0.0655 PPM
NO. 838 = 0.0756 PPM	NO. 888 = 0.0763 PPM	NO. 938 = 0.0666 PPM	NO. 988 = 0.0671 PPM
NO. 839 = 0.0745 PPM	NO. 889 = 0.0758 PPM	NO. 939 = 0.0674 PPM	NO. 989 = 0.0703 PPM
NO. 840 = 0.0752 PPM	NO. 890 = 0.0746 PPM	NO. 940 = 0.0684 PPM	NO. 990 = 0.0744 PPM
NO. 841 = 0.0773 PPM	NO. 891 = 0.0740 PPM	NO. 941 = 0.0696 PPM	NO. 991 = 0.0807 PPM
NO. 842 = 0.0790 PPM	NO. 892 = 0.0748 PPM	NO. 942 = 0.0704 PPM	NO. 992 = 0.0840 PPM
NO. 843 = 0.0799 PPM	NO. 893 = 0.0759 PPM	NO. 943 = 0.0702 PPM	NO. 993 = 0.0883 PPM
NO. 844 = 0.0808 PPM	NO. 894 = 0.0743 PPM	NO. 944 = 0.0696 PPM	NO. 994 = 0.0927 PPM
NO. 845 = 0.0823 PPM	NO. 895 = 0.0737 PPM	NO. 945 = 0.0743 PPM	NO. 995 = 0.0970 PPM
NO. 846 = 0.0834 PPM	NO. 896 = 0.0725 PPM	NO. 946 = 0.0797 PPM	NO. 996 = 0.0960 PPM
NO. 847 = 0.0835 PPM	NO. 897 = 0.0736 PPM	NO. 947 = 0.0842 PPM	NO. 997 = 0.0951 PPM
NO. 848 = 0.0826 PPM	NO. 898 = 0.0742 PPM	NO. 948 = 0.0888 PPM	NO. 998 = 0.0935 PPM
NO. 849 = 0.0812 PPM	NO. 899 = 0.0740 PPM	NO. 949 = 0.0945 PPM	NO. 999 = 0.0921 PPM
NO. 850 = 0.0797 PPM	NO. 900 = 0.0783 PPM	NO. 950 = 0.0960 PPM	NO. 1000 = 0.0903 PPM

A-1. continued.

NO. 1001 = 0.0853 PPM	NO. 1051 = 0.0805 PPM	NO. 1101 = 0.0752 PPM	NO. 1151 = 0.0735 PPM
NO. 1002 = 0.0799 PPM	NO. 1052 = 0.0809 PPM	NO. 1102 = 0.0717 PPM	NO. 1152 = 0.0721 PPM
NO. 1003 = 0.0730 PPM	NO. 1053 = 0.0793 PPM	NO. 1103 = 0.0699 PPM	NO. 1153 = 0.0695 PPM
NO. 1004 = 0.0703 PPM	NO. 1054 = 0.0772 PPM	NO. 1104 = 0.0762 PPM	NO. 1154 = 0.0655 PPM
NO. 1005 = 0.0766 PPM	NO. 1055 = 0.0753 PPM	NO. 1105 = 0.0719 PPM	NO. 1155 = 0.0645 PPM
NO. 1006 = 0.0793 PPM	NO. 1056 = 0.0724 PPM	NO. 1106 = 0.0709 PPM	NO. 1156 = 0.0616 PPM
NO. 1007 = 0.0785 PPM	NO. 1057 = 0.0696 PPM	NO. 1107 = 0.0682 PPM	NO. 1157 = 0.0649 PPM
NO. 1008 = 0.0764 PPM	NO. 1058 = 0.0758 PPM	NO. 1108 = 0.0657 PPM	NO. 1158 = 0.0625 PPM
NO. 1009 = 0.0742 PPM	NO. 1059 = 0.0702 PPM	NO. 1109 = 0.0628 PPM	NO. 1159 = 0.0660 PPM
NO. 1010 = 0.0727 PPM	NO. 1060 = 0.0695 PPM	NO. 1110 = 0.0622 PPM	NO. 1160 = 0.0671 PPM
NO. 1011 = 0.0701 PPM	NO. 1061 = 0.0672 PPM	NO. 1111 = 0.0590 PPM	NO. 1161 = 0.0730 PPM
NO. 1012 = 0.0762 PPM	NO. 1062 = 0.0654 PPM	NO. 1112 = 0.0637 PPM	NO. 1162 = 0.0771 PPM
NO. 1013 = 0.0687 PPM	NO. 1063 = 0.0630 PPM	NO. 1113 = 0.0708 PPM	NO. 1163 = 0.0807 PPM
NO. 1014 = 0.0683 PPM	NO. 1064 = 0.0608 PPM	NO. 1114 = 0.0756 PPM	NO. 1164 = 0.0859 PPM
NO. 1015 = 0.0666 PPM	NO. 1065 = 0.0594 PPM	NO. 1115 = 0.0792 PPM	NO. 1165 = 0.0894 PPM
NO. 1016 = 0.0646 PPM	NO. 1066 = 0.0583 PPM	NO. 1116 = 0.0812 PPM	NO. 1166 = 0.0903 PPM
NO. 1017 = 0.0627 PPM	NO. 1067 = 0.0606 PPM	NO. 1117 = 0.0816 PPM	NO. 1167 = 0.0902 PPM
NO. 1018 = 0.0606 PPM	NO. 1068 = 0.0623 PPM	NO. 1118 = 0.0808 PPM	NO. 1168 = 0.0892 PPM
NO. 1019 = 0.0604 PPM	NO. 1069 = 0.0623 PPM	NO. 1119 = 0.0794 PPM	NO. 1169 = 0.0883 PPM
NO. 1020 = 0.0607 PPM	NO. 1070 = 0.0617 PPM	NO. 1120 = 0.0777 PPM	NO. 1170 = 0.0887 PPM
NO. 1021 = 0.0608 PPM	NO. 1071 = 0.0606 PPM	NO. 1121 = 0.0765 PPM	NO. 1171 = 0.0902 PPM
NO. 1022 = 0.0609 PPM	NO. 1072 = 0.0617 PPM	NO. 1122 = 0.0755 PPM	NO. 1172 = 0.0919 PPM
NO. 1023 = 0.0611 PPM	NO. 1073 = 0.0634 PPM	NO. 1123 = 0.0752 PPM	NO. 1173 = 0.0907 PPM
NO. 1024 = 0.0611 PPM	NO. 1074 = 0.0651 PPM	NO. 1124 = 0.0768 PPM	NO. 1174 = 0.0909 PPM
NO. 1025 = 0.0608 PPM	NO. 1075 = 0.0672 PPM	NO. 1125 = 0.0798 PPM	NO. 1175 = 0.0863 PPM
NO. 1026 = 0.0605 PPM	NO. 1076 = 0.0683 PPM	NO. 1126 = 0.0850 PPM	NO. 1176 = 0.0848 PPM
NO. 1027 = 0.0602 PPM	NO. 1077 = 0.0701 PPM	NO. 1127 = 0.0888 PPM	NO. 1177 = 0.0874 PPM
NO. 1028 = 0.0594 PPM	NO. 1078 = 0.0736 PPM	NO. 1128 = 0.0916 PPM	NO. 1178 = 0.0863 PPM
NO. 1029 = 0.0603 PPM	NO. 1079 = 0.0739 PPM	NO. 1129 = 0.0916 PPM	NO. 1179 = 0.0775 PPM
NO. 1030 = 0.0611 PPM	NO. 1080 = 0.0782 PPM	NO. 1130 = 0.0897 PPM	NO. 1180 = 0.0679 PPM
NO. 1031 = 0.0643 PPM	NO. 1081 = 0.0798 PPM	NO. 1131 = 0.0885 PPM	NO. 1181 = 0.0662 PPM
NO. 1032 = 0.0671 PPM	NO. 1082 = 0.0830 PPM	NO. 1132 = 0.0888 PPM	NO. 1182 = 0.0679 PPM
NO. 1033 = 0.0663 PPM	NO. 1083 = 0.0880 PPM	NO. 1133 = 0.0859 PPM	NO. 1183 = 0.0705 PPM
NO. 1034 = 0.0713 PPM	NO. 1084 = 0.0928 PPM	NO. 1134 = 0.0864 PPM	NO. 1184 = 0.0754 PPM
NO. 1035 = 0.0730 PPM	NO. 1085 = 0.0960 PPM	NO. 1135 = 0.0678 PPM	NO. 1185 = 0.0810 PPM
NO. 1036 = 0.0768 PPM	NO. 1086 = 0.0969 PPM	NO. 1136 = 0.0639 PPM	NO. 1186 = 0.0852 PPM
NO. 1037 = 0.0787 PPM	NO. 1087 = 0.0942 PPM	NO. 1137 = 0.0688 PPM	NO. 1187 = 0.0872 PPM
NO. 1038 = 0.0841 PPM	NO. 1088 = 0.0886 PPM	NO. 1138 = 0.0682 PPM	NO. 1188 = 0.0883 PPM
NO. 1039 = 0.0917 PPM	NO. 1089 = 0.0806 PPM	NO. 1139 = 0.0744 PPM	NO. 1189 = 0.0876 PPM
NO. 1040 = 0.0957 PPM	NO. 1090 = 0.0770 PPM	NO. 1140 = 0.0801 PPM	NO. 1190 = 0.0847 PPM
NO. 1041 = 0.0954 PPM	NO. 1091 = 0.0780 PPM	NO. 1141 = 0.0835 PPM	NO. 1191 = 0.0825 PPM
NO. 1042 = 0.0933 PPM	NO. 1092 = 0.0751 PPM	NO. 1142 = 0.0852 PPM	NO. 1192 = 0.0774 PPM
NO. 1043 = 0.0914 PPM	NO. 1093 = 0.0692 PPM	NO. 1143 = 0.0852 PPM	NO. 1193 = 0.0725 PPM
NO. 1044 = 0.0888 PPM	NO. 1094 = 0.0737 PPM	NO. 1144 = 0.0839 PPM	NO. 1194 = 0.0718 PPM
NO. 1045 = 0.0877 PPM	NO. 1095 = 0.0792 PPM	NO. 1145 = 0.0814 PPM	NO. 1195 = 0.0699 PPM
NO. 1046 = 0.0855 PPM	NO. 1096 = 0.0821 PPM	NO. 1146 = 0.0784 PPM	NO. 1196 = 0.0782 PPM
NO. 1047 = 0.0795 PPM	NO. 1097 = 0.0832 PPM	NO. 1147 = 0.0737 PPM	NO. 1197 = 0.0751 PPM
NO. 1048 = 0.0724 PPM	NO. 1098 = 0.0824 PPM	NO. 1148 = 0.0717 PPM	NO. 1198 = 0.0729 PPM
NO. 1049 = 0.0719 PPM	NO. 1099 = 0.0807 PPM	NO. 1149 = 0.0697 PPM	NO. 1199 = 0.0701 PPM
NO. 1050 = 0.0773 PPM	NO. 1100 = 0.0786 PPM	NO. 1150 = 0.0771 PPM	NO. 1200 = 0.0666 PPM

A-1. continued.

NO. 1201 = 0.0653 PPM	NO. 1251 = 0.0678 PPM	NO. 1301 = 0.0629 PPM	NO. 1351 = 0.0679 PPM
NO. 1202 = 0.0600 PPM	NO. 1252 = 0.0722 PPM	NO. 1302 = 0.0665 PPM	NO. 1352 = 0.0704 PPM
NO. 1203 = 0.0729 PPM	NO. 1253 = 0.0750 PPM	NO. 1303 = 0.0693 PPM	NO. 1353 = 0.0714 PPM
NO. 1204 = 0.0591 PPM	NO. 1254 = 0.0769 PPM	NO. 1304 = 0.0702 PPM	NO. 1354 = 0.0722 PPM
NO. 1205 = 0.0543 PPM	NO. 1255 = 0.0781 PPM	NO. 1305 = 0.0713 PPM	NO. 1355 = 0.0716 PPM
NO. 1206 = 0.0467 PPM	NO. 1256 = 0.0809 PPM	NO. 1306 = 0.0751 PPM	NO. 1356 = 0.0687 PPM
NO. 1207 = 0.0587 PPM	NO. 1257 = 0.0847 PPM	NO. 1307 = 0.0775 PPM	NO. 1357 = 0.0660 PPM
NO. 1208 = 0.0634 PPM	NO. 1258 = 0.0882 PPM	NO. 1308 = 0.0787 PPM	NO. 1358 = 0.0652 PPM
NO. 1209 = 0.0638 PPM	NO. 1259 = 0.0905 PPM	NO. 1309 = 0.0803 PPM	NO. 1359 = 0.0646 PPM
NO. 1210 = 0.0657 PPM	NO. 1260 = 0.0921 PPM	NO. 1310 = 0.0784 PPM	NO. 1360 = 0.0642 PPM
NO. 1211 = 0.0693 PPM	NO. 1261 = 0.0929 PPM	NO. 1311 = 0.0755 PPM	NO. 1361 = 0.0655 PPM
NO. 1212 = 0.0718 PPM	NO. 1262 = 0.0934 PPM	NO. 1312 = 0.0716 PPM	NO. 1362 = 0.0665 PPM
NO. 1213 = 0.0750 PPM	NO. 1263 = 0.0915 PPM	NO. 1313 = 0.0676 PPM	NO. 1363 = 0.0718 PPM
NO. 1214 = 0.0796 PPM	NO. 1264 = 0.0920 PPM	NO. 1314 = 0.0644 PPM	NO. 1364 = 0.0761 PPM
NO. 1215 = 0.0826 PPM	NO. 1265 = 0.0914 PPM	NO. 1315 = 0.0655 PPM	NO. 1365 = 0.0814 PPM
NO. 1216 = 0.0848 PPM	NO. 1266 = 0.0885 PPM	NO. 1316 = 0.0656 PPM	NO. 1366 = 0.0874 PPM
NO. 1217 = 0.0854 PPM	NO. 1267 = 0.0796 PPM	NO. 1317 = 0.0667 PPM	NO. 1367 = 0.0954 PPM
NO. 1218 = 0.0852 PPM	NO. 1268 = 0.0732 PPM	NO. 1318 = 0.0720 PPM	NO. 1368 = 0.1012 PPM
NO. 1219 = 0.0830 PPM	NO. 1269 = 0.0671 PPM	NO. 1319 = 0.0769 PPM	NO. 1369 = 0.1023 PPM
NO. 1220 = 0.0833 PPM	NO. 1270 = 0.0642 PPM	NO. 1320 = 0.0817 PPM	NO. 1370 = 0.1014 PPM
NO. 1221 = 0.0860 PPM	NO. 1271 = 0.0646 PPM	NO. 1321 = 0.0871 PPM	NO. 1371 = 0.0985 PPM
NO. 1222 = 0.0881 PPM	NO. 1272 = 0.0671 PPM	NO. 1322 = 0.0939 PPM	NO. 1372 = 0.0938 PPM
NO. 1223 = 0.0821 PPM	NO. 1273 = 0.0719 PPM	NO. 1323 = 0.0975 PPM	NO. 1373 = 0.0886 PPM
NO. 1224 = 0.0731 PPM	NO. 1274 = 0.0766 PPM	NO. 1324 = 0.0991 PPM	NO. 1374 = 0.0811 PPM
NO. 1225 = 0.0649 PPM	NO. 1275 = 0.0815 PPM	NO. 1325 = 0.0984 PPM	NO. 1375 = 0.0753 PPM
NO. 1226 = 0.0639 PPM	NO. 1276 = 0.0873 PPM	NO. 1326 = 0.0939 PPM	NO. 1376 = 0.0742 PPM
NO. 1227 = 0.0657 PPM	NO. 1277 = 0.0920 PPM	NO. 1327 = 0.0912 PPM	NO. 1377 = 0.0736 PPM
NO. 1228 = 0.0697 PPM	NO. 1278 = 0.0944 PPM	NO. 1328 = 0.0844 PPM	NO. 1378 = 0.0736 PPM
NO. 1229 = 0.0749 PPM	NO. 1279 = 0.0950 PPM	NO. 1329 = 0.0777 PPM	NO. 1379 = 0.0748 PPM
NO. 1230 = 0.0811 PPM	NO. 1280 = 0.0941 PPM	NO. 1330 = 0.0738 PPM	NO. 1380 = 0.0810 PPM
NO. 1231 = 0.0864 PPM	NO. 1281 = 0.0914 PPM	NO. 1331 = 0.0731 PPM	NO. 1381 = 0.0823 PPM
NO. 1232 = 0.0894 PPM	NO. 1282 = 0.0871 PPM	NO. 1332 = 0.0728 PPM	NO. 1382 = 0.0799 PPM
NO. 1233 = 0.0914 PPM	NO. 1283 = 0.0801 PPM	NO. 1333 = 0.0734 PPM	NO. 1383 = 0.0773 PPM
NO. 1234 = 0.0914 PPM	NO. 1284 = 0.0744 PPM	NO. 1334 = 0.0804 PPM	NO. 1384 = 0.0745 PPM
NO. 1235 = 0.0889 PPM	NO. 1285 = 0.0726 PPM	NO. 1335 = 0.0805 PPM	NO. 1385 = 0.0720 PPM
NO. 1236 = 0.0869 PPM	NO. 1286 = 0.0722 PPM	NO. 1336 = 0.0781 PPM	NO. 1386 = 0.0684 PPM
NO. 1237 = 0.0820 PPM	NO. 1287 = 0.0719 PPM	NO. 1337 = 0.0751 PPM	NO. 1387 = 0.0664 PPM
NO. 1238 = 0.0760 PPM	NO. 1288 = 0.0800 PPM	NO. 1338 = 0.0718 PPM	NO. 1388 = 0.0650 PPM
NO. 1239 = 0.0726 PPM	NO. 1289 = 0.0786 PPM	NO. 1339 = 0.0701 PPM	NO. 1389 = 0.0615 PPM
NO. 1240 = 0.0715 PPM	NO. 1290 = 0.0763 PPM	NO. 1340 = 0.0650 PPM	NO. 1390 = 0.0604 PPM
NO. 1241 = 0.0706 PPM	NO. 1291 = 0.0728 PPM	NO. 1341 = 0.0684 PPM	NO. 1391 = 0.0591 PPM
NO. 1242 = 0.0792 PPM	NO. 1292 = 0.0696 PPM	NO. 1342 = 0.0655 PPM	NO. 1392 = 0.0588 PPM
NO. 1243 = 0.0768 PPM	NO. 1293 = 0.0677 PPM	NO. 1343 = 0.0613 PPM	NO. 1393 = 0.0637 PPM
NO. 1244 = 0.0747 PPM	NO. 1294 = 0.0628 PPM	NO. 1344 = 0.0598 PPM	NO. 1394 = 0.0642 PPM
NO. 1245 = 0.0713 PPM	NO. 1295 = 0.0696 PPM	NO. 1345 = 0.0588 PPM	NO. 1395 = 0.0647 PPM
NO. 1246 = 0.0683 PPM	NO. 1296 = 0.0642 PPM	NO. 1346 = 0.0583 PPM	NO. 1396 = 0.0663 PPM
NO. 1247 = 0.0663 PPM	NO. 1297 = 0.0592 PPM	NO. 1347 = 0.0588 PPM	NO. 1397 = 0.0663 PPM
NO. 1248 = 0.0638 PPM	NO. 1298 = 0.0584 PPM	NO. 1348 = 0.0610 PPM	NO. 1398 = 0.0669 PPM
NO. 1249 = 0.0660 PPM	NO. 1299 = 0.0595 PPM	NO. 1349 = 0.0633 PPM	NO. 1399 = 0.0663 PPM
NO. 1250 = 0.0615 PPM	NO. 1300 = 0.0607 PPM	NO. 1350 = 0.0646 PPM	NO. 1400 = 0.0666 PPM

A-1. continued.

NO. 1401 = 0.0653 PPM	NO. 1451 = 0.0713 PPM	NO. 1501 = 0.0898 PPM	NO. 1551 = 0.1076 PPM
NO. 1402 = 0.0645 PPM	NO. 1452 = 0.0722 PPM	NO. 1502 = 0.0975 PPM	NO. 1552 = 0.1024 PPM
NO. 1403 = 0.0643 PPM	NO. 1453 = 0.0720 PPM	NO. 1503 = 0.1036 PPM	NO. 1553 = 0.0961 PPM
NO. 1404 = 0.0655 PPM	NO. 1454 = 0.0763 PPM	NO. 1504 = 0.1076 PPM	NO. 1554 = 0.0915 PPM
NO. 1405 = 0.0668 PPM	NO. 1455 = 0.0822 PPM	NO. 1505 = 0.1082 PPM	NO. 1555 = 0.0872 PPM
NO. 1406 = 0.0682 PPM	NO. 1456 = 0.0886 PPM	NO. 1506 = 0.1045 PPM	NO. 1556 = 0.0824 PPM
NO. 1407 = 0.0689 PPM	NO. 1457 = 0.0962 PPM	NO. 1507 = 0.0992 PPM	NO. 1557 = 0.0778 PPM
NO. 1408 = 0.0706 PPM	NO. 1458 = 0.1032 PPM	NO. 1508 = 0.0940 PPM	NO. 1558 = 0.0779 PPM
NO. 1409 = 0.0767 PPM	NO. 1459 = 0.1074 PPM	NO. 1509 = 0.0880 PPM	NO. 1559 = 0.0784 PPM
NO. 1410 = 0.0804 PPM	NO. 1460 = 0.1058 PPM	NO. 1510 = 0.0845 PPM	NO. 1560 = 0.0788 PPM
NO. 1411 = 0.0878 PPM	NO. 1461 = 0.1026 PPM	NO. 1511 = 0.0788 PPM	NO. 1561 = 0.0791 PPM
NO. 1412 = 0.0956 PPM	NO. 1462 = 0.0975 PPM	NO. 1512 = 0.0767 PPM	NO. 1562 = 0.0800 PPM
NO. 1413 = 0.1029 PPM	NO. 1463 = 0.0918 PPM	NO. 1513 = 0.0768 PPM	NO. 1563 = 0.0811 PPM
NO. 1414 = 0.1057 PPM	NO. 1464 = 0.0877 PPM	NO. 1514 = 0.0772 PPM	NO. 1564 = 0.0839 PPM
NO. 1415 = 0.1044 PPM	NO. 1465 = 0.0815 PPM	NO. 1515 = 0.0774 PPM	NO. 1565 = 0.0865 PPM
NO. 1416 = 0.1008 PPM	NO. 1466 = 0.0771 PPM	NO. 1516 = 0.0781 PPM	NO. 1566 = 0.0847 PPM
NO. 1417 = 0.0958 PPM	NO. 1467 = 0.0760 PPM	NO. 1517 = 0.0795 PPM	NO. 1567 = 0.0838 PPM
NO. 1418 = 0.0915 PPM	NO. 1468 = 0.0757 PPM	NO. 1518 = 0.0833 PPM	NO. 1568 = 0.0817 PPM
NO. 1419 = 0.0854 PPM	NO. 1469 = 0.0759 PPM	NO. 1519 = 0.0853 PPM	NO. 1569 = 0.0799 PPM
NO. 1420 = 0.0781 PPM	NO. 1470 = 0.0762 PPM	NO. 1520 = 0.0835 PPM	NO. 1570 = 0.0779 PPM
NO. 1421 = 0.0754 PPM	NO. 1471 = 0.0778 PPM	NO. 1521 = 0.0816 PPM	NO. 1571 = 0.0758 PPM
NO. 1422 = 0.0746 PPM	NO. 1472 = 0.0826 PPM	NO. 1522 = 0.0797 PPM	NO. 1572 = 0.0730 PPM
NO. 1423 = 0.0744 PPM	NO. 1473 = 0.0843 PPM	NO. 1523 = 0.0780 PPM	NO. 1573 = 0.0704 PPM
NO. 1424 = 0.0748 PPM	NO. 1474 = 0.0826 PPM	NO. 1524 = 0.0759 PPM	NO. 1574 = 0.0682 PPM
NO. 1425 = 0.0761 PPM	NO. 1475 = 0.0804 PPM	NO. 1525 = 0.0734 PPM	NO. 1575 = 0.0675 PPM
NO. 1426 = 0.0818 PPM	NO. 1476 = 0.0783 PPM	NO. 1526 = 0.0711 PPM	NO. 1576 = 0.0686 PPM
NO. 1427 = 0.0833 PPM	NO. 1477 = 0.0763 PPM	NO. 1527 = 0.0687 PPM	NO. 1577 = 0.0665 PPM
NO. 1428 = 0.0813 PPM	NO. 1478 = 0.0740 PPM	NO. 1528 = 0.0659 PPM	NO. 1578 = 0.0671 PPM
NO. 1429 = 0.0793 PPM	NO. 1479 = 0.0716 PPM	NO. 1529 = 0.0647 PPM	NO. 1579 = 0.0687 PPM
NO. 1430 = 0.0769 PPM	NO. 1480 = 0.0693 PPM	NO. 1530 = 0.0650 PPM	NO. 1580 = 0.0704 PPM
NO. 1431 = 0.0745 PPM	NO. 1481 = 0.0664 PPM	NO. 1531 = 0.0654 PPM	NO. 1581 = 0.0721 PPM
NO. 1432 = 0.0717 PPM	NO. 1482 = 0.0647 PPM	NO. 1532 = 0.0649 PPM	NO. 1582 = 0.0732 PPM
NO. 1433 = 0.0692 PPM	NO. 1483 = 0.0612 PPM	NO. 1533 = 0.0657 PPM	NO. 1583 = 0.0744 PPM
NO. 1434 = 0.0667 PPM	NO. 1484 = 0.0666 PPM	NO. 1534 = 0.0672 PPM	NO. 1584 = 0.0756 PPM
NO. 1435 = 0.0638 PPM	NO. 1485 = 0.0674 PPM	NO. 1535 = 0.0687 PPM	NO. 1585 = 0.0767 PPM
NO. 1436 = 0.0631 PPM	NO. 1486 = 0.0669 PPM	NO. 1536 = 0.0704 PPM	NO. 1586 = 0.0781 PPM
NO. 1437 = 0.0594 PPM	NO. 1487 = 0.0672 PPM	NO. 1537 = 0.0718 PPM	NO. 1587 = 0.0804 PPM
NO. 1438 = 0.0637 PPM	NO. 1488 = 0.0668 PPM	NO. 1538 = 0.0730 PPM	NO. 1588 = 0.0836 PPM
NO. 1439 = 0.0647 PPM	NO. 1489 = 0.0672 PPM	NO. 1539 = 0.0743 PPM	NO. 1589 = 0.0870 PPM
NO. 1440 = 0.0634 PPM	NO. 1490 = 0.0673 PPM	NO. 1540 = 0.0756 PPM	NO. 1590 = 0.0891 PPM
NO. 1441 = 0.0646 PPM	NO. 1491 = 0.0683 PPM	NO. 1541 = 0.0766 PPM	NO. 1591 = 0.0924 PPM
NO. 1442 = 0.0652 PPM	NO. 1492 = 0.0692 PPM	NO. 1542 = 0.0778 PPM	NO. 1592 = 0.0979 PPM
NO. 1443 = 0.0650 PPM	NO. 1493 = 0.0705 PPM	NO. 1543 = 0.0797 PPM	NO. 1593 = 0.1027 PPM
NO. 1444 = 0.0650 PPM	NO. 1494 = 0.0716 PPM	NO. 1544 = 0.0826 PPM	NO. 1594 = 0.1031 PPM
NO. 1445 = 0.0645 PPM	NO. 1495 = 0.0728 PPM	NO. 1545 = 0.0851 PPM	NO. 1595 = 0.1022 PPM
NO. 1446 = 0.0658 PPM	NO. 1496 = 0.0739 PPM	NO. 1546 = 0.0893 PPM	NO. 1596 = 0.1060 PPM
NO. 1447 = 0.0669 PPM	NO. 1497 = 0.0746 PPM	NO. 1547 = 0.1005 PPM	NO. 1597 = 0.1079 PPM
NO. 1448 = 0.0680 PPM	NO. 1498 = 0.0759 PPM	NO. 1548 = 0.1045 PPM	NO. 1598 = 0.1008 PPM
NO. 1449 = 0.0694 PPM	NO. 1499 = 0.0777 PPM	NO. 1549 = 0.1054 PPM	NO. 1599 = 0.0951 PPM
NO. 1450 = 0.0706 PPM	NO. 1500 = 0.0811 PPM	NO. 1550 = 0.1076 PPM	NO. 1600 = 0.0902 PPM

A-1. continued.

NO. 1601 = 0.0870 PPM	NO. 1651 = 0.0806 PPM	NO. 1701 = 0.0842 PPM	NO. 1751 = 0.0774 PPM
NO. 1602 = 0.0812 PPM	NO. 1652 = 0.0811 PPM	NO. 1702 = 0.0855 PPM	NO. 1752 = 0.0758 PPM
NO. 1603 = 0.0790 PPM	NO. 1653 = 0.0819 PPM	NO. 1703 = 0.0885 PPM	NO. 1753 = 0.0741 PPM
NO. 1604 = 0.0791 PPM	NO. 1654 = 0.0828 PPM	NO. 1704 = 0.0872 PPM	NO. 1754 = 0.0725 PPM
NO. 1605 = 0.0795 PPM	NO. 1655 = 0.0832 PPM	NO. 1705 = 0.0827 PPM	NO. 1755 = 0.0717 PPM
NO. 1606 = 0.0800 PPM	NO. 1656 = 0.0851 PPM	NO. 1706 = 0.0783 PPM	NO. 1756 = 0.0707 PPM
NO. 1607 = 0.0809 PPM	NO. 1657 = 0.0874 PPM	NO. 1707 = 0.0761 PPM	NO. 1757 = 0.0706 PPM
NO. 1608 = 0.0818 PPM	NO. 1658 = 0.0878 PPM	NO. 1708 = 0.0745 PPM	NO. 1758 = 0.0712 PPM
NO. 1609 = 0.0823 PPM	NO. 1659 = 0.0849 PPM	NO. 1709 = 0.0734 PPM	NO. 1759 = 0.0720 PPM
NO. 1610 = 0.0847 PPM	NO. 1660 = 0.0813 PPM	NO. 1710 = 0.0730 PPM	NO. 1760 = 0.0749 PPM
NO. 1611 = 0.0868 PPM	NO. 1661 = 0.0785 PPM	NO. 1711 = 0.0744 PPM	NO. 1761 = 0.0769 PPM
NO. 1612 = 0.0865 PPM	NO. 1662 = 0.0763 PPM	NO. 1712 = 0.0710 PPM	NO. 1762 = 0.0789 PPM
NO. 1613 = 0.0852 PPM	NO. 1663 = 0.0753 PPM	NO. 1713 = 0.0770 PPM	NO. 1763 = 0.0813 PPM
NO. 1614 = 0.0824 PPM	NO. 1664 = 0.0728 PPM	NO. 1714 = 0.0777 PPM	NO. 1764 = 0.0824 PPM
NO. 1615 = 0.0800 PPM	NO. 1665 = 0.0762 PPM	NO. 1715 = 0.0789 PPM	NO. 1765 = 0.0833 PPM
NO. 1616 = 0.0778 PPM	NO. 1666 = 0.0718 PPM	NO. 1716 = 0.0785 PPM	NO. 1766 = 0.0851 PPM
NO. 1617 = 0.0764 PPM	NO. 1667 = 0.0791 PPM	NO. 1717 = 0.0780 PPM	NO. 1767 = 0.0846 PPM
NO. 1618 = 0.0736 PPM	NO. 1668 = 0.0802 PPM	NO. 1718 = 0.0793 PPM	NO. 1768 = 0.0876 PPM
NO. 1619 = 0.0729 PPM	NO. 1669 = 0.0802 PPM	NO. 1719 = 0.0824 PPM	NO. 1769 = 0.0888 PPM
NO. 1620 = 0.0711 PPM	NO. 1670 = 0.0772 PPM	NO. 1720 = 0.0846 PPM	NO. 1770 = 0.0928 PPM
NO. 1621 = 0.0735 PPM	NO. 1671 = 0.0777 PPM	NO. 1721 = 0.0845 PPM	NO. 1771 = 0.0955 PPM
NO. 1622 = 0.0728 PPM	NO. 1672 = 0.0775 PPM	NO. 1722 = 0.0872 PPM	NO. 1772 = 0.0985 PPM
NO. 1623 = 0.0701 PPM	NO. 1673 = 0.0778 PPM	NO. 1723 = 0.0883 PPM	NO. 1773 = 0.1039 PPM
NO. 1624 = 0.0722 PPM	NO. 1674 = 0.0795 PPM	NO. 1724 = 0.0904 PPM	NO. 1774 = 0.0945 PPM
NO. 1625 = 0.0736 PPM	NO. 1675 = 0.0818 PPM	NO. 1725 = 0.0929 PPM	NO. 1775 = 0.0839 PPM
NO. 1626 = 0.0745 PPM	NO. 1676 = 0.0849 PPM	NO. 1726 = 0.0958 PPM	NO. 1776 = 0.0906 PPM
NO. 1627 = 0.0759 PPM	NO. 1677 = 0.0863 PPM	NO. 1727 = 0.1036 PPM	NO. 1777 = 0.0981 PPM
NO. 1628 = 0.0773 PPM	NO. 1678 = 0.0894 PPM	NO. 1728 = 0.1026 PPM	NO. 1778 = 0.1049 PPM
NO. 1629 = 0.0783 PPM	NO. 1679 = 0.0927 PPM	NO. 1729 = 0.0966 PPM	NO. 1779 = 0.1081 PPM
NO. 1630 = 0.0794 PPM	NO. 1680 = 0.0947 PPM	NO. 1730 = 0.0800 PPM	NO. 1780 = 0.1051 PPM
NO. 1631 = 0.0813 PPM	NO. 1681 = 0.0964 PPM	NO. 1731 = 0.0873 PPM	NO. 1781 = 0.0983 PPM
NO. 1632 = 0.0847 PPM	NO. 1682 = 0.1021 PPM	NO. 1732 = 0.1016 PPM	NO. 1782 = 0.0917 PPM
NO. 1633 = 0.0880 PPM	NO. 1683 = 0.1009 PPM	NO. 1733 = 0.1130 PPM	NO. 1783 = 0.0867 PPM
NO. 1634 = 0.0893 PPM	NO. 1684 = 0.1037 PPM	NO. 1734 = 0.1091 PPM	NO. 1784 = 0.0834 PPM
NO. 1635 = 0.0921 PPM	NO. 1685 = 0.0850 PPM	NO. 1735 = 0.1035 PPM	NO. 1785 = 0.0811 PPM
NO. 1636 = 0.0949 PPM	NO. 1686 = 0.0840 PPM	NO. 1736 = 0.0950 PPM	NO. 1786 = 0.0811 PPM
NO. 1637 = 0.0998 PPM	NO. 1687 = 0.1055 PPM	NO. 1737 = 0.0902 PPM	NO. 1787 = 0.0808 PPM
NO. 1638 = 0.1032 PPM	NO. 1688 = 0.1093 PPM	NO. 1738 = 0.0857 PPM	NO. 1788 = 0.0809 PPM
NO. 1639 = 0.1056 PPM	NO. 1689 = 0.1076 PPM	NO. 1739 = 0.0823 PPM	NO. 1789 = 0.0817 PPM
NO. 1640 = 0.0982 PPM	NO. 1690 = 0.0990 PPM	NO. 1740 = 0.0813 PPM	NO. 1790 = 0.0826 PPM
NO. 1641 = 0.0950 PPM	NO. 1691 = 0.0930 PPM	NO. 1741 = 0.0810 PPM	NO. 1791 = 0.0835 PPM
NO. 1642 = 0.1086 PPM	NO. 1692 = 0.0890 PPM	NO. 1742 = 0.0810 PPM	NO. 1792 = 0.0846 PPM
NO. 1643 = 0.1080 PPM	NO. 1693 = 0.0845 PPM	NO. 1743 = 0.0817 PPM	NO. 1793 = 0.0854 PPM
NO. 1644 = 0.1023 PPM	NO. 1694 = 0.0807 PPM	NO. 1744 = 0.0824 PPM	NO. 1794 = 0.0863 PPM
NO. 1645 = 0.0951 PPM	NO. 1695 = 0.0806 PPM	NO. 1745 = 0.0832 PPM	NO. 1795 = 0.0467 PPM
NO. 1646 = 0.0917 PPM	NO. 1696 = 0.0806 PPM	NO. 1746 = 0.0842 PPM	NO. 1796 = 0.0772 PPM
NO. 1647 = 0.0864 PPM	NO. 1697 = 0.0812 PPM	NO. 1747 = 0.0848 PPM	NO. 1797 = 0.0760 PPM
NO. 1648 = 0.0807 PPM	NO. 1698 = 0.0820 PPM	NO. 1748 = 0.0859 PPM	NO. 1798 = 0.0753 PPM
NO. 1649 = 0.0800 PPM	NO. 1699 = 0.0828 PPM	NO. 1749 = 0.0883 PPM	NO. 1799 = 0.0759 PPM
NO. 1650 = 0.0801 PPM	NO. 1700 = 0.0836 PPM	NO. 1750 = 0.0829 PPM	NO. 1800 = 0.0756 PPM

A-1. continued.

NO. 1801 = 0.0754 PPM
NO. 1802 = 0.0752 PPM
NO. 1803 = 0.0751 PPM
NO. 1804 = 0.0759 PPM
NO. 1805 = 0.0767 PPM
NO. 1806 = 0.0778 PPM
NO. 1807 = 0.0790 PPM
NO. 1808 = 0.0797 PPM
NO. 1809 = 0.0799 PPM
NO. 1810 = 0.0805 PPM
NO. 1811 = 0.0813 PPM
NO. 1812 = 0.0816 PPM
NO. 1813 = 0.0746 PPM
NO. 1814 = 0.0700 PPM
NO. 1815 = 0.0671 PPM
NO. 1816 = 0.0645 PPM
NO. 1817 = 0.0674 PPM
NO. 1818 = 0.0730 PPM
NO. 1819 = 0.0789 PPM
NO. 1820 = 0.0852 PPM
NO. 1821 = 0.0908 PPM
NO. 1822 = 0.0938 PPM
NO. 1823 = 0.0967 PPM
NO. 1824 = 0.0997 PPM
NO. 1825 = 0.1027 PPM
NO. 1826 = 0.0992 PPM
NO. 1827 = 0.0941 PPM
NO. 1828 = 0.0890 PPM
NO. 1829 = 0.0842 PPM
NO. 1830 = 0.0821 PPM
NO. 1831 = 0.0811 PPM
NO. 1832 = 0.0805 PPM
NO. 1833 = 0.0806 PPM
NO. 1834 = 0.0808 PPM
NO. 1835 = 0.0818 PPM
NO. 1836 = 0.0830 PPM
NO. 1837 = 0.0841 PPM
NO. 1838 = 0.0853 PPM
NO. 1839 = 0.0862 PPM
NO. 1840 = 0.0681 PPM

A-2. UAM-DWH max. values for June 24, 1988.

NO.	1 = 0.0458 PPM	NO.	51 = 0.0711 PPM	NO.	101 = 0.0681 PPM	NO.	151 = 0.0586 PPM
NO.	2 = 0.0623 PPM	NO.	52 = 0.0740 PPM	NO.	102 = 0.0665 PPM	NO.	152 = 0.0582 PPM
NO.	3 = 0.0627 PPM	NO.	53 = 0.0760 PPM	NO.	103 = 0.0647 PPM	NO.	153 = 0.0575 PPM
NO.	4 = 0.0632 PPM	NO.	54 = 0.0764 PPM	NO.	104 = 0.0629 PPM	NO.	154 = 0.0565 PPM
NO.	5 = 0.0631 PPM	NO.	55 = 0.0757 PPM	NO.	105 = 0.0610 PPM	NO.	155 = 0.0558 PPM
NO.	6 = 0.0654 PPM	NO.	56 = 0.0746 PPM	NO.	106 = 0.0608 PPM	NO.	156 = 0.0553 PPM
NO.	7 = 0.0677 PPM	NO.	57 = 0.0728 PPM	NO.	107 = 0.0612 PPM	NO.	157 = 0.0548 PPM
NO.	8 = 0.0701 PPM	NO.	58 = 0.0715 PPM	NO.	108 = 0.0616 PPM	NO.	158 = 0.0542 PPM
NO.	9 = 0.0720 PPM	NO.	59 = 0.0677 PPM	NO.	109 = 0.0619 PPM	NO.	159 = 0.0537 PPM
NO.	10 = 0.0731 PPM	NO.	60 = 0.0702 PPM	NO.	110 = 0.0621 PPM	NO.	160 = 0.0540 PPM
NO.	11 = 0.0742 PPM	NO.	61 = 0.0689 PPM	NO.	111 = 0.0629 PPM	NO.	161 = 0.0563 PPM
NO.	12 = 0.0757 PPM	NO.	62 = 0.0709 PPM	NO.	112 = 0.0634 PPM	NO.	162 = 0.0592 PPM
NO.	13 = 0.0773 PPM	NO.	63 = 0.0729 PPM	NO.	113 = 0.0636 PPM	NO.	163 = 0.0594 PPM
NO.	14 = 0.0763 PPM	NO.	64 = 0.0744 PPM	NO.	114 = 0.0637 PPM	NO.	164 = 0.0588 PPM
NO.	15 = 0.0743 PPM	NO.	65 = 0.0757 PPM	NO.	115 = 0.0617 PPM	NO.	165 = 0.0564 PPM
NO.	16 = 0.0759 PPM	NO.	66 = 0.0765 PPM	NO.	116 = 0.0614 PPM	NO.	166 = 0.0562 PPM
NO.	17 = 0.0779 PPM	NO.	67 = 0.0760 PPM	NO.	117 = 0.0589 PPM	NO.	167 = 0.0554 PPM
NO.	18 = 0.0796 PPM	NO.	68 = 0.0750 PPM	NO.	118 = 0.0553 PPM	NO.	168 = 0.0541 PPM
NO.	19 = 0.0785 PPM	NO.	69 = 0.0736 PPM	NO.	119 = 0.0522 PPM	NO.	169 = 0.0539 PPM
NO.	20 = 0.0775 PPM	NO.	70 = 0.0724 PPM	NO.	120 = 0.0518 PPM	NO.	170 = 0.0556 PPM
NO.	21 = 0.0764 PPM	NO.	71 = 0.0699 PPM	NO.	121 = 0.0510 PPM	NO.	171 = 0.0537 PPM
NO.	22 = 0.0754 PPM	NO.	72 = 0.0668 PPM	NO.	122 = 0.0505 PPM	NO.	172 = 0.0602 PPM
NO.	23 = 0.0740 PPM	NO.	73 = 0.0643 PPM	NO.	123 = 0.0501 PPM	NO.	173 = 0.0624 PPM
NO.	24 = 0.0725 PPM	NO.	74 = 0.0613 PPM	NO.	124 = 0.0523 PPM	NO.	174 = 0.0578 PPM
NO.	25 = 0.0712 PPM	NO.	75 = 0.0581 PPM	NO.	125 = 0.0513 PPM	NO.	175 = 0.0554 PPM
NO.	26 = 0.0700 PPM	NO.	76 = 0.0551 PPM	NO.	126 = 0.0541 PPM	NO.	176 = 0.0540 PPM
NO.	27 = 0.0687 PPM	NO.	77 = 0.0526 PPM	NO.	127 = 0.0619 PPM	NO.	177 = 0.0578 PPM
NO.	28 = 0.0664 PPM	NO.	78 = 0.0499 PPM	NO.	128 = 0.0606 PPM	NO.	178 = 0.0604 PPM
NO.	29 = 0.0640 PPM	NO.	79 = 0.0495 PPM	NO.	129 = 0.0587 PPM	NO.	179 = 0.0594 PPM
NO.	30 = 0.0619 PPM	NO.	80 = 0.0490 PPM	NO.	130 = 0.0573 PPM	NO.	180 = 0.0584 PPM
NO.	31 = 0.0600 PPM	NO.	81 = 0.0523 PPM	NO.	131 = 0.0557 PPM	NO.	181 = 0.0575 PPM
NO.	32 = 0.0614 PPM	NO.	82 = 0.0555 PPM	NO.	132 = 0.0591 PPM	NO.	182 = 0.0566 PPM
NO.	33 = 0.0654 PPM	NO.	83 = 0.0559 PPM	NO.	133 = 0.0591 PPM	NO.	183 = 0.0549 PPM
NO.	34 = 0.0695 PPM	NO.	84 = 0.0551 PPM	NO.	134 = 0.0584 PPM	NO.	184 = 0.0867 PPM
NO.	35 = 0.0736 PPM	NO.	85 = 0.0539 PPM	NO.	135 = 0.0573 PPM	NO.	185 = 0.0721 PPM
NO.	36 = 0.0780 PPM	NO.	86 = 0.0538 PPM	NO.	136 = 0.0566 PPM	NO.	186 = 0.0723 PPM
NO.	37 = 0.0789 PPM	NO.	87 = 0.0572 PPM	NO.	137 = 0.0543 PPM	NO.	187 = 0.0718 PPM
NO.	38 = 0.0796 PPM	NO.	88 = 0.0576 PPM	NO.	138 = 0.0860 PPM	NO.	188 = 0.0715 PPM
NO.	39 = 0.0808 PPM	NO.	89 = 0.0569 PPM	NO.	139 = 0.0678 PPM	NO.	189 = 0.0708 PPM
NO.	40 = 0.0823 PPM	NO.	90 = 0.0553 PPM	NO.	140 = 0.0684 PPM	NO.	190 = 0.0699 PPM
NO.	41 = 0.0828 PPM	NO.	91 = 0.0533 PPM	NO.	141 = 0.0691 PPM	NO.	191 = 0.0684 PPM
NO.	42 = 0.0813 PPM	NO.	92 = 0.0858 PPM	NO.	142 = 0.0698 PPM	NO.	192 = 0.0666 PPM
NO.	43 = 0.0799 PPM	NO.	93 = 0.0658 PPM	NO.	143 = 0.0702 PPM	NO.	193 = 0.0645 PPM
NO.	44 = 0.0789 PPM	NO.	94 = 0.0649 PPM	NO.	144 = 0.0695 PPM	NO.	194 = 0.0625 PPM
NO.	45 = 0.0796 PPM	NO.	95 = 0.0666 PPM	NO.	145 = 0.0689 PPM	NO.	195 = 0.0607 PPM
NO.	46 = 0.0691 PPM	NO.	96 = 0.0681 PPM	NO.	146 = 0.0673 PPM	NO.	196 = 0.0591 PPM
NO.	47 = 0.0666 PPM	NO.	97 = 0.0685 PPM	NO.	147 = 0.0654 PPM	NO.	197 = 0.0579 PPM
NO.	48 = 0.0641 PPM	NO.	98 = 0.0703 PPM	NO.	148 = 0.0636 PPM	NO.	198 = 0.0567 PPM
NO.	49 = 0.0642 PPM	NO.	99 = 0.0707 PPM	NO.	149 = 0.0619 PPM	NO.	199 = 0.0553 PPM
NO.	50 = 0.0677 PPM	NO.	100 = 0.0696 PPM	NO.	150 = 0.0601 PPM	NO.	200 = 0.0541 PPM

A-2. continued.

NO. 201 = 0.0537 PPM	NO. 251 = 0.0535 PPM	NO. 301 = 0.0607 PPM	NO. 351 = 0.0587 PPM
NO. 202 = 0.0538 PPM	NO. 252 = 0.0529 PPM	NO. 302 = 0.0589 PPM	NO. 352 = 0.0565 PPM
NO. 203 = 0.0537 PPM	NO. 253 = 0.0607 PPM	NO. 303 = 0.0576 PPM	NO. 353 = 0.0547 PPM
NO. 204 = 0.0535 PPM	NO. 254 = 0.0708 PPM	NO. 304 = 0.0560 PPM	NO. 354 = 0.0535 PPM
NO. 205 = 0.0533 PPM	NO. 255 = 0.0668 PPM	NO. 305 = 0.0562 PPM	NO. 355 = 0.0536 PPM
NO. 206 = 0.0525 PPM	NO. 256 = 0.0637 PPM	NO. 306 = 0.0680 PPM	NO. 356 = 0.0556 PPM
NO. 207 = 0.0540 PPM	NO. 257 = 0.0606 PPM	NO. 307 = 0.0617 PPM	NO. 357 = 0.0631 PPM
NO. 208 = 0.0646 PPM	NO. 258 = 0.0602 PPM	NO. 308 = 0.0581 PPM	NO. 358 = 0.0679 PPM
NO. 209 = 0.0636 PPM	NO. 259 = 0.0591 PPM	NO. 309 = 0.0565 PPM	NO. 359 = 0.0680 PPM
NO. 210 = 0.0616 PPM	NO. 260 = 0.0656 PPM	NO. 310 = 0.0551 PPM	NO. 360 = 0.0668 PPM
NO. 211 = 0.0585 PPM	NO. 261 = 0.0637 PPM	NO. 311 = 0.0552 PPM	NO. 361 = 0.0649 PPM
NO. 212 = 0.0584 PPM	NO. 262 = 0.0609 PPM	NO. 312 = 0.0590 PPM	NO. 362 = 0.0635 PPM
NO. 213 = 0.0581 PPM	NO. 263 = 0.0591 PPM	NO. 313 = 0.0676 PPM	NO. 363 = 0.0619 PPM
NO. 214 = 0.0568 PPM	NO. 264 = 0.0574 PPM	NO. 314 = 0.0677 PPM	NO. 364 = 0.0619 PPM
NO. 215 = 0.0593 PPM	NO. 265 = 0.0563 PPM	NO. 315 = 0.0646 PPM	NO. 365 = 0.0641 PPM
NO. 216 = 0.0577 PPM	NO. 266 = 0.0554 PPM	NO. 316 = 0.0629 PPM	NO. 366 = 0.0646 PPM
NO. 217 = 0.0570 PPM	NO. 267 = 0.0623 PPM	NO. 317 = 0.0618 PPM	NO. 367 = 0.0649 PPM
NO. 218 = 0.0558 PPM	NO. 268 = 0.0691 PPM	NO. 318 = 0.0603 PPM	NO. 368 = 0.0869 PPM
NO. 219 = 0.0546 PPM	NO. 269 = 0.0665 PPM	NO. 319 = 0.0615 PPM	NO. 369 = 0.0807 PPM
NO. 220 = 0.0540 PPM	NO. 270 = 0.0645 PPM	NO. 320 = 0.0630 PPM	NO. 370 = 0.0787 PPM
NO. 221 = 0.0540 PPM	NO. 271 = 0.0631 PPM	NO. 321 = 0.0632 PPM	NO. 371 = 0.0750 PPM
NO. 222 = 0.0594 PPM	NO. 272 = 0.0617 PPM	NO. 322 = 0.0872 PPM	NO. 372 = 0.0715 PPM
NO. 223 = 0.0642 PPM	NO. 273 = 0.0607 PPM	NO. 323 = 0.0788 PPM	NO. 373 = 0.0691 PPM
NO. 224 = 0.0632 PPM	NO. 274 = 0.0605 PPM	NO. 324 = 0.0774 PPM	NO. 374 = 0.0665 PPM
NO. 225 = 0.0617 PPM	NO. 275 = 0.0616 PPM	NO. 325 = 0.0742 PPM	NO. 375 = 0.0635 PPM
NO. 226 = 0.0605 PPM	NO. 276 = 0.0883 PPM	NO. 326 = 0.0714 PPM	NO. 376 = 0.0623 PPM
NO. 227 = 0.0600 PPM	NO. 277 = 0.0768 PPM	NO. 327 = 0.0692 PPM	NO. 377 = 0.0612 PPM
NO. 228 = 0.0586 PPM	NO. 278 = 0.0758 PPM	NO. 328 = 0.0668 PPM	NO. 378 = 0.0601 PPM
NO. 229 = 0.0579 PPM	NO. 279 = 0.0733 PPM	NO. 329 = 0.0641 PPM	NO. 379 = 0.0579 PPM
NO. 230 = 0.0881 PPM	NO. 280 = 0.0714 PPM	NO. 330 = 0.0622 PPM	NO. 380 = 0.0561 PPM
NO. 231 = 0.0749 PPM	NO. 281 = 0.0697 PPM	NO. 331 = 0.0612 PPM	NO. 381 = 0.0569 PPM
NO. 232 = 0.0741 PPM	NO. 282 = 0.0677 PPM	NO. 332 = 0.0595 PPM	NO. 382 = 0.0560 PPM
NO. 233 = 0.0727 PPM	NO. 283 = 0.0654 PPM	NO. 333 = 0.0580 PPM	NO. 383 = 0.0655 PPM
NO. 234 = 0.0716 PPM	NO. 284 = 0.0631 PPM	NO. 334 = 0.0559 PPM	NO. 384 = 0.0621 PPM
NO. 235 = 0.0702 PPM	NO. 285 = 0.0607 PPM	NO. 335 = 0.0555 PPM	NO. 385 = 0.0629 PPM
NO. 236 = 0.0687 PPM	NO. 286 = 0.0594 PPM	NO. 336 = 0.0541 PPM	NO. 386 = 0.0573 PPM
NO. 237 = 0.0668 PPM	NO. 287 = 0.0586 PPM	NO. 337 = 0.0548 PPM	NO. 387 = 0.0698 PPM
NO. 238 = 0.0648 PPM	NO. 288 = 0.0573 PPM	NO. 338 = 0.0650 PPM	NO. 388 = 0.0722 PPM
NO. 239 = 0.0628 PPM	NO. 289 = 0.0556 PPM	NO. 339 = 0.0663 PPM	NO. 389 = 0.0680 PPM
NO. 240 = 0.0608 PPM	NO. 290 = 0.0544 PPM	NO. 340 = 0.0606 PPM	NO. 390 = 0.0707 PPM
NO. 241 = 0.0589 PPM	NO. 291 = 0.0537 PPM	NO. 341 = 0.0624 PPM	NO. 391 = 0.0664 PPM
NO. 242 = 0.0578 PPM	NO. 292 = 0.0564 PPM	NO. 342 = 0.0678 PPM	NO. 392 = 0.0643 PPM
NO. 243 = 0.0566 PPM	NO. 293 = 0.0581 PPM	NO. 343 = 0.0623 PPM	NO. 393 = 0.0635 PPM
NO. 244 = 0.0552 PPM	NO. 294 = 0.0549 PPM	NO. 344 = 0.0707 PPM	NO. 394 = 0.0622 PPM
NO. 245 = 0.0540 PPM	NO. 295 = 0.0549 PPM	NO. 345 = 0.0669 PPM	NO. 395 = 0.0613 PPM
NO. 246 = 0.0538 PPM	NO. 296 = 0.0596 PPM	NO. 346 = 0.0652 PPM	NO. 396 = 0.0598 PPM
NO. 247 = 0.0540 PPM	NO. 297 = 0.0577 PPM	NO. 347 = 0.0636 PPM	NO. 397 = 0.0569 PPM
NO. 248 = 0.0538 PPM	NO. 298 = 0.0624 PPM	NO. 348 = 0.0621 PPM	NO. 398 = 0.0559 PPM
NO. 249 = 0.0538 PPM	NO. 299 = 0.0668 PPM	NO. 349 = 0.0613 PPM	NO. 399 = 0.0570 PPM
NO. 250 = 0.0534 PPM	NO. 300 = 0.0633 PPM	NO. 350 = 0.0604 PPM	NO. 400 = 0.0576 PPM

A-2. continued.

NO. 401 = 0.0570 PPM	NO. 451 = 0.0738 PPM	NO. 501 = 0.0669 PPM	NO. 551 = 0.0711 PPM
NO. 402 = 0.0641 PPM	NO. 452 = 0.0726 PPM	NO. 502 = 0.0726 PPM	NO. 552 = 0.0827 PPM
NO. 403 = 0.0738 PPM	NO. 453 = 0.0703 PPM	NO. 503 = 0.0731 PPM	NO. 553 = 0.0680 PPM
NO. 404 = 0.0728 PPM	NO. 454 = 0.0682 PPM	NO. 504 = 0.0728 PPM	NO. 554 = 0.0684 PPM
NO. 405 = 0.0708 PPM	NO. 455 = 0.0653 PPM	NO. 505 = 0.0713 PPM	NO. 555 = 0.0688 PPM
NO. 406 = 0.0692 PPM	NO. 456 = 0.0688 PPM	NO. 506 = 0.0833 PPM	NO. 556 = 0.0694 PPM
NO. 407 = 0.0679 PPM	NO. 457 = 0.0696 PPM	NO. 507 = 0.0713 PPM	NO. 557 = 0.0661 PPM
NO. 408 = 0.0660 PPM	NO. 458 = 0.0698 PPM	NO. 508 = 0.0709 PPM	NO. 558 = 0.0782 PPM
NO. 409 = 0.0634 PPM	NO. 459 = 0.0696 PPM	NO. 509 = 0.0705 PPM	NO. 559 = 0.0748 PPM
NO. 410 = 0.0652 PPM	NO. 460 = 0.0865 PPM	NO. 510 = 0.0704 PPM	NO. 560 = 0.0728 PPM
NO. 411 = 0.0668 PPM	NO. 461 = 0.0746 PPM	NO. 511 = 0.0682 PPM	NO. 561 = 0.0699 PPM
NO. 412 = 0.0673 PPM	NO. 462 = 0.0734 PPM	NO. 512 = 0.0742 PPM	NO. 562 = 0.0669 PPM
NO. 413 = 0.0669 PPM	NO. 463 = 0.0722 PPM	NO. 513 = 0.0714 PPM	NO. 563 = 0.0671 PPM
NO. 414 = 0.0887 PPM	NO. 464 = 0.0711 PPM	NO. 514 = 0.0686 PPM	NO. 564 = 0.0639 PPM
NO. 415 = 0.0780 PPM	NO. 465 = 0.0694 PPM	NO. 515 = 0.0646 PPM	NO. 565 = 0.0634 PPM
NO. 416 = 0.0761 PPM	NO. 466 = 0.0677 PPM	NO. 516 = 0.0615 PPM	NO. 566 = 0.0618 PPM
NO. 417 = 0.0739 PPM	NO. 467 = 0.0659 PPM	NO. 517 = 0.0597 PPM	NO. 567 = 0.0617 PPM
NO. 418 = 0.0712 PPM	NO. 468 = 0.0638 PPM	NO. 518 = 0.0610 PPM	NO. 568 = 0.0636 PPM
NO. 419 = 0.0703 PPM	NO. 469 = 0.0611 PPM	NO. 519 = 0.0612 PPM	NO. 569 = 0.0636 PPM
NO. 420 = 0.0677 PPM	NO. 470 = 0.0594 PPM	NO. 520 = 0.0600 PPM	NO. 570 = 0.0625 PPM
NO. 421 = 0.0644 PPM	NO. 471 = 0.0584 PPM	NO. 521 = 0.0590 PPM	NO. 571 = 0.0608 PPM
NO. 422 = 0.0621 PPM	NO. 472 = 0.0572 PPM	NO. 522 = 0.0595 PPM	NO. 572 = 0.0604 PPM
NO. 423 = 0.0615 PPM	NO. 473 = 0.0558 PPM	NO. 523 = 0.0591 PPM	NO. 573 = 0.0592 PPM
NO. 424 = 0.0603 PPM	NO. 474 = 0.0587 PPM	NO. 524 = 0.0572 PPM	NO. 574 = 0.0603 PPM
NO. 425 = 0.0585 PPM	NO. 475 = 0.0551 PPM	NO. 525 = 0.0573 PPM	NO. 575 = 0.0652 PPM
NO. 426 = 0.0569 PPM	NO. 476 = 0.0554 PPM	NO. 526 = 0.0580 PPM	NO. 576 = 0.0642 PPM
NO. 427 = 0.0547 PPM	NO. 477 = 0.0556 PPM	NO. 527 = 0.0579 PPM	NO. 577 = 0.0620 PPM
NO. 428 = 0.0631 PPM	NO. 478 = 0.0545 PPM	NO. 528 = 0.0585 PPM	NO. 578 = 0.0624 PPM
NO. 429 = 0.0713 PPM	NO. 479 = 0.0554 PPM	NO. 529 = 0.0642 PPM	NO. 579 = 0.0636 PPM
NO. 430 = 0.0696 PPM	NO. 480 = 0.0560 PPM	NO. 530 = 0.0646 PPM	NO. 580 = 0.0627 PPM
NO. 431 = 0.0673 PPM	NO. 481 = 0.0565 PPM	NO. 531 = 0.0618 PPM	NO. 581 = 0.0641 PPM
NO. 432 = 0.0644 PPM	NO. 482 = 0.0570 PPM	NO. 532 = 0.0607 PPM	NO. 582 = 0.0679 PPM
NO. 433 = 0.0653 PPM	NO. 483 = 0.0571 PPM	NO. 533 = 0.0609 PPM	NO. 583 = 0.0799 PPM
NO. 434 = 0.0701 PPM	NO. 484 = 0.0575 PPM	NO. 534 = 0.0604 PPM	NO. 584 = 0.1018 PPM
NO. 435 = 0.0680 PPM	NO. 485 = 0.0576 PPM	NO. 535 = 0.0607 PPM	NO. 585 = 0.0973 PPM
NO. 436 = 0.0691 PPM	NO. 486 = 0.0582 PPM	NO. 536 = 0.0621 PPM	NO. 586 = 0.0903 PPM
NO. 437 = 0.0663 PPM	NO. 487 = 0.0583 PPM	NO. 537 = 0.0670 PPM	NO. 587 = 0.0870 PPM
NO. 438 = 0.0636 PPM	NO. 488 = 0.0580 PPM	NO. 538 = 0.0783 PPM	NO. 588 = 0.0860 PPM
NO. 439 = 0.0611 PPM	NO. 489 = 0.0582 PPM	NO. 539 = 0.0937 PPM	NO. 589 = 0.0839 PPM
NO. 440 = 0.0615 PPM	NO. 490 = 0.0580 PPM	NO. 540 = 0.0886 PPM	NO. 590 = 0.0801 PPM
NO. 441 = 0.0599 PPM	NO. 491 = 0.0616 PPM	NO. 541 = 0.0854 PPM	NO. 591 = 0.0758 PPM
NO. 442 = 0.0590 PPM	NO. 492 = 0.0653 PPM	NO. 542 = 0.0829 PPM	NO. 592 = 0.0697 PPM
NO. 443 = 0.0577 PPM	NO. 493 = 0.0775 PPM	NO. 543 = 0.0795 PPM	NO. 593 = 0.0694 PPM
NO. 444 = 0.0566 PPM	NO. 494 = 0.0855 PPM	NO. 544 = 0.0781 PPM	NO. 594 = 0.0705 PPM
NO. 445 = 0.0570 PPM	NO. 495 = 0.0830 PPM	NO. 545 = 0.0751 PPM	NO. 595 = 0.0705 PPM
NO. 446 = 0.0579 PPM	NO. 496 = 0.0804 PPM	NO. 546 = 0.0695 PPM	NO. 596 = 0.0703 PPM
NO. 447 = 0.0640 PPM	NO. 497 = 0.0783 PPM	NO. 547 = 0.0671 PPM	NO. 597 = 0.0712 PPM
NO. 448 = 0.0755 PPM	NO. 498 = 0.0754 PPM	NO. 548 = 0.0727 PPM	NO. 598 = 0.0820 PPM
NO. 449 = 0.0777 PPM	NO. 499 = 0.0738 PPM	NO. 549 = 0.0727 PPM	NO. 599 = 0.0659 PPM
NO. 450 = 0.0758 PPM	NO. 500 = 0.0705 PPM	NO. 550 = 0.0718 PPM	NO. 600 = 0.0667 PPM

A-2. continued.

NO. 601 = 0.0675 PPM	NO. 651 = 0.0697 PPM	NO. 701 = 0.0713 PPM	NO. 751 = 0.0843 PPM
NO. 602 = 0.0669 PPM	NO. 652 = 0.0688 PPM	NO. 702 = 0.0724 PPM	NO. 752 = 0.0833 PPM
NO. 603 = 0.0657 PPM	NO. 653 = 0.0649 PPM	NO. 703 = 0.0726 PPM	NO. 753 = 0.0796 PPM
NO. 604 = 0.0637 PPM	NO. 654 = 0.0629 PPM	NO. 704 = 0.0746 PPM	NO. 754 = 0.0766 PPM
NO. 605 = 0.0606 PPM	NO. 655 = 0.0618 PPM	NO. 705 = 0.0744 PPM	NO. 755 = 0.0735 PPM
NO. 606 = 0.0602 PPM	NO. 656 = 0.0649 PPM	NO. 706 = 0.0737 PPM	NO. 756 = 0.0728 PPM
NO. 607 = 0.0592 PPM	NO. 657 = 0.0643 PPM	NO. 707 = 0.0710 PPM	NO. 757 = 0.0695 PPM
NO. 608 = 0.0601 PPM	NO. 658 = 0.0649 PPM	NO. 708 = 0.0687 PPM	NO. 758 = 0.0673 PPM
NO. 609 = 0.0598 PPM	NO. 659 = 0.0647 PPM	NO. 709 = 0.0642 PPM	NO. 759 = 0.0673 PPM
NO. 610 = 0.0603 PPM	NO. 660 = 0.0644 PPM	NO. 710 = 0.0666 PPM	NO. 760 = 0.0779 PPM
NO. 611 = 0.0588 PPM	NO. 661 = 0.0624 PPM	NO. 711 = 0.0620 PPM	NO. 761 = 0.0781 PPM
NO. 612 = 0.0582 PPM	NO. 662 = 0.0612 PPM	NO. 712 = 0.0693 PPM	NO. 762 = 0.0800 PPM
NO. 613 = 0.0545 PPM	NO. 663 = 0.0586 PPM	NO. 713 = 0.0644 PPM	NO. 763 = 0.0797 PPM
NO. 614 = 0.0557 PPM	NO. 664 = 0.0602 PPM	NO. 714 = 0.0804 PPM	NO. 764 = 0.0774 PPM
NO. 615 = 0.0568 PPM	NO. 665 = 0.0572 PPM	NO. 715 = 0.0797 PPM	NO. 765 = 0.1108 PPM
NO. 616 = 0.0567 PPM	NO. 666 = 0.0603 PPM	NO. 716 = 0.0787 PPM	NO. 766 = 0.1068 PPM
NO. 617 = 0.0556 PPM	NO. 667 = 0.0681 PPM	NO. 717 = 0.0798 PPM	NO. 767 = 0.1021 PPM
NO. 618 = 0.0552 PPM	NO. 668 = 0.0737 PPM	NO. 718 = 0.0766 PPM	NO. 768 = 0.0984 PPM
NO. 619 = 0.0551 PPM	NO. 669 = 0.0744 PPM	NO. 719 = 0.0923 PPM	NO. 769 = 0.0963 PPM
NO. 620 = 0.0564 PPM	NO. 670 = 0.0747 PPM	NO. 720 = 0.1121 PPM	NO. 770 = 0.0942 PPM
NO. 621 = 0.0684 PPM	NO. 671 = 0.0762 PPM	NO. 721 = 0.1058 PPM	NO. 771 = 0.0925 PPM
NO. 622 = 0.0691 PPM	NO. 672 = 0.0739 PPM	NO. 722 = 0.0990 PPM	NO. 772 = 0.0890 PPM
NO. 623 = 0.0689 PPM	NO. 673 = 0.0771 PPM	NO. 723 = 0.0956 PPM	NO. 773 = 0.0850 PPM
NO. 624 = 0.0692 PPM	NO. 674 = 0.0915 PPM	NO. 724 = 0.0926 PPM	NO. 774 = 0.0797 PPM
NO. 625 = 0.0711 PPM	NO. 675 = 0.1103 PPM	NO. 725 = 0.0907 PPM	NO. 775 = 0.0742 PPM
NO. 626 = 0.0692 PPM	NO. 676 = 0.1028 PPM	NO. 726 = 0.0868 PPM	NO. 776 = 0.0708 PPM
NO. 627 = 0.0700 PPM	NO. 677 = 0.0966 PPM	NO. 727 = 0.0809 PPM	NO. 777 = 0.0753 PPM
NO. 628 = 0.0773 PPM	NO. 678 = 0.0929 PPM	NO. 728 = 0.0744 PPM	NO. 778 = 0.0747 PPM
NO. 629 = 0.0996 PPM	NO. 679 = 0.0890 PPM	NO. 729 = 0.0708 PPM	NO. 779 = 0.0719 PPM
NO. 630 = 0.1053 PPM	NO. 680 = 0.0865 PPM	NO. 730 = 0.0697 PPM	NO. 780 = 0.0704 PPM
NO. 631 = 0.0984 PPM	NO. 681 = 0.0828 PPM	NO. 731 = 0.0729 PPM	NO. 781 = 0.0678 PPM
NO. 632 = 0.0933 PPM	NO. 682 = 0.0767 PPM	NO. 732 = 0.0736 PPM	NO. 782 = 0.0784 PPM
NO. 633 = 0.0911 PPM	NO. 683 = 0.0700 PPM	NO. 733 = 0.0719 PPM	NO. 783 = 0.0596 PPM
NO. 634 = 0.0883 PPM	NO. 684 = 0.0691 PPM	NO. 734 = 0.0729 PPM	NO. 784 = 0.0612 PPM
NO. 635 = 0.0834 PPM	NO. 685 = 0.0696 PPM	NO. 735 = 0.0718 PPM	NO. 785 = 0.0778 PPM
NO. 636 = 0.0803 PPM	NO. 686 = 0.0721 PPM	NO. 736 = 0.0792 PPM	NO. 786 = 0.0944 PPM
NO. 637 = 0.0745 PPM	NO. 687 = 0.0716 PPM	NO. 737 = 0.0631 PPM	NO. 787 = 0.0948 PPM
NO. 638 = 0.0694 PPM	NO. 688 = 0.0722 PPM	NO. 738 = 0.0765 PPM	NO. 788 = 0.0936 PPM
NO. 639 = 0.0698 PPM	NO. 689 = 0.0734 PPM	NO. 739 = 0.0921 PPM	NO. 789 = 0.0905 PPM
NO. 640 = 0.0695 PPM	NO. 690 = 0.0802 PPM	NO. 740 = 0.0963 PPM	NO. 790 = 0.0884 PPM
NO. 641 = 0.0707 PPM	NO. 691 = 0.0650 PPM	NO. 741 = 0.0934 PPM	NO. 791 = 0.0857 PPM
NO. 642 = 0.0719 PPM	NO. 692 = 0.0687 PPM	NO. 742 = 0.0885 PPM	NO. 792 = 0.0830 PPM
NO. 643 = 0.0720 PPM	NO. 693 = 0.0820 PPM	NO. 743 = 0.0852 PPM	NO. 793 = 0.0871 PPM
NO. 644 = 0.0811 PPM	NO. 694 = 0.0855 PPM	NO. 744 = 0.0799 PPM	NO. 794 = 0.0868 PPM
NO. 645 = 0.0655 PPM	NO. 695 = 0.0867 PPM	NO. 745 = 0.0758 PPM	NO. 795 = 0.0866 PPM
NO. 646 = 0.0658 PPM	NO. 696 = 0.0845 PPM	NO. 746 = 0.0773 PPM	NO. 796 = 0.0863 PPM
NO. 647 = 0.0663 PPM	NO. 697 = 0.0815 PPM	NO. 747 = 0.0809 PPM	NO. 797 = 0.0836 PPM
NO. 648 = 0.0690 PPM	NO. 698 = 0.0791 PPM	NO. 748 = 0.0829 PPM	NO. 798 = 0.0829 PPM
NO. 649 = 0.0685 PPM	NO. 699 = 0.0739 PPM	NO. 749 = 0.0841 PPM	NO. 799 = 0.0813 PPM
NO. 650 = 0.0701 PPM	NO. 700 = 0.0691 PPM	NO. 750 = 0.0849 PPM	NO. 800 = 0.0797 PPM

A-2. continued.

