

Sapelo Island National Estuarine Research Reserve
Meteorological Metadata Report
January - December 2003
Latest Update: **February 22, 2023**

I. Data Set & Research Descriptors

1. Principal investigator & contact persons:

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2. Entry verification

a) Our meteorological information is sampled every 5 seconds by each instrument on the station and stored in a Campbell Scientific CR10X datalogger. The data are output in 3 arrays: array 15 stores 15min average, max, and minimum values; array 60 stores hourly average, max, and minimum values; and array 144 stores daily average, max, and minimum values. The CDMO datalogger program (NERR_4.CSI) is loaded into the CR10X and controls the sensors. This system interfaces with the Campbell Scientific PC208W software.

Data are uploaded to a PC on a weekly basis and saved on a raw data file that is backed up on a separate drive as well as the CDMO ftp site. Raw comma delimited files (.dat) produced by PC208 are pre processed in Excel with a CDMO developed EQWin macro which is used to properly format the files with header columns, station codes, date, (mm, dd, yyyy), as well as format the data to the correct number of decimal places. The pre-processed file is then copied into the EQWin weather.eqf file where the data are QA/QC checked and archived in a database. EQWin queries, reports, and graphs are used to discover data set outliers (values falling outside the measurement capabilities of the instruments) and large changes in data. EQWin generates statistics, graphs, custom queries, and reports as well as cross referencing with water data. Finally the data are sent to the CDMO. Anomalous data are noted in the anomalous/suspect data section below. Any corrections that were performed are noted in the deleted data section below. The most common errors/anomalies for 2003 were:

- 1) Related temperature and relative humidity inaccuracies.
- 2) Barometric pressure below 900mb.
- 3) Negative PAR readings.

b) Data collection schedule

i) Data are collected in the following formats.

- (1) Sample data points are collected every 15 minutes.
- (2) Hourly averages are produced every 60 minutes.
- (3) Daily average, maximum with time, and minimum with time every 24 hours.

ii) 15 minute sample point parameters:

Date, Time, Air Temperature (c), Relative Humidity (%), LiCor (par), Barometric Pressure (mb), Wind Speed (m/s), Wind Direction, Rainfall (mm)

iii) Hourly average parameters:

Date, Time, Air Temperature (c), Relative Humidity (%), LiCor (par), Barometric Pressure (mb), Wind Speed (m/s), Wind Direction, Wind Direction Standard Deviation (using Yamartino's Algorithm)

iv) Daily Averages parameters:

Date, Time, Air Temperature (c), Relative Humidity (%), LiCor (par), Barometric Pressure (mb), Wind Speed (m/s), Wind Direction

v) Daily Maximum parameters:

Date, Time, Air Temperature (c), Time, Relative Humidity (%), Time, LiCor (par), Time, Barometric Pressure (mb), Time, Wind Speed (m/s), Time, Battery Voltage, Time

vi) Daily Minimum parameters:

Date, Time, Air Temperature (c), Time, Relative Humidity (%), Time, LiCor (par), Time, Barometric Pressure (mb), Time, Wind Speed (m/s), Time, Battery Voltage, Time

c) Error/anomalous data criteria

Air Temp:

- 15 min sample not greater than max for the day
- 15 min sample not less than the min for the day
- 15 min sample not greater than 3.0 C from the previous 15 minutes
- Max and min temp recorded for the day
- 1 hour average not greater than 10% above the greatest 15 min sample recorded in the hour

Relative Humidity:

- Not changed by more than 25% from the previous 15 minutes
- Max and min humidity recorded for the day
- 1 hour average not greater than 10% above the greatest 15 min sample recorded in the hour

Rainfall:

- Precipitation not greater than 5 mm in 15 min
- No precipitation for the month

Wind Speed:

- Wind speed greater than 30 m/s
- Wind speed less than .5 m/s

Wind Direction:

- Wind direction not greater than 360 degrees
- Wind direction not less than 0 degrees

Pressure:

- Pressure greater than 1040 mb or less than 980 mb
- Pressure changes greater than 5 mb per hour
- Maximum and minimum values recorded for the day
- 1 hour average not greater than 10% above the greatest 15 min sample recorded in the hour

Time:

- 15 minute interval recorded

For all data:

- Duplicate interval data

3) Research objectives (Campbell Weather Station):

The principal objective of the Weather Monitoring Program is to establish a continuous meteorological record for the Sapelo Island NERR in order to observe both long-term trends and short-term variability in weather parameters over time. Additionally, this data provides a baseline of information for the large quantity of biological research and physical oceanography conducted within the Reserve by staff, graduate students and fellows, University of Georgia Marine Programs, and the recently established Georgia Coastal Ecosystems Long Term Ecological Research (GCE-LTER) initiative.

4) Research methods

The Campbell Scientific weather station measures the parameters every 5 seconds to produce both hourly and daily averages of those measurements of air temperature, relative humidity, barometric pressure, rainfall, wind speed and wind direction. An instantaneous sample is taken every 15 minutes and that data are stored in array 150. A laptop computer is used to download the data from the datalogger via the SC32A interface. On-site weather conditions are measured to verify the accuracy of the readings by the sensors. After downloading data, sensors on the weather station are inspected for damage or debris. If any problems are found, it is repaired and/or cleaned. Tree limbs and other shrubs are cut back to prevent obstruction of the sensors. Sensors will be removed and sent back to Campbell Scientific for calibration at a minimum of every two years.