NO. 801 = 0.0777 PPM	NO. 851 = 0.0729 PPM	NO. 901 = 0.1075 PPM	NO. 951 = 0.1042 PPM
NO. 802 = 0.0763 PPM	NO. 852 = 0.0795 PPM	NO. 902 = 0.1084 PPM	NO. 952 = 0.1021 PPM
NO. 803 = 0.0748 PPM	NO. 853 = 0.0861 PPM	NO. 903 = 0.1091 PPM	NO. 953 = 0.1003 PPM
NO. 804 = 0.0719 PPM	NO. 854 = 0.0901 PPM	NO. 904 = 0.1067 PPM	NO. 954 = 0.0972 PPM
NO. 805 = 0.0719 PPM	NO. 855 = 0.0944 PPM	NO. 905 = 0.1040 PPM	NO. 955 = 0.0951 PPM
NO. 806 = 0.0786 PPM	NO. 856 = 0.1016 PPM	NO. 906 = 0.1026 PPM	NO. 956 = 0.0933 PPM
NO. 807 = 0.0825 PPM	NO. 857 = 0.1050 PPM	NO. 907 = 0.1009 PPM	NO. 957 = 0.0913 PPM
NO. 808 = 0.0849 PPM	NO. 858 = 0.1022 PPM	NO. 908 = 0.0974 PPM	NO. 958 = 0.0888 PPM
NO. 809 = 0.0820 PPM	NO. 859 = 0.1007 PPM	NO. 909 = 0.0934 PPM	NO. 959 = 0.0870 PPM
NO. 810 = 0.0965 PPM	NO. 860 = 0.0995 PPM	NO. 910 = 0.0879 PPM	NO. 960 = 0.0859 PPM
NO. 811 = 0.1050 PPM	NO. 861 = 0.0979 PPM	NO. 911 = 0.0874 PPM	NO. 961 = 0.0835 PPM
NO. 812 = 0.1021 PPM	NO. 862 = 0.0963 PPM	NO. 912 = 0.0856 PPM	NO. 962 = 0.0798 PPM
NO. 813 = 0.0997 PPM	NO. 863 = 0.0932 PPM	NO. 913 = 0.0837 PPM	NO. 963 = 0.0710 PPM
NO. 814 = 0.0982 PPM	NO. 864 = 0.0902 PPM	NO. 914 = 0.0832 PPM	NO. 964 = 0.0685 PPM
NO. 815 = 0.0971 PPM	NO. 865 = 0.0864 PPM	NO. 915 = 0.0841 PPM	NO. 965 = 0.0725 PPM
NO. 816 = 0.0950 PPM	NO. 866 = 0.0828 PPM	NO. 916 = 0.0819 PPM	NO. 966 = 0.0766 PPM
NO. 817 = 0.0934 PPM	NO. 867 = 0.0786 PPM	NO. 917 = 0.0789 PPM	NO. 967 = 0.0673 PPM
NO. 818 = 0.0902 PPM	NO. 868 = 0.0755 PPM	NO. 918 = 0.0781 PPM	NO. 968 = 0.0673 PPM
NO. 819 = 0.0861 PPM	NO. 869 = 0.0767 PPM	NO. 919 = 0.0753 PPM	NO. 969 = 0.0653 PPM
NO. 820 = 0.0805 PPM	NO. 870 = 0.0759 PPM	NO. 920 = 0.0771 PPM	NO. 970 = 0.0651 PPM
NO. 821 = 0.0749 PPM	NO. 871 = 0.0759 PPM	NO. 921 = 0.0660 PPM	NO. 971 = 0.0656 PPM
NO. 822 = 0.0738 PPM	NO. 872 = 0.0755 PPM	NO. 922 = 0.0668 PPM	NO. 972 = 0.0654 PPM
NO. 823 = 0.0739 PPM	NO. 873 = 0.0729 PPM	NO. 923 = 0.0662 PPM	NO. 973 = 0.0645 PPM
NO. 824 = 0.0732 PPM	NO. 874 = 0.0775 PPM	NO. 924 = 0.0674 PPM	NO. 974 = 0.0631 PPM
NO. 825 = 0.0706 PPM	NO. 875 = 0.0643 PPM	NO. 925 = 0.0687 PPM	NO. 975 = 0.0657 PPM
NO. 826 = 0.0701 PPM	NO. 876 = 0.0671 PPM	NO. 926 = 0.0693 PPM	NO. 976 = 0.0685 PPM
NO. 827 = 0.0670 PPM	NO. 877 = 0.0743 PPM	NO. 927 = 0.0681 PPM	NO. 977 = 0.0695 PPM
NO. 828 = 0.0779 PPM	NO. 878 = 0.0755 PPM	NO. 928 = 0.0659 PPM	NO. 978 = 0.0684 PPM
NO. 829 = 0.0618 PPM	NO. 879 = 0.0752 PPM	NO. 929 = 0.0660 PPM	NO. 979 = 0.0686 PPM
NO. 830 = 0.0506 PPM	NO. 880 = 0.0765 PPM	NO. 930 = 0.0663 PPM	NO. 980 = 0.0704 PPM
NO. 831 = 0.0596 PPM	NO. 881 = 0.0748 PPM	NO. 931 = 0.0667 PPM	NO. 981 = 0.0759 PPM
NO. 832 = 0.0804 PPM	NO. 882 = 0.0745 PPM	NO. 932 = 0.0665 PPM	NO. 982 = 0.0831 PPM
NO. 833 = 0.0818 PPM	NO. 883 = 0.0750 PPM	NO. 933 = 0.0657 PPM	NO. 983 = 0.0917 PPM
NO. 834 = 0.0843 PPM	NO. 884 = 0.0761 PPM	NO. 934 = 0.0635 PPM	NO. 984 = 0.0960 PPM
NO. 835 = 0.0835 PPM	NO. 885 = 0.0764 PPM	NO. 935 = 0.0604 PPM	NO. 985 = 0.0982 PPM
NO. 836 = 0.0838 PPM	NO. 886 = 0.0752 PPM	NO. 936 = 0.0664 PPM	NO. 986 = 0.0960 PPM
NO. 837 = 0.0841 PPM	NO. 887 = 0.0785 PPM	NO. 937 = 0.0771 PPM	NO. 987 = 0.0964 PPM
NO. 838 = 0.0815 PPM	NO. 888 = 0.0786 PPM	NO. 938 = 0.0859 PPM	NO. 988 = 0.0874 PPM
NO. 839 = 0.0819 PPM	NO. 889 = 0.0731 PPM	NO. 939 = 0.0912 PPM	NO. 989 = 0.0921 PPM
NO. 840 = 0.0777 PPM	NO. 890 = 0.0689 PPM	NO. 940 = 0.1012 PPM	NO. 990 = 0.0963 PPM
NO. 841 = 0.0787 PPM	NO. 891 = 0.0665 PPM	NO. 941 = 0.0976 PPM	NO. 991 = 0.0976 PPM
NO. 842 = 0.0800 PPM	NO. 892 = 0.0672 PPM	NO. 942 = 0.0954 PPM	NO. 992 = 0.1001 PPM
NO. 843 = 0.0790 PPM	NO. 893 = 0.0727 PPM	NO. 943 = 0.0952 PPM	NO. 993 = 0.1051 PPM
NO. 844 = 0.0778 PPM	NO. 894 = 0.0792 PPM	NO. 944 = 0.0996 PPM	NO. 994 = 0.1042 PPM
NO. 845 = 0.0760 PPM	NO. 895 = 0.0829 PPM	NO. 945 = 0.1024 PPM	NO. 995 = 0.1042 PPM
NO. 846 = 0.0751 PPM	NO. 896 = 0.0853 PPM	NO. 946 = 0.1059 PPM	NO. 996 = 0.0973 PPM
NO. 847 = 0.0747 PPM	NO. 897 = 0.0898 PPM	NO. 947 = 0.1096 PPM	NO. 997 = 0.0942 PPM
NO. 848 = 0.0747 PPM	NO. 898 = 0.0912 PPM	NO. 948 = 0.1082 PPM	NO. 998 = 0.0954 PPM
NO. 849 = 0.0751 PPM	NO. 899 = 0.0961 PPM	NO. 949 = 0.1093 PPM	NO. 999 = 0.1014 PPM
NO. 850 = 0.0734 PPM	NO. 900 = 0.1008 PPM	NO. 950 = 0.1063 PPM	NO. 1000 = 0.1017 PPM

A-2. continued.

NO. 1001 = 0.0966 PPM	NO. 1051 = 0.0655 PPM	NO. 1101 = 0.0536 PPM	NO. 1151 = 0.0735 PPM
NO. 1002 = 0.0907 PPM	NO. 1052 = 0.0643 PPM	NO. 1102 = 0.0543 PPM	NO. 1152 = 0.0721 PPM
NO. 1003 = 0.0859 PPM	NO. 1053 = 0.0596 PPM	NO. 1103 = 0.0569 PPM	NO. 1153 = 0.0717 PPM
NO. 1004 = 0.0832 PPM	NO. 1054 = 0.0595 PPM	NO. 1104 = 0.0762 PPM	NO. 1154 = 0.0697 PPM
NO. 1005 = 0.0804 PPM	NO. 1055 = 0.0574 PPM	NO. 1105 = 0.0719 PPM	NO. 1155 = 0.0665 PPM
NO. 1006 = 0.0768 PPM	NO. 1056 = 0.0563 PPM	NO. 1106 = 0.0711 PPM	NO. 1156 = 0.0652 PPM
NO. 1007 = 0.0696 PPM	NO. 1057 = 0.0560 PPM	NO. 1107 = 0.0693 PPM	NO. 1157 = 0.0735 PPM
NO. 1008 = 0.0640 PPM	NO. 1058 = 0.0758 PPM	NO. 1108 = 0.0684 PPM	NO. 1158 = 0.0615 PPM
NO. 1009 = 0.0642 PPM	NO. 1059 = 0.0702 PPM	NO. 1109 = 0.0668 PPM	NO. 1159 = 0.0597 PPM
NO. 1010 = 0.0665 PPM	NO. 1060 = 0.0699 PPM	NO. 1110 = 0.0632 PPM	NO. 1160 = 0.0575 PPM
NO. 1011 = 0.0575 PPM	NO. 1061 = 0.0676 PPM	NO. 1111 = 0.0687 PPM	NO. 1161 = 0.0565 PPM
NO. 1012 = 0.0762 PPM	NO. 1062 = 0.0671 PPM	NO. 1112 = 0.0651 PPM	NO. 1162 = 0.0683 PPM
NO. 1013 = 0.0687 PPM	NO. 1063 = 0.0652 PPM	NO. 1113 = 0.0695 PPM	NO. 1163 = 0.0785 PPM
NO. 1014 = 0.0684 PPM	NO. 1064 = 0.0622 PPM	NO. 1114 = 0.0737 PPM	NO. 1164 = 0.0802 PPM
NO. 1015 = 0.0662 PPM	NO. 1065 = 0.0597 PPM	NO. 1115 = 0.0787 PPM	NO. 1165 = 0.0812 PPM
NO. 1016 = 0.0651 PPM	NO. 1066 = 0.0762 PPM	NO. 1116 = 0.0843 PPM	NO. 1166 = 0.0868 PPM
NO. 1017 = 0.0631 PPM	NO. 1067 = 0.0845 PPM	NO. 1117 = 0.0906 PPM	NO. 1167 = 0.0886 PPM
NO. 1018 = 0.0620 PPM	NO. 1068 = 0.0919 PPM	NO. 1118 = 0.0934 PPM	NO. 1168 = 0.0894 PPM
NO. 1019 = 0.0611 PPM	NO. 1069 = 0.0970 PPM	NO. 1119 = 0.0929 PPM	NO. 1169 = 0.0876 PPM
NO. 1020 = 0.0699 PPM	NO. 1070 = 0.1005 PPM	NO. 1120 = 0.0920 PPM	NO. 1170 = 0.0879 PPM
NO. 1021 = 0.0851 PPM	NO. 1071 = 0.1017 PPM	NO. 1121 = 0.0917 PPM	NO. 1171 = 0.0857 PPM
NO. 1022 = 0.0907 PPM	NO. 1072 = 0.1001 PPM	NO. 1122 = 0.0923 PPM	NO. 1172 = 0.0856 PPM
NO. 1023 = 0.0910 PPM	NO. 1073 = 0.1000 PPM	NO. 1123 = 0.0912 PPM	NO. 1173 = 0.0829 PPM
NO. 1024 = 0.0889 PPM	NO. 1074 = 0.1007 PPM	NO. 1124 = 0.0896 PPM	NO. 1174 = 0.0796 PPM
NO. 1025 = 0.0883 PPM	NO. 1075 = 0.0992 PPM	NO. 1125 = 0.0905 PPM	NO. 1175 = 0.0781 PPM
NO. 1026 = 0.0870 PPM	NO. 1076 = 0.0981 PPM	NO. 1126 = 0.0930 PPM	NO. 1176 = 0.0776 PPM
NO. 1027 = 0.0898 PPM	NO. 1077 = 0.0959 PPM	NO. 1127 = 0.0881 PPM	NO. 1177 = 0.0722 PPM
NO. 1028 = 0.0954 PPM	NO. 1078 = 0.0908 PPM	NO. 1128 = 0.0856 PPM	NO. 1178 = 0.0698 PPM
NO. 1029 = 0.0980 PPM	NO. 1079 = 0.0905 PPM	NO. 1129 = 0.0806 PPM	NO. 1179 = 0.0686 PPM
NO. 1030 = 0.0978 PPM	NO. 1080 = 0.0861 PPM	NO. 1130 = 0.0807 PPM	NO. 1180 = 0.0639 PPM
NO. 1031 = 0.0944 PPM	NO. 1081 = 0.0861 PPM	NO. 1131 = 0.0751 PPM	NO. 1181 = 0.0748 PPM
NO. 1032 = 0.0912 PPM	NO. 1082 = 0.0873 PPM	NO. 1132 = 0.0757 PPM	NO. 1182 = 0.0713 PPM
NO. 1033 = 0.0920 PPM	NO. 1083 = 0.0825 PPM	NO. 1133 = 0.0670 PPM	NO. 1183 = 0.0687 PPM
NO. 1034 = 0.0881 PPM	NO. 1084 = 0.0936 PPM	NO. 1134 = 0.0745 PPM	NO. 1184 = 0.0677 PPM
NO. 1035 = 0.0850 PPM	NO. 1085 = 0.0873 PPM	NO. 1135 = 0.0649 PPM	NO. 1185 = 0.0655 PPM
NO. 1036 = 0.0856 PPM	NO. 1086 = 0.0854 PPM	NO. 1136 = 0.0663 PPM	NO. 1186 = 0.0614 PPM
NO. 1037 = 0.0876 PPM	NO. 1087 = 0.0748 PPM	NO. 1137 = 0.0755 PPM	NO. 1187 = 0.0578 PPM
NO. 1038 = 0.0922 PPM	NO. 1088 = 0.0739 PPM	NO. 1138 = 0.0694 PPM	NO. 1188 = 0.0586 PPM
NO. 1039 = 0.0921 PPM	NO. 1089 = 0.0721 PPM	NO. 1139 = 0.0637 PPM	NO. 1189 = 0.0590 PPM
NO. 1040 = 0.0918 PPM	NO. 1090 = 0.0706 PPM	NO. 1140 = 0.0598 PPM	NO. 1190 = 0.0593 PPM
NO. 1041 = 0.0860 PPM	NO. 1091 = 0.0794 PPM	NO. 1141 = 0.0580 PPM	NO. 1191 = 0.0599 PPM
NO. 1042 = 0.0825 PPM	NO. 1092 = 0.0744 PPM	NO. 1142 = 0.0587 PPM	NO. 1192 = 0.0597 PPM
NO. 1043 = 0.0794 PPM	NO. 1093 = 0.0691 PPM	NO. 1143 = 0.0590 PPM	NO. 1193 = 0.0598 PPM
NO. 1044 = 0.0914 PPM	NO. 1094 = 0.0652 PPM	NO. 1144 = 0.0586 PPM	NO. 1194 = 0.0611 PPM
NO. 1045 = 0.0985 PPM	NO. 1095 = 0.0623 PPM	NO. 1145 = 0.0581 PPM	NO. 1195 = 0.0627 PPM
NO. 1046 = 0.0930 PPM	NO. 1096 = 0.0593 PPM	NO. 1146 = 0.0582 PPM	NO. 1196 = 0.0782 PPM
NO. 1047 = 0.0840 PPM	NO. 1097 = 0.0591 PPM	NO. 1147 = 0.0587 PPM	NO. 1197 = 0.0751 PPM
NO. 1048 = 0.0772 PPM	NO. 1098 = 0.0557 PPM	NO. 1148 = 0.0583 PPM	NO. 1198 = 0.0735 PPM
NO. 1049 = 0.0703 PPM	NO. 1099 = 0.0532 PPM	NO. 1149 = 0.0594 PPM	NO. 1199 = 0.0744 PPM
NO. 1050 = 0.0672 PPM	NO. 1100 = 0.0516 PPM	NO. 1150 = 0.0771 PPM	NO. 1200 = 0.0706 PPM

A-2. continued.

NO. 1201 = 0.0694 PPM	NO. 1251 = 0.0743 PPM	NO. 1301 = 0.0646 PPM	NO. 1351 = 0.0784 PPM
NO. 1202 = 0.0627 PPM	NO. 1252 = 0.0754 PPM	NO. 1302 = 0.0664 PPM	NO. 1352 = 0.0770 PPM
NO. 1203 = 0.0707 PPM	NO. 1253 = 0.0747 PPM	NO. 1303 = 0.0715 PPM	NO. 1353 = 0.0752 PPM
NO. 1204 = 0.0632 PPM	NO. 1254 = 0.0777 PPM	NO. 1304 = 0.0741 PPM	NO. 1354 = 0.0742 PPM
NO. 1205 = 0.0565 PPM	NO. 1255 = 0.0797 PPM	NO. 1305 = 0.0728 PPM	NO. 1355 = 0.0724 PPM
NO. 1206 = 0.0545 PPM	NO. 1256 = 0.0816 PPM	NO. 1306 = 0.0746 PPM	NO. 1356 = 0.0707 PPM
NO. 1207 = 0.0817 PPM	NO. 1257 = 0.0830 PPM	NO. 1307 = 0.0736 PPM	NO. 1357 = 0.0683 PPM
NO. 1208 = 0.0845 PPM	NO. 1258 = 0.0830 PPM	NO. 1308 = 0.0728 PPM	NO. 1358 = 0.0646 PPM
NO. 1209 = 0.0823 PPM	NO. 1259 = 0.0799 PPM	NO. 1309 = 0.0716 PPM	NO. 1359 = 0.0613 PPM
NO. 1210 = 0.0839 PPM	NO. 1260 = 0.0780 PPM	NO. 1310 = 0.0691 PPM	NO. 1360 = 0.0595 PPM
NO. 1211 = 0.0854 PPM	NO. 1261 = 0.0743 PPM	NO. 1311 = 0.0678 PPM	NO. 1361 = 0.0690 PPM
NO. 1212 = 0.0864 PPM	NO. 1262 = 0.0708 PPM	NO. 1312 = 0.0653 PPM	NO. 1362 = 0.0778 PPM
NO. 1213 = 0.0844 PPM	NO. 1263 = 0.0635 PPM	NO. 1313 = 0.0630 PPM	NO. 1363 = 0.0832 PPM
NO. 1214 = 0.0832 PPM	NO. 1264 = 0.0630 PPM	NO. 1314 = 0.0625 PPM	NO. 1364 = 0.0829 PPM
NO. 1215 = 0.0797 PPM	NO. 1265 = 0.0633 PPM	NO. 1315 = 0.0650 PPM	NO. 1365 = 0.0817 PPM
NO. 1216 = 0.0792 PPM	NO. 1266 = 0.0652 PPM	NO. 1316 = 0.0677 PPM	NO. 1366 = 0.0805 PPM
NO. 1217 = 0.0749 PPM	NO. 1267 = 0.0615 PPM	NO. 1317 = 0.0709 PPM	NO. 1367 = 0.0793 PPM
NO. 1218 = 0.0716 PPM	NO. 1268 = 0.0723 PPM	NO. 1318 = 0.0728 PPM	NO. 1368 = 0.0768 PPM
NO. 1219 = 0.0706 PPM	NO. 1269 = 0.0668 PPM	NO. 1319 = 0.0739 PPM	NO. 1369 = 0.0743 PPM
NO. 1220 = 0.0685 PPM	NO. 1270 = 0.0627 PPM	NO. 1320 = 0.0740 PPM	NO. 1370 = 0.0710 PPM
NO. 1221 = 0.0665 PPM	NO. 1271 = 0.0644 PPM	NO. 1321 = 0.0734 PPM	NO. 1371 = 0.0679 PPM
NO. 1222 = 0.0758 PPM	NO. 1272 = 0.0649 PPM	NO. 1322 = 0.0728 PPM	NO. 1372 = 0.0706 PPM
NO. 1223 = 0.0690 PPM	NO. 1273 = 0.0644 PPM	NO. 1323 = 0.0712 PPM	NO. 1373 = 0.0713 PPM
NO. 1224 = 0.0689 PPM	NO. 1274 = 0.0634 PPM	NO. 1324 = 0.0687 PPM	NO. 1374 = 0.0715 PPM
NO. 1225 = 0.0633 PPM	NO. 1275 = 0.0633 PPM	NO. 1325 = 0.0677 PPM	NO. 1375 = 0.0716 PPM
NO. 1226 = 0.0693 PPM	NO. 1276 = 0.0621 PPM	NO. 1326 = 0.0682 PPM	NO. 1376 = 0.0722 PPM
NO. 1227 = 0.0648 PPM	NO. 1277 = 0.0638 PPM	NO. 1327 = 0.0695 PPM	NO. 1377 = 0.0723 PPM
NO. 1228 = 0.0615 PPM	NO. 1278 = 0.0645 PPM	NO. 1328 = 0.0698 PPM	NO. 1378 = 0.0721 PPM
NO. 1229 = 0.0602 PPM	NO. 1279 = 0.0643 PPM	NO. 1329 = 0.0698 PPM	NO. 1379 = 0.0714 PPM
NO. 1230 = 0.0587 PPM	NO. 1280 = 0.0636 PPM	NO. 1330 = 0.0701 PPM	NO. 1380 = 0.0810 PPM
NO. 1231 = 0.0625 PPM	NO. 1281 = 0.0649 PPM	NO. 1331 = 0.0702 PPM	NO. 1381 = 0.0823 PPM
NO. 1232 = 0.0650 PPM	NO. 1282 = 0.0657 PPM	NO. 1332 = 0.0703 PPM	NO. 1382 = 0.0812 PPM
NO. 1233 = 0.0657 PPM	NO. 1283 = 0.0663 PPM	NO. 1333 = 0.0697 PPM	NO. 1383 = 0.0793 PPM
NO. 1234 = 0.0654 PPM	NO. 1284 = 0.0671 PPM	NO. 1334 = 0.0804 PPM	NO. 1384 = 0.0772 PPM
NO. 1235 = 0.0646 PPM	NO. 1285 = 0.0676 PPM	NO. 1335 = 0.0805 PPM	NO. 1385 = 0.0747 PPM
NO. 1236 = 0.0642 PPM	NO. 1286 = 0.0680 PPM	NO. 1336 = 0.0793 PPM	NO. 1386 = 0.0717 PPM
NO. 1237 = 0.0639 PPM	NO. 1287 = 0.0678 PPM	NO. 1337 = 0.0776 PPM	NO. 1387 = 0.0678 PPM
NO. 1238 = 0.0639 PPM	NO. 1288 = 0.0800 PPM	NO. 1338 = 0.0754 PPM	NO. 1388 = 0.0631 PPM
NO. 1239 = 0.0648 PPM	NO. 1289 = 0.0786 PPM	NO. 1339 = 0.0736 PPM	NO. 1389 = 0.0587 PPM
NO. 1240 = 0.0656 PPM	NO. 1290 = 0.0775 PPM	NO. 1340 = 0.0706 PPM	NO. 1390 = 0.0592 PPM
NO. 1241 = 0.0655 PPM	NO. 1291 = 0.0761 PPM	NO. 1341 = 0.0669 PPM	NO. 1391 = 0.0601 PPM
NO. 1242 = 0.0792 PPM	NO. 1292 = 0.0732 PPM	NO. 1342 = 0.0621 PPM	NO. 1392 = 0.0601 PPM
NO. 1243 = 0.0768 PPM	NO. 1293 = 0.0725 PPM	NO. 1343 = 0.0583 PPM	NO. 1393 = 0.0684 PPM
NO. 1244 = 0.0758 PPM	NO. 1294 = 0.0686 PPM	NO. 1344 = 0.0591 PPM	NO. 1394 = 0.0691 PPM
NO. 1245 = 0.0751 PPM	NO. 1295 = 0.0653 PPM	NO. 1345 = 0.0606 PPM	NO. 1395 = 0.0676 PPM
NO. 1246 = 0.0713 PPM	NO. 1296 = 0.0616 PPM	NO. 1346 = 0.0610 PPM	NO. 1396 = 0.0680 PPM
NO. 1247 = 0.0720 PPM	NO. 1297 = 0.0586 PPM	NO. 1347 = 0.0676 PPM	NO. 1397 = 0.0670 PPM
NO. 1248 = 0.0658 PPM	NO. 1298 = 0.0601 PPM	NO. 1348 = 0.0747 PPM	NO. 1398 = 0.0658 PPM
NO. 1249 = 0.0651 PPM	NO. 1299 = 0.0616 PPM	NO. 1349 = 0.0761 PPM	NO. 1399 = 0.0649 PPM
NO. 1250 = 0.0693 PPM	NO. 1300 = 0.0633 PPM	NO. 1350 = 0.0768 PPM	NO. 1400 = 0.0639 PPM

A-2. continued.

NO. 1401 = 0.0631 PPM	NO. 1451 = 0.0640 PPM	NO. 1501 = 0.0961 PPM	NO. 1551 = 0.1104 PPM
NO. 1402 = 0.0620 PPM	NO. 1452 = 0.0696 PPM	NO. 1502 = 0.0985 PPM	NO. 1552 = 0.1084 PPM
NO. 1403 = 0.0608 PPM	NO. 1453 = 0.0693 PPM	NO. 1503 = 0.0998 PPM	NO. 1553 = 0.1059 PPM
NO. 1404 = 0.0623 PPM	NO. 1454 = 0.0864 PPM	NO. 1504 = 0.1013 PPM	NO. 1554 = 0.1020 PPM
NO. 1405 = 0.0599 PPM	NO. 1455 = 0.0902 PPM	NO. 1505 = 0.1017 PPM	NO. 1555 = 0.0979 PPM
NO. 1406 = 0.0666 PPM	NO. 1456 = 0.0897 PPM	NO. 1506 = 0.1010 PPM	NO. 1556 = 0.0939 PPM
NO. 1407 = 0.0637 PPM	NO. 1457 = 0.0891 PPM	NO. 1507 = 0.0991 PPM	NO. 1557 = 0.0900 PPM
NO. 1408 = 0.0873 PPM	NO. 1458 = 0.0889 PPM	NO. 1508 = 0.0965 PPM	NO. 1558 = 0.0864 PPM
NO. 1409 = 0.0891 PPM	NO. 1459 = 0.0886 PPM	NO. 1509 = 0.0936 PPM	NO. 1559 = 0.0824 PPM
NO. 1410 = 0.0875 PPM	NO. 1460 = 0.0874 PPM	NO. 1510 = 0.0911 PPM	NO. 1560 = 0.0790 PPM
NO. 1411 = 0.0857 PPM	NO. 1461 = 0.0859 PPM	NO. 1511 = 0.0892 PPM	NO. 1561 = 0.0761 PPM
NO. 1412 = 0.0840 PPM	NO. 1462 = 0.0838 PPM	NO. 1512 = 0.0867 PPM	NO. 1562 = 0.0761 PPM
NO. 1413 = 0.0825 PPM	NO. 1463 = 0.0829 PPM	NO. 1513 = 0.0834 PPM	NO. 1563 = 0.0745 PPM
NO. 1414 = 0.0799 PPM	NO. 1464 = 0.0832 PPM	NO. 1514 = 0.0802 PPM	NO. 1564 = 0.0839 PPM
NO. 1415 = 0.0776 PPM	NO. 1465 = 0.0834 PPM	NO. 1515 = 0.0766 PPM	NO. 1565 = 0.0865 PPM
NO. 1416 = 0.0747 PPM	NO. 1466 = 0.0828 PPM	NO. 1516 = 0.0744 PPM	NO. 1566 = 0.0864 PPM
NO. 1417 = 0.0736 PPM	NO. 1467 = 0.0814 PPM	NO. 1517 = 0.0731 PPM	NO. 1567 = 0.0846 PPM
NO. 1418 = 0.0755 PPM	NO. 1468 = 0.0800 PPM	NO. 1518 = 0.0833 PPM	NO. 1568 = 0.0830 PPM
NO. 1419 = 0.0764 PPM	NO. 1469 = 0.0779 PPM	NO. 1519 = 0.0853 PPM	NO. 1569 = 0.0807 PPM
NO. 1420 = 0.0766 PPM	NO. 1470 = 0.0755 PPM	NO. 1520 = 0.0846 PPM	NO. 1570 = 0.0770 PPM
NO. 1421 = 0.0764 PPM	NO. 1471 = 0.0726 PPM	NO. 1521 = 0.0831 PPM	NO. 1571 = 0.0736 PPM
NO. 1422 = 0.0763 PPM	NO. 1472 = 0.0826 PPM	NO. 1522 = 0.0809 PPM	NO. 1572 = 0.0687 PPM
NO. 1423 = 0.0755 PPM	NO. 1473 = 0.0843 PPM	NO. 1523 = 0.0787 PPM	NO. 1573 = 0.0658 PPM
NO. 1424 = 0.0745 PPM	NO. 1474 = 0.0834 PPM	NO. 1524 = 0.0753 PPM	NO. 1574 = 0.0644 PPM
NO. 1425 = 0.0725 PPM	NO. 1475 = 0.0820 PPM	NO. 1525 = 0.0715 PPM	NO. 1575 = 0.0638 PPM
NO. 1426 = 0.0818 PPM	NO. 1476 = 0.0800 PPM	NO. 1526 = 0.0667 PPM	NO. 1576 = 0.0712 PPM
NO. 1427 = 0.0833 PPM	NO. 1477 = 0.0773 PPM	NO. 1527 = 0.0628 PPM	NO. 1577 = 0.0700 PPM
NO. 1428 = 0.0824 PPM	NO. 1478 = 0.0741 PPM	NO. 1528 = 0.0624 PPM	NO. 1578 = 0.0701 PPM
NO. 1429 = 0.0807 PPM	NO. 1479 = 0.0700 PPM	NO. 1529 = 0.0616 PPM	NO. 1579 = 0.0746 PPM
NO. 1430 = 0.0787 PPM	NO. 1480 = 0.0650 PPM	NO. 1530 = 0.0632 PPM	NO. 1580 = 0.0735 PPM
NO. 1431 = 0.0759 PPM	NO. 1481 = 0.0603 PPM	NO. 1531 = 0.0646 PPM	NO. 1581 = 0.0734 PPM
NO. 1432 = 0.0729 PPM	NO. 1482 = 0.0615 PPM	NO. 1532 = 0.0652 PPM	NO. 1582 = 0.0726 PPM
NO. 1433 = 0.0688 PPM	NO. 1483 = 0.0601 PPM	NO. 1533 = 0.0634 PPM	NO. 1583 = 0.0732 PPM
NO. 1434 = 0.0641 PPM	NO. 1484 = 0.0644 PPM	NO. 1534 = 0.0646 PPM	NO. 1584 = 0.0788 PPM
NO. 1435 = 0.0591 PPM	NO. 1485 = 0.0685 PPM	NO. 1535 = 0.0655 PPM	NO. 1585 = 0.0807 PPM
NO. 1436 = 0.0602 PPM	NO. 1486 = 0.0703 PPM	NO. 1536 = 0.0667 PPM	NO. 1586 = 0.0901 PPM
NO. 1437 = 0.0598 PPM	NO. 1487 = 0.0694 PPM	NO. 1537 = 0.0677 PPM	NO. 1587 = 0.0998 PPM
NO. 1438 = 0.0627 PPM	NO. 1488 = 0.0667 PPM	NO. 1538 = 0.0703 PPM	NO. 1588 = 0.1065 PPM
NO. 1439 = 0.0657 PPM	NO. 1489 = 0.0674 PPM	NO. 1539 = 0.0712 PPM	NO. 1589 = 0.1111 PPM
NO. 1440 = 0.0653 PPM	NO. 1490 = 0.0665 PPM	NO. 1540 = 0.0756 PPM	NO. 1590 = 0.1128 PPM
NO. 1441 = 0.0711 PPM	NO. 1491 = 0.0648 PPM	NO. 1541 = 0.0819 PPM	NO. 1591 = 0.1122 PPM
NO. 1442 = 0.0674 PPM	NO. 1492 = 0.0647 PPM	NO. 1542 = 0.0884 PPM	NO. 1592 = 0.1083 PPM
NO. 1443 = 0.0663 PPM	NO. 1493 = 0.0646 PPM	NO. 1543 = 0.0941 PPM	NO. 1593 = 0.1075 PPM
NO. 1444 = 0.0675 PPM	NO. 1494 = 0.0648 PPM	NO. 1544 = 0.1009 PPM	NO. 1594 = 0.1083 PPM
NO. 1445 = 0.0672 PPM	NO. 1495 = 0.0688 PPM	NO. 1545 = 0.1026 PPM	NO. 1595 = 0.1082 PPM
NO. 1446 = 0.0662 PPM	NO. 1496 = 0.0722 PPM	NO. 1546 = 0.1107 PPM	NO. 1596 = 0.1070 PPM
NO. 1447 = 0.0656 PPM	NO. 1497 = 0.0753 PPM	NO. 1547 = 0.1140 PPM	NO. 1597 = 0.1055 PPM
NO. 1448 = 0.0646 PPM	NO. 1498 = 0.0807 PPM	NO. 1548 = 0.1146 PPM	NO. 1598 = 0.1039 PPM
NO. 1449 = 0.0635 PPM	NO. 1499 = 0.0833 PPM	NO. 1549 = 0.1138 PPM	NO. 1599 = 0.1017 PPM
NO. 1450 = 0.0643 PPM	NO. 1500 = 0.0913 PPM	NO. 1550 = 0.1121 PPM	NO. 1600 = 0.0994 PPM

A-2. continued.

NO. 1601 = 0.0966 PPM	NO. 1651 = 0.0794 PPM	NO. 1701 = 0.0793 PPM	NO. 1751 = 0.0880 PPM
NO. 1602 = 0.0933 PPM	NO. 1652 = 0.0762 PPM	NO. 1702 = 0.0855 PPM	NO. 1752 = 0.0861 PPM
NO. 1603 = 0.0896 PPM	NO. 1653 = 0.0753 PPM	NO. 1703 = 0.0885 PPM	NO. 1753 = 0.0846 PPM
NO. 1604 = 0.0855 PPM	NO. 1654 = 0.0758 PPM	NO. 1704 = 0.0896 PPM	NO. 1754 = 0.0822 PPM
NO. 1605 = 0.0814 PPM	NO. 1655 = 0.0768 PPM	NO. 1705 = 0.0875 PPM	NO. 1755 = 0.0794 PPM
NO. 1606 = 0.0774 PPM	NO. 1656 = 0.0851 PPM	NO. 1706 = 0.0852 PPM	NO. 1756 = 0.0768 PPM
NO. 1607 = 0.0753 PPM	NO. 1657 = 0.0874 PPM	NO. 1707 = 0.0837 PPM	NO. 1757 = 0.0720 PPM
NO. 1608 = 0.0739 PPM	NO. 1658 = 0.0879 PPM	NO. 1708 = 0.0812 PPM	NO. 1758 = 0.0689 PPM
NO. 1609 = 0.0742 PPM	NO. 1659 = 0.0860 PPM	NO. 1709 = 0.0775 PPM	NO. 1759 = 0.0685 PPM
NO. 1610 = 0.0847 PPM	NO. 1660 = 0.0841 PPM	NO. 1710 = 0.0749 PPM	NO. 1760 = 0.0694 PPM
NO. 1611 = 0.0868 PPM	NO. 1661 = 0.0825 PPM	NO. 1711 = 0.0729 PPM	NO. 1761 = 0.0715 PPM
NO. 1612 = 0.0868 PPM	NO. 1662 = 0.0806 PPM	NO. 1712 = 0.0706 PPM	NO. 1762 = 0.0751 PPM
NO. 1613 = 0.0854 PPM	NO. 1663 = 0.0775 PPM	NO. 1713 = 0.0746 PPM	NO. 1763 = 0.0799 PPM
NO. 1614 = 0.0840 PPM	NO. 1664 = 0.0734 PPM	NO. 1714 = 0.0759 PPM	NO. 1764 = 0.0856 PPM
NO. 1615 = 0.0820 PPM	NO. 1665 = 0.0757 PPM	NO. 1715 = 0.0737 PPM	NO. 1765 = 0.0907 PPM
NO. 1616 = 0.0794 PPM	NO. 1666 = 0.0693 PPM	NO. 1716 = 0.0732 PPM	NO. 1766 = 0.0944 PPM
NO. 1617 = 0.0763 PPM	NO. 1667 = 0.0788 PPM	NO. 1717 = 0.0762 PPM	NO. 1767 = 0.0951 PPM
NO. 1618 = 0.0715 PPM	NO. 1668 = 0.0837 PPM	NO. 1718 = 0.0815 PPM	NO. 1768 = 0.0949 PPM
NO. 1619 = 0.0708 PPM	NO. 1669 = 0.0856 PPM	NO. 1719 = 0.0876 PPM	NO. 1769 = 0.0927 PPM
NO. 1620 = 0.0669 PPM	NO. 1670 = 0.0845 PPM	NO. 1720 = 0.0927 PPM	NO. 1770 = 0.0884 PPM
NO. 1621 = 0.0730 PPM	NO. 1671 = 0.0825 PPM	NO. 1721 = 0.1006 PPM	NO. 1771 = 0.0850 PPM
NO. 1622 = 0.0775 PPM	NO. 1672 = 0.0802 PPM	NO. 1722 = 0.1026 PPM	NO. 1772 = 0.0828 PPM
NO. 1623 = 0.0766 PPM	NO. 1673 = 0.0807 PPM	NO. 1723 = 0.1062 PPM	NO. 1773 = 0.0815 PPM
NO. 1624 = 0.0818 PPM	NO. 1674 = 0.0844 PPM	NO. 1724 = 0.1033 PPM	NO. 1774 = 0.0882 PPM
NO. 1625 = 0.0813 PPM	NO. 1675 = 0.0921 PPM	NO. 1725 = 0.1006 PPM	NO. 1775 = 0.1000 PPM
NO. 1626 = 0.0791 PPM	NO. 1676 = 0.1001 PPM	NO. 1726 = 0.0987 PPM	NO. 1776 = 0.1081 PPM
NO. 1627 = 0.0763 PPM	NO. 1677 = 0.1045 PPM	NO. 1727 = 0.0963 PPM	NO. 1777 = 0.1072 PPM
NO. 1628 = 0.0800 PPM	NO. 1678 = 0.1126 PPM	NO. 1728 = 0.0939 PPM	NO. 1778 = 0.1058 PPM
NO. 1629 = 0.0830 PPM	NO. 1679 = 0.1106 PPM	NO. 1729 = 0.0904 PPM	NO. 1779 = 0.1063 PPM
NO. 1630 = 0.0901 PPM	NO. 1680 = 0.1065 PPM	NO. 1730 = 0.1058 PPM	NO. 1780 = 0.1043 PPM
NO. 1631 = 0.0939 PPM	NO. 1681 = 0.1027 PPM	NO. 1731 = 0.1136 PPM	NO. 1781 = 0.1005 PPM
NO. 1632 = 0.1075 PPM	NO. 1682 = 0.1002 PPM	NO. 1732 = 0.1140 PPM	NO. 1782 = 0.0970 PPM
NO. 1633 = 0.1140 PPM	NO. 1683 = 0.1006 PPM	NO. 1733 = 0.1129 PPM	NO. 1783 = 0.0945 PPM
NO. 1634 = 0.1132 PPM	NO. 1684 = 0.0966 PPM	NO. 1734 = 0.1107 PPM	NO. 1784 = 0.0920 PPM
NO. 1635 = 0.1107 PPM	NO. 1685 = 0.0988 PPM	NO. 1735 = 0.1084 PPM	NO. 1785 = 0.0887 PPM
NO. 1636 = 0.1083 PPM	NO. 1686 = 0.1089 PPM	NO. 1736 = 0.1058 PPM	NO. 1786 = 0.0847 PPM
NO. 1637 = 0.1071 PPM	NO. 1687 = 0.1103 PPM	NO. 1737 = 0.1027 PPM	NO. 1787 = 0.0813 PPM
NO. 1638 = 0.1054 PPM	NO. 1688 = 0.1091 PPM	NO. 1738 = 0.0993 PPM	NO. 1788 = 0.0812 PPM
NO. 1639 = 0.1032 PPM	NO. 1689 = 0.1073 PPM	NO. 1739 = 0.0952 PPM	NO. 1789 = 0.0815 PPM
NO. 1640 = 0.1091 PPM	NO. 1690 = 0.1052 PPM	NO. 1740 = 0.0910 PPM	NO. 1790 = 0.0818 PPM
NO. 1641 = 0.1099 PPM	NO. 1691 = 0.1027 PPM	NO. 1741 = 0.0865 PPM	NO. 1791 = 0.0822 PPM
NO. 1642 = 0.1090 PPM	NO. 1692 = 0.0993 PPM	NO. 1742 = 0.0824 PPM	NO. 1792 = 0.0827 PPM
NO. 1643 = 0.1073 PPM	NO. 1693 = 0.0955 PPM	NO. 1743 = 0.0796 PPM	NO. 1793 = 0.0834 PPM
NO. 1644 = 0.1053 PPM	NO. 1694 = 0.0913 PPM	NO. 1744 = 0.0802 PPM	NO. 1794 = 0.0863 PPM
NO. 1645 = 0.1031 PPM	NO. 1695 = 0.0871 PPM	NO. 1745 = 0.0807 PPM	NO. 1795 = 0.0467 PPM
NO. 1646 = 0.1005 PPM	NO. 1696 = 0.0831 PPM	NO. 1746 = 0.0810 PPM	NO. 1796 = 0.0772 PPM
NO. 1647 = 0.0969 PPM	NO. 1697 = 0.0793 PPM	NO. 1747 = 0.0815 PPM	NO. 1797 = 0.0760 PPM
NO. 1648 = 0.0928 PPM	NO. 1698 = 0.0775 PPM	NO. 1748 = 0.0859 PPM	NO. 1798 = 0.0753 PPM
NO. 1649 = 0.0882 PPM	NO. 1699 = 0.0783 PPM	NO. 1749 = 0.0883 PPM	NO. 1799 = 0.0759 PPM
NO. 1650 = 0.0837 PPM	NO. 1700 = 0.0789 PPM	NO. 1750 = 0.0897 PPM	NO. 1800 = 0.0756 PPM

A-2. continued.

NO. 1801 = 0.0754 PPM
NO. 1802 = 0.0752 PPM
NO. 1803 = 0.0751 PPM
NO. 1804 = 0.0759 PPM
NO. 1805 = 0.0767 PPM
NO. 1806 = 0.0778 PPM
NO. 1807 = 0.0790 PPM
NO. 1808 = 0.0797 PPM
NO. 1809 = 0.0799 PPM
NO. 1810 = 0.0805 PPM
NO. 1811 = 0.0813 PPM
NO. 1812 = 0.0816 PPM
NO. 1813 = 0.0746 PPM
NO. 1814 = 0.0700 PPM
NO. 1815 = 0.0671 PPM
NO. 1816 = 0.0645 PPM
NO. 1817 = 0.0674 PPM
NO. 1818 = 0.0730 PPM
NO. 1819 = 0.0789 PPM
NO. 1820 = 0.0852 PPM
NO. 1821 = 0.0908 PPM
NO. 1822 = 0.0938 PPM
NO. 1823 = 0.0967 PPM
NO. 1824 = 0.0997 PPM
NO. 1825 = 0.1027 PPM
NO. 1826 = 0.0992 PPM
NO. 1827 = 0.0941 PPM
NO. 1828 = 0.0890 PPM
NO. 1829 = 0.0842 PPM
NO. 1830 = 0.0821 PPM
NO. 1831 = 0.0811 PPM
NO. 1832 = 0.0805 PPM
NO. 1833 = 0.0806 PPM
NO. 1834 = 0.0808 PPM
NO. 1835 = 0.0818 PPM
NO. 1836 = 0.0830 PPM
NO. 1837 = 0.0841 PPM
NO. 1838 = 0.0853 PPM
NO. 1839 = 0.0862 PPM
NO. 1840 = 0.0681 PPM

A-3. UAM-ROM max. values for July 9, 1988.

NO. 1 = 0.0683 PPM	NO. 51 = 0.0893 PPM	NO. 101 = 0.0940 PPM	NO. 151 = 0.0948 PPM
NO. 2 = 0.0846 PPM	NO. 52 = 0.0903 PPM	NO. 102 = 0.0940 PPM	NO. 152 = 0.0945 PPM
NO. 3 = 0.0864 PPM	NO. 53 = 0.0917 PPM	NO. 103 = 0.0940 PPM	NO. 153 = 0.0935 PPM
NO. 4 = 0.0883 PPM	NO. 54 = 0.0933 PPM	NO. 104 = 0.0940 PPM	NO. 154 = 0.0927 PPM
NO. 5 = 0.0890 PPM	NO. 55 = 0.0945 PPM	NO. 105 = 0.0940 PPM	NO. 155 = 0.0919 PPM
NO. 6 = 0.0901 PPM	NO. 56 = 0.0946 PPM	NO. 106 = 0.0940 PPM	NO. 156 = 0.0909 PPM
NO. 7 = 0.0917 PPM	NO. 57 = 0.0947 PPM	NO. 107 = 0.0929 PPM	NO. 157 = 0.0894 PPM
NO. 8 = 0.0933 PPM	NO. 58 = 0.0948 PPM	NO. 108 = 0.0921 PPM	NO. 158 = 0.0879 PPM
NO. 9 = 0.0945 PPM	NO. 59 = 0.0950 PPM	NO. 109 = 0.0915 PPM	NO. 159 = 0.0864 PPM
NO. 10 = 0.0946 PPM	NO. 60 = 0.0946 PPM	NO. 110 = 0.0907 PPM	NO. 160 = 0.0906 PPM
NO. 11 = 0.0947 PPM	NO. 61 = 0.0936 PPM	NO. 111 = 0.0894 PPM	NO. 161 = 0.0916 PPM
NO. 12 = 0.0948 PPM	NO. 62 = 0.0928 PPM	NO. 112 = 0.0882 PPM	NO. 162 = 0.0921 PPM
NO. 13 = 0.0949 PPM	NO. 63 = 0.0920 PPM	NO. 113 = 0.0886 PPM	NO. 163 = 0.0917 PPM
NO. 14 = 0.0943 PPM	NO. 64 = 0.0910 PPM	NO. 114 = 0.0930 PPM	NO. 164 = 0.0913 PPM
NO. 15 = 0.0935 PPM	NO. 65 = 0.0893 PPM	NO. 115 = 0.0944 PPM	NO. 165 = 0.0910 PPM
NO. 16 = 0.0927 PPM	NO. 66 = 0.0882 PPM	NO. 116 = 0.0946 PPM	NO. 166 = 0.0905 PPM
NO. 17 = 0.0920 PPM	NO. 67 = 0.0916 PPM	NO. 117 = 0.0942 PPM	NO. 167 = 0.0900 PPM
NO. 18 = 0.0910 PPM	NO. 68 = 0.0963 PPM	NO. 118 = 0.0940 PPM	NO. 168 = 0.0909 PPM
NO. 19 = 0.0893 PPM	NO. 69 = 0.0980 PPM	NO. 119 = 0.0937 PPM	NO. 169 = 0.0919 PPM
NO. 20 = 0.0890 PPM	NO. 70 = 0.0981 PPM	NO. 120 = 0.0927 PPM	NO. 170 = 0.0922 PPM
NO. 21 = 0.0941 PPM	NO. 71 = 0.0980 PPM	NO. 121 = 0.0921 PPM	NO. 171 = 0.0915 PPM
NO. 22 = 0.0993 PPM	NO. 72 = 0.0979 PPM	NO. 122 = 0.0926 PPM	NO. 172 = 0.0872 PPM
NO. 23 = 0.1017 PPM	NO. 73 = 0.0978 PPM	NO. 123 = 0.0933 PPM	NO. 173 = 0.0865 PPM
NO. 24 = 0.1023 PPM	NO. 74 = 0.0960 PPM	NO. 124 = 0.0938 PPM	NO. 174 = 0.0864 PPM
NO. 25 = 0.1028 PPM	NO. 75 = 0.0943 PPM	NO. 125 = 0.0929 PPM	NO. 175 = 0.0835 PPM
NO. 26 = 0.1034 PPM	NO. 76 = 0.0947 PPM	NO. 126 = 0.0906 PPM	NO. 176 = 0.0800 PPM
NO. 27 = 0.1038 PPM	NO. 77 = 0.0966 PPM	NO. 127 = 0.0881 PPM	NO. 177 = 0.0789 PPM
NO. 28 = 0.1008 PPM	NO. 78 = 0.0977 PPM	NO. 128 = 0.0878 PPM	NO. 178 = 0.0788 PPM
NO. 29 = 0.0978 PPM	NO. 79 = 0.0964 PPM	NO. 129 = 0.0854 PPM	NO. 179 = 0.0783 PPM
NO. 30 = 0.0974 PPM	NO. 80 = 0.0929 PPM	NO. 130 = 0.0822 PPM	NO. 180 = 0.0783 PPM
NO. 31 = 0.0997 PPM	NO. 81 = 0.0903 PPM	NO. 131 = 0.0784 PPM	NO. 181 = 0.0794 PPM
NO. 32 = 0.0987 PPM	NO. 82 = 0.0885 PPM	NO. 132 = 0.0776 PPM	NO. 182 = 0.0811 PPM
NO. 33 = 0.0950 PPM	NO. 83 = 0.0858 PPM	NO. 133 = 0.0772 PPM	NO. 183 = 0.0801 PPM
NO. 34 = 0.0926 PPM	NO. 84 = 0.0829 PPM	NO. 134 = 0.0769 PPM	NO. 184 = 0.0789 PPM
NO. 35 = 0.0915 PPM	NO. 85 = 0.0796 PPM	NO. 135 = 0.0768 PPM	NO. 185 = 0.0845 PPM
NO. 36 = 0.0908 PPM	NO. 86 = 0.0767 PPM	NO. 136 = 0.0784 PPM	NO. 186 = 0.0824 PPM
NO. 37 = 0.0879 PPM	NO. 87 = 0.0785 PPM	NO. 137 = 0.0778 PPM	NO. 187 = 0.0861 PPM
NO. 38 = 0.0848 PPM	NO. 88 = 0.0787 PPM	NO. 138 = 0.0771 PPM	NO. 188 = 0.0885 PPM
NO. 39 = 0.0818 PPM	NO. 89 = 0.0782 PPM	NO. 139 = 0.0837 PPM	NO. 189 = 0.0899 PPM
NO. 40 = 0.0788 PPM	NO. 90 = 0.0773 PPM	NO. 140 = 0.0823 PPM	NO. 190 = 0.0913 PPM
NO. 41 = 0.0771 PPM	NO. 91 = 0.0766 PPM	NO. 141 = 0.0860 PPM	NO. 191 = 0.0925 PPM
NO. 42 = 0.0771 PPM	NO. 92 = 0.0754 PPM	NO. 142 = 0.0888 PPM	NO. 192 = 0.0937 PPM
NO. 43 = 0.0771 PPM	NO. 93 = 0.0836 PPM	NO. 143 = 0.0901 PPM	NO. 193 = 0.0944 PPM
NO. 44 = 0.0771 PPM	NO. 94 = 0.0818 PPM	NO. 144 = 0.0914 PPM	NO. 194 = 0.0944 PPM
NO. 45 = 0.0773 PPM	NO. 95 = 0.0854 PPM	NO. 145 = 0.0927 PPM	NO. 195 = 0.0944 PPM
NO. 46 = 0.0816 PPM	NO. 96 = 0.0884 PPM	NO. 146 = 0.0940 PPM	NO. 196 = 0.0946 PPM
NO. 47 = 0.0835 PPM	NO. 97 = 0.0897 PPM	NO. 147 = 0.0948 PPM	NO. 197 = 0.0946 PPM
NO. 48 = 0.0814 PPM	NO. 98 = 0.0908 PPM	NO. 148 = 0.0947 PPM	NO. 198 = 0.0945 PPM
NO. 49 = 0.0848 PPM	NO. 99 = 0.0921 PPM	NO. 149 = 0.0947 PPM	NO. 199 = 0.0933 PPM
NO. 50 = 0.0879 PPM	NO. 100 = 0.0933 PPM	NO. 150 = 0.0948 PPM	NO. 200 = 0.0923 PPM

A-3. continued.

NO. 201 = 0.0913 PPM	NO. 251 = 0.0865 PPM	NO. 301 = 0.0851 PPM	NO. 351 = 0.0849 PPM
NO. 202 = 0.0902 PPM	NO. 252 = 0.0854 PPM	NO. 302 = 0.0857 PPM	NO. 352 = 0.0853 PPM
NO. 203 = 0.0885 PPM	NO. 253 = 0.0853 PPM	NO. 303 = 0.0860 PPM	NO. 353 = 0.0847 PPM
NO. 204 = 0.0874 PPM	NO. 254 = 0.0849 PPM	NO. 304 = 0.0861 PPM	NO. 354 = 0.0866 PPM
NO. 205 = 0.0865 PPM	NO. 255 = 0.0859 PPM	NO. 305 = 0.0867 PPM	NO. 355 = 0.0871 PPM
NO. 206 = 0.0882 PPM	NO. 256 = 0.0858 PPM	NO. 306 = 0.0891 PPM	NO. 356 = 0.0875 PPM
NO. 207 = 0.0891 PPM	NO. 257 = 0.0865 PPM	NO. 307 = 0.0862 PPM	NO. 357 = 0.0873 PPM
NO. 208 = 0.0899 PPM	NO. 258 = 0.0870 PPM	NO. 308 = 0.0868 PPM	NO. 358 = 0.0872 PPM
NO. 209 = 0.0892 PPM	NO. 259 = 0.0870 PPM	NO. 309 = 0.0868 PPM	NO. 359 = 0.0876 PPM
NO. 210 = 0.0888 PPM	NO. 260 = 0.0876 PPM	NO. 310 = 0.0859 PPM	NO. 360 = 0.0849 PPM
NO. 211 = 0.0884 PPM	NO. 261 = 0.0883 PPM	NO. 311 = 0.0861 PPM	NO. 361 = 0.0841 PPM
NO. 212 = 0.0883 PPM	NO. 262 = 0.0882 PPM	NO. 312 = 0.0858 PPM	NO. 362 = 0.0883 PPM
NO. 213 = 0.0883 PPM	NO. 263 = 0.0878 PPM	NO. 313 = 0.0885 PPM	NO. 363 = 0.0904 PPM
NO. 214 = 0.0889 PPM	NO. 264 = 0.0848 PPM	NO. 314 = 0.0860 PPM	NO. 364 = 0.0886 PPM
NO. 215 = 0.0899 PPM	NO. 265 = 0.0844 PPM	NO. 315 = 0.0830 PPM	NO. 365 = 0.0869 PPM
NO. 216 = 0.0903 PPM	NO. 266 = 0.0843 PPM	NO. 316 = 0.0842 PPM	NO. 366 = 0.0878 PPM
NO. 217 = 0.0893 PPM	NO. 267 = 0.0845 PPM	NO. 317 = 0.0886 PPM	NO. 367 = 0.0889 PPM
NO. 218 = 0.0859 PPM	NO. 268 = 0.0848 PPM	NO. 318 = 0.0888 PPM	NO. 368 = 0.0872 PPM
NO. 219 = 0.0843 PPM	NO. 269 = 0.0820 PPM	NO. 319 = 0.0861 PPM	NO. 369 = 0.0852 PPM
NO. 220 = 0.0826 PPM	NO. 270 = 0.0812 PPM	NO. 320 = 0.0871 PPM	NO. 370 = 0.0843 PPM
NO. 221 = 0.0821 PPM	NO. 271 = 0.0840 PPM	NO. 321 = 0.0875 PPM	NO. 371 = 0.0879 PPM
NO. 222 = 0.0814 PPM	NO. 272 = 0.0864 PPM	NO. 322 = 0.0850 PPM	NO. 372 = 0.0889 PPM
NO. 223 = 0.0815 PPM	NO. 273 = 0.0845 PPM	NO. 323 = 0.0846 PPM	NO. 373 = 0.0899 PPM
NO. 224 = 0.0800 PPM	NO. 274 = 0.0855 PPM	NO. 324 = 0.0837 PPM	NO. 374 = 0.0910 PPM
NO. 225 = 0.0796 PPM	NO. 275 = 0.0852 PPM	NO. 325 = 0.0875 PPM	NO. 375 = 0.0918 PPM
NO. 226 = 0.0821 PPM	NO. 276 = 0.0828 PPM	NO. 326 = 0.0895 PPM	NO. 376 = 0.0927 PPM
NO. 227 = 0.0822 PPM	NO. 277 = 0.0847 PPM	NO. 327 = 0.0904 PPM	NO. 377 = 0.0931 PPM
NO. 228 = 0.0834 PPM	NO. 278 = 0.0829 PPM	NO. 328 = 0.0916 PPM	NO. 378 = 0.0930 PPM
NO. 229 = 0.0826 PPM	NO. 279 = 0.0871 PPM	NO. 329 = 0.0927 PPM	NO. 379 = 0.0931 PPM
NO. 230 = 0.0808 PPM	NO. 280 = 0.0893 PPM	NO. 330 = 0.0936 PPM	NO. 380 = 0.0932 PPM
NO. 231 = 0.0848 PPM	NO. 281 = 0.0902 PPM	NO. 331 = 0.0940 PPM	NO. 381 = 0.0932 PPM
NO. 232 = 0.0823 PPM	NO. 282 = 0.0913 PPM	NO. 332 = 0.0939 PPM	NO. 382 = 0.0930 PPM
NO. 233 = 0.0864 PPM	NO. 283 = 0.0924 PPM	NO. 333 = 0.0939 PPM	NO. 383 = 0.0918 PPM
NO. 234 = 0.0888 PPM	NO. 284 = 0.0933 PPM	NO. 334 = 0.0939 PPM	NO. 384 = 0.0907 PPM
NO. 235 = 0.0896 PPM	NO. 285 = 0.0938 PPM	NO. 335 = 0.0940 PPM	NO. 385 = 0.0897 PPM
NO. 236 = 0.0905 PPM	NO. 286 = 0.0936 PPM	NO. 336 = 0.0936 PPM	NO. 386 = 0.0885 PPM
NO. 237 = 0.0914 PPM	NO. 287 = 0.0936 PPM	NO. 337 = 0.0925 PPM	NO. 387 = 0.0875 PPM
NO. 238 = 0.0923 PPM	NO. 288 = 0.0935 PPM	NO. 338 = 0.0915 PPM	NO. 388 = 0.0867 PPM
NO. 239 = 0.0927 PPM	NO. 289 = 0.0935 PPM	NO. 339 = 0.0908 PPM	NO. 389 = 0.0855 PPM
NO. 240 = 0.0926 PPM	NO. 290 = 0.0931 PPM	NO. 340 = 0.0898 PPM	NO. 390 = 0.0843 PPM
NO. 241 = 0.0925 PPM	NO. 291 = 0.0922 PPM	NO. 341 = 0.0882 PPM	NO. 391 = 0.0838 PPM
NO. 242 = 0.0927 PPM	NO. 292 = 0.0916 PPM	NO. 342 = 0.0866 PPM	NO. 392 = 0.0833 PPM
NO. 243 = 0.0927 PPM	NO. 293 = 0.0909 PPM	NO. 343 = 0.0857 PPM	NO. 393 = 0.0836 PPM
NO. 244 = 0.0928 PPM	NO. 294 = 0.0901 PPM	NO. 344 = 0.0847 PPM	NO. 394 = 0.0837 PPM
NO. 245 = 0.0916 PPM	NO. 295 = 0.0888 PPM	NO. 345 = 0.0842 PPM	NO. 395 = 0.0833 PPM
NO. 246 = 0.0909 PPM	NO. 296 = 0.0874 PPM	NO. 346 = 0.0843 PPM	NO. 396 = 0.0836 PPM
NO. 247 = 0.0904 PPM	NO. 297 = 0.0859 PPM	NO. 347 = 0.0846 PPM	NO. 397 = 0.0846 PPM
NO. 248 = 0.0897 PPM	NO. 298 = 0.0849 PPM	NO. 348 = 0.0847 PPM	NO. 398 = 0.0854 PPM
NO. 249 = 0.0887 PPM	NO. 299 = 0.0841 PPM	NO. 349 = 0.0853 PPM	NO. 399 = 0.0874 PPM
NO. 250 = 0.0876 PPM	NO. 300 = 0.0842 PPM	NO. 350 = 0.0854 PPM	NO. 400 = 0.0888 PPM

A-3. continued.

NO. 401 = 0.0888 PPM	NO. 451 = 0.0879 PPM	NO. 501 = 0.0935 PPM	NO. 551 = 0.0913 PPM
NO. 402 = 0.0886 PPM	NO. 452 = 0.0875 PPM	NO. 502 = 0.0956 PPM	NO. 552 = 0.0956 PPM
NO. 403 = 0.0882 PPM	NO. 453 = 0.0886 PPM	NO. 503 = 0.0921 PPM	NO. 553 = 0.0880 PPM
NO. 404 = 0.0872 PPM	NO. 454 = 0.0904 PPM	NO. 504 = 0.0908 PPM	NO. 554 = 0.0848 PPM
NO. 405 = 0.0866 PPM	NO. 455 = 0.0907 PPM	NO. 505 = 0.0907 PPM	NO. 555 = 0.0880 PPM
NO. 406 = 0.0860 PPM	NO. 456 = 0.0926 PPM	NO. 506 = 0.0935 PPM	NO. 556 = 0.0886 PPM
NO. 407 = 0.0867 PPM	NO. 457 = 0.0903 PPM	NO. 507 = 0.0865 PPM	NO. 557 = 0.0898 PPM
NO. 408 = 0.0894 PPM	NO. 458 = 0.0898 PPM	NO. 508 = 0.0848 PPM	NO. 558 = 0.0887 PPM
NO. 409 = 0.0899 PPM	NO. 459 = 0.0894 PPM	NO. 509 = 0.0884 PPM	NO. 559 = 0.0910 PPM
NO. 410 = 0.0896 PPM	NO. 460 = 0.0915 PPM	NO. 510 = 0.0893 PPM	NO. 560 = 0.0910 PPM
NO. 411 = 0.0883 PPM	NO. 461 = 0.0849 PPM	NO. 511 = 0.0904 PPM	NO. 561 = 0.0909 PPM
NO. 412 = 0.0885 PPM	NO. 462 = 0.0849 PPM	NO. 512 = 0.0913 PPM	NO. 562 = 0.0910 PPM
NO. 413 = 0.0893 PPM	NO. 463 = 0.0888 PPM	NO. 513 = 0.0916 PPM	NO. 563 = 0.0910 PPM
NO. 414 = 0.0894 PPM	NO. 464 = 0.0897 PPM	NO. 514 = 0.0920 PPM	NO. 564 = 0.0907 PPM
NO. 415 = 0.0842 PPM	NO. 465 = 0.0909 PPM	NO. 515 = 0.0921 PPM	NO. 565 = 0.0900 PPM
NO. 416 = 0.0848 PPM	NO. 466 = 0.0921 PPM	NO. 516 = 0.0921 PPM	NO. 566 = 0.0887 PPM
NO. 417 = 0.0885 PPM	NO. 467 = 0.0930 PPM	NO. 517 = 0.0923 PPM	NO. 567 = 0.0878 PPM
NO. 418 = 0.0893 PPM	NO. 468 = 0.0934 PPM	NO. 518 = 0.0923 PPM	NO. 568 = 0.0873 PPM
NO. 419 = 0.0903 PPM	NO. 469 = 0.0935 PPM	NO. 519 = 0.0919 PPM	NO. 569 = 0.0860 PPM
NO. 420 = 0.0916 PPM	NO. 470 = 0.0934 PPM	NO. 520 = 0.0911 PPM	NO. 570 = 0.0842 PPM
NO. 421 = 0.0925 PPM	NO. 471 = 0.0934 PPM	NO. 521 = 0.0898 PPM	NO. 571 = 0.0823 PPM
NO. 422 = 0.0929 PPM	NO. 472 = 0.0934 PPM	NO. 522 = 0.0889 PPM	NO. 572 = 0.0818 PPM
NO. 423 = 0.0929 PPM	NO. 473 = 0.0930 PPM	NO. 523 = 0.0877 PPM	NO. 573 = 0.0811 PPM
NO. 424 = 0.0928 PPM	NO. 474 = 0.0920 PPM	NO. 524 = 0.0860 PPM	NO. 574 = 0.0834 PPM
NO. 425 = 0.0928 PPM	NO. 475 = 0.0909 PPM	NO. 525 = 0.0841 PPM	NO. 575 = 0.0842 PPM
NO. 426 = 0.0927 PPM	NO. 476 = 0.0906 PPM	NO. 526 = 0.0829 PPM	NO. 576 = 0.0820 PPM
NO. 427 = 0.0924 PPM	NO. 477 = 0.0895 PPM	NO. 527 = 0.0814 PPM	NO. 577 = 0.0819 PPM
NO. 428 = 0.0914 PPM	NO. 478 = 0.0881 PPM	NO. 528 = 0.0815 PPM	NO. 578 = 0.0835 PPM
NO. 429 = 0.0933 PPM	NO. 479 = 0.0863 PPM	NO. 529 = 0.0825 PPM	NO. 579 = 0.0856 PPM
NO. 430 = 0.0906 PPM	NO. 480 = 0.0846 PPM	NO. 530 = 0.0807 PPM	NO. 580 = 0.0887 PPM
NO. 431 = 0.0897 PPM	NO. 481 = 0.0829 PPM	NO. 531 = 0.0810 PPM	NO. 581 = 0.0914 PPM
NO. 432 = 0.0887 PPM	NO. 482 = 0.0814 PPM	NO. 532 = 0.0824 PPM	NO. 582 = 0.0941 PPM
NO. 433 = 0.0902 PPM	NO. 483 = 0.0811 PPM	NO. 533 = 0.0841 PPM	NO. 583 = 0.0960 PPM
NO. 434 = 0.0862 PPM	NO. 484 = 0.0798 PPM	NO. 534 = 0.0862 PPM	NO. 584 = 0.0951 PPM
NO. 435 = 0.0847 PPM	NO. 485 = 0.0806 PPM	NO. 535 = 0.0891 PPM	NO. 585 = 0.0944 PPM
NO. 436 = 0.0830 PPM	NO. 486 = 0.0820 PPM	NO. 536 = 0.0919 PPM	NO. 586 = 0.0953 PPM
NO. 437 = 0.0824 PPM	NO. 487 = 0.0840 PPM	NO. 537 = 0.0943 PPM	NO. 587 = 0.0956 PPM
NO. 438 = 0.0821 PPM	NO. 488 = 0.0854 PPM	NO. 538 = 0.0938 PPM	NO. 588 = 0.0953 PPM
NO. 439 = 0.0819 PPM	NO. 489 = 0.0870 PPM	NO. 539 = 0.0939 PPM	NO. 589 = 0.0944 PPM
NO. 440 = 0.0818 PPM	NO. 490 = 0.0900 PPM	NO. 540 = 0.0913 PPM	NO. 590 = 0.0934 PPM
NO. 441 = 0.0831 PPM	NO. 491 = 0.0926 PPM	NO. 541 = 0.0928 PPM	NO. 591 = 0.0935 PPM
NO. 442 = 0.0846 PPM	NO. 492 = 0.0924 PPM	NO. 542 = 0.0926 PPM	NO. 592 = 0.0938 PPM
NO. 443 = 0.0854 PPM	NO. 493 = 0.0915 PPM	NO. 543 = 0.0919 PPM	NO. 593 = 0.0939 PPM
NO. 444 = 0.0873 PPM	NO. 494 = 0.0923 PPM	NO. 544 = 0.0912 PPM	NO. 594 = 0.0944 PPM
NO. 445 = 0.0898 PPM	NO. 495 = 0.0896 PPM	NO. 545 = 0.0914 PPM	NO. 595 = 0.0942 PPM
NO. 446 = 0.0906 PPM	NO. 496 = 0.0901 PPM	NO. 546 = 0.0921 PPM	NO. 596 = 0.0926 PPM
NO. 447 = 0.0902 PPM	NO. 497 = 0.0896 PPM	NO. 547 = 0.0927 PPM	NO. 597 = 0.0917 PPM
NO. 448 = 0.0894 PPM	NO. 498 = 0.0892 PPM	NO. 548 = 0.0967 PPM	NO. 598 = 0.0976 PPM
NO. 449 = 0.0887 PPM	NO. 499 = 0.0897 PPM	NO. 549 = 0.0931 PPM	NO. 599 = 0.0898 PPM
NO. 450 = 0.0881 PPM	NO. 500 = 0.0907 PPM	NO. 550 = 0.0917 PPM	NO. 600 = 0.0842 PPM

A-3. continued.

NO. 601 = 0.0878 PPM	NO. 651 = 0.0872 PPM	NO. 701 = 0.0875 PPM	NO. 751 = 0.0831 PPM
NO. 602 = 0.0880 PPM	NO. 652 = 0.0879 PPM	NO. 702 = 0.0866 PPM	NO. 752 = 0.0820 PPM
NO. 603 = 0.0886 PPM	NO. 653 = 0.0878 PPM	NO. 703 = 0.0867 PPM	NO. 753 = 0.0809 PPM
NO. 604 = 0.0875 PPM	NO. 654 = 0.0878 PPM	NO. 704 = 0.0858 PPM	NO. 754 = 0.0843 PPM
NO. 605 = 0.0894 PPM	NO. 655 = 0.0879 PPM	NO. 705 = 0.0845 PPM	NO. 755 = 0.0858 PPM
NO. 606 = 0.0893 PPM	NO. 656 = 0.0872 PPM	NO. 706 = 0.0839 PPM	NO. 756 = 0.0877 PPM
NO. 607 = 0.0892 PPM	NO. 657 = 0.0873 PPM	NO. 707 = 0.0831 PPM	NO. 757 = 0.0906 PPM
NO. 608 = 0.0892 PPM	NO. 658 = 0.0865 PPM	NO. 708 = 0.0816 PPM	NO. 758 = 0.0929 PPM
NO. 609 = 0.0893 PPM	NO. 659 = 0.0849 PPM	NO. 709 = 0.0831 PPM	NO. 759 = 0.0936 PPM
NO. 610 = 0.0892 PPM	NO. 660 = 0.0848 PPM	NO. 710 = 0.0852 PPM	NO. 760 = 0.0940 PPM
NO. 611 = 0.0884 PPM	NO. 661 = 0.0844 PPM	NO. 711 = 0.0885 PPM	NO. 761 = 0.0955 PPM
NO. 612 = 0.0872 PPM	NO. 662 = 0.0832 PPM	NO. 712 = 0.0902 PPM	NO. 762 = 0.1007 PPM
NO. 613 = 0.0861 PPM	NO. 663 = 0.0813 PPM	NO. 713 = 0.0909 PPM	NO. 763 = 0.1043 PPM
NO. 614 = 0.0851 PPM	NO. 664 = 0.0819 PPM	NO. 714 = 0.0898 PPM	NO. 764 = 0.1077 PPM
NO. 615 = 0.0846 PPM	NO. 665 = 0.0852 PPM	NO. 715 = 0.0913 PPM	NO. 765 = 0.1075 PPM
NO. 616 = 0.0839 PPM	NO. 666 = 0.0874 PPM	NO. 716 = 0.0955 PPM	NO. 766 = 0.1048 PPM
NO. 617 = 0.0822 PPM	NO. 667 = 0.0877 PPM	NO. 717 = 0.0999 PPM	NO. 767 = 0.1061 PPM
NO. 618 = 0.0817 PPM	NO. 668 = 0.0858 PPM	NO. 718 = 0.1047 PPM	NO. 768 = 0.1073 PPM
NO. 619 = 0.0831 PPM	NO. 669 = 0.0885 PPM	NO. 719 = 0.1075 PPM	NO. 769 = 0.1087 PPM
NO. 620 = 0.0854 PPM	NO. 670 = 0.0905 PPM	NO. 720 = 0.1068 PPM	NO. 770 = 0.1087 PPM
NO. 621 = 0.0858 PPM	NO. 671 = 0.0951 PPM	NO. 721 = 0.1032 PPM	NO. 771 = 0.1084 PPM
NO. 622 = 0.0837 PPM	NO. 672 = 0.0995 PPM	NO. 722 = 0.1039 PPM	NO. 772 = 0.1068 PPM
NO. 623 = 0.0842 PPM	NO. 673 = 0.1042 PPM	NO. 723 = 0.1051 PPM	NO. 773 = 0.1050 PPM
NO. 624 = 0.0859 PPM	NO. 674 = 0.1071 PPM	NO. 724 = 0.1055 PPM	NO. 774 = 0.1034 PPM
NO. 625 = 0.0887 PPM	NO. 675 = 0.1058 PPM	NO. 725 = 0.1054 PPM	NO. 775 = 0.1019 PPM
NO. 626 = 0.0917 PPM	NO. 676 = 0.0996 PPM	NO. 726 = 0.1041 PPM	NO. 776 = 0.1010 PPM
NO. 627 = 0.0947 PPM	NO. 677 = 0.1017 PPM	NO. 727 = 0.1024 PPM	NO. 777 = 0.1008 PPM
NO. 628 = 0.0974 PPM	NO. 678 = 0.1021 PPM	NO. 728 = 0.1010 PPM	NO. 778 = 0.0998 PPM
NO. 629 = 0.0985 PPM	NO. 679 = 0.1020 PPM	NO. 729 = 0.0999 PPM	NO. 779 = 0.0982 PPM
NO. 630 = 0.0985 PPM	NO. 680 = 0.1009 PPM	NO. 730 = 0.0993 PPM	NO. 780 = 0.0958 PPM
NO. 631 = 0.0970 PPM	NO. 681 = 0.0995 PPM	NO. 731 = 0.0993 PPM	NO. 781 = 0.0968 PPM
NO. 632 = 0.0986 PPM	NO. 682 = 0.0986 PPM	NO. 732 = 0.0986 PPM	NO. 782 = 0.1042 PPM
NO. 633 = 0.0987 PPM	NO. 683 = 0.0978 PPM	NO. 733 = 0.0973 PPM	NO. 783 = 0.0999 PPM
NO. 634 = 0.0981 PPM	NO. 684 = 0.0976 PPM	NO. 734 = 0.0950 PPM	NO. 784 = 0.0898 PPM
NO. 635 = 0.0971 PPM	NO. 685 = 0.0976 PPM	NO. 735 = 0.0960 PPM	NO. 785 = 0.0875 PPM
NO. 636 = 0.0959 PPM	NO. 686 = 0.0974 PPM	NO. 736 = 0.1027 PPM	NO. 786 = 0.0845 PPM
NO. 637 = 0.0956 PPM	NO. 687 = 0.0964 PPM	NO. 737 = 0.0968 PPM	NO. 787 = 0.0842 PPM
NO. 638 = 0.0957 PPM	NO. 688 = 0.0942 PPM	NO. 738 = 0.0844 PPM	NO. 788 = 0.0824 PPM
NO. 639 = 0.0959 PPM	NO. 689 = 0.0949 PPM	NO. 739 = 0.0835 PPM	NO. 789 = 0.0822 PPM
NO. 640 = 0.0961 PPM	NO. 690 = 0.1010 PPM	NO. 740 = 0.0846 PPM	NO. 790 = 0.0825 PPM
NO. 641 = 0.0955 PPM	NO. 691 = 0.0940 PPM	NO. 741 = 0.0853 PPM	NO. 791 = 0.0827 PPM
NO. 642 = 0.0934 PPM	NO. 692 = 0.0831 PPM	NO. 742 = 0.0839 PPM	NO. 792 = 0.0824 PPM
NO. 643 = 0.0934 PPM	NO. 693 = 0.0840 PPM	NO. 743 = 0.0852 PPM	NO. 793 = 0.0827 PPM
NO. 644 = 0.0993 PPM	NO. 694 = 0.0850 PPM	NO. 744 = 0.0855 PPM	NO. 794 = 0.0823 PPM
NO. 645 = 0.0919 PPM	NO. 695 = 0.0863 PPM	NO. 745 = 0.0854 PPM	NO. 795 = 0.0824 PPM
NO. 646 = 0.0827 PPM	NO. 696 = 0.0848 PPM	NO. 746 = 0.0853 PPM	NO. 796 = 0.0828 PPM
NO. 647 = 0.0865 PPM	NO. 697 = 0.0868 PPM	NO. 747 = 0.0856 PPM	NO. 797 = 0.0823 PPM
NO. 648 = 0.0861 PPM	NO. 698 = 0.0874 PPM	NO. 748 = 0.0847 PPM	NO. 798 = 0.0800 PPM
NO. 649 = 0.0862 PPM	NO. 699 = 0.0875 PPM	NO. 749 = 0.0848 PPM	NO. 799 = 0.0843 PPM
NO. 650 = 0.0851 PPM	NO. 700 = 0.0873 PPM	NO. 750 = 0.0840 PPM	NO. 800 = 0.0872 PPM

A-3. continued.