5) Site location and character

All sensors are mounted on a 10m-aluminum tower located in the Marsh Landing parking lot on the southwest corner of the island. The coordinates of the tower are:

Latitude: 31° 25' 4" N,

Longitude: 81° 17' 46" W

It is bordered by a gravel parking lot on the south and salt marsh to the north. Low shrubs border the edge of the lot and transition into pine forest occurs 1/2 mi to the east. The station is well exposed to all winds and weather with practically no blockage. The CR10X datalogger and the barometric sensor are enclosed in a fiberglass housing at an elevation of approximately 1m. The 10 m tall weather station tower elevates the sensors above potential confounding physical barriers in addition to enhancing the performance of each sensor probe. The Wind Sentry sensor and Temperature/Relative Humidity sensor are attached to the tower at 10 m and 3 m elevations; respectively. The Solar Panel is attached 4 m above the ground, and is oriented to the South at approximately a 45-degree angle from the ground. The LiCor sensor is attached at an elevation of 3 m. The Tipping Bucket Rain gauge is attached to the tower at an elevation of 7m and fixed to the southwest side of the tower. The sensors are wired to the CR10X following protocol in the CDMO Manual, with minor changes due to upgraded sensors. This region is subject to multiple severe weather phenomena partially due to the proximity to the ocean. These phenomena include severe summer thunderstorms, which can cause drastic, localized drops in pressure, temperature, and heavy rains; powerful fall and winter frontal systems carrying prolonged strong winds (usually N, NE), drastic and sudden drops in temperature and pressure, and long, steady rains; and of course the late summer and early fall hurricanes. It must be noted that due to the remote location and proximity to the ocean our weather patterns can vary from those on the mainland, particularly temperatures which tend to moderate due to being surrounded by water. The nearest sites for comparison is the Grays Reef NOAA weather Buoy located about 20nm east of Sapelo Island and Glynco airport located approx. 30 mi to the SSE.

6. Data collection period :

The Marsh Landing Weather Station has been collecting data since July 2002.

2003 Marsh Landing Weather Station Data Collection Times

BEGIN	END
07/08/2002 (189), 10:00	07/12/2002 (193), 10:30
07/12/2002 (193), 10:45	07/25/2002 (206), 10:00
07/25/2002 (206), 10:15	08/06/2002 (218), 07:45
08/28/2002 (240), 15:15	09/04/2002 (247), 14:30
09/04/2002 (247), 14:45	09/30/2002 (273), 09:15
09/30/2002 (273), 09:30	11/02/2002 (306), 09:00
11/02/2002 (306), 09:15	11/26/2002 (330), 09:15
11/27/2002 (331), 20:00	12/29/2002 (363), 15:45
12/29/2002 (363), 16:00	12/31/2003 (365), 24:00

7. Distribution

NOAA/ERD retains the right to analyze, synthesize, and publish summaries of the NERRS System-wide Monitoring Program data. The PI retains the right to be fully credited for having collected and processed the data. Following academic courtesy standards, the PI and NERR site where the data were collected will be contacted and fully acknowledged in any subsequent publications in which any part of the data are used. Manuscripts resulting from this NOAA/OCRM supported research that are produced for publication in open

literature, including referred scientific journals, will acknowledge that the research was conducted under an award from the Estuarine Reserved Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration. The data set enclosed within this package/transmission is only as good as the quality assurance and quality control procedures outlined by the enclosed metadata reporting statement. The user bears all responsibility for its subsequent use/misuse in any further analyses or comparisons. The Federal government does not assume liability to the recipient or third persons, nor will the Federal government reimburse or indemnify the recipient for its liability due to any losses resulting in any way from the use of this data. NERR weather data and metadata can be obtained from the Research Coordinator at the individual NERR site (please see section 1 Principal investigators and contact persons), from the Data Manager at the Centralized Data Management Office (please see personnel directory at under the general information link on the CDMO home page) and online at the CDMO home page <http://cdmo.baruch.sc.edu/>. Data are available in text format and Access data tables.

8. Associated researchers and projects

The NERR Water Quality Monitoring Project is a study, which records long-term water quality data for Sapelo Island in order to observe any physical changes or trends in water quality over time. Four continuous water quality stations are maintained and described as follows: Deployment on alternate weeks with weekly field check and cleaning in summer due to intensive bio-fouling community. Data collected on all parameters at 30-minute intervals and include biweekly data harvesting and weekly calibration and bio-fouling checks. YSI 6600 and 6000 series water quality electronics deployed at all sites.

Locations

Marsh Landing: near surface: Lat: 31 25' 04" N, Long: 081 17' 46" W

Marsh Landing: near benthic: Lat: 31 25' 04" N, Long: 081 17' 46" W

Flume Dock: near surface: Lat: 31 28' 58" N, Long: 081 17' 03" W

Hunt Camp near benthic: Lat: 31 28' 30" N, Long: 081 17' 30" W

Water quality site descriptions

Near Surface water quality-monitoring units are suspended by chains from floating docks associated with each station. Near benthic sites are fixed in a deployment depth of 0.5 m above bottom. Salinities at all sites vary according to localized rainfall and associated runoff. Upper Duplin River sites (Flume Dock and Hunt Camp) experience slightly lower salinities associated with rainfall events (2 –3 ppt) as compared to lower Duplin River sites (Marsh Landing). Average salinities range from 15 ppt. to 30 ppt. depending on seasonal or event rainfall.

II. Physical Structure Descriptors

9. Sensor specifications, operating range, accuracy, date of last calibration

Parameter: temperature

Units: Celsius

Sensor type: Platinum resistance temperature detector (PRT)

Model #: HMP45C temperature and relative humidity probe
Operating temperature: -40 to +60 deg C
Range Units: -40 to +60 deg C
Accuracy: +/- .2deg C @20deg C
Last calibration: June 2002

Parameter: relative humidity
Units: percent
Sensor type: Vaisala HUMICAP 180 capacitive relative humidity sensor
Model #: HMP45C temperature and relative humidity probe
Range: 0-100% non-condensing
Accuracy @20deg C: +/- 2% RH (0-90%) and +/- 3% (90-100%)
Temperature dependence of RH measurement: +/-0.05% RH/deg C
Last calibration: June 2002

Parameter: barometric sensor
Units: millibars (mb)
Sensor type: Vaisala Barocap silicon capacitive pressure sensor
Model #: CS-105
Operating range: 600-1061mb @-20 to +60deg C
Humidity: non condensing
Accuracy: +/- .5mb @20degC; +/- 2 mb @ 0-40deg C; +/- 4mb @-20 to 45deg C;
+/-6mb @ 40-60deg C
Stability: +/- .1mb/ year
Last calibration: Feb 2002

Parameter: wind speed
Units: Meters/second (m/s)
Sensor type: 12cm dia cup wheel assembly, 40 mm dia hemispherical cups
Model #: R.M. Young 03110-5 Wind Sentry
Range: 0-50m/s (112mph) gust survival; 60m/s (134mph)
Accuracy: +/-2%
Last service: Feb 2002

Parameter: wind direction
Units: degrees
Sensor type: balanced vane 16cm turning radius
Model #: R.M. Young 03110-5 Wind Sentry
Range: 360deg
Accuracy: +/- 5%
Last service: Feb 2002