NO. 801 = 0.0883 PPM	NO. 851 = 0.1041 PPM	NO. 901 = 0.1151 PPM	NO. 951 = 0.1177 PPM
NO. 802 = 0.0903 PPM	NO. 852 = 0.1076 PPM	NO. 902 = 0.1158 PPM	NO. 952 = 0.1190 PPM
NO. 803 = 0.0931 PPM	NO. 853 = 0.1083 PPM	NO. 903 = 0.1174 PPM	NO. 953 = 0.1205 PPM
NO. 804 = 0.0958 PPM	NO. 854 = 0.1114 PPM	NO. 904 = 0.1166 PPM	NO. 954 = 0.1192 PPM
NO. 805 = 0.0969 PPM	NO. 855 = 0.1112 PPM	NO. 905 = 0.1147 PPM	NO. 955 = 0.1185 PPM
NO. 806 = 0.1005 PPM	NO. 856 = 0.1131 PPM	NO. 906 = 0.1153 PPM	NO. 956 = 0.1169 PPM
NO. 807 = 0.1011 PPM	NO. 857 = 0.1119 PPM	NO. 907 = 0.1175 PPM	NO. 957 = 0.1150 PPM
NO. 808 = 0.1071 PPM	NO. 858 = 0.1122 PPM	NO. 908 = 0.1164 PPM	NO. 958 = 0.1126 PPM
NO. 809 = 0.1089 PPM	NO. 859 = 0.1113 PPM	NO. 909 = 0.1160 PPM	NO. 959 = 0.1102 PPM
NO. 810 = 0.1093 PPM	NO. 860 = 0.1129 PPM	NO. 910 = 0.1144 PPM	NO. 960 = 0.1077 PPM
NO. 811 = 0.1083 PPM	NO. 861 = 0.1146 PPM	NO. 911 = 0.1125 PPM	NO. 961 = 0.1060 PPM
NO. 812 = 0.1075 PPM	NO. 862 = 0.1138 PPM	NO. 912 = 0.1103 PPM	NO. 962 = 0.1042 PPM
NO. 813 = 0.1088 PPM	NO. 863 = 0.1135 PPM	NO. 913 = 0.1081 PPM	NO. 963 = 0.1017 PPM
NO. 814 = 0.1103 PPM	NO. 864 = 0.1120 PPM	NO. 914 = 0.1060 PPM	NO. 964 = 0.0987 PPM
NO. 815 = 0.1118 PPM	NO. 865 = 0.1101 PPM	NO. 915 = 0.1048 PPM	NO. 965 = 0.0994 PPM
NO. 816 = 0.1114 PPM	NO. 866 = 0.1080 PPM	NO. 916 = 0.1033 PPM	NO. 966 = 0.1085 PPM
NO. 817 = 0.1110 PPM	NO. 867 = 0.1060 PPM	NO. 917 = 0.1010 PPM	NO. 967 = 0.1100 PPM
NO. 818 = 0.1095 PPM	NO. 868 = 0.1042 PPM	NO. 918 = 0.0982 PPM	NO. 968 = 0.1092 PPM
NO. 819 = 0.1077 PPM	NO. 869 = 0.1034 PPM	NO. 919 = 0.0989 PPM	NO. 969 = 0.1098 PPM
NO. 820 = 0.1057 PPM	NO. 870 = 0.1022 PPM	NO. 920 = 0.1078 PPM	NO. 970 = 0.1062 PPM
NO. 821 = 0.1039 PPM	NO. 871 = 0.1001 PPM	NO. 921 = 0.1101 PPM	NO. 971 = 0.1052 PPM
NO. 822 = 0.1025 PPM	NO. 872 = 0.0974 PPM	NO. 922 = 0.1091 PPM	NO. 972 = 0.1028 PPM
NO. 823 = 0.1018 PPM	NO. 873 = 0.0985 PPM	NO. 923 = 0.1087 PPM	NO. 973 = 0.0988 PPM
NO. 824 = 0.1010 PPM	NO. 874 = 0.1066 PPM	NO. 924 = 0.1051 PPM	NO. 974 = 0.0939 PPM
NO. 825 = 0.0992 PPM	NO. 875 = 0.1092 PPM	NO. 925 = 0.1026 PPM	NO. 975 = 0.0869 PPM
NO. 826 = 0.0966 PPM	NO. 876 = 0.1031 PPM	NO. 926 = 0.0965 PPM	NO. 976 = 0.0828 PPM
NO. 827 = 0.0978 PPM	NO. 877 = 0.1026 PPM	NO. 927 = 0.0915 PPM	NO. 977 = 0.0770 PPM
NO. 828 = 0.1054 PPM	NO. 878 = 0.0981 PPM	NO. 928 = 0.0858 PPM	NO. 978 = 0.0793 PPM
NO. 829 = 0.1045 PPM	NO. 879 = 0.0943 PPM	NO. 929 = 0.0819 PPM	NO. 979 = 0.0812 PPM
NO. 830 = 0.0870 PPM	NO. 880 = 0.0892 PPM	NO. 930 = 0.0794 PPM	NO. 980 = 0.0833 PPM
NO. 831 = 0.0957 PPM	NO. 881 = 0.0836 PPM	NO. 931 = 0.0769 PPM	NO. 981 = 0.0879 PPM
NO. 832 = 0.0894 PPM	NO. 882 = 0.0801 PPM	NO. 932 = 0.0796 PPM	NO. 982 = 0.0921 PPM
NO. 833 = 0.0869 PPM	NO. 883 = 0.0802 PPM	NO. 933 = 0.0818 PPM	NO. 983 = 0.0961 PPM
NO. 834 = 0.0844 PPM	NO. 884 = 0.0798 PPM	NO. 934 = 0.0826 PPM	NO. 984 = 0.1007 PPM
NO. 835 = 0.0812 PPM	NO. 885 = 0.0801 PPM	NO. 935 = 0.0868 PPM	NO. 985 = 0.1063 PPM
NO. 836 = 0.0821 PPM	NO. 886 = 0.0793 PPM	NO. 936 = 0.0905 PPM	NO. 986 = 0.1140 PPM
NO. 837 = 0.0822 PPM	NO. 887 = 0.0824 PPM	NO. 937 = 0.0934 PPM	NO. 987 = 0.1216 PPM
NO. 838 = 0.0819 PPM	NO. 888 = 0.0834 PPM	NO. 938 = 0.0965 PPM	NO. 988 = 0.1255 PPM
NO. 839 = 0.0822 PPM	NO. 889 = 0.0843 PPM	NO. 939 = 0.0981 PPM	NO. 989 = 0.1242 PPM
NO. 840 = 0.0813 PPM	NO. 890 = 0.0881 PPM	NO. 940 = 0.1017 PPM	NO. 990 = 0.1274 PPM
NO. 841 = 0.0814 PPM	NO. 891 = 0.0910 PPM	NO. 941 = 0.1062 PPM	NO. 991 = 0.1229 PPM
NO. 842 = 0.0835 PPM	NO. 892 = 0.0951 PPM	NO. 942 = 0.1126 PPM	NO. 992 = 0.1212 PPM
NO. 843 = 0.0822 PPM	NO. 893 = 0.0982 PPM	NO. 943 = 0.1172 PPM	NO. 993 = 0.1210 PPM
NO. 844 = 0.0855 PPM	NO. 894 = 0.1026 PPM	NO. 944 = 0.1182 PPM	NO. 994 = 0.1246 PPM
NO. 845 = 0.0876 PPM	NO. 895 = 0.1042 PPM	NO. 945 = 0.1163 PPM	NO. 995 = 0.1260 PPM
NO. 846 = 0.0888 PPM	NO. 896 = 0.1064 PPM	NO. 946 = 0.1153 PPM	NO. 996 = 0.1258 PPM
NO. 847 = 0.0921 PPM	NO. 897 = 0.1121 PPM	NO. 947 = 0.1170 PPM	NO. 997 = 0.1225 PPM
NO. 848 = 0.0946 PPM	NO. 898 = 0.1159 PPM	NO. 948 = 0.1202 PPM	NO. 998 = 0.1221 PPM
NO. 849 = 0.0966 PPM	NO. 899 = 0.1165 PPM	NO. 949 = 0.1207 PPM	NO. 999 = 0.1238 PPM
NO. 850 = 0.0996 PPM	NO. 900 = 0.1146 PPM	NO. 950 = 0.1204 PPM	NO. 1000 = 0.1217 PPM

A-3. continued.

NO. 1001 = 0.1205 PPM	NO. 1051 = 0.1137 PPM	NO. 1101 = 0.1027 PPM	NO. 1151 = 0.1130 PPM
NO. 1002 = 0.1192 PPM	NO. 1052 = 0.1106 PPM	NO. 1102 = 0.0995 PPM	NO. 1152 = 0.1066 PPM
NO. 1003 = 0.1173 PPM	NO. 1053 = 0.1079 PPM	NO. 1103 = 0.0998 PPM	NO. 1153 = 0.1095 PPM
NO. 1004 = 0.1147 PPM	NO. 1054 = 0.1054 PPM	NO. 1104 = 0.1097 PPM	NO. 1154 = 0.1080 PPM
NO. 1005 = 0.1121 PPM	NO. 1055 = 0.1025 PPM	NO. 1105 = 0.1117 PPM	NO. 1155 = 0.1037 PPM
NO. 1006 = 0.1092 PPM	NO. 1056 = 0.0993 PPM	NO. 1106 = 0.1084 PPM	NO. 1156 = 0.1005 PPM
NO. 1007 = 0.1070 PPM	NO. 1057 = 0.0995 PPM	NO. 1107 = 0.1096 PPM	NO. 1157 = 0.0957 PPM
NO. 1008 = 0.1049 PPM	NO. 1058 = 0.1093 PPM	NO. 1108 = 0.1077 PPM	NO. 1158 = 0.0954 PPM
NO. 1009 = 0.1021 PPM	NO. 1059 = 0.1105 PPM	NO. 1109 = 0.1030 PPM	NO. 1159 = 0.1010 PPM
NO. 1010 = 0.0989 PPM	NO. 1060 = 0.1097 PPM	NO. 1110 = 0.0977 PPM	NO. 1160 = 0.0890 PPM
NO. 1011 = 0.0996 PPM	NO. 1061 = 0.1086 PPM	NO. 1111 = 0.0935 PPM	NO. 1161 = 0.0888 PPM
NO. 1012 = 0.1089 PPM	NO. 1062 = 0.1060 PPM	NO. 1112 = 0.0927 PPM	NO. 1162 = 0.0822 PPM
NO. 1013 = 0.1098 PPM	NO. 1063 = 0.1037 PPM	NO. 1113 = 0.1001 PPM	NO. 1163 = 0.0838 PPM
NO. 1014 = 0.1096 PPM	NO. 1064 = 0.0997 PPM	NO. 1114 = 0.0885 PPM	NO. 1164 = 0.0879 PPM
NO. 1015 = 0.1077 PPM	NO. 1065 = 0.0959 PPM	NO. 1115 = 0.0850 PPM	NO. 1165 = 0.0923 PPM
NO. 1016 = 0.1066 PPM	NO. 1066 = 0.0947 PPM	NO. 1116 = 0.0799 PPM	NO. 1166 = 0.0957 PPM
NO. 1017 = 0.1051 PPM	NO. 1067 = 0.0957 PPM	NO. 1117 = 0.0826 PPM	NO. 1167 = 0.1029 PPM
NO. 1018 = 0.1016 PPM	NO. 1068 = 0.0878 PPM	NO. 1118 = 0.0856 PPM	NO. 1168 = 0.1089 PPM
NO. 1019 = 0.0996 PPM	NO. 1069 = 0.0828 PPM	NO. 1119 = 0.0911 PPM	NO. 1169 = 0.1135 PPM
NO. 1020 = 0.0993 PPM	NO. 1070 = 0.0778 PPM	NO. 1120 = 0.0977 PPM	NO. 1170 = 0.1171 PPM
NO. 1021 = 0.0915 PPM	NO. 1071 = 0.0811 PPM	NO. 1121 = 0.1037 PPM	NO. 1171 = 0.1219 PPM
NO. 1022 = 0.0846 PPM	NO. 1072 = 0.0858 PPM	NO. 1122 = 0.1094 PPM	NO. 1172 = 0.1274 PPM
NO. 1023 = 0.0798 PPM	NO. 1073 = 0.0911 PPM	NO. 1123 = 0.1148 PPM	NO. 1173 = 0.1322 PPM
NO. 1024 = 0.0793 PPM	NO. 1074 = 0.0957 PPM	NO. 1124 = 0.1197 PPM	NO. 1174 = 0.1361 PPM
NO. 1025 = 0.0821 PPM	NO. 1075 = 0.1003 PPM	NO. 1125 = 0.1243 PPM	NO. 1175 = 0.1369 PPM
NO. 1026 = 0.0850 PPM	NO. 1076 = 0.1068 PPM	NO. 1126 = 0.1281 PPM	NO. 1176 = 0.1359 PPM
NO. 1027 = 0.0891 PPM	NO. 1077 = 0.1121 PPM	NO. 1127 = 0.1299 PPM	NO. 1177 = 0.1342 PPM
NO. 1028 = 0.0941 PPM	NO. 1078 = 0.1167 PPM	NO. 1128 = 0.1350 PPM	NO. 1178 = 0.1309 PPM
NO. 1029 = 0.1000 PPM	NO. 1079 = 0.1223 PPM	NO. 1129 = 0.1385 PPM	NO. 1179 = 0.1271 PPM
NO. 1030 = 0.1058 PPM	NO. 1080 = 0.1264 PPM	NO. 1130 = 0.1391 PPM	NO. 1180 = 0.1272 PPM
NO. 1031 = 0.1118 PPM	NO. 1081 = 0.1289 PPM	NO. 1131 = 0.1392 PPM	NO. 1181 = 0.1294 PPM
NO. 1032 = 0.1181 PPM	NO. 1082 = 0.1333 PPM	NO. 1132 = 0.1372 PPM	NO. 1182 = 0.1291 PPM
NO. 1033 = 0.1233 PPM	NO. 1083 = 0.1341 PPM	NO. 1133 = 0.1377 PPM	NO. 1183 = 0.1304 PPM
NO. 1034 = 0.1269 PPM	NO. 1084 = 0.1331 PPM	NO. 1134 = 0.1333 PPM	NO. 1184 = 0.1300 PPM
NO. 1035 = 0.1273 PPM	NO. 1085 = 0.1308 PPM	NO. 1135 = 0.1198 PPM	NO. 1185 = 0.1281 PPM
NO. 1036 = 0.1293 PPM	NO. 1086 = 0.1338 PPM	NO. 1136 = 0.1306 PPM	NO. 1186 = 0.1254 PPM
NO. 1037 = 0.1287 PPM	NO. 1087 = 0.1343 PPM	NO. 1137 = 0.1284 PPM	NO. 1187 = 0.1227 PPM
NO. 1038 = 0.1299 PPM	NO. 1088 = 0.1343 PPM	NO. 1138 = 0.1282 PPM	NO. 1188 = 0.1200 PPM
NO. 1039 = 0.1312 PPM	NO. 1089 = 0.1287 PPM	NO. 1139 = 0.1265 PPM	NO. 1189 = 0.1170 PPM
NO. 1040 = 0.1323 PPM	NO. 1090 = 0.1264 PPM	NO. 1140 = 0.1242 PPM	NO. 1190 = 0.1138 PPM
NO. 1041 = 0.1332 PPM	NO. 1091 = 0.1263 PPM	NO. 1141 = 0.1217 PPM	NO. 1191 = 0.1106 PPM
NO. 1042 = 0.1312 PPM	NO. 1092 = 0.1257 PPM	NO. 1142 = 0.1189 PPM	NO. 1192 = 0.1075 PPM
NO. 1043 = 0.1272 PPM	NO. 1093 = 0.1245 PPM	NO. 1143 = 0.1159 PPM	NO. 1193 = 0.1039 PPM
NO. 1044 = 0.1256 PPM	NO. 1094 = 0.1226 PPM	NO. 1144 = 0.1129 PPM	NO. 1194 = 0.0997 PPM
NO. 1045 = 0.1264 PPM	NO. 1095 = 0.1205 PPM	NO. 1145 = 0.1097 PPM	NO. 1195 = 0.1000 PPM
NO. 1046 = 0.1239 PPM	NO. 1096 = 0.1178 PPM	NO. 1146 = 0.1068 PPM	NO. 1196 = 0.1085 PPM
NO. 1047 = 0.1228 PPM	NO. 1097 = 0.1149 PPM	NO. 1147 = 0.1034 PPM	NO. 1197 = 0.1150 PPM
NO. 1048 = 0.1212 PPM	NO. 1098 = 0.1117 PPM	NO. 1148 = 0.0996 PPM	NO. 1198 = 0.1061 PPM
NO. 1049 = 0.1190 PPM	NO. 1099 = 0.1089 PPM	NO. 1149 = 0.0999 PPM	NO. 1199 = 0.1116 PPM
NO. 1050 = 0.1165 PPM	NO. 1100 = 0.1060 PPM	NO. 1150 = 0.1091 PPM	NO. 1200 = 0.1091 PPM

A-3. continued.

NO. 1201 = 0.1038 PPM	NO. 1251 = 0.0920 PPM	NO. 1301 = 0.0882 PPM	NO. 1351 = 0.1011 PPM
NO. 1202 = 0.0993 PPM	NO. 1252 = 0.0946 PPM	NO. 1302 = 0.0866 PPM	NO. 1352 = 0.1070 PPM
NO. 1203 = 0.0939 PPM	NO. 1253 = 0.0907 PPM	NO. 1303 = 0.0918 PPM	NO. 1353 = 0.1123 PPM
NO. 1204 = 0.0647 PPM	NO. 1254 = 0.0901 PPM	NO. 1304 = 0.0988 PPM	NO. 1354 = 0.1168 PPM
NO. 1205 = 0.1055 PPM	NO. 1255 = 0.0873 PPM	NO. 1305 = 0.1049 PPM	NO. 1355 = 0.1209 PPM
NO. 1206 = 0.0912 PPM	NO. 1256 = 0.0876 PPM	NO. 1306 = 0.1101 PPM	NO. 1356 = 0.1245 PPM
NO. 1207 = 0.0911 PPM	NO. 1257 = 0.0942 PPM	NO. 1307 = 0.1151 PPM	NO. 1357 = 0.1273 PPM
NO. 1208 = 0.0853 PPM	NO. 1258 = 0.1004 PPM	NO. 1308 = 0.1200 PPM	NO. 1358 = 0.1283 PPM
NO. 1209 = 0.0844 PPM	NO. 1259 = 0.1061 PPM	NO. 1309 = 0.1245 PPM	NO. 1359 = 0.1272 PPM
NO. 1210 = 0.0887 PPM	NO. 1260 = 0.1111 PPM	NO. 1310 = 0.1279 PPM	NO. 1360 = 0.1252 PPM
NO. 1211 = 0.0942 PPM	NO. 1261 = 0.1159 PPM	NO. 1311 = 0.1308 PPM	NO. 1361 = 0.1250 PPM
NO. 1212 = 0.0990 PPM	NO. 1262 = 0.1208 PPM	NO. 1312 = 0.1324 PPM	NO. 1362 = 0.1253 PPM
NO. 1213 = 0.1036 PPM	NO. 1263 = 0.1255 PPM	NO. 1313 = 0.1313 PPM	NO. 1363 = 0.1225 PPM
NO. 1214 = 0.1085 PPM	NO. 1264 = 0.1287 PPM	NO. 1314 = 0.1296 PPM	NO. 1364 = 0.1219 PPM
NO. 1215 = 0.1134 PPM	NO. 1265 = 0.1306 PPM	NO. 1315 = 0.1239 PPM	NO. 1365 = 0.1239 PPM
NO. 1216 = 0.1185 PPM	NO. 1266 = 0.1324 PPM	NO. 1316 = 0.1225 PPM	NO. 1366 = 0.1278 PPM
NO. 1217 = 0.1233 PPM	NO. 1267 = 0.1311 PPM	NO. 1317 = 0.1252 PPM	NO. 1367 = 0.1304 PPM
NO. 1218 = 0.1263 PPM	NO. 1268 = 0.1305 PPM	NO. 1318 = 0.1235 PPM	NO. 1368 = 0.1317 PPM
NO. 1219 = 0.1288 PPM	NO. 1269 = 0.1290 PPM	NO. 1319 = 0.1257 PPM	NO. 1369 = 0.1311 PPM
NO. 1220 = 0.1321 PPM	NO. 1270 = 0.1263 PPM	NO. 1320 = 0.1279 PPM	NO. 1370 = 0.1293 PPM
NO. 1221 = 0.1329 PPM	NO. 1271 = 0.1220 PPM	NO. 1321 = 0.1307 PPM	NO. 1371 = 0.1266 PPM
NO. 1222 = 0.1316 PPM	NO. 1272 = 0.1240 PPM	NO. 1322 = 0.1320 PPM	NO. 1372 = 0.1233 PPM
NO. 1223 = 0.1272 PPM	NO. 1273 = 0.1271 PPM	NO. 1323 = 0.1310 PPM	NO. 1373 = 0.1202 PPM
NO. 1224 = 0.1279 PPM	NO. 1274 = 0.1296 PPM	NO. 1324 = 0.1287 PPM	NO. 1374 = 0.1174 PPM
NO. 1225 = 0.1268 PPM	NO. 1275 = 0.1307 PPM	NO. 1325 = 0.1260 PPM	NO. 1375 = 0.1142 PPM
NO. 1226 = 0.1270 PPM	NO. 1276 = 0.1309 PPM	NO. 1326 = 0.1230 PPM	NO. 1376 = 0.1104 PPM
NO. 1227 = 0.1268 PPM	NO. 1277 = 0.1297 PPM	NO. 1327 = 0.1200 PPM	NO. 1377 = 0.1065 PPM
NO. 1228 = 0.1303 PPM	NO. 1278 = 0.1274 PPM	NO. 1328 = 0.1170 PPM	NO. 1378 = 0.1046 PPM
NO. 1229 = 0.1313 PPM	NO. 1279 = 0.1249 PPM	NO. 1329 = 0.1137 PPM	NO. 1379 = 0.1028 PPM
NO. 1230 = 0.1309 PPM	NO. 1280 = 0.1222 PPM	NO. 1330 = 0.1097 PPM	NO. 1380 = 0.1066 PPM
NO. 1231 = 0.1291 PPM	NO. 1281 = 0.1194 PPM	NO. 1331 = 0.1055 PPM	NO. 1381 = 0.1148 PPM
NO. 1232 = 0.1264 PPM	NO. 1282 = 0.1162 PPM	NO. 1332 = 0.1034 PPM	NO. 1382 = 0.1021 PPM
NO. 1233 = 0.1238 PPM	NO. 1283 = 0.1128 PPM	NO. 1333 = 0.1015 PPM	NO. 1383 = 0.1091 PPM
NO. 1234 = 0.1212 PPM	NO. 1284 = 0.1090 PPM	NO. 1334 = 0.1070 PPM	NO. 1384 = 0.1075 PPM
NO. 1235 = 0.1183 PPM	NO. 1285 = 0.1047 PPM	NO. 1335 = 0.1141 PPM	NO. 1385 = 0.1045 PPM
NO. 1236 = 0.1151 PPM	NO. 1286 = 0.1017 PPM	NO. 1336 = 0.1065 PPM	NO. 1386 = 0.1009 PPM
NO. 1237 = 0.1117 PPM	NO. 1287 = 0.1003 PPM	NO. 1337 = 0.1101 PPM	NO. 1387 = 0.0989 PPM
NO. 1238 = 0.1083 PPM	NO. 1288 = 0.1074 PPM	NO. 1338 = 0.1070 PPM	NO. 1388 = 0.0989 PPM
NO. 1239 = 0.1043 PPM	NO. 1289 = 0.1134 PPM	NO. 1339 = 0.1080 PPM	NO. 1389 = 0.0979 PPM
NO. 1240 = 0.1001 PPM	NO. 1290 = 0.1056 PPM	NO. 1340 = 0.1046 PPM	NO. 1390 = 0.0954 PPM
NO. 1241 = 0.1001 PPM	NO. 1291 = 0.1116 PPM	NO. 1341 = 0.0997 PPM	NO. 1391 = 0.0925 PPM
NO. 1242 = 0.1079 PPM	NO. 1292 = 0.1095 PPM	NO. 1342 = 0.0979 PPM	NO. 1392 = 0.0896 PPM
NO. 1243 = 0.1155 PPM	NO. 1293 = 0.1096 PPM	NO. 1343 = 0.0957 PPM	NO. 1393 = 0.0871 PPM
NO. 1244 = 0.1074 PPM	NO. 1294 = 0.1050 PPM	NO. 1344 = 0.0939 PPM	NO. 1394 = 0.0890 PPM
NO. 1245 = 0.1106 PPM	NO. 1295 = 0.0982 PPM	NO. 1345 = 0.0916 PPM	NO. 1395 = 0.0945 PPM
NO. 1246 = 0.1103 PPM	NO. 1296 = 0.0941 PPM	NO. 1346 = 0.0909 PPM	NO. 1396 = 0.0991 PPM
NO. 1247 = 0.1061 PPM	NO. 1297 = 0.0960 PPM	NO. 1347 = 0.0879 PPM	NO. 1397 = 0.1034 PPM
NO. 1248 = 0.0987 PPM	NO. 1298 = 0.0932 PPM	NO. 1348 = 0.0883 PPM	NO. 1398 = 0.1079 PPM
NO. 1249 = 0.1008 PPM	NO. 1299 = 0.0910 PPM	NO. 1349 = 0.0927 PPM	NO. 1399 = 0.1128 PPM
NO. 1250 = 0.1041 PPM	NO. 1300 = 0.0905 PPM	NO. 1350 = 0.0962 PPM	NO. 1400 = 0.1185 PPM

A-3. continued.

NO. 1401 = 0.1234 PPM	NO. 1451 = 0.1301 PPM	NO. 1501 = 0.1121 PPM	NO. 1551 = 0.1242 PPM
NO. 1402 = 0.1263 PPM	NO. 1452 = 0.1285 PPM	NO. 1502 = 0.1162 PPM	NO. 1552 = 0.1265 PPM
NO. 1403 = 0.1281 PPM	NO. 1453 = 0.1232 PPM	NO. 1503 = 0.1183 PPM	NO. 1553 = 0.1273 PPM
NO. 1404 = 0.1297 PPM	NO. 1454 = 0.1225 PPM	NO. 1504 = 0.1220 PPM	NO. 1554 = 0.1275 PPM
NO. 1405 = 0.1293 PPM	NO. 1455 = 0.1138 PPM	NO. 1505 = 0.1257 PPM	NO. 1555 = 0.1263 PPM
NO. 1406 = 0.1288 PPM	NO. 1456 = 0.1191 PPM	NO. 1506 = 0.1287 PPM	NO. 1556 = 0.1238 PPM
NO. 1407 = 0.1256 PPM	NO. 1457 = 0.1220 PPM	NO. 1507 = 0.1297 PPM	NO. 1557 = 0.1209 PPM
NO. 1408 = 0.1243 PPM	NO. 1458 = 0.1242 PPM	NO. 1508 = 0.1293 PPM	NO. 1558 = 0.1190 PPM
NO. 1409 = 0.1158 PPM	NO. 1459 = 0.1260 PPM	NO. 1509 = 0.1275 PPM	NO. 1559 = 0.1174 PPM
NO. 1410 = 0.1197 PPM	NO. 1460 = 0.1294 PPM	NO. 1510 = 0.1247 PPM	NO. 1560 = 0.1145 PPM
NO. 1411 = 0.1236 PPM	NO. 1461 = 0.1301 PPM	NO. 1511 = 0.1219 PPM	NO. 1561 = 0.1103 PPM
NO. 1412 = 0.1268 PPM	NO. 1462 = 0.1291 PPM	NO. 1512 = 0.1193 PPM	NO. 1562 = 0.1068 PPM
NO. 1413 = 0.1287 PPM	NO. 1463 = 0.1269 PPM	NO. 1513 = 0.1164 PPM	NO. 1563 = 0.1063 PPM
NO. 1414 = 0.1298 PPM	NO. 1464 = 0.1242 PPM	NO. 1514 = 0.1131 PPM	NO. 1564 = 0.1077 PPM
NO. 1415 = 0.1295 PPM	NO. 1465 = 0.1217 PPM	NO. 1515 = 0.1092 PPM	NO. 1565 = 0.1147 PPM
NO. 1416 = 0.1282 PPM	NO. 1466 = 0.1191 PPM	NO. 1516 = 0.1068 PPM	NO. 1566 = 0.1111 PPM
NO. 1417 = 0.1258 PPM	NO. 1467 = 0.1160 PPM	NO. 1517 = 0.1055 PPM	NO. 1567 = 0.1102 PPM
NO. 1418 = 0.1232 PPM	NO. 1468 = 0.1121 PPM	NO. 1518 = 0.1070 PPM	NO. 1568 = 0.1090 PPM
NO. 1419 = 0.1209 PPM	NO. 1469 = 0.1080 PPM	NO. 1519 = 0.1143 PPM	NO. 1569 = 0.1084 PPM
NO. 1420 = 0.1182 PPM	NO. 1470 = 0.1062 PPM	NO. 1520 = 0.1084 PPM	NO. 1570 = 0.1077 PPM
NO. 1421 = 0.1150 PPM	NO. 1471 = 0.1045 PPM	NO. 1521 = 0.1075 PPM	NO. 1571 = 0.1081 PPM
NO. 1422 = 0.1112 PPM	NO. 1472 = 0.1064 PPM	NO. 1522 = 0.1064 PPM	NO. 1572 = 0.1089 PPM
NO. 1423 = 0.1072 PPM	NO. 1473 = 0.1139 PPM	NO. 1523 = 0.1063 PPM	NO. 1573 = 0.1092 PPM
NO. 1424 = 0.1052 PPM	NO. 1474 = 0.1055 PPM	NO. 1524 = 0.1063 PPM	NO. 1574 = 0.1086 PPM
NO. 1425 = 0.1039 PPM	NO. 1475 = 0.1044 PPM	NO. 1525 = 0.1066 PPM	NO. 1575 = 0.1067 PPM
NO. 1426 = 0.1062 PPM	NO. 1476 = 0.1038 PPM	NO. 1526 = 0.1067 PPM	NO. 1576 = 0.1043 PPM
NO. 1427 = 0.1136 PPM	NO. 1477 = 0.1040 PPM	NO. 1527 = 0.1062 PPM	NO. 1577 = 0.1012 PPM
NO. 1428 = 0.1020 PPM	NO. 1478 = 0.1039 PPM	NO. 1528 = 0.1049 PPM	NO. 1578 = 0.0979 PPM
NO. 1429 = 0.1024 PPM	NO. 1479 = 0.1037 PPM	NO. 1529 = 0.1034 PPM	NO. 1579 = 0.0955 PPM
NO. 1430 = 0.1039 PPM	NO. 1480 = 0.1031 PPM	NO. 1530 = 0.1026 PPM	NO. 1580 = 0.1018 PPM
NO. 1431 = 0.1045 PPM	NO. 1481 = 0.1022 PPM	NO. 1531 = 0.1015 PPM	NO. 1581 = 0.1078 PPM
NO. 1432 = 0.1011 PPM	NO. 1482 = 0.1006 PPM	NO. 1532 = 0.0993 PPM	NO. 1582 = 0.1133 PPM
NO. 1433 = 0.1008 PPM	NO. 1483 = 0.0997 PPM	NO. 1533 = 0.0968 PPM	NO. 1583 = 0.1188 PPM
NO. 1434 = 0.1006 PPM	NO. 1484 = 0.0987 PPM	NO. 1534 = 0.0994 PPM	NO. 1584 = 0.1236 PPM
NO. 1435 = 0.0996 PPM	NO. 1485 = 0.0946 PPM	NO. 1535 = 0.1050 PPM	NO. 1585 = 0.1261 PPM
NO. 1436 = 0.0979 PPM	NO. 1486 = 0.0941 PPM	NO. 1536 = 0.1111 PPM	NO. 1586 = 0.1271 PPM
NO. 1437 = 0.0957 PPM	NO. 1487 = 0.0936 PPM	NO. 1537 = 0.1175 PPM	NO. 1587 = 0.1261 PPM
NO. 1438 = 0.0931 PPM	NO. 1488 = 0.0984 PPM	NO. 1538 = 0.1230 PPM	NO. 1588 = 0.1226 PPM
NO. 1439 = 0.0885 PPM	NO. 1489 = 0.1042 PPM	NO. 1539 = 0.1266 PPM	NO. 1589 = 0.1178 PPM
NO. 1440 = 0.0888 PPM	NO. 1490 = 0.1095 PPM	NO. 1540 = 0.1290 PPM	NO. 1590 = 0.1145 PPM
NO. 1441 = 0.0942 PPM	NO. 1491 = 0.1143 PPM	NO. 1541 = 0.1305 PPM	NO. 1591 = 0.1117 PPM
NO. 1442 = 0.1000 PPM	NO. 1492 = 0.1195 PPM	NO. 1542 = 0.1296 PPM	NO. 1592 = 0.1176 PPM
NO. 1443 = 0.1052 PPM	NO. 1493 = 0.1240 PPM	NO. 1543 = 0.1254 PPM	NO. 1593 = 0.1161 PPM
NO. 1444 = 0.1101 PPM	NO. 1494 = 0.1266 PPM	NO. 1544 = 0.1191 PPM	NO. 1594 = 0.1133 PPM
NO. 1445 = 0.1150 PPM	NO. 1495 = 0.1290 PPM	NO. 1545 = 0.1126 PPM	NO. 1595 = 0.1157 PPM
NO. 1446 = 0.1204 PPM	NO. 1496 = 0.1309 PPM	NO. 1546 = 0.1212 PPM	NO. 1596 = 0.1187 PPM
NO. 1447 = 0.1248 PPM	NO. 1497 = 0.1301 PPM	NO. 1547 = 0.1097 PPM	NO. 1597 = 0.1206 PPM
NO. 1448 = 0.1278 PPM	NO. 1498 = 0.1257 PPM	NO. 1548 = 0.1129 PPM	NO. 1598 = 0.1219 PPM
NO. 1449 = 0.1299 PPM	NO. 1499 = 0.1162 PPM	NO. 1549 = 0.1176 PPM	NO. 1599 = 0.1225 PPM
NO. 1450 = 0.1312 PPM	NO. 1500 = 0.1186 PPM	NO. 1550 = 0.1214 PPM	NO. 1600 = 0.1228 PPM

A-3. continued.

NO. 1601 = 0.1234 PPM	NO. 1651 = 0.1182 PPM	NO. 1701 = 0.1066 PPM	NO. 1751 = 0.1162 PPM
NO. 1602 = 0.1232 PPM	NO. 1652 = 0.1160 PPM	NO. 1702 = 0.1098 PPM	NO. 1752 = 0.1162 PPM
NO. 1603 = 0.1216 PPM	NO. 1653 = 0.1128 PPM	NO. 1703 = 0.1142 PPM	NO. 1753 = 0.1149 PPM
NO. 1604 = 0.1196 PPM	NO. 1654 = 0.1110 PPM	NO. 1704 = 0.1141 PPM	NO. 1754 = 0.1131 PPM
NO. 1605 = 0.1179 PPM	NO. 1655 = 0.1064 PPM	NO. 1705 = 0.1144 PPM	NO. 1755 = 0.1112 PPM
NO. 1606 = 0.1156 PPM	NO. 1656 = 0.1091 PPM	NO. 1706 = 0.1138 PPM	NO. 1756 = 0.1097 PPM
NO. 1607 = 0.1117 PPM	NO. 1657 = 0.1141 PPM	NO. 1707 = 0.1123 PPM	NO. 1757 = 0.1103 PPM
NO. 1608 = 0.1096 PPM	NO. 1658 = 0.1140 PPM	NO. 1708 = 0.1105 PPM	NO. 1758 = 0.1107 PPM
NO. 1609 = 0.1064 PPM	NO. 1659 = 0.1126 PPM	NO. 1709 = 0.1094 PPM	NO. 1759 = 0.1123 PPM
NO. 1610 = 0.1083 PPM	NO. 1660 = 0.1117 PPM	NO. 1710 = 0.1097 PPM	NO. 1760 = 0.1103 PPM
NO. 1611 = 0.1140 PPM	NO. 1661 = 0.1103 PPM	NO. 1711 = 0.1114 PPM	NO. 1761 = 0.1070 PPM
NO. 1612 = 0.1129 PPM	NO. 1662 = 0.1088 PPM	NO. 1712 = 0.1107 PPM	NO. 1762 = 0.1051 PPM
NO. 1613 = 0.1119 PPM	NO. 1663 = 0.1085 PPM	NO. 1713 = 0.1123 PPM	NO. 1763 = 0.1030 PPM
NO. 1614 = 0.1106 PPM	NO. 1664 = 0.1098 PPM	NO. 1714 = 0.1081 PPM	NO. 1764 = 0.1023 PPM
NO. 1615 = 0.1093 PPM	NO. 1665 = 0.1106 PPM	NO. 1715 = 0.1036 PPM	NO. 1765 = 0.1063 PPM
NO. 1616 = 0.1081 PPM	NO. 1666 = 0.1104 PPM	NO. 1716 = 0.1010 PPM	NO. 1766 = 0.1116 PPM
NO. 1617 = 0.1083 PPM	NO. 1667 = 0.1079 PPM	NO. 1717 = 0.1000 PPM	NO. 1767 = 0.1151 PPM
NO. 1618 = 0.1098 PPM	NO. 1668 = 0.1054 PPM	NO. 1718 = 0.1056 PPM	NO. 1768 = 0.1160 PPM
NO. 1619 = 0.1100 PPM	NO. 1669 = 0.1028 PPM	NO. 1719 = 0.1102 PPM	NO. 1769 = 0.1153 PPM
NO. 1620 = 0.1089 PPM	NO. 1670 = 0.1007 PPM	NO. 1720 = 0.1136 PPM	NO. 1770 = 0.1128 PPM
NO. 1621 = 0.1067 PPM	NO. 1671 = 0.0994 PPM	NO. 1721 = 0.1161 PPM	NO. 1771 = 0.1130 PPM
NO. 1622 = 0.1025 PPM	NO. 1672 = 0.1050 PPM	NO. 1722 = 0.1191 PPM	NO. 1772 = 0.1115 PPM
NO. 1623 = 0.1005 PPM	NO. 1673 = 0.1108 PPM	NO. 1723 = 0.1200 PPM	NO. 1773 = 0.1123 PPM
NO. 1624 = 0.1003 PPM	NO. 1674 = 0.1159 PPM	NO. 1724 = 0.1185 PPM	NO. 1774 = 0.1152 PPM
NO. 1625 = 0.0989 PPM	NO. 1675 = 0.1190 PPM	NO. 1725 = 0.1164 PPM	NO. 1775 = 0.1147 PPM
NO. 1626 = 0.1021 PPM	NO. 1676 = 0.1197 PPM	NO. 1726 = 0.1127 PPM	NO. 1776 = 0.1147 PPM
NO. 1627 = 0.1087 PPM	NO. 1677 = 0.1199 PPM	NO. 1727 = 0.1123 PPM	NO. 1777 = 0.1123 PPM
NO. 1628 = 0.1155 PPM	NO. 1678 = 0.1202 PPM	NO. 1728 = 0.1126 PPM	NO. 1778 = 0.1119 PPM
NO. 1629 = 0.1210 PPM	NO. 1679 = 0.1195 PPM	NO. 1729 = 0.1092 PPM	NO. 1779 = 0.1127 PPM
NO. 1630 = 0.1239 PPM	NO. 1680 = 0.1162 PPM	NO. 1730 = 0.1055 PPM	NO. 1780 = 0.1121 PPM
NO. 1631 = 0.1249 PPM	NO. 1681 = 0.1126 PPM	NO. 1731 = 0.1025 PPM	NO. 1781 = 0.1107 PPM
NO. 1632 = 0.1237 PPM	NO. 1682 = 0.1097 PPM	NO. 1732 = 0.1050 PPM	NO. 1782 = 0.1093 PPM
NO. 1633 = 0.1204 PPM	NO. 1683 = 0.1070 PPM	NO. 1733 = 0.1071 PPM	NO. 1783 = 0.1079 PPM
NO. 1634 = 0.1193 PPM	NO. 1684 = 0.1001 PPM	NO. 1734 = 0.1078 PPM	NO. 1784 = 0.1083 PPM
NO. 1635 = 0.1163 PPM	NO. 1685 = 0.1016 PPM	NO. 1735 = 0.1090 PPM	NO. 1785 = 0.1071 PPM
NO. 1636 = 0.1123 PPM	NO. 1686 = 0.1057 PPM	NO. 1736 = 0.1101 PPM	NO. 1786 = 0.1072 PPM
NO. 1637 = 0.1101 PPM	NO. 1687 = 0.1072 PPM	NO. 1737 = 0.1100 PPM	NO. 1787 = 0.1099 PPM
NO. 1638 = 0.1135 PPM	NO. 1688 = 0.1082 PPM	NO. 1738 = 0.1119 PPM	NO. 1788 = 0.1109 PPM
NO. 1639 = 0.1154 PPM	NO. 1689 = 0.1117 PPM	NO. 1739 = 0.1136 PPM	NO. 1789 = 0.1094 PPM
NO. 1640 = 0.1100 PPM	NO. 1690 = 0.1143 PPM	NO. 1740 = 0.1145 PPM	NO. 1790 = 0.1079 PPM
NO. 1641 = 0.1110 PPM	NO. 1691 = 0.1163 PPM	NO. 1741 = 0.1166 PPM	NO. 1791 = 0.1061 PPM
NO. 1642 = 0.1132 PPM	NO. 1692 = 0.1185 PPM	NO. 1742 = 0.1184 PPM	NO. 1792 = 0.1067 PPM
NO. 1643 = 0.1142 PPM	NO. 1693 = 0.1207 PPM	NO. 1743 = 0.1174 PPM	NO. 1793 = 0.1073 PPM
NO. 1644 = 0.1169 PPM	NO. 1694 = 0.1216 PPM	NO. 1744 = 0.1160 PPM	NO. 1794 = 0.1112 PPM
NO. 1645 = 0.1191 PPM	NO. 1695 = 0.1210 PPM	NO. 1745 = 0.1128 PPM	NO. 1795 = 0.0852 PPM
NO. 1646 = 0.1211 PPM	NO. 1696 = 0.1193 PPM	NO. 1746 = 0.1113 PPM	NO. 1796 = 0.1171 PPM
NO. 1647 = 0.1231 PPM	NO. 1697 = 0.1172 PPM	NO. 1747 = 0.1060 PPM	NO. 1797 = 0.1173 PPM
NO. 1648 = 0.1237 PPM	NO. 1698 = 0.1162 PPM	NO. 1748 = 0.1106 PPM	NO. 1798 = 0.1178 PPM
NO. 1649 = 0.1222 PPM	NO. 1699 = 0.1139 PPM	NO. 1749 = 0.1146 PPM	NO. 1799 = 0.1171 PPM
NO. 1650 = 0.1200 PPM	NO. 1700 = 0.1121 PPM	NO. 1750 = 0.1164 PPM	NO. 1800 = 0.1149 PPM

A-3. continued.

NO. 1801 = 0.1129 PPM
NO. 1802 = 0.1111 PPM
NO. 1803 = 0.1112 PPM
NO. 1804 = 0.1091 PPM
NO. 1805 = 0.1072 PPM
NO. 1806 = 0.1067 PPM
NO. 1807 = 0.1065 PPM
NO. 1808 = 0.1051 PPM
NO. 1809 = 0.1042 PPM
NO. 1810 = 0.1119 PPM
NO. 1811 = 0.1196 PPM
NO. 1812 = 0.1257 PPM
NO. 1813 = 0.1216 PPM
NO. 1814 = 0.1195 PPM
NO. 1815 = 0.1174 PPM
NO. 1816 = 0.1156 PPM
NO. 1817 = 0.1141 PPM
NO. 1818 = 0.1116 PPM
NO. 1819 = 0.1092 PPM
NO. 1820 = 0.1068 PPM
NO. 1821 = 0.1048 PPM
NO. 1822 = 0.1043 PPM
NO. 1823 = 0.1037 PPM
NO. 1824 = 0.1037 PPM
NO. 1825 = 0.1055 PPM
NO. 1826 = 0.1056 PPM
NO. 1827 = 0.1055 PPM
NO. 1828 = 0.1072 PPM
NO. 1829 = 0.1088 PPM
NO. 1830 = 0.1094 PPM
NO. 1831 = 0.1080 PPM
NO. 1832 = 0.1065 PPM
NO. 1833 = 0.1055 PPM
NO. 1834 = 0.1046 PPM
NO. 1835 = 0.1026 PPM
NO. 1836 = 0.1058 PPM
NO. 1837 = 0.1108 PPM
NO. 1838 = 0.1158 PPM
NO. 1839 = 0.1180 PPM
NO. 1840 = 0.0657 PPM

A-4. UAM-DWM max. values for July 9, 1988.

NO. 1 = 0.0683 PPM	NO. 51 = 0.0901 PPM	NO. 101 = 0.0931 PPM	NO. 151 = 0.0929 PPM
NO. 2 = 0.0846 PPM	NO. 52 = 0.0910 PPM	NO. 102 = 0.0934 PPM	NO. 152 = 0.0938 PPM
NO. 3 = 0.0864 PPM	NO. 53 = 0.0925 PPM	NO. 103 = 0.0939 PPM	NO. 153 = 0.0915 PPM
NO. 4 = 0.0883 PPM	NO. 54 = 0.0940 PPM	NO. 104 = 0.0943 PPM	NO. 154 = 0.0909 PPM
NO. 5 = 0.0890 PPM	NO. 55 = 0.0950 PPM	NO. 105 = 0.0937 PPM	NO. 155 = 0.0899 PPM
NO. 6 = 0.0901 PPM	NO. 56 = 0.0949 PPM	NO. 106 = 0.0950 PPM	NO. 156 = 0.0890 PPM
NO. 7 = 0.0917 PPM	NO. 57 = 0.0950 PPM	NO. 107 = 0.0928 PPM	NO. 157 = 0.0876 PPM
NO. 8 = 0.0933 PPM	NO. 58 = 0.0951 PPM	NO. 108 = 0.0920 PPM	NO. 158 = 0.0868 PPM
NO. 9 = 0.0945 PPM	NO. 59 = 0.0955 PPM	NO. 109 = 0.0911 PPM	NO. 159 = 0.0859 PPM
NO. 10 = 0.0946 PPM	NO. 60 = 0.0961 PPM	NO. 110 = 0.0902 PPM	NO. 160 = 0.0857 PPM
NO. 11 = 0.0947 PPM	NO. 61 = 0.0945 PPM	NO. 111 = 0.0891 PPM	NO. 161 = 0.0861 PPM
NO. 12 = 0.0948 PPM	NO. 62 = 0.0938 PPM	NO. 112 = 0.0881 PPM	NO. 162 = 0.0871 PPM
NO. 13 = 0.0949 PPM	NO. 63 = 0.0928 PPM	NO. 113 = 0.0868 PPM	NO. 163 = 0.0870 PPM
NO. 14 = 0.0943 PPM	NO. 64 = 0.0918 PPM	NO. 114 = 0.0905 PPM	NO. 164 = 0.0881 PPM
NO. 15 = 0.0935 PPM	NO. 65 = 0.0903 PPM	NO. 115 = 0.0920 PPM	NO. 165 = 0.0891 PPM
NO. 16 = 0.0927 PPM	NO. 66 = 0.0891 PPM	NO. 116 = 0.0926 PPM	NO. 166 = 0.0903 PPM
NO. 17 = 0.0920 PPM	NO. 67 = 0.0906 PPM	NO. 117 = 0.0920 PPM	NO. 167 = 0.0914 PPM
NO. 18 = 0.0910 PPM	NO. 68 = 0.0955 PPM	NO. 118 = 0.0916 PPM	NO. 168 = 0.0935 PPM
NO. 19 = 0.0893 PPM	NO. 69 = 0.0973 PPM	NO. 119 = 0.0912 PPM	NO. 169 = 0.0957 PPM
NO. 20 = 0.0890 PPM	NO. 70 = 0.0976 PPM	NO. 120 = 0.0915 PPM	NO. 170 = 0.0953 PPM
NO. 21 = 0.0941 PPM	NO. 71 = 0.0973 PPM	NO. 121 = 0.0935 PPM	NO. 171 = 0.0923 PPM
NO. 22 = 0.0993 PPM	NO. 72 = 0.0972 PPM	NO. 122 = 0.0959 PPM	NO. 172 = 0.0886 PPM
NO. 23 = 0.1017 PPM	NO. 73 = 0.0972 PPM	NO. 123 = 0.0976 PPM	NO. 173 = 0.0863 PPM
NO. 24 = 0.1023 PPM	NO. 74 = 0.0957 PPM	NO. 124 = 0.0961 PPM	NO. 174 = 0.0845 PPM
NO. 25 = 0.1028 PPM	NO. 75 = 0.0945 PPM	NO. 125 = 0.0935 PPM	NO. 175 = 0.0819 PPM
NO. 26 = 0.1034 PPM	NO. 76 = 0.0963 PPM	NO. 126 = 0.0917 PPM	NO. 176 = 0.0792 PPM
NO. 27 = 0.1038 PPM	NO. 77 = 0.0980 PPM	NO. 127 = 0.0893 PPM	NO. 177 = 0.0772 PPM
NO. 28 = 0.1008 PPM	NO. 78 = 0.0974 PPM	NO. 128 = 0.0873 PPM	NO. 178 = 0.0746 PPM
NO. 29 = 0.0978 PPM	NO. 79 = 0.0945 PPM	NO. 129 = 0.0851 PPM	NO. 179 = 0.0761 PPM
NO. 30 = 0.0974 PPM	NO. 80 = 0.0916 PPM	NO. 130 = 0.0824 PPM	NO. 180 = 0.0768 PPM
NO. 31 = 0.0997 PPM	NO. 81 = 0.0902 PPM	NO. 131 = 0.0782 PPM	NO. 181 = 0.0765 PPM
NO. 32 = 0.0987 PPM	NO. 82 = 0.0890 PPM	NO. 132 = 0.0766 PPM	NO. 182 = 0.0760 PPM
NO. 33 = 0.0950 PPM	NO. 83 = 0.0864 PPM	NO. 133 = 0.0777 PPM	NO. 183 = 0.0762 PPM
NO. 34 = 0.0926 PPM	NO. 84 = 0.0836 PPM	NO. 134 = 0.0783 PPM	NO. 184 = 0.0789 PPM
NO. 35 = 0.0915 PPM	NO. 85 = 0.0804 PPM	NO. 135 = 0.0779 PPM	NO. 185 = 0.0845 PPM
NO. 36 = 0.0908 PPM	NO. 86 = 0.0776 PPM	NO. 136 = 0.0775 PPM	NO. 186 = 0.0795 PPM
NO. 37 = 0.0879 PPM	NO. 87 = 0.0782 PPM	NO. 137 = 0.0777 PPM	NO. 187 = 0.0837 PPM
NO. 38 = 0.0848 PPM	NO. 88 = 0.0790 PPM	NO. 138 = 0.0771 PPM	NO. 188 = 0.0867 PPM
NO. 39 = 0.0818 PPM	NO. 89 = 0.0790 PPM	NO. 139 = 0.0837 PPM	NO. 189 = 0.0877 PPM
NO. 40 = 0.0788 PPM	NO. 90 = 0.0787 PPM	NO. 140 = 0.0809 PPM	NO. 190 = 0.0887 PPM
NO. 41 = 0.0771 PPM	NO. 91 = 0.0788 PPM	NO. 141 = 0.0844 PPM	NO. 191 = 0.0892 PPM
NO. 42 = 0.0771 PPM	NO. 92 = 0.0754 PPM	NO. 142 = 0.0872 PPM	NO. 192 = 0.0902 PPM
NO. 43 = 0.0771 PPM	NO. 93 = 0.0836 PPM	NO. 143 = 0.0884 PPM	NO. 193 = 0.0916 PPM
NO. 44 = 0.0771 PPM	NO. 94 = 0.0814 PPM	NO. 144 = 0.0893 PPM	NO. 194 = 0.0921 PPM
NO. 45 = 0.0773 PPM	NO. 95 = 0.0850 PPM	NO. 145 = 0.0902 PPM	NO. 195 = 0.0924 PPM
NO. 46 = 0.0816 PPM	NO. 96 = 0.0882 PPM	NO. 146 = 0.0912 PPM	NO. 196 = 0.0926 PPM
NO. 47 = 0.0835 PPM	NO. 97 = 0.0896 PPM	NO. 147 = 0.0920 PPM	NO. 197 = 0.0924 PPM
NO. 48 = 0.0815 PPM	NO. 98 = 0.0905 PPM	NO. 148 = 0.0929 PPM	NO. 198 = 0.0929 PPM
NO. 49 = 0.0851 PPM	NO. 99 = 0.0914 PPM	NO. 149 = 0.0932 PPM	NO. 199 = 0.0905 PPM
NO. 50 = 0.0884 PPM	NO. 100 = 0.0925 PPM	NO. 150 = 0.0934 PPM	NO. 200 = 0.0889 PPM

A-4. continued.

NO. 201 = 0.0887 PPM	NO. 251 = 0.0836 PPM	NO. 301 = 0.0806 PPM	NO. 351 = 0.0792 PPM
NO. 202 = 0.0884 PPM	NO. 252 = 0.0831 PPM	NO. 302 = 0.0821 PPM	NO. 352 = 0.0787 PPM
NO. 203 = 0.0874 PPM	NO. 253 = 0.0812 PPM	NO. 303 = 0.0828 PPM	NO. 353 = 0.0768 PPM
NO. 204 = 0.0858 PPM	NO. 254 = 0.0819 PPM	NO. 304 = 0.0836 PPM	NO. 354 = 0.0752 PPM
NO. 205 = 0.0846 PPM	NO. 255 = 0.0839 PPM	NO. 305 = 0.0842 PPM	NO. 355 = 0.0750 PPM
NO. 206 = 0.0843 PPM	NO. 256 = 0.0848 PPM	NO. 306 = 0.0817 PPM	NO. 356 = 0.0700 PPM
NO. 207 = 0.0828 PPM	NO. 257 = 0.0856 PPM	NO. 307 = 0.0826 PPM	NO. 357 = 0.0668 PPM
NO. 208 = 0.0851 PPM	NO. 258 = 0.0861 PPM	NO. 308 = 0.0819 PPM	NO. 358 = 0.0656 PPM
NO. 209 = 0.0858 PPM	NO. 259 = 0.0866 PPM	NO. 309 = 0.0812 PPM	NO. 359 = 0.0670 PPM
NO. 210 = 0.0866 PPM	NO. 260 = 0.0881 PPM	NO. 310 = 0.0759 PPM	NO. 360 = 0.0696 PPM
NO. 211 = 0.0874 PPM	NO. 261 = 0.0888 PPM	NO. 311 = 0.0724 PPM	NO. 361 = 0.0721 PPM
NO. 212 = 0.0888 PPM	NO. 262 = 0.0884 PPM	NO. 312 = 0.0699 PPM	NO. 362 = 0.0767 PPM
NO. 213 = 0.0903 PPM	NO. 263 = 0.0873 PPM	NO. 313 = 0.0679 PPM	NO. 363 = 0.0802 PPM
NO. 214 = 0.0902 PPM	NO. 264 = 0.0821 PPM	NO. 314 = 0.0691 PPM	NO. 364 = 0.0823 PPM
NO. 215 = 0.0913 PPM	NO. 265 = 0.0789 PPM	NO. 315 = 0.0681 PPM	NO. 365 = 0.0803 PPM
NO. 216 = 0.0924 PPM	NO. 266 = 0.0757 PPM	NO. 316 = 0.0724 PPM	NO. 366 = 0.0787 PPM
NO. 217 = 0.0907 PPM	NO. 267 = 0.0735 PPM	NO. 317 = 0.0765 PPM	NO. 367 = 0.0776 PPM
NO. 218 = 0.0862 PPM	NO. 268 = 0.0718 PPM	NO. 318 = 0.0786 PPM	NO. 368 = 0.0872 PPM
NO. 219 = 0.0836 PPM	NO. 269 = 0.0706 PPM	NO. 319 = 0.0768 PPM	NO. 369 = 0.0852 PPM
NO. 220 = 0.0810 PPM	NO. 270 = 0.0691 PPM	NO. 320 = 0.0753 PPM	NO. 370 = 0.0782 PPM
NO. 221 = 0.0784 PPM	NO. 271 = 0.0718 PPM	NO. 321 = 0.0762 PPM	NO. 371 = 0.0770 PPM
NO. 222 = 0.0757 PPM	NO. 272 = 0.0748 PPM	NO. 322 = 0.0850 PPM	NO. 372 = 0.0799 PPM
NO. 223 = 0.0734 PPM	NO. 273 = 0.0736 PPM	NO. 323 = 0.0846 PPM	NO. 373 = 0.0807 PPM
NO. 224 = 0.0717 PPM	NO. 274 = 0.0715 PPM	NO. 324 = 0.0777 PPM	NO. 374 = 0.0808 PPM
NO. 225 = 0.0735 PPM	NO. 275 = 0.0740 PPM	NO. 325 = 0.0786 PPM	NO. 375 = 0.0807 PPM
NO. 226 = 0.0747 PPM	NO. 276 = 0.0828 PPM	NO. 326 = 0.0815 PPM	NO. 376 = 0.0810 PPM
NO. 227 = 0.0748 PPM	NO. 277 = 0.0847 PPM	NO. 327 = 0.0827 PPM	NO. 377 = 0.0828 PPM
NO. 228 = 0.0743 PPM	NO. 278 = 0.0779 PPM	NO. 328 = 0.0835 PPM	NO. 378 = 0.0846 PPM
NO. 229 = 0.0743 PPM	NO. 279 = 0.0804 PPM	NO. 329 = 0.0838 PPM	NO. 379 = 0.0857 PPM
NO. 230 = 0.0808 PPM	NO. 280 = 0.0832 PPM	NO. 330 = 0.0846 PPM	NO. 380 = 0.0861 PPM
NO. 231 = 0.0848 PPM	NO. 281 = 0.0839 PPM	NO. 331 = 0.0861 PPM	NO. 381 = 0.0852 PPM
NO. 232 = 0.0786 PPM	NO. 282 = 0.0845 PPM	NO. 332 = 0.0865 PPM	NO. 382 = 0.0847 PPM
NO. 233 = 0.0821 PPM	NO. 283 = 0.0851 PPM	NO. 333 = 0.0869 PPM	NO. 383 = 0.0902 PPM
NO. 234 = 0.0849 PPM	NO. 284 = 0.0861 PPM	NO. 334 = 0.0872 PPM	NO. 384 = 0.0838 PPM
NO. 235 = 0.0861 PPM	NO. 285 = 0.0870 PPM	NO. 335 = 0.0871 PPM	NO. 385 = 0.0832 PPM
NO. 236 = 0.0869 PPM	NO. 286 = 0.0885 PPM	NO. 336 = 0.0876 PPM	NO. 386 = 0.0816 PPM
NO. 237 = 0.0875 PPM	NO. 287 = 0.0890 PPM	NO. 337 = 0.0853 PPM	NO. 387 = 0.0831 PPM
NO. 238 = 0.0885 PPM	NO. 288 = 0.0892 PPM	NO. 338 = 0.0891 PPM	NO. 388 = 0.0821 PPM
NO. 239 = 0.0897 PPM	NO. 289 = 0.0884 PPM	NO. 339 = 0.0862 PPM	NO. 389 = 0.0785 PPM
NO. 240 = 0.0897 PPM	NO. 290 = 0.0881 PPM	NO. 340 = 0.0843 PPM	NO. 390 = 0.0768 PPM
NO. 241 = 0.0898 PPM	NO. 291 = 0.0874 PPM	NO. 341 = 0.0835 PPM	NO. 391 = 0.0755 PPM
NO. 242 = 0.0900 PPM	NO. 292 = 0.0867 PPM	NO. 342 = 0.0825 PPM	NO. 392 = 0.0762 PPM
NO. 243 = 0.0902 PPM	NO. 293 = 0.0856 PPM	NO. 343 = 0.0811 PPM	NO. 393 = 0.0753 PPM
NO. 244 = 0.0908 PPM	NO. 294 = 0.0847 PPM	NO. 344 = 0.0791 PPM	NO. 394 = 0.0771 PPM
NO. 245 = 0.0894 PPM	NO. 295 = 0.0836 PPM	NO. 345 = 0.0772 PPM	NO. 395 = 0.0767 PPM
NO. 246 = 0.0881 PPM	NO. 296 = 0.0831 PPM	NO. 346 = 0.0774 PPM	NO. 396 = 0.0747 PPM
NO. 247 = 0.0876 PPM	NO. 297 = 0.0827 PPM	NO. 347 = 0.0767 PPM	NO. 397 = 0.0773 PPM
NO. 248 = 0.0870 PPM	NO. 298 = 0.0821 PPM	NO. 348 = 0.0782 PPM	NO. 398 = 0.0774 PPM
NO. 249 = 0.0861 PPM	NO. 299 = 0.0794 PPM	NO. 349 = 0.0795 PPM	NO. 399 = 0.0733 PPM
NO. 250 = 0.0850 PPM	NO. 300 = 0.0780 PPM	NO. 350 = 0.0802 PPM	NO. 400 = 0.0675 PPM

A-4. continued.

NO. 401 = 0.0678 PPM	NO. 451 = 0.0739 PPM	NO. 501 = 0.0897 PPM	NO. 551 = 0.0848 PPM
NO. 402 = 0.0664 PPM	NO. 452 = 0.0768 PPM	NO. 502 = 0.0921 PPM	NO. 552 = 0.0956 PPM
NO. 403 = 0.0678 PPM	NO. 453 = 0.0804 PPM	NO. 503 = 0.0884 PPM	NO. 553 = 0.0880 PPM
NO. 404 = 0.0678 PPM	NO. 454 = 0.0841 PPM	NO. 504 = 0.0850 PPM	NO. 554 = 0.0838 PPM
NO. 405 = 0.0693 PPM	NO. 455 = 0.0867 PPM	NO. 505 = 0.0824 PPM	NO. 555 = 0.0774 PPM
NO. 406 = 0.0721 PPM	NO. 456 = 0.0881 PPM	NO. 506 = 0.0935 PPM	NO. 556 = 0.0755 PPM
NO. 407 = 0.0761 PPM	NO. 457 = 0.0852 PPM	NO. 507 = 0.0865 PPM	NO. 557 = 0.0748 PPM
NO. 408 = 0.0805 PPM	NO. 458 = 0.0827 PPM	NO. 508 = 0.0825 PPM	NO. 558 = 0.0923 PPM
NO. 409 = 0.0835 PPM	NO. 459 = 0.0803 PPM	NO. 509 = 0.0776 PPM	NO. 559 = 0.0924 PPM
NO. 410 = 0.0854 PPM	NO. 460 = 0.0915 PPM	NO. 510 = 0.0735 PPM	NO. 560 = 0.0833 PPM
NO. 411 = 0.0840 PPM	NO. 461 = 0.0849 PPM	NO. 511 = 0.0764 PPM	NO. 561 = 0.0757 PPM
NO. 412 = 0.0813 PPM	NO. 462 = 0.0814 PPM	NO. 512 = 0.0842 PPM	NO. 562 = 0.0737 PPM
NO. 413 = 0.0793 PPM	NO. 463 = 0.0769 PPM	NO. 513 = 0.0781 PPM	NO. 563 = 0.0755 PPM
NO. 414 = 0.0894 PPM	NO. 464 = 0.0751 PPM	NO. 514 = 0.0748 PPM	NO. 564 = 0.0796 PPM
NO. 415 = 0.0842 PPM	NO. 465 = 0.0773 PPM	NO. 515 = 0.0725 PPM	NO. 565 = 0.0786 PPM
NO. 416 = 0.0797 PPM	NO. 466 = 0.0791 PPM	NO. 516 = 0.0736 PPM	NO. 566 = 0.0781 PPM
NO. 417 = 0.0760 PPM	NO. 467 = 0.0748 PPM	NO. 517 = 0.0759 PPM	NO. 567 = 0.0795 PPM
NO. 418 = 0.0775 PPM	NO. 468 = 0.0747 PPM	NO. 518 = 0.0775 PPM	NO. 568 = 0.0817 PPM
NO. 419 = 0.0785 PPM	NO. 469 = 0.0759 PPM	NO. 519 = 0.0762 PPM	NO. 569 = 0.0822 PPM
NO. 420 = 0.0783 PPM	NO. 470 = 0.0777 PPM	NO. 520 = 0.0779 PPM	NO. 570 = 0.0779 PPM
NO. 421 = 0.0783 PPM	NO. 471 = 0.0795 PPM	NO. 521 = 0.0802 PPM	NO. 571 = 0.0805 PPM
NO. 422 = 0.0784 PPM	NO. 472 = 0.0806 PPM	NO. 522 = 0.0828 PPM	NO. 572 = 0.0803 PPM
NO. 423 = 0.0797 PPM	NO. 473 = 0.0797 PPM	NO. 523 = 0.0840 PPM	NO. 573 = 0.0780 PPM
NO. 424 = 0.0810 PPM	NO. 474 = 0.0796 PPM	NO. 524 = 0.0787 PPM	NO. 574 = 0.0785 PPM
NO. 425 = 0.0828 PPM	NO. 475 = 0.0812 PPM	NO. 525 = 0.0819 PPM	NO. 575 = 0.0806 PPM
NO. 426 = 0.0832 PPM	NO. 476 = 0.0848 PPM	NO. 526 = 0.0818 PPM	NO. 576 = 0.0787 PPM
NO. 427 = 0.0819 PPM	NO. 477 = 0.0864 PPM	NO. 527 = 0.0770 PPM	NO. 577 = 0.0855 PPM
NO. 428 = 0.0828 PPM	NO. 478 = 0.0799 PPM	NO. 528 = 0.0778 PPM	NO. 578 = 0.0843 PPM
NO. 429 = 0.0973 PPM	NO. 479 = 0.0836 PPM	NO. 529 = 0.0788 PPM	NO. 579 = 0.0817 PPM
NO. 430 = 0.0962 PPM	NO. 480 = 0.0839 PPM	NO. 530 = 0.0778 PPM	NO. 580 = 0.0794 PPM
NO. 431 = 0.0942 PPM	NO. 481 = 0.0753 PPM	NO. 531 = 0.0859 PPM	NO. 581 = 0.0744 PPM
NO. 432 = 0.0828 PPM	NO. 482 = 0.0779 PPM	NO. 532 = 0.0861 PPM	NO. 582 = 0.0741 PPM
NO. 433 = 0.0854 PPM	NO. 483 = 0.0764 PPM	NO. 533 = 0.0850 PPM	NO. 583 = 0.0745 PPM
NO. 434 = 0.0895 PPM	NO. 484 = 0.0750 PPM	NO. 534 = 0.0830 PPM	NO. 584 = 0.0774 PPM
NO. 435 = 0.0809 PPM	NO. 485 = 0.0835 PPM	NO. 535 = 0.0747 PPM	NO. 585 = 0.0802 PPM
NO. 436 = 0.0804 PPM	NO. 486 = 0.0847 PPM	NO. 536 = 0.0726 PPM	NO. 586 = 0.0771 PPM
NO. 437 = 0.0763 PPM	NO. 487 = 0.0842 PPM	NO. 537 = 0.0724 PPM	NO. 587 = 0.0769 PPM
NO. 438 = 0.0745 PPM	NO. 488 = 0.0830 PPM	NO. 538 = 0.0702 PPM	NO. 588 = 0.0806 PPM
NO. 439 = 0.0797 PPM	NO. 489 = 0.0792 PPM	NO. 539 = 0.0761 PPM	NO. 589 = 0.0853 PPM
NO. 440 = 0.0802 PPM	NO. 490 = 0.0730 PPM	NO. 540 = 0.0757 PPM	NO. 590 = 0.0910 PPM
NO. 441 = 0.0812 PPM	NO. 491 = 0.0711 PPM	NO. 541 = 0.0739 PPM	NO. 591 = 0.0948 PPM
NO. 442 = 0.0797 PPM	NO. 492 = 0.0690 PPM	NO. 542 = 0.0773 PPM	NO. 592 = 0.0962 PPM
NO. 443 = 0.0798 PPM	NO. 493 = 0.0689 PPM	NO. 543 = 0.0814 PPM	NO. 593 = 0.0960 PPM
NO. 444 = 0.0777 PPM	NO. 494 = 0.0736 PPM	NO. 544 = 0.0865 PPM	NO. 594 = 0.0938 PPM
NO. 445 = 0.0701 PPM	NO. 495 = 0.0717 PPM	NO. 545 = 0.0899 PPM	NO. 595 = 0.0912 PPM
NO. 446 = 0.0671 PPM	NO. 496 = 0.0744 PPM	NO. 546 = 0.0921 PPM	NO. 596 = 0.0882 PPM
NO. 447 = 0.0666 PPM	NO. 497 = 0.0778 PPM	NO. 547 = 0.0925 PPM	NO. 597 = 0.0870 PPM
NO. 448 = 0.0690 PPM	NO. 498 = 0.0816 PPM	NO. 548 = 0.0935 PPM	NO. 598 = 0.0976 PPM
NO. 449 = 0.0699 PPM	NO. 499 = 0.0852 PPM	NO. 549 = 0.0896 PPM	NO. 599 = 0.0898 PPM
NO. 450 = 0.0717 PPM	NO. 500 = 0.0881 PPM	NO. 550 = 0.0865 PPM	NO. 600 = 0.0852 PPM

A-4. continued.

NO. 601 = 0.0781 PPM	NO. 651 = 0.0769 PPM	NO. 701 = 0.0720 PPM	NO. 751 = 0.0784 PPM
NO. 602 = 0.0742 PPM	NO. 652 = 0.0750 PPM	NO. 702 = 0.0764 PPM	NO. 752 = 0.0790 PPM
NO. 603 = 0.0732 PPM	NO. 653 = 0.0726 PPM	NO. 703 = 0.0774 PPM	NO. 753 = 0.0805 PPM
NO. 604 = 0.0846 PPM	NO. 654 = 0.0736 PPM	NO. 704 = 0.0777 PPM	NO. 754 = 0.0808 PPM
NO. 605 = 0.0821 PPM	NO. 655 = 0.0724 PPM	NO. 705 = 0.0772 PPM	NO. 755 = 0.0785 PPM
NO. 606 = 0.0779 PPM	NO. 656 = 0.0840 PPM	NO. 706 = 0.0780 PPM	NO. 756 = 0.0782 PPM
NO. 607 = 0.0733 PPM	NO. 657 = 0.0828 PPM	NO. 707 = 0.0791 PPM	NO. 757 = 0.0795 PPM
NO. 608 = 0.0736 PPM	NO. 658 = 0.0811 PPM	NO. 708 = 0.0796 PPM	NO. 758 = 0.0828 PPM
NO. 609 = 0.0748 PPM	NO. 659 = 0.0785 PPM	NO. 709 = 0.0781 PPM	NO. 759 = 0.0828 PPM
NO. 610 = 0.0804 PPM	NO. 660 = 0.0797 PPM	NO. 710 = 0.0780 PPM	NO. 760 = 0.0921 PPM
NO. 611 = 0.0795 PPM	NO. 661 = 0.0801 PPM	NO. 711 = 0.0783 PPM	NO. 761 = 0.0910 PPM
NO. 612 = 0.0788 PPM	NO. 662 = 0.0786 PPM	NO. 712 = 0.0831 PPM	NO. 762 = 0.0862 PPM
NO. 613 = 0.0789 PPM	NO. 663 = 0.0780 PPM	NO. 713 = 0.0838 PPM	NO. 763 = 0.0845 PPM
NO. 614 = 0.0807 PPM	NO. 664 = 0.0777 PPM	NO. 714 = 0.0901 PPM	NO. 764 = 0.0818 PPM
NO. 615 = 0.0807 PPM	NO. 665 = 0.0781 PPM	NO. 715 = 0.0889 PPM	NO. 765 = 0.0923 PPM
NO. 616 = 0.0777 PPM	NO. 666 = 0.0798 PPM	NO. 716 = 0.0843 PPM	NO. 766 = 0.0952 PPM
NO. 617 = 0.0792 PPM	NO. 667 = 0.0824 PPM	NO. 717 = 0.0787 PPM	NO. 767 = 0.0960 PPM
NO. 618 = 0.0790 PPM	NO. 668 = 0.0823 PPM	NO. 718 = 0.0798 PPM	NO. 768 = 0.0966 PPM
NO. 619 = 0.0777 PPM	NO. 669 = 0.0804 PPM	NO. 719 = 0.0797 PPM	NO. 769 = 0.0878 PPM
NO. 620 = 0.0792 PPM	NO. 670 = 0.0778 PPM	NO. 720 = 0.0872 PPM	NO. 770 = 0.0854 PPM
NO. 621 = 0.0819 PPM	NO. 671 = 0.0760 PPM	NO. 721 = 0.0948 PPM	NO. 771 = 0.0894 PPM
NO. 622 = 0.0808 PPM	NO. 672 = 0.0768 PPM	NO. 722 = 0.1002 PPM	NO. 772 = 0.0935 PPM
NO. 623 = 0.0802 PPM	NO. 673 = 0.0776 PPM	NO. 723 = 0.0929 PPM	NO. 773 = 0.0977 PPM
NO. 624 = 0.0781 PPM	NO. 674 = 0.0759 PPM	NO. 724 = 0.0824 PPM	NO. 774 = 0.1023 PPM
NO. 625 = 0.0738 PPM	NO. 675 = 0.0951 PPM	NO. 725 = 0.0862 PPM	NO. 775 = 0.1060 PPM
NO. 626 = 0.0746 PPM	NO. 676 = 0.1004 PPM	NO. 726 = 0.0907 PPM	NO. 776 = 0.1071 PPM
NO. 627 = 0.0762 PPM	NO. 677 = 0.0963 PPM	NO. 727 = 0.0956 PPM	NO. 777 = 0.1061 PPM
NO. 628 = 0.0761 PPM	NO. 678 = 0.0853 PPM	NO. 728 = 0.1000 PPM	NO. 778 = 0.1024 PPM
NO. 629 = 0.0794 PPM	NO. 679 = 0.0830 PPM	NO. 729 = 0.1041 PPM	NO. 779 = 0.0974 PPM
NO. 630 = 0.0861 PPM	NO. 680 = 0.0878 PPM	NO. 730 = 0.1054 PPM	NO. 780 = 0.0934 PPM
NO. 631 = 0.0842 PPM	NO. 681 = 0.0922 PPM	NO. 731 = 0.1047 PPM	NO. 781 = 0.0917 PPM
NO. 632 = 0.0787 PPM	NO. 682 = 0.0973 PPM	NO. 732 = 0.1016 PPM	NO. 782 = 0.1042 PPM
NO. 633 = 0.0801 PPM	NO. 683 = 0.1017 PPM	NO. 733 = 0.0969 PPM	NO. 783 = 0.0999 PPM
NO. 634 = 0.0843 PPM	NO. 684 = 0.1031 PPM	NO. 734 = 0.0921 PPM	NO. 784 = 0.1040 PPM
NO. 635 = 0.0894 PPM	NO. 685 = 0.1026 PPM	NO. 735 = 0.0903 PPM	NO. 785 = 0.1026 PPM
NO. 636 = 0.0945 PPM	NO. 686 = 0.1001 PPM	NO. 736 = 0.1027 PPM	NO. 786 = 0.0922 PPM
NO. 637 = 0.0987 PPM	NO. 687 = 0.0959 PPM	NO. 737 = 0.0968 PPM	NO. 787 = 0.0853 PPM
NO. 638 = 0.1000 PPM	NO. 688 = 0.0909 PPM	NO. 738 = 0.0960 PPM	NO. 788 = 0.0840 PPM
NO. 639 = 0.0996 PPM	NO. 689 = 0.0886 PPM	NO. 739 = 0.0853 PPM	NO. 789 = 0.0813 PPM
NO. 640 = 0.0973 PPM	NO. 690 = 0.1010 PPM	NO. 740 = 0.0786 PPM	NO. 790 = 0.0781 PPM
NO. 641 = 0.0936 PPM	NO. 691 = 0.0940 PPM	NO. 741 = 0.0805 PPM	NO. 791 = 0.0751 PPM
NO. 642 = 0.0896 PPM	NO. 692 = 0.0914 PPM	NO. 742 = 0.0809 PPM	NO. 792 = 0.0752 PPM
NO. 643 = 0.0874 PPM	NO. 693 = 0.0853 PPM	NO. 743 = 0.0796 PPM	NO. 793 = 0.0743 PPM
NO. 644 = 0.0993 PPM	NO. 694 = 0.0787 PPM	NO. 744 = 0.0781 PPM	NO. 794 = 0.0750 PPM
NO. 645 = 0.0919 PPM	NO. 695 = 0.0808 PPM	NO. 745 = 0.0771 PPM	NO. 795 = 0.0755 PPM
NO. 646 = 0.0874 PPM	NO. 696 = 0.0811 PPM	NO. 746 = 0.0759 PPM	NO. 796 = 0.0765 PPM
NO. 647 = 0.0787 PPM	NO. 697 = 0.0807 PPM	NO. 747 = 0.0713 PPM	NO. 797 = 0.0784 PPM
NO. 648 = 0.0739 PPM	NO. 698 = 0.0821 PPM	NO. 748 = 0.0757 PPM	NO. 798 = 0.0807 PPM
NO. 649 = 0.0769 PPM	NO. 699 = 0.0763 PPM	NO. 749 = 0.0765 PPM	NO. 799 = 0.0815 PPM
NO. 650 = 0.0814 PPM	NO. 700 = 0.0737 PPM	NO. 750 = 0.0775 PPM	NO. 800 = 0.0807 PPM

A-4. continued.

NO. 801 = 0.0787 PPM	NO. 851 = 0.0866 PPM	NO. 901 = 0.1071 PPM	NO. 951 = 0.0887 PPM
NO. 802 = 0.0791 PPM	NO. 852 = 0.1047 PPM	NO. 902 = 0.0991 PPM	NO. 952 = 0.0891 PPM
NO. 803 = 0.0824 PPM	NO. 853 = 0.1084 PPM	NO. 903 = 0.0978 PPM	NO. 953 = 0.0931 PPM
NO. 804 = 0.0857 PPM	NO. 854 = 0.1041 PPM	NO. 904 = 0.0927 PPM	NO. 954 = 0.0962 PPM
NO. 805 = 0.0826 PPM	NO. 855 = 0.0909 PPM	NO. 905 = 0.0909 PPM	NO. 955 = 0.1003 PPM
NO. 806 = 0.0985 PPM	NO. 856 = 0.1005 PPM	NO. 906 = 0.0873 PPM	NO. 956 = 0.1050 PPM
NO. 807 = 0.0993 PPM	NO. 857 = 0.1032 PPM	NO. 907 = 0.0896 PPM	NO. 957 = 0.1093 PPM
NO. 808 = 0.0932 PPM	NO. 858 = 0.0981 PPM	NO. 908 = 0.0929 PPM	NO. 958 = 0.1128 PPM
NO. 809 = 0.0866 PPM	NO. 859 = 0.0964 PPM	NO. 909 = 0.0974 PPM	NO. 959 = 0.1150 PPM
NO. 810 = 0.0891 PPM	NO. 860 = 0.0917 PPM	NO. 910 = 0.1020 PPM	NO. 960 = 0.1149 PPM
NO. 811 = 0.1016 PPM	NO. 861 = 0.0868 PPM	NO. 911 = 0.1064 PPM	NO. 961 = 0.1127 PPM
NO. 812 = 0.1013 PPM	NO. 862 = 0.0903 PPM	NO. 912 = 0.1101 PPM	NO. 962 = 0.1089 PPM
NO. 813 = 0.0985 PPM	NO. 863 = 0.0947 PPM	NO. 913 = 0.1125 PPM	NO. 963 = 0.1056 PPM
NO. 814 = 0.0945 PPM	NO. 864 = 0.0990 PPM	NO. 914 = 0.1123 PPM	NO. 964 = 0.1046 PPM
NO. 815 = 0.0842 PPM	NO. 865 = 0.1033 PPM	NO. 915 = 0.1097 PPM	NO. 965 = 0.0996 PPM
NO. 816 = 0.0879 PPM	NO. 866 = 0.1072 PPM	NO. 916 = 0.1059 PPM	NO. 966 = 0.1085 PPM
NO. 817 = 0.0921 PPM	NO. 867 = 0.1099 PPM	NO. 917 = 0.1020 PPM	NO. 967 = 0.1100 PPM
NO. 818 = 0.0964 PPM	NO. 868 = 0.1101 PPM	NO. 918 = 0.0981 PPM	NO. 968 = 0.1137 PPM
NO. 819 = 0.1004 PPM	NO. 869 = 0.1078 PPM	NO. 919 = 0.0955 PPM	NO. 969 = 0.1053 PPM
NO. 820 = 0.1043 PPM	NO. 870 = 0.1037 PPM	NO. 920 = 0.1078 PPM	NO. 970 = 0.0933 PPM
NO. 821 = 0.1076 PPM	NO. 871 = 0.0997 PPM	NO. 921 = 0.1101 PPM	NO. 971 = 0.0858 PPM
NO. 822 = 0.1086 PPM	NO. 872 = 0.0961 PPM	NO. 922 = 0.1160 PPM	NO. 972 = 0.0871 PPM
NO. 823 = 0.1066 PPM	NO. 873 = 0.0943 PPM	NO. 923 = 0.1100 PPM	NO. 973 = 0.0854 PPM
NO. 824 = 0.1028 PPM	NO. 874 = 0.1066 PPM	NO. 924 = 0.0973 PPM	NO. 974 = 0.0805 PPM
NO. 825 = 0.0985 PPM	NO. 875 = 0.1092 PPM	NO. 925 = 0.0879 PPM	NO. 975 = 0.0761 PPM
NO. 826 = 0.0948 PPM	NO. 876 = 0.1147 PPM	NO. 926 = 0.0876 PPM	NO. 976 = 0.0767 PPM
NO. 827 = 0.0933 PPM	NO. 877 = 0.1162 PPM	NO. 927 = 0.0857 PPM	NO. 977 = 0.0807 PPM
NO. 828 = 0.1054 PPM	NO. 878 = 0.1069 PPM	NO. 928 = 0.0805 PPM	NO. 978 = 0.0807 PPM
NO. 829 = 0.1045 PPM	NO. 879 = 0.0942 PPM	NO. 929 = 0.0762 PPM	NO. 979 = 0.0823 PPM
NO. 830 = 0.1049 PPM	NO. 880 = 0.0913 PPM	NO. 930 = 0.0758 PPM	NO. 980 = 0.0844 PPM
NO. 831 = 0.0987 PPM	NO. 881 = 0.0862 PPM	NO. 931 = 0.0791 PPM	NO. 981 = 0.0861 PPM
NO. 832 = 0.1086 PPM	NO. 882 = 0.0802 PPM	NO. 932 = 0.0792 PPM	NO. 982 = 0.0862 PPM
NO. 833 = 0.1015 PPM	NO. 883 = 0.0737 PPM	NO. 933 = 0.0798 PPM	NO. 983 = 0.0850 PPM
NO. 834 = 0.0909 PPM	NO. 884 = 0.0743 PPM	NO. 934 = 0.0813 PPM	NO. 984 = 0.0827 PPM
NO. 835 = 0.0846 PPM	NO. 885 = 0.0773 PPM	NO. 935 = 0.0842 PPM	NO. 985 = 0.0817 PPM
NO. 836 = 0.0789 PPM	NO. 886 = 0.0773 PPM	NO. 936 = 0.0859 PPM	NO. 986 = 0.0814 PPM
NO. 837 = 0.0744 PPM	NO. 887 = 0.0810 PPM	NO. 937 = 0.0842 PPM	NO. 987 = 0.0796 PPM
NO. 838 = 0.0748 PPM	NO. 888 = 0.0822 PPM	NO. 938 = 0.0836 PPM	NO. 988 = 0.0918 PPM
NO. 839 = 0.0745 PPM	NO. 889 = 0.0822 PPM	NO. 939 = 0.0844 PPM	NO. 989 = 0.1049 PPM
NO. 840 = 0.0765 PPM	NO. 890 = 0.0839 PPM	NO. 940 = 0.0852 PPM	NO. 990 = 0.1361 PPM
NO. 841 = 0.0793 PPM	NO. 891 = 0.0829 PPM	NO. 941 = 0.0827 PPM	NO. 991 = 0.1391 PPM
NO. 842 = 0.0822 PPM	NO. 892 = 0.0824 PPM	NO. 942 = 0.0938 PPM	NO. 992 = 0.1315 PPM
NO. 843 = 0.0820 PPM	NO. 893 = 0.0822 PPM	NO. 943 = 0.1053 PPM	NO. 993 = 0.1194 PPM
NO. 844 = 0.0833 PPM	NO. 894 = 0.0791 PPM	NO. 944 = 0.1234 PPM	NO. 994 = 0.1002 PPM
NO. 845 = 0.0846 PPM	NO. 895 = 0.0866 PPM	NO. 945 = 0.1181 PPM	NO. 995 = 0.0951 PPM
NO. 846 = 0.0845 PPM	NO. 896 = 0.0924 PPM	NO. 946 = 0.1093 PPM	NO. 996 = 0.0957 PPM
NO. 847 = 0.0817 PPM	NO. 897 = 0.0946 PPM	NO. 947 = 0.1006 PPM	NO. 997 = 0.0982 PPM
NO. 848 = 0.0795 PPM	NO. 898 = 0.1041 PPM	NO. 948 = 0.0932 PPM	NO. 998 = 0.0945 PPM
NO. 849 = 0.0849 PPM	NO. 899 = 0.1137 PPM	NO. 949 = 0.0964 PPM	NO. 999 = 0.0981 PPM
NO. 850 = 0.0861 PPM	NO. 900 = 0.1075 PPM	NO. 950 = 0.0935 PPM	NO. 1000 = 0.0999 PPM

A-4. continued.

NO. 1001 = 0.1034 PPM	NO. 1051 = 0.1202 PPM	NO. 1101 = 0.1111 PPM	NO. 1151 = 0.1130 PPM
NO. 1002 = 0.1077 PPM	NO. 1052 = 0.1203 PPM	NO. 1102 = 0.1049 PPM	NO. 1152 = 0.1125 PPM
NO. 1003 = 0.1123 PPM	NO. 1053 = 0.1180 PPM	NO. 1103 = 0.1004 PPM	NO. 1153 = 0.1001 PPM
NO. 1004 = 0.1155 PPM	NO. 1054 = 0.1146 PPM	NO. 1104 = 0.1097 PPM	NO. 1154 = 0.0894 PPM
NO. 1005 = 0.1178 PPM	NO. 1055 = 0.1087 PPM	NO. 1105 = 0.1117 PPM	NO. 1155 = 0.0935 PPM
NO. 1006 = 0.1176 PPM	NO. 1056 = 0.1039 PPM	NO. 1106 = 0.1129 PPM	NO. 1156 = 0.0940 PPM
NO. 1007 = 0.1162 PPM	NO. 1057 = 0.1023 PPM	NO. 1107 = 0.1016 PPM	NO. 1157 = 0.1002 PPM
NO. 1008 = 0.1130 PPM	NO. 1058 = 0.1093 PPM	NO. 1108 = 0.0893 PPM	NO. 1158 = 0.1017 PPM
NO. 1009 = 0.1098 PPM	NO. 1059 = 0.1105 PPM	NO. 1109 = 0.0923 PPM	NO. 1159 = 0.1042 PPM
NO. 1010 = 0.1058 PPM	NO. 1060 = 0.1126 PPM	NO. 1110 = 0.0941 PPM	NO. 1160 = 0.1065 PPM
NO. 1011 = 0.1051 PPM	NO. 1061 = 0.1021 PPM	NO. 1111 = 0.0940 PPM	NO. 1161 = 0.0955 PPM
NO. 1012 = 0.1089 PPM	NO. 1062 = 0.0898 PPM	NO. 1112 = 0.0970 PPM	NO. 1162 = 0.0913 PPM
NO. 1013 = 0.1098 PPM	NO. 1063 = 0.0896 PPM	NO. 1113 = 0.0999 PPM	NO. 1163 = 0.0915 PPM
NO. 1014 = 0.1127 PPM	NO. 1064 = 0.0908 PPM	NO. 1114 = 0.0895 PPM	NO. 1164 = 0.0919 PPM
NO. 1015 = 0.1039 PPM	NO. 1065 = 0.0914 PPM	NO. 1115 = 0.0896 PPM	NO. 1165 = 0.0918 PPM
NO. 1016 = 0.0916 PPM	NO. 1066 = 0.0940 PPM	NO. 1116 = 0.0888 PPM	NO. 1166 = 0.0903 PPM
NO. 1017 = 0.0874 PPM	NO. 1067 = 0.0858 PPM	NO. 1117 = 0.0895 PPM	NO. 1167 = 0.0879 PPM
NO. 1018 = 0.0887 PPM	NO. 1068 = 0.0820 PPM	NO. 1118 = 0.0908 PPM	NO. 1168 = 0.0841 PPM
NO. 1019 = 0.0887 PPM	NO. 1069 = 0.0864 PPM	NO. 1119 = 0.0911 PPM	NO. 1169 = 0.0820 PPM
NO. 1020 = 0.0843 PPM	NO. 1070 = 0.0856 PPM	NO. 1120 = 0.0898 PPM	NO. 1170 = 0.0802 PPM
NO. 1021 = 0.0797 PPM	NO. 1071 = 0.0870 PPM	NO. 1121 = 0.0874 PPM	NO. 1171 = 0.0794 PPM
NO. 1022 = 0.0789 PPM	NO. 1072 = 0.0890 PPM	NO. 1122 = 0.0833 PPM	NO. 1172 = 0.0911 PPM
NO. 1023 = 0.0832 PPM	NO. 1073 = 0.0901 PPM	NO. 1123 = 0.0810 PPM	NO. 1173 = 0.0978 PPM
NO. 1024 = 0.0829 PPM	NO. 1074 = 0.0893 PPM	NO. 1124 = 0.0794 PPM	NO. 1174 = 0.1156 PPM
NO. 1025 = 0.0842 PPM	NO. 1075 = 0.0869 PPM	NO. 1125 = 0.0790 PPM	NO. 1175 = 0.1245 PPM
NO. 1026 = 0.0864 PPM	NO. 1076 = 0.0835 PPM	NO. 1126 = 0.0907 PPM	NO. 1176 = 0.1240 PPM
NO. 1027 = 0.0886 PPM	NO. 1077 = 0.0809 PPM	NO. 1127 = 0.0957 PPM	NO. 1177 = 0.1171 PPM
NO. 1028 = 0.0882 PPM	NO. 1078 = 0.0796 PPM	NO. 1128 = 0.1114 PPM	NO. 1178 = 0.1069 PPM
NO. 1029 = 0.0858 PPM	NO. 1079 = 0.0784 PPM	NO. 1129 = 0.1288 PPM	NO. 1179 = 0.1000 PPM
NO. 1030 = 0.0833 PPM	NO. 1080 = 0.0896 PPM	NO. 1130 = 0.1255 PPM	NO. 1180 = 0.0951 PPM
NO. 1031 = 0.0801 PPM	NO. 1081 = 0.0941 PPM	NO. 1131 = 0.1152 PPM	NO. 1181 = 0.1035 PPM
NO. 1032 = 0.0794 PPM	NO. 1082 = 0.1123 PPM	NO. 1132 = 0.1074 PPM	NO. 1182 = 0.1068 PPM
NO. 1033 = 0.0782 PPM	NO. 1083 = 0.1238 PPM	NO. 1133 = 0.1008 PPM	NO. 1183 = 0.1192 PPM
NO. 1034 = 0.0904 PPM	NO. 1084 = 0.1285 PPM	NO. 1134 = 0.1005 PPM	NO. 1184 = 0.1158 PPM
NO. 1035 = 0.0916 PPM	NO. 1085 = 0.1164 PPM	NO. 1135 = 0.0895 PPM	NO. 1185 = 0.1129 PPM
NO. 1036 = 0.1104 PPM	NO. 1086 = 0.1066 PPM	NO. 1136 = 0.1065 PPM	NO. 1186 = 0.1165 PPM
NO. 1037 = 0.1240 PPM	NO. 1087 = 0.1032 PPM	NO. 1137 = 0.1210 PPM	NO. 1187 = 0.1205 PPM
NO. 1038 = 0.1244 PPM	NO. 1088 = 0.0995 PPM	NO. 1138 = 0.1220 PPM	NO. 1188 = 0.1232 PPM
NO. 1039 = 0.1121 PPM	NO. 1089 = 0.1159 PPM	NO. 1139 = 0.1112 PPM	NO. 1189 = 0.1243 PPM
NO. 1040 = 0.1031 PPM	NO. 1090 = 0.1125 PPM	NO. 1140 = 0.1147 PPM	NO. 1190 = 0.1236 PPM
NO. 1041 = 0.1047 PPM	NO. 1091 = 0.1123 PPM	NO. 1141 = 0.1184 PPM	NO. 1191 = 0.1215 PPM
NO. 1042 = 0.1095 PPM	NO. 1092 = 0.1070 PPM	NO. 1142 = 0.1215 PPM	NO. 1192 = 0.1172 PPM
NO. 1043 = 0.1140 PPM	NO. 1093 = 0.1086 PPM	NO. 1143 = 0.1228 PPM	NO. 1193 = 0.1114 PPM
NO. 1044 = 0.1147 PPM	NO. 1094 = 0.1124 PPM	NO. 1144 = 0.1226 PPM	NO. 1194 = 0.1075 PPM
NO. 1045 = 0.1209 PPM	NO. 1095 = 0.1164 PPM	NO. 1145 = 0.1208 PPM	NO. 1195 = 0.1022 PPM
NO. 1046 = 0.1185 PPM	NO. 1096 = 0.1195 PPM	NO. 1146 = 0.1165 PPM	NO. 1196 = 0.1085 PPM
NO. 1047 = 0.1106 PPM	NO. 1097 = 0.1220 PPM	NO. 1147 = 0.1112 PPM	NO. 1197 = 0.1150 PPM
NO. 1048 = 0.1115 PPM	NO. 1098 = 0.1213 PPM	NO. 1148 = 0.1061 PPM	NO. 1198 = 0.1128 PPM
NO. 1049 = 0.1145 PPM	NO. 1099 = 0.1198 PPM	NO. 1149 = 0.1017 PPM	NO. 1199 = 0.0985 PPM
NO. 1050 = 0.1181 PPM	NO. 1100 = 0.1159 PPM	NO. 1150 = 0.1091 PPM	NO. 1200 = 0.0869 PPM

A-4. continued.

NO. 1201 = 0.0905 PPM	NO. 1251 = 0.1041 PPM	NO. 1301 = 0.0945 PPM	NO. 1351 = 0.0961 PPM
NO. 1202 = 0.0936 PPM	NO. 1252 = 0.1047 PPM	NO. 1302 = 0.0968 PPM	NO. 1352 = 0.0916 PPM
NO. 1203 = 0.1106 PPM	NO. 1253 = 0.1099 PPM	NO. 1303 = 0.0962 PPM	NO. 1353 = 0.0879 PPM
NO. 1204 = 0.0830 PPM	NO. 1254 = 0.0991 PPM	NO. 1304 = 0.0940 PPM	NO. 1354 = 0.0871 PPM
NO. 1205 = 0.0961 PPM	NO. 1255 = 0.0932 PPM	NO. 1305 = 0.0916 PPM	NO. 1355 = 0.0830 PPM
NO. 1206 = 0.0925 PPM	NO. 1256 = 0.0940 PPM	NO. 1306 = 0.0908 PPM	NO. 1356 = 0.0876 PPM
NO. 1207 = 0.0984 PPM	NO. 1257 = 0.0936 PPM	NO. 1307 = 0.0878 PPM	NO. 1357 = 0.0892 PPM
NO. 1208 = 0.1024 PPM	NO. 1258 = 0.0924 PPM	NO. 1308 = 0.0873 PPM	NO. 1358 = 0.1092 PPM
NO. 1209 = 0.0924 PPM	NO. 1259 = 0.0900 PPM	NO. 1309 = 0.0838 PPM	NO. 1359 = 0.1141 PPM
NO. 1210 = 0.0926 PPM	NO. 1260 = 0.0875 PPM	NO. 1310 = 0.0867 PPM	NO. 1360 = 0.1053 PPM
NO. 1211 = 0.0926 PPM	NO. 1261 = 0.0855 PPM	NO. 1311 = 0.0941 PPM	NO. 1361 = 0.1006 PPM
NO. 1212 = 0.0914 PPM	NO. 1262 = 0.0858 PPM	NO. 1312 = 0.1109 PPM	NO. 1362 = 0.0936 PPM
NO. 1213 = 0.0887 PPM	NO. 1263 = 0.0858 PPM	NO. 1313 = 0.1184 PPM	NO. 1363 = 0.0920 PPM
NO. 1214 = 0.0857 PPM	NO. 1264 = 0.0880 PPM	NO. 1314 = 0.1083 PPM	NO. 1364 = 0.0957 PPM
NO. 1215 = 0.0828 PPM	NO. 1265 = 0.0971 PPM	NO. 1315 = 0.1038 PPM	NO. 1365 = 0.1028 PPM
NO. 1216 = 0.0826 PPM	NO. 1266 = 0.1161 PPM	NO. 1316 = 0.0959 PPM	NO. 1366 = 0.1091 PPM
NO. 1217 = 0.0835 PPM	NO. 1267 = 0.1231 PPM	NO. 1317 = 0.0939 PPM	NO. 1367 = 0.1144 PPM
NO. 1218 = 0.0897 PPM	NO. 1268 = 0.1132 PPM	NO. 1318 = 0.0942 PPM	NO. 1368 = 0.1192 PPM
NO. 1219 = 0.0971 PPM	NO. 1269 = 0.1061 PPM	NO. 1319 = 0.1008 PPM	NO. 1369 = 0.1232 PPM
NO. 1220 = 0.1191 PPM	NO. 1270 = 0.0995 PPM	NO. 1320 = 0.1067 PPM	NO. 1370 = 0.1268 PPM
NO. 1221 = 0.1227 PPM	NO. 1271 = 0.0971 PPM	NO. 1321 = 0.1118 PPM	NO. 1371 = 0.1301 PPM
NO. 1222 = 0.1200 PPM	NO. 1272 = 0.0926 PPM	NO. 1322 = 0.1163 PPM	NO. 1372 = 0.1309 PPM
NO. 1223 = 0.1111 PPM	NO. 1273 = 0.0987 PPM	NO. 1323 = 0.1210 PPM	NO. 1373 = 0.1294 PPM
NO. 1224 = 0.1022 PPM	NO. 1274 = 0.1082 PPM	NO. 1324 = 0.1248 PPM	NO. 1374 = 0.1273 PPM
NO. 1225 = 0.0987 PPM	NO. 1275 = 0.1158 PPM	NO. 1325 = 0.1278 PPM	NO. 1375 = 0.1249 PPM
NO. 1226 = 0.0953 PPM	NO. 1276 = 0.1134 PPM	NO. 1326 = 0.1292 PPM	NO. 1376 = 0.1209 PPM
NO. 1227 = 0.0986 PPM	NO. 1277 = 0.1176 PPM	NO. 1327 = 0.1285 PPM	NO. 1377 = 0.1160 PPM
NO. 1228 = 0.1077 PPM	NO. 1278 = 0.1216 PPM	NO. 1328 = 0.1268 PPM	NO. 1378 = 0.1127 PPM
NO. 1229 = 0.1184 PPM	NO. 1279 = 0.1251 PPM	NO. 1329 = 0.1240 PPM	NO. 1379 = 0.1060 PPM
NO. 1230 = 0.1131 PPM	NO. 1280 = 0.1271 PPM	NO. 1330 = 0.1196 PPM	NO. 1380 = 0.1066 PPM
NO. 1231 = 0.1153 PPM	NO. 1281 = 0.1271 PPM	NO. 1331 = 0.1151 PPM	NO. 1381 = 0.1148 PPM
NO. 1232 = 0.1189 PPM	NO. 1282 = 0.1257 PPM	NO. 1332 = 0.1114 PPM	NO. 1382 = 0.1082 PPM
NO. 1233 = 0.1226 PPM	NO. 1283 = 0.1226 PPM	NO. 1333 = 0.1049 PPM	NO. 1383 = 0.0941 PPM
NO. 1234 = 0.1250 PPM	NO. 1284 = 0.1182 PPM	NO. 1334 = 0.1070 PPM	NO. 1384 = 0.0857 PPM
NO. 1235 = 0.1256 PPM	NO. 1285 = 0.1138 PPM	NO. 1335 = 0.1141 PPM	NO. 1385 = 0.0886 PPM
NO. 1236 = 0.1245 PPM	NO. 1286 = 0.1099 PPM	NO. 1336 = 0.1099 PPM	NO. 1386 = 0.0916 PPM
NO. 1237 = 0.1218 PPM	NO. 1287 = 0.1039 PPM	NO. 1337 = 0.0947 PPM	NO. 1387 = 0.0941 PPM
NO. 1238 = 0.1173 PPM	NO. 1288 = 0.1074 PPM	NO. 1338 = 0.0853 PPM	NO. 1388 = 0.0997 PPM
NO. 1239 = 0.1124 PPM	NO. 1289 = 0.1134 PPM	NO. 1339 = 0.0874 PPM	NO. 1389 = 0.1081 PPM
NO. 1240 = 0.1084 PPM	NO. 1290 = 0.1116 PPM	NO. 1340 = 0.0910 PPM	NO. 1390 = 0.1040 PPM
NO. 1241 = 0.1029 PPM	NO. 1291 = 0.0957 PPM	NO. 1341 = 0.0935 PPM	NO. 1391 = 0.0991 PPM
NO. 1242 = 0.1079 PPM	NO. 1292 = 0.0855 PPM	NO. 1342 = 0.0984 PPM	NO. 1392 = 0.0974 PPM
NO. 1243 = 0.1155 PPM	NO. 1293 = 0.0853 PPM	NO. 1343 = 0.1081 PPM	NO. 1393 = 0.1004 PPM
NO. 1244 = 0.1132 PPM	NO. 1294 = 0.0875 PPM	NO. 1344 = 0.1085 PPM	NO. 1394 = 0.0956 PPM
NO. 1245 = 0.0974 PPM	NO. 1295 = 0.0942 PPM	NO. 1345 = 0.1006 PPM	NO. 1395 = 0.0973 PPM
NO. 1246 = 0.0858 PPM	NO. 1296 = 0.0945 PPM	NO. 1346 = 0.0944 PPM	NO. 1396 = 0.0980 PPM
NO. 1247 = 0.0838 PPM	NO. 1297 = 0.1011 PPM	NO. 1347 = 0.0968 PPM	NO. 1397 = 0.0955 PPM
NO. 1248 = 0.0898 PPM	NO. 1298 = 0.1105 PPM	NO. 1348 = 0.0993 PPM	NO. 1398 = 0.0927 PPM
NO. 1249 = 0.0965 PPM	NO. 1299 = 0.1059 PPM	NO. 1349 = 0.1001 PPM	NO. 1399 = 0.0905 PPM
NO. 1250 = 0.1073 PPM	NO. 1300 = 0.0935 PPM	NO. 1350 = 0.0977 PPM	NO. 1400 = 0.0886 PPM

A-4. continued.

NO. 1401 = 0.0863 PPM	NO. 1451 = 0.1074 PPM	NO. 1501 = 0.0951 PPM	NO. 1551 = 0.1205 PPM
NO. 1402 = 0.0866 PPM	NO. 1452 = 0.1005 PPM	NO. 1502 = 0.1018 PPM	NO. 1552 = 0.1236 PPM
NO. 1403 = 0.0836 PPM	NO. 1453 = 0.0952 PPM	NO. 1503 = 0.1093 PPM	NO. 1553 = 0.1257 PPM
NO. 1404 = 0.1016 PPM	NO. 1454 = 0.0949 PPM	NO. 1504 = 0.1164 PPM	NO. 1554 = 0.1272 PPM
NO. 1405 = 0.1108 PPM	NO. 1455 = 0.1039 PPM	NO. 1505 = 0.1213 PPM	NO. 1555 = 0.1288 PPM
NO. 1406 = 0.1027 PPM	NO. 1456 = 0.1029 PPM	NO. 1506 = 0.1247 PPM	NO. 1556 = 0.1288 PPM
NO. 1407 = 0.0980 PPM	NO. 1457 = 0.1076 PPM	NO. 1507 = 0.1270 PPM	NO. 1557 = 0.1267 PPM
NO. 1408 = 0.0980 PPM	NO. 1458 = 0.1147 PPM	NO. 1508 = 0.1290 PPM	NO. 1558 = 0.1230 PPM
NO. 1409 = 0.0957 PPM	NO. 1459 = 0.1200 PPM	NO. 1509 = 0.1307 PPM	NO. 1559 = 0.1201 PPM
NO. 1410 = 0.0980 PPM	NO. 1460 = 0.1239 PPM	NO. 1510 = 0.1306 PPM	NO. 1560 = 0.1184 PPM
NO. 1411 = 0.1053 PPM	NO. 1461 = 0.1269 PPM	NO. 1511 = 0.1283 PPM	NO. 1561 = 0.1158 PPM
NO. 1412 = 0.1123 PPM	NO. 1462 = 0.1292 PPM	NO. 1512 = 0.1250 PPM	NO. 1562 = 0.1134 PPM
NO. 1413 = 0.1180 PPM	NO. 1463 = 0.1313 PPM	NO. 1513 = 0.1218 PPM	NO. 1563 = 0.1046 PPM
NO. 1414 = 0.1221 PPM	NO. 1464 = 0.1314 PPM	NO. 1514 = 0.1204 PPM	NO. 1564 = 0.1077 PPM
NO. 1415 = 0.1253 PPM	NO. 1465 = 0.1292 PPM	NO. 1515 = 0.1168 PPM	NO. 1565 = 0.1147 PPM
NO. 1416 = 0.1283 PPM	NO. 1466 = 0.1264 PPM	NO. 1516 = 0.1144 PPM	NO. 1566 = 0.0998 PPM
NO. 1417 = 0.1308 PPM	NO. 1467 = 0.1237 PPM	NO. 1517 = 0.1043 PPM	NO. 1567 = 0.0925 PPM
NO. 1418 = 0.1312 PPM	NO. 1468 = 0.1215 PPM	NO. 1518 = 0.1070 PPM	NO. 1568 = 0.0919 PPM
NO. 1419 = 0.1298 PPM	NO. 1469 = 0.1178 PPM	NO. 1519 = 0.1143 PPM	NO. 1569 = 0.0948 PPM
NO. 1420 = 0.1271 PPM	NO. 1470 = 0.1133 PPM	NO. 1520 = 0.1010 PPM	NO. 1570 = 0.0984 PPM
NO. 1421 = 0.1247 PPM	NO. 1471 = 0.1057 PPM	NO. 1521 = 0.0912 PPM	NO. 1571 = 0.1017 PPM
NO. 1422 = 0.1218 PPM	NO. 1472 = 0.1064 PPM	NO. 1522 = 0.0928 PPM	NO. 1572 = 0.1022 PPM
NO. 1423 = 0.1172 PPM	NO. 1473 = 0.1139 PPM	NO. 1523 = 0.0954 PPM	NO. 1573 = 0.1005 PPM
NO. 1424 = 0.1120 PPM	NO. 1474 = 0.1035 PPM	NO. 1524 = 0.0987 PPM	NO. 1574 = 0.1004 PPM
NO. 1425 = 0.1061 PPM	NO. 1475 = 0.0928 PPM	NO. 1525 = 0.1018 PPM	NO. 1575 = 0.1019 PPM
NO. 1426 = 0.1062 PPM	NO. 1476 = 0.0918 PPM	NO. 1526 = 0.1027 PPM	NO. 1576 = 0.1017 PPM
NO. 1427 = 0.1136 PPM	NO. 1477 = 0.0943 PPM	NO. 1527 = 0.1003 PPM	NO. 1577 = 0.1023 PPM
NO. 1428 = 0.1055 PPM	NO. 1478 = 0.0973 PPM	NO. 1528 = 0.0994 PPM	NO. 1578 = 0.1042 PPM
NO. 1429 = 0.0936 PPM	NO. 1479 = 0.1005 PPM	NO. 1529 = 0.0981 PPM	NO. 1579 = 0.1051 PPM
NO. 1430 = 0.0892 PPM	NO. 1480 = 0.1021 PPM	NO. 1530 = 0.1003 PPM	NO. 1580 = 0.1052 PPM
NO. 1431 = 0.0921 PPM	NO. 1481 = 0.1031 PPM	NO. 1531 = 0.0999 PPM	NO. 1581 = 0.1040 PPM
NO. 1432 = 0.0952 PPM	NO. 1482 = 0.1012 PPM	NO. 1532 = 0.1018 PPM	NO. 1582 = 0.1045 PPM
NO. 1433 = 0.0986 PPM	NO. 1483 = 0.0980 PPM	NO. 1533 = 0.1030 PPM	NO. 1583 = 0.1031 PPM
NO. 1434 = 0.1012 PPM	NO. 1484 = 0.1064 PPM	NO. 1534 = 0.1050 PPM	NO. 1584 = 0.1012 PPM
NO. 1435 = 0.1065 PPM	NO. 1485 = 0.0980 PPM	NO. 1535 = 0.1045 PPM	NO. 1585 = 0.0985 PPM
NO. 1436 = 0.1016 PPM	NO. 1486 = 0.0993 PPM	NO. 1536 = 0.1044 PPM	NO. 1586 = 0.0968 PPM
NO. 1437 = 0.0997 PPM	NO. 1487 = 0.1002 PPM	NO. 1537 = 0.1021 PPM	NO. 1587 = 0.0959 PPM
NO. 1438 = 0.1017 PPM	NO. 1488 = 0.1010 PPM	NO. 1538 = 0.0989 PPM	NO. 1588 = 0.0953 PPM
NO. 1439 = 0.0952 PPM	NO. 1489 = 0.1029 PPM	NO. 1539 = 0.0963 PPM	NO. 1589 = 0.0947 PPM
NO. 1440 = 0.0972 PPM	NO. 1490 = 0.1007 PPM	NO. 1540 = 0.0947 PPM	NO. 1590 = 0.0920 PPM
NO. 1441 = 0.0991 PPM	NO. 1491 = 0.0982 PPM	NO. 1541 = 0.0936 PPM	NO. 1591 = 0.0889 PPM
NO. 1442 = 0.0990 PPM	NO. 1492 = 0.0957 PPM	NO. 1542 = 0.0911 PPM	NO. 1592 = 0.0974 PPM
NO. 1443 = 0.0983 PPM	NO. 1493 = 0.0935 PPM	NO. 1543 = 0.0887 PPM	NO. 1593 = 0.0975 PPM
NO. 1444 = 0.0962 PPM	NO. 1494 = 0.0919 PPM	NO. 1544 = 0.0938 PPM	NO. 1594 = 0.1032 PPM
NO. 1445 = 0.0940 PPM	NO. 1495 = 0.0909 PPM	NO. 1545 = 0.0919 PPM	NO. 1595 = 0.1088 PPM
NO. 1446 = 0.0916 PPM	NO. 1496 = 0.0875 PPM	NO. 1546 = 0.1032 PPM	NO. 1596 = 0.1142 PPM
NO. 1447 = 0.0900 PPM	NO. 1497 = 0.0974 PPM	NO. 1547 = 0.0963 PPM	NO. 1597 = 0.1174 PPM
NO. 1448 = 0.0889 PPM	NO. 1498 = 0.0983 PPM	NO. 1548 = 0.1029 PPM	NO. 1598 = 0.1199 PPM
NO. 1449 = 0.0872 PPM	NO. 1499 = 0.0949 PPM	NO. 1549 = 0.1096 PPM	NO. 1599 = 0.1218 PPM
NO. 1450 = 0.0935 PPM	NO. 1500 = 0.0948 PPM	NO. 1550 = 0.1162 PPM	NO. 1600 = 0.1232 PPM

A-4. continued.

NO. 1601 = 0.1247 PPM	NO. 1651 = 0.1139 PPM	NO. 1701 = 0.1064 PPM	NO. 1751 = 0.1000 PPM
NO. 1602 = 0.1256 PPM	NO. 1652 = 0.1127 PPM	NO. 1702 = 0.1098 PPM	NO. 1752 = 0.1003 PPM
NO. 1603 = 0.1237 PPM	NO. 1653 = 0.1107 PPM	NO. 1703 = 0.1142 PPM	NO. 1753 = 0.1017 PPM
NO. 1604 = 0.1204 PPM	NO. 1654 = 0.1073 PPM	NO. 1704 = 0.1037 PPM	NO. 1754 = 0.1018 PPM
NO. 1605 = 0.1175 PPM	NO. 1655 = 0.1059 PPM	NO. 1705 = 0.0963 PPM	NO. 1755 = 0.1023 PPM
NO. 1606 = 0.1154 PPM	NO. 1656 = 0.1091 PPM	NO. 1706 = 0.0979 PPM	NO. 1756 = 0.1030 PPM
NO. 1607 = 0.1126 PPM	NO. 1657 = 0.1141 PPM	NO. 1707 = 0.0998 PPM	NO. 1757 = 0.1073 PPM
NO. 1608 = 0.1102 PPM	NO. 1658 = 0.1025 PPM	NO. 1708 = 0.1013 PPM	NO. 1758 = 0.1035 PPM
NO. 1609 = 0.1032 PPM	NO. 1659 = 0.0962 PPM	NO. 1709 = 0.1034 PPM	NO. 1759 = 0.1046 PPM
NO. 1610 = 0.1083 PPM	NO. 1660 = 0.0947 PPM	NO. 1710 = 0.1042 PPM	NO. 1760 = 0.1025 PPM
NO. 1611 = 0.1140 PPM	NO. 1661 = 0.0971 PPM	NO. 1711 = 0.1048 PPM	NO. 1761 = 0.1020 PPM
NO. 1612 = 0.1009 PPM	NO. 1662 = 0.0995 PPM	NO. 1712 = 0.1015 PPM	NO. 1762 = 0.1033 PPM
NO. 1613 = 0.0944 PPM	NO. 1663 = 0.1023 PPM	NO. 1713 = 0.1065 PPM	NO. 1763 = 0.1035 PPM
NO. 1614 = 0.0917 PPM	NO. 1664 = 0.1030 PPM	NO. 1714 = 0.1075 PPM	NO. 1764 = 0.1029 PPM
NO. 1615 = 0.0945 PPM	NO. 1665 = 0.1030 PPM	NO. 1715 = 0.1048 PPM	NO. 1765 = 0.1044 PPM
NO. 1616 = 0.0982 PPM	NO. 1666 = 0.1019 PPM	NO. 1716 = 0.1030 PPM	NO. 1766 = 0.1055 PPM
NO. 1617 = 0.1020 PPM	NO. 1667 = 0.1087 PPM	NO. 1717 = 0.1027 PPM	NO. 1767 = 0.1045 PPM
NO. 1618 = 0.1026 PPM	NO. 1668 = 0.1080 PPM	NO. 1718 = 0.1030 PPM	NO. 1768 = 0.1014 PPM
NO. 1619 = 0.1023 PPM	NO. 1669 = 0.1059 PPM	NO. 1719 = 0.1036 PPM	NO. 1769 = 0.0999 PPM
NO. 1620 = 0.1027 PPM	NO. 1670 = 0.1041 PPM	NO. 1720 = 0.1041 PPM	NO. 1770 = 0.0999 PPM
NO. 1621 = 0.1050 PPM	NO. 1671 = 0.1030 PPM	NO. 1721 = 0.1028 PPM	NO. 1771 = 0.0997 PPM
NO. 1622 = 0.1035 PPM	NO. 1672 = 0.1037 PPM	NO. 1722 = 0.1024 PPM	NO. 1772 = 0.0970 PPM
NO. 1623 = 0.1036 PPM	NO. 1673 = 0.1029 PPM	NO. 1723 = 0.1000 PPM	NO. 1773 = 0.0993 PPM
NO. 1624 = 0.1055 PPM	NO. 1674 = 0.1034 PPM	NO. 1724 = 0.1012 PPM	NO. 1774 = 0.1074 PPM
NO. 1625 = 0.1052 PPM	NO. 1675 = 0.1040 PPM	NO. 1725 = 0.1013 PPM	NO. 1775 = 0.1032 PPM
NO. 1626 = 0.1038 PPM	NO. 1676 = 0.1033 PPM	NO. 1726 = 0.0988 PPM	NO. 1776 = 0.0965 PPM
NO. 1627 = 0.1049 PPM	NO. 1677 = 0.1006 PPM	NO. 1727 = 0.1025 PPM	NO. 1777 = 0.1006 PPM
NO. 1628 = 0.1051 PPM	NO. 1678 = 0.1027 PPM	NO. 1728 = 0.1060 PPM	NO. 1778 = 0.1059 PPM
NO. 1629 = 0.1050 PPM	NO. 1679 = 0.1009 PPM	NO. 1729 = 0.0968 PPM	NO. 1779 = 0.1046 PPM
NO. 1630 = 0.1032 PPM	NO. 1680 = 0.0995 PPM	NO. 1730 = 0.0922 PPM	NO. 1780 = 0.1051 PPM
NO. 1631 = 0.1005 PPM	NO. 1681 = 0.1011 PPM	NO. 1731 = 0.0971 PPM	NO. 1781 = 0.1051 PPM
NO. 1632 = 0.0986 PPM	NO. 1682 = 0.1049 PPM	NO. 1732 = 0.1025 PPM	NO. 1782 = 0.1036 PPM
NO. 1633 = 0.0969 PPM	NO. 1683 = 0.0926 PPM	NO. 1733 = 0.1042 PPM	NO. 1783 = 0.1018 PPM
NO. 1634 = 0.0961 PPM	NO. 1684 = 0.0949 PPM	NO. 1734 = 0.1052 PPM	NO. 1784 = 0.1005 PPM
NO. 1635 = 0.1001 PPM	NO. 1685 = 0.0967 PPM	NO. 1735 = 0.1047 PPM	NO. 1785 = 0.1005 PPM
NO. 1636 = 0.0982 PPM	NO. 1686 = 0.1026 PPM	NO. 1736 = 0.1033 PPM	NO. 1786 = 0.1011 PPM
NO. 1637 = 0.0882 PPM	NO. 1687 = 0.1055 PPM	NO. 1737 = 0.1014 PPM	NO. 1787 = 0.1013 PPM
NO. 1638 = 0.0960 PPM	NO. 1688 = 0.1070 PPM	NO. 1738 = 0.1004 PPM	NO. 1788 = 0.1021 PPM
NO. 1639 = 0.0971 PPM	NO. 1689 = 0.1071 PPM	NO. 1739 = 0.1016 PPM	NO. 1789 = 0.1038 PPM
NO. 1640 = 0.1027 PPM	NO. 1690 = 0.1064 PPM	NO. 1740 = 0.1030 PPM	NO. 1790 = 0.1052 PPM
NO. 1641 = 0.1068 PPM	NO. 1691 = 0.1060 PPM	NO. 1741 = 0.1040 PPM	NO. 1791 = 0.1064 PPM
NO. 1642 = 0.1102 PPM	NO. 1692 = 0.1069 PPM	NO. 1742 = 0.1051 PPM	NO. 1792 = 0.1090 PPM
NO. 1643 = 0.1118 PPM	NO. 1693 = 0.1091 PPM	NO. 1743 = 0.1071 PPM	NO. 1793 = 0.1110 PPM
NO. 1644 = 0.1124 PPM	NO. 1694 = 0.1103 PPM	NO. 1744 = 0.1089 PPM	NO. 1794 = 0.1112 PPM
NO. 1645 = 0.1139 PPM	NO. 1695 = 0.1114 PPM	NO. 1745 = 0.1101 PPM	NO. 1795 = 0.0852 PPM
NO. 1646 = 0.1160 PPM	NO. 1696 = 0.1105 PPM	NO. 1746 = 0.1100 PPM	NO. 1796 = 0.1171 PPM
NO. 1647 = 0.1184 PPM	NO. 1697 = 0.1108 PPM	NO. 1747 = 0.1075 PPM	NO. 1797 = 0.1173 PPM
NO. 1648 = 0.1196 PPM	NO. 1698 = 0.1113 PPM	NO. 1748 = 0.1106 PPM	NO. 1798 = 0.1178 PPM
NO. 1649 = 0.1187 PPM	NO. 1699 = 0.1110 PPM	NO. 1749 = 0.1146 PPM	NO. 1799 = 0.1171 PPM
NO. 1650 = 0.1166 PPM	NO. 1700 = 0.1086 PPM	NO. 1750 = 0.1075 PPM	NO. 1800 = 0.1149 PPM

A-4. continued.

NO. 1801 = 0.1129 PPM
NO. 1802 = 0.1111 PPM
NO. 1803 = 0.1112 PPM
NO. 1804 = 0.1091 PPM
NO. 1805 = 0.1072 PPM
NO. 1806 = 0.1067 PPM
NO. 1807 = 0.1065 PPM
NO. 1808 = 0.1051 PPM
NO. 1809 = 0.1042 PPM
NO. 1810 = 0.1119 PPM
NO. 1811 = 0.1196 PPM
NO. 1812 = 0.1257 PPM
NO. 1813 = 0.1216 PPM
NO. 1814 = 0.1195 PPM
NO. 1815 = 0.1174 PPM
NO. 1816 = 0.1156 PPM
NO. 1817 = 0.1141 PPM
NO. 1818 = 0.1116 PPM
NO. 1819 = 0.1092 PPM
NO. 1820 = 0.1068 PPM
NO. 1821 = 0.1048 PPM
NO. 1822 = 0.1043 PPM
NO. 1823 = 0.1037 PPM
NO. 1824 = 0.1037 PPM
NO. 1825 = 0.1055 PPM
NO. 1826 = 0.1056 PPM
NO. 1827 = 0.1055 PPM
NO. 1828 = 0.1072 PPM
NO. 1829 = 0.1088 PPM
NO. 1830 = 0.1094 PPM
NO. 1831 = 0.1080 PPM
NO. 1832 = 0.1065 PPM
NO. 1833 = 0.1055 PPM
NO. 1834 = 0.1046 PPM
NO. 1835 = 0.1026 PPM
NO. 1836 = 0.1058 PPM
NO. 1837 = 0.1108 PPM
NO. 1838 = 0.1158 PPM
NO. 1839 = 0.1180 PPM
NO. 1840 = 0.0657 PPM

A-5. UAM-ROM max. values for August 1, 1988.

NO. 1 = 0.0550 PPM	NO. 51 = 0.0722 PPM	NO. 101 = 0.0754 PPM	NO. 151 = 0.0540 PPM
NO. 2 = 0.0687 PPM	NO. 52 = 0.0743 PPM	NO. 102 = 0.0704 PPM	NO. 152 = 0.0545 PPM
NO. 3 = 0.0717 PPM	NO. 53 = 0.0744 PPM	NO. 103 = 0.0620 PPM	NO. 153 = 0.0562 PPM
NO. 4 = 0.0753 PPM	NO. 54 = 0.0734 PPM	NO. 104 = 0.0559 PPM	NO. 154 = 0.0564 PPM
NO. 5 = 0.0737 PPM	NO. 55 = 0.0710 PPM	NO. 105 = 0.0535 PPM	NO. 155 = 0.0563 PPM
NO. 6 = 0.0711 PPM	NO. 56 = 0.0663 PPM	NO. 106 = 0.0565 PPM	NO. 156 = 0.0564 PPM
NO. 7 = 0.0685 PPM	NO. 57 = 0.0601 PPM	NO. 107 = 0.0578 PPM	NO. 157 = 0.0571 PPM
NO. 8 = 0.0661 PPM	NO. 58 = 0.0562 PPM	NO. 108 = 0.0576 PPM	NO. 158 = 0.0578 PPM
NO. 9 = 0.0640 PPM	NO. 59 = 0.0540 PPM	NO. 109 = 0.0573 PPM	NO. 159 = 0.0598 PPM
NO. 10 = 0.0610 PPM	NO. 60 = 0.0584 PPM	NO. 110 = 0.0580 PPM	NO. 160 = 0.0609 PPM
NO. 11 = 0.0581 PPM	NO. 61 = 0.0575 PPM	NO. 111 = 0.0588 PPM	NO. 161 = 0.0652 PPM
NO. 12 = 0.0552 PPM	NO. 62 = 0.0565 PPM	NO. 112 = 0.0592 PPM	NO. 162 = 0.0599 PPM
NO. 13 = 0.0524 PPM	NO. 63 = 0.0577 PPM	NO. 113 = 0.0592 PPM	NO. 163 = 0.0588 PPM
NO. 14 = 0.0524 PPM	NO. 64 = 0.0591 PPM	NO. 114 = 0.0604 PPM	NO. 164 = 0.0579 PPM
NO. 15 = 0.0544 PPM	NO. 65 = 0.0598 PPM	NO. 115 = 0.0641 PPM	NO. 165 = 0.0576 PPM
NO. 16 = 0.0565 PPM	NO. 66 = 0.0608 PPM	NO. 116 = 0.0604 PPM	NO. 166 = 0.0586 PPM
NO. 17 = 0.0586 PPM	NO. 67 = 0.0610 PPM	NO. 117 = 0.0595 PPM	NO. 167 = 0.0599 PPM
NO. 18 = 0.0604 PPM	NO. 68 = 0.0611 PPM	NO. 118 = 0.0589 PPM	NO. 168 = 0.0632 PPM
NO. 19 = 0.0608 PPM	NO. 69 = 0.0629 PPM	NO. 119 = 0.0594 PPM	NO. 169 = 0.0681 PPM
NO. 20 = 0.0613 PPM	NO. 70 = 0.0614 PPM	NO. 120 = 0.0587 PPM	NO. 170 = 0.0699 PPM
NO. 21 = 0.0623 PPM	NO. 71 = 0.0605 PPM	NO. 121 = 0.0584 PPM	NO. 171 = 0.0716 PPM
NO. 22 = 0.0634 PPM	NO. 72 = 0.0602 PPM	NO. 122 = 0.0585 PPM	NO. 172 = 0.0750 PPM
NO. 23 = 0.0628 PPM	NO. 73 = 0.0604 PPM	NO. 123 = 0.0597 PPM	NO. 173 = 0.0741 PPM
NO. 24 = 0.0618 PPM	NO. 74 = 0.0600 PPM	NO. 124 = 0.0621 PPM	NO. 174 = 0.0632 PPM
NO. 25 = 0.0613 PPM	NO. 75 = 0.0602 PPM	NO. 125 = 0.0647 PPM	NO. 175 = 0.0611 PPM
NO. 26 = 0.0607 PPM	NO. 76 = 0.0610 PPM	NO. 126 = 0.0648 PPM	NO. 176 = 0.0603 PPM
NO. 27 = 0.0611 PPM	NO. 77 = 0.0614 PPM	NO. 127 = 0.0651 PPM	NO. 177 = 0.0611 PPM
NO. 28 = 0.0603 PPM	NO. 78 = 0.0642 PPM	NO. 128 = 0.0660 PPM	NO. 178 = 0.0653 PPM
NO. 29 = 0.0596 PPM	NO. 79 = 0.0639 PPM	NO. 129 = 0.0669 PPM	NO. 179 = 0.0600 PPM
NO. 30 = 0.0598 PPM	NO. 80 = 0.0665 PPM	NO. 130 = 0.0656 PPM	NO. 180 = 0.0589 PPM
NO. 31 = 0.0603 PPM	NO. 81 = 0.0676 PPM	NO. 131 = 0.0627 PPM	NO. 181 = 0.0577 PPM
NO. 32 = 0.0612 PPM	NO. 82 = 0.0701 PPM	NO. 132 = 0.0671 PPM	NO. 182 = 0.0569 PPM
NO. 33 = 0.0624 PPM	NO. 83 = 0.0691 PPM	NO. 133 = 0.0682 PPM	NO. 183 = 0.0559 PPM
NO. 34 = 0.0636 PPM	NO. 84 = 0.0689 PPM	NO. 134 = 0.0613 PPM	NO. 184 = 0.0565 PPM
NO. 35 = 0.0648 PPM	NO. 85 = 0.0710 PPM	NO. 135 = 0.0601 PPM	NO. 185 = 0.0598 PPM
NO. 36 = 0.0660 PPM	NO. 86 = 0.0726 PPM	NO. 136 = 0.0589 PPM	NO. 186 = 0.0691 PPM
NO. 37 = 0.0665 PPM	NO. 87 = 0.0784 PPM	NO. 137 = 0.0590 PPM	NO. 187 = 0.0726 PPM
NO. 38 = 0.0671 PPM	NO. 88 = 0.0727 PPM	NO. 138 = 0.0591 PPM	NO. 188 = 0.0732 PPM
NO. 39 = 0.0679 PPM	NO. 89 = 0.0689 PPM	NO. 139 = 0.0615 PPM	NO. 189 = 0.0740 PPM
NO. 40 = 0.0687 PPM	NO. 90 = 0.0659 PPM	NO. 140 = 0.0683 PPM	NO. 190 = 0.0750 PPM
NO. 41 = 0.0694 PPM	NO. 91 = 0.0651 PPM	NO. 141 = 0.0724 PPM	NO. 191 = 0.0748 PPM
NO. 42 = 0.0690 PPM	NO. 92 = 0.0620 PPM	NO. 142 = 0.0710 PPM	NO. 192 = 0.0724 PPM
NO. 43 = 0.0700 PPM	NO. 93 = 0.0633 PPM	NO. 143 = 0.0734 PPM	NO. 193 = 0.0711 PPM
NO. 44 = 0.0716 PPM	NO. 94 = 0.0693 PPM	NO. 144 = 0.0763 PPM	NO. 194 = 0.0683 PPM
NO. 45 = 0.0733 PPM	NO. 95 = 0.0717 PPM	NO. 145 = 0.0767 PPM	NO. 195 = 0.0640 PPM
NO. 46 = 0.0451 PPM	NO. 96 = 0.0717 PPM	NO. 146 = 0.0758 PPM	NO. 196 = 0.0590 PPM
NO. 47 = 0.0650 PPM	NO. 97 = 0.0723 PPM	NO. 147 = 0.0742 PPM	NO. 197 = 0.0547 PPM
NO. 48 = 0.0700 PPM	NO. 98 = 0.0775 PPM	NO. 148 = 0.0710 PPM	NO. 198 = 0.0528 PPM
NO. 49 = 0.0728 PPM	NO. 99 = 0.0779 PPM	NO. 149 = 0.0648 PPM	NO. 199 = 0.0530 PPM
NO. 50 = 0.0733 PPM	NO. 100 = 0.0776 PPM	NO. 150 = 0.0586 PPM	NO. 200 = 0.0536 PPM

A-5. continued.

NO. 201 = 0.0547 PPM	NO. 251 = 0.0629 PPM	NO. 301 = 0.0611 PPM	NO. 351 = 0.0622 PPM
NO. 202 = 0.0553 PPM	NO. 252 = 0.0651 PPM	NO. 302 = 0.0617 PPM	NO. 352 = 0.0660 PPM
NO. 203 = 0.0565 PPM	NO. 253 = 0.0710 PPM	NO. 303 = 0.0623 PPM	NO. 353 = 0.0638 PPM
NO. 204 = 0.0564 PPM	NO. 254 = 0.0714 PPM	NO. 304 = 0.0630 PPM	NO. 354 = 0.0641 PPM
NO. 205 = 0.0570 PPM	NO. 255 = 0.0614 PPM	NO. 305 = 0.0660 PPM	NO. 355 = 0.0635 PPM
NO. 206 = 0.0576 PPM	NO. 256 = 0.0594 PPM	NO. 306 = 0.0711 PPM	NO. 356 = 0.0633 PPM
NO. 207 = 0.0611 PPM	NO. 257 = 0.0625 PPM	NO. 307 = 0.0636 PPM	NO. 357 = 0.0662 PPM
NO. 208 = 0.0570 PPM	NO. 258 = 0.0644 PPM	NO. 308 = 0.0637 PPM	NO. 358 = 0.0702 PPM
NO. 209 = 0.0573 PPM	NO. 259 = 0.0638 PPM	NO. 309 = 0.0654 PPM	NO. 359 = 0.0696 PPM
NO. 210 = 0.0579 PPM	NO. 260 = 0.0650 PPM	NO. 310 = 0.0689 PPM	NO. 360 = 0.0618 PPM
NO. 211 = 0.0588 PPM	NO. 261 = 0.0631 PPM	NO. 311 = 0.0691 PPM	NO. 361 = 0.0577 PPM
NO. 212 = 0.0604 PPM	NO. 262 = 0.0609 PPM	NO. 312 = 0.0712 PPM	NO. 362 = 0.0560 PPM
NO. 213 = 0.0644 PPM	NO. 263 = 0.0614 PPM	NO. 313 = 0.0760 PPM	NO. 363 = 0.0564 PPM
NO. 214 = 0.0675 PPM	NO. 264 = 0.0645 PPM	NO. 314 = 0.0690 PPM	NO. 364 = 0.0569 PPM
NO. 215 = 0.0685 PPM	NO. 265 = 0.0664 PPM	NO. 315 = 0.0593 PPM	NO. 365 = 0.0570 PPM
NO. 216 = 0.0680 PPM	NO. 266 = 0.0659 PPM	NO. 316 = 0.0573 PPM	NO. 366 = 0.0569 PPM
NO. 217 = 0.0694 PPM	NO. 267 = 0.0665 PPM	NO. 317 = 0.0566 PPM	NO. 367 = 0.0557 PPM
NO. 218 = 0.0729 PPM	NO. 268 = 0.0687 PPM	NO. 318 = 0.0566 PPM	NO. 368 = 0.0567 PPM
NO. 219 = 0.0690 PPM	NO. 269 = 0.0603 PPM	NO. 319 = 0.0564 PPM	NO. 369 = 0.0556 PPM
NO. 220 = 0.0636 PPM	NO. 270 = 0.0586 PPM	NO. 320 = 0.0563 PPM	NO. 370 = 0.0675 PPM
NO. 221 = 0.0612 PPM	NO. 271 = 0.0576 PPM	NO. 321 = 0.0554 PPM	NO. 371 = 0.0671 PPM
NO. 222 = 0.0618 PPM	NO. 272 = 0.0569 PPM	NO. 322 = 0.0566 PPM	NO. 372 = 0.0668 PPM
NO. 223 = 0.0686 PPM	NO. 273 = 0.0564 PPM	NO. 323 = 0.0540 PPM	NO. 373 = 0.0645 PPM
NO. 224 = 0.0599 PPM	NO. 274 = 0.0560 PPM	NO. 324 = 0.0681 PPM	NO. 374 = 0.0618 PPM
NO. 225 = 0.0586 PPM	NO. 275 = 0.0552 PPM	NO. 325 = 0.0715 PPM	NO. 375 = 0.0605 PPM
NO. 226 = 0.0575 PPM	NO. 276 = 0.0567 PPM	NO. 326 = 0.0702 PPM	NO. 376 = 0.0589 PPM
NO. 227 = 0.0564 PPM	NO. 277 = 0.0547 PPM	NO. 327 = 0.0676 PPM	NO. 377 = 0.0565 PPM
NO. 228 = 0.0558 PPM	NO. 278 = 0.0706 PPM	NO. 328 = 0.0676 PPM	NO. 378 = 0.0540 PPM
NO. 229 = 0.0550 PPM	NO. 279 = 0.0735 PPM	NO. 329 = 0.0654 PPM	NO. 379 = 0.0531 PPM
NO. 230 = 0.0566 PPM	NO. 280 = 0.0713 PPM	NO. 330 = 0.0620 PPM	NO. 380 = 0.0531 PPM
NO. 231 = 0.0575 PPM	NO. 281 = 0.0729 PPM	NO. 331 = 0.0579 PPM	NO. 381 = 0.0535 PPM
NO. 232 = 0.0709 PPM	NO. 282 = 0.0724 PPM	NO. 332 = 0.0579 PPM	NO. 382 = 0.0538 PPM
NO. 233 = 0.0717 PPM	NO. 283 = 0.0692 PPM	NO. 333 = 0.0546 PPM	NO. 383 = 0.0544 PPM
NO. 234 = 0.0733 PPM	NO. 284 = 0.0648 PPM	NO. 334 = 0.0526 PPM	NO. 384 = 0.0542 PPM
NO. 235 = 0.0755 PPM	NO. 285 = 0.0612 PPM	NO. 335 = 0.0517 PPM	NO. 385 = 0.0568 PPM
NO. 236 = 0.0744 PPM	NO. 286 = 0.0597 PPM	NO. 336 = 0.0521 PPM	NO. 386 = 0.0577 PPM
NO. 237 = 0.0708 PPM	NO. 287 = 0.0574 PPM	NO. 337 = 0.0534 PPM	NO. 387 = 0.0681 PPM
NO. 238 = 0.0688 PPM	NO. 288 = 0.0546 PPM	NO. 338 = 0.0625 PPM	NO. 388 = 0.0578 PPM
NO. 239 = 0.0669 PPM	NO. 289 = 0.0519 PPM	NO. 339 = 0.0563 PPM	NO. 389 = 0.0559 PPM
NO. 240 = 0.0651 PPM	NO. 290 = 0.0521 PPM	NO. 340 = 0.0564 PPM	NO. 390 = 0.0539 PPM
NO. 241 = 0.0622 PPM	NO. 291 = 0.0527 PPM	NO. 341 = 0.0580 PPM	NO. 391 = 0.0570 PPM
NO. 242 = 0.0587 PPM	NO. 292 = 0.0538 PPM	NO. 342 = 0.0601 PPM	NO. 392 = 0.0584 PPM
NO. 243 = 0.0548 PPM	NO. 293 = 0.0548 PPM	NO. 343 = 0.0578 PPM	NO. 393 = 0.0585 PPM
NO. 244 = 0.0522 PPM	NO. 294 = 0.0546 PPM	NO. 344 = 0.0577 PPM	NO. 394 = 0.0586 PPM
NO. 245 = 0.0526 PPM	NO. 295 = 0.0577 PPM	NO. 345 = 0.0574 PPM	NO. 395 = 0.0590 PPM
NO. 246 = 0.0540 PPM	NO. 296 = 0.0595 PPM	NO. 346 = 0.0592 PPM	NO. 396 = 0.0605 PPM
NO. 247 = 0.0548 PPM	NO. 297 = 0.0615 PPM	NO. 347 = 0.0600 PPM	NO. 397 = 0.0608 PPM
NO. 248 = 0.0547 PPM	NO. 298 = 0.0621 PPM	NO. 348 = 0.0604 PPM	NO. 398 = 0.0617 PPM
NO. 249 = 0.0566 PPM	NO. 299 = 0.0635 PPM	NO. 349 = 0.0605 PPM	NO. 399 = 0.0607 PPM
NO. 250 = 0.0574 PPM	NO. 300 = 0.0616 PPM	NO. 350 = 0.0606 PPM	NO. 400 = 0.0588 PPM

A-5. continued.