Parameter: LI-COR quantum sensor
Units: mmoles m-2 (total flux)
Sensor type: high stability silicone photovoltaic detector (blue enhanced)
Model #: LI190SB

Light spectrum waveband: 400-700nm
Temperature dependence: 0.15% per deg C max
Stability: <2% change/year
Operating temperature: -40 to 65deg C; 0-100% humidity
Accuracy: typically 5 uA per 1000umoles s-1 m-2
Last calibration: Mar 2002

Parameter: precipitation
Units: millimeters (mm)
Sensor type: Tipping bucket rain gauge
Model#: TE525
Rainfall per tip: 0.01inch
Operating range: 32-50degC; 0-100% humidity
Accuracy: +/-1% up to 1in/hr; +0, -3% from 1-2in/hr, +0, -5% from 2-3in/hr
Last calibration: Nov 2001

Storage Module
Model#:Sm192
Storage capacity: 192896 bytes
Operating range: -35 to 65degC
Processor: Hitachi 6303
Baud rates: 300,1200, 9600, 76800
Memory type: user selectable for either ring style or fill and drop
Power requirements: 2 +/-0.4vdc@ 100mA

The Campbell Scientific CR10X wiring panel has 128K of flash memory (EEPROM), in which it stores the operating system and its program (that it uses to run the weather station). Additionally there are 128K of SRAM, which it uses to run the program and store its measurements and for final data storage.

10. Coded variable indicator

Station code: sapmlmet
Sampling site code: ML = Marsh Landing

11. Data anomalies/data corrections

Arrays:

During 2022 all pre-2007 weather data were revisited by the CDMO. Historically those datasets included 15 minute, hourly (60), and daily data arrays (144). As directed by the NERRS Data Management Committee, the CDMO removed the hourly and daily data arrays leaving only the 15 minute data to make the entire NERRS SWMP weather dataset consistent in its reporting. All references to the 60 and 144 arrays were left in the metadata document as they may still provide valuable information, but users should be aware that they are largely no longer relevant. The updated datasets were uploaded to the database and made available through the various data applications at www.nerrsdata.org/get/landing.cfm throughout the fall of 2022.

All data recorded by properly operating sensors appears to be free of faults.

12. Deleted data

Arrays:

During 2022 all pre-2007 weather data were revisited by the CDMO. Historically those datasets included 15 minute, hourly (60), and daily data arrays (144). As directed by the NERRS Data Management Committee, the CDMO removed the hourly and daily data arrays leaving only the 15 minute data to make the entire NERRS SWMP weather dataset consistent in its reporting. All references to the 60 and 144 arrays were left in the metadata document as they may still provide valuable information, but users should be aware that they are largely no longer relevant. The updated datasets were uploaded to the database and made available through the various data applications at www.nerrsdata.org/get/landing.cfm throughout the fall of 2022.

The station was down from 01/02/2003 @ 15:30 to 01/02/2003 @ 24:00 Array 60 and Array 144 PAR and Precipitation totals were deleted due to missing data

The station was down from 3/05/03 @9:00 to 3/05/03 @15:45 so the 3/05 array 15 data from 16:00, the array 60 data from 16:00 and the 3/05 array 144 were deleted due to missing data.

The station was down from 5/13/03 @ 3:30 to 5/13/03 @ 11:15 so the 5/13 array 15 data from 11:30 to 12:00, the 12:00 array 60, and the 5/13 array 144 were deleted due to missing data.

The station was down from 5/14/03 @ 2:30 to 5/14/03 @11:15 so the 5/14 array 15 data from 11:30 to 12:00, the 12:00 array 60, and the 5/14 array 144 were deleted due to missing data.

The station was down from 5/16/03 @ 2:45 to 5/16/03 @ 15:45 so the 5/16 16:00 array 15 and 60 were deleted along with the 5/16 144 array due to missing data.

The station was down from 5/17/03 @ 8:45 to 5/19/03 @10:15 so the 5/19 array 15 data from 10:30 to 11:00, the 11:00 array 60, and the 5/19 array 144 were deleted due to missing data.

The station was down from 5/21/03 @ 8:15 to 6/21/03 @ 2:00 so the 6/21 array 15 data from 2:15 to 3:00, the 3:00 array 60, and the 6/21 array 144 were deleted due to missing data.

The station was down from 7/24/03 @ 17:45 to 7/25 03 @ 13:00 so the 7/25 array 15 data from 13:15 to 14:00, the 14:00 array 60, and the 7/25 array 144 were deleted due to missing data

The station was down from 7/25/03 @17:45 to 7/28/03 @ 13:00 so the 7/28 array 15 data from 13:15 to 14:00, the 14:00 array 60 and the 7/28 array 144 were deleted due to missing data.

The station was down from 8/01/03 @ 00:15 to 8/01/03 @ 5:00 so the 8/01 5:00 array 60 and the 8/01 array 144 had to be deleted due to missing data.

The station got a new battery on 7/21/03 at 10:05 so the 10:00 array 60 and the 7/21 144 array for that day were deleted because of missing 5sec data.

The program was reloaded on 11/10/03 @7:15; the station came back on line on 11/10/03 @14:15 so due to missing data the 11/10 15 min arrays from 14:15 to 15:00 were deleted in addition to the 15:00 array 60 and the 11/10 144 array.

Due to a wiring problem the temperature and relative humidity readings from 01/01/2003 at 9:00 to 01/02/03 at 15:15 were removed.

A barometric pressure malfunction affected the readings from 01/03/2003 at 0:15 to 01/06/03 at 8:30 so they were deleted.

An erroneous Minimum Temperature and Minimum RH value were deleted on 5/20/2003 for Array 144

Array	MinTemp	MinTempTime	MinRH	MinRHTime
144	-40	850	000	850

As a result of these erroneous values being recorded, Hourly data for Temperature and RH at 9:00 were deleted.

The following negative PAR readings were also removed from the data set.