NO. 401 = 0.0573 PPM	NO. 451 = 0.0590 PPM	NO. 501 = 0.0656 PPM	NO. 551 = 0.0607 PPM
NO. 402 = 0.0595 PPM	NO. 452 = 0.0599 PPM	NO. 502 = 0.0746 PPM	NO. 552 = 0.0608 PPM
NO. 403 = 0.0617 PPM	NO. 453 = 0.0618 PPM	NO. 503 = 0.0630 PPM	NO. 553 = 0.0566 PPM
NO. 404 = 0.0589 PPM	NO. 454 = 0.0629 PPM	NO. 504 = 0.0579 PPM	NO. 554 = 0.0575 PPM
NO. 405 = 0.0580 PPM	NO. 455 = 0.0614 PPM	NO. 505 = 0.0576 PPM	NO. 555 = 0.0583 PPM
NO. 406 = 0.0572 PPM	NO. 456 = 0.0618 PPM	NO. 506 = 0.0600 PPM	NO. 556 = 0.0576 PPM
NO. 407 = 0.0604 PPM	NO. 457 = 0.0590 PPM	NO. 507 = 0.0565 PPM	NO. 557 = 0.0585 PPM
NO. 408 = 0.0607 PPM	NO. 458 = 0.0575 PPM	NO. 508 = 0.0562 PPM	NO. 558 = 0.0681 PPM
NO. 409 = 0.0564 PPM	NO. 459 = 0.0558 PPM	NO. 509 = 0.0550 PPM	NO. 559 = 0.0601 PPM
NO. 410 = 0.0577 PPM	NO. 460 = 0.0591 PPM	NO. 510 = 0.0549 PPM	NO. 560 = 0.0573 PPM
NO. 411 = 0.0575 PPM	NO. 461 = 0.0562 PPM	NO. 511 = 0.0546 PPM	NO. 561 = 0.0580 PPM
NO. 412 = 0.0573 PPM	NO. 462 = 0.0601 PPM	NO. 512 = 0.0553 PPM	NO. 562 = 0.0582 PPM
NO. 413 = 0.0559 PPM	NO. 463 = 0.0579 PPM	NO. 513 = 0.0565 PPM	NO. 563 = 0.0578 PPM
NO. 414 = 0.0581 PPM	NO. 464 = 0.0552 PPM	NO. 514 = 0.0571 PPM	NO. 564 = 0.0577 PPM
NO. 415 = 0.0560 PPM	NO. 465 = 0.0547 PPM	NO. 515 = 0.0571 PPM	NO. 565 = 0.0575 PPM
NO. 416 = 0.0641 PPM	NO. 466 = 0.0542 PPM	NO. 516 = 0.0570 PPM	NO. 566 = 0.0605 PPM
NO. 417 = 0.0621 PPM	NO. 467 = 0.0545 PPM	NO. 517 = 0.0568 PPM	NO. 567 = 0.0585 PPM
NO. 418 = 0.0608 PPM	NO. 468 = 0.0547 PPM	NO. 518 = 0.0569 PPM	NO. 568 = 0.0583 PPM
NO. 419 = 0.0600 PPM	NO. 469 = 0.0549 PPM	NO. 519 = 0.0573 PPM	NO. 569 = 0.0642 PPM
NO. 420 = 0.0580 PPM	NO. 470 = 0.0551 PPM	NO. 520 = 0.0607 PPM	NO. 570 = 0.0611 PPM
NO. 421 = 0.0549 PPM	NO. 471 = 0.0553 PPM	NO. 521 = 0.0615 PPM	NO. 571 = 0.0624 PPM
NO. 422 = 0.0547 PPM	NO. 472 = 0.0559 PPM	NO. 522 = 0.0582 PPM	NO. 572 = 0.0636 PPM
NO. 423 = 0.0539 PPM	NO. 473 = 0.0552 PPM	NO. 523 = 0.0645 PPM	NO. 573 = 0.0644 PPM
NO. 424 = 0.0542 PPM	NO. 474 = 0.0615 PPM	NO. 524 = 0.0640 PPM	NO. 574 = 0.0635 PPM
NO. 425 = 0.0546 PPM	NO. 475 = 0.0673 PPM	NO. 525 = 0.0642 PPM	NO. 575 = 0.0649 PPM
NO. 426 = 0.0548 PPM	NO. 476 = 0.0590 PPM	NO. 526 = 0.0645 PPM	NO. 576 = 0.0591 PPM
NO. 427 = 0.0543 PPM	NO. 477 = 0.0627 PPM	NO. 527 = 0.0631 PPM	NO. 577 = 0.0540 PPM
NO. 428 = 0.0574 PPM	NO. 478 = 0.0687 PPM	NO. 528 = 0.0636 PPM	NO. 578 = 0.0521 PPM
NO. 429 = 0.0712 PPM	NO. 479 = 0.0708 PPM	NO. 529 = 0.0608 PPM	NO. 579 = 0.0535 PPM
NO. 430 = 0.0604 PPM	NO. 480 = 0.0663 PPM	NO. 530 = 0.0564 PPM	NO. 580 = 0.0560 PPM
NO. 431 = 0.0614 PPM	NO. 481 = 0.0618 PPM	NO. 531 = 0.0521 PPM	NO. 581 = 0.0580 PPM
NO. 432 = 0.0687 PPM	NO. 482 = 0.0624 PPM	NO. 532 = 0.0521 PPM	NO. 582 = 0.0620 PPM
NO. 433 = 0.0794 PPM	NO. 483 = 0.0570 PPM	NO. 533 = 0.0528 PPM	NO. 583 = 0.0627 PPM
NO. 434 = 0.0690 PPM	NO. 484 = 0.0540 PPM	NO. 534 = 0.0530 PPM	NO. 584 = 0.0627 PPM
NO. 435 = 0.0588 PPM	NO. 485 = 0.0538 PPM	NO. 535 = 0.0551 PPM	NO. 585 = 0.0650 PPM
NO. 436 = 0.0591 PPM	NO. 486 = 0.0548 PPM	NO. 536 = 0.0581 PPM	NO. 586 = 0.0546 PPM
NO. 437 = 0.0546 PPM	NO. 487 = 0.0556 PPM	NO. 537 = 0.0614 PPM	NO. 587 = 0.0535 PPM
NO. 438 = 0.0567 PPM	NO. 488 = 0.0542 PPM	NO. 538 = 0.0613 PPM	NO. 588 = 0.0542 PPM
NO. 439 = 0.0562 PPM	NO. 489 = 0.0542 PPM	NO. 539 = 0.0637 PPM	NO. 589 = 0.0535 PPM
NO. 440 = 0.0575 PPM	NO. 490 = 0.0552 PPM	NO. 540 = 0.0579 PPM	NO. 590 = 0.0523 PPM
NO. 441 = 0.0584 PPM	NO. 491 = 0.0581 PPM	NO. 541 = 0.0542 PPM	NO. 591 = 0.0520 PPM
NO. 442 = 0.0579 PPM	NO. 492 = 0.0596 PPM	NO. 542 = 0.0549 PPM	NO. 592 = 0.0544 PPM
NO. 443 = 0.0569 PPM	NO. 493 = 0.0613 PPM	NO. 543 = 0.0543 PPM	NO. 593 = 0.0557 PPM
NO. 444 = 0.0568 PPM	NO. 494 = 0.0645 PPM	NO. 544 = 0.0532 PPM	NO. 594 = 0.0574 PPM
NO. 445 = 0.0556 PPM	NO. 495 = 0.0572 PPM	NO. 545 = 0.0524 PPM	NO. 595 = 0.0580 PPM
NO. 446 = 0.0562 PPM	NO. 496 = 0.0558 PPM	NO. 546 = 0.0572 PPM	NO. 596 = 0.0592 PPM
NO. 447 = 0.0558 PPM	NO. 497 = 0.0561 PPM	NO. 547 = 0.0630 PPM	NO. 597 = 0.0628 PPM
NO. 448 = 0.0576 PPM	NO. 498 = 0.0556 PPM	NO. 548 = 0.0732 PPM	NO. 598 = 0.0617 PPM
NO. 449 = 0.0611 PPM	NO. 499 = 0.0574 PPM	NO. 549 = 0.0597 PPM	NO. 599 = 0.0580 PPM
NO. 450 = 0.0567 PPM	NO. 500 = 0.0617 PPM	NO. 550 = 0.0578 PPM	NO. 600 = 0.0593 PPM

A-5. continued.

NO. 601 = 0.0606 PPM	NO. 651 = 0.0602 PPM	NO. 701 = 0.0625 PPM	NO. 751 = 0.0599 PPM
NO. 602 = 0.0612 PPM	NO. 652 = 0.0609 PPM	NO. 702 = 0.0615 PPM	NO. 752 = 0.0596 PPM
NO. 603 = 0.0586 PPM	NO. 653 = 0.0614 PPM	NO. 703 = 0.0605 PPM	NO. 753 = 0.0596 PPM
NO. 604 = 0.0660 PPM	NO. 654 = 0.0617 PPM	NO. 704 = 0.0602 PPM	NO. 754 = 0.0604 PPM
NO. 605 = 0.0607 PPM	NO. 655 = 0.0609 PPM	NO. 705 = 0.0592 PPM	NO. 755 = 0.0630 PPM
NO. 606 = 0.0608 PPM	NO. 656 = 0.0607 PPM	NO. 706 = 0.0593 PPM	NO. 756 = 0.0647 PPM
NO. 607 = 0.0609 PPM	NO. 657 = 0.0602 PPM	NO. 707 = 0.0585 PPM	NO. 757 = 0.0705 PPM
NO. 608 = 0.0607 PPM	NO. 658 = 0.0594 PPM	NO. 708 = 0.0610 PPM	NO. 758 = 0.0753 PPM
NO. 609 = 0.0599 PPM	NO. 659 = 0.0589 PPM	NO. 709 = 0.0619 PPM	NO. 759 = 0.0753 PPM
NO. 610 = 0.0597 PPM	NO. 660 = 0.0592 PPM	NO. 710 = 0.0643 PPM	NO. 760 = 0.0740 PPM
NO. 611 = 0.0593 PPM	NO. 661 = 0.0598 PPM	NO. 711 = 0.0675 PPM	NO. 761 = 0.0614 PPM
NO. 612 = 0.0589 PPM	NO. 662 = 0.0609 PPM	NO. 712 = 0.0720 PPM	NO. 762 = 0.0617 PPM
NO. 613 = 0.0591 PPM	NO. 663 = 0.0614 PPM	NO. 713 = 0.0742 PPM	NO. 763 = 0.0681 PPM
NO. 614 = 0.0589 PPM	NO. 664 = 0.0630 PPM	NO. 714 = 0.0679 PPM	NO. 764 = 0.0748 PPM
NO. 615 = 0.0616 PPM	NO. 665 = 0.0634 PPM	NO. 715 = 0.0589 PPM	NO. 765 = 0.0782 PPM
NO. 616 = 0.0608 PPM	NO. 666 = 0.0650 PPM	NO. 716 = 0.0566 PPM	NO. 766 = 0.0740 PPM
NO. 617 = 0.0621 PPM	NO. 667 = 0.0733 PPM	NO. 717 = 0.0624 PPM	NO. 767 = 0.0696 PPM
NO. 618 = 0.0640 PPM	NO. 668 = 0.0618 PPM	NO. 718 = 0.0685 PPM	NO. 768 = 0.0644 PPM
NO. 619 = 0.0644 PPM	NO. 669 = 0.0567 PPM	NO. 719 = 0.0803 PPM	NO. 769 = 0.0578 PPM
NO. 620 = 0.0663 PPM	NO. 670 = 0.0548 PPM	NO. 720 = 0.0839 PPM	NO. 770 = 0.0528 PPM
NO. 621 = 0.0720 PPM	NO. 671 = 0.0550 PPM	NO. 721 = 0.0791 PPM	NO. 771 = 0.0513 PPM
NO. 622 = 0.0624 PPM	NO. 672 = 0.0582 PPM	NO. 722 = 0.0674 PPM	NO. 772 = 0.0497 PPM
NO. 623 = 0.0572 PPM	NO. 673 = 0.0692 PPM	NO. 723 = 0.0579 PPM	NO. 773 = 0.0484 PPM
NO. 624 = 0.0544 PPM	NO. 674 = 0.0756 PPM	NO. 724 = 0.0523 PPM	NO. 774 = 0.0531 PPM
NO. 625 = 0.0535 PPM	NO. 675 = 0.0815 PPM	NO. 725 = 0.0511 PPM	NO. 775 = 0.0564 PPM
NO. 626 = 0.0562 PPM	NO. 676 = 0.0647 PPM	NO. 726 = 0.0498 PPM	NO. 776 = 0.0589 PPM
NO. 627 = 0.0575 PPM	NO. 677 = 0.0559 PPM	NO. 727 = 0.0495 PPM	NO. 777 = 0.0579 PPM
NO. 628 = 0.0630 PPM	NO. 678 = 0.0511 PPM	NO. 728 = 0.0510 PPM	NO. 778 = 0.0602 PPM
NO. 629 = 0.0626 PPM	NO. 679 = 0.0515 PPM	NO. 729 = 0.0548 PPM	NO. 779 = 0.0622 PPM
NO. 630 = 0.0664 PPM	NO. 680 = 0.0508 PPM	NO. 730 = 0.0574 PPM	NO. 780 = 0.0649 PPM
NO. 631 = 0.0564 PPM	NO. 681 = 0.0523 PPM	NO. 731 = 0.0577 PPM	NO. 781 = 0.0633 PPM
NO. 632 = 0.0520 PPM	NO. 682 = 0.0506 PPM	NO. 732 = 0.0594 PPM	NO. 782 = 0.0628 PPM
NO. 633 = 0.0523 PPM	NO. 683 = 0.0528 PPM	NO. 733 = 0.0612 PPM	NO. 783 = 0.0677 PPM
NO. 634 = 0.0525 PPM	NO. 684 = 0.0559 PPM	NO. 734 = 0.0646 PPM	NO. 784 = 0.0724 PPM
NO. 635 = 0.0572 PPM	NO. 685 = 0.0568 PPM	NO. 735 = 0.0650 PPM	NO. 785 = 0.0722 PPM
NO. 636 = 0.0534 PPM	NO. 686 = 0.0579 PPM	NO. 736 = 0.0627 PPM	NO. 786 = 0.0677 PPM
NO. 637 = 0.0518 PPM	NO. 687 = 0.0595 PPM	NO. 737 = 0.0650 PPM	NO. 787 = 0.0656 PPM
NO. 638 = 0.0552 PPM	NO. 688 = 0.0628 PPM	NO. 738 = 0.0642 PPM	NO. 788 = 0.0630 PPM
NO. 639 = 0.0569 PPM	NO. 689 = 0.0652 PPM	NO. 739 = 0.0620 PPM	NO. 789 = 0.0607 PPM
NO. 640 = 0.0580 PPM	NO. 690 = 0.0624 PPM	NO. 740 = 0.0614 PPM	NO. 790 = 0.0598 PPM
NO. 641 = 0.0589 PPM	NO. 691 = 0.0631 PPM	NO. 741 = 0.0623 PPM	NO. 791 = 0.0607 PPM
NO. 642 = 0.0613 PPM	NO. 692 = 0.0622 PPM	NO. 742 = 0.0631 PPM	NO. 792 = 0.0617 PPM
NO. 643 = 0.0647 PPM	NO. 693 = 0.0627 PPM	NO. 743 = 0.0626 PPM	NO. 793 = 0.0648 PPM
NO. 644 = 0.0620 PPM	NO. 694 = 0.0646 PPM	NO. 744 = 0.0618 PPM	NO. 794 = 0.0633 PPM
NO. 645 = 0.0605 PPM	NO. 695 = 0.0651 PPM	NO. 745 = 0.0632 PPM	NO. 795 = 0.0610 PPM
NO. 646 = 0.0610 PPM	NO. 696 = 0.0639 PPM	NO. 746 = 0.0644 PPM	NO. 796 = 0.0594 PPM
NO. 647 = 0.0621 PPM	NO. 697 = 0.0624 PPM	NO. 747 = 0.0636 PPM	NO. 797 = 0.0584 PPM
NO. 648 = 0.0633 PPM	NO. 698 = 0.0630 PPM	NO. 748 = 0.0625 PPM	NO. 798 = 0.0587 PPM
NO. 649 = 0.0611 PPM	NO. 699 = 0.0632 PPM	NO. 749 = 0.0608 PPM	NO. 799 = 0.0608 PPM
NO. 650 = 0.0611 PPM	NO. 700 = 0.0636 PPM	NO. 750 = 0.0602 PPM	NO. 800 = 0.0617 PPM

A-5. continued.

NO. 801 = 0.0640 PPM	NO. 851 = 0.0797 PPM	NO. 901 = 0.0720 PPM	NO. 951 = 0.0645 PPM
NO. 802 = 0.0684 PPM	NO. 852 = 0.0885 PPM	NO. 902 = 0.0697 PPM	NO. 952 = 0.0559 PPM
NO. 803 = 0.0729 PPM	NO. 853 = 0.0694 PPM	NO. 903 = 0.0662 PPM	NO. 953 = 0.0524 PPM
NO. 804 = 0.0759 PPM	NO. 854 = 0.0698 PPM	NO. 904 = 0.0606 PPM	NO. 954 = 0.0518 PPM
NO. 805 = 0.0733 PPM	NO. 855 = 0.0742 PPM	NO. 905 = 0.0635 PPM	NO. 955 = 0.0581 PPM
NO. 806 = 0.0801 PPM	NO. 856 = 0.0794 PPM	NO. 906 = 0.0525 PPM	NO. 956 = 0.0623 PPM
NO. 807 = 0.0643 PPM	NO. 857 = 0.0725 PPM	NO. 907 = 0.0491 PPM	NO. 957 = 0.0646 PPM
NO. 808 = 0.0662 PPM	NO. 858 = 0.0608 PPM	NO. 908 = 0.0481 PPM	NO. 958 = 0.0633 PPM
NO. 809 = 0.0697 PPM	NO. 859 = 0.0562 PPM	NO. 909 = 0.0513 PPM	NO. 959 = 0.0589 PPM
NO. 810 = 0.0777 PPM	NO. 860 = 0.0566 PPM	NO. 910 = 0.0575 PPM	NO. 960 = 0.0549 PPM
NO. 811 = 0.0794 PPM	NO. 861 = 0.0539 PPM	NO. 911 = 0.0616 PPM	NO. 961 = 0.0550 PPM
NO. 812 = 0.0617 PPM	NO. 862 = 0.0522 PPM	NO. 912 = 0.0631 PPM	NO. 962 = 0.0555 PPM
NO. 813 = 0.0665 PPM	NO. 863 = 0.0505 PPM	NO. 913 = 0.0620 PPM	NO. 963 = 0.0591 PPM
NO. 814 = 0.0617 PPM	NO. 864 = 0.0517 PPM	NO. 914 = 0.0601 PPM	NO. 964 = 0.0614 PPM
NO. 815 = 0.0566 PPM	NO. 865 = 0.0574 PPM	NO. 915 = 0.0584 PPM	NO. 965 = 0.0578 PPM
NO. 816 = 0.0526 PPM	NO. 866 = 0.0609 PPM	NO. 916 = 0.0586 PPM	NO. 966 = 0.0612 PPM
NO. 817 = 0.0509 PPM	NO. 867 = 0.0614 PPM	NO. 917 = 0.0600 PPM	NO. 967 = 0.0747 PPM
NO. 818 = 0.0494 PPM	NO. 868 = 0.0612 PPM	NO. 918 = 0.0578 PPM	NO. 968 = 0.0799 PPM
NO. 819 = 0.0516 PPM	NO. 869 = 0.0612 PPM	NO. 919 = 0.0555 PPM	NO. 969 = 0.0924 PPM
NO. 820 = 0.0566 PPM	NO. 870 = 0.0621 PPM	NO. 920 = 0.0619 PPM	NO. 970 = 0.0963 PPM
NO. 821 = 0.0590 PPM	NO. 871 = 0.0615 PPM	NO. 921 = 0.0742 PPM	NO. 971 = 0.0947 PPM
NO. 822 = 0.0597 PPM	NO. 872 = 0.0606 PPM	NO. 922 = 0.0812 PPM	NO. 972 = 0.0927 PPM
NO. 823 = 0.0603 PPM	NO. 873 = 0.0567 PPM	NO. 923 = 0.0874 PPM	NO. 973 = 0.0871 PPM
NO. 824 = 0.0619 PPM	NO. 874 = 0.0622 PPM	NO. 924 = 0.0930 PPM	NO. 974 = 0.0798 PPM
NO. 825 = 0.0629 PPM	NO. 875 = 0.0735 PPM	NO. 925 = 0.0914 PPM	NO. 975 = 0.0756 PPM
NO. 826 = 0.0639 PPM	NO. 876 = 0.0692 PPM	NO. 926 = 0.0868 PPM	NO. 976 = 0.0718 PPM
NO. 827 = 0.0603 PPM	NO. 877 = 0.0768 PPM	NO. 927 = 0.0784 PPM	NO. 977 = 0.0681 PPM
NO. 828 = 0.0625 PPM	NO. 878 = 0.0884 PPM	NO. 928 = 0.0737 PPM	NO. 978 = 0.0644 PPM
NO. 829 = 0.0706 PPM	NO. 879 = 0.0829 PPM	NO. 929 = 0.0706 PPM	NO. 979 = 0.0687 PPM
NO. 830 = 0.0513 PPM	NO. 880 = 0.0765 PPM	NO. 930 = 0.0669 PPM	NO. 980 = 0.0637 PPM
NO. 831 = 0.0702 PPM	NO. 881 = 0.0714 PPM	NO. 931 = 0.0637 PPM	NO. 981 = 0.0611 PPM
NO. 832 = 0.0764 PPM	NO. 882 = 0.0676 PPM	NO. 932 = 0.0660 PPM	NO. 982 = 0.0617 PPM
NO. 833 = 0.0724 PPM	NO. 883 = 0.0649 PPM	NO. 933 = 0.0707 PPM	NO. 983 = 0.0661 PPM
NO. 834 = 0.0682 PPM	NO. 884 = 0.0620 PPM	NO. 934 = 0.0663 PPM	NO. 984 = 0.0666 PPM
NO. 835 = 0.0654 PPM	NO. 885 = 0.0609 PPM	NO. 935 = 0.0628 PPM	NO. 985 = 0.0689 PPM
NO. 836 = 0.0633 PPM	NO. 886 = 0.0648 PPM	NO. 936 = 0.0636 PPM	NO. 986 = 0.0709 PPM
NO. 837 = 0.0607 PPM	NO. 887 = 0.0690 PPM	NO. 937 = 0.0642 PPM	NO. 987 = 0.0705 PPM
NO. 838 = 0.0608 PPM	NO. 888 = 0.0702 PPM	NO. 938 = 0.0664 PPM	NO. 988 = 0.0767 PPM
NO. 839 = 0.0620 PPM	NO. 889 = 0.0647 PPM	NO. 939 = 0.0700 PPM	NO. 989 = 0.0907 PPM
NO. 840 = 0.0639 PPM	NO. 890 = 0.0612 PPM	NO. 940 = 0.0707 PPM	NO. 990 = 0.0979 PPM
NO. 841 = 0.0642 PPM	NO. 891 = 0.0611 PPM	NO. 941 = 0.0743 PPM	NO. 991 = 0.0971 PPM
NO. 842 = 0.0646 PPM	NO. 892 = 0.0652 PPM	NO. 942 = 0.0764 PPM	NO. 992 = 0.0973 PPM
NO. 843 = 0.0617 PPM	NO. 893 = 0.0679 PPM	NO. 943 = 0.0852 PPM	NO. 993 = 0.0816 PPM
NO. 844 = 0.0607 PPM	NO. 894 = 0.0687 PPM	NO. 944 = 0.0902 PPM	NO. 994 = 0.0684 PPM
NO. 845 = 0.0652 PPM	NO. 895 = 0.0745 PPM	NO. 945 = 0.0902 PPM	NO. 995 = 0.0627 PPM
NO. 846 = 0.0646 PPM	NO. 896 = 0.0776 PPM	NO. 946 = 0.0776 PPM	NO. 996 = 0.0549 PPM
NO. 847 = 0.0649 PPM	NO. 897 = 0.0809 PPM	NO. 947 = 0.0717 PPM	NO. 997 = 0.0540 PPM
NO. 848 = 0.0690 PPM	NO. 898 = 0.0868 PPM	NO. 948 = 0.0681 PPM	NO. 998 = 0.0531 PPM
NO. 849 = 0.0714 PPM	NO. 899 = 0.0847 PPM	NO. 949 = 0.0678 PPM	NO. 999 = 0.0512 PPM
NO. 850 = 0.0776 PPM	NO. 900 = 0.0779 PPM	NO. 950 = 0.0641 PPM	NO. 1000 = 0.0578 PPM

A-5. continued.

NO. 1001 = 0.0629 PPM	NO. 1051 = 0.0584 PPM	NO. 1101 = 0.0552 PPM	NO. 1151 = 0.0707 PPM
NO. 1002 = 0.0659 PPM	NO. 1052 = 0.0559 PPM	NO. 1102 = 0.0553 PPM	NO. 1152 = 0.0871 PPM
NO. 1003 = 0.0609 PPM	NO. 1053 = 0.0523 PPM	NO. 1103 = 0.0561 PPM	NO. 1153 = 0.0956 PPM
NO. 1004 = 0.0574 PPM	NO. 1054 = 0.0533 PPM	NO. 1104 = 0.0628 PPM	NO. 1154 = 0.0913 PPM
NO. 1005 = 0.0581 PPM	NO. 1055 = 0.0550 PPM	NO. 1105 = 0.0733 PPM	NO. 1155 = 0.0938 PPM
NO. 1006 = 0.0580 PPM	NO. 1056 = 0.0552 PPM	NO. 1106 = 0.0896 PPM	NO. 1156 = 0.0965 PPM
NO. 1007 = 0.0558 PPM	NO. 1057 = 0.0551 PPM	NO. 1107 = 0.0957 PPM	NO. 1157 = 0.1024 PPM
NO. 1008 = 0.0549 PPM	NO. 1058 = 0.0623 PPM	NO. 1108 = 0.0949 PPM	NO. 1158 = 0.1081 PPM
NO. 1009 = 0.0572 PPM	NO. 1059 = 0.0759 PPM	NO. 1109 = 0.0941 PPM	NO. 1159 = 0.1041 PPM
NO. 1010 = 0.0557 PPM	NO. 1060 = 0.0871 PPM	NO. 1110 = 0.0944 PPM	NO. 1160 = 0.0930 PPM
NO. 1011 = 0.0630 PPM	NO. 1061 = 0.0962 PPM	NO. 1111 = 0.0959 PPM	NO. 1161 = 0.0747 PPM
NO. 1012 = 0.0617 PPM	NO. 1062 = 0.0955 PPM	NO. 1112 = 0.0902 PPM	NO. 1162 = 0.0707 PPM
NO. 1013 = 0.0755 PPM	NO. 1063 = 0.0956 PPM	NO. 1113 = 0.0826 PPM	NO. 1163 = 0.0688 PPM
NO. 1014 = 0.0822 PPM	NO. 1064 = 0.0952 PPM	NO. 1114 = 0.0774 PPM	NO. 1164 = 0.0679 PPM
NO. 1015 = 0.0976 PPM	NO. 1065 = 0.0919 PPM	NO. 1115 = 0.0765 PPM	NO. 1165 = 0.0657 PPM
NO. 1016 = 0.0969 PPM	NO. 1066 = 0.0892 PPM	NO. 1116 = 0.0755 PPM	NO. 1166 = 0.0645 PPM
NO. 1017 = 0.0953 PPM	NO. 1067 = 0.0869 PPM	NO. 1117 = 0.0711 PPM	NO. 1167 = 0.0730 PPM
NO. 1018 = 0.0942 PPM	NO. 1068 = 0.0833 PPM	NO. 1118 = 0.0670 PPM	NO. 1168 = 0.0820 PPM
NO. 1019 = 0.0917 PPM	NO. 1069 = 0.0777 PPM	NO. 1119 = 0.0641 PPM	NO. 1169 = 0.0869 PPM
NO. 1020 = 0.0872 PPM	NO. 1070 = 0.0713 PPM	NO. 1120 = 0.0618 PPM	NO. 1170 = 0.0950 PPM
NO. 1021 = 0.0819 PPM	NO. 1071 = 0.0675 PPM	NO. 1121 = 0.0659 PPM	NO. 1171 = 0.0983 PPM
NO. 1022 = 0.0755 PPM	NO. 1072 = 0.0647 PPM	NO. 1122 = 0.0730 PPM	NO. 1172 = 0.1036 PPM
NO. 1023 = 0.0716 PPM	NO. 1073 = 0.0620 PPM	NO. 1123 = 0.0783 PPM	NO. 1173 = 0.1078 PPM
NO. 1024 = 0.0677 PPM	NO. 1074 = 0.0616 PPM	NO. 1124 = 0.0871 PPM	NO. 1174 = 0.1151 PPM
NO. 1025 = 0.0645 PPM	NO. 1075 = 0.0645 PPM	NO. 1125 = 0.0941 PPM	NO. 1175 = 0.1128 PPM
NO. 1026 = 0.0620 PPM	NO. 1076 = 0.0675 PPM	NO. 1126 = 0.0999 PPM	NO. 1176 = 0.1093 PPM
NO. 1027 = 0.0600 PPM	NO. 1077 = 0.0697 PPM	NO. 1127 = 0.1040 PPM	NO. 1177 = 0.1041 PPM
NO. 1028 = 0.0635 PPM	NO. 1078 = 0.0770 PPM	NO. 1128 = 0.1153 PPM	NO. 1178 = 0.0941 PPM
NO. 1029 = 0.0646 PPM	NO. 1079 = 0.0863 PPM	NO. 1129 = 0.1136 PPM	NO. 1179 = 0.0848 PPM
NO. 1030 = 0.0671 PPM	NO. 1080 = 0.0974 PPM	NO. 1130 = 0.1102 PPM	NO. 1180 = 0.0808 PPM
NO. 1031 = 0.0668 PPM	NO. 1081 = 0.1014 PPM	NO. 1131 = 0.1055 PPM	NO. 1181 = 0.0701 PPM
NO. 1032 = 0.0712 PPM	NO. 1082 = 0.1112 PPM	NO. 1132 = 0.0919 PPM	NO. 1182 = 0.0919 PPM
NO. 1033 = 0.0807 PPM	NO. 1083 = 0.1090 PPM	NO. 1133 = 0.0808 PPM	NO. 1183 = 0.0849 PPM
NO. 1034 = 0.0896 PPM	NO. 1084 = 0.1101 PPM	NO. 1134 = 0.0776 PPM	NO. 1184 = 0.0747 PPM
NO. 1035 = 0.0968 PPM	NO. 1085 = 0.0936 PPM	NO. 1135 = 0.0575 PPM	NO. 1185 = 0.0663 PPM
NO. 1036 = 0.1058 PPM	NO. 1086 = 0.0853 PPM	NO. 1136 = 0.0873 PPM	NO. 1186 = 0.0596 PPM
NO. 1037 = 0.1032 PPM	NO. 1087 = 0.0800 PPM	NO. 1137 = 0.0736 PPM	NO. 1187 = 0.0607 PPM
NO. 1038 = 0.0919 PPM	NO. 1088 = 0.0777 PPM	NO. 1138 = 0.0647 PPM	NO. 1188 = 0.0627 PPM
NO. 1039 = 0.0892 PPM	NO. 1089 = 0.0809 PPM	NO. 1139 = 0.0575 PPM	NO. 1189 = 0.0620 PPM
NO. 1040 = 0.0783 PPM	NO. 1090 = 0.0644 PPM	NO. 1140 = 0.0559 PPM	NO. 1190 = 0.0595 PPM
NO. 1041 = 0.0781 PPM	NO. 1091 = 0.0667 PPM	NO. 1141 = 0.0543 PPM	NO. 1191 = 0.0553 PPM
NO. 1042 = 0.0764 PPM	NO. 1092 = 0.0628 PPM	NO. 1142 = 0.0539 PPM	NO. 1192 = 0.0542 PPM
NO. 1043 = 0.0749 PPM	NO. 1093 = 0.0603 PPM	NO. 1143 = 0.0541 PPM	NO. 1193 = 0.0543 PPM
NO. 1044 = 0.0801 PPM	NO. 1094 = 0.0611 PPM	NO. 1144 = 0.0546 PPM	NO. 1194 = 0.0568 PPM
NO. 1045 = 0.0807 PPM	NO. 1095 = 0.0569 PPM	NO. 1145 = 0.0563 PPM	NO. 1195 = 0.0574 PPM
NO. 1046 = 0.0698 PPM	NO. 1096 = 0.0540 PPM	NO. 1146 = 0.0546 PPM	NO. 1196 = 0.0639 PPM
NO. 1047 = 0.0676 PPM	NO. 1097 = 0.0577 PPM	NO. 1147 = 0.0548 PPM	NO. 1197 = 0.0681 PPM
NO. 1048 = 0.0665 PPM	NO. 1098 = 0.0551 PPM	NO. 1148 = 0.0561 PPM	NO. 1198 = 0.0900 PPM
NO. 1049 = 0.0585 PPM	NO. 1099 = 0.0539 PPM	NO. 1149 = 0.0590 PPM	NO. 1199 = 0.0930 PPM
NO. 1050 = 0.0624 PPM	NO. 1100 = 0.0558 PPM	NO. 1150 = 0.0634 PPM	NO. 1200 = 0.0934 PPM

A-5. continued.

NO. 1201 = 0.0932 PPM	NO. 1251 = 0.1026 PPM	NO. 1301 = 0.0872 PPM	NO. 1351 = 0.0817 PPM
NO. 1202 = 0.0897 PPM	NO. 1252 = 0.0926 PPM	NO. 1302 = 0.0744 PPM	NO. 1352 = 0.0930 PPM
NO. 1203 = 0.0971 PPM	NO. 1253 = 0.0935 PPM	NO. 1303 = 0.0663 PPM	NO. 1353 = 0.0990 PPM
NO. 1204 = 0.0569 PPM	NO. 1254 = 0.0907 PPM	NO. 1304 = 0.0736 PPM	NO. 1354 = 0.0985 PPM
NO. 1205 = 0.1057 PPM	NO. 1255 = 0.0749 PPM	NO. 1305 = 0.0847 PPM	NO. 1355 = 0.0987 PPM
NO. 1206 = 0.0882 PPM	NO. 1256 = 0.0643 PPM	NO. 1306 = 0.0927 PPM	NO. 1356 = 0.0979 PPM
NO. 1207 = 0.0939 PPM	NO. 1257 = 0.0639 PPM	NO. 1307 = 0.0971 PPM	NO. 1357 = 0.0994 PPM
NO. 1208 = 0.0771 PPM	NO. 1258 = 0.0726 PPM	NO. 1308 = 0.1014 PPM	NO. 1358 = 0.0982 PPM
NO. 1209 = 0.0670 PPM	NO. 1259 = 0.0829 PPM	NO. 1309 = 0.0985 PPM	NO. 1359 = 0.0946 PPM
NO. 1210 = 0.0660 PPM	NO. 1260 = 0.0902 PPM	NO. 1310 = 0.1024 PPM	NO. 1360 = 0.0901 PPM
NO. 1211 = 0.0647 PPM	NO. 1261 = 0.0983 PPM	NO. 1311 = 0.1014 PPM	NO. 1361 = 0.0896 PPM
NO. 1212 = 0.0685 PPM	NO. 1262 = 0.1005 PPM	NO. 1312 = 0.1039 PPM	NO. 1362 = 0.0922 PPM
NO. 1213 = 0.0783 PPM	NO. 1263 = 0.1038 PPM	NO. 1313 = 0.0995 PPM	NO. 1363 = 0.0894 PPM
NO. 1214 = 0.0886 PPM	NO. 1264 = 0.1057 PPM	NO. 1314 = 0.0961 PPM	NO. 1364 = 0.0914 PPM
NO. 1215 = 0.0945 PPM	NO. 1265 = 0.1052 PPM	NO. 1315 = 0.0922 PPM	NO. 1365 = 0.0872 PPM
NO. 1216 = 0.0973 PPM	NO. 1266 = 0.1087 PPM	NO. 1316 = 0.0944 PPM	NO. 1366 = 0.0850 PPM
NO. 1217 = 0.1034 PPM	NO. 1267 = 0.1052 PPM	NO. 1317 = 0.0976 PPM	NO. 1367 = 0.0850 PPM
NO. 1218 = 0.1029 PPM	NO. 1268 = 0.1019 PPM	NO. 1318 = 0.0967 PPM	NO. 1368 = 0.0816 PPM
NO. 1219 = 0.1091 PPM	NO. 1269 = 0.0933 PPM	NO. 1319 = 0.0968 PPM	NO. 1369 = 0.0796 PPM
NO. 1220 = 0.1099 PPM	NO. 1270 = 0.0918 PPM	NO. 1320 = 0.0940 PPM	NO. 1370 = 0.0771 PPM
NO. 1221 = 0.1089 PPM	NO. 1271 = 0.0983 PPM	NO. 1321 = 0.0920 PPM	NO. 1371 = 0.0775 PPM
NO. 1222 = 0.1052 PPM	NO. 1272 = 0.1026 PPM	NO. 1322 = 0.0875 PPM	NO. 1372 = 0.0770 PPM
NO. 1223 = 0.0992 PPM	NO. 1273 = 0.1040 PPM	NO. 1323 = 0.0830 PPM	NO. 1373 = 0.0729 PPM
NO. 1224 = 0.0927 PPM	NO. 1274 = 0.0962 PPM	NO. 1324 = 0.0790 PPM	NO. 1374 = 0.0706 PPM
NO. 1225 = 0.0925 PPM	NO. 1275 = 0.0920 PPM	NO. 1325 = 0.0752 PPM	NO. 1375 = 0.0700 PPM
NO. 1226 = 0.0977 PPM	NO. 1276 = 0.0858 PPM	NO. 1326 = 0.0715 PPM	NO. 1376 = 0.0692 PPM
NO. 1227 = 0.0976 PPM	NO. 1277 = 0.0808 PPM	NO. 1327 = 0.0697 PPM	NO. 1377 = 0.0681 PPM
NO. 1228 = 0.0890 PPM	NO. 1278 = 0.0747 PPM	NO. 1328 = 0.0684 PPM	NO. 1378 = 0.0689 PPM
NO. 1229 = 0.0883 PPM	NO. 1279 = 0.0711 PPM	NO. 1329 = 0.0673 PPM	NO. 1379 = 0.0686 PPM
NO. 1230 = 0.0818 PPM	NO. 1280 = 0.0689 PPM	NO. 1330 = 0.0657 PPM	NO. 1380 = 0.0653 PPM
NO. 1231 = 0.0761 PPM	NO. 1281 = 0.0669 PPM	NO. 1331 = 0.0645 PPM	NO. 1381 = 0.0665 PPM
NO. 1232 = 0.0693 PPM	NO. 1282 = 0.0655 PPM	NO. 1332 = 0.0639 PPM	NO. 1382 = 0.0779 PPM
NO. 1233 = 0.0648 PPM	NO. 1283 = 0.0641 PPM	NO. 1333 = 0.0648 PPM	NO. 1383 = 0.0812 PPM
NO. 1234 = 0.0618 PPM	NO. 1284 = 0.0623 PPM	NO. 1334 = 0.0651 PPM	NO. 1384 = 0.0817 PPM
NO. 1235 = 0.0605 PPM	NO. 1285 = 0.0610 PPM	NO. 1335 = 0.0655 PPM	NO. 1385 = 0.0842 PPM
NO. 1236 = 0.0597 PPM	NO. 1286 = 0.0587 PPM	NO. 1336 = 0.0810 PPM	NO. 1386 = 0.0815 PPM
NO. 1237 = 0.0587 PPM	NO. 1287 = 0.0595 PPM	NO. 1337 = 0.0836 PPM	NO. 1387 = 0.0905 PPM
NO. 1238 = 0.0577 PPM	NO. 1288 = 0.0650 PPM	NO. 1338 = 0.0832 PPM	NO. 1388 = 0.0882 PPM
NO. 1239 = 0.0563 PPM	NO. 1289 = 0.0650 PPM	NO. 1339 = 0.0857 PPM	NO. 1389 = 0.0939 PPM
NO. 1240 = 0.0552 PPM	NO. 1290 = 0.0855 PPM	NO. 1340 = 0.0837 PPM	NO. 1390 = 0.0805 PPM
NO. 1241 = 0.0558 PPM	NO. 1291 = 0.0864 PPM	NO. 1341 = 0.0917 PPM	NO. 1391 = 0.0925 PPM
NO. 1242 = 0.0645 PPM	NO. 1292 = 0.0871 PPM	NO. 1342 = 0.0915 PPM	NO. 1392 = 0.0931 PPM
NO. 1243 = 0.0656 PPM	NO. 1293 = 0.0873 PPM	NO. 1343 = 0.0971 PPM	NO. 1393 = 0.0865 PPM
NO. 1244 = 0.0893 PPM	NO. 1294 = 0.0859 PPM	NO. 1344 = 0.0907 PPM	NO. 1394 = 0.0865 PPM
NO. 1245 = 0.0913 PPM	NO. 1295 = 0.0986 PPM	NO. 1345 = 0.0927 PPM	NO. 1395 = 0.0853 PPM
NO. 1246 = 0.0918 PPM	NO. 1296 = 0.0739 PPM	NO. 1346 = 0.0889 PPM	NO. 1396 = 0.0787 PPM
NO. 1247 = 0.0903 PPM	NO. 1297 = 0.0939 PPM	NO. 1347 = 0.0869 PPM	NO. 1397 = 0.0786 PPM
NO. 1248 = 0.0880 PPM	NO. 1298 = 0.0878 PPM	NO. 1348 = 0.0864 PPM	NO. 1398 = 0.0904 PPM
NO. 1249 = 0.0998 PPM	NO. 1299 = 0.0950 PPM	NO. 1349 = 0.0777 PPM	NO. 1399 = 0.0965 PPM
NO. 1250 = 0.0571 PPM	NO. 1300 = 0.0913 PPM	NO. 1350 = 0.0703 PPM	NO. 1400 = 0.0977 PPM

A-5. continued.

NO. 1401 = 0.0954 PPM	NO. 1451 = 0.0832 PPM	NO. 1501 = 0.0720 PPM	NO. 1551 = 0.0651 PPM
NO. 1402 = 0.0922 PPM	NO. 1452 = 0.0831 PPM	NO. 1502 = 0.0695 PPM	NO. 1552 = 0.0646 PPM
NO. 1403 = 0.0932 PPM	NO. 1453 = 0.0819 PPM	NO. 1503 = 0.0681 PPM	NO. 1553 = 0.0641 PPM
NO. 1404 = 0.0901 PPM	NO. 1454 = 0.0807 PPM	NO. 1504 = 0.0665 PPM	NO. 1554 = 0.0638 PPM
NO. 1405 = 0.0871 PPM	NO. 1455 = 0.0744 PPM	NO. 1505 = 0.0652 PPM	NO. 1555 = 0.0641 PPM
NO. 1406 = 0.0859 PPM	NO. 1456 = 0.0716 PPM	NO. 1506 = 0.0642 PPM	NO. 1556 = 0.0645 PPM
NO. 1407 = 0.0846 PPM	NO. 1457 = 0.0713 PPM	NO. 1507 = 0.0647 PPM	NO. 1557 = 0.0649 PPM
NO. 1408 = 0.0850 PPM	NO. 1458 = 0.0685 PPM	NO. 1508 = 0.0654 PPM	NO. 1558 = 0.0651 PPM
NO. 1409 = 0.0812 PPM	NO. 1459 = 0.0687 PPM	NO. 1509 = 0.0662 PPM	NO. 1559 = 0.0652 PPM
NO. 1410 = 0.0809 PPM	NO. 1460 = 0.0670 PPM	NO. 1510 = 0.0669 PPM	NO. 1560 = 0.0644 PPM
NO. 1411 = 0.0801 PPM	NO. 1461 = 0.0661 PPM	NO. 1511 = 0.0676 PPM	NO. 1561 = 0.0647 PPM
NO. 1412 = 0.0764 PPM	NO. 1462 = 0.0665 PPM	NO. 1512 = 0.0681 PPM	NO. 1562 = 0.0660 PPM
NO. 1413 = 0.0769 PPM	NO. 1463 = 0.0675 PPM	NO. 1513 = 0.0682 PPM	NO. 1563 = 0.0638 PPM
NO. 1414 = 0.0748 PPM	NO. 1464 = 0.0686 PPM	NO. 1514 = 0.0684 PPM	NO. 1564 = 0.0647 PPM
NO. 1415 = 0.0727 PPM	NO. 1465 = 0.0695 PPM	NO. 1515 = 0.0682 PPM	NO. 1565 = 0.0675 PPM
NO. 1416 = 0.0713 PPM	NO. 1466 = 0.0702 PPM	NO. 1516 = 0.0680 PPM	NO. 1566 = 0.0723 PPM
NO. 1417 = 0.0718 PPM	NO. 1467 = 0.0705 PPM	NO. 1517 = 0.0652 PPM	NO. 1567 = 0.0776 PPM
NO. 1418 = 0.0716 PPM	NO. 1468 = 0.0709 PPM	NO. 1518 = 0.0651 PPM	NO. 1568 = 0.0782 PPM
NO. 1419 = 0.0714 PPM	NO. 1469 = 0.0702 PPM	NO. 1519 = 0.0669 PPM	NO. 1569 = 0.0778 PPM
NO. 1420 = 0.0707 PPM	NO. 1470 = 0.0706 PPM	NO. 1520 = 0.0727 PPM	NO. 1570 = 0.0805 PPM
NO. 1421 = 0.0706 PPM	NO. 1471 = 0.0683 PPM	NO. 1521 = 0.0794 PPM	NO. 1571 = 0.0835 PPM
NO. 1422 = 0.0711 PPM	NO. 1472 = 0.0654 PPM	NO. 1522 = 0.0771 PPM	NO. 1572 = 0.0829 PPM
NO. 1423 = 0.0709 PPM	NO. 1473 = 0.0667 PPM	NO. 1523 = 0.0813 PPM	NO. 1573 = 0.0840 PPM
NO. 1424 = 0.0713 PPM	NO. 1474 = 0.0752 PPM	NO. 1524 = 0.0814 PPM	NO. 1574 = 0.0866 PPM
NO. 1425 = 0.0697 PPM	NO. 1475 = 0.0774 PPM	NO. 1525 = 0.0821 PPM	NO. 1575 = 0.0824 PPM
NO. 1426 = 0.0655 PPM	NO. 1476 = 0.0805 PPM	NO. 1526 = 0.0854 PPM	NO. 1576 = 0.0828 PPM
NO. 1427 = 0.0667 PPM	NO. 1477 = 0.0801 PPM	NO. 1527 = 0.0886 PPM	NO. 1577 = 0.0824 PPM
NO. 1428 = 0.0764 PPM	NO. 1478 = 0.0814 PPM	NO. 1528 = 0.0822 PPM	NO. 1578 = 0.0824 PPM
NO. 1429 = 0.0785 PPM	NO. 1479 = 0.0858 PPM	NO. 1529 = 0.0827 PPM	NO. 1579 = 0.0804 PPM
NO. 1430 = 0.0816 PPM	NO. 1480 = 0.0897 PPM	NO. 1530 = 0.0833 PPM	NO. 1580 = 0.0795 PPM
NO. 1431 = 0.0810 PPM	NO. 1481 = 0.0869 PPM	NO. 1531 = 0.0853 PPM	NO. 1581 = 0.0792 PPM
NO. 1432 = 0.0843 PPM	NO. 1482 = 0.0825 PPM	NO. 1532 = 0.0842 PPM	NO. 1582 = 0.0753 PPM
NO. 1433 = 0.0867 PPM	NO. 1483 = 0.0870 PPM	NO. 1533 = 0.0846 PPM	NO. 1583 = 0.0757 PPM
NO. 1434 = 0.0896 PPM	NO. 1484 = 0.0832 PPM	NO. 1534 = 0.0805 PPM	NO. 1584 = 0.0761 PPM
NO. 1435 = 0.0849 PPM	NO. 1485 = 0.0877 PPM	NO. 1535 = 0.0792 PPM	NO. 1585 = 0.0771 PPM
NO. 1436 = 0.0878 PPM	NO. 1486 = 0.0887 PPM	NO. 1536 = 0.0754 PPM	NO. 1586 = 0.0750 PPM
NO. 1437 = 0.0842 PPM	NO. 1487 = 0.0821 PPM	NO. 1537 = 0.0792 PPM	NO. 1587 = 0.0748 PPM
NO. 1438 = 0.0901 PPM	NO. 1488 = 0.0823 PPM	NO. 1538 = 0.0841 PPM	NO. 1588 = 0.0763 PPM
NO. 1439 = 0.0912 PPM	NO. 1489 = 0.0767 PPM	NO. 1539 = 0.0821 PPM	NO. 1589 = 0.0745 PPM
NO. 1440 = 0.0847 PPM	NO. 1490 = 0.0779 PPM	NO. 1540 = 0.0783 PPM	NO. 1590 = 0.0774 PPM
NO. 1441 = 0.0849 PPM	NO. 1491 = 0.0873 PPM	NO. 1541 = 0.0764 PPM	NO. 1591 = 0.0773 PPM
NO. 1442 = 0.0826 PPM	NO. 1492 = 0.0914 PPM	NO. 1542 = 0.0784 PPM	NO. 1592 = 0.0773 PPM
NO. 1443 = 0.0767 PPM	NO. 1493 = 0.0875 PPM	NO. 1543 = 0.0779 PPM	NO. 1593 = 0.0723 PPM
NO. 1444 = 0.0849 PPM	NO. 1494 = 0.0822 PPM	NO. 1544 = 0.0775 PPM	NO. 1594 = 0.0699 PPM
NO. 1445 = 0.0932 PPM	NO. 1495 = 0.0811 PPM	NO. 1545 = 0.0770 PPM	NO. 1595 = 0.0691 PPM
NO. 1446 = 0.0958 PPM	NO. 1496 = 0.0804 PPM	NO. 1546 = 0.0791 PPM	NO. 1596 = 0.0681 PPM
NO. 1447 = 0.0910 PPM	NO. 1497 = 0.0811 PPM	NO. 1547 = 0.0688 PPM	NO. 1597 = 0.0668 PPM
NO. 1448 = 0.0872 PPM	NO. 1498 = 0.0807 PPM	NO. 1548 = 0.0674 PPM	NO. 1598 = 0.0660 PPM
NO. 1449 = 0.0865 PPM	NO. 1499 = 0.0792 PPM	NO. 1549 = 0.0666 PPM	NO. 1599 = 0.0663 PPM
NO. 1450 = 0.0836 PPM	NO. 1500 = 0.0785 PPM	NO. 1550 = 0.0657 PPM	NO. 1600 = 0.0654 PPM

A-5. continued.

NO. 1601 = 0.0643 PPM	NO. 1651 = 0.0591 PPM	NO. 1701 = 0.0554 PPM	NO. 1751 = 0.0690 PPM
NO. 1602 = 0.0633 PPM	NO. 1652 = 0.0581 PPM	NO. 1702 = 0.0624 PPM	NO. 1752 = 0.0686 PPM
NO. 1603 = 0.0625 PPM	NO. 1653 = 0.0574 PPM	NO. 1703 = 0.0641 PPM	NO. 1753 = 0.0691 PPM
NO. 1604 = 0.0617 PPM	NO. 1654 = 0.0568 PPM	NO. 1704 = 0.0700 PPM	NO. 1754 = 0.0723 PPM
NO. 1605 = 0.0615 PPM	NO. 1655 = 0.0567 PPM	NO. 1705 = 0.0731 PPM	NO. 1755 = 0.0731 PPM
NO. 1606 = 0.0607 PPM	NO. 1656 = 0.0634 PPM	NO. 1706 = 0.0737 PPM	NO. 1756 = 0.0773 PPM
NO. 1607 = 0.0604 PPM	NO. 1657 = 0.0650 PPM	NO. 1707 = 0.0744 PPM	NO. 1757 = 0.0791 PPM
NO. 1608 = 0.0607 PPM	NO. 1658 = 0.0695 PPM	NO. 1708 = 0.0749 PPM	NO. 1758 = 0.0790 PPM
NO. 1609 = 0.0599 PPM	NO. 1659 = 0.0747 PPM	NO. 1709 = 0.0794 PPM	NO. 1759 = 0.0816 PPM
NO. 1610 = 0.0644 PPM	NO. 1660 = 0.0725 PPM	NO. 1710 = 0.0785 PPM	NO. 1760 = 0.0812 PPM
NO. 1611 = 0.0662 PPM	NO. 1661 = 0.0755 PPM	NO. 1711 = 0.0819 PPM	NO. 1761 = 0.0792 PPM
NO. 1612 = 0.0720 PPM	NO. 1662 = 0.0774 PPM	NO. 1712 = 0.0841 PPM	NO. 1762 = 0.0802 PPM
NO. 1613 = 0.0749 PPM	NO. 1663 = 0.0742 PPM	NO. 1713 = 0.0823 PPM	NO. 1763 = 0.0787 PPM
NO. 1614 = 0.0771 PPM	NO. 1664 = 0.0805 PPM	NO. 1714 = 0.0855 PPM	NO. 1764 = 0.0793 PPM
NO. 1615 = 0.0780 PPM	NO. 1665 = 0.0802 PPM	NO. 1715 = 0.0846 PPM	NO. 1765 = 0.0769 PPM
NO. 1616 = 0.0764 PPM	NO. 1666 = 0.0812 PPM	NO. 1716 = 0.0848 PPM	NO. 1766 = 0.0765 PPM
NO. 1617 = 0.0803 PPM	NO. 1667 = 0.0845 PPM	NO. 1717 = 0.0819 PPM	NO. 1767 = 0.0736 PPM
NO. 1618 = 0.0795 PPM	NO. 1668 = 0.0849 PPM	NO. 1718 = 0.0810 PPM	NO. 1768 = 0.0748 PPM
NO. 1619 = 0.0825 PPM	NO. 1669 = 0.0858 PPM	NO. 1719 = 0.0782 PPM	NO. 1769 = 0.0747 PPM
NO. 1620 = 0.0840 PPM	NO. 1670 = 0.0819 PPM	NO. 1720 = 0.0790 PPM	NO. 1770 = 0.0765 PPM
NO. 1621 = 0.0845 PPM	NO. 1671 = 0.0808 PPM	NO. 1721 = 0.0747 PPM	NO. 1771 = 0.0744 PPM
NO. 1622 = 0.0873 PPM	NO. 1672 = 0.0791 PPM	NO. 1722 = 0.0711 PPM	NO. 1772 = 0.0748 PPM
NO. 1623 = 0.0829 PPM	NO. 1673 = 0.0756 PPM	NO. 1723 = 0.0714 PPM	NO. 1773 = 0.0748 PPM
NO. 1624 = 0.0828 PPM	NO. 1674 = 0.0740 PPM	NO. 1724 = 0.0731 PPM	NO. 1774 = 0.0758 PPM
NO. 1625 = 0.0811 PPM	NO. 1675 = 0.0715 PPM	NO. 1725 = 0.0702 PPM	NO. 1775 = 0.0787 PPM
NO. 1626 = 0.0774 PPM	NO. 1676 = 0.0738 PPM	NO. 1726 = 0.0713 PPM	NO. 1776 = 0.0810 PPM
NO. 1627 = 0.0752 PPM	NO. 1677 = 0.0729 PPM	NO. 1727 = 0.0722 PPM	NO. 1777 = 0.0815 PPM
NO. 1628 = 0.0775 PPM	NO. 1678 = 0.0719 PPM	NO. 1728 = 0.0735 PPM	NO. 1778 = 0.0836 PPM
NO. 1629 = 0.0757 PPM	NO. 1679 = 0.0705 PPM	NO. 1729 = 0.0770 PPM	NO. 1779 = 0.0812 PPM
NO. 1630 = 0.0742 PPM	NO. 1680 = 0.0700 PPM	NO. 1730 = 0.0790 PPM	NO. 1780 = 0.0795 PPM
NO. 1631 = 0.0737 PPM	NO. 1681 = 0.0715 PPM	NO. 1731 = 0.0785 PPM	NO. 1781 = 0.0785 PPM
NO. 1632 = 0.0736 PPM	NO. 1682 = 0.0731 PPM	NO. 1732 = 0.0797 PPM	NO. 1782 = 0.0775 PPM
NO. 1633 = 0.0729 PPM	NO. 1683 = 0.0763 PPM	NO. 1733 = 0.0783 PPM	NO. 1783 = 0.0762 PPM
NO. 1634 = 0.0724 PPM	NO. 1684 = 0.0787 PPM	NO. 1734 = 0.0776 PPM	NO. 1784 = 0.0743 PPM
NO. 1635 = 0.0731 PPM	NO. 1685 = 0.0765 PPM	NO. 1735 = 0.0768 PPM	NO. 1785 = 0.0712 PPM
NO. 1636 = 0.0746 PPM	NO. 1686 = 0.0794 PPM	NO. 1736 = 0.0759 PPM	NO. 1786 = 0.0681 PPM
NO. 1637 = 0.0750 PPM	NO. 1687 = 0.0778 PPM	NO. 1737 = 0.0749 PPM	NO. 1787 = 0.0643 PPM
NO. 1638 = 0.0761 PPM	NO. 1688 = 0.0760 PPM	NO. 1738 = 0.0730 PPM	NO. 1788 = 0.0610 PPM
NO. 1639 = 0.0749 PPM	NO. 1689 = 0.0743 PPM	NO. 1739 = 0.0707 PPM	NO. 1789 = 0.0581 PPM
NO. 1640 = 0.0732 PPM	NO. 1690 = 0.0722 PPM	NO. 1740 = 0.0673 PPM	NO. 1790 = 0.0553 PPM
NO. 1641 = 0.0719 PPM	NO. 1691 = 0.0700 PPM	NO. 1741 = 0.0639 PPM	NO. 1791 = 0.0549 PPM
NO. 1642 = 0.0706 PPM	NO. 1692 = 0.0681 PPM	NO. 1742 = 0.0604 PPM	NO. 1792 = 0.0556 PPM
NO. 1643 = 0.0694 PPM	NO. 1693 = 0.0662 PPM	NO. 1743 = 0.0573 PPM	NO. 1793 = 0.0562 PPM
NO. 1644 = 0.0678 PPM	NO. 1694 = 0.0640 PPM	NO. 1744 = 0.0543 PPM	NO. 1794 = 0.0608 PPM
NO. 1645 = 0.0670 PPM	NO. 1695 = 0.0616 PPM	NO. 1745 = 0.0538 PPM	NO. 1795 = 0.0455 PPM
NO. 1646 = 0.0659 PPM	NO. 1696 = 0.0594 PPM	NO. 1746 = 0.0554 PPM	NO. 1796 = 0.0589 PPM
NO. 1647 = 0.0645 PPM	NO. 1697 = 0.0575 PPM	NO. 1747 = 0.0562 PPM	NO. 1797 = 0.0613 PPM
NO. 1648 = 0.0630 PPM	NO. 1698 = 0.0557 PPM	NO. 1748 = 0.0617 PPM	NO. 1798 = 0.0636 PPM
NO. 1649 = 0.0615 PPM	NO. 1699 = 0.0547 PPM	NO. 1749 = 0.0631 PPM	NO. 1799 = 0.0654 PPM
NO. 1650 = 0.0601 PPM	NO. 1700 = 0.0540 PPM	NO. 1750 = 0.0630 PPM	NO. 1800 = 0.0666 PPM

A-5. continued.

NO. 1801 = 0.0678 PPM
NO. 1802 = 0.0690 PPM
NO. 1803 = 0.0702 PPM
NO. 1804 = 0.0694 PPM
NO. 1805 = 0.0685 PPM
NO. 1806 = 0.0683 PPM
NO. 1807 = 0.0681 PPM
NO. 1808 = 0.0678 PPM
NO. 1809 = 0.0668 PPM
NO. 1810 = 0.0658 PPM
NO. 1811 = 0.0651 PPM
NO. 1812 = 0.0646 PPM
NO. 1813 = 0.0630 PPM
NO. 1814 = 0.0614 PPM
NO. 1815 = 0.0598 PPM
NO. 1816 = 0.0582 PPM
NO. 1817 = 0.0589 PPM
NO. 1818 = 0.0606 PPM
NO. 1819 = 0.0622 PPM
NO. 1820 = 0.0639 PPM
NO. 1821 = 0.0650 PPM
NO. 1822 = 0.0644 PPM
NO. 1823 = 0.0637 PPM
NO. 1824 = 0.0631 PPM
NO. 1825 = 0.0626 PPM
NO. 1826 = 0.0617 PPM
NO. 1827 = 0.0609 PPM
NO. 1828 = 0.0609 PPM
NO. 1829 = 0.0615 PPM
NO. 1830 = 0.0618 PPM
NO. 1831 = 0.0609 PPM
NO. 1832 = 0.0599 PPM
NO. 1833 = 0.0590 PPM
NO. 1834 = 0.0580 PPM
NO. 1835 = 0.0581 PPM
NO. 1836 = 0.0585 PPM
NO. 1837 = 0.0589 PPM
NO. 1838 = 0.0592 PPM
NO. 1839 = 0.0593 PPM
NO. 1840 = 0.0594 PPM

A-6. UAM-DWM max. values for August 1, 1988.

NO. 1 = 0.0550 PPM	NO. 51 = 0.0741 PPM	NO. 101 = 0.0661 PPM	NO. 151 = 0.0537 PPM
NO. 2 = 0.0687 PPM	NO. 52 = 0.0740 PPM	NO. 102 = 0.0633 PPM	NO. 152 = 0.0543 PPM
NO. 3 = 0.0717 PPM	NO. 53 = 0.0733 PPM	NO. 103 = 0.0595 PPM	NO. 153 = 0.0556 PPM
NO. 4 = 0.0753 PPM	NO. 54 = 0.0715 PPM	NO. 104 = 0.0590 PPM	NO. 154 = 0.0538 PPM
NO. 5 = 0.0737 PPM	NO. 55 = 0.0687 PPM	NO. 105 = 0.0555 PPM	NO. 155 = 0.0529 PPM
NO. 6 = 0.0711 PPM	NO. 56 = 0.0652 PPM	NO. 106 = 0.0599 PPM	NO. 156 = 0.0524 PPM
NO. 7 = 0.0685 PPM	NO. 57 = 0.0613 PPM	NO. 107 = 0.0593 PPM	NO. 157 = 0.0516 PPM
NO. 8 = 0.0661 PPM	NO. 58 = 0.0589 PPM	NO. 108 = 0.0568 PPM	NO. 158 = 0.0541 PPM
NO. 9 = 0.0640 PPM	NO. 59 = 0.0579 PPM	NO. 109 = 0.0562 PPM	NO. 159 = 0.0538 PPM
NO. 10 = 0.0610 PPM	NO. 60 = 0.0683 PPM	NO. 110 = 0.0551 PPM	NO. 160 = 0.0576 PPM
NO. 11 = 0.0581 PPM	NO. 61 = 0.0596 PPM	NO. 111 = 0.0545 PPM	NO. 161 = 0.0677 PPM
NO. 12 = 0.0552 PPM	NO. 62 = 0.0578 PPM	NO. 112 = 0.0545 PPM	NO. 162 = 0.0578 PPM
NO. 13 = 0.0524 PPM	NO. 63 = 0.0567 PPM	NO. 113 = 0.0552 PPM	NO. 163 = 0.0551 PPM
NO. 14 = 0.0524 PPM	NO. 64 = 0.0556 PPM	NO. 114 = 0.0575 PPM	NO. 164 = 0.0545 PPM
NO. 15 = 0.0544 PPM	NO. 65 = 0.0560 PPM	NO. 115 = 0.0642 PPM	NO. 165 = 0.0543 PPM
NO. 16 = 0.0565 PPM	NO. 66 = 0.0572 PPM	NO. 116 = 0.0567 PPM	NO. 166 = 0.0536 PPM
NO. 17 = 0.0586 PPM	NO. 67 = 0.0582 PPM	NO. 117 = 0.0561 PPM	NO. 167 = 0.0531 PPM
NO. 18 = 0.0604 PPM	NO. 68 = 0.0596 PPM	NO. 118 = 0.0561 PPM	NO. 168 = 0.0532 PPM
NO. 19 = 0.0608 PPM	NO. 69 = 0.0637 PPM	NO. 119 = 0.0567 PPM	NO. 169 = 0.0531 PPM
NO. 20 = 0.0613 PPM	NO. 70 = 0.0595 PPM	NO. 120 = 0.0563 PPM	NO. 170 = 0.0553 PPM
NO. 21 = 0.0623 PPM	NO. 71 = 0.0586 PPM	NO. 121 = 0.0557 PPM	NO. 171 = 0.0601 PPM
NO. 22 = 0.0634 PPM	NO. 72 = 0.0582 PPM	NO. 122 = 0.0558 PPM	NO. 172 = 0.0733 PPM
NO. 23 = 0.0628 PPM	NO. 73 = 0.0580 PPM	NO. 123 = 0.0554 PPM	NO. 173 = 0.0765 PPM
NO. 24 = 0.0618 PPM	NO. 74 = 0.0578 PPM	NO. 124 = 0.0559 PPM	NO. 174 = 0.0638 PPM
NO. 25 = 0.0613 PPM	NO. 75 = 0.0576 PPM	NO. 125 = 0.0565 PPM	NO. 175 = 0.0580 PPM
NO. 26 = 0.0607 PPM	NO. 76 = 0.0585 PPM	NO. 126 = 0.0573 PPM	NO. 176 = 0.0571 PPM
NO. 27 = 0.0611 PPM	NO. 77 = 0.0597 PPM	NO. 127 = 0.0569 PPM	NO. 177 = 0.0511 PPM
NO. 28 = 0.0603 PPM	NO. 78 = 0.0653 PPM	NO. 128 = 0.0593 PPM	NO. 178 = 0.0561 PPM
NO. 29 = 0.0596 PPM	NO. 79 = 0.0610 PPM	NO. 129 = 0.0575 PPM	NO. 179 = 0.0526 PPM
NO. 30 = 0.0598 PPM	NO. 80 = 0.0617 PPM	NO. 130 = 0.0562 PPM	NO. 180 = 0.0515 PPM
NO. 31 = 0.0603 PPM	NO. 81 = 0.0639 PPM	NO. 131 = 0.0547 PPM	NO. 181 = 0.0502 PPM
NO. 32 = 0.0612 PPM	NO. 82 = 0.0687 PPM	NO. 132 = 0.0536 PPM	NO. 182 = 0.0514 PPM
NO. 33 = 0.0624 PPM	NO. 83 = 0.0680 PPM	NO. 133 = 0.0546 PPM	NO. 183 = 0.0535 PPM
NO. 34 = 0.0636 PPM	NO. 84 = 0.0654 PPM	NO. 134 = 0.0580 PPM	NO. 184 = 0.0565 PPM
NO. 35 = 0.0648 PPM	NO. 85 = 0.0598 PPM	NO. 135 = 0.0574 PPM	NO. 185 = 0.0598 PPM
NO. 36 = 0.0660 PPM	NO. 86 = 0.0617 PPM	NO. 136 = 0.0586 PPM	NO. 186 = 0.0555 PPM
NO. 37 = 0.0665 PPM	NO. 87 = 0.0641 PPM	NO. 137 = 0.0592 PPM	NO. 187 = 0.0541 PPM
NO. 38 = 0.0671 PPM	NO. 88 = 0.0676 PPM	NO. 138 = 0.0591 PPM	NO. 188 = 0.0535 PPM
NO. 39 = 0.0679 PPM	NO. 89 = 0.0679 PPM	NO. 139 = 0.0615 PPM	NO. 189 = 0.0536 PPM
NO. 40 = 0.0687 PPM	NO. 90 = 0.0679 PPM	NO. 140 = 0.0555 PPM	NO. 190 = 0.0536 PPM
NO. 41 = 0.0694 PPM	NO. 91 = 0.0675 PPM	NO. 141 = 0.0569 PPM	NO. 191 = 0.0521 PPM
NO. 42 = 0.0690 PPM	NO. 92 = 0.0620 PPM	NO. 142 = 0.0596 PPM	NO. 192 = 0.0523 PPM
NO. 43 = 0.0700 PPM	NO. 93 = 0.0633 PPM	NO. 143 = 0.0622 PPM	NO. 193 = 0.0526 PPM
NO. 44 = 0.0716 PPM	NO. 94 = 0.0589 PPM	NO. 144 = 0.0632 PPM	NO. 194 = 0.0526 PPM
NO. 45 = 0.0733 PPM	NO. 95 = 0.0643 PPM	NO. 145 = 0.0612 PPM	NO. 195 = 0.0523 PPM
NO. 46 = 0.0451 PPM	NO. 96 = 0.0689 PPM	NO. 146 = 0.0588 PPM	NO. 196 = 0.0519 PPM
NO. 47 = 0.0650 PPM	NO. 97 = 0.0713 PPM	NO. 147 = 0.0571 PPM	NO. 197 = 0.0515 PPM
NO. 48 = 0.0647 PPM	NO. 98 = 0.0752 PPM	NO. 148 = 0.0565 PPM	NO. 198 = 0.0511 PPM
NO. 49 = 0.0704 PPM	NO. 99 = 0.0732 PPM	NO. 149 = 0.0549 PPM	NO. 199 = 0.0511 PPM
NO. 50 = 0.0733 PPM	NO. 100 = 0.0697 PPM	NO. 150 = 0.0546 PPM	NO. 200 = 0.0510 PPM

A-6. continued.

NO. 201 = 0.0504 PPM	NO. 251 = 0.0517 PPM	NO. 301 = 0.0568 PPM	NO. 351 = 0.0581 PPM
NO. 202 = 0.0501 PPM	NO. 252 = 0.0597 PPM	NO. 302 = 0.0551 PPM	NO. 352 = 0.0633 PPM
NO. 203 = 0.0495 PPM	NO. 253 = 0.0712 PPM	NO. 303 = 0.0528 PPM	NO. 353 = 0.0577 PPM
NO. 204 = 0.0500 PPM	NO. 254 = 0.0838 PPM	NO. 304 = 0.0527 PPM	NO. 354 = 0.0562 PPM
NO. 205 = 0.0510 PPM	NO. 255 = 0.0675 PPM	NO. 305 = 0.0622 PPM	NO. 355 = 0.0528 PPM
NO. 206 = 0.0528 PPM	NO. 256 = 0.0595 PPM	NO. 306 = 0.0895 PPM	NO. 356 = 0.0528 PPM
NO. 207 = 0.0624 PPM	NO. 257 = 0.0540 PPM	NO. 307 = 0.0706 PPM	NO. 357 = 0.0537 PPM
NO. 208 = 0.0532 PPM	NO. 258 = 0.0504 PPM	NO. 308 = 0.0580 PPM	NO. 358 = 0.0653 PPM
NO. 209 = 0.0519 PPM	NO. 259 = 0.0493 PPM	NO. 309 = 0.0526 PPM	NO. 359 = 0.0731 PPM
NO. 210 = 0.0515 PPM	NO. 260 = 0.0516 PPM	NO. 310 = 0.0512 PPM	NO. 360 = 0.0672 PPM
NO. 211 = 0.0509 PPM	NO. 261 = 0.0505 PPM	NO. 311 = 0.0516 PPM	NO. 361 = 0.0602 PPM
NO. 212 = 0.0504 PPM	NO. 262 = 0.0500 PPM	NO. 312 = 0.0574 PPM	NO. 362 = 0.0563 PPM
NO. 213 = 0.0505 PPM	NO. 263 = 0.0526 PPM	NO. 313 = 0.0742 PPM	NO. 363 = 0.0550 PPM
NO. 214 = 0.0508 PPM	NO. 264 = 0.0562 PPM	NO. 314 = 0.0758 PPM	NO. 364 = 0.0536 PPM
NO. 215 = 0.0510 PPM	NO. 265 = 0.0539 PPM	NO. 315 = 0.0630 PPM	NO. 365 = 0.0529 PPM
NO. 216 = 0.0550 PPM	NO. 266 = 0.0546 PPM	NO. 316 = 0.0552 PPM	NO. 366 = 0.0522 PPM
NO. 217 = 0.0607 PPM	NO. 267 = 0.0589 PPM	NO. 317 = 0.0537 PPM	NO. 367 = 0.0501 PPM
NO. 218 = 0.0669 PPM	NO. 268 = 0.0632 PPM	NO. 318 = 0.0519 PPM	NO. 368 = 0.0567 PPM
NO. 219 = 0.0690 PPM	NO. 269 = 0.0581 PPM	NO. 319 = 0.0500 PPM	NO. 369 = 0.0556 PPM
NO. 220 = 0.0630 PPM	NO. 270 = 0.0542 PPM	NO. 320 = 0.0499 PPM	NO. 370 = 0.0537 PPM
NO. 221 = 0.0577 PPM	NO. 271 = 0.0522 PPM	NO. 321 = 0.0486 PPM	NO. 371 = 0.0524 PPM
NO. 222 = 0.0508 PPM	NO. 272 = 0.0502 PPM	NO. 322 = 0.0566 PPM	NO. 372 = 0.0524 PPM
NO. 223 = 0.0596 PPM	NO. 273 = 0.0484 PPM	NO. 323 = 0.0540 PPM	NO. 373 = 0.0539 PPM
NO. 224 = 0.0552 PPM	NO. 274 = 0.0485 PPM	NO. 324 = 0.0527 PPM	NO. 374 = 0.0553 PPM
NO. 225 = 0.0521 PPM	NO. 275 = 0.0483 PPM	NO. 325 = 0.0517 PPM	NO. 375 = 0.0565 PPM
NO. 226 = 0.0503 PPM	NO. 276 = 0.0567 PPM	NO. 326 = 0.0511 PPM	NO. 376 = 0.0569 PPM
NO. 227 = 0.0487 PPM	NO. 277 = 0.0547 PPM	NO. 327 = 0.0529 PPM	NO. 377 = 0.0567 PPM
NO. 228 = 0.0485 PPM	NO. 278 = 0.0527 PPM	NO. 328 = 0.0543 PPM	NO. 378 = 0.0567 PPM
NO. 229 = 0.0496 PPM	NO. 279 = 0.0514 PPM	NO. 329 = 0.0555 PPM	NO. 379 = 0.0566 PPM
NO. 230 = 0.0566 PPM	NO. 280 = 0.0509 PPM	NO. 330 = 0.0560 PPM	NO. 380 = 0.0553 PPM
NO. 231 = 0.0575 PPM	NO. 281 = 0.0517 PPM	NO. 331 = 0.0555 PPM	NO. 381 = 0.0540 PPM
NO. 232 = 0.0536 PPM	NO. 282 = 0.0530 PPM	NO. 332 = 0.0582 PPM	NO. 382 = 0.0532 PPM
NO. 233 = 0.0519 PPM	NO. 283 = 0.0541 PPM	NO. 333 = 0.0574 PPM	NO. 383 = 0.0516 PPM
NO. 234 = 0.0506 PPM	NO. 284 = 0.0544 PPM	NO. 334 = 0.0555 PPM	NO. 384 = 0.0562 PPM
NO. 235 = 0.0501 PPM	NO. 285 = 0.0545 PPM	NO. 335 = 0.0532 PPM	NO. 385 = 0.0580 PPM
NO. 236 = 0.0512 PPM	NO. 286 = 0.0540 PPM	NO. 336 = 0.0529 PPM	NO. 386 = 0.0618 PPM
NO. 237 = 0.0521 PPM	NO. 287 = 0.0532 PPM	NO. 337 = 0.0583 PPM	NO. 387 = 0.0794 PPM
NO. 238 = 0.0526 PPM	NO. 288 = 0.0525 PPM	NO. 338 = 0.0754 PPM	NO. 388 = 0.0659 PPM
NO. 239 = 0.0528 PPM	NO. 289 = 0.0516 PPM	NO. 339 = 0.0629 PPM	NO. 389 = 0.0549 PPM
NO. 240 = 0.0527 PPM	NO. 290 = 0.0514 PPM	NO. 340 = 0.0590 PPM	NO. 390 = 0.0597 PPM
NO. 241 = 0.0523 PPM	NO. 291 = 0.0510 PPM	NO. 341 = 0.0538 PPM	NO. 391 = 0.0509 PPM
NO. 242 = 0.0519 PPM	NO. 292 = 0.0507 PPM	NO. 342 = 0.0513 PPM	NO. 392 = 0.0476 PPM
NO. 243 = 0.0513 PPM	NO. 293 = 0.0496 PPM	NO. 343 = 0.0493 PPM	NO. 393 = 0.0499 PPM
NO. 244 = 0.0511 PPM	NO. 294 = 0.0483 PPM	NO. 344 = 0.0549 PPM	NO. 394 = 0.0467 PPM
NO. 245 = 0.0518 PPM	NO. 295 = 0.0481 PPM	NO. 345 = 0.0538 PPM	NO. 395 = 0.0471 PPM
NO. 246 = 0.0511 PPM	NO. 296 = 0.0474 PPM	NO. 346 = 0.0531 PPM	NO. 396 = 0.0479 PPM
NO. 247 = 0.0507 PPM	NO. 297 = 0.0491 PPM	NO. 347 = 0.0522 PPM	NO. 397 = 0.0524 PPM
NO. 248 = 0.0498 PPM	NO. 298 = 0.0558 PPM	NO. 348 = 0.0518 PPM	NO. 398 = 0.0541 PPM
NO. 249 = 0.0492 PPM	NO. 299 = 0.0624 PPM	NO. 349 = 0.0494 PPM	NO. 399 = 0.0501 PPM
NO. 250 = 0.0479 PPM	NO. 300 = 0.0627 PPM	NO. 350 = 0.0515 PPM	NO. 400 = 0.0520 PPM

A-6. continued.