Station	Array	Date	Julian	Time	Reading
sapmlmet	15	11/14/2003	318	18:00	-1.3
sapmlmet	15	11/14/2003	318	18:15	-0.6
sapmlmet	15	11/14/2003	318	18:30	-0.6
sapmlmet	15	11/14/2003	318	18:45	-0.5
sapmlmet	15	11/14/2003	318	19:00	-0.3
sapmlmet	60	11/14/2003	318	19:00	-1.9
sapmlmet	15	11/14/2003	318	19:15	-0.1
sapmlmet	15	11/14/2003	318	19:30	-0.1
sapmlmet	60	11/14/2003	318	20:00	-0.2
sapmlmet	15	11/14/2003	318	22:15	-0.1
sapmlmet	15	11/14/2003	318	22:30	-0.1
sapmlmet	15	11/14/2003	318	22:45	-0.1
sapmlmet	15	11/14/2003	318	23:00	-0.2
sapmlmet	60	11/14/2003	318	23:00	-0.4
sapmlmet	15	11/14/2003	318	23:15	-0.1
sapmlmet	15	11/14/2003	318	23:30	-0.1
sapmlmet	15	11/14/2003	318	23:45	-0.2
sapmlmet	15	11/14/2003	318	0:00	-0.3
sapmlmet	60	11/14/2003	318	0:00	-0.8
sapmlmet	15	11/15/2003	319	0:15	-0.4
sapmlmet	15	11/15/2003	319	0:30	-0.2
sapmlmet	15	11/15/2003	319	0:45	-0.2
sapmlmet	15	11/15/2003	319	1:00	-0.2
sapmlmet	60	11/15/2003	319	1:00	-1.2
sapmlmet	15	11/15/2003	319	1:15	-0.1
sapmlmet	15	11/15/2003	319	1:30	-0.1
sapmlmet	15	11/15/2003	319	1:45	-0.1
sapmlmet	15	11/15/2003	319	2:00	-0.1
sapmlmet	60	11/15/2003	319	2:00	-0.5
sapmlmet	15	11/15/2003	319	2:15	-0.1
sapmlmet	15	11/15/2003	319	2:30	-0.1
sapmlmet	15	11/15/2003	319	2:45	-0.2
sapmlmet	15	11/15/2003	319	3:00	-0.2
sapmlmet	60	11/15/2003	319	3:00	-0.6
sapmlmet	15	11/15/2003	319	3:15	-0.2
sapmlmet	15	11/15/2003	319	3:03	-0.2
sapmlmet	15	11/15/2003	319	3:00	-0.2
sapmlmet	15	11/15/2003	319	4:00	-0.2
sapmlmet	60	11/15/2003	319	4:00	-0.7
sapmlmet	15	11/15/2003	319	4:01	-0.2
sapmlmet	15	11/15/2003	319	4:03	-0.2

sapmlmet	15	11/15/2003	319	4:45	-0.2
sapmlmet	15	11/15/2003	319	5:00	-0.2
sapmlmet	60	11/15/2003	319	5:00	-0.8
sapmlmet	15	11/15/2003	319	5:01	-0.2
sapmlmet	15	11/15/2003	319	5:03	-0.2
sapmlmet	15	11/15/2003	319	5:45	-0.2
sapmlmet	15	11/15/2003	319	6:00	-0.2
sapmlmet	60	11/15/2003	319	6:00	-0.9
sapmlmet	15	11/15/2003	319	6:15	-0.1
sapmlmet	60	11/15/2003	319	19:00	-0.1
sapmlmet	15	11/15/2003	319	19:04	-0.1
sapmlmet	15	11/15/2003	319	20:00	-0.1
sapmlmet	60	11/15/2003	319	20:00	-0.2
sapmlmet	15	11/15/2003	319	20:15	-0.1
sapmlmet	15	11/15/2003	319	20:03	-0.1
sapmlmet	15	11/15/2003	319	20:04	-0.1
sapmlmet	60	11/15/2003	319	21:00	-0.3
sapmlmet	15	11/15/2003	319	21:01	-0.2
sapmlmet	15	11/15/2003	319	21:30	-0.1
sapmlmet	15	11/15/2003	319	21:45	-0.1
sapmlmet	15	11/15/2003	319	22:00	-0.1
sapmlmet	60	11/15/2003	319	22:00	-0.5
sapmlmet	15	11/15/2003	319	22:15	-0.1
sapmlmet	60	11/15/2003	319	23:00	-0.1
sapmlmet	15	11/16/2003	320	18:00	-0.3
sapmlmet	15	11/16/2003	320	18:01	-0.4
sapmlmet	15	11/16/2003	320	18:30	-0.3
sapmlmet	15	11/16/2003	320	18:45	-0.1
sapmlmet	15	11/16/2003	320	19:00	-0.1
sapmlmet	60	11/16/2003	320	19:00	-0.8
sapmlmet	15	11/17/2003	321	18:30	-0.1
sapmlmet	15	11/17/2003	321	18:45	-0.1
sapmlmet	15	11/17/2003	321	19:00	-0.2
sapmlmet	60	11/17/2003	321	19:00	-0.5
sapmlmet	15	11/17/2003	321	19:15	-0.3
sapmlmet	15	11/17/2003	321	19:30	-0.4
sapmlmet	15	11/17/2003	321	19:45	-0.4
sapmlmet	15	11/17/2003	321	20:00	-0.3
sapmlmet	60	11/17/2003	321	20:00	-1.3
sapmlmet	15	11/17/2003	321	20:15	-0.2
sapmlmet	15	11/17/2003	321	20:30	-0.4
sapmlmet	15	11/17/2003	321	20:45	-0.4
sapmlmet	15	11/17/2003	321	21:00	-0.3
sapmlmet	60	11/17/2003	321	21:00	-1.3
sapmlmet	15	11/17/2003	321	21:15	-0.2