NO. 401 = 0.0518 PPM	NO. 451 = 0.0529 PPM	NO. 501 = 0.0513 PPM	NO. 551 = 0.0523 PPM
NO. 402 = 0.0532 PPM	NO. 452 = 0.0515 PPM	NO. 502 = 0.0637 PPM	NO. 552 = 0.0608 PPM
NO. 403 = 0.0622 PPM	NO. 453 = 0.0505 PPM	NO. 503 = 0.0606 PPM	NO. 553 = 0.0566 PPM
NO. 404 = 0.0569 PPM	NO. 454 = 0.0505 PPM	NO. 504 = 0.0562 PPM	NO. 554 = 0.0599 PPM
NO. 405 = 0.0556 PPM	NO. 455 = 0.0511 PPM	NO. 505 = 0.0515 PPM	NO. 555 = 0.0631 PPM
NO. 406 = 0.0539 PPM	NO. 456 = 0.0515 PPM	NO. 506 = 0.0600 PPM	NO. 556 = 0.0649 PPM
NO. 407 = 0.0538 PPM	NO. 457 = 0.0513 PPM	NO. 507 = 0.0565 PPM	NO. 557 = 0.0659 PPM
NO. 408 = 0.0543 PPM	NO. 458 = 0.0509 PPM	NO. 508 = 0.0579 PPM	NO. 558 = 0.0970 PPM
NO. 409 = 0.0533 PPM	NO. 459 = 0.0493 PPM	NO. 509 = 0.0601 PPM	NO. 559 = 0.0799 PPM
NO. 410 = 0.0529 PPM	NO. 460 = 0.0591 PPM	NO. 510 = 0.0602 PPM	NO. 560 = 0.0696 PPM
NO. 411 = 0.0526 PPM	NO. 461 = 0.0562 PPM	NO. 511 = 0.0599 PPM	NO. 561 = 0.0668 PPM
NO. 412 = 0.0515 PPM	NO. 462 = 0.0552 PPM	NO. 512 = 0.0588 PPM	NO. 562 = 0.0652 PPM
NO. 413 = 0.0503 PPM	NO. 463 = 0.0569 PPM	NO. 513 = 0.0583 PPM	NO. 563 = 0.0623 PPM
NO. 414 = 0.0581 PPM	NO. 464 = 0.0568 PPM	NO. 514 = 0.0590 PPM	NO. 564 = 0.0618 PPM
NO. 415 = 0.0560 PPM	NO. 465 = 0.0567 PPM	NO. 515 = 0.0588 PPM	NO. 565 = 0.0590 PPM
NO. 416 = 0.0535 PPM	NO. 466 = 0.0573 PPM	NO. 516 = 0.0582 PPM	NO. 566 = 0.0561 PPM
NO. 417 = 0.0535 PPM	NO. 467 = 0.0577 PPM	NO. 517 = 0.0571 PPM	NO. 567 = 0.0543 PPM
NO. 418 = 0.0537 PPM	NO. 468 = 0.0582 PPM	NO. 518 = 0.0561 PPM	NO. 568 = 0.0534 PPM
NO. 419 = 0.0555 PPM	NO. 469 = 0.0580 PPM	NO. 519 = 0.0551 PPM	NO. 569 = 0.0542 PPM
NO. 420 = 0.0564 PPM	NO. 470 = 0.0574 PPM	NO. 520 = 0.0540 PPM	NO. 570 = 0.0554 PPM
NO. 421 = 0.0573 PPM	NO. 471 = 0.0566 PPM	NO. 521 = 0.0548 PPM	NO. 571 = 0.0559 PPM
NO. 422 = 0.0577 PPM	NO. 472 = 0.0557 PPM	NO. 522 = 0.0548 PPM	NO. 572 = 0.0572 PPM
NO. 423 = 0.0576 PPM	NO. 473 = 0.0549 PPM	NO. 523 = 0.0589 PPM	NO. 573 = 0.0611 PPM
NO. 424 = 0.0571 PPM	NO. 474 = 0.0608 PPM	NO. 524 = 0.0608 PPM	NO. 574 = 0.0588 PPM
NO. 425 = 0.0564 PPM	NO. 475 = 0.0659 PPM	NO. 525 = 0.0623 PPM	NO. 575 = 0.0716 PPM
NO. 426 = 0.0559 PPM	NO. 476 = 0.0610 PPM	NO. 526 = 0.0644 PPM	NO. 576 = 0.0606 PPM
NO. 427 = 0.0541 PPM	NO. 477 = 0.0658 PPM	NO. 527 = 0.0619 PPM	NO. 577 = 0.0530 PPM
NO. 428 = 0.0604 PPM	NO. 478 = 0.0693 PPM	NO. 528 = 0.0656 PPM	NO. 578 = 0.0545 PPM
NO. 429 = 0.0776 PPM	NO. 479 = 0.0744 PPM	NO. 529 = 0.0675 PPM	NO. 579 = 0.0504 PPM
NO. 430 = 0.0784 PPM	NO. 480 = 0.0787 PPM	NO. 530 = 0.0588 PPM	NO. 580 = 0.0478 PPM
NO. 431 = 0.0743 PPM	NO. 481 = 0.0707 PPM	NO. 531 = 0.0533 PPM	NO. 581 = 0.0471 PPM
NO. 432 = 0.0755 PPM	NO. 482 = 0.0786 PPM	NO. 532 = 0.0532 PPM	NO. 582 = 0.0504 PPM
NO. 433 = 0.0971 PPM	NO. 483 = 0.0662 PPM	NO. 533 = 0.0509 PPM	NO. 583 = 0.0576 PPM
NO. 434 = 0.0963 PPM	NO. 484 = 0.0599 PPM	NO. 534 = 0.0480 PPM	NO. 584 = 0.0620 PPM
NO. 435 = 0.0762 PPM	NO. 485 = 0.0531 PPM	NO. 535 = 0.0476 PPM	NO. 585 = 0.0719 PPM
NO. 436 = 0.0806 PPM	NO. 486 = 0.0554 PPM	NO. 536 = 0.0464 PPM	NO. 586 = 0.0579 PPM
NO. 437 = 0.0661 PPM	NO. 487 = 0.0513 PPM	NO. 537 = 0.0509 PPM	NO. 587 = 0.0505 PPM
NO. 438 = 0.0562 PPM	NO. 488 = 0.0488 PPM	NO. 538 = 0.0555 PPM	NO. 588 = 0.0478 PPM
NO. 439 = 0.0514 PPM	NO. 489 = 0.0473 PPM	NO. 539 = 0.0724 PPM	NO. 589 = 0.0490 PPM
NO. 440 = 0.0556 PPM	NO. 490 = 0.0469 PPM	NO. 540 = 0.0633 PPM	NO. 590 = 0.0480 PPM
NO. 441 = 0.0499 PPM	NO. 491 = 0.0479 PPM	NO. 541 = 0.0528 PPM	NO. 591 = 0.0461 PPM
NO. 442 = 0.0496 PPM	NO. 492 = 0.0491 PPM	NO. 542 = 0.0480 PPM	NO. 592 = 0.0484 PPM
NO. 443 = 0.0474 PPM	NO. 493 = 0.0514 PPM	NO. 543 = 0.0465 PPM	NO. 593 = 0.0513 PPM
NO. 444 = 0.0484 PPM	NO. 494 = 0.0664 PPM	NO. 544 = 0.0457 PPM	NO. 594 = 0.0544 PPM
NO. 445 = 0.0490 PPM	NO. 495 = 0.0609 PPM	NO. 545 = 0.0463 PPM	NO. 595 = 0.0499 PPM
NO. 446 = 0.0508 PPM	NO. 496 = 0.0537 PPM	NO. 546 = 0.0510 PPM	NO. 596 = 0.0507 PPM
NO. 447 = 0.0516 PPM	NO. 497 = 0.0495 PPM	NO. 547 = 0.0567 PPM	NO. 597 = 0.0522 PPM
NO. 448 = 0.0514 PPM	NO. 498 = 0.0466 PPM	NO. 548 = 0.0717 PPM	NO. 598 = 0.0617 PPM
NO. 449 = 0.0621 PPM	NO. 499 = 0.0452 PPM	NO. 549 = 0.0606 PPM	NO. 599 = 0.0580 PPM
NO. 450 = 0.0538 PPM	NO. 500 = 0.0469 PPM	NO. 550 = 0.0576 PPM	NO. 600 = 0.0611 PPM

A-6. continued.

NO. 601 = 0.0633 PPM	NO. 651 = 0.0599 PPM	NO. 701 = 0.0591 PPM	NO. 751 = 0.0545 PPM
NO. 602 = 0.0649 PPM	NO. 652 = 0.0599 PPM	NO. 702 = 0.0570 PPM	NO. 752 = 0.0551 PPM
NO. 603 = 0.0660 PPM	NO. 653 = 0.0595 PPM	NO. 703 = 0.0550 PPM	NO. 753 = 0.0536 PPM
NO. 604 = 0.0698 PPM	NO. 654 = 0.0591 PPM	NO. 704 = 0.0558 PPM	NO. 754 = 0.0572 PPM
NO. 605 = 0.0637 PPM	NO. 655 = 0.0568 PPM	NO. 705 = 0.0554 PPM	NO. 755 = 0.0540 PPM
NO. 606 = 0.0651 PPM	NO. 656 = 0.0590 PPM	NO. 706 = 0.0553 PPM	NO. 756 = 0.0547 PPM
NO. 607 = 0.0654 PPM	NO. 657 = 0.0564 PPM	NO. 707 = 0.0546 PPM	NO. 757 = 0.0632 PPM
NO. 608 = 0.0650 PPM	NO. 658 = 0.0554 PPM	NO. 708 = 0.0541 PPM	NO. 758 = 0.0728 PPM
NO. 609 = 0.0623 PPM	NO. 659 = 0.0546 PPM	NO. 709 = 0.0531 PPM	NO. 759 = 0.0762 PPM
NO. 610 = 0.0633 PPM	NO. 660 = 0.0540 PPM	NO. 710 = 0.0540 PPM	NO. 760 = 0.0898 PPM
NO. 611 = 0.0595 PPM	NO. 661 = 0.0532 PPM	NO. 711 = 0.0623 PPM	NO. 761 = 0.0727 PPM
NO. 612 = 0.0570 PPM	NO. 662 = 0.0529 PPM	NO. 712 = 0.0766 PPM	NO. 762 = 0.0672 PPM
NO. 613 = 0.0552 PPM	NO. 663 = 0.0526 PPM	NO. 713 = 0.0788 PPM	NO. 763 = 0.0599 PPM
NO. 614 = 0.0546 PPM	NO. 664 = 0.0524 PPM	NO. 714 = 0.0848 PPM	NO. 764 = 0.0706 PPM
NO. 615 = 0.0541 PPM	NO. 665 = 0.0535 PPM	NO. 715 = 0.0693 PPM	NO. 765 = 0.0971 PPM
NO. 616 = 0.0538 PPM	NO. 666 = 0.0582 PPM	NO. 716 = 0.0624 PPM	NO. 766 = 0.0949 PPM
NO. 617 = 0.0538 PPM	NO. 667 = 0.0743 PPM	NO. 717 = 0.0532 PPM	NO. 767 = 0.0844 PPM
NO. 618 = 0.0550 PPM	NO. 668 = 0.0624 PPM	NO. 718 = 0.0596 PPM	NO. 768 = 0.0706 PPM
NO. 619 = 0.0583 PPM	NO. 669 = 0.0561 PPM	NO. 719 = 0.0707 PPM	NO. 769 = 0.0645 PPM
NO. 620 = 0.0623 PPM	NO. 670 = 0.0548 PPM	NO. 720 = 0.0926 PPM	NO. 770 = 0.0578 PPM
NO. 621 = 0.0766 PPM	NO. 671 = 0.0543 PPM	NO. 721 = 0.1097 PPM	NO. 771 = 0.0533 PPM
NO. 622 = 0.0659 PPM	NO. 672 = 0.0498 PPM	NO. 722 = 0.0915 PPM	NO. 772 = 0.0511 PPM
NO. 623 = 0.0580 PPM	NO. 673 = 0.0616 PPM	NO. 723 = 0.0737 PPM	NO. 773 = 0.0514 PPM
NO. 624 = 0.0575 PPM	NO. 674 = 0.0759 PPM	NO. 724 = 0.0624 PPM	NO. 774 = 0.0542 PPM
NO. 625 = 0.0531 PPM	NO. 675 = 0.1133 PPM	NO. 725 = 0.0560 PPM	NO. 775 = 0.0557 PPM
NO. 626 = 0.0512 PPM	NO. 676 = 0.1089 PPM	NO. 726 = 0.0519 PPM	NO. 776 = 0.0570 PPM
NO. 627 = 0.0492 PPM	NO. 677 = 0.0812 PPM	NO. 727 = 0.0502 PPM	NO. 777 = 0.0627 PPM
NO. 628 = 0.0585 PPM	NO. 678 = 0.0656 PPM	NO. 728 = 0.0523 PPM	NO. 778 = 0.0572 PPM
NO. 629 = 0.0583 PPM	NO. 679 = 0.0581 PPM	NO. 729 = 0.0537 PPM	NO. 779 = 0.0564 PPM
NO. 630 = 0.0842 PPM	NO. 680 = 0.0527 PPM	NO. 730 = 0.0536 PPM	NO. 780 = 0.0588 PPM
NO. 631 = 0.0657 PPM	NO. 681 = 0.0503 PPM	NO. 731 = 0.0535 PPM	NO. 781 = 0.0616 PPM
NO. 632 = 0.0543 PPM	NO. 682 = 0.0486 PPM	NO. 732 = 0.0525 PPM	NO. 782 = 0.0628 PPM
NO. 633 = 0.0517 PPM	NO. 683 = 0.0503 PPM	NO. 733 = 0.0544 PPM	NO. 783 = 0.0677 PPM
NO. 634 = 0.0484 PPM	NO. 684 = 0.0499 PPM	NO. 734 = 0.0563 PPM	NO. 784 = 0.0744 PPM
NO. 635 = 0.0549 PPM	NO. 685 = 0.0501 PPM	NO. 735 = 0.0591 PPM	NO. 785 = 0.0795 PPM
NO. 636 = 0.0521 PPM	NO. 686 = 0.0501 PPM	NO. 736 = 0.0627 PPM	NO. 786 = 0.0784 PPM
NO. 637 = 0.0500 PPM	NO. 687 = 0.0518 PPM	NO. 737 = 0.0650 PPM	NO. 787 = 0.0741 PPM
NO. 638 = 0.0483 PPM	NO. 688 = 0.0538 PPM	NO. 738 = 0.0675 PPM	NO. 788 = 0.0686 PPM
NO. 639 = 0.0479 PPM	NO. 689 = 0.0563 PPM	NO. 739 = 0.0672 PPM	NO. 789 = 0.0629 PPM
NO. 640 = 0.0490 PPM	NO. 690 = 0.0624 PPM	NO. 740 = 0.0649 PPM	NO. 790 = 0.0585 PPM
NO. 641 = 0.0499 PPM	NO. 691 = 0.0631 PPM	NO. 741 = 0.0637 PPM	NO. 791 = 0.0571 PPM
NO. 642 = 0.0510 PPM	NO. 692 = 0.0637 PPM	NO. 742 = 0.0603 PPM	NO. 792 = 0.0610 PPM
NO. 643 = 0.0536 PPM	NO. 693 = 0.0689 PPM	NO. 743 = 0.0588 PPM	NO. 793 = 0.0648 PPM
NO. 644 = 0.0620 PPM	NO. 694 = 0.0707 PPM	NO. 744 = 0.0591 PPM	NO. 794 = 0.0564 PPM
NO. 645 = 0.0605 PPM	NO. 695 = 0.0746 PPM	NO. 745 = 0.0645 PPM	NO. 795 = 0.0542 PPM
NO. 646 = 0.0622 PPM	NO. 696 = 0.0733 PPM	NO. 746 = 0.0632 PPM	NO. 796 = 0.0540 PPM
NO. 647 = 0.0632 PPM	NO. 697 = 0.0704 PPM	NO. 747 = 0.0575 PPM	NO. 797 = 0.0533 PPM
NO. 648 = 0.0634 PPM	NO. 698 = 0.0720 PPM	NO. 748 = 0.0563 PPM	NO. 798 = 0.0531 PPM
NO. 649 = 0.0623 PPM	NO. 699 = 0.0622 PPM	NO. 749 = 0.0543 PPM	NO. 799 = 0.0523 PPM
NO. 650 = 0.0604 PPM	NO. 700 = 0.0616 PPM	NO. 750 = 0.0547 PPM	NO. 800 = 0.0544 PPM

A-6. continued.

NO. 801 = 0.0537 PPM	NO. 851 = 0.0790 PPM	NO. 901 = 0.0908 PPM	NO. 951 = 0.0643 PPM
NO. 802 = 0.0548 PPM	NO. 852 = 0.0977 PPM	NO. 902 = 0.0848 PPM	NO. 952 = 0.0609 PPM
NO. 803 = 0.0627 PPM	NO. 853 = 0.0874 PPM	NO. 903 = 0.0789 PPM	NO. 953 = 0.0582 PPM
NO. 804 = 0.0714 PPM	NO. 854 = 0.0780 PPM	NO. 904 = 0.0694 PPM	NO. 954 = 0.0579 PPM
NO. 805 = 0.0741 PPM	NO. 855 = 0.0764 PPM	NO. 905 = 0.0862 PPM	NO. 955 = 0.0581 PPM
NO. 806 = 0.0970 PPM	NO. 856 = 0.0897 PPM	NO. 906 = 0.0687 PPM	NO. 956 = 0.0617 PPM
NO. 807 = 0.0778 PPM	NO. 857 = 0.0921 PPM	NO. 907 = 0.0612 PPM	NO. 957 = 0.0663 PPM
NO. 808 = 0.0657 PPM	NO. 858 = 0.0770 PPM	NO. 908 = 0.0574 PPM	NO. 958 = 0.0686 PPM
NO. 809 = 0.0701 PPM	NO. 859 = 0.0644 PPM	NO. 909 = 0.0603 PPM	NO. 959 = 0.0710 PPM
NO. 810 = 0.0842 PPM	NO. 860 = 0.0602 PPM	NO. 910 = 0.0637 PPM	NO. 960 = 0.0725 PPM
NO. 811 = 0.1099 PPM	NO. 861 = 0.0558 PPM	NO. 911 = 0.0667 PPM	NO. 961 = 0.0738 PPM
NO. 812 = 0.0892 PPM	NO. 862 = 0.0545 PPM	NO. 912 = 0.0687 PPM	NO. 962 = 0.0759 PPM
NO. 813 = 0.0754 PPM	NO. 863 = 0.0563 PPM	NO. 913 = 0.0699 PPM	NO. 963 = 0.0751 PPM
NO. 814 = 0.0638 PPM	NO. 864 = 0.0588 PPM	NO. 914 = 0.0699 PPM	NO. 964 = 0.0780 PPM
NO. 815 = 0.0579 PPM	NO. 865 = 0.0620 PPM	NO. 915 = 0.0697 PPM	NO. 965 = 0.0749 PPM
NO. 816 = 0.0537 PPM	NO. 866 = 0.0641 PPM	NO. 916 = 0.0687 PPM	NO. 966 = 0.0612 PPM
NO. 817 = 0.0505 PPM	NO. 867 = 0.0646 PPM	NO. 917 = 0.0693 PPM	NO. 967 = 0.0747 PPM
NO. 818 = 0.0525 PPM	NO. 868 = 0.0645 PPM	NO. 918 = 0.0714 PPM	NO. 968 = 0.0878 PPM
NO. 819 = 0.0562 PPM	NO. 869 = 0.0639 PPM	NO. 919 = 0.0704 PPM	NO. 969 = 0.0974 PPM
NO. 820 = 0.0586 PPM	NO. 870 = 0.0624 PPM	NO. 920 = 0.0619 PPM	NO. 970 = 0.0908 PPM
NO. 821 = 0.0594 PPM	NO. 871 = 0.0631 PPM	NO. 921 = 0.0742 PPM	NO. 971 = 0.0900 PPM
NO. 822 = 0.0599 PPM	NO. 872 = 0.0642 PPM	NO. 922 = 0.0913 PPM	NO. 972 = 0.0886 PPM
NO. 823 = 0.0588 PPM	NO. 873 = 0.0671 PPM	NO. 923 = 0.1053 PPM	NO. 973 = 0.0853 PPM
NO. 824 = 0.0566 PPM	NO. 874 = 0.0622 PPM	NO. 924 = 0.1000 PPM	NO. 974 = 0.0824 PPM
NO. 825 = 0.0583 PPM	NO. 875 = 0.0735 PPM	NO. 925 = 0.1002 PPM	NO. 975 = 0.0797 PPM
NO. 826 = 0.0614 PPM	NO. 876 = 0.0885 PPM	NO. 926 = 0.1014 PPM	NO. 976 = 0.0757 PPM
NO. 827 = 0.0645 PPM	NO. 877 = 0.1224 PPM	NO. 927 = 0.0972 PPM	NO. 977 = 0.0722 PPM
NO. 828 = 0.0625 PPM	NO. 878 = 0.1188 PPM	NO. 928 = 0.0912 PPM	NO. 978 = 0.0680 PPM
NO. 829 = 0.0706 PPM	NO. 879 = 0.1105 PPM	NO. 929 = 0.0870 PPM	NO. 979 = 0.0655 PPM
NO. 830 = 0.0406 PPM	NO. 880 = 0.1081 PPM	NO. 930 = 0.0789 PPM	NO. 980 = 0.0639 PPM
NO. 831 = 0.0586 PPM	NO. 881 = 0.0980 PPM	NO. 931 = 0.0738 PPM	NO. 981 = 0.0585 PPM
NO. 832 = 0.0763 PPM	NO. 882 = 0.0906 PPM	NO. 932 = 0.0668 PPM	NO. 982 = 0.0577 PPM
NO. 833 = 0.0912 PPM	NO. 883 = 0.0815 PPM	NO. 933 = 0.0672 PPM	NO. 983 = 0.0602 PPM
NO. 834 = 0.0938 PPM	NO. 884 = 0.0718 PPM	NO. 934 = 0.0629 PPM	NO. 984 = 0.0639 PPM
NO. 835 = 0.0861 PPM	NO. 885 = 0.0676 PPM	NO. 935 = 0.0601 PPM	NO. 985 = 0.0645 PPM
NO. 836 = 0.0771 PPM	NO. 886 = 0.0680 PPM	NO. 936 = 0.0647 PPM	NO. 986 = 0.0711 PPM
NO. 837 = 0.0674 PPM	NO. 887 = 0.0837 PPM	NO. 937 = 0.0646 PPM	NO. 987 = 0.0808 PPM
NO. 838 = 0.0612 PPM	NO. 888 = 0.0803 PPM	NO. 938 = 0.0719 PPM	NO. 988 = 0.0936 PPM
NO. 839 = 0.0562 PPM	NO. 889 = 0.0693 PPM	NO. 939 = 0.0768 PPM	NO. 989 = 0.1216 PPM
NO. 840 = 0.0647 PPM	NO. 890 = 0.0645 PPM	NO. 940 = 0.0781 PPM	NO. 990 = 0.1390 PPM
NO. 841 = 0.0662 PPM	NO. 891 = 0.0622 PPM	NO. 941 = 0.0790 PPM	NO. 991 = 0.1387 PPM
NO. 842 = 0.0725 PPM	NO. 892 = 0.0737 PPM	NO. 942 = 0.0923 PPM	NO. 992 = 0.1317 PPM
NO. 843 = 0.0733 PPM	NO. 893 = 0.0662 PPM	NO. 943 = 0.0998 PPM	NO. 993 = 0.1223 PPM
NO. 844 = 0.0713 PPM	NO. 894 = 0.0664 PPM	NO. 944 = 0.1088 PPM	NO. 994 = 0.1065 PPM
NO. 845 = 0.0793 PPM	NO. 895 = 0.0832 PPM	NO. 945 = 0.1088 PPM	NO. 995 = 0.1044 PPM
NO. 846 = 0.0715 PPM	NO. 896 = 0.0817 PPM	NO. 946 = 0.0985 PPM	NO. 996 = 0.0966 PPM
NO. 847 = 0.0622 PPM	NO. 897 = 0.0822 PPM	NO. 947 = 0.0870 PPM	NO. 997 = 0.0851 PPM
NO. 848 = 0.0566 PPM	NO. 898 = 0.0879 PPM	NO. 948 = 0.0750 PPM	NO. 998 = 0.0796 PPM
NO. 849 = 0.0625 PPM	NO. 899 = 0.0977 PPM	NO. 949 = 0.0733 PPM	NO. 999 = 0.0795 PPM
NO. 850 = 0.0725 PPM	NO. 900 = 0.0925 PPM	NO. 950 = 0.0668 PPM	NO. 1000 = 0.0723 PPM

A-6. continued.

NO. 1001 = 0.0679 PPM	NO. 1051 = 0.0872 PPM	NO. 1101 = 0.0597 PPM	NO. 1151 = 0.0707 PPM
NO. 1002 = 0.0653 PPM	NO. 1052 = 0.0861 PPM	NO. 1102 = 0.0626 PPM	NO. 1152 = 0.0733 PPM
NO. 1003 = 0.0798 PPM	NO. 1053 = 0.0746 PPM	NO. 1103 = 0.0650 PPM	NO. 1153 = 0.0776 PPM
NO. 1004 = 0.0650 PPM	NO. 1054 = 0.0653 PPM	NO. 1104 = 0.0628 PPM	NO. 1154 = 0.0792 PPM
NO. 1005 = 0.0636 PPM	NO. 1055 = 0.0632 PPM	NO. 1105 = 0.0733 PPM	NO. 1155 = 0.0756 PPM
NO. 1006 = 0.0624 PPM	NO. 1056 = 0.0626 PPM	NO. 1106 = 0.0761 PPM	NO. 1156 = 0.0738 PPM
NO. 1007 = 0.0695 PPM	NO. 1057 = 0.0668 PPM	NO. 1107 = 0.0797 PPM	NO. 1157 = 0.0748 PPM
NO. 1008 = 0.0721 PPM	NO. 1058 = 0.0623 PPM	NO. 1108 = 0.0786 PPM	NO. 1158 = 0.0899 PPM
NO. 1009 = 0.0759 PPM	NO. 1059 = 0.0759 PPM	NO. 1109 = 0.0773 PPM	NO. 1159 = 0.0937 PPM
NO. 1010 = 0.0718 PPM	NO. 1060 = 0.0798 PPM	NO. 1110 = 0.0729 PPM	NO. 1160 = 0.0903 PPM
NO. 1011 = 0.0813 PPM	NO. 1061 = 0.0844 PPM	NO. 1111 = 0.0692 PPM	NO. 1161 = 0.0856 PPM
NO. 1012 = 0.0617 PPM	NO. 1062 = 0.0819 PPM	NO. 1112 = 0.0621 PPM	NO. 1162 = 0.0811 PPM
NO. 1013 = 0.0755 PPM	NO. 1063 = 0.0804 PPM	NO. 1113 = 0.0594 PPM	NO. 1163 = 0.0750 PPM
NO. 1014 = 0.0831 PPM	NO. 1064 = 0.0761 PPM	NO. 1114 = 0.0598 PPM	NO. 1164 = 0.0682 PPM
NO. 1015 = 0.0903 PPM	NO. 1065 = 0.0732 PPM	NO. 1115 = 0.0598 PPM	NO. 1165 = 0.0626 PPM
NO. 1016 = 0.0855 PPM	NO. 1066 = 0.0716 PPM	NO. 1116 = 0.0607 PPM	NO. 1166 = 0.0574 PPM
NO. 1017 = 0.0841 PPM	NO. 1067 = 0.0679 PPM	NO. 1117 = 0.0607 PPM	NO. 1167 = 0.0585 PPM
NO. 1018 = 0.0810 PPM	NO. 1068 = 0.0670 PPM	NO. 1118 = 0.0607 PPM	NO. 1168 = 0.0560 PPM
NO. 1019 = 0.0762 PPM	NO. 1069 = 0.0664 PPM	NO. 1119 = 0.0602 PPM	NO. 1169 = 0.0597 PPM
NO. 1020 = 0.0732 PPM	NO. 1070 = 0.0661 PPM	NO. 1120 = 0.0576 PPM	NO. 1170 = 0.0585 PPM
NO. 1021 = 0.0722 PPM	NO. 1071 = 0.0641 PPM	NO. 1121 = 0.0564 PPM	NO. 1171 = 0.0733 PPM
NO. 1022 = 0.0713 PPM	NO. 1072 = 0.0614 PPM	NO. 1122 = 0.0556 PPM	NO. 1172 = 0.0868 PPM
NO. 1023 = 0.0697 PPM	NO. 1073 = 0.0587 PPM	NO. 1123 = 0.0602 PPM	NO. 1173 = 0.0935 PPM
NO. 1024 = 0.0686 PPM	NO. 1074 = 0.0557 PPM	NO. 1124 = 0.0654 PPM	NO. 1174 = 0.0969 PPM
NO. 1025 = 0.0656 PPM	NO. 1075 = 0.0541 PPM	NO. 1125 = 0.0778 PPM	NO. 1175 = 0.0989 PPM
NO. 1026 = 0.0619 PPM	NO. 1076 = 0.0540 PPM	NO. 1126 = 0.0929 PPM	NO. 1176 = 0.1024 PPM
NO. 1027 = 0.0588 PPM	NO. 1077 = 0.0606 PPM	NO. 1127 = 0.1035 PPM	NO. 1177 = 0.0936 PPM
NO. 1028 = 0.0552 PPM	NO. 1078 = 0.0684 PPM	NO. 1128 = 0.1086 PPM	NO. 1178 = 0.0864 PPM
NO. 1029 = 0.0535 PPM	NO. 1079 = 0.0846 PPM	NO. 1129 = 0.1100 PPM	NO. 1179 = 0.0880 PPM
NO. 1030 = 0.0566 PPM	NO. 1080 = 0.0981 PPM	NO. 1130 = 0.1066 PPM	NO. 1180 = 0.0848 PPM
NO. 1031 = 0.0607 PPM	NO. 1081 = 0.1054 PPM	NO. 1131 = 0.1173 PPM	NO. 1181 = 0.1013 PPM
NO. 1032 = 0.0728 PPM	NO. 1082 = 0.1130 PPM	NO. 1132 = 0.1052 PPM	NO. 1182 = 0.1015 PPM
NO. 1033 = 0.0876 PPM	NO. 1083 = 0.1242 PPM	NO. 1133 = 0.0927 PPM	NO. 1183 = 0.0949 PPM
NO. 1034 = 0.1039 PPM	NO. 1084 = 0.1411 PPM	NO. 1134 = 0.1020 PPM	NO. 1184 = 0.0877 PPM
NO. 1035 = 0.1122 PPM	NO. 1085 = 0.1287 PPM	NO. 1135 = 0.0472 PPM	NO. 1185 = 0.0839 PPM
NO. 1036 = 0.1255 PPM	NO. 1086 = 0.1171 PPM	NO. 1136 = 0.1054 PPM	NO. 1186 = 0.0836 PPM
NO. 1037 = 0.1430 PPM	NO. 1087 = 0.1032 PPM	NO. 1137 = 0.1003 PPM	NO. 1187 = 0.0851 PPM
NO. 1038 = 0.1393 PPM	NO. 1088 = 0.0913 PPM	NO. 1138 = 0.1081 PPM	NO. 1188 = 0.0859 PPM
NO. 1039 = 0.1332 PPM	NO. 1089 = 0.0875 PPM	NO. 1139 = 0.1018 PPM	NO. 1189 = 0.0849 PPM
NO. 1040 = 0.1327 PPM	NO. 1090 = 0.1182 PPM	NO. 1140 = 0.0970 PPM	NO. 1190 = 0.0823 PPM
NO. 1041 = 0.1340 PPM	NO. 1091 = 0.1149 PPM	NO. 1141 = 0.0949 PPM	NO. 1191 = 0.0776 PPM
NO. 1042 = 0.1313 PPM	NO. 1092 = 0.1022 PPM	NO. 1142 = 0.0911 PPM	NO. 1192 = 0.0723 PPM
NO. 1043 = 0.1320 PPM	NO. 1093 = 0.0916 PPM	NO. 1143 = 0.0863 PPM	NO. 1193 = 0.0666 PPM
NO. 1044 = 0.1297 PPM	NO. 1094 = 0.0844 PPM	NO. 1144 = 0.0795 PPM	NO. 1194 = 0.0681 PPM
NO. 1045 = 0.1392 PPM	NO. 1095 = 0.0808 PPM	NO. 1145 = 0.0731 PPM	NO. 1195 = 0.0646 PPM
NO. 1046 = 0.1253 PPM	NO. 1096 = 0.0752 PPM	NO. 1146 = 0.0674 PPM	NO. 1196 = 0.0639 PPM
NO. 1047 = 0.1131 PPM	NO. 1097 = 0.0829 PPM	NO. 1147 = 0.0648 PPM	NO. 1197 = 0.0681 PPM
NO. 1048 = 0.1166 PPM	NO. 1098 = 0.0730 PPM	NO. 1148 = 0.0652 PPM	NO. 1198 = 0.0694 PPM
NO. 1049 = 0.0978 PPM	NO. 1099 = 0.0658 PPM	NO. 1149 = 0.0645 PPM	NO. 1199 = 0.0698 PPM
NO. 1050 = 0.0965 PPM	NO. 1100 = 0.0605 PPM	NO. 1150 = 0.0634 PPM	NO. 1200 = 0.0673 PPM

A-6. continued.

NO. 1201 = 0.0691 PPM	NO. 1251 = 0.0374 PPM	NO. 1301 = 0.0633 PPM	NO. 1351 = 0.0762 PPM
NO. 1202 = 0.0617 PPM	NO. 1252 = 0.0390 PPM	NO. 1302 = 0.0675 PPM	NO. 1352 = 0.0800 PPM
NO. 1203 = 0.0840 PPM	NO. 1253 = 0.0452 PPM	NO. 1303 = 0.0746 PPM	NO. 1353 = 0.0815 PPM
NO. 1204 = 0.0339 PPM	NO. 1254 = 0.0579 PPM	NO. 1304 = 0.0761 PPM	NO. 1354 = 0.0838 PPM
NO. 1205 = 0.0514 PPM	NO. 1255 = 0.0690 PPM	NO. 1305 = 0.0801 PPM	NO. 1355 = 0.0790 PPM
NO. 1206 = 0.0573 PPM	NO. 1256 = 0.0717 PPM	NO. 1306 = 0.0850 PPM	NO. 1356 = 0.0895 PPM
NO. 1207 = 0.0636 PPM	NO. 1257 = 0.0742 PPM	NO. 1307 = 0.0849 PPM	NO. 1357 = 0.0817 PPM
NO. 1208 = 0.0686 PPM	NO. 1258 = 0.0803 PPM	NO. 1308 = 0.0824 PPM	NO. 1358 = 0.0784 PPM
NO. 1209 = 0.0739 PPM	NO. 1259 = 0.0821 PPM	NO. 1309 = 0.0758 PPM	NO. 1359 = 0.0798 PPM
NO. 1210 = 0.0835 PPM	NO. 1260 = 0.0754 PPM	NO. 1310 = 0.0916 PPM	NO. 1360 = 0.0868 PPM
NO. 1211 = 0.0866 PPM	NO. 1261 = 0.0790 PPM	NO. 1311 = 0.0818 PPM	NO. 1361 = 0.0916 PPM
NO. 1212 = 0.0790 PPM	NO. 1262 = 0.0843 PPM	NO. 1312 = 0.0794 PPM	NO. 1362 = 0.0846 PPM
NO. 1213 = 0.0708 PPM	NO. 1263 = 0.0780 PPM	NO. 1313 = 0.0800 PPM	NO. 1363 = 0.0787 PPM
NO. 1214 = 0.0668 PPM	NO. 1264 = 0.0754 PPM	NO. 1314 = 0.0975 PPM	NO. 1364 = 0.0772 PPM
NO. 1215 = 0.0635 PPM	NO. 1265 = 0.0804 PPM	NO. 1315 = 0.0812 PPM	NO. 1365 = 0.0742 PPM
NO. 1216 = 0.0719 PPM	NO. 1266 = 0.0813 PPM	NO. 1316 = 0.0754 PPM	NO. 1366 = 0.0717 PPM
NO. 1217 = 0.0803 PPM	NO. 1267 = 0.0828 PPM	NO. 1317 = 0.0715 PPM	NO. 1367 = 0.0699 PPM
NO. 1218 = 0.0805 PPM	NO. 1268 = 0.0949 PPM	NO. 1318 = 0.0727 PPM	NO. 1368 = 0.0675 PPM
NO. 1219 = 0.0875 PPM	NO. 1269 = 0.0806 PPM	NO. 1319 = 0.0697 PPM	NO. 1369 = 0.0665 PPM
NO. 1220 = 0.0908 PPM	NO. 1270 = 0.0812 PPM	NO. 1320 = 0.0686 PPM	NO. 1370 = 0.0646 PPM
NO. 1221 = 0.0911 PPM	NO. 1271 = 0.0828 PPM	NO. 1321 = 0.0698 PPM	NO. 1371 = 0.0687 PPM
NO. 1222 = 0.0963 PPM	NO. 1272 = 0.0853 PPM	NO. 1322 = 0.0681 PPM	NO. 1372 = 0.0741 PPM
NO. 1223 = 0.0815 PPM	NO. 1273 = 0.0773 PPM	NO. 1323 = 0.0667 PPM	NO. 1373 = 0.0674 PPM
NO. 1224 = 0.0860 PPM	NO. 1274 = 0.0716 PPM	NO. 1324 = 0.0659 PPM	NO. 1374 = 0.0623 PPM
NO. 1225 = 0.0893 PPM	NO. 1275 = 0.0722 PPM	NO. 1325 = 0.0649 PPM	NO. 1375 = 0.0637 PPM
NO. 1226 = 0.1009 PPM	NO. 1276 = 0.0736 PPM	NO. 1326 = 0.0646 PPM	NO. 1376 = 0.0597 PPM
NO. 1227 = 0.0948 PPM	NO. 1277 = 0.0744 PPM	NO. 1327 = 0.0642 PPM	NO. 1377 = 0.0599 PPM
NO. 1228 = 0.0828 PPM	NO. 1278 = 0.0724 PPM	NO. 1328 = 0.0626 PPM	NO. 1378 = 0.0611 PPM
NO. 1229 = 0.0784 PPM	NO. 1279 = 0.0709 PPM	NO. 1329 = 0.0617 PPM	NO. 1379 = 0.0592 PPM
NO. 1230 = 0.0797 PPM	NO. 1280 = 0.0708 PPM	NO. 1330 = 0.0589 PPM	NO. 1380 = 0.0653 PPM
NO. 1231 = 0.0813 PPM	NO. 1281 = 0.0700 PPM	NO. 1331 = 0.0579 PPM	NO. 1381 = 0.0665 PPM
NO. 1232 = 0.0805 PPM	NO. 1282 = 0.0687 PPM	NO. 1332 = 0.0605 PPM	NO. 1382 = 0.0568 PPM
NO. 1233 = 0.0789 PPM	NO. 1283 = 0.0663 PPM	NO. 1333 = 0.0608 PPM	NO. 1383 = 0.0528 PPM
NO. 1234 = 0.0793 PPM	NO. 1284 = 0.0637 PPM	NO. 1334 = 0.0651 PPM	NO. 1384 = 0.0518 PPM
NO. 1235 = 0.0791 PPM	NO. 1285 = 0.0614 PPM	NO. 1335 = 0.0655 PPM	NO. 1385 = 0.0530 PPM
NO. 1236 = 0.0765 PPM	NO. 1286 = 0.0599 PPM	NO. 1336 = 0.0590 PPM	NO. 1386 = 0.0561 PPM
NO. 1237 = 0.0721 PPM	NO. 1287 = 0.0615 PPM	NO. 1337 = 0.0554 PPM	NO. 1387 = 0.0591 PPM
NO. 1238 = 0.0690 PPM	NO. 1288 = 0.0650 PPM	NO. 1338 = 0.0539 PPM	NO. 1388 = 0.0657 PPM
NO. 1239 = 0.0643 PPM	NO. 1289 = 0.0650 PPM	NO. 1339 = 0.0537 PPM	NO. 1389 = 0.0698 PPM
NO. 1240 = 0.0629 PPM	NO. 1290 = 0.0612 PPM	NO. 1340 = 0.0551 PPM	NO. 1390 = 0.0718 PPM
NO. 1241 = 0.0616 PPM	NO. 1291 = 0.0583 PPM	NO. 1341 = 0.0578 PPM	NO. 1391 = 0.0762 PPM
NO. 1242 = 0.0645 PPM	NO. 1292 = 0.0577 PPM	NO. 1342 = 0.0669 PPM	NO. 1392 = 0.0823 PPM
NO. 1243 = 0.0656 PPM	NO. 1293 = 0.0591 PPM	NO. 1343 = 0.0743 PPM	NO. 1393 = 0.1058 PPM
NO. 1244 = 0.0645 PPM	NO. 1294 = 0.0590 PPM	NO. 1344 = 0.0787 PPM	NO. 1394 = 0.0954 PPM
NO. 1245 = 0.0625 PPM	NO. 1295 = 0.0568 PPM	NO. 1345 = 0.0805 PPM	NO. 1395 = 0.0932 PPM
NO. 1246 = 0.0603 PPM	NO. 1296 = 0.0733 PPM	NO. 1346 = 0.0833 PPM	NO. 1396 = 0.0727 PPM
NO. 1247 = 0.0614 PPM	NO. 1297 = 0.0881 PPM	NO. 1347 = 0.0863 PPM	NO. 1397 = 0.0768 PPM
NO. 1248 = 0.0558 PPM	NO. 1298 = 0.0922 PPM	NO. 1348 = 0.0815 PPM	NO. 1398 = 0.0794 PPM
NO. 1249 = 0.0679 PPM	NO. 1299 = 0.0892 PPM	NO. 1349 = 0.0664 PPM	NO. 1399 = 0.0798 PPM
NO. 1250 = 0.0480 PPM	NO. 1300 = 0.0770 PPM	NO. 1350 = 0.0760 PPM	NO. 1400 = 0.0829 PPM

A-6. continued.

NO. 1401 = 0.0828 PPM	NO. 1451 = 0.0794 PPM	NO. 1501 = 0.0821 PPM	NO. 1551 = 0.0694 PPM
NO. 1402 = 0.0847 PPM	NO. 1452 = 0.0837 PPM	NO. 1502 = 0.0790 PPM	NO. 1552 = 0.0661 PPM
NO. 1403 = 0.0799 PPM	NO. 1453 = 0.0888 PPM	NO. 1503 = 0.0765 PPM	NO. 1553 = 0.0629 PPM
NO. 1404 = 0.0772 PPM	NO. 1454 = 0.1017 PPM	NO. 1504 = 0.0744 PPM	NO. 1554 = 0.0601 PPM
NO. 1405 = 0.0789 PPM	NO. 1455 = 0.0919 PPM	NO. 1505 = 0.0732 PPM	NO. 1555 = 0.0576 PPM
NO. 1406 = 0.0823 PPM	NO. 1456 = 0.0851 PPM	NO. 1506 = 0.0702 PPM	NO. 1556 = 0.0561 PPM
NO. 1407 = 0.0972 PPM	NO. 1457 = 0.0795 PPM	NO. 1507 = 0.0670 PPM	NO. 1557 = 0.0561 PPM
NO. 1408 = 0.0774 PPM	NO. 1458 = 0.0761 PPM	NO. 1508 = 0.0645 PPM	NO. 1558 = 0.0550 PPM
NO. 1409 = 0.0878 PPM	NO. 1459 = 0.0751 PPM	NO. 1509 = 0.0606 PPM	NO. 1559 = 0.0542 PPM
NO. 1410 = 0.0804 PPM	NO. 1460 = 0.0722 PPM	NO. 1510 = 0.0576 PPM	NO. 1560 = 0.0538 PPM
NO. 1411 = 0.0769 PPM	NO. 1461 = 0.0695 PPM	NO. 1511 = 0.0567 PPM	NO. 1561 = 0.0589 PPM
NO. 1412 = 0.0741 PPM	NO. 1462 = 0.0658 PPM	NO. 1512 = 0.0564 PPM	NO. 1562 = 0.0600 PPM
NO. 1413 = 0.0737 PPM	NO. 1463 = 0.0635 PPM	NO. 1513 = 0.0552 PPM	NO. 1563 = 0.0527 PPM
NO. 1414 = 0.0722 PPM	NO. 1464 = 0.0610 PPM	NO. 1514 = 0.0547 PPM	NO. 1564 = 0.0647 PPM
NO. 1415 = 0.0696 PPM	NO. 1465 = 0.0585 PPM	NO. 1515 = 0.0534 PPM	NO. 1565 = 0.0675 PPM
NO. 1416 = 0.0658 PPM	NO. 1466 = 0.0585 PPM	NO. 1516 = 0.0520 PPM	NO. 1566 = 0.0521 PPM
NO. 1417 = 0.0675 PPM	NO. 1467 = 0.0585 PPM	NO. 1517 = 0.0496 PPM	NO. 1567 = 0.0507 PPM
NO. 1418 = 0.0650 PPM	NO. 1468 = 0.0579 PPM	NO. 1518 = 0.0651 PPM	NO. 1568 = 0.0495 PPM
NO. 1419 = 0.0626 PPM	NO. 1469 = 0.0557 PPM	NO. 1519 = 0.0669 PPM	NO. 1569 = 0.0481 PPM
NO. 1420 = 0.0589 PPM	NO. 1470 = 0.0548 PPM	NO. 1520 = 0.0536 PPM	NO. 1570 = 0.0466 PPM
NO. 1421 = 0.0595 PPM	NO. 1471 = 0.0519 PPM	NO. 1521 = 0.0503 PPM	NO. 1571 = 0.0467 PPM
NO. 1422 = 0.0603 PPM	NO. 1472 = 0.0654 PPM	NO. 1522 = 0.0485 PPM	NO. 1572 = 0.0501 PPM
NO. 1423 = 0.0598 PPM	NO. 1473 = 0.0667 PPM	NO. 1523 = 0.0466 PPM	NO. 1573 = 0.0549 PPM
NO. 1424 = 0.0585 PPM	NO. 1474 = 0.0542 PPM	NO. 1524 = 0.0459 PPM	NO. 1574 = 0.0637 PPM
NO. 1425 = 0.0554 PPM	NO. 1475 = 0.0506 PPM	NO. 1525 = 0.0489 PPM	NO. 1575 = 0.0787 PPM
NO. 1426 = 0.0655 PPM	NO. 1476 = 0.0474 PPM	NO. 1526 = 0.0529 PPM	NO. 1576 = 0.0858 PPM
NO. 1427 = 0.0667 PPM	NO. 1477 = 0.0475 PPM	NO. 1527 = 0.0582 PPM	NO. 1577 = 0.0747 PPM
NO. 1428 = 0.0553 PPM	NO. 1478 = 0.0494 PPM	NO. 1528 = 0.0676 PPM	NO. 1578 = 0.0783 PPM
NO. 1429 = 0.0511 PPM	NO. 1479 = 0.0526 PPM	NO. 1529 = 0.0795 PPM	NO. 1579 = 0.0811 PPM
NO. 1430 = 0.0496 PPM	NO. 1480 = 0.0568 PPM	NO. 1530 = 0.0925 PPM	NO. 1580 = 0.0780 PPM
NO. 1431 = 0.0507 PPM	NO. 1481 = 0.0623 PPM	NO. 1531 = 0.0830 PPM	NO. 1581 = 0.0797 PPM
NO. 1432 = 0.0532 PPM	NO. 1482 = 0.0695 PPM	NO. 1532 = 0.0820 PPM	NO. 1582 = 0.0813 PPM
NO. 1433 = 0.0568 PPM	NO. 1483 = 0.0792 PPM	NO. 1533 = 0.0807 PPM	NO. 1583 = 0.0823 PPM
NO. 1434 = 0.0625 PPM	NO. 1484 = 0.1003 PPM	NO. 1534 = 0.0858 PPM	NO. 1584 = 0.0804 PPM
NO. 1435 = 0.0667 PPM	NO. 1485 = 0.0870 PPM	NO. 1535 = 0.0881 PPM	NO. 1585 = 0.0785 PPM
NO. 1436 = 0.0699 PPM	NO. 1486 = 0.0883 PPM	NO. 1536 = 0.0899 PPM	NO. 1586 = 0.0773 PPM
NO. 1437 = 0.0742 PPM	NO. 1487 = 0.0884 PPM	NO. 1537 = 0.0853 PPM	NO. 1587 = 0.0760 PPM
NO. 1438 = 0.0868 PPM	NO. 1488 = 0.0827 PPM	NO. 1538 = 0.0817 PPM	NO. 1588 = 0.0746 PPM
NO. 1439 = 0.0900 PPM	NO. 1489 = 0.0895 PPM	NO. 1539 = 0.0798 PPM	NO. 1589 = 0.0765 PPM
NO. 1440 = 0.0862 PPM	NO. 1490 = 0.0845 PPM	NO. 1540 = 0.0787 PPM	NO. 1590 = 0.0790 PPM
NO. 1441 = 0.0946 PPM	NO. 1491 = 0.0803 PPM	NO. 1541 = 0.0789 PPM	NO. 1591 = 0.0824 PPM
NO. 1442 = 0.0882 PPM	NO. 1492 = 0.0796 PPM	NO. 1542 = 0.0767 PPM	NO. 1592 = 0.0940 PPM
NO. 1443 = 0.0795 PPM	NO. 1493 = 0.0817 PPM	NO. 1543 = 0.0758 PPM	NO. 1593 = 0.0880 PPM
NO. 1444 = 0.0741 PPM	NO. 1494 = 0.0824 PPM	NO. 1544 = 0.0775 PPM	NO. 1594 = 0.0755 PPM
NO. 1445 = 0.0780 PPM	NO. 1495 = 0.0832 PPM	NO. 1545 = 0.0810 PPM	NO. 1595 = 0.0706 PPM
NO. 1446 = 0.0812 PPM	NO. 1496 = 0.0787 PPM	NO. 1546 = 0.0979 PPM	NO. 1596 = 0.0686 PPM
NO. 1447 = 0.0839 PPM	NO. 1497 = 0.0776 PPM	NO. 1547 = 0.0818 PPM	NO. 1597 = 0.0657 PPM
NO. 1448 = 0.0845 PPM	NO. 1498 = 0.0810 PPM	NO. 1548 = 0.0757 PPM	NO. 1598 = 0.0675 PPM
NO. 1449 = 0.0818 PPM	NO. 1499 = 0.0834 PPM	NO. 1549 = 0.0731 PPM	NO. 1599 = 0.0698 PPM
NO. 1450 = 0.0779 PPM	NO. 1500 = 0.0906 PPM	NO. 1550 = 0.0710 PPM	NO. 1600 = 0.0643 PPM

A-6. continued.

NO. 1601 = 0.0594 PPM	NO. 1651 = 0.0513 PPM	NO. 1701 = 0.0495 PPM	NO. 1751 = 0.0565 PPM
NO. 1602 = 0.0564 PPM	NO. 1652 = 0.0505 PPM	NO. 1702 = 0.0624 PPM	NO. 1752 = 0.0554 PPM
NO. 1603 = 0.0551 PPM	NO. 1653 = 0.0493 PPM	NO. 1703 = 0.0641 PPM	NO. 1753 = 0.0538 PPM
NO. 1604 = 0.0533 PPM	NO. 1654 = 0.0494 PPM	NO. 1704 = 0.0514 PPM	NO. 1754 = 0.0553 PPM
NO. 1605 = 0.0525 PPM	NO. 1655 = 0.0482 PPM	NO. 1705 = 0.0527 PPM	NO. 1755 = 0.0563 PPM
NO. 1606 = 0.0511 PPM	NO. 1656 = 0.0634 PPM	NO. 1706 = 0.0512 PPM	NO. 1756 = 0.0579 PPM
NO. 1607 = 0.0524 PPM	NO. 1657 = 0.0650 PPM	NO. 1707 = 0.0560 PPM	NO. 1757 = 0.0600 PPM
NO. 1608 = 0.0516 PPM	NO. 1658 = 0.0512 PPM	NO. 1708 = 0.0557 PPM	NO. 1758 = 0.0640 PPM
NO. 1609 = 0.0501 PPM	NO. 1659 = 0.0522 PPM	NO. 1709 = 0.0543 PPM	NO. 1759 = 0.0711 PPM
NO. 1610 = 0.0644 PPM	NO. 1660 = 0.0509 PPM	NO. 1710 = 0.0607 PPM	NO. 1760 = 0.0636 PPM
NO. 1611 = 0.0662 PPM	NO. 1661 = 0.0547 PPM	NO. 1711 = 0.0722 PPM	NO. 1761 = 0.0593 PPM
NO. 1612 = 0.0513 PPM	NO. 1662 = 0.0520 PPM	NO. 1712 = 0.0651 PPM	NO. 1762 = 0.0588 PPM
NO. 1613 = 0.0510 PPM	NO. 1663 = 0.0503 PPM	NO. 1713 = 0.0833 PPM	NO. 1763 = 0.0614 PPM
NO. 1614 = 0.0504 PPM	NO. 1664 = 0.0481 PPM	NO. 1714 = 0.0867 PPM	NO. 1764 = 0.0629 PPM
NO. 1615 = 0.0492 PPM	NO. 1665 = 0.0577 PPM	NO. 1715 = 0.0751 PPM	NO. 1765 = 0.0630 PPM
NO. 1616 = 0.0487 PPM	NO. 1666 = 0.0560 PPM	NO. 1716 = 0.0665 PPM	NO. 1766 = 0.0632 PPM
NO. 1617 = 0.0467 PPM	NO. 1667 = 0.0740 PPM	NO. 1717 = 0.0680 PPM	NO. 1767 = 0.0641 PPM
NO. 1618 = 0.0492 PPM	NO. 1668 = 0.0821 PPM	NO. 1718 = 0.0710 PPM	NO. 1768 = 0.0651 PPM
NO. 1619 = 0.0525 PPM	NO. 1669 = 0.0857 PPM	NO. 1719 = 0.0701 PPM	NO. 1769 = 0.0659 PPM
NO. 1620 = 0.0569 PPM	NO. 1670 = 0.0701 PPM	NO. 1720 = 0.0703 PPM	NO. 1770 = 0.0668 PPM
NO. 1621 = 0.0642 PPM	NO. 1671 = 0.0690 PPM	NO. 1721 = 0.0717 PPM	NO. 1771 = 0.0659 PPM
NO. 1622 = 0.0718 PPM	NO. 1672 = 0.0734 PPM	NO. 1722 = 0.0718 PPM	NO. 1772 = 0.0650 PPM
NO. 1623 = 0.0692 PPM	NO. 1673 = 0.0724 PPM	NO. 1723 = 0.0720 PPM	NO. 1773 = 0.0648 PPM
NO. 1624 = 0.0743 PPM	NO. 1674 = 0.0723 PPM	NO. 1724 = 0.0718 PPM	NO. 1774 = 0.0651 PPM
NO. 1625 = 0.0758 PPM	NO. 1675 = 0.0738 PPM	NO. 1725 = 0.0677 PPM	NO. 1775 = 0.0659 PPM
NO. 1626 = 0.0772 PPM	NO. 1676 = 0.0741 PPM	NO. 1726 = 0.0696 PPM	NO. 1776 = 0.0681 PPM
NO. 1627 = 0.0772 PPM	NO. 1677 = 0.0773 PPM	NO. 1727 = 0.0680 PPM	NO. 1777 = 0.0681 PPM
NO. 1628 = 0.0770 PPM	NO. 1678 = 0.0948 PPM	NO. 1728 = 0.0696 PPM	NO. 1778 = 0.0711 PPM
NO. 1629 = 0.0763 PPM	NO. 1679 = 0.0804 PPM	NO. 1729 = 0.0685 PPM	NO. 1779 = 0.0658 PPM
NO. 1630 = 0.0745 PPM	NO. 1680 = 0.0749 PPM	NO. 1730 = 0.0692 PPM	NO. 1780 = 0.0627 PPM
NO. 1631 = 0.0744 PPM	NO. 1681 = 0.0741 PPM	NO. 1731 = 0.0669 PPM	NO. 1781 = 0.0607 PPM
NO. 1632 = 0.0718 PPM	NO. 1682 = 0.0747 PPM	NO. 1732 = 0.0683 PPM	NO. 1782 = 0.0591 PPM
NO. 1633 = 0.0722 PPM	NO. 1683 = 0.0751 PPM	NO. 1733 = 0.0630 PPM	NO. 1783 = 0.0568 PPM
NO. 1634 = 0.0706 PPM	NO. 1684 = 0.0802 PPM	NO. 1734 = 0.0601 PPM	NO. 1784 = 0.0561 PPM
NO. 1635 = 0.0748 PPM	NO. 1685 = 0.0749 PPM	NO. 1735 = 0.0578 PPM	NO. 1785 = 0.0530 PPM
NO. 1636 = 0.0760 PPM	NO. 1686 = 0.0754 PPM	NO. 1736 = 0.0559 PPM	NO. 1786 = 0.0544 PPM
NO. 1637 = 0.0777 PPM	NO. 1687 = 0.0667 PPM	NO. 1737 = 0.0543 PPM	NO. 1787 = 0.0533 PPM
NO. 1638 = 0.0823 PPM	NO. 1688 = 0.0642 PPM	NO. 1738 = 0.0529 PPM	NO. 1788 = 0.0534 PPM
NO. 1639 = 0.0827 PPM	NO. 1689 = 0.0612 PPM	NO. 1739 = 0.0521 PPM	NO. 1789 = 0.0538 PPM
NO. 1640 = 0.0732 PPM	NO. 1690 = 0.0582 PPM	NO. 1740 = 0.0503 PPM	NO. 1790 = 0.0539 PPM
NO. 1641 = 0.0667 PPM	NO. 1691 = 0.0565 PPM	NO. 1741 = 0.0503 PPM	NO. 1791 = 0.0546 PPM
NO. 1642 = 0.0630 PPM	NO. 1692 = 0.0554 PPM	NO. 1742 = 0.0493 PPM	NO. 1792 = 0.0554 PPM
NO. 1643 = 0.0612 PPM	NO. 1693 = 0.0538 PPM	NO. 1743 = 0.0496 PPM	NO. 1793 = 0.0561 PPM
NO. 1644 = 0.0595 PPM	NO. 1694 = 0.0528 PPM	NO. 1744 = 0.0496 PPM	NO. 1794 = 0.0608 PPM
NO. 1645 = 0.0609 PPM	NO. 1695 = 0.0522 PPM	NO. 1745 = 0.0506 PPM	NO. 1795 = 0.0455 PPM
NO. 1646 = 0.0584 PPM	NO. 1696 = 0.0515 PPM	NO. 1746 = 0.0513 PPM	NO. 1796 = 0.0589 PPM
NO. 1647 = 0.0556 PPM	NO. 1697 = 0.0509 PPM	NO. 1747 = 0.0531 PPM	NO. 1797 = 0.0613 PPM
NO. 1648 = 0.0543 PPM	NO. 1698 = 0.0501 PPM	NO. 1748 = 0.0617 PPM	NO. 1798 = 0.0636 PPM
NO. 1649 = 0.0534 PPM	NO. 1699 = 0.0493 PPM	NO. 1749 = 0.0631 PPM	NO. 1799 = 0.0654 PPM
NO. 1650 = 0.0521 PPM	NO. 1700 = 0.0482 PPM	NO. 1750 = 0.0600 PPM	NO. 1800 = 0.0666 PPM

A-6. continued.

NO. 1801 = 0.0678 PPM
NO. 1802 = 0.0690 PPM
NO. 1803 = 0.0702 PPM
NO. 1804 = 0.0694 PPM
NO. 1805 = 0.0685 PPM
NO. 1806 = 0.0683 PPM
NO. 1807 = 0.0681 PPM
NO. 1808 = 0.0678 PPM
NO. 1809 = 0.0668 PPM
NO. 1810 = 0.0658 PPM
NO. 1811 = 0.0651 PPM
NO. 1812 = 0.0646 PPM
NO. 1813 = 0.0630 PPM
NO. 1814 = 0.0614 PPM
NO. 1815 = 0.0598 PPM
NO. 1816 = 0.0582 PPM
NO. 1817 = 0.0589 PPM
NO. 1818 = 0.0606 PPM
NO. 1819 = 0.0622 PPM
NO. 1820 = 0.0639 PPM
NO. 1821 = 0.0650 PPM
NO. 1822 = 0.0644 PPM
NO. 1823 = 0.0637 PPM
NO. 1824 = 0.0631 PPM
NO. 1825 = 0.0626 PPM
NO. 1826 = 0.0617 PPM
NO. 1827 = 0.0609 PPM
NO. 1828 = 0.0609 PPM
NO. 1829 = 0.0615 PPM
NO. 1830 = 0.0618 PPM
NO. 1831 = 0.0609 PPM
NO. 1832 = 0.0599 PPM
NO. 1833 = 0.0590 PPM
NO. 1834 = 0.0580 PPM
NO. 1835 = 0.0581 PPM
NO. 1836 = 0.0585 PPM
NO. 1837 = 0.0589 PPM
NO. 1838 = 0.0592 PPM
NO. 1839 = 0.0593 PPM
NO. 1840 = 0.0594 PPM

A-7. UAM-ROM max. values for August 3, 1988.

NO. 1 = 0.0677 PPM	NO. 51 = 0.0812 PPM	NO. 101 = 0.0776 PPM	NO. 151 = 0.0750 PPM
NO. 2 = 0.0815 PPM	NO. 52 = 0.0802 PPM	NO. 102 = 0.0773 PPM	NO. 152 = 0.0747 PPM
NO. 3 = 0.0814 PPM	NO. 53 = 0.0794 PPM	NO. 103 = 0.0770 PPM	NO. 153 = 0.0743 PPM
NO. 4 = 0.0813 PPM	NO. 54 = 0.0791 PPM	NO. 104 = 0.0767 PPM	NO. 154 = 0.0741 PPM
NO. 5 = 0.0813 PPM	NO. 55 = 0.0795 PPM	NO. 105 = 0.0766 PPM	NO. 155 = 0.0741 PPM
NO. 6 = 0.0814 PPM	NO. 56 = 0.0805 PPM	NO. 106 = 0.0769 PPM	NO. 156 = 0.0743 PPM
NO. 7 = 0.0815 PPM	NO. 57 = 0.0817 PPM	NO. 107 = 0.0765 PPM	NO. 157 = 0.0744 PPM
NO. 8 = 0.0815 PPM	NO. 58 = 0.0831 PPM	NO. 108 = 0.0763 PPM	NO. 158 = 0.0746 PPM
NO. 9 = 0.0820 PPM	NO. 59 = 0.0841 PPM	NO. 109 = 0.0766 PPM	NO. 159 = 0.0746 PPM
NO. 10 = 0.0829 PPM	NO. 60 = 0.0839 PPM	NO. 110 = 0.0766 PPM	NO. 160 = 0.0750 PPM
NO. 11 = 0.0837 PPM	NO. 61 = 0.0814 PPM	NO. 111 = 0.0768 PPM	NO. 161 = 0.0752 PPM
NO. 12 = 0.0846 PPM	NO. 62 = 0.0824 PPM	NO. 112 = 0.0769 PPM	NO. 162 = 0.0761 PPM
NO. 13 = 0.0854 PPM	NO. 63 = 0.0817 PPM	NO. 113 = 0.0769 PPM	NO. 163 = 0.0772 PPM
NO. 14 = 0.0852 PPM	NO. 64 = 0.0817 PPM	NO. 114 = 0.0769 PPM	NO. 164 = 0.0778 PPM
NO. 15 = 0.0846 PPM	NO. 65 = 0.0815 PPM	NO. 115 = 0.0770 PPM	NO. 165 = 0.0782 PPM
NO. 16 = 0.0842 PPM	NO. 66 = 0.0812 PPM	NO. 116 = 0.0786 PPM	NO. 166 = 0.0785 PPM
NO. 17 = 0.0839 PPM	NO. 67 = 0.0804 PPM	NO. 117 = 0.0794 PPM	NO. 167 = 0.0788 PPM
NO. 18 = 0.0835 PPM	NO. 68 = 0.0802 PPM	NO. 118 = 0.0799 PPM	NO. 168 = 0.0792 PPM
NO. 19 = 0.0828 PPM	NO. 69 = 0.0797 PPM	NO. 119 = 0.0802 PPM	NO. 169 = 0.0801 PPM
NO. 20 = 0.0820 PPM	NO. 70 = 0.0789 PPM	NO. 120 = 0.0805 PPM	NO. 170 = 0.0815 PPM
NO. 21 = 0.0813 PPM	NO. 71 = 0.0788 PPM	NO. 121 = 0.0810 PPM	NO. 171 = 0.0829 PPM
NO. 22 = 0.0805 PPM	NO. 72 = 0.0789 PPM	NO. 122 = 0.0816 PPM	NO. 172 = 0.0832 PPM
NO. 23 = 0.0797 PPM	NO. 73 = 0.0798 PPM	NO. 123 = 0.0824 PPM	NO. 173 = 0.0841 PPM
NO. 24 = 0.0792 PPM	NO. 74 = 0.0803 PPM	NO. 124 = 0.0834 PPM	NO. 174 = 0.0843 PPM
NO. 25 = 0.0787 PPM	NO. 75 = 0.0809 PPM	NO. 125 = 0.0843 PPM	NO. 175 = 0.0834 PPM
NO. 26 = 0.0782 PPM	NO. 76 = 0.0816 PPM	NO. 126 = 0.0852 PPM	NO. 176 = 0.0826 PPM
NO. 27 = 0.0778 PPM	NO. 77 = 0.0826 PPM	NO. 127 = 0.0858 PPM	NO. 177 = 0.0819 PPM
NO. 28 = 0.0780 PPM	NO. 78 = 0.0835 PPM	NO. 128 = 0.0860 PPM	NO. 178 = 0.0813 PPM
NO. 29 = 0.0783 PPM	NO. 79 = 0.0842 PPM	NO. 129 = 0.0858 PPM	NO. 179 = 0.0805 PPM
NO. 30 = 0.0785 PPM	NO. 80 = 0.0846 PPM	NO. 130 = 0.0856 PPM	NO. 180 = 0.0785 PPM
NO. 31 = 0.0787 PPM	NO. 81 = 0.0853 PPM	NO. 131 = 0.0853 PPM	NO. 181 = 0.0774 PPM
NO. 32 = 0.0794 PPM	NO. 82 = 0.0860 PPM	NO. 132 = 0.0851 PPM	NO. 182 = 0.0776 PPM
NO. 33 = 0.0804 PPM	NO. 83 = 0.0854 PPM	NO. 133 = 0.0844 PPM	NO. 183 = 0.0766 PPM
NO. 34 = 0.0815 PPM	NO. 84 = 0.0850 PPM	NO. 134 = 0.0833 PPM	NO. 184 = 0.0772 PPM
NO. 35 = 0.0825 PPM	NO. 85 = 0.0851 PPM	NO. 135 = 0.0829 PPM	NO. 185 = 0.0723 PPM
NO. 36 = 0.0836 PPM	NO. 86 = 0.0854 PPM	NO. 136 = 0.0826 PPM	NO. 186 = 0.0736 PPM
NO. 37 = 0.0838 PPM	NO. 87 = 0.0845 PPM	NO. 137 = 0.0802 PPM	NO. 187 = 0.0736 PPM
NO. 38 = 0.0839 PPM	NO. 88 = 0.0839 PPM	NO. 138 = 0.0799 PPM	NO. 188 = 0.0738 PPM
NO. 39 = 0.0841 PPM	NO. 89 = 0.0837 PPM	NO. 139 = 0.0727 PPM	NO. 189 = 0.0741 PPM
NO. 40 = 0.0842 PPM	NO. 90 = 0.0838 PPM	NO. 140 = 0.0766 PPM	NO. 190 = 0.0738 PPM
NO. 41 = 0.0843 PPM	NO. 91 = 0.0825 PPM	NO. 141 = 0.0769 PPM	NO. 191 = 0.0735 PPM
NO. 42 = 0.0843 PPM	NO. 92 = 0.0826 PPM	NO. 142 = 0.0768 PPM	NO. 192 = 0.0735 PPM
NO. 43 = 0.0843 PPM	NO. 93 = 0.0733 PPM	NO. 143 = 0.0771 PPM	NO. 193 = 0.0736 PPM
NO. 44 = 0.0842 PPM	NO. 94 = 0.0789 PPM	NO. 144 = 0.0767 PPM	NO. 194 = 0.0735 PPM
NO. 45 = 0.0842 PPM	NO. 95 = 0.0797 PPM	NO. 145 = 0.0763 PPM	NO. 195 = 0.0733 PPM
NO. 46 = 0.0534 PPM	NO. 96 = 0.0797 PPM	NO. 146 = 0.0758 PPM	NO. 196 = 0.0730 PPM
NO. 47 = 0.0754 PPM	NO. 97 = 0.0796 PPM	NO. 147 = 0.0757 PPM	NO. 197 = 0.0730 PPM
NO. 48 = 0.0820 PPM	NO. 98 = 0.0792 PPM	NO. 148 = 0.0754 PPM	NO. 198 = 0.0728 PPM
NO. 49 = 0.0822 PPM	NO. 99 = 0.0786 PPM	NO. 149 = 0.0751 PPM	NO. 199 = 0.0726 PPM
NO. 50 = 0.0817 PPM	NO. 100 = 0.0780 PPM	NO. 150 = 0.0751 PPM	NO. 200 = 0.0723 PPM

A-7. continued.