sapmlmet	15	11/17/2003	321	21:30	-0.2
sapmlmet	15	11/17/2003	321	21:45	-0.2
sapmlmet	15	11/17/2003	321	22:00	-0.1
sapmlmet	60	11/17/2003	321	22:00	-0.6
sapmlmet	15	11/17/2003	321	22:15	-0.1
sapmlmet	15	11/17/2003	321	22:30	-0.1
sapmlmet	15	11/17/2003	321	22:45	-0.1
sapmlmet	15	11/17/2003	321	23:00	-0.2
sapmlmet	60	11/17/2003	321	23:00	-0.5
sapmlmet	15	11/17/2003	321	23:15	-0.2
sapmlmet	15	11/17/2003	321	23:30	-0.2
sapmlmet	15	11/17/2003	321	23:45	-0.1
sapmlmet	15	11/17/2003	321	0:00	-0.1
sapmlmet	60	11/17/2003	321	0:00	-0.6
sapmlmet	15	11/18/2003	322	0:15	-0.1
sapmlmet	15	11/18/2003	322	0:45	-0.1
sapmlmet	15	11/18/2003	322	1:00	-0.1
sapmlmet	60	11/18/2003	322	1:00	-0.2
sapmlmet	15	11/18/2003	322	2:45	-0.1
sapmlmet	60	11/18/2003	322	3:00	-0.1
sapmlmet	15	11/18/2003	322	3:15	-0.1
sapmlmet	60	11/18/2003	322	4:00	-0.1
sapmlmet	60	11/18/2003	322	20:00	-0.1
sapmlmet	60	11/18/2003	322	21:00	-0.1
sapmlmet	15	11/13/2003	317	18:15	-0.1
sapmlmet	60	11/13/2003	317	19:00	-0.1
sapmlmet	15	11/13/2003	317	23:30	-0.1
sapmlmet	15	11/13/2003	317	23:45	-0.2
sapmlmet	15	11/13/2003	317	0:00	-0.2
sapmlmet	60	11/13/2003	317	0:00	-0.6
sapmlmet	15	11/14/2003	318	0:15	-0.3
sapmlmet	15	11/14/2003	318	0:30	-0.4
sapmlmet	15	11/14/2003	318	0:45	-0.5
sapmlmet	15	11/14/2003	318	1:00	-0.5
sapmlmet	60	11/14/2003	318	1:00	-1.8
sapmlmet	15	11/14/2003	318	1:15	-0.4
sapmlmet	15	11/14/2003	318	1:30	-0.3
sapmlmet	15	11/14/2003	318	1:45	-0.1
sapmlmet	15	11/14/2003	318	2:00	-0.1
sapmlmet	60	11/14/2003	318	2:00	-0.9
sapmlmet	15	11/14/2003	318	6:15	-0.1
sapmlmet	15	11/20/2003	324	2:15	-0.1
sapmlmet	15	11/20/2003	324	2:30	-0.2
sapmlmet	15	11/20/2003	324	2:45	-0.2
sapmlmet	15	11/20/2003	324	3:00	-0.2

sapmlmet	60	11/20/2003	324	3:00	-0.6
sapmlmet	15	11/20/2003	324	3:15	-0.3
sapmlmet	15	11/20/2003	324	3:30	-0.4
sapmlmet	15	11/20/2003	324	3:45	-0.5
sapmlmet	15	11/20/2003	324	4:00	-0.5
sapmlmet	60	11/20/2003	324	4:00	-1.7
sapmlmet	15	11/20/2003	324	4:15	-0.5
sapmlmet	15	11/20/2003	324	4:30	-0.5
sapmlmet	15	11/20/2003	324	4:45	-0.5
sapmlmet	15	11/20/2003	324	5:00	-0.3
sapmlmet	60	11/20/2003	324	5:00	-1.7
sapmlmet	15	11/20/2003	324	5:15	-0.2
sapmlmet	15	11/20/2003	324	5:30	-0.1
sapmlmet	15	11/20/2003	324	5:45	-0.1
sapmlmet	60	11/20/2003	324	6:00	-0.4
sapmlmet	15	11/21/2003	325	19:00	-0.1
sapmlmet	60	11/21/2003	325	19:00	-0.1
sapmlmet	15	11/21/2003	325	19:15	-0.2
sapmlmet	15	11/21/2003	325	19:30	-0.3
sapmlmet	15	11/21/2003	325	19:45	-0.5
sapmlmet	15	11/21/2003	325	20:00	-0.6
sapmlmet	60	11/21/2003	325	20:00	-1.6
sapmlmet	15	11/21/2003	325	20:15	-0.5
sapmlmet	15	11/21/2003	325	20:30	-0.5
sapmlmet	15	11/21/2003	325	20:45	-0.3
sapmlmet	15	11/21/2003	325	21:00	-0.1
sapmlmet	60	11/21/2003	325	21:00	-1.4
sapmlmet	15	11/20/2003	324	19:45	-0.2
sapmlmet	15	11/20/2003	324	20:00	-0.4
sapmlmet	60	11/20/2003	324	20:00	-0.7
sapmlmet	15	11/20/2003	324	20:15	-0.5
sapmlmet	15	11/20/2003	324	20:30	-0.5
sapmlmet	15	11/20/2003	324	20:45	-0.5
sapmlmet	15	11/20/2003	324	21:00	-0.3
sapmlmet	60	11/20/2003	324	21:00	-1.7
sapmlmet	15	11/20/2003	324	21:15	-0.2
sapmlmet	15	11/20/2003	324	21:30	-0.1
sapmlmet	15	11/20/2003	324	21:45	-0.1
sapmlmet	60	11/20/2003	324	22:00	-0.4
sapmlmet	60	11/22/2003	326	19:00	-0.1
sapmlmet	15	11/22/2003	326	19:15	-0.1
sapmlmet	15	11/22/2003	326	19:30	-0.2
sapmlmet	15	11/22/2003	326	19:45	-0.2
sapmlmet	15	11/22/2003	326	20:00	-0.4
sapmlmet	60	11/22/2003	326	20:00	-0.8

sapmlmet	15	11/22/2003	326	20:15	-0.4
sapmlmet	15	11/22/2003	326	20:30	-0.4
sapmlmet	15	11/22/2003	326	20:45	-0.5
sapmlmet	15	11/22/2003	326	21:00	-0.3
sapmlmet	60	11/22/2003	326	21:00	-1.6
sapmlmet	15	11/22/2003	326	21:15	-0.3
sapmlmet	15	11/22/2003	326	21:30	-0.2
sapmlmet	15	11/22/2003	326	21:45	-0.2
sapmlmet	15	11/22/2003	326	22:00	-0.2
sapmlmet	60	11/22/2003	326	22:00	-1
sapmlmet	15	11/22/2003	326	22:15	-0.1
sapmlmet	15	11/22/2003	326	22:30	-0.1
sapmlmet	15	11/22/2003	326	22:45	-0.1
sapmlmet	60	11/22/2003	326	23:00	-0.3
sapmlmet	60	11/22/2003	326	0:00	-0.1
sapmlmet	60	11/24/2003	328	23:00	-0.1
sapmlmet	15	11/24/2003	328	23:15	-0.1
sapmlmet	15	11/24/2003	328	23:30	-0.1
sapmlmet	15	11/24/2003	328	23:45	-0.1
sapmlmet	15	11/24/2003	328	0:00	-0.2
sapmlmet	60	11/24/2003	328	0:00	-0.5
sapmlmet	15	11/25/2003	329	0:15	-0.2
sapmlmet	15	11/25/2003	329	0:30	-0.4
sapmlmet	15	11/25/2003	329	0:45	-0.4
sapmlmet	15	11/25/2003	329	1:00	-0.5
sapmlmet	60	11/25/2003	329	1:00	-1.4
sapmlmet	15	11/25/2003	329	1:15	-0.5
sapmlmet	15	11/25/2003	329	1:30	-0.5
sapmlmet	15	11/25/2003	329	1:45	-0.4
sapmlmet	15	11/25/2003	329	2:00	-0.4
sapmlmet	60	11/25/2003	329	2:00	-1.8
sapmlmet	15	11/25/2003	329	2:15	-0.2
sapmlmet	15	11/25/2003	329	2:30	-0.1
sapmlmet	60	11/25/2003	329	3:00	-0.3
sapmlmet	15	11/25/2003	329	5:45	-0.1
sapmlmet	60	11/25/2003	329	6:00	-0.1
sapmlmet	15	11/25/2003	329	6:15	-0.1
sapmlmet	15	11/25/2003	329	6:30	-0.1
sapmlmet	15	11/25/2003	329	6:45	-0.1
sapmlmet	15	11/25/2003	329	18:00	-0.3
sapmlmet	15	11/25/2003	329	18:15	-0.5
sapmlmet	15	11/25/2003	329	18:30	-0.3
sapmlmet	15	11/25/2003	329	18:45	-0.2
sapmlmet	15	11/25/2003	329	19:00	-0.1
sapmlmet	60	11/25/2003	329	19:00	-1.1

sapmlmet	15	11/26/2003	330	18:00	-0.1
sapmlmet	15	11/26/2003	330	18:15	-0.2
sapmlmet	15	11/26/2003	330	18:30	-0.2
sapmlmet	15	11/26/2003	330	18:45	-0.3
sapmlmet	15	11/26/2003	330	19:00	-0.3
sapmlmet	60	11/26/2003	330	19:00	-1
sapmlmet	15	11/26/2003	330	19:15	-0.2
sapmlmet	15	11/26/2003	330	19:30	-0.3
sapmlmet	15	11/26/2003	330	19:45	-0.2
sapmlmet	15	11/26/2003	330	20:00	-0.3
sapmlmet	60	11/26/2003	330	20:00	-1
sapmlmet	15	11/26/2003	330	20:15	-0.3
sapmlmet	15	11/26/2003	330	20:30	-0.3
sapmlmet	15	11/26/2003	330	20:45	-0.2
sapmlmet	15	11/26/2003	330	21:00	-0.2
sapmlmet	60	11/26/2003	330	21:00	-1
sapmlmet	15	11/26/2003	330	21:15	-0.3
sapmlmet	15	11/26/2003	330	21:30	-0.2
sapmlmet	15	11/26/2003	330	21:45	-0.3
sapmlmet	15	11/26/2003	330	22:00	-0.2
sapmlmet	60	11/26/2003	330	22:00	-0.9
sapmlmet	15	11/26/2003	330	22:15	-0.1
sapmlmet	15	11/26/2003	330	22:30	-0.1
sapmlmet	15	11/26/2003	330	22:45	-0.1
sapmlmet	60	11/26/2003	330	23:00	-0.3
sapmlmet	15	11/26/2003	330	23:15	-0.1
sapmlmet	60	11/26/2003	330	0:00	-0.1
sapmlmet	15	11/27/2003	331	18:00	-0.2
sapmlmet	15	11/27/2003	331	18:15	-0.2
sapmlmet	15	11/27/2003	331	18:30	-0.1
sapmlmet	60	11/27/2003	331	19:00	-0.4
sapmlmet	15	11/28/2003	332	18:00	-0.1
sapmlmet	15	11/28/2003	332	18:15	-0.2
sapmlmet	15	11/28/2003	332	18:30	-0.3
sapmlmet	15	11/28/2003	332	18:45	-0.3
sapmlmet	15	11/28/2003	332	19:00	-0.4
sapmlmet	60	11/28/2003	332	19:00	-1.2
sapmlmet	15	11/28/2003	332	19:15	-0.5
sapmlmet	15	11/28/2003	332	19:30	-0.5
sapmlmet	15	11/28/2003	332	19:45	-0.4
sapmlmet	15	11/28/2003	332	20:00	-0.3
sapmlmet	60	11/28/2003	332	20:00	-1.6
sapmlmet	15	11/28/2003	332	20:15	-0.1
sapmlmet	60	11/28/2003	332	21:00	-0.2
sapmlmet	60	11/29/2003	333	1:00	-0.1