NO. 201 = 0.0722 PPM	NO. 251 = 0.0722 PPM	NO. 301 = 0.0714 PPM	NO. 351 = 0.0681 PPM
NO. 202 = 0.0722 PPM	NO. 252 = 0.0725 PPM	NO. 302 = 0.0719 PPM	NO. 352 = 0.0675 PPM
NO. 203 = 0.0727 PPM	NO. 253 = 0.0754 PPM	NO. 303 = 0.0726 PPM	NO. 353 = 0.0684 PPM
NO. 204 = 0.0735 PPM	NO. 254 = 0.0738 PPM	NO. 304 = 0.0732 PPM	NO. 354 = 0.0675 PPM
NO. 205 = 0.0736 PPM	NO. 255 = 0.0734 PPM	NO. 305 = 0.0735 PPM	NO. 355 = 0.0661 PPM
NO. 206 = 0.0737 PPM	NO. 256 = 0.0736 PPM	NO. 306 = 0.0784 PPM	NO. 356 = 0.0712 PPM
NO. 207 = 0.0751 PPM	NO. 257 = 0.0746 PPM	NO. 307 = 0.0751 PPM	NO. 357 = 0.0744 PPM
NO. 208 = 0.0756 PPM	NO. 258 = 0.0759 PPM	NO. 308 = 0.0740 PPM	NO. 358 = 0.0757 PPM
NO. 209 = 0.0755 PPM	NO. 259 = 0.0773 PPM	NO. 309 = 0.0730 PPM	NO. 359 = 0.0746 PPM
NO. 210 = 0.0757 PPM	NO. 260 = 0.0783 PPM	NO. 310 = 0.0722 PPM	NO. 360 = 0.0758 PPM
NO. 211 = 0.0758 PPM	NO. 261 = 0.0789 PPM	NO. 311 = 0.0717 PPM	NO. 361 = 0.0812 PPM
NO. 212 = 0.0763 PPM	NO. 262 = 0.0789 PPM	NO. 312 = 0.0767 PPM	NO. 362 = 0.0838 PPM
NO. 213 = 0.0771 PPM	NO. 263 = 0.0785 PPM	NO. 313 = 0.0788 PPM	NO. 363 = 0.0866 PPM
NO. 214 = 0.0783 PPM	NO. 264 = 0.0779 PPM	NO. 314 = 0.0717 PPM	NO. 364 = 0.0872 PPM
NO. 215 = 0.0797 PPM	NO. 265 = 0.0770 PPM	NO. 315 = 0.0740 PPM	NO. 365 = 0.0882 PPM
NO. 216 = 0.0808 PPM	NO. 266 = 0.0757 PPM	NO. 316 = 0.0775 PPM	NO. 366 = 0.0908 PPM
NO. 217 = 0.0813 PPM	NO. 267 = 0.0748 PPM	NO. 317 = 0.0803 PPM	NO. 367 = 0.0912 PPM
NO. 218 = 0.0815 PPM	NO. 268 = 0.0731 PPM	NO. 318 = 0.0818 PPM	NO. 368 = 0.0921 PPM
NO. 219 = 0.0817 PPM	NO. 269 = 0.0720 PPM	NO. 319 = 0.0837 PPM	NO. 369 = 0.0698 PPM
NO. 220 = 0.0810 PPM	NO. 270 = 0.0715 PPM	NO. 320 = 0.0864 PPM	NO. 370 = 0.0622 PPM
NO. 221 = 0.0798 PPM	NO. 271 = 0.0740 PPM	NO. 321 = 0.0877 PPM	NO. 371 = 0.0620 PPM
NO. 222 = 0.0787 PPM	NO. 272 = 0.0763 PPM	NO. 322 = 0.0885 PPM	NO. 372 = 0.0625 PPM
NO. 223 = 0.0777 PPM	NO. 273 = 0.0793 PPM	NO. 323 = 0.0678 PPM	NO. 373 = 0.0622 PPM
NO. 224 = 0.0770 PPM	NO. 274 = 0.0818 PPM	NO. 324 = 0.0641 PPM	NO. 374 = 0.0620 PPM
NO. 225 = 0.0751 PPM	NO. 275 = 0.0841 PPM	NO. 325 = 0.0643 PPM	NO. 375 = 0.0626 PPM
NO. 226 = 0.0738 PPM	NO. 276 = 0.0851 PPM	NO. 326 = 0.0647 PPM	NO. 376 = 0.0649 PPM
NO. 227 = 0.0750 PPM	NO. 277 = 0.0676 PPM	NO. 327 = 0.0647 PPM	NO. 377 = 0.0677 PPM
NO. 228 = 0.0778 PPM	NO. 278 = 0.0666 PPM	NO. 328 = 0.0650 PPM	NO. 378 = 0.0687 PPM
NO. 229 = 0.0805 PPM	NO. 279 = 0.0670 PPM	NO. 329 = 0.0677 PPM	NO. 379 = 0.0695 PPM
NO. 230 = 0.0812 PPM	NO. 280 = 0.0673 PPM	NO. 330 = 0.0698 PPM	NO. 380 = 0.0703 PPM
NO. 231 = 0.0705 PPM	NO. 281 = 0.0674 PPM	NO. 331 = 0.0706 PPM	NO. 381 = 0.0697 PPM
NO. 232 = 0.0697 PPM	NO. 282 = 0.0682 PPM	NO. 332 = 0.0705 PPM	NO. 382 = 0.0697 PPM
NO. 233 = 0.0700 PPM	NO. 283 = 0.0693 PPM	NO. 333 = 0.0691 PPM	NO. 383 = 0.0668 PPM
NO. 234 = 0.0703 PPM	NO. 284 = 0.0690 PPM	NO. 334 = 0.0698 PPM	NO. 384 = 0.0697 PPM
NO. 235 = 0.0704 PPM	NO. 285 = 0.0682 PPM	NO. 335 = 0.0695 PPM	NO. 385 = 0.0720 PPM
NO. 236 = 0.0706 PPM	NO. 286 = 0.0684 PPM	NO. 336 = 0.0695 PPM	NO. 386 = 0.0690 PPM
NO. 237 = 0.0708 PPM	NO. 287 = 0.0682 PPM	NO. 337 = 0.0693 PPM	NO. 387 = 0.0676 PPM
NO. 238 = 0.0711 PPM	NO. 288 = 0.0691 PPM	NO. 338 = 0.0707 PPM	NO. 388 = 0.0571 PPM
NO. 239 = 0.0711 PPM	NO. 289 = 0.0690 PPM	NO. 339 = 0.0636 PPM	NO. 389 = 0.0591 PPM
NO. 240 = 0.0710 PPM	NO. 290 = 0.0683 PPM	NO. 340 = 0.0631 PPM	NO. 390 = 0.0603 PPM
NO. 241 = 0.0709 PPM	NO. 291 = 0.0672 PPM	NO. 341 = 0.0618 PPM	NO. 391 = 0.0621 PPM
NO. 242 = 0.0707 PPM	NO. 292 = 0.0662 PPM	NO. 342 = 0.0631 PPM	NO. 392 = 0.0630 PPM
NO. 243 = 0.0708 PPM	NO. 293 = 0.0651 PPM	NO. 343 = 0.0639 PPM	NO. 393 = 0.0644 PPM
NO. 244 = 0.0705 PPM	NO. 294 = 0.0650 PPM	NO. 344 = 0.0639 PPM	NO. 394 = 0.0649 PPM
NO. 245 = 0.0700 PPM	NO. 295 = 0.0650 PPM	NO. 345 = 0.0661 PPM	NO. 395 = 0.0648 PPM
NO. 246 = 0.0697 PPM	NO. 296 = 0.0671 PPM	NO. 346 = 0.0674 PPM	NO. 396 = 0.0644 PPM
NO. 247 = 0.0694 PPM	NO. 297 = 0.0686 PPM	NO. 347 = 0.0685 PPM	NO. 397 = 0.0641 PPM
NO. 248 = 0.0692 PPM	NO. 298 = 0.0687 PPM	NO. 348 = 0.0687 PPM	NO. 398 = 0.0658 PPM
NO. 249 = 0.0708 PPM	NO. 299 = 0.0684 PPM	NO. 349 = 0.0689 PPM	NO. 399 = 0.0684 PPM
NO. 250 = 0.0713 PPM	NO. 300 = 0.0703 PPM	NO. 350 = 0.0685 PPM	NO. 400 = 0.0712 PPM

A-7. continued.

NO. 401 = 0.0730 PPM	NO. 451 = 0.0848 PPM	NO. 501 = 0.1021 PPM	NO. 551 = 0.1061 PPM
NO. 402 = 0.0746 PPM	NO. 452 = 0.0882 PPM	NO. 502 = 0.1027 PPM	NO. 552 = 0.1065 PPM
NO. 403 = 0.0766 PPM	NO. 453 = 0.0922 PPM	NO. 503 = 0.1016 PPM	NO. 553 = 0.0691 PPM
NO. 404 = 0.0755 PPM	NO. 454 = 0.0945 PPM	NO. 504 = 0.1031 PPM	NO. 554 = 0.0563 PPM
NO. 405 = 0.0803 PPM	NO. 455 = 0.0969 PPM	NO. 505 = 0.1025 PPM	NO. 555 = 0.0579 PPM
NO. 406 = 0.0824 PPM	NO. 456 = 0.0962 PPM	NO. 506 = 0.1029 PPM	NO. 556 = 0.0591 PPM
NO. 407 = 0.0865 PPM	NO. 457 = 0.0969 PPM	NO. 507 = 0.0667 PPM	NO. 557 = 0.0628 PPM
NO. 408 = 0.0894 PPM	NO. 458 = 0.0992 PPM	NO. 508 = 0.0597 PPM	NO. 558 = 0.0643 PPM
NO. 409 = 0.0918 PPM	NO. 459 = 0.0986 PPM	NO. 509 = 0.0618 PPM	NO. 559 = 0.0552 PPM
NO. 410 = 0.0917 PPM	NO. 460 = 0.0993 PPM	NO. 510 = 0.0618 PPM	NO. 560 = 0.0571 PPM
NO. 411 = 0.0923 PPM	NO. 461 = 0.0674 PPM	NO. 511 = 0.0596 PPM	NO. 561 = 0.0600 PPM
NO. 412 = 0.0951 PPM	NO. 462 = 0.0597 PPM	NO. 512 = 0.0569 PPM	NO. 562 = 0.0629 PPM
NO. 413 = 0.0946 PPM	NO. 463 = 0.0608 PPM	NO. 513 = 0.0565 PPM	NO. 563 = 0.0659 PPM
NO. 414 = 0.0957 PPM	NO. 464 = 0.0608 PPM	NO. 514 = 0.0582 PPM	NO. 564 = 0.0679 PPM
NO. 415 = 0.0688 PPM	NO. 465 = 0.0586 PPM	NO. 515 = 0.0582 PPM	NO. 565 = 0.0685 PPM
NO. 416 = 0.0608 PPM	NO. 466 = 0.0572 PPM	NO. 516 = 0.0604 PPM	NO. 566 = 0.0693 PPM
NO. 417 = 0.0607 PPM	NO. 467 = 0.0568 PPM	NO. 517 = 0.0621 PPM	NO. 567 = 0.0688 PPM
NO. 418 = 0.0612 PPM	NO. 468 = 0.0580 PPM	NO. 518 = 0.0631 PPM	NO. 568 = 0.0685 PPM
NO. 419 = 0.0608 PPM	NO. 469 = 0.0579 PPM	NO. 519 = 0.0631 PPM	NO. 569 = 0.0676 PPM
NO. 420 = 0.0602 PPM	NO. 470 = 0.0606 PPM	NO. 520 = 0.0637 PPM	NO. 570 = 0.0704 PPM
NO. 421 = 0.0591 PPM	NO. 471 = 0.0626 PPM	NO. 521 = 0.0632 PPM	NO. 571 = 0.0740 PPM
NO. 422 = 0.0601 PPM	NO. 472 = 0.0629 PPM	NO. 522 = 0.0630 PPM	NO. 572 = 0.0765 PPM
NO. 423 = 0.0612 PPM	NO. 473 = 0.0615 PPM	NO. 523 = 0.0622 PPM	NO. 573 = 0.0781 PPM
NO. 424 = 0.0647 PPM	NO. 474 = 0.0592 PPM	NO. 524 = 0.0641 PPM	NO. 574 = 0.0803 PPM
NO. 425 = 0.0681 PPM	NO. 475 = 0.0595 PPM	NO. 525 = 0.0669 PPM	NO. 575 = 0.0823 PPM
NO. 426 = 0.0698 PPM	NO. 476 = 0.0594 PPM	NO. 526 = 0.0690 PPM	NO. 576 = 0.0840 PPM
NO. 427 = 0.0705 PPM	NO. 477 = 0.0601 PPM	NO. 527 = 0.0707 PPM	NO. 577 = 0.0854 PPM
NO. 428 = 0.0734 PPM	NO. 478 = 0.0598 PPM	NO. 528 = 0.0728 PPM	NO. 578 = 0.0858 PPM
NO. 429 = 0.0728 PPM	NO. 479 = 0.0609 PPM	NO. 529 = 0.0749 PPM	NO. 579 = 0.0863 PPM
NO. 430 = 0.0646 PPM	NO. 480 = 0.0623 PPM	NO. 530 = 0.0775 PPM	NO. 580 = 0.0862 PPM
NO. 431 = 0.0689 PPM	NO. 481 = 0.0640 PPM	NO. 531 = 0.0795 PPM	NO. 581 = 0.0876 PPM
NO. 432 = 0.0663 PPM	NO. 482 = 0.0657 PPM	NO. 532 = 0.0807 PPM	NO. 582 = 0.0904 PPM
NO. 433 = 0.0718 PPM	NO. 483 = 0.0677 PPM	NO. 533 = 0.0824 PPM	NO. 583 = 0.0908 PPM
NO. 434 = 0.0606 PPM	NO. 484 = 0.0696 PPM	NO. 534 = 0.0832 PPM	NO. 584 = 0.0904 PPM
NO. 435 = 0.0597 PPM	NO. 485 = 0.0714 PPM	NO. 535 = 0.0844 PPM	NO. 585 = 0.0872 PPM
NO. 436 = 0.0604 PPM	NO. 486 = 0.0732 PPM	NO. 536 = 0.0850 PPM	NO. 586 = 0.0887 PPM
NO. 437 = 0.0618 PPM	NO. 487 = 0.0750 PPM	NO. 537 = 0.0856 PPM	NO. 587 = 0.0915 PPM
NO. 438 = 0.0630 PPM	NO. 488 = 0.0773 PPM	NO. 538 = 0.0871 PPM	NO. 588 = 0.0941 PPM
NO. 439 = 0.0639 PPM	NO. 489 = 0.0788 PPM	NO. 539 = 0.0903 PPM	NO. 589 = 0.0973 PPM
NO. 440 = 0.0651 PPM	NO. 490 = 0.0812 PPM	NO. 540 = 0.0856 PPM	NO. 590 = 0.0999 PPM
NO. 441 = 0.0664 PPM	NO. 491 = 0.0822 PPM	NO. 541 = 0.0882 PPM	NO. 591 = 0.1032 PPM
NO. 442 = 0.0680 PPM	NO. 492 = 0.0834 PPM	NO. 542 = 0.0898 PPM	NO. 592 = 0.1057 PPM
NO. 443 = 0.0696 PPM	NO. 493 = 0.0855 PPM	NO. 543 = 0.0931 PPM	NO. 593 = 0.1076 PPM
NO. 444 = 0.0725 PPM	NO. 494 = 0.0859 PPM	NO. 544 = 0.0962 PPM	NO. 594 = 0.1072 PPM
NO. 445 = 0.0749 PPM	NO. 495 = 0.0832 PPM	NO. 545 = 0.1005 PPM	NO. 595 = 0.1077 PPM
NO. 446 = 0.0765 PPM	NO. 496 = 0.0870 PPM	NO. 546 = 0.1043 PPM	NO. 596 = 0.1079 PPM
NO. 447 = 0.0775 PPM	NO. 497 = 0.0895 PPM	NO. 547 = 0.1060 PPM	NO. 597 = 0.1081 PPM
NO. 448 = 0.0792 PPM	NO. 498 = 0.0939 PPM	NO. 548 = 0.1065 PPM	NO. 598 = 0.1099 PPM
NO. 449 = 0.0784 PPM	NO. 499 = 0.0975 PPM	NO. 549 = 0.1053 PPM	NO. 599 = 0.0727 PPM
NO. 450 = 0.0807 PPM	NO. 500 = 0.1002 PPM	NO. 550 = 0.1061 PPM	NO. 600 = 0.0532 PPM

A-7. continued.

NO. 601 = 0.0523 PPM	NO. 651 = 0.0601 PPM	NO. 701 = 0.0779 PPM	NO. 751 = 0.0913 PPM
NO. 602 = 0.0528 PPM	NO. 652 = 0.0639 PPM	NO. 702 = 0.0822 PPM	NO. 752 = 0.0918 PPM
NO. 603 = 0.0522 PPM	NO. 653 = 0.0676 PPM	NO. 703 = 0.0856 PPM	NO. 753 = 0.0920 PPM
NO. 604 = 0.0537 PPM	NO. 654 = 0.0705 PPM	NO. 704 = 0.0866 PPM	NO. 754 = 0.0915 PPM
NO. 605 = 0.0572 PPM	NO. 655 = 0.0740 PPM	NO. 705 = 0.0881 PPM	NO. 755 = 0.0907 PPM
NO. 606 = 0.0604 PPM	NO. 656 = 0.0776 PPM	NO. 706 = 0.0880 PPM	NO. 756 = 0.0908 PPM
NO. 607 = 0.0638 PPM	NO. 657 = 0.0795 PPM	NO. 707 = 0.0882 PPM	NO. 757 = 0.0922 PPM
NO. 608 = 0.0664 PPM	NO. 658 = 0.0801 PPM	NO. 708 = 0.0868 PPM	NO. 758 = 0.0934 PPM
NO. 609 = 0.0701 PPM	NO. 659 = 0.0804 PPM	NO. 709 = 0.0863 PPM	NO. 759 = 0.0925 PPM
NO. 610 = 0.0727 PPM	NO. 660 = 0.0799 PPM	NO. 710 = 0.0871 PPM	NO. 760 = 0.0888 PPM
NO. 611 = 0.0737 PPM	NO. 661 = 0.0788 PPM	NO. 711 = 0.0883 PPM	NO. 761 = 0.0888 PPM
NO. 612 = 0.0744 PPM	NO. 662 = 0.0811 PPM	NO. 712 = 0.0894 PPM	NO. 762 = 0.0899 PPM
NO. 613 = 0.0742 PPM	NO. 663 = 0.0839 PPM	NO. 713 = 0.0884 PPM	NO. 763 = 0.0881 PPM
NO. 614 = 0.0739 PPM	NO. 664 = 0.0875 PPM	NO. 714 = 0.0879 PPM	NO. 764 = 0.0924 PPM
NO. 615 = 0.0729 PPM	NO. 665 = 0.0899 PPM	NO. 715 = 0.0882 PPM	NO. 765 = 0.0957 PPM
NO. 616 = 0.0762 PPM	NO. 666 = 0.0909 PPM	NO. 716 = 0.0892 PPM	NO. 766 = 0.0877 PPM
NO. 617 = 0.0805 PPM	NO. 667 = 0.0929 PPM	NO. 717 = 0.0891 PPM	NO. 767 = 0.0922 PPM
NO. 618 = 0.0837 PPM	NO. 668 = 0.0940 PPM	NO. 718 = 0.0897 PPM	NO. 768 = 0.0957 PPM
NO. 619 = 0.0850 PPM	NO. 669 = 0.0955 PPM	NO. 719 = 0.0896 PPM	NO. 769 = 0.0993 PPM
NO. 620 = 0.0873 PPM	NO. 670 = 0.0949 PPM	NO. 720 = 0.0917 PPM	NO. 770 = 0.1017 PPM
NO. 621 = 0.0888 PPM	NO. 671 = 0.0958 PPM	NO. 721 = 0.0890 PPM	NO. 771 = 0.1027 PPM
NO. 622 = 0.0903 PPM	NO. 672 = 0.0969 PPM	NO. 722 = 0.0931 PPM	NO. 772 = 0.1047 PPM
NO. 623 = 0.0914 PPM	NO. 673 = 0.0964 PPM	NO. 723 = 0.0964 PPM	NO. 773 = 0.1055 PPM
NO. 624 = 0.0911 PPM	NO. 674 = 0.0981 PPM	NO. 724 = 0.0994 PPM	NO. 774 = 0.1070 PPM
NO. 625 = 0.0913 PPM	NO. 675 = 0.1054 PPM	NO. 725 = 0.1015 PPM	NO. 775 = 0.1078 PPM
NO. 626 = 0.0928 PPM	NO. 676 = 0.0903 PPM	NO. 726 = 0.1029 PPM	NO. 776 = 0.1076 PPM
NO. 627 = 0.0942 PPM	NO. 677 = 0.0930 PPM	NO. 727 = 0.1043 PPM	NO. 777 = 0.1080 PPM
NO. 628 = 0.0965 PPM	NO. 678 = 0.0961 PPM	NO. 728 = 0.1059 PPM	NO. 778 = 0.1076 PPM
NO. 629 = 0.0983 PPM	NO. 679 = 0.0994 PPM	NO. 729 = 0.1068 PPM	NO. 779 = 0.1068 PPM
NO. 630 = 0.0927 PPM	NO. 680 = 0.1016 PPM	NO. 730 = 0.1072 PPM	NO. 780 = 0.1060 PPM
NO. 631 = 0.0898 PPM	NO. 681 = 0.1032 PPM	NO. 731 = 0.1077 PPM	NO. 781 = 0.1054 PPM
NO. 632 = 0.0921 PPM	NO. 682 = 0.1047 PPM	NO. 732 = 0.1072 PPM	NO. 782 = 0.1060 PPM
NO. 633 = 0.0956 PPM	NO. 683 = 0.1064 PPM	NO. 733 = 0.1076 PPM	NO. 783 = 0.0808 PPM
NO. 634 = 0.0986 PPM	NO. 684 = 0.1068 PPM	NO. 734 = 0.1071 PPM	NO. 784 = 0.0689 PPM
NO. 635 = 0.1008 PPM	NO. 685 = 0.1071 PPM	NO. 735 = 0.1072 PPM	NO. 785 = 0.0618 PPM
NO. 636 = 0.1032 PPM	NO. 686 = 0.1070 PPM	NO. 736 = 0.1078 PPM	NO. 786 = 0.0658 PPM
NO. 637 = 0.1055 PPM	NO. 687 = 0.1070 PPM	NO. 737 = 0.0812 PPM	NO. 787 = 0.0693 PPM
NO. 638 = 0.1066 PPM	NO. 688 = 0.1070 PPM	NO. 738 = 0.0622 PPM	NO. 788 = 0.0736 PPM
NO. 639 = 0.1072 PPM	NO. 689 = 0.1077 PPM	NO. 739 = 0.0620 PPM	NO. 789 = 0.0789 PPM
NO. 640 = 0.1066 PPM	NO. 690 = 0.1085 PPM	NO. 740 = 0.0627 PPM	NO. 790 = 0.0840 PPM
NO. 641 = 0.1070 PPM	NO. 691 = 0.0799 PPM	NO. 741 = 0.0643 PPM	NO. 791 = 0.0876 PPM
NO. 642 = 0.1071 PPM	NO. 692 = 0.0582 PPM	NO. 742 = 0.0670 PPM	NO. 792 = 0.0900 PPM
NO. 643 = 0.1076 PPM	NO. 693 = 0.0609 PPM	NO. 743 = 0.0707 PPM	NO. 793 = 0.0925 PPM
NO. 644 = 0.1092 PPM	NO. 694 = 0.0608 PPM	NO. 744 = 0.0746 PPM	NO. 794 = 0.0953 PPM
NO. 645 = 0.0763 PPM	NO. 695 = 0.0598 PPM	NO. 745 = 0.0774 PPM	NO. 795 = 0.0970 PPM
NO. 646 = 0.0578 PPM	NO. 696 = 0.0604 PPM	NO. 746 = 0.0801 PPM	NO. 796 = 0.0971 PPM
NO. 647 = 0.0575 PPM	NO. 697 = 0.0636 PPM	NO. 747 = 0.0828 PPM	NO. 797 = 0.0987 PPM
NO. 648 = 0.0566 PPM	NO. 698 = 0.0676 PPM	NO. 748 = 0.0861 PPM	NO. 798 = 0.0986 PPM
NO. 649 = 0.0549 PPM	NO. 699 = 0.0715 PPM	NO. 749 = 0.0890 PPM	NO. 799 = 0.0988 PPM
NO. 650 = 0.0569 PPM	NO. 700 = 0.0750 PPM	NO. 750 = 0.0901 PPM	NO. 800 = 0.0984 PPM

A-7. continued.

NO. 801 = 0.0973 PPM	NO. 851 = 0.1053 PPM	NO. 901 = 0.0861 PPM	NO. 951 = 0.0970 PPM
NO. 802 = 0.0971 PPM	NO. 852 = 0.1037 PPM	NO. 902 = 0.0886 PPM	NO. 952 = 0.0991 PPM
NO. 803 = 0.0988 PPM	NO. 853 = 0.0946 PPM	NO. 903 = 0.0926 PPM	NO. 953 = 0.0995 PPM
NO. 804 = 0.0997 PPM	NO. 854 = 0.0897 PPM	NO. 904 = 0.0946 PPM	NO. 954 = 0.1000 PPM
NO. 805 = 0.0998 PPM	NO. 855 = 0.0868 PPM	NO. 905 = 0.0976 PPM	NO. 955 = 0.1009 PPM
NO. 806 = 0.0979 PPM	NO. 856 = 0.0849 PPM	NO. 906 = 0.1002 PPM	NO. 956 = 0.1004 PPM
NO. 807 = 0.0855 PPM	NO. 857 = 0.0900 PPM	NO. 907 = 0.1005 PPM	NO. 957 = 0.1022 PPM
NO. 808 = 0.0878 PPM	NO. 858 = 0.0937 PPM	NO. 908 = 0.1023 PPM	NO. 958 = 0.1026 PPM
NO. 809 = 0.0885 PPM	NO. 859 = 0.0971 PPM	NO. 909 = 0.1029 PPM	NO. 959 = 0.1017 PPM
NO. 810 = 0.0914 PPM	NO. 860 = 0.0995 PPM	NO. 910 = 0.1034 PPM	NO. 960 = 0.1020 PPM
NO. 811 = 0.0856 PPM	NO. 861 = 0.1014 PPM	NO. 911 = 0.1048 PPM	NO. 961 = 0.1018 PPM
NO. 812 = 0.0919 PPM	NO. 862 = 0.1033 PPM	NO. 912 = 0.1048 PPM	NO. 962 = 0.1008 PPM
NO. 813 = 0.0952 PPM	NO. 863 = 0.1039 PPM	NO. 913 = 0.1040 PPM	NO. 963 = 0.0993 PPM
NO. 814 = 0.0981 PPM	NO. 864 = 0.1052 PPM	NO. 914 = 0.1045 PPM	NO. 964 = 0.0979 PPM
NO. 815 = 0.1010 PPM	NO. 865 = 0.1063 PPM	NO. 915 = 0.1037 PPM	NO. 965 = 0.0970 PPM
NO. 816 = 0.1031 PPM	NO. 866 = 0.1060 PPM	NO. 916 = 0.1020 PPM	NO. 966 = 0.0964 PPM
NO. 817 = 0.1037 PPM	NO. 867 = 0.1066 PPM	NO. 917 = 0.1003 PPM	NO. 967 = 0.0880 PPM
NO. 818 = 0.1056 PPM	NO. 868 = 0.1068 PPM	NO. 918 = 0.0993 PPM	NO. 968 = 0.0888 PPM
NO. 819 = 0.1064 PPM	NO. 869 = 0.1056 PPM	NO. 919 = 0.0980 PPM	NO. 969 = 0.0893 PPM
NO. 820 = 0.1067 PPM	NO. 870 = 0.1032 PPM	NO. 920 = 0.0970 PPM	NO. 970 = 0.0841 PPM
NO. 821 = 0.1079 PPM	NO. 871 = 0.1022 PPM	NO. 921 = 0.0879 PPM	NO. 971 = 0.0854 PPM
NO. 822 = 0.1079 PPM	NO. 872 = 0.1005 PPM	NO. 922 = 0.0857 PPM	NO. 972 = 0.0908 PPM
NO. 823 = 0.1065 PPM	NO. 873 = 0.0991 PPM	NO. 923 = 0.0804 PPM	NO. 973 = 0.0953 PPM
NO. 824 = 0.1057 PPM	NO. 874 = 0.0983 PPM	NO. 924 = 0.0769 PPM	NO. 974 = 0.1039 PPM
NO. 825 = 0.1044 PPM	NO. 875 = 0.0871 PPM	NO. 925 = 0.0823 PPM	NO. 975 = 0.1090 PPM
NO. 826 = 0.1030 PPM	NO. 876 = 0.0810 PPM	NO. 926 = 0.0878 PPM	NO. 976 = 0.1090 PPM
NO. 827 = 0.1017 PPM	NO. 877 = 0.0731 PPM	NO. 927 = 0.0936 PPM	NO. 977 = 0.1162 PPM
NO. 828 = 0.1021 PPM	NO. 878 = 0.0751 PPM	NO. 928 = 0.0972 PPM	NO. 978 = 0.1187 PPM
NO. 829 = 0.0825 PPM	NO. 879 = 0.0815 PPM	NO. 929 = 0.1019 PPM	NO. 979 = 0.1191 PPM
NO. 830 = 0.0553 PPM	NO. 880 = 0.0838 PPM	NO. 930 = 0.1094 PPM	NO. 980 = 0.1242 PPM
NO. 831 = 0.0693 PPM	NO. 881 = 0.0871 PPM	NO. 931 = 0.1123 PPM	NO. 981 = 0.1252 PPM
NO. 832 = 0.0692 PPM	NO. 882 = 0.0933 PPM	NO. 932 = 0.1174 PPM	NO. 982 = 0.1288 PPM
NO. 833 = 0.0775 PPM	NO. 883 = 0.0989 PPM	NO. 933 = 0.1219 PPM	NO. 983 = 0.1322 PPM
NO. 834 = 0.0814 PPM	NO. 884 = 0.1027 PPM	NO. 934 = 0.1229 PPM	NO. 984 = 0.1314 PPM
NO. 835 = 0.0864 PPM	NO. 885 = 0.1086 PPM	NO. 935 = 0.1252 PPM	NO. 985 = 0.1323 PPM
NO. 836 = 0.0893 PPM	NO. 886 = 0.1141 PPM	NO. 936 = 0.1264 PPM	NO. 986 = 0.1317 PPM
NO. 837 = 0.0943 PPM	NO. 887 = 0.1146 PPM	NO. 937 = 0.1240 PPM	NO. 987 = 0.1274 PPM
NO. 838 = 0.0990 PPM	NO. 888 = 0.1173 PPM	NO. 938 = 0.1230 PPM	NO. 988 = 0.1213 PPM
NO. 839 = 0.1022 PPM	NO. 889 = 0.1167 PPM	NO. 939 = 0.1218 PPM	NO. 989 = 0.1114 PPM
NO. 840 = 0.1041 PPM	NO. 890 = 0.1166 PPM	NO. 940 = 0.1213 PPM	NO. 990 = 0.1091 PPM
NO. 841 = 0.1046 PPM	NO. 891 = 0.1149 PPM	NO. 941 = 0.1183 PPM	NO. 991 = 0.1054 PPM
NO. 842 = 0.1061 PPM	NO. 892 = 0.1127 PPM	NO. 942 = 0.1177 PPM	NO. 992 = 0.0984 PPM
NO. 843 = 0.1065 PPM	NO. 893 = 0.1106 PPM	NO. 943 = 0.1123 PPM	NO. 993 = 0.0916 PPM
NO. 844 = 0.1050 PPM	NO. 894 = 0.1127 PPM	NO. 944 = 0.1081 PPM	NO. 994 = 0.0915 PPM
NO. 845 = 0.1059 PPM	NO. 895 = 0.1115 PPM	NO. 945 = 0.0974 PPM	NO. 995 = 0.0939 PPM
NO. 846 = 0.1050 PPM	NO. 896 = 0.1092 PPM	NO. 946 = 0.0866 PPM	NO. 996 = 0.0962 PPM
NO. 847 = 0.1042 PPM	NO. 897 = 0.1057 PPM	NO. 947 = 0.0846 PPM	NO. 997 = 0.0969 PPM
NO. 848 = 0.1033 PPM	NO. 898 = 0.1056 PPM	NO. 948 = 0.0896 PPM	NO. 998 = 0.0978 PPM
NO. 849 = 0.1040 PPM	NO. 899 = 0.1029 PPM	NO. 949 = 0.0927 PPM	NO. 999 = 0.0984 PPM
NO. 850 = 0.1046 PPM	NO. 900 = 0.0928 PPM	NO. 950 = 0.0951 PPM	NO. 1000 = 0.0978 PPM

A-7. continued.

NO. 1001 = 0.0990 PPM	NO. 1051 = 0.0988 PPM	NO. 1101 = 0.0943 PPM	NO. 1151 = 0.0870 PPM
NO. 1002 = 0.0987 PPM	NO. 1052 = 0.0986 PPM	NO. 1102 = 0.0941 PPM	NO. 1152 = 0.0787 PPM
NO. 1003 = 0.0999 PPM	NO. 1053 = 0.0983 PPM	NO. 1103 = 0.0946 PPM	NO. 1153 = 0.0741 PPM
NO. 1004 = 0.1007 PPM	NO. 1054 = 0.0975 PPM	NO. 1104 = 0.0951 PPM	NO. 1154 = 0.0779 PPM
NO. 1005 = 0.1003 PPM	NO. 1055 = 0.0965 PPM	NO. 1105 = 0.0876 PPM	NO. 1155 = 0.0797 PPM
NO. 1006 = 0.1003 PPM	NO. 1056 = 0.0953 PPM	NO. 1106 = 0.0699 PPM	NO. 1156 = 0.0791 PPM
NO. 1007 = 0.1002 PPM	NO. 1057 = 0.0945 PPM	NO. 1107 = 0.0740 PPM	NO. 1157 = 0.0862 PPM
NO. 1008 = 0.0994 PPM	NO. 1058 = 0.0950 PPM	NO. 1108 = 0.0803 PPM	NO. 1158 = 0.0919 PPM
NO. 1009 = 0.0983 PPM	NO. 1059 = 0.0882 PPM	NO. 1109 = 0.0790 PPM	NO. 1159 = 0.0937 PPM
NO. 1010 = 0.0971 PPM	NO. 1060 = 0.0804 PPM	NO. 1110 = 0.0849 PPM	NO. 1160 = 0.0963 PPM
NO. 1011 = 0.0959 PPM	NO. 1061 = 0.0850 PPM	NO. 1111 = 0.0931 PPM	NO. 1161 = 0.0964 PPM
NO. 1012 = 0.0951 PPM	NO. 1062 = 0.0838 PPM	NO. 1112 = 0.0969 PPM	NO. 1162 = 0.0961 PPM
NO. 1013 = 0.0881 PPM	NO. 1063 = 0.0831 PPM	NO. 1113 = 0.1002 PPM	NO. 1163 = 0.0972 PPM
NO. 1014 = 0.0855 PPM	NO. 1064 = 0.0895 PPM	NO. 1114 = 0.1016 PPM	NO. 1164 = 0.0941 PPM
NO. 1015 = 0.0904 PPM	NO. 1065 = 0.0943 PPM	NO. 1115 = 0.1010 PPM	NO. 1165 = 0.0936 PPM
NO. 1016 = 0.0886 PPM	NO. 1066 = 0.1016 PPM	NO. 1116 = 0.1020 PPM	NO. 1166 = 0.0921 PPM
NO. 1017 = 0.0836 PPM	NO. 1067 = 0.1057 PPM	NO. 1117 = 0.0992 PPM	NO. 1167 = 0.0903 PPM
NO. 1018 = 0.0900 PPM	NO. 1068 = 0.1057 PPM	NO. 1118 = 0.1000 PPM	NO. 1168 = 0.0912 PPM
NO. 1019 = 0.0987 PPM	NO. 1069 = 0.1077 PPM	NO. 1119 = 0.0998 PPM	NO. 1169 = 0.0912 PPM
NO. 1020 = 0.1037 PPM	NO. 1070 = 0.1044 PPM	NO. 1120 = 0.0984 PPM	NO. 1170 = 0.0932 PPM
NO. 1021 = 0.1076 PPM	NO. 1071 = 0.1044 PPM	NO. 1121 = 0.0992 PPM	NO. 1171 = 0.0943 PPM
NO. 1022 = 0.1121 PPM	NO. 1072 = 0.1045 PPM	NO. 1122 = 0.1004 PPM	NO. 1172 = 0.0949 PPM
NO. 1023 = 0.1102 PPM	NO. 1073 = 0.1039 PPM	NO. 1123 = 0.1015 PPM	NO. 1173 = 0.0945 PPM
NO. 1024 = 0.1099 PPM	NO. 1074 = 0.1062 PPM	NO. 1124 = 0.1046 PPM	NO. 1174 = 0.0930 PPM
NO. 1025 = 0.1105 PPM	NO. 1075 = 0.1068 PPM	NO. 1125 = 0.1037 PPM	NO. 1175 = 0.0910 PPM
NO. 1026 = 0.1061 PPM	NO. 1076 = 0.1088 PPM	NO. 1126 = 0.1050 PPM	NO. 1176 = 0.0869 PPM
NO. 1027 = 0.1090 PPM	NO. 1077 = 0.1106 PPM	NO. 1127 = 0.1028 PPM	NO. 1177 = 0.0805 PPM
NO. 1028 = 0.1099 PPM	NO. 1078 = 0.1107 PPM	NO. 1128 = 0.1018 PPM	NO. 1178 = 0.0774 PPM
NO. 1029 = 0.1118 PPM	NO. 1079 = 0.1112 PPM	NO. 1129 = 0.0950 PPM	NO. 1179 = 0.0789 PPM
NO. 1030 = 0.1153 PPM	NO. 1080 = 0.1094 PPM	NO. 1130 = 0.0879 PPM	NO. 1180 = 0.0833 PPM
NO. 1031 = 0.1166 PPM	NO. 1081 = 0.1084 PPM	NO. 1131 = 0.0843 PPM	NO. 1181 = 0.0878 PPM
NO. 1032 = 0.1162 PPM	NO. 1082 = 0.1063 PPM	NO. 1132 = 0.0839 PPM	NO. 1182 = 0.0937 PPM
NO. 1033 = 0.1156 PPM	NO. 1083 = 0.1033 PPM	NO. 1133 = 0.0831 PPM	NO. 1183 = 0.0912 PPM
NO. 1034 = 0.1121 PPM	NO. 1084 = 0.0978 PPM	NO. 1134 = 0.0795 PPM	NO. 1184 = 0.0925 PPM
NO. 1035 = 0.1077 PPM	NO. 1085 = 0.0926 PPM	NO. 1135 = 0.0783 PPM	NO. 1185 = 0.0924 PPM
NO. 1036 = 0.1042 PPM	NO. 1086 = 0.0871 PPM	NO. 1136 = 0.0952 PPM	NO. 1186 = 0.0924 PPM
NO. 1037 = 0.1004 PPM	NO. 1087 = 0.0919 PPM	NO. 1137 = 0.0926 PPM	NO. 1187 = 0.0930 PPM
NO. 1038 = 0.0978 PPM	NO. 1088 = 0.0937 PPM	NO. 1138 = 0.0943 PPM	NO. 1188 = 0.0930 PPM
NO. 1039 = 0.0982 PPM	NO. 1089 = 0.0929 PPM	NO. 1139 = 0.0944 PPM	NO. 1189 = 0.0926 PPM
NO. 1040 = 0.0962 PPM	NO. 1090 = 0.0915 PPM	NO. 1140 = 0.0945 PPM	NO. 1190 = 0.0919 PPM
NO. 1041 = 0.0927 PPM	NO. 1091 = 0.0942 PPM	NO. 1141 = 0.0953 PPM	NO. 1191 = 0.0912 PPM
NO. 1042 = 0.0914 PPM	NO. 1092 = 0.0951 PPM	NO. 1142 = 0.0954 PPM	NO. 1192 = 0.0904 PPM
NO. 1043 = 0.0932 PPM	NO. 1093 = 0.0960 PPM	NO. 1143 = 0.0949 PPM	NO. 1193 = 0.0896 PPM
NO. 1044 = 0.0936 PPM	NO. 1094 = 0.0961 PPM	NO. 1144 = 0.0942 PPM	NO. 1194 = 0.0891 PPM
NO. 1045 = 0.0947 PPM	NO. 1095 = 0.0972 PPM	NO. 1145 = 0.0934 PPM	NO. 1195 = 0.0891 PPM
NO. 1046 = 0.0955 PPM	NO. 1096 = 0.0975 PPM	NO. 1146 = 0.0927 PPM	NO. 1196 = 0.0896 PPM
NO. 1047 = 0.0967 PPM	NO. 1097 = 0.0970 PPM	NO. 1147 = 0.0922 PPM	NO. 1197 = 0.0864 PPM
NO. 1048 = 0.0967 PPM	NO. 1098 = 0.0963 PPM	NO. 1148 = 0.0919 PPM	NO. 1198 = 0.0766 PPM
NO. 1049 = 0.0985 PPM	NO. 1099 = 0.0959 PPM	NO. 1149 = 0.0919 PPM	NO. 1199 = 0.0801 PPM
NO. 1050 = 0.0991 PPM	NO. 1100 = 0.0952 PPM	NO. 1150 = 0.0922 PPM	NO. 1200 = 0.0794 PPM

A-7. continued.

NO. 1201 = 0.0719 PPM	NO. 1251 = 0.0812 PPM	NO. 1301 = 0.0783 PPM	NO. 1351 = 0.0630 PPM
NO. 1202 = 0.0694 PPM	NO. 1252 = 0.0848 PPM	NO. 1302 = 0.0765 PPM	NO. 1352 = 0.0639 PPM
NO. 1203 = 0.0752 PPM	NO. 1253 = 0.0856 PPM	NO. 1303 = 0.0721 PPM	NO. 1353 = 0.0663 PPM
NO. 1204 = 0.0830 PPM	NO. 1254 = 0.0860 PPM	NO. 1304 = 0.0711 PPM	NO. 1354 = 0.0665 PPM
NO. 1205 = 0.0893 PPM	NO. 1255 = 0.0858 PPM	NO. 1305 = 0.0681 PPM	NO. 1355 = 0.0662 PPM
NO. 1206 = 0.0895 PPM	NO. 1256 = 0.0821 PPM	NO. 1306 = 0.0695 PPM	NO. 1356 = 0.0650 PPM
NO. 1207 = 0.0916 PPM	NO. 1257 = 0.0819 PPM	NO. 1307 = 0.0692 PPM	NO. 1357 = 0.0676 PPM
NO. 1208 = 0.0924 PPM	NO. 1258 = 0.0779 PPM	NO. 1308 = 0.0714 PPM	NO. 1358 = 0.0712 PPM
NO. 1209 = 0.0904 PPM	NO. 1259 = 0.0744 PPM	NO. 1309 = 0.0724 PPM	NO. 1359 = 0.0750 PPM
NO. 1210 = 0.0906 PPM	NO. 1260 = 0.0730 PPM	NO. 1310 = 0.0706 PPM	NO. 1360 = 0.0781 PPM
NO. 1211 = 0.0865 PPM	NO. 1261 = 0.0739 PPM	NO. 1311 = 0.0657 PPM	NO. 1361 = 0.0802 PPM
NO. 1212 = 0.0849 PPM	NO. 1262 = 0.0731 PPM	NO. 1312 = 0.0687 PPM	NO. 1362 = 0.0821 PPM
NO. 1213 = 0.0832 PPM	NO. 1263 = 0.0723 PPM	NO. 1313 = 0.0723 PPM	NO. 1363 = 0.0832 PPM
NO. 1214 = 0.0798 PPM	NO. 1264 = 0.0710 PPM	NO. 1314 = 0.0758 PPM	NO. 1364 = 0.0837 PPM
NO. 1215 = 0.0805 PPM	NO. 1265 = 0.0677 PPM	NO. 1315 = 0.0801 PPM	NO. 1365 = 0.0843 PPM
NO. 1216 = 0.0795 PPM	NO. 1266 = 0.0672 PPM	NO. 1316 = 0.0822 PPM	NO. 1366 = 0.0844 PPM
NO. 1217 = 0.0808 PPM	NO. 1267 = 0.0701 PPM	NO. 1317 = 0.0843 PPM	NO. 1367 = 0.0843 PPM
NO. 1218 = 0.0807 PPM	NO. 1268 = 0.0737 PPM	NO. 1318 = 0.0857 PPM	NO. 1368 = 0.0842 PPM
NO. 1219 = 0.0809 PPM	NO. 1269 = 0.0787 PPM	NO. 1319 = 0.0860 PPM	NO. 1369 = 0.0844 PPM
NO. 1220 = 0.0795 PPM	NO. 1270 = 0.0815 PPM	NO. 1320 = 0.0863 PPM	NO. 1370 = 0.0845 PPM
NO. 1221 = 0.0777 PPM	NO. 1271 = 0.0841 PPM	NO. 1321 = 0.0861 PPM	NO. 1371 = 0.0841 PPM
NO. 1222 = 0.0745 PPM	NO. 1272 = 0.0867 PPM	NO. 1322 = 0.0863 PPM	NO. 1372 = 0.0834 PPM
NO. 1223 = 0.0755 PPM	NO. 1273 = 0.0882 PPM	NO. 1323 = 0.0862 PPM	NO. 1373 = 0.0827 PPM
NO. 1224 = 0.0787 PPM	NO. 1274 = 0.0881 PPM	NO. 1324 = 0.0865 PPM	NO. 1374 = 0.0821 PPM
NO. 1225 = 0.0819 PPM	NO. 1275 = 0.0880 PPM	NO. 1325 = 0.0864 PPM	NO. 1375 = 0.0812 PPM
NO. 1226 = 0.0853 PPM	NO. 1276 = 0.0882 PPM	NO. 1326 = 0.0859 PPM	NO. 1376 = 0.0804 PPM
NO. 1227 = 0.0897 PPM	NO. 1277 = 0.0881 PPM	NO. 1327 = 0.0852 PPM	NO. 1377 = 0.0806 PPM
NO. 1228 = 0.0906 PPM	NO. 1278 = 0.0884 PPM	NO. 1328 = 0.0843 PPM	NO. 1378 = 0.0806 PPM
NO. 1229 = 0.0898 PPM	NO. 1279 = 0.0886 PPM	NO. 1329 = 0.0835 PPM	NO. 1379 = 0.0805 PPM
NO. 1230 = 0.0901 PPM	NO. 1280 = 0.0883 PPM	NO. 1330 = 0.0825 PPM	NO. 1380 = 0.0806 PPM
NO. 1231 = 0.0901 PPM	NO. 1281 = 0.0878 PPM	NO. 1331 = 0.0829 PPM	NO. 1381 = 0.0715 PPM
NO. 1232 = 0.0903 PPM	NO. 1282 = 0.0870 PPM	NO. 1332 = 0.0829 PPM	NO. 1382 = 0.0731 PPM
NO. 1233 = 0.0907 PPM	NO. 1283 = 0.0859 PPM	NO. 1333 = 0.0826 PPM	NO. 1383 = 0.0691 PPM
NO. 1234 = 0.0906 PPM	NO. 1284 = 0.0850 PPM	NO. 1334 = 0.0825 PPM	NO. 1384 = 0.0683 PPM
NO. 1235 = 0.0902 PPM	NO. 1285 = 0.0849 PPM	NO. 1335 = 0.0726 PPM	NO. 1385 = 0.0678 PPM
NO. 1236 = 0.0895 PPM	NO. 1286 = 0.0848 PPM	NO. 1336 = 0.0742 PPM	NO. 1386 = 0.0680 PPM
NO. 1237 = 0.0887 PPM	NO. 1287 = 0.0845 PPM	NO. 1337 = 0.0677 PPM	NO. 1387 = 0.0685 PPM
NO. 1238 = 0.0877 PPM	NO. 1288 = 0.0850 PPM	NO. 1338 = 0.0667 PPM	NO. 1388 = 0.0683 PPM
NO. 1239 = 0.0868 PPM	NO. 1289 = 0.0772 PPM	NO. 1339 = 0.0664 PPM	NO. 1389 = 0.0691 PPM
NO. 1240 = 0.0866 PPM	NO. 1290 = 0.0707 PPM	NO. 1340 = 0.0669 PPM	NO. 1390 = 0.0697 PPM
NO. 1241 = 0.0867 PPM	NO. 1291 = 0.0652 PPM	NO. 1341 = 0.0673 PPM	NO. 1391 = 0.0692 PPM
NO. 1242 = 0.0874 PPM	NO. 1292 = 0.0634 PPM	NO. 1342 = 0.0675 PPM	NO. 1392 = 0.0676 PPM
NO. 1243 = 0.0834 PPM	NO. 1293 = 0.0650 PPM	NO. 1343 = 0.0689 PPM	NO. 1393 = 0.0634 PPM
NO. 1244 = 0.0822 PPM	NO. 1294 = 0.0672 PPM	NO. 1344 = 0.0701 PPM	NO. 1394 = 0.0614 PPM
NO. 1245 = 0.0902 PPM	NO. 1295 = 0.0688 PPM	NO. 1345 = 0.0723 PPM	NO. 1395 = 0.0620 PPM
NO. 1246 = 0.0884 PPM	NO. 1296 = 0.0689 PPM	NO. 1346 = 0.0731 PPM	NO. 1396 = 0.0609 PPM
NO. 1247 = 0.0857 PPM	NO. 1297 = 0.0707 PPM	NO. 1347 = 0.0702 PPM	NO. 1397 = 0.0609 PPM
NO. 1248 = 0.0829 PPM	NO. 1298 = 0.0766 PPM	NO. 1348 = 0.0664 PPM	NO. 1398 = 0.0633 PPM
NO. 1249 = 0.0751 PPM	NO. 1299 = 0.0802 PPM	NO. 1349 = 0.0664 PPM	NO. 1399 = 0.0638 PPM
NO. 1250 = 0.0753 PPM	NO. 1300 = 0.0791 PPM	NO. 1350 = 0.0634 PPM	NO. 1400 = 0.0639 PPM

A-7. continued.

NO. 1401 = 0.0624 PPM	NO. 1451 = 0.0753 PPM	NO. 1501 = 0.0787 PPM	NO. 1551 = 0.0773 PPM
NO. 1402 = 0.0650 PPM	NO. 1452 = 0.0769 PPM	NO. 1502 = 0.0788 PPM	NO. 1552 = 0.0773 PPM
NO. 1403 = 0.0691 PPM	NO. 1453 = 0.0776 PPM	NO. 1503 = 0.0787 PPM	NO. 1553 = 0.0775 PPM
NO. 1404 = 0.0727 PPM	NO. 1454 = 0.0780 PPM	NO. 1504 = 0.0790 PPM	NO. 1554 = 0.0774 PPM
NO. 1405 = 0.0761 PPM	NO. 1455 = 0.0801 PPM	NO. 1505 = 0.0788 PPM	NO. 1555 = 0.0769 PPM
NO. 1406 = 0.0784 PPM	NO. 1456 = 0.0805 PPM	NO. 1506 = 0.0789 PPM	NO. 1556 = 0.0762 PPM
NO. 1407 = 0.0797 PPM	NO. 1457 = 0.0806 PPM	NO. 1507 = 0.0792 PPM	NO. 1557 = 0.0759 PPM
NO. 1408 = 0.0810 PPM	NO. 1458 = 0.0806 PPM	NO. 1508 = 0.0790 PPM	NO. 1558 = 0.0757 PPM
NO. 1409 = 0.0811 PPM	NO. 1459 = 0.0806 PPM	NO. 1509 = 0.0784 PPM	NO. 1559 = 0.0752 PPM
NO. 1410 = 0.0822 PPM	NO. 1460 = 0.0806 PPM	NO. 1510 = 0.0777 PPM	NO. 1560 = 0.0747 PPM
NO. 1411 = 0.0824 PPM	NO. 1461 = 0.0809 PPM	NO. 1511 = 0.0774 PPM	NO. 1561 = 0.0742 PPM
NO. 1412 = 0.0823 PPM	NO. 1462 = 0.0807 PPM	NO. 1512 = 0.0770 PPM	NO. 1562 = 0.0739 PPM
NO. 1413 = 0.0824 PPM	NO. 1463 = 0.0801 PPM	NO. 1513 = 0.0764 PPM	NO. 1563 = 0.0744 PPM
NO. 1414 = 0.0822 PPM	NO. 1464 = 0.0793 PPM	NO. 1514 = 0.0757 PPM	NO. 1564 = 0.0759 PPM
NO. 1415 = 0.0826 PPM	NO. 1465 = 0.0790 PPM	NO. 1515 = 0.0750 PPM	NO. 1565 = 0.0770 PPM
NO. 1416 = 0.0825 PPM	NO. 1466 = 0.0785 PPM	NO. 1516 = 0.0745 PPM	NO. 1566 = 0.0943 PPM
NO. 1417 = 0.0820 PPM	NO. 1467 = 0.0778 PPM	NO. 1517 = 0.0753 PPM	NO. 1567 = 0.0954 PPM
NO. 1418 = 0.0812 PPM	NO. 1468 = 0.0770 PPM	NO. 1518 = 0.0769 PPM	NO. 1568 = 0.0928 PPM
NO. 1419 = 0.0808 PPM	NO. 1469 = 0.0762 PPM	NO. 1519 = 0.0756 PPM	NO. 1569 = 0.0917 PPM
NO. 1420 = 0.0802 PPM	NO. 1470 = 0.0759 PPM	NO. 1520 = 0.0839 PPM	NO. 1570 = 0.0900 PPM
NO. 1421 = 0.0794 PPM	NO. 1471 = 0.0764 PPM	NO. 1521 = 0.0852 PPM	NO. 1571 = 0.0885 PPM
NO. 1422 = 0.0785 PPM	NO. 1472 = 0.0779 PPM	NO. 1522 = 0.0838 PPM	NO. 1572 = 0.0898 PPM
NO. 1423 = 0.0781 PPM	NO. 1473 = 0.0742 PPM	NO. 1523 = 0.0829 PPM	NO. 1573 = 0.0892 PPM
NO. 1424 = 0.0782 PPM	NO. 1474 = 0.0790 PPM	NO. 1524 = 0.0831 PPM	NO. 1574 = 0.0860 PPM
NO. 1425 = 0.0782 PPM	NO. 1475 = 0.0792 PPM	NO. 1525 = 0.0843 PPM	NO. 1575 = 0.0818 PPM
NO. 1426 = 0.0790 PPM	NO. 1476 = 0.0779 PPM	NO. 1526 = 0.0823 PPM	NO. 1576 = 0.0796 PPM
NO. 1427 = 0.0728 PPM	NO. 1477 = 0.0775 PPM	NO. 1527 = 0.0790 PPM	NO. 1577 = 0.0790 PPM
NO. 1428 = 0.0740 PPM	NO. 1478 = 0.0783 PPM	NO. 1528 = 0.0731 PPM	NO. 1578 = 0.0783 PPM
NO. 1429 = 0.0733 PPM	NO. 1479 = 0.0772 PPM	NO. 1529 = 0.0684 PPM	NO. 1579 = 0.0789 PPM
NO. 1430 = 0.0717 PPM	NO. 1480 = 0.0741 PPM	NO. 1530 = 0.0675 PPM	NO. 1580 = 0.0789 PPM
NO. 1431 = 0.0713 PPM	NO. 1481 = 0.0717 PPM	NO. 1531 = 0.0666 PPM	NO. 1581 = 0.0765 PPM
NO. 1432 = 0.0720 PPM	NO. 1482 = 0.0703 PPM	NO. 1532 = 0.0663 PPM	NO. 1582 = 0.0718 PPM
NO. 1433 = 0.0713 PPM	NO. 1483 = 0.0712 PPM	NO. 1533 = 0.0679 PPM	NO. 1583 = 0.0678 PPM
NO. 1434 = 0.0696 PPM	NO. 1484 = 0.0704 PPM	NO. 1534 = 0.0677 PPM	NO. 1584 = 0.0618 PPM
NO. 1435 = 0.0698 PPM	NO. 1485 = 0.0632 PPM	NO. 1535 = 0.0653 PPM	NO. 1585 = 0.0611 PPM
NO. 1436 = 0.0708 PPM	NO. 1486 = 0.0626 PPM	NO. 1536 = 0.0625 PPM	NO. 1586 = 0.0646 PPM
NO. 1437 = 0.0700 PPM	NO. 1487 = 0.0626 PPM	NO. 1537 = 0.0590 PPM	NO. 1587 = 0.0676 PPM
NO. 1438 = 0.0671 PPM	NO. 1488 = 0.0614 PPM	NO. 1538 = 0.0584 PPM	NO. 1588 = 0.0697 PPM
NO. 1439 = 0.0605 PPM	NO. 1489 = 0.0599 PPM	NO. 1539 = 0.0619 PPM	NO. 1589 = 0.0717 PPM
NO. 1440 = 0.0626 PPM	NO. 1490 = 0.0581 PPM	NO. 1540 = 0.0656 PPM	NO. 1590 = 0.0730 PPM
NO. 1441 = 0.0597 PPM	NO. 1491 = 0.0591 PPM	NO. 1541 = 0.0687 PPM	NO. 1591 = 0.0735 PPM
NO. 1442 = 0.0591 PPM	NO. 1492 = 0.0594 PPM	NO. 1542 = 0.0712 PPM	NO. 1592 = 0.0746 PPM
NO. 1443 = 0.0594 PPM	NO. 1493 = 0.0627 PPM	NO. 1543 = 0.0729 PPM	NO. 1593 = 0.0757 PPM
NO. 1444 = 0.0596 PPM	NO. 1494 = 0.0666 PPM	NO. 1544 = 0.0743 PPM	NO. 1594 = 0.0757 PPM
NO. 1445 = 0.0616 PPM	NO. 1495 = 0.0697 PPM	NO. 1545 = 0.0747 PPM	NO. 1595 = 0.0756 PPM
NO. 1446 = 0.0611 PPM	NO. 1496 = 0.0724 PPM	NO. 1546 = 0.0757 PPM	NO. 1596 = 0.0758 PPM
NO. 1447 = 0.0629 PPM	NO. 1497 = 0.0741 PPM	NO. 1547 = 0.0774 PPM	NO. 1597 = 0.0756 PPM
NO. 1448 = 0.0671 PPM	NO. 1498 = 0.0758 PPM	NO. 1548 = 0.0772 PPM	NO. 1598 = 0.0755 PPM
NO. 1449 = 0.0706 PPM	NO. 1499 = 0.0767 PPM	NO. 1549 = 0.0772 PPM	NO. 1599 = 0.0759 PPM
NO. 1450 = 0.0732 PPM	NO. 1500 = 0.0773 PPM	NO. 1550 = 0.0775 PPM	NO. 1600 = 0.0759 PPM

A-7. continued.

NO. 1601 = 0.0756 PPM	NO. 1651 = 0.0735 PPM	NO. 1701 = 0.0723 PPM	NO. 1751 = 0.0914 PPM
NO. 1602 = 0.0750 PPM	NO. 1652 = 0.0735 PPM	NO. 1702 = 0.0730 PPM	NO. 1752 = 0.0920 PPM
NO. 1603 = 0.0746 PPM	NO. 1653 = 0.0734 PPM	NO. 1703 = 0.0739 PPM	NO. 1753 = 0.0961 PPM
NO. 1604 = 0.0745 PPM	NO. 1654 = 0.0733 PPM	NO. 1704 = 0.1052 PPM	NO. 1754 = 0.1033 PPM
NO. 1605 = 0.0743 PPM	NO. 1655 = 0.0730 PPM	NO. 1705 = 0.1062 PPM	NO. 1755 = 0.1070 PPM
NO. 1606 = 0.0741 PPM	NO. 1656 = 0.0739 PPM	NO. 1706 = 0.1087 PPM	NO. 1756 = 0.1098 PPM
NO. 1607 = 0.0739 PPM	NO. 1657 = 0.0749 PPM	NO. 1707 = 0.1128 PPM	NO. 1757 = 0.1119 PPM
NO. 1608 = 0.0737 PPM	NO. 1658 = 0.1097 PPM	NO. 1708 = 0.1168 PPM	NO. 1758 = 0.1128 PPM
NO. 1609 = 0.0738 PPM	NO. 1659 = 0.1124 PPM	NO. 1709 = 0.1176 PPM	NO. 1759 = 0.1128 PPM
NO. 1610 = 0.0749 PPM	NO. 1660 = 0.1129 PPM	NO. 1710 = 0.1158 PPM	NO. 1760 = 0.1088 PPM
NO. 1611 = 0.0760 PPM	NO. 1661 = 0.1128 PPM	NO. 1711 = 0.1161 PPM	NO. 1761 = 0.1054 PPM
NO. 1612 = 0.1030 PPM	NO. 1662 = 0.1136 PPM	NO. 1712 = 0.1150 PPM	NO. 1762 = 0.0989 PPM
NO. 1613 = 0.1069 PPM	NO. 1663 = 0.1130 PPM	NO. 1713 = 0.1135 PPM	NO. 1763 = 0.0883 PPM
NO. 1614 = 0.1049 PPM	NO. 1664 = 0.1107 PPM	NO. 1714 = 0.1112 PPM	NO. 1764 = 0.0897 PPM
NO. 1615 = 0.1032 PPM	NO. 1665 = 0.1095 PPM	NO. 1715 = 0.1056 PPM	NO. 1765 = 0.0838 PPM
NO. 1616 = 0.1015 PPM	NO. 1666 = 0.1086 PPM	NO. 1716 = 0.0998 PPM	NO. 1766 = 0.0887 PPM
NO. 1617 = 0.0992 PPM	NO. 1667 = 0.1087 PPM	NO. 1717 = 0.0900 PPM	NO. 1767 = 0.0864 PPM
NO. 1618 = 0.0976 PPM	NO. 1668 = 0.1055 PPM	NO. 1718 = 0.0942 PPM	NO. 1768 = 0.0825 PPM
NO. 1619 = 0.0973 PPM	NO. 1669 = 0.1021 PPM	NO. 1719 = 0.0925 PPM	NO. 1769 = 0.0867 PPM
NO. 1620 = 0.0989 PPM	NO. 1670 = 0.0958 PPM	NO. 1720 = 0.0893 PPM	NO. 1770 = 0.0831 PPM
NO. 1621 = 0.0964 PPM	NO. 1671 = 0.0932 PPM	NO. 1721 = 0.0933 PPM	NO. 1771 = 0.0830 PPM
NO. 1622 = 0.0937 PPM	NO. 1672 = 0.0926 PPM	NO. 1722 = 0.0879 PPM	NO. 1772 = 0.0816 PPM
NO. 1623 = 0.0937 PPM	NO. 1673 = 0.0930 PPM	NO. 1723 = 0.0897 PPM	NO. 1773 = 0.0783 PPM
NO. 1624 = 0.0917 PPM	NO. 1674 = 0.0874 PPM	NO. 1724 = 0.0860 PPM	NO. 1774 = 0.0753 PPM
NO. 1625 = 0.0904 PPM	NO. 1675 = 0.0896 PPM	NO. 1725 = 0.0810 PPM	NO. 1775 = 0.0724 PPM
NO. 1626 = 0.0901 PPM	NO. 1676 = 0.0870 PPM	NO. 1726 = 0.0743 PPM	NO. 1776 = 0.0702 PPM
NO. 1627 = 0.0891 PPM	NO. 1677 = 0.0832 PPM	NO. 1727 = 0.0711 PPM	NO. 1777 = 0.0696 PPM
NO. 1628 = 0.0860 PPM	NO. 1678 = 0.0755 PPM	NO. 1728 = 0.0699 PPM	NO. 1778 = 0.0697 PPM
NO. 1629 = 0.0807 PPM	NO. 1679 = 0.0663 PPM	NO. 1729 = 0.0705 PPM	NO. 1779 = 0.0700 PPM
NO. 1630 = 0.0752 PPM	NO. 1680 = 0.0675 PPM	NO. 1730 = 0.0710 PPM	NO. 1780 = 0.0704 PPM
NO. 1631 = 0.0679 PPM	NO. 1681 = 0.0695 PPM	NO. 1731 = 0.0716 PPM	NO. 1781 = 0.0708 PPM
NO. 1632 = 0.0642 PPM	NO. 1682 = 0.0708 PPM	NO. 1732 = 0.0715 PPM	NO. 1782 = 0.0709 PPM
NO. 1633 = 0.0665 PPM	NO. 1683 = 0.0713 PPM	NO. 1733 = 0.0716 PPM	NO. 1783 = 0.0708 PPM
NO. 1634 = 0.0689 PPM	NO. 1684 = 0.0718 PPM	NO. 1734 = 0.0721 PPM	NO. 1784 = 0.0708 PPM
NO. 1635 = 0.0709 PPM	NO. 1685 = 0.0727 PPM	NO. 1735 = 0.0723 PPM	NO. 1785 = 0.0711 PPM
NO. 1636 = 0.0721 PPM	NO. 1686 = 0.0726 PPM	NO. 1736 = 0.0721 PPM	NO. 1786 = 0.0713 PPM
NO. 1637 = 0.0727 PPM	NO. 1687 = 0.0725 PPM	NO. 1737 = 0.0721 PPM	NO. 1787 = 0.0712 PPM
NO. 1638 = 0.0734 PPM	NO. 1688 = 0.0730 PPM	NO. 1738 = 0.0726 PPM	NO. 1788 = 0.0710 PPM
NO. 1639 = 0.0742 PPM	NO. 1689 = 0.0730 PPM	NO. 1739 = 0.0728 PPM	NO. 1789 = 0.0707 PPM
NO. 1640 = 0.0742 PPM	NO. 1690 = 0.0727 PPM	NO. 1740 = 0.0728 PPM	NO. 1790 = 0.0704 PPM
NO. 1641 = 0.0741 PPM	NO. 1691 = 0.0732 PPM	NO. 1741 = 0.0728 PPM	NO. 1791 = 0.0704 PPM
NO. 1642 = 0.0744 PPM	NO. 1692 = 0.0734 PPM	NO. 1742 = 0.0726 PPM	NO. 1792 = 0.0709 PPM
NO. 1643 = 0.0743 PPM	NO. 1693 = 0.0734 PPM	NO. 1743 = 0.0724 PPM	NO. 1793 = 0.0716 PPM
NO. 1644 = 0.0740 PPM	NO. 1694 = 0.0732 PPM	NO. 1744 = 0.0720 PPM	NO. 1794 = 0.0722 PPM
NO. 1645 = 0.0745 PPM	NO. 1695 = 0.0731 PPM	NO. 1745 = 0.0716 PPM	NO. 1795 = 0.0573 PPM
NO. 1646 = 0.0747 PPM	NO. 1696 = 0.0730 PPM	NO. 1746 = 0.0715 PPM	NO. 1796 = 0.0769 PPM
NO. 1647 = 0.0745 PPM	NO. 1697 = 0.0729 PPM	NO. 1747 = 0.0718 PPM	NO. 1797 = 0.0788 PPM
NO. 1648 = 0.0741 PPM	NO. 1698 = 0.0727 PPM	NO. 1748 = 0.0724 PPM	NO. 1798 = 0.0820 PPM
NO. 1649 = 0.0736 PPM	NO. 1699 = 0.0725 PPM	NO. 1749 = 0.0737 PPM	NO. 1799 = 0.0829 PPM
NO. 1650 = 0.0735 PPM	NO. 1700 = 0.0723 PPM	NO. 1750 = 0.0881 PPM	NO. 1800 = 0.0814 PPM

A-7. continued.

NO. 1801 = 0.0820 PPM
NO. 1802 = 0.0850 PPM
NO. 1803 = 0.0881 PPM
NO. 1804 = 0.0870 PPM
NO. 1805 = 0.0909 PPM
NO. 1806 = 0.0947 PPM
NO. 1807 = 0.0986 PPM
NO. 1808 = 0.0932 PPM
NO. 1809 = 0.0819 PPM
NO. 1810 = 0.0738 PPM
NO. 1811 = 0.0678 PPM
NO. 1812 = 0.0627 PPM
NO. 1813 = 0.0545 PPM
NO. 1814 = 0.0544 PPM
NO. 1815 = 0.0553 PPM
NO. 1816 = 0.0563 PPM
NO. 1817 = 0.0575 PPM
NO. 1818 = 0.0587 PPM
NO. 1819 = 0.0599 PPM
NO. 1820 = 0.0612 PPM
NO. 1821 = 0.0660 PPM
NO. 1822 = 0.0662 PPM
NO. 1823 = 0.0664 PPM
NO. 1824 = 0.0669 PPM
NO. 1825 = 0.0675 PPM
NO. 1826 = 0.0677 PPM
NO. 1827 = 0.0681 PPM
NO. 1828 = 0.0687 PPM
NO. 1829 = 0.0692 PPM
NO. 1830 = 0.0696 PPM
NO. 1831 = 0.0697 PPM
NO. 1832 = 0.0697 PPM
NO. 1833 = 0.0698 PPM
NO. 1834 = 0.0699 PPM
NO. 1835 = 0.0703 PPM
NO. 1836 = 0.0707 PPM
NO. 1837 = 0.0712 PPM
NO. 1838 = 0.0716 PPM
NO. 1839 = 0.0723 PPM
NO. 1840 = 0.0433 PPM

A-8. UAM-DWM max. values for August 3, 1988.

NO. 1 = 0.0677 PPM	NO. 51 = 0.0756 PPM	NO. 101 = 0.0751 PPM	NO. 151 = 0.0686 PPM
NO. 2 = 0.0815 PPM	NO. 52 = 0.0775 PPM	NO. 102 = 0.0735 PPM	NO. 152 = 0.0698 PPM
NO. 3 = 0.0814 PPM	NO. 53 = 0.0780 PPM	NO. 103 = 0.0707 PPM	NO. 153 = 0.0708 PPM
NO. 4 = 0.0813 PPM	NO. 54 = 0.0782 PPM	NO. 104 = 0.0688 PPM	NO. 154 = 0.0708 PPM
NO. 5 = 0.0813 PPM	NO. 55 = 0.0780 PPM	NO. 105 = 0.0681 PPM	NO. 155 = 0.0702 PPM
NO. 6 = 0.0814 PPM	NO. 56 = 0.0766 PPM	NO. 106 = 0.0695 PPM	NO. 156 = 0.0696 PPM
NO. 7 = 0.0815 PPM	NO. 57 = 0.0749 PPM	NO. 107 = 0.0721 PPM	NO. 157 = 0.0692 PPM
NO. 8 = 0.0815 PPM	NO. 58 = 0.0747 PPM	NO. 108 = 0.0711 PPM	NO. 158 = 0.0712 PPM
NO. 9 = 0.0820 PPM	NO. 59 = 0.0797 PPM	NO. 109 = 0.0714 PPM	NO. 159 = 0.0726 PPM
NO. 10 = 0.0829 PPM	NO. 60 = 0.0837 PPM	NO. 110 = 0.0697 PPM	NO. 160 = 0.0759 PPM
NO. 11 = 0.0837 PPM	NO. 61 = 0.0760 PPM	NO. 111 = 0.0680 PPM	NO. 161 = 0.0794 PPM
NO. 12 = 0.0846 PPM	NO. 62 = 0.0765 PPM	NO. 112 = 0.0693 PPM	NO. 162 = 0.0737 PPM
NO. 13 = 0.0854 PPM	NO. 63 = 0.0753 PPM	NO. 113 = 0.0701 PPM	NO. 163 = 0.0733 PPM
NO. 14 = 0.0852 PPM	NO. 64 = 0.0738 PPM	NO. 114 = 0.0735 PPM	NO. 164 = 0.0744 PPM
NO. 15 = 0.0846 PPM	NO. 65 = 0.0726 PPM	NO. 115 = 0.0758 PPM	NO. 165 = 0.0741 PPM
NO. 16 = 0.0842 PPM	NO. 66 = 0.0725 PPM	NO. 116 = 0.0712 PPM	NO. 166 = 0.0735 PPM
NO. 17 = 0.0839 PPM	NO. 67 = 0.0735 PPM	NO. 117 = 0.0723 PPM	NO. 167 = 0.0743 PPM
NO. 18 = 0.0835 PPM	NO. 68 = 0.0768 PPM	NO. 118 = 0.0730 PPM	NO. 168 = 0.0764 PPM
NO. 19 = 0.0828 PPM	NO. 69 = 0.0784 PPM	NO. 119 = 0.0730 PPM	NO. 169 = 0.0771 PPM
NO. 20 = 0.0820 PPM	NO. 70 = 0.0742 PPM	NO. 120 = 0.0711 PPM	NO. 170 = 0.0782 PPM
NO. 21 = 0.0813 PPM	NO. 71 = 0.0744 PPM	NO. 121 = 0.0716 PPM	NO. 171 = 0.0793 PPM
NO. 22 = 0.0805 PPM	NO. 72 = 0.0738 PPM	NO. 122 = 0.0737 PPM	NO. 172 = 0.0868 PPM
NO. 23 = 0.0797 PPM	NO. 73 = 0.0731 PPM	NO. 123 = 0.0749 PPM	NO. 173 = 0.0827 PPM
NO. 24 = 0.0792 PPM	NO. 74 = 0.0717 PPM	NO. 124 = 0.0762 PPM	NO. 174 = 0.0738 PPM
NO. 25 = 0.0787 PPM	NO. 75 = 0.0724 PPM	NO. 125 = 0.0788 PPM	NO. 175 = 0.0732 PPM
NO. 26 = 0.0782 PPM	NO. 76 = 0.0744 PPM	NO. 126 = 0.0820 PPM	NO. 176 = 0.0728 PPM
NO. 27 = 0.0778 PPM	NO. 77 = 0.0769 PPM	NO. 127 = 0.0798 PPM	NO. 177 = 0.0715 PPM
NO. 28 = 0.0780 PPM	NO. 78 = 0.0791 PPM	NO. 128 = 0.0748 PPM	NO. 178 = 0.0717 PPM
NO. 29 = 0.0783 PPM	NO. 79 = 0.0766 PPM	NO. 129 = 0.0726 PPM	NO. 179 = 0.0749 PPM
NO. 30 = 0.0785 PPM	NO. 80 = 0.0781 PPM	NO. 130 = 0.0724 PPM	NO. 180 = 0.0761 PPM
NO. 31 = 0.0787 PPM	NO. 81 = 0.0781 PPM	NO. 131 = 0.0715 PPM	NO. 181 = 0.0769 PPM
NO. 32 = 0.0794 PPM	NO. 82 = 0.0791 PPM	NO. 132 = 0.0706 PPM	NO. 182 = 0.0777 PPM
NO. 33 = 0.0804 PPM	NO. 83 = 0.0759 PPM	NO. 133 = 0.0700 PPM	NO. 183 = 0.0766 PPM
NO. 34 = 0.0815 PPM	NO. 84 = 0.0745 PPM	NO. 134 = 0.0749 PPM	NO. 184 = 0.0772 PPM
NO. 35 = 0.0825 PPM	NO. 85 = 0.0743 PPM	NO. 135 = 0.0739 PPM	NO. 185 = 0.0723 PPM
NO. 36 = 0.0836 PPM	NO. 86 = 0.0735 PPM	NO. 136 = 0.0738 PPM	NO. 186 = 0.0763 PPM
NO. 37 = 0.0838 PPM	NO. 87 = 0.0727 PPM	NO. 137 = 0.0758 PPM	NO. 187 = 0.0751 PPM
NO. 38 = 0.0839 PPM	NO. 88 = 0.0717 PPM	NO. 138 = 0.0799 PPM	NO. 188 = 0.0733 PPM
NO. 39 = 0.0841 PPM	NO. 89 = 0.0716 PPM	NO. 139 = 0.0727 PPM	NO. 189 = 0.0725 PPM
NO. 40 = 0.0842 PPM	NO. 90 = 0.0741 PPM	NO. 140 = 0.0767 PPM	NO. 190 = 0.0721 PPM
NO. 41 = 0.0843 PPM	NO. 91 = 0.0782 PPM	NO. 141 = 0.0762 PPM	NO. 191 = 0.0716 PPM
NO. 42 = 0.0843 PPM	NO. 92 = 0.0826 PPM	NO. 142 = 0.0740 PPM	NO. 192 = 0.0721 PPM
NO. 43 = 0.0843 PPM	NO. 93 = 0.0733 PPM	NO. 143 = 0.0724 PPM	NO. 193 = 0.0718 PPM
NO. 44 = 0.0842 PPM	NO. 94 = 0.0764 PPM	NO. 144 = 0.0723 PPM	NO. 194 = 0.0707 PPM
NO. 45 = 0.0842 PPM	NO. 95 = 0.0754 PPM	NO. 145 = 0.0746 PPM	NO. 195 = 0.0691 PPM
NO. 46 = 0.0534 PPM	NO. 96 = 0.0730 PPM	NO. 146 = 0.0745 PPM	NO. 196 = 0.0671 PPM
NO. 47 = 0.0754 PPM	NO. 97 = 0.0732 PPM	NO. 147 = 0.0745 PPM	NO. 197 = 0.0661 PPM
NO. 48 = 0.0776 PPM	NO. 98 = 0.0768 PPM	NO. 148 = 0.0731 PPM	NO. 198 = 0.0681 PPM
NO. 49 = 0.0769 PPM	NO. 99 = 0.0750 PPM	NO. 149 = 0.0707 PPM	NO. 199 = 0.0693 PPM
NO. 50 = 0.0755 PPM	NO. 100 = 0.0749 PPM	NO. 150 = 0.0685 PPM	NO. 200 = 0.0689 PPM

A-8. continued.