sapmlmet	15	11/29/2003	333	1:30	-0.1
sapmlmet	15	11/29/2003	333	1:45	-0.1
sapmlmet	15	11/29/2003	333	2:00	-0.2
sapmlmet	60	11/29/2003	333	2:00	-0.4
sapmlmet	15	11/29/2003	333	2:15	-0.3
sapmlmet	15	11/29/2003	333	2:30	-0.4
sapmlmet	15	11/29/2003	333	2:45	-0.4
sapmlmet	15	11/29/2003	333	3:00	-0.4
sapmlmet	60	11/29/2003	333	3:00	-1.4
sapmlmet	15	11/29/2003	333	3:15	-0.5
sapmlmet	15	11/29/2003	333	3:30	-0.5
sapmlmet	15	11/29/2003	333	3:45	-0.5
sapmlmet	15	11/29/2003	333	4:00	-0.4
sapmlmet	60	11/29/2003	333	4:00	-1.9
sapmlmet	15	11/29/2003	333	4:15	-0.4
sapmlmet	15	11/29/2003	333	4:30	-0.3
sapmlmet	15	11/29/2003	333	4:45	-0.2
sapmlmet	15	11/29/2003	333	5:00	-0.1
sapmlmet	60	11/29/2003	333	5:00	-1
sapmlmet	15	11/29/2003	333	5:15	-0.1
sapmlmet	60	11/29/2003	333	6:00	-0.1
sapmlmet	15	11/29/2003	333	23:15	-0.1
sapmlmet	15	11/29/2003	333	23:30	-0.3
sapmlmet	15	11/29/2003	333	23:45	-0.5
sapmlmet	15	11/29/2003	333	0:00	-0.3
sapmlmet	60	11/29/2003	333	0:00	-1.2
sapmlmet	15	11/30/2003	334	0:15	-0.3
sapmlmet	15	11/30/2003	334	0:30	-0.1
sapmlmet	15	11/30/2003	334	0:45	-0.1
sapmlmet	60	11/30/2003	334	1:00	-0.5
sapmlmet	15	11/30/2003	334	20:30	-0.1
sapmlmet	15	11/30/2003	334	20:45	-0.2
sapmlmet	15	11/30/2003	334	21:00	-0.3
sapmlmet	60	11/30/2003	334	21:00	-0.6
sapmlmet	15	11/30/2003	334	21:15	-0.4
sapmlmet	15	11/30/2003	334	21:30	-0.4
sapmlmet	15	11/30/2003	334	21:45	-0.5
sapmlmet	15	11/30/2003	334	22:00	-0.5
sapmlmet	60	11/30/2003	334	22:00	-1.9
sapmlmet	15	11/30/2003	334	22:15	-0.5
sapmlmet	15	11/30/2003	334	22:30	-0.3
sapmlmet	15	11/30/2003	334	22:45	-0.1
sapmlmet	60	11/30/2003	334	23:00	-0.8
sapmlmet	15	11/30/2003	334	23:30	-0.1
sapmlmet	15	11/30/2003	334	0:00	-0.1

sapmlmet	60	11/30/2003	334	0:00	-0.2
sapmlmet	15	12/1/2003	335	0:15	-0.2
sapmlmet	15	12/1/2003	335	0:30	-0.2
sapmlmet	15	12/1/2003	335	0:45	-0.3
sapmlmet	15	12/1/2003	335	1:00	-0.2
sapmlmet	60	12/1/2003	335	1:00	-0.9
sapmlmet	15	12/2/2003	336	6:00	-0.1
sapmlmet	60	12/2/2003	336	6:00	-0.1
sapmlmet	15	12/2/2003	336	6:15	-0.1
sapmlmet	15	12/2/2003	336	6:30	-0.1
sapmlmet	15	12/2/2003	336	21:15	-0.1
sapmlmet	15	12/2/2003	336	21:30	-0.1
sapmlmet	15	12/2/2003	336	21:45	-0.1
sapmlmet	15	12/2/2003	336	22:00	-0.1
sapmlmet	60	12/2/2003	336	22:00	-0.4
sapmlmet	15	12/2/2003	336	22:15	-0.2
sapmlmet	15	12/2/2003	336	22:30	-0.2
sapmlmet	15	12/2/2003	336	22:45	-0.4
sapmlmet	15	12/2/2003	336	23:00	-0.5
sapmlmet	60	12/2/2003	336	23:00	-1.4
sapmlmet	15	12/2/2003	336	23:15	-0.5
sapmlmet	15	12/2/2003	336	23:30	-0.5
sapmlmet	15	12/2/2003	336	23:45	-0.4
sapmlmet	15	12/2/2003	336	0:00	-0.5
sapmlmet	60	12/2/2003	336	0:00	-1.8
sapmlmet	15	12/3/2003	337	0:15	-0.4
sapmlmet	15	12/3/2003	337	0:30	-0.4
sapmlmet	15	12/3/2003	337	0:45	-0.2
sapmlmet	15	12/3/2003	337	1:00	-0.4
sapmlmet	60	12/3/2003	337	1:00	-1.5
sapmlmet	15	12/3/2003	337	1:15	-0.3
sapmlmet	15	12/3/2003	337	1:30	-0.3
sapmlmet	15	12/3/2003	337	1:45	-0.1
sapmlmet	60	12/3/2003	337	2:00	-0.7
sapmlmet	15	12/6/2003	340	6:00	-0.2
sapmlmet	60	12/6/2003	340	6:00	-0.3
sapmlmet	15	12/6/2003	340	6:15	-0.1
sapmlmet	15	12/6/2003	340	6:30	-0.1
sapmlmet	15	12/6/2003	340	6:45	-0.1
sapmlmet	60	12/6/2003	340	7:00	-0.3
sapmlmet	15	12/6/2003	340	18:15	-0.1
sapmlmet	60	12/6/2003	340	19:00	-0.2
sapmlmet	60	12/6/2003	340	20:00	-0.1
sapmlmet	15	12/6/2003	340	20:30	-0.1
sapmlmet	15	12/6/2003	340	20:45	-0.1

sapmlmet	60	12/6/2003	340	21:00	-0.3
sapmlmet	15	12/6/2003	340	21:15	-0.1
sapmlmet	15	12/6/2003	340	21:30	-0.1
sapmlmet	15	12/6/2003	340	21:45	-0.2
sapmlmet	15	12/6/2003	340	22:00	-0.1
sapmlmet	60	12/6/2003	340	22:00	-0.5
sapmlmet	15	12/6/2003	340	22:15	-0.1
sapmlmet	15	12/6/2003	340	22:30	-0.2
sapmlmet	15	12/6/2003	340	22:45	-0.3
sapmlmet	15	12/6/2003	340	23:00	-0.4
sapmlmet	60	12/6/2003	340	23:00	-1.1
sapmlmet	15	12/6/2003	340	23:15	-0.4
sapmlmet	15	12/6/2003	340	23:30	-0.5
sapmlmet	15	12/6/2003	340	23:45	-0.5
sapmlmet	15	12/6/2003	340	0:00	-0.5
sapmlmet	60	12/6/2003	340	0:00	-2
sapmlmet	15	12/7/2003	341	0:15	-0.5
sapmlmet	15	12/7/2003	341	0:30	-0.6
sapmlmet	15	12/7/2003	341	0:45	-0.5
sapmlmet	15	12/7/2003	341	1:00	-0.5
sapmlmet	60	12/7/2003	341	1:00	-2.1
sapmlmet	15	12/7/2003	341	1:15	-0.4
sapmlmet	15	12/7/2003	341	1:30	-0.4
sapmlmet	15	12/7/2003	341	1:45	-0.5
sapmlmet	15	12/7/2003	341	2:00	-0.3
sapmlmet	15	12/7/2003	341	2:15	-0.3
sapmlmet	15	12/7/2003	341	2:30	-0.2
sapmlmet	15	12/7/2003	341	2:45	-0.1
sapmlmet	60	12/7/2003	341	3:00	-0.6
sapmlmet	15	12/7/2003	341	3:30	-0.1
sapmlmet	15	12/7/2003	341	3:45	-0.1
sapmlmet	60	12/7/2003	341	4:00	-0.2
sapmlmet	15	12/7/2003	341	4:30	-0.1
sapmlmet	60	12/7/2003	341	5:00	-0.1
sapmlmet	15	12/7/2003	341	20:30	-0.3
sapmlmet	15	12/7/2003	341	20:45	-1.6
sapmlmet	15	12/7/2003	341	21:00	-0.3
sapmlmet	60	12/7/2003	341	21:00	-0.2
sapmlmet	15	12/7/2003	341	21:15	-0.1
sapmlmet	15	12/7/2003	341	21:30	-0.1
sapmlmet	15	12/7/2003	341	21:45	-0.6
sapmlmet	15	12/7/2003	341	22:00	-0.1
sapmlmet	60	12/7/2003	341	22:00	-0.1
sapmlmet	15	12/7/2003	341	22:15	-0.1
sapmlmet	15	12/7/2003	341	22:30	-0.1

sapmlmet	15	12/7/2003	341	22:45	-0.2
sapmlmet	15	12/7/2003	341	23:00	0.1
sapmlmet	60	12/7/2003	341	23:00	-0.1
sapmlmet	15	12/7/2003	341	23:15	-0.1
sapmlmet	15	12/7/2003	341	23:30	-0.1
sapmlmet	15	12/7/2003	341	23:45	-0.1
sapmlmet	15	12/7/2003	341	0:00	-0.1
sapmlmet	60	12/7/2003	341	0:00	-0.1
sapmlmet	60	12/8/2003	342	22:00	-0.1
sapmlmet	15	12/8/2003	342	22:15	-0.1
sapmlmet	15	12/8/2003	342	22:45	-0.1
sapmlmet	15	12/8/2003	342	23:00	-0.2
sapmlmet	60	12/8/2003	342	23:00	-0.4
sapmlmet	15	12/8/2003	342	23:15	-0.3
sapmlmet	15	12/8/2003	342	23:30	-0.3
sapmlmet	15	12/8/2003	342	23:45	-0.4
sapmlmet	15	12/8/2003	342	0:00	-0.3
sapmlmet	60	12/8/2003	342	0:00	-1.4
sapmlmet	15	12/9/2003	343	0:15	-0.3
sapmlmet	15	12/9/2003	343	0:30	-0.3
sapmlmet	15	12/9/2003	343	0:45	-0.2
sapmlmet	15	12/9/2003	343	1:00	-0.2
sapmlmet	60	12/9/2003	343	1:00	-1
sapmlmet	15	12/9/2003	343	1:15	-0.2
sapmlmet	15	12/9/2003	343	1:30	-0.2
sapmlmet	15	12/9/2003	343	1:45	-0.1
sapmlmet	60	12/9/2003	343	2:00	-0.5
sapmlmet	15	12/9/2003	343	2:15	-0.1
sapmlmet	60	12/11/2003	345	5:00	-0.1
sapmlmet	15	12/11/2003	345	5:15	-0.1
sapmlmet	15	12/11/2003	345	5:30	-0.1
sapmlmet	15	12/11/2003	345	5:45	-0.1
sapmlmet	60	12/11/2003	345	6:00	-0.3
sapmlmet	15	12/11/2003	345	6:15	-0.1
sapmlmet	15	12/11/2003	345	6:30	-0.1
sapmlmet	15	12/11/2003	345	6:45	-0.1
sapmlmet	60	12/11/2003	345	7:00	-0.2
sapmlmet	15	12/11/2003	345	18:15	-0.6
sapmlmet	15	12/11/2003	345	18:30	-0.5
sapmlmet	15	12/11/2003	345	18:45	-0.4
sapmlmet	15	12/11/2003	345	19:00	-0.5
sapmlmet	60	12/11/2003	345	19:00	-2
sapmlmet	15	12/11/2003	345	19:15	-0.4
sapmlmet	15	12/11/2003	345	19:30	-0.3
sapmlmet	15	12/11/2003	345	19:45	-0.3

sapmlmet	15	12/11/2003	345	20:00	-0.2
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sapmlmet	15	12/11/2003	345	20:15	-0.3
sapmlmet	15	12/11/2003	345	20:30	-0.2
sapmlmet	15	12/11/2003	345	20:45	-0.3
sapmlmet	15	12/11/2003	345	21:00	-0.3
sapmlmet	60	12/11/2003	345	21:00	-1.1
sapmlmet	15	12/11/2003	345	21:15	-0.3
sapmlmet	15	12/11/2003	345	21:30	-0.2
sapmlmet	15	12/11/2003	345	21:45	-0.3
sapmlmet	15	12/11/2003	345	22:00	-0.3
sapmlmet	60	12/11/2003	345	22:00	-1.1
sapmlmet	15	12/11/2003	345	22:15	-0.3
sapmlmet	15	12/11/2003	345	22:30	-0.3
sapmlmet	15	12/11/2003	345	22:45	-0.4
sapmlmet	15	12/11/2003	345	23:00	-0.4
sapmlmet	60	12/11/2003	345	23:00	-1.4
sapmlmet	15	12/11/2003	345	23:15	-0.3
sapmlmet	15	12/11/2003	345	23:30	-0.4
sapmlmet	15	12/11/2003	345	23:45	-0.3
sapmlmet	15	12/11/2003	345	0:00	-0.2
sapmlmet	60	12/11/2003	345	0:00	-1.2
sapmlmet	15	12/12/2003	346	0:15	-0.3
sapmlmet	15	12/12/2003	346	0:30	-0.3
sapmlmet	15	12/12/2003	346	0:45	-0.3
sapmlmet	15	12/12/2003	346	1:00	-0.3
sapmlmet	60	12/12/2003	346	1:00	-1.3
sapmlmet	15	12/12/2003	346	1:15	-0.3
sapmlmet