NO. 201 = 0.0679 PPM	NO. 251 = 0.0722 PPM	NO. 301 = 0.0679 PPM	NO. 351 = 0.0645 PPM
NO. 202 = 0.0677 PPM	NO. 252 = 0.0775 PPM	NO. 302 = 0.0665 PPM	NO. 352 = 0.0653 PPM
NO. 203 = 0.0672 PPM	NO. 253 = 0.0852 PPM	NO. 303 = 0.0668 PPM	NO. 353 = 0.0679 PPM
NO. 204 = 0.0697 PPM	NO. 254 = 0.0829 PPM	NO. 304 = 0.0704 PPM	NO. 354 = 0.0703 PPM
NO. 205 = 0.0729 PPM	NO. 255 = 0.0699 PPM	NO. 305 = 0.0801 PPM	NO. 355 = 0.0684 PPM
NO. 206 = 0.0751 PPM	NO. 256 = 0.0704 PPM	NO. 306 = 0.0890 PPM	NO. 356 = 0.0669 PPM
NO. 207 = 0.0785 PPM	NO. 257 = 0.0700 PPM	NO. 307 = 0.0725 PPM	NO. 357 = 0.0664 PPM
NO. 208 = 0.0763 PPM	NO. 258 = 0.0722 PPM	NO. 308 = 0.0715 PPM	NO. 358 = 0.0697 PPM
NO. 209 = 0.0717 PPM	NO. 259 = 0.0763 PPM	NO. 309 = 0.0717 PPM	NO. 359 = 0.0750 PPM
NO. 210 = 0.0728 PPM	NO. 260 = 0.0819 PPM	NO. 310 = 0.0704 PPM	NO. 360 = 0.0788 PPM
NO. 211 = 0.0721 PPM	NO. 261 = 0.0738 PPM	NO. 311 = 0.0697 PPM	NO. 361 = 0.0818 PPM
NO. 212 = 0.0719 PPM	NO. 262 = 0.0741 PPM	NO. 312 = 0.0735 PPM	NO. 362 = 0.0835 PPM
NO. 213 = 0.0739 PPM	NO. 263 = 0.0754 PPM	NO. 313 = 0.0778 PPM	NO. 363 = 0.0848 PPM
NO. 214 = 0.0768 PPM	NO. 264 = 0.0740 PPM	NO. 314 = 0.0731 PPM	NO. 364 = 0.0849 PPM
NO. 215 = 0.0753 PPM	NO. 265 = 0.0726 PPM	NO. 315 = 0.0763 PPM	NO. 365 = 0.0845 PPM
NO. 216 = 0.0760 PPM	NO. 266 = 0.0748 PPM	NO. 316 = 0.0782 PPM	NO. 366 = 0.0854 PPM
NO. 217 = 0.0771 PPM	NO. 267 = 0.0782 PPM	NO. 317 = 0.0808 PPM	NO. 367 = 0.0840 PPM
NO. 218 = 0.0766 PPM	NO. 268 = 0.0717 PPM	NO. 318 = 0.0811 PPM	NO. 368 = 0.0921 PPM
NO. 219 = 0.0754 PPM	NO. 269 = 0.0737 PPM	NO. 319 = 0.0826 PPM	NO. 369 = 0.0698 PPM
NO. 220 = 0.0742 PPM	NO. 270 = 0.0755 PPM	NO. 320 = 0.0832 PPM	NO. 370 = 0.0674 PPM
NO. 221 = 0.0738 PPM	NO. 271 = 0.0775 PPM	NO. 321 = 0.0815 PPM	NO. 371 = 0.0652 PPM
NO. 222 = 0.0730 PPM	NO. 272 = 0.0799 PPM	NO. 322 = 0.0885 PPM	NO. 372 = 0.0657 PPM
NO. 223 = 0.0724 PPM	NO. 273 = 0.0810 PPM	NO. 323 = 0.0678 PPM	NO. 373 = 0.0661 PPM
NO. 224 = 0.0779 PPM	NO. 274 = 0.0818 PPM	NO. 324 = 0.0682 PPM	NO. 374 = 0.0645 PPM
NO. 225 = 0.0783 PPM	NO. 275 = 0.0817 PPM	NO. 325 = 0.0680 PPM	NO. 375 = 0.0616 PPM
NO. 226 = 0.0769 PPM	NO. 276 = 0.0851 PPM	NO. 326 = 0.0686 PPM	NO. 376 = 0.0616 PPM
NO. 227 = 0.0791 PPM	NO. 277 = 0.0676 PPM	NO. 327 = 0.0685 PPM	NO. 377 = 0.0650 PPM
NO. 228 = 0.0797 PPM	NO. 278 = 0.0705 PPM	NO. 328 = 0.0669 PPM	NO. 378 = 0.0701 PPM
NO. 229 = 0.0799 PPM	NO. 279 = 0.0704 PPM	NO. 329 = 0.0646 PPM	NO. 379 = 0.0736 PPM
NO. 230 = 0.0812 PPM	NO. 280 = 0.0706 PPM	NO. 330 = 0.0667 PPM	NO. 380 = 0.0759 PPM
NO. 231 = 0.0705 PPM	NO. 281 = 0.0703 PPM	NO. 331 = 0.0699 PPM	NO. 381 = 0.0789 PPM
NO. 232 = 0.0728 PPM	NO. 282 = 0.0689 PPM	NO. 332 = 0.0728 PPM	NO. 382 = 0.0812 PPM
NO. 233 = 0.0727 PPM	NO. 283 = 0.0672 PPM	NO. 333 = 0.0741 PPM	NO. 383 = 0.0749 PPM
NO. 234 = 0.0719 PPM	NO. 284 = 0.0672 PPM	NO. 334 = 0.0772 PPM	NO. 384 = 0.0696 PPM
NO. 235 = 0.0713 PPM	NO. 285 = 0.0699 PPM	NO. 335 = 0.0774 PPM	NO. 385 = 0.0843 PPM
NO. 236 = 0.0705 PPM	NO. 286 = 0.0715 PPM	NO. 336 = 0.0793 PPM	NO. 386 = 0.0851 PPM
NO. 237 = 0.0698 PPM	NO. 287 = 0.0723 PPM	NO. 337 = 0.0799 PPM	NO. 387 = 0.0888 PPM
NO. 238 = 0.0693 PPM	NO. 288 = 0.0731 PPM	NO. 338 = 0.0807 PPM	NO. 388 = 0.0654 PPM
NO. 239 = 0.0691 PPM	NO. 289 = 0.0717 PPM	NO. 339 = 0.0758 PPM	NO. 389 = 0.0646 PPM
NO. 240 = 0.0701 PPM	NO. 290 = 0.0738 PPM	NO. 340 = 0.0741 PPM	NO. 390 = 0.0676 PPM
NO. 241 = 0.0707 PPM	NO. 291 = 0.0744 PPM	NO. 341 = 0.0718 PPM	NO. 391 = 0.0605 PPM
NO. 242 = 0.0697 PPM	NO. 292 = 0.0721 PPM	NO. 342 = 0.0636 PPM	NO. 392 = 0.0622 PPM
NO. 243 = 0.0681 PPM	NO. 293 = 0.0677 PPM	NO. 343 = 0.0653 PPM	NO. 393 = 0.0637 PPM
NO. 244 = 0.0707 PPM	NO. 294 = 0.0665 PPM	NO. 344 = 0.0673 PPM	NO. 394 = 0.0636 PPM
NO. 245 = 0.0714 PPM	NO. 295 = 0.0677 PPM	NO. 345 = 0.0612 PPM	NO. 395 = 0.0660 PPM
NO. 246 = 0.0692 PPM	NO. 296 = 0.0653 PPM	NO. 346 = 0.0648 PPM	NO. 396 = 0.0674 PPM
NO. 247 = 0.0668 PPM	NO. 297 = 0.0653 PPM	NO. 347 = 0.0655 PPM	NO. 397 = 0.0667 PPM
NO. 248 = 0.0667 PPM	NO. 298 = 0.0666 PPM	NO. 348 = 0.0633 PPM	NO. 398 = 0.0675 PPM
NO. 249 = 0.0665 PPM	NO. 299 = 0.0655 PPM	NO. 349 = 0.0617 PPM	NO. 399 = 0.0684 PPM
NO. 250 = 0.0679 PPM	NO. 300 = 0.0661 PPM	NO. 350 = 0.0618 PPM	NO. 400 = 0.0692 PPM

A-8. continued.

NO. 401 = 0.0674 PPM	NO. 451 = 0.0855 PPM	NO. 501 = 0.1001 PPM	NO. 551 = 0.1051 PPM
NO. 402 = 0.0666 PPM	NO. 452 = 0.0905 PPM	NO. 502 = 0.1014 PPM	NO. 552 = 0.1065 PPM
NO. 403 = 0.0711 PPM	NO. 453 = 0.0928 PPM	NO. 503 = 0.0977 PPM	NO. 553 = 0.0691 PPM
NO. 404 = 0.0780 PPM	NO. 454 = 0.0951 PPM	NO. 504 = 0.1001 PPM	NO. 554 = 0.0607 PPM
NO. 405 = 0.0818 PPM	NO. 455 = 0.0959 PPM	NO. 505 = 0.1015 PPM	NO. 555 = 0.0602 PPM
NO. 406 = 0.0848 PPM	NO. 456 = 0.0950 PPM	NO. 506 = 0.1029 PPM	NO. 556 = 0.0639 PPM
NO. 407 = 0.0881 PPM	NO. 457 = 0.0920 PPM	NO. 507 = 0.0667 PPM	NO. 557 = 0.0719 PPM
NO. 408 = 0.0892 PPM	NO. 458 = 0.0937 PPM	NO. 508 = 0.0634 PPM	NO. 558 = 0.0769 PPM
NO. 409 = 0.0900 PPM	NO. 459 = 0.0943 PPM	NO. 509 = 0.0620 PPM	NO. 559 = 0.0532 PPM
NO. 410 = 0.0893 PPM	NO. 460 = 0.0993 PPM	NO. 510 = 0.0641 PPM	NO. 560 = 0.0605 PPM
NO. 411 = 0.0872 PPM	NO. 461 = 0.0674 PPM	NO. 511 = 0.0689 PPM	NO. 561 = 0.0576 PPM
NO. 412 = 0.0889 PPM	NO. 462 = 0.0649 PPM	NO. 512 = 0.0682 PPM	NO. 562 = 0.0583 PPM
NO. 413 = 0.0888 PPM	NO. 463 = 0.0610 PPM	NO. 513 = 0.0555 PPM	NO. 563 = 0.0585 PPM
NO. 414 = 0.0957 PPM	NO. 464 = 0.0619 PPM	NO. 514 = 0.0603 PPM	NO. 564 = 0.0587 PPM
NO. 415 = 0.0688 PPM	NO. 465 = 0.0651 PPM	NO. 515 = 0.0585 PPM	NO. 565 = 0.0525 PPM
NO. 416 = 0.0666 PPM	NO. 466 = 0.0670 PPM	NO. 516 = 0.0583 PPM	NO. 566 = 0.0563 PPM
NO. 417 = 0.0630 PPM	NO. 467 = 0.0563 PPM	NO. 517 = 0.0569 PPM	NO. 567 = 0.0575 PPM
NO. 418 = 0.0629 PPM	NO. 468 = 0.0603 PPM	NO. 518 = 0.0564 PPM	NO. 568 = 0.0624 PPM
NO. 419 = 0.0665 PPM	NO. 469 = 0.0585 PPM	NO. 519 = 0.0554 PPM	NO. 569 = 0.0675 PPM
NO. 420 = 0.0640 PPM	NO. 470 = 0.0579 PPM	NO. 520 = 0.0575 PPM	NO. 570 = 0.0725 PPM
NO. 421 = 0.0593 PPM	NO. 471 = 0.0559 PPM	NO. 521 = 0.0594 PPM	NO. 571 = 0.0748 PPM
NO. 422 = 0.0601 PPM	NO. 472 = 0.0544 PPM	NO. 522 = 0.0644 PPM	NO. 572 = 0.0749 PPM
NO. 423 = 0.0606 PPM	NO. 473 = 0.0554 PPM	NO. 523 = 0.0660 PPM	NO. 573 = 0.0714 PPM
NO. 424 = 0.0641 PPM	NO. 474 = 0.0589 PPM	NO. 524 = 0.0686 PPM	NO. 574 = 0.0705 PPM
NO. 425 = 0.0678 PPM	NO. 475 = 0.0608 PPM	NO. 525 = 0.0703 PPM	NO. 575 = 0.0721 PPM
NO. 426 = 0.0735 PPM	NO. 476 = 0.0583 PPM	NO. 526 = 0.0701 PPM	NO. 576 = 0.0824 PPM
NO. 427 = 0.0804 PPM	NO. 477 = 0.0628 PPM	NO. 527 = 0.0681 PPM	NO. 577 = 0.0831 PPM
NO. 428 = 0.0868 PPM	NO. 478 = 0.0647 PPM	NO. 528 = 0.0677 PPM	NO. 578 = 0.0854 PPM
NO. 429 = 0.0778 PPM	NO. 479 = 0.0667 PPM	NO. 529 = 0.0699 PPM	NO. 579 = 0.0890 PPM
NO. 430 = 0.0640 PPM	NO. 480 = 0.0661 PPM	NO. 530 = 0.0764 PPM	NO. 580 = 0.0886 PPM
NO. 431 = 0.0679 PPM	NO. 481 = 0.0632 PPM	NO. 531 = 0.0772 PPM	NO. 581 = 0.0868 PPM
NO. 432 = 0.0763 PPM	NO. 482 = 0.0672 PPM	NO. 532 = 0.0788 PPM	NO. 582 = 0.0850 PPM
NO. 433 = 0.0884 PPM	NO. 483 = 0.0658 PPM	NO. 533 = 0.0834 PPM	NO. 583 = 0.0813 PPM
NO. 434 = 0.0714 PPM	NO. 484 = 0.0692 PPM	NO. 534 = 0.0824 PPM	NO. 584 = 0.0787 PPM
NO. 435 = 0.0626 PPM	NO. 485 = 0.0716 PPM	NO. 535 = 0.0798 PPM	NO. 585 = 0.0742 PPM
NO. 436 = 0.0698 PPM	NO. 486 = 0.0727 PPM	NO. 536 = 0.0782 PPM	NO. 586 = 0.0761 PPM
NO. 437 = 0.0613 PPM	NO. 487 = 0.0775 PPM	NO. 537 = 0.0771 PPM	NO. 587 = 0.0773 PPM
NO. 438 = 0.0628 PPM	NO. 488 = 0.0766 PPM	NO. 538 = 0.0767 PPM	NO. 588 = 0.0817 PPM
NO. 439 = 0.0635 PPM	NO. 489 = 0.0763 PPM	NO. 539 = 0.0812 PPM	NO. 589 = 0.0829 PPM
NO. 440 = 0.0657 PPM	NO. 490 = 0.0750 PPM	NO. 540 = 0.0770 PPM	NO. 590 = 0.0887 PPM
NO. 441 = 0.0696 PPM	NO. 491 = 0.0749 PPM	NO. 541 = 0.0778 PPM	NO. 591 = 0.0912 PPM
NO. 442 = 0.0710 PPM	NO. 492 = 0.0749 PPM	NO. 542 = 0.0803 PPM	NO. 592 = 0.0939 PPM
NO. 443 = 0.0715 PPM	NO. 493 = 0.0788 PPM	NO. 543 = 0.0851 PPM	NO. 593 = 0.0970 PPM
NO. 444 = 0.0722 PPM	NO. 494 = 0.0804 PPM	NO. 544 = 0.0886 PPM	NO. 594 = 0.0994 PPM
NO. 445 = 0.0719 PPM	NO. 495 = 0.0791 PPM	NO. 545 = 0.0919 PPM	NO. 595 = 0.1023 PPM
NO. 446 = 0.0722 PPM	NO. 496 = 0.0811 PPM	NO. 546 = 0.0939 PPM	NO. 596 = 0.1044 PPM
NO. 447 = 0.0722 PPM	NO. 497 = 0.0868 PPM	NO. 547 = 0.0980 PPM	NO. 597 = 0.1081 PPM
NO. 448 = 0.0703 PPM	NO. 498 = 0.0906 PPM	NO. 548 = 0.1006 PPM	NO. 598 = 0.1099 PPM
NO. 449 = 0.0761 PPM	NO. 499 = 0.0942 PPM	NO. 549 = 0.1002 PPM	NO. 599 = 0.0727 PPM
NO. 450 = 0.0812 PPM	NO. 500 = 0.0969 PPM	NO. 550 = 0.1042 PPM	NO. 600 = 0.0596 PPM

A-8. continued.

NO. 601 = 0.0560 PPM	NO. 651 = 0.0537 PPM	NO. 701 = 0.0623 PPM	NO. 751 = 0.0805 PPM
NO. 602 = 0.0532 PPM	NO. 652 = 0.0538 PPM	NO. 702 = 0.0627 PPM	NO. 752 = 0.0867 PPM
NO. 603 = 0.0507 PPM	NO. 653 = 0.0549 PPM	NO. 703 = 0.0644 PPM	NO. 753 = 0.0936 PPM
NO. 604 = 0.0534 PPM	NO. 654 = 0.0569 PPM	NO. 704 = 0.0672 PPM	NO. 754 = 0.0982 PPM
NO. 605 = 0.0557 PPM	NO. 655 = 0.0577 PPM	NO. 705 = 0.0712 PPM	NO. 755 = 0.1018 PPM
NO. 606 = 0.0548 PPM	NO. 656 = 0.0588 PPM	NO. 706 = 0.0755 PPM	NO. 756 = 0.0994 PPM
NO. 607 = 0.0553 PPM	NO. 657 = 0.0599 PPM	NO. 707 = 0.0813 PPM	NO. 757 = 0.0961 PPM
NO. 608 = 0.0561 PPM	NO. 658 = 0.0620 PPM	NO. 708 = 0.0863 PPM	NO. 758 = 0.0949 PPM
NO. 609 = 0.0560 PPM	NO. 659 = 0.0654 PPM	NO. 709 = 0.0902 PPM	NO. 759 = 0.0910 PPM
NO. 610 = 0.0564 PPM	NO. 660 = 0.0700 PPM	NO. 710 = 0.0912 PPM	NO. 760 = 0.0846 PPM
NO. 611 = 0.0567 PPM	NO. 661 = 0.0756 PPM	NO. 711 = 0.0903 PPM	NO. 761 = 0.0907 PPM
NO. 612 = 0.0588 PPM	NO. 662 = 0.0814 PPM	NO. 712 = 0.0958 PPM	NO. 762 = 0.0962 PPM
NO. 613 = 0.0627 PPM	NO. 663 = 0.0854 PPM	NO. 713 = 0.0819 PPM	NO. 763 = 0.0946 PPM
NO. 614 = 0.0673 PPM	NO. 664 = 0.0870 PPM	NO. 714 = 0.0791 PPM	NO. 764 = 0.1036 PPM
NO. 615 = 0.0722 PPM	NO. 665 = 0.0850 PPM	NO. 715 = 0.0871 PPM	NO. 765 = 0.1061 PPM
NO. 616 = 0.0772 PPM	NO. 666 = 0.0802 PPM	NO. 716 = 0.0923 PPM	NO. 766 = 0.0705 PPM
NO. 617 = 0.0805 PPM	NO. 667 = 0.0756 PPM	NO. 717 = 0.0887 PPM	NO. 767 = 0.0729 PPM
NO. 618 = 0.0813 PPM	NO. 668 = 0.0838 PPM	NO. 718 = 0.0954 PPM	NO. 768 = 0.0685 PPM
NO. 619 = 0.0777 PPM	NO. 669 = 0.0862 PPM	NO. 719 = 0.0945 PPM	NO. 769 = 0.0723 PPM
NO. 620 = 0.0764 PPM	NO. 670 = 0.0909 PPM	NO. 720 = 0.0924 PPM	NO. 770 = 0.0715 PPM
NO. 621 = 0.0740 PPM	NO. 671 = 0.0903 PPM	NO. 721 = 0.0724 PPM	NO. 771 = 0.0760 PPM
NO. 622 = 0.0849 PPM	NO. 672 = 0.0958 PPM	NO. 722 = 0.0704 PPM	NO. 772 = 0.0779 PPM
NO. 623 = 0.0863 PPM	NO. 673 = 0.0994 PPM	NO. 723 = 0.0732 PPM	NO. 773 = 0.0811 PPM
NO. 624 = 0.0893 PPM	NO. 674 = 0.1065 PPM	NO. 724 = 0.0747 PPM	NO. 774 = 0.0839 PPM
NO. 625 = 0.0908 PPM	NO. 675 = 0.1059 PPM	NO. 725 = 0.0774 PPM	NO. 775 = 0.0861 PPM
NO. 626 = 0.0931 PPM	NO. 676 = 0.0731 PPM	NO. 726 = 0.0803 PPM	NO. 776 = 0.0892 PPM
NO. 627 = 0.0954 PPM	NO. 677 = 0.0727 PPM	NO. 727 = 0.0832 PPM	NO. 777 = 0.0917 PPM
NO. 628 = 0.0956 PPM	NO. 678 = 0.0739 PPM	NO. 728 = 0.0855 PPM	NO. 778 = 0.0946 PPM
NO. 629 = 0.0897 PPM	NO. 679 = 0.0785 PPM	NO. 729 = 0.0880 PPM	NO. 779 = 0.0990 PPM
NO. 630 = 0.0799 PPM	NO. 680 = 0.0804 PPM	NO. 730 = 0.0910 PPM	NO. 780 = 0.1026 PPM
NO. 631 = 0.0747 PPM	NO. 681 = 0.0838 PPM	NO. 731 = 0.0942 PPM	NO. 781 = 0.1052 PPM
NO. 632 = 0.0741 PPM	NO. 682 = 0.0860 PPM	NO. 732 = 0.0975 PPM	NO. 782 = 0.1060 PPM
NO. 633 = 0.0789 PPM	NO. 683 = 0.0894 PPM	NO. 733 = 0.1023 PPM	NO. 783 = 0.0808 PPM
NO. 634 = 0.0800 PPM	NO. 684 = 0.0932 PPM	NO. 734 = 0.1048 PPM	NO. 784 = 0.0653 PPM
NO. 635 = 0.0837 PPM	NO. 685 = 0.0964 PPM	NO. 735 = 0.1077 PPM	NO. 785 = 0.0847 PPM
NO. 636 = 0.0879 PPM	NO. 686 = 0.0997 PPM	NO. 736 = 0.1078 PPM	NO. 786 = 0.0711 PPM
NO. 637 = 0.0916 PPM	NO. 687 = 0.1028 PPM	NO. 737 = 0.0812 PPM	NO. 787 = 0.0619 PPM
NO. 638 = 0.0943 PPM	NO. 688 = 0.1047 PPM	NO. 738 = 0.0849 PPM	NO. 788 = 0.0523 PPM
NO. 639 = 0.0970 PPM	NO. 689 = 0.1068 PPM	NO. 739 = 0.0744 PPM	NO. 789 = 0.0569 PPM
NO. 640 = 0.0997 PPM	NO. 690 = 0.1085 PPM	NO. 740 = 0.0624 PPM	NO. 790 = 0.0606 PPM
NO. 641 = 0.1012 PPM	NO. 691 = 0.0799 PPM	NO. 741 = 0.0554 PPM	NO. 791 = 0.0662 PPM
NO. 642 = 0.1039 PPM	NO. 692 = 0.0802 PPM	NO. 742 = 0.0535 PPM	NO. 792 = 0.0709 PPM
NO. 643 = 0.1065 PPM	NO. 693 = 0.0680 PPM	NO. 743 = 0.0612 PPM	NO. 793 = 0.0708 PPM
NO. 644 = 0.1092 PPM	NO. 694 = 0.0649 PPM	NO. 744 = 0.0631 PPM	NO. 794 = 0.0706 PPM
NO. 645 = 0.0763 PPM	NO. 695 = 0.0621 PPM	NO. 745 = 0.0650 PPM	NO. 795 = 0.0709 PPM
NO. 646 = 0.0656 PPM	NO. 696 = 0.0589 PPM	NO. 746 = 0.0662 PPM	NO. 796 = 0.0805 PPM
NO. 647 = 0.0578 PPM	NO. 697 = 0.0590 PPM	NO. 747 = 0.0662 PPM	NO. 797 = 0.0890 PPM
NO. 648 = 0.0588 PPM	NO. 698 = 0.0585 PPM	NO. 748 = 0.0657 PPM	NO. 798 = 0.0978 PPM
NO. 649 = 0.0556 PPM	NO. 699 = 0.0606 PPM	NO. 749 = 0.0688 PPM	NO. 799 = 0.1074 PPM
NO. 650 = 0.0544 PPM	NO. 700 = 0.0609 PPM	NO. 750 = 0.0749 PPM	NO. 800 = 0.1146 PPM

A-8. continued.

NO. 801 = 0.1196 PPM	NO. 851 = 0.1137 PPM	NO. 901 = 0.1055 PPM	NO. 951 = 0.0758 PPM
NO. 802 = 0.1175 PPM	NO. 852 = 0.1088 PPM	NO. 902 = 0.0856 PPM	NO. 952 = 0.0758 PPM
NO. 803 = 0.1085 PPM	NO. 853 = 0.1052 PPM	NO. 903 = 0.0864 PPM	NO. 953 = 0.0734 PPM
NO. 804 = 0.1058 PPM	NO. 854 = 0.1033 PPM	NO. 904 = 0.0822 PPM	NO. 954 = 0.0739 PPM
NO. 805 = 0.1024 PPM	NO. 855 = 0.0973 PPM	NO. 905 = 0.0780 PPM	NO. 955 = 0.0763 PPM
NO. 806 = 0.1001 PPM	NO. 856 = 0.1021 PPM	NO. 906 = 0.0712 PPM	NO. 956 = 0.0760 PPM
NO. 807 = 0.0909 PPM	NO. 857 = 0.0774 PPM	NO. 907 = 0.0741 PPM	NO. 957 = 0.0754 PPM
NO. 808 = 0.0981 PPM	NO. 858 = 0.0744 PPM	NO. 908 = 0.0735 PPM	NO. 958 = 0.0767 PPM
NO. 809 = 0.0985 PPM	NO. 859 = 0.0719 PPM	NO. 909 = 0.0755 PPM	NO. 959 = 0.0805 PPM
NO. 810 = 0.1069 PPM	NO. 860 = 0.0716 PPM	NO. 910 = 0.0752 PPM	NO. 960 = 0.0840 PPM
NO. 811 = 0.0917 PPM	NO. 861 = 0.0734 PPM	NO. 911 = 0.0764 PPM	NO. 961 = 0.0879 PPM
NO. 812 = 0.0719 PPM	NO. 862 = 0.0731 PPM	NO. 912 = 0.0801 PPM	NO. 962 = 0.0912 PPM
NO. 813 = 0.0710 PPM	NO. 863 = 0.0753 PPM	NO. 913 = 0.0840 PPM	NO. 963 = 0.0961 PPM
NO. 814 = 0.0712 PPM	NO. 864 = 0.0759 PPM	NO. 914 = 0.0873 PPM	NO. 964 = 0.0972 PPM
NO. 815 = 0.0714 PPM	NO. 865 = 0.0783 PPM	NO. 915 = 0.0903 PPM	NO. 965 = 0.0970 PPM
NO. 816 = 0.0725 PPM	NO. 866 = 0.0799 PPM	NO. 916 = 0.0930 PPM	NO. 966 = 0.0964 PPM
NO. 817 = 0.0749 PPM	NO. 867 = 0.0831 PPM	NO. 917 = 0.0958 PPM	NO. 967 = 0.0880 PPM
NO. 818 = 0.0761 PPM	NO. 868 = 0.0865 PPM	NO. 918 = 0.0963 PPM	NO. 968 = 0.0813 PPM
NO. 819 = 0.0784 PPM	NO. 869 = 0.0897 PPM	NO. 919 = 0.0974 PPM	NO. 969 = 0.0857 PPM
NO. 820 = 0.0804 PPM	NO. 870 = 0.0923 PPM	NO. 920 = 0.0970 PPM	NO. 970 = 0.0828 PPM
NO. 821 = 0.0824 PPM	NO. 871 = 0.0952 PPM	NO. 921 = 0.0879 PPM	NO. 971 = 0.0760 PPM
NO. 822 = 0.0860 PPM	NO. 872 = 0.0969 PPM	NO. 922 = 0.0729 PPM	NO. 972 = 0.0685 PPM
NO. 823 = 0.0895 PPM	NO. 873 = 0.0987 PPM	NO. 923 = 0.0811 PPM	NO. 973 = 0.0649 PPM
NO. 824 = 0.0929 PPM	NO. 874 = 0.0983 PPM	NO. 924 = 0.0701 PPM	NO. 974 = 0.0646 PPM
NO. 825 = 0.0954 PPM	NO. 875 = 0.0871 PPM	NO. 925 = 0.0657 PPM	NO. 975 = 0.0580 PPM
NO. 826 = 0.0994 PPM	NO. 876 = 0.0861 PPM	NO. 926 = 0.0604 PPM	NO. 976 = 0.0579 PPM
NO. 827 = 0.1017 PPM	NO. 877 = 0.0796 PPM	NO. 927 = 0.0582 PPM	NO. 977 = 0.0559 PPM
NO. 828 = 0.1021 PPM	NO. 878 = 0.0716 PPM	NO. 928 = 0.0589 PPM	NO. 978 = 0.0550 PPM
NO. 829 = 0.0825 PPM	NO. 879 = 0.0685 PPM	NO. 929 = 0.0588 PPM	NO. 979 = 0.0557 PPM
NO. 830 = 0.0439 PPM	NO. 880 = 0.0624 PPM	NO. 930 = 0.0561 PPM	NO. 980 = 0.0584 PPM
NO. 831 = 0.0929 PPM	NO. 881 = 0.0546 PPM	NO. 931 = 0.0559 PPM	NO. 981 = 0.0605 PPM
NO. 832 = 0.0712 PPM	NO. 882 = 0.0564 PPM	NO. 932 = 0.0557 PPM	NO. 982 = 0.0624 PPM
NO. 833 = 0.0653 PPM	NO. 883 = 0.0559 PPM	NO. 933 = 0.0580 PPM	NO. 983 = 0.0693 PPM
NO. 834 = 0.0581 PPM	NO. 884 = 0.0576 PPM	NO. 934 = 0.0636 PPM	NO. 984 = 0.0795 PPM
NO. 835 = 0.0553 PPM	NO. 885 = 0.0598 PPM	NO. 935 = 0.0667 PPM	NO. 985 = 0.0941 PPM
NO. 836 = 0.0580 PPM	NO. 886 = 0.0647 PPM	NO. 936 = 0.0746 PPM	NO. 986 = 0.1114 PPM
NO. 837 = 0.0614 PPM	NO. 887 = 0.0753 PPM	NO. 937 = 0.0844 PPM	NO. 987 = 0.1288 PPM
NO. 838 = 0.0681 PPM	NO. 888 = 0.0654 PPM	NO. 938 = 0.0990 PPM	NO. 988 = 0.1389 PPM
NO. 839 = 0.0747 PPM	NO. 889 = 0.0766 PPM	NO. 939 = 0.1146 PPM	NO. 989 = 0.1453 PPM
NO. 840 = 0.0803 PPM	NO. 890 = 0.0862 PPM	NO. 940 = 0.1316 PPM	NO. 990 = 0.1502 PPM
NO. 841 = 0.0780 PPM	NO. 891 = 0.0982 PPM	NO. 941 = 0.1470 PPM	NO. 991 = 0.1456 PPM
NO. 842 = 0.0734 PPM	NO. 892 = 0.1098 PPM	NO. 942 = 0.1521 PPM	NO. 992 = 0.1369 PPM
NO. 843 = 0.0848 PPM	NO. 893 = 0.1240 PPM	NO. 943 = 0.1454 PPM	NO. 993 = 0.1233 PPM
NO. 844 = 0.0936 PPM	NO. 894 = 0.1382 PPM	NO. 944 = 0.1441 PPM	NO. 994 = 0.1090 PPM
NO. 845 = 0.1041 PPM	NO. 895 = 0.1392 PPM	NO. 945 = 0.1308 PPM	NO. 995 = 0.1041 PPM
NO. 846 = 0.1176 PPM	NO. 896 = 0.1330 PPM	NO. 946 = 0.1203 PPM	NO. 996 = 0.0957 PPM
NO. 847 = 0.1275 PPM	NO. 897 = 0.1272 PPM	NO. 947 = 0.1069 PPM	NO. 997 = 0.0850 PPM
NO. 848 = 0.1316 PPM	NO. 898 = 0.1251 PPM	NO. 948 = 0.0999 PPM	NO. 998 = 0.0787 PPM
NO. 849 = 0.1237 PPM	NO. 899 = 0.1249 PPM	NO. 949 = 0.0968 PPM	NO. 999 = 0.0796 PPM
NO. 850 = 0.1178 PPM	NO. 900 = 0.1128 PPM	NO. 950 = 0.0855 PPM	NO. 1000 = 0.0733 PPM

A-8. continued.

NO. 1001 = 0.0776 PPM	NO. 1051 = 0.0738 PPM	NO. 1101 = 0.0859 PPM	NO. 1151 = 0.0870 PPM
NO. 1002 = 0.0771 PPM	NO. 1052 = 0.0719 PPM	NO. 1102 = 0.0883 PPM	NO. 1152 = 0.0916 PPM
NO. 1003 = 0.0773 PPM	NO. 1053 = 0.0767 PPM	NO. 1103 = 0.0912 PPM	NO. 1153 = 0.0988 PPM
NO. 1004 = 0.0750 PPM	NO. 1054 = 0.0808 PPM	NO. 1104 = 0.0951 PPM	NO. 1154 = 0.0874 PPM
NO. 1005 = 0.0764 PPM	NO. 1055 = 0.0843 PPM	NO. 1105 = 0.0876 PPM	NO. 1155 = 0.0576 PPM
NO. 1006 = 0.0775 PPM	NO. 1056 = 0.0872 PPM	NO. 1106 = 0.0907 PPM	NO. 1156 = 0.0409 PPM
NO. 1007 = 0.0822 PPM	NO. 1057 = 0.0904 PPM	NO. 1107 = 0.0978 PPM	NO. 1157 = 0.0363 PPM
NO. 1008 = 0.0837 PPM	NO. 1058 = 0.0950 PPM	NO. 1108 = 0.1000 PPM	NO. 1158 = 0.0645 PPM
NO. 1009 = 0.0887 PPM	NO. 1059 = 0.0882 PPM	NO. 1109 = 0.0820 PPM	NO. 1159 = 0.0994 PPM
NO. 1010 = 0.0940 PPM	NO. 1060 = 0.0876 PPM	NO. 1110 = 0.0498 PPM	NO. 1160 = 0.0784 PPM
NO. 1011 = 0.1013 PPM	NO. 1061 = 0.0979 PPM	NO. 1111 = 0.0582 PPM	NO. 1161 = 0.0825 PPM
NO. 1012 = 0.0951 PPM	NO. 1062 = 0.1011 PPM	NO. 1112 = 0.0795 PPM	NO. 1162 = 0.0762 PPM
NO. 1013 = 0.0881 PPM	NO. 1063 = 0.1003 PPM	NO. 1113 = 0.0898 PPM	NO. 1163 = 0.0703 PPM
NO. 1014 = 0.0845 PPM	NO. 1064 = 0.0925 PPM	NO. 1114 = 0.0804 PPM	NO. 1164 = 0.0687 PPM
NO. 1015 = 0.0945 PPM	NO. 1065 = 0.0848 PPM	NO. 1115 = 0.0768 PPM	NO. 1165 = 0.0717 PPM
NO. 1016 = 0.0959 PPM	NO. 1066 = 0.0897 PPM	NO. 1116 = 0.0712 PPM	NO. 1166 = 0.0740 PPM
NO. 1017 = 0.0935 PPM	NO. 1067 = 0.0830 PPM	NO. 1117 = 0.0658 PPM	NO. 1167 = 0.0767 PPM
NO. 1018 = 0.0899 PPM	NO. 1068 = 0.0775 PPM	NO. 1118 = 0.0672 PPM	NO. 1168 = 0.0788 PPM
NO. 1019 = 0.0860 PPM	NO. 1069 = 0.0696 PPM	NO. 1119 = 0.0697 PPM	NO. 1169 = 0.0808 PPM
NO. 1020 = 0.0805 PPM	NO. 1070 = 0.0621 PPM	NO. 1120 = 0.0716 PPM	NO. 1170 = 0.0809 PPM
NO. 1021 = 0.0689 PPM	NO. 1071 = 0.0631 PPM	NO. 1121 = 0.0740 PPM	NO. 1171 = 0.0804 PPM
NO. 1022 = 0.0656 PPM	NO. 1072 = 0.0657 PPM	NO. 1122 = 0.0756 PPM	NO. 1172 = 0.0790 PPM
NO. 1023 = 0.0607 PPM	NO. 1073 = 0.0701 PPM	NO. 1123 = 0.0774 PPM	NO. 1173 = 0.0783 PPM
NO. 1024 = 0.0574 PPM	NO. 1074 = 0.0735 PPM	NO. 1124 = 0.0779 PPM	NO. 1174 = 0.0799 PPM
NO. 1025 = 0.0625 PPM	NO. 1075 = 0.0768 PPM	NO. 1125 = 0.0776 PPM	NO. 1175 = 0.0829 PPM
NO. 1026 = 0.0643 PPM	NO. 1076 = 0.0785 PPM	NO. 1126 = 0.0784 PPM	NO. 1176 = 0.0817 PPM
NO. 1027 = 0.0661 PPM	NO. 1077 = 0.0789 PPM	NO. 1127 = 0.0810 PPM	NO. 1177 = 0.0659 PPM
NO. 1028 = 0.0680 PPM	NO. 1078 = 0.0799 PPM	NO. 1128 = 0.0875 PPM	NO. 1178 = 0.0724 PPM
NO. 1029 = 0.0691 PPM	NO. 1079 = 0.0843 PPM	NO. 1129 = 0.0918 PPM	NO. 1179 = 0.0744 PPM
NO. 1030 = 0.0698 PPM	NO. 1080 = 0.0893 PPM	NO. 1130 = 0.0902 PPM	NO. 1180 = 0.0812 PPM
NO. 1031 = 0.0727 PPM	NO. 1081 = 0.0967 PPM	NO. 1131 = 0.0968 PPM	NO. 1181 = 0.0687 PPM
NO. 1032 = 0.0803 PPM	NO. 1082 = 0.1097 PPM	NO. 1132 = 0.0968 PPM	NO. 1182 = 0.0594 PPM
NO. 1033 = 0.0921 PPM	NO. 1083 = 0.1241 PPM	NO. 1133 = 0.0999 PPM	NO. 1183 = 0.0616 PPM
NO. 1034 = 0.1058 PPM	NO. 1084 = 0.1200 PPM	NO. 1134 = 0.0674 PPM	NO. 1184 = 0.0602 PPM
NO. 1035 = 0.1187 PPM	NO. 1085 = 0.0948 PPM	NO. 1135 = 0.0566 PPM	NO. 1185 = 0.0605 PPM
NO. 1036 = 0.1338 PPM	NO. 1086 = 0.1018 PPM	NO. 1136 = 0.0765 PPM	NO. 1186 = 0.0591 PPM
NO. 1037 = 0.1343 PPM	NO. 1087 = 0.1035 PPM	NO. 1137 = 0.0604 PPM	NO. 1187 = 0.0591 PPM
NO. 1038 = 0.1222 PPM	NO. 1088 = 0.0623 PPM	NO. 1138 = 0.0629 PPM	NO. 1188 = 0.0600 PPM
NO. 1039 = 0.1153 PPM	NO. 1089 = 0.0678 PPM	NO. 1139 = 0.0603 PPM	NO. 1189 = 0.0626 PPM
NO. 1040 = 0.1146 PPM	NO. 1090 = 0.0672 PPM	NO. 1140 = 0.0603 PPM	NO. 1190 = 0.0662 PPM
NO. 1041 = 0.1096 PPM	NO. 1091 = 0.0574 PPM	NO. 1141 = 0.0598 PPM	NO. 1191 = 0.0708 PPM
NO. 1042 = 0.1011 PPM	NO. 1092 = 0.0580 PPM	NO. 1142 = 0.0613 PPM	NO. 1192 = 0.0747 PPM
NO. 1043 = 0.1019 PPM	NO. 1093 = 0.0570 PPM	NO. 1143 = 0.0639 PPM	NO. 1193 = 0.0784 PPM
NO. 1044 = 0.0901 PPM	NO. 1094 = 0.0590 PPM	NO. 1144 = 0.0685 PPM	NO. 1194 = 0.0814 PPM
NO. 1045 = 0.0894 PPM	NO. 1095 = 0.0607 PPM	NO. 1145 = 0.0732 PPM	NO. 1195 = 0.0853 PPM
NO. 1046 = 0.0788 PPM	NO. 1096 = 0.0636 PPM	NO. 1146 = 0.0779 PPM	NO. 1196 = 0.0896 PPM
NO. 1047 = 0.0803 PPM	NO. 1097 = 0.0674 PPM	NO. 1147 = 0.0817 PPM	NO. 1197 = 0.0864 PPM
NO. 1048 = 0.0789 PPM	NO. 1098 = 0.0721 PPM	NO. 1148 = 0.0846 PPM	NO. 1198 = 0.0928 PPM
NO. 1049 = 0.0700 PPM	NO. 1099 = 0.0764 PPM	NO. 1149 = 0.0872 PPM	NO. 1199 = 0.0934 PPM
NO. 1050 = 0.0804 PPM	NO. 1100 = 0.0806 PPM	NO. 1150 = 0.0922 PPM	NO. 1200 = 0.0711 PPM

A-8. continued.

NO. 1201 = 0.0535 PPM	NO. 1251 = 0.0827 PPM	NO. 1301 = 0.0926 PPM	NO. 1351 = 0.0688 PPM
NO. 1202 = 0.0393 PPM	NO. 1252 = 0.0910 PPM	NO. 1302 = 0.0815 PPM	NO. 1352 = 0.0653 PPM
NO. 1203 = 0.0455 PPM	NO. 1253 = 0.0895 PPM	NO. 1303 = 0.0717 PPM	NO. 1353 = 0.0699 PPM
NO. 1204 = 0.0704 PPM	NO. 1254 = 0.0883 PPM	NO. 1304 = 0.0702 PPM	NO. 1354 = 0.0691 PPM
NO. 1205 = 0.0980 PPM	NO. 1255 = 0.0816 PPM	NO. 1305 = 0.0717 PPM	NO. 1355 = 0.0753 PPM
NO. 1206 = 0.0830 PPM	NO. 1256 = 0.0724 PPM	NO. 1306 = 0.0743 PPM	NO. 1356 = 0.0844 PPM
NO. 1207 = 0.0863 PPM	NO. 1257 = 0.0692 PPM	NO. 1307 = 0.0714 PPM	NO. 1357 = 0.0927 PPM
NO. 1208 = 0.0812 PPM	NO. 1258 = 0.0714 PPM	NO. 1308 = 0.0773 PPM	NO. 1358 = 0.0865 PPM
NO. 1209 = 0.0747 PPM	NO. 1259 = 0.0732 PPM	NO. 1309 = 0.0825 PPM	NO. 1359 = 0.0793 PPM
NO. 1210 = 0.0676 PPM	NO. 1260 = 0.0748 PPM	NO. 1310 = 0.0868 PPM	NO. 1360 = 0.0823 PPM
NO. 1211 = 0.0699 PPM	NO. 1261 = 0.0758 PPM	NO. 1311 = 0.0806 PPM	NO. 1361 = 0.0872 PPM
NO. 1212 = 0.0725 PPM	NO. 1262 = 0.0743 PPM	NO. 1312 = 0.0761 PPM	NO. 1362 = 0.0759 PPM
NO. 1213 = 0.0746 PPM	NO. 1263 = 0.0739 PPM	NO. 1313 = 0.0770 PPM	NO. 1363 = 0.0708 PPM
NO. 1214 = 0.0775 PPM	NO. 1264 = 0.0781 PPM	NO. 1314 = 0.0822 PPM	NO. 1364 = 0.0648 PPM
NO. 1215 = 0.0794 PPM	NO. 1265 = 0.0742 PPM	NO. 1315 = 0.0723 PPM	NO. 1365 = 0.0599 PPM
NO. 1216 = 0.0818 PPM	NO. 1266 = 0.0775 PPM	NO. 1316 = 0.0693 PPM	NO. 1366 = 0.0594 PPM
NO. 1217 = 0.0778 PPM	NO. 1267 = 0.0792 PPM	NO. 1317 = 0.0682 PPM	NO. 1367 = 0.0597 PPM
NO. 1218 = 0.0755 PPM	NO. 1268 = 0.0832 PPM	NO. 1318 = 0.0693 PPM	NO. 1368 = 0.0600 PPM
NO. 1219 = 0.0780 PPM	NO. 1269 = 0.0662 PPM	NO. 1319 = 0.0586 PPM	NO. 1369 = 0.0583 PPM
NO. 1220 = 0.0821 PPM	NO. 1270 = 0.0648 PPM	NO. 1320 = 0.0605 PPM	NO. 1370 = 0.0581 PPM
NO. 1221 = 0.0815 PPM	NO. 1271 = 0.0641 PPM	NO. 1321 = 0.0609 PPM	NO. 1371 = 0.0625 PPM
NO. 1222 = 0.0816 PPM	NO. 1272 = 0.0678 PPM	NO. 1322 = 0.0599 PPM	NO. 1372 = 0.0591 PPM
NO. 1223 = 0.0621 PPM	NO. 1273 = 0.0597 PPM	NO. 1323 = 0.0584 PPM	NO. 1373 = 0.0597 PPM
NO. 1224 = 0.0725 PPM	NO. 1274 = 0.0605 PPM	NO. 1324 = 0.0584 PPM	NO. 1374 = 0.0617 PPM
NO. 1225 = 0.0746 PPM	NO. 1275 = 0.0601 PPM	NO. 1325 = 0.0591 PPM	NO. 1375 = 0.0645 PPM
NO. 1226 = 0.0801 PPM	NO. 1276 = 0.0596 PPM	NO. 1326 = 0.0581 PPM	NO. 1376 = 0.0683 PPM
NO. 1227 = 0.0593 PPM	NO. 1277 = 0.0578 PPM	NO. 1327 = 0.0604 PPM	NO. 1377 = 0.0709 PPM
NO. 1228 = 0.0614 PPM	NO. 1278 = 0.0578 PPM	NO. 1328 = 0.0625 PPM	NO. 1378 = 0.0733 PPM
NO. 1229 = 0.0609 PPM	NO. 1279 = 0.0580 PPM	NO. 1329 = 0.0658 PPM	NO. 1379 = 0.0768 PPM
NO. 1230 = 0.0606 PPM	NO. 1280 = 0.0587 PPM	NO. 1330 = 0.0695 PPM	NO. 1380 = 0.0806 PPM
NO. 1231 = 0.0631 PPM	NO. 1281 = 0.0613 PPM	NO. 1331 = 0.0724 PPM	NO. 1381 = 0.0715 PPM
NO. 1232 = 0.0594 PPM	NO. 1282 = 0.0637 PPM	NO. 1332 = 0.0754 PPM	NO. 1382 = 0.0752 PPM
NO. 1233 = 0.0577 PPM	NO. 1283 = 0.0673 PPM	NO. 1333 = 0.0788 PPM	NO. 1383 = 0.0767 PPM
NO. 1234 = 0.0593 PPM	NO. 1284 = 0.0707 PPM	NO. 1334 = 0.0825 PPM	NO. 1384 = 0.0769 PPM
NO. 1235 = 0.0616 PPM	NO. 1285 = 0.0739 PPM	NO. 1335 = 0.0726 PPM	NO. 1385 = 0.0787 PPM
NO. 1236 = 0.0649 PPM	NO. 1286 = 0.0773 PPM	NO. 1336 = 0.0801 PPM	NO. 1386 = 0.0783 PPM
NO. 1237 = 0.0689 PPM	NO. 1287 = 0.0809 PPM	NO. 1337 = 0.0819 PPM	NO. 1387 = 0.0781 PPM
NO. 1238 = 0.0727 PPM	NO. 1288 = 0.0850 PPM	NO. 1338 = 0.0807 PPM	NO. 1388 = 0.0823 PPM
NO. 1239 = 0.0765 PPM	NO. 1289 = 0.0772 PPM	NO. 1339 = 0.0815 PPM	NO. 1389 = 0.0860 PPM
NO. 1240 = 0.0799 PPM	NO. 1290 = 0.0851 PPM	NO. 1340 = 0.0808 PPM	NO. 1390 = 0.0905 PPM
NO. 1241 = 0.0831 PPM	NO. 1291 = 0.0877 PPM	NO. 1341 = 0.0798 PPM	NO. 1391 = 0.0957 PPM
NO. 1242 = 0.0874 PPM	NO. 1292 = 0.0866 PPM	NO. 1342 = 0.0813 PPM	NO. 1392 = 0.1061 PPM
NO. 1243 = 0.0834 PPM	NO. 1293 = 0.0865 PPM	NO. 1343 = 0.0872 PPM	NO. 1393 = 0.1005 PPM
NO. 1244 = 0.1017 PPM	NO. 1294 = 0.0839 PPM	NO. 1344 = 0.0928 PPM	NO. 1394 = 0.0763 PPM
NO. 1245 = 0.1092 PPM	NO. 1295 = 0.0835 PPM	NO. 1345 = 0.0953 PPM	NO. 1395 = 0.0784 PPM
NO. 1246 = 0.1069 PPM	NO. 1296 = 0.0839 PPM	NO. 1346 = 0.1011 PPM	NO. 1396 = 0.0732 PPM
NO. 1247 = 0.1041 PPM	NO. 1297 = 0.0892 PPM	NO. 1347 = 0.1017 PPM	NO. 1397 = 0.0649 PPM
NO. 1248 = 0.1000 PPM	NO. 1298 = 0.0887 PPM	NO. 1348 = 0.0931 PPM	NO. 1398 = 0.0671 PPM
NO. 1249 = 0.0976 PPM	NO. 1299 = 0.0942 PPM	NO. 1349 = 0.0815 PPM	NO. 1399 = 0.0670 PPM
NO. 1250 = 0.0918 PPM	NO. 1300 = 0.0947 PPM	NO. 1350 = 0.0733 PPM	NO. 1400 = 0.0692 PPM

A-8. continued.

NO. 1401 = 0.0734 PPM	NO. 1451 = 0.0975 PPM	NO. 1501 = 0.0761 PPM	NO. 1551 = 0.0641 PPM
NO. 1402 = 0.0907 PPM	NO. 1452 = 0.0889 PPM	NO. 1502 = 0.0734 PPM	NO. 1552 = 0.0597 PPM
NO. 1403 = 0.1006 PPM	NO. 1453 = 0.0898 PPM	NO. 1503 = 0.0706 PPM	NO. 1553 = 0.0566 PPM
NO. 1404 = 0.0978 PPM	NO. 1454 = 0.0928 PPM	NO. 1504 = 0.0666 PPM	NO. 1554 = 0.0544 PPM
NO. 1405 = 0.0889 PPM	NO. 1455 = 0.0727 PPM	NO. 1505 = 0.0624 PPM	NO. 1555 = 0.0564 PPM
NO. 1406 = 0.0834 PPM	NO. 1456 = 0.0710 PPM	NO. 1506 = 0.0597 PPM	NO. 1556 = 0.0571 PPM
NO. 1407 = 0.0891 PPM	NO. 1457 = 0.0659 PPM	NO. 1507 = 0.0567 PPM	NO. 1557 = 0.0590 PPM
NO. 1408 = 0.0837 PPM	NO. 1458 = 0.0632 PPM	NO. 1508 = 0.0540 PPM	NO. 1558 = 0.0605 PPM
NO. 1409 = 0.0749 PPM	NO. 1459 = 0.0608 PPM	NO. 1509 = 0.0562 PPM	NO. 1559 = 0.0630 PPM
NO. 1410 = 0.0671 PPM	NO. 1460 = 0.0595 PPM	NO. 1510 = 0.0576 PPM	NO. 1560 = 0.0656 PPM
NO. 1411 = 0.0624 PPM	NO. 1461 = 0.0573 PPM	NO. 1511 = 0.0599 PPM	NO. 1561 = 0.0686 PPM
NO. 1412 = 0.0615 PPM	NO. 1462 = 0.0550 PPM	NO. 1512 = 0.0620 PPM	NO. 1562 = 0.0695 PPM
NO. 1413 = 0.0617 PPM	NO. 1463 = 0.0554 PPM	NO. 1513 = 0.0644 PPM	NO. 1563 = 0.0729 PPM
NO. 1414 = 0.0606 PPM	NO. 1464 = 0.0570 PPM	NO. 1514 = 0.0662 PPM	NO. 1564 = 0.0759 PPM
NO. 1415 = 0.0576 PPM	NO. 1465 = 0.0594 PPM	NO. 1515 = 0.0682 PPM	NO. 1565 = 0.0770 PPM
NO. 1416 = 0.0561 PPM	NO. 1466 = 0.0614 PPM	NO. 1516 = 0.0704 PPM	NO. 1566 = 0.0736 PPM
NO. 1417 = 0.0541 PPM	NO. 1467 = 0.0634 PPM	NO. 1517 = 0.0734 PPM	NO. 1567 = 0.0761 PPM
NO. 1418 = 0.0564 PPM	NO. 1468 = 0.0658 PPM	NO. 1518 = 0.0769 PPM	NO. 1568 = 0.0768 PPM
NO. 1419 = 0.0583 PPM	NO. 1469 = 0.0680 PPM	NO. 1519 = 0.0756 PPM	NO. 1569 = 0.0782 PPM
NO. 1420 = 0.0615 PPM	NO. 1470 = 0.0705 PPM	NO. 1520 = 0.0727 PPM	NO. 1570 = 0.0793 PPM
NO. 1421 = 0.0640 PPM	NO. 1471 = 0.0737 PPM	NO. 1521 = 0.0758 PPM	NO. 1571 = 0.0844 PPM
NO. 1422 = 0.0665 PPM	NO. 1472 = 0.0779 PPM	NO. 1522 = 0.0771 PPM	NO. 1572 = 0.0876 PPM
NO. 1423 = 0.0693 PPM	NO. 1473 = 0.0742 PPM	NO. 1523 = 0.0786 PPM	NO. 1573 = 0.0906 PPM
NO. 1424 = 0.0720 PPM	NO. 1474 = 0.0719 PPM	NO. 1524 = 0.0798 PPM	NO. 1574 = 0.0917 PPM
NO. 1425 = 0.0746 PPM	NO. 1475 = 0.0755 PPM	NO. 1525 = 0.0824 PPM	NO. 1575 = 0.0925 PPM
NO. 1426 = 0.0790 PPM	NO. 1476 = 0.0769 PPM	NO. 1526 = 0.0846 PPM	NO. 1576 = 0.0878 PPM
NO. 1427 = 0.0728 PPM	NO. 1477 = 0.0779 PPM	NO. 1527 = 0.0870 PPM	NO. 1577 = 0.0833 PPM
NO. 1428 = 0.0715 PPM	NO. 1478 = 0.0784 PPM	NO. 1528 = 0.0877 PPM	NO. 1578 = 0.0839 PPM
NO. 1429 = 0.0743 PPM	NO. 1479 = 0.0807 PPM	NO. 1529 = 0.0920 PPM	NO. 1579 = 0.0865 PPM
NO. 1430 = 0.0750 PPM	NO. 1480 = 0.0828 PPM	NO. 1530 = 0.1000 PPM	NO. 1580 = 0.0882 PPM
NO. 1431 = 0.0756 PPM	NO. 1481 = 0.0860 PPM	NO. 1531 = 0.0859 PPM	NO. 1581 = 0.0875 PPM
NO. 1432 = 0.0768 PPM	NO. 1482 = 0.0910 PPM	NO. 1532 = 0.0809 PPM	NO. 1582 = 0.0878 PPM
NO. 1433 = 0.0798 PPM	NO. 1483 = 0.1022 PPM	NO. 1533 = 0.0786 PPM	NO. 1583 = 0.0837 PPM
NO. 1434 = 0.0825 PPM	NO. 1484 = 0.1252 PPM	NO. 1534 = 0.0788 PPM	NO. 1584 = 0.0722 PPM
NO. 1435 = 0.0859 PPM	NO. 1485 = 0.0871 PPM	NO. 1535 = 0.0786 PPM	NO. 1585 = 0.0709 PPM
NO. 1436 = 0.0916 PPM	NO. 1486 = 0.0826 PPM	NO. 1536 = 0.0766 PPM	NO. 1586 = 0.0712 PPM
NO. 1437 = 0.0983 PPM	NO. 1487 = 0.0763 PPM	NO. 1537 = 0.0712 PPM	NO. 1587 = 0.0716 PPM
NO. 1438 = 0.1123 PPM	NO. 1488 = 0.0781 PPM	NO. 1538 = 0.0659 PPM	NO. 1588 = 0.0768 PPM
NO. 1439 = 0.0814 PPM	NO. 1489 = 0.0795 PPM	NO. 1539 = 0.0649 PPM	NO. 1589 = 0.0846 PPM
NO. 1440 = 0.0824 PPM	NO. 1490 = 0.0683 PPM	NO. 1540 = 0.0706 PPM	NO. 1590 = 0.0883 PPM
NO. 1441 = 0.0806 PPM	NO. 1491 = 0.0642 PPM	NO. 1541 = 0.0819 PPM	NO. 1591 = 0.0823 PPM
NO. 1442 = 0.0703 PPM	NO. 1492 = 0.0648 PPM	NO. 1542 = 0.0890 PPM	NO. 1592 = 0.0900 PPM
NO. 1443 = 0.0727 PPM	NO. 1493 = 0.0665 PPM	NO. 1543 = 0.0942 PPM	NO. 1593 = 0.0792 PPM
NO. 1444 = 0.0661 PPM	NO. 1494 = 0.0809 PPM	NO. 1544 = 0.0910 PPM	NO. 1594 = 0.0793 PPM
NO. 1445 = 0.0659 PPM	NO. 1495 = 0.0931 PPM	NO. 1545 = 0.0948 PPM	NO. 1595 = 0.0758 PPM
NO. 1446 = 0.0659 PPM	NO. 1496 = 0.1008 PPM	NO. 1546 = 0.0974 PPM	NO. 1596 = 0.0704 PPM
NO. 1447 = 0.0716 PPM	NO. 1497 = 0.0994 PPM	NO. 1547 = 0.0780 PPM	NO. 1597 = 0.0647 PPM
NO. 1448 = 0.0907 PPM	NO. 1498 = 0.0935 PPM	NO. 1548 = 0.0768 PPM	NO. 1598 = 0.0593 PPM
NO. 1449 = 0.1027 PPM	NO. 1499 = 0.0885 PPM	NO. 1549 = 0.0744 PPM	NO. 1599 = 0.0585 PPM
NO. 1450 = 0.1052 PPM	NO. 1500 = 0.0880 PPM	NO. 1550 = 0.0695 PPM	NO. 1600 = 0.0547 PPM

A-8. continued.

NO. 1601 = 0.0562 PPM	NO. 1651 = 0.0623 PPM	NO. 1701 = 0.0705 PPM	NO. 1751 = 0.0738 PPM
NO. 1602 = 0.0570 PPM	NO. 1652 = 0.0634 PPM	NO. 1702 = 0.0730 PPM	NO. 1752 = 0.0761 PPM
NO. 1603 = 0.0580 PPM	NO. 1653 = 0.0646 PPM	NO. 1703 = 0.0739 PPM	NO. 1753 = 0.0768 PPM
NO. 1604 = 0.0591 PPM	NO. 1654 = 0.0680 PPM	NO. 1704 = 0.0759 PPM	NO. 1754 = 0.0793 PPM
NO. 1605 = 0.0608 PPM	NO. 1655 = 0.0714 PPM	NO. 1705 = 0.0756 PPM	NO. 1755 = 0.0776 PPM
NO. 1606 = 0.0636 PPM	NO. 1656 = 0.0739 PPM	NO. 1706 = 0.0783 PPM	NO. 1756 = 0.0813 PPM
NO. 1607 = 0.0667 PPM	NO. 1657 = 0.0749 PPM	NO. 1707 = 0.0807 PPM	NO. 1757 = 0.0859 PPM
NO. 1608 = 0.0695 PPM	NO. 1658 = 0.0756 PPM	NO. 1708 = 0.0804 PPM	NO. 1758 = 0.0886 PPM
NO. 1609 = 0.0717 PPM	NO. 1659 = 0.0772 PPM	NO. 1709 = 0.0808 PPM	NO. 1759 = 0.0934 PPM
NO. 1610 = 0.0749 PPM	NO. 1660 = 0.0787 PPM	NO. 1710 = 0.0838 PPM	NO. 1760 = 0.1019 PPM
NO. 1611 = 0.0760 PPM	NO. 1661 = 0.0802 PPM	NO. 1711 = 0.0824 PPM	NO. 1761 = 0.1050 PPM
NO. 1612 = 0.0748 PPM	NO. 1662 = 0.0783 PPM	NO. 1712 = 0.0849 PPM	NO. 1762 = 0.1060 PPM
NO. 1613 = 0.0770 PPM	NO. 1663 = 0.0825 PPM	NO. 1713 = 0.0958 PPM	NO. 1763 = 0.1068 PPM
NO. 1614 = 0.0773 PPM	NO. 1664 = 0.0863 PPM	NO. 1714 = 0.0955 PPM	NO. 1764 = 0.1042 PPM
NO. 1615 = 0.0781 PPM	NO. 1665 = 0.0904 PPM	NO. 1715 = 0.0990 PPM	NO. 1765 = 0.1019 PPM
NO. 1616 = 0.0788 PPM	NO. 1666 = 0.0954 PPM	NO. 1716 = 0.0981 PPM	NO. 1766 = 0.0968 PPM
NO. 1617 = 0.0838 PPM	NO. 1667 = 0.1110 PPM	NO. 1717 = 0.0955 PPM	NO. 1767 = 0.0789 PPM
NO. 1618 = 0.0877 PPM	NO. 1668 = 0.0921 PPM	NO. 1718 = 0.0971 PPM	NO. 1768 = 0.0714 PPM
NO. 1619 = 0.0918 PPM	NO. 1669 = 0.0890 PPM	NO. 1719 = 0.0953 PPM	NO. 1769 = 0.0815 PPM
NO. 1620 = 0.0954 PPM	NO. 1670 = 0.0909 PPM	NO. 1720 = 0.0956 PPM	NO. 1770 = 0.0888 PPM
NO. 1621 = 0.0974 PPM	NO. 1671 = 0.0907 PPM	NO. 1721 = 0.0953 PPM	NO. 1771 = 0.0896 PPM
NO. 1622 = 0.0857 PPM	NO. 1672 = 0.0904 PPM	NO. 1722 = 0.0943 PPM	NO. 1772 = 0.0871 PPM
NO. 1623 = 0.0879 PPM	NO. 1673 = 0.0954 PPM	NO. 1723 = 0.0910 PPM	NO. 1773 = 0.0823 PPM
NO. 1624 = 0.0874 PPM	NO. 1674 = 0.0971 PPM	NO. 1724 = 0.0902 PPM	NO. 1774 = 0.0797 PPM
NO. 1625 = 0.0923 PPM	NO. 1675 = 0.0983 PPM	NO. 1725 = 0.0876 PPM	NO. 1775 = 0.0772 PPM
NO. 1626 = 0.0922 PPM	NO. 1676 = 0.1004 PPM	NO. 1726 = 0.0841 PPM	NO. 1776 = 0.0764 PPM
NO. 1627 = 0.0932 PPM	NO. 1677 = 0.1024 PPM	NO. 1727 = 0.0821 PPM	NO. 1777 = 0.0775 PPM
NO. 1628 = 0.0926 PPM	NO. 1678 = 0.1024 PPM	NO. 1728 = 0.0790 PPM	NO. 1778 = 0.0929 PPM
NO. 1629 = 0.0919 PPM	NO. 1679 = 0.0842 PPM	NO. 1729 = 0.0742 PPM	NO. 1779 = 0.0693 PPM
NO. 1630 = 0.0887 PPM	NO. 1680 = 0.0817 PPM	NO. 1730 = 0.0748 PPM	NO. 1780 = 0.0609 PPM
NO. 1631 = 0.0844 PPM	NO. 1681 = 0.0791 PPM	NO. 1731 = 0.0738 PPM	NO. 1781 = 0.0589 PPM
NO. 1632 = 0.0836 PPM	NO. 1682 = 0.0748 PPM	NO. 1732 = 0.0720 PPM	NO. 1782 = 0.0595 PPM
NO. 1633 = 0.0759 PPM	NO. 1683 = 0.0746 PPM	NO. 1733 = 0.0719 PPM	NO. 1783 = 0.0605 PPM
NO. 1634 = 0.0738 PPM	NO. 1684 = 0.0779 PPM	NO. 1734 = 0.0676 PPM	NO. 1784 = 0.0615 PPM
NO. 1635 = 0.0746 PPM	NO. 1685 = 0.0755 PPM	NO. 1735 = 0.0612 PPM	NO. 1785 = 0.0622 PPM
NO. 1636 = 0.0820 PPM	NO. 1686 = 0.0737 PPM	NO. 1736 = 0.0576 PPM	NO. 1786 = 0.0621 PPM
NO. 1637 = 0.0776 PPM	NO. 1687 = 0.0726 PPM	NO. 1737 = 0.0589 PPM	NO. 1787 = 0.0623 PPM
NO. 1638 = 0.0819 PPM	NO. 1688 = 0.0682 PPM	NO. 1738 = 0.0596 PPM	NO. 1788 = 0.0628 PPM
NO. 1639 = 0.0764 PPM	NO. 1689 = 0.0624 PPM	NO. 1739 = 0.0602 PPM	NO. 1789 = 0.0628 PPM
NO. 1640 = 0.0750 PPM	NO. 1690 = 0.0567 PPM	NO. 1740 = 0.0606 PPM	NO. 1790 = 0.0634 PPM
NO. 1641 = 0.0745 PPM	NO. 1691 = 0.0567 PPM	NO. 1741 = 0.0611 PPM	NO. 1791 = 0.0643 PPM
NO. 1642 = 0.0701 PPM	NO. 1692 = 0.0581 PPM	NO. 1742 = 0.0619 PPM	NO. 1792 = 0.0668 PPM
NO. 1643 = 0.0640 PPM	NO. 1693 = 0.0588 PPM	NO. 1743 = 0.0624 PPM	NO. 1793 = 0.0696 PPM
NO. 1644 = 0.0581 PPM	NO. 1694 = 0.0594 PPM	NO. 1744 = 0.0631 PPM	NO. 1794 = 0.0722 PPM
NO. 1645 = 0.0554 PPM	NO. 1695 = 0.0604 PPM	NO. 1745 = 0.0639 PPM	NO. 1795 = 0.0573 PPM
NO. 1646 = 0.0569 PPM	NO. 1696 = 0.0613 PPM	NO. 1746 = 0.0660 PPM	NO. 1796 = 0.0769 PPM
NO. 1647 = 0.0574 PPM	NO. 1697 = 0.0622 PPM	NO. 1747 = 0.0698 PPM	NO. 1797 = 0.0788 PPM
NO. 1648 = 0.0589 PPM	NO. 1698 = 0.0632 PPM	NO. 1748 = 0.0724 PPM	NO. 1798 = 0.0820 PPM
NO. 1649 = 0.0599 PPM	NO. 1699 = 0.0643 PPM	NO. 1749 = 0.0737 PPM	NO. 1799 = 0.0829 PPM
NO. 1650 = 0.0611 PPM	NO. 1700 = 0.0671 PPM	NO. 1750 = 0.0803 PPM	NO. 1800 = 0.0814 PPM

A-8. continued.

NO. 1801 = 0.0820 PPM
NO. 1802 = 0.0850 PPM
NO. 1803 = 0.0881 PPM
NO. 1804 = 0.0870 PPM
NO. 1805 = 0.0909 PPM
NO. 1806 = 0.0947 PPM
NO. 1807 = 0.0986 PPM
NO. 1808 = 0.0932 PPM
NO. 1809 = 0.0819 PPM
NO. 1810 = 0.0738 PPM
NO. 1811 = 0.0678 PPM
NO. 1812 = 0.0627 PPM
NO. 1813 = 0.0545 PPM
NO. 1814 = 0.0544 PPM
NO. 1815 = 0.0553 PPM
NO. 1816 = 0.0563 PPM
NO. 1817 = 0.0575 PPM
NO. 1818 = 0.0587 PPM
NO. 1819 = 0.0599 PPM
NO. 1820 = 0.0612 PPM
NO. 1821 = 0.0660 PPM
NO. 1822 = 0.0662 PPM
NO. 1823 = 0.0664 PPM
NO. 1824 = 0.0669 PPM
NO. 1825 = 0.0675 PPM
NO. 1826 = 0.0677 PPM
NO. 1827 = 0.0681 PPM
NO. 1828 = 0.0687 PPM
NO. 1829 = 0.0692 PPM
NO. 1830 = 0.0696 PPM
NO. 1831 = 0.0697 PPM
NO. 1832 = 0.0697 PPM
NO. 1833 = 0.0698 PPM
NO. 1834 = 0.0699 PPM
NO. 1835 = 0.0703 PPM
NO. 1836 = 0.0707 PPM
NO. 1837 = 0.0712 PPM
NO. 1838 = 0.0716 PPM
NO. 1839 = 0.0723 PPM
NO. 1840 = 0.0433 PPM

VITA

Mark A. Kaminski was born in Birmingham, England in 1966 to Walentyna and Zdzislaw Kaminski. He was raised in the Chicagoland area and attended the University of Tulsa after graduating from high school. Upon receiving a B.S. in Chemical Engineering from the University of Illinois at Champaign-Urbana, he was employed as a Process Engineer in Tennessee for several years at a manufacturing facility in the Knoxville area. In the summer of 1992 he returned to college full-time working for Dr. Wayne T. Davis at the University of Tennessee at Knoxville as a Graduate Research Assistant in the Environmental Engineering program. While a student at the University of Tennessee, Mark also performed some consulting work in the area of air quality for a local air pollution control agency. He is scheduled to receive an M.S. in Environmental Engineering in the Spring semester of 1995.

In January of 1995, Mark will be moving to Florida to begin employment with Delta Research Corporation as an Environmental Engineer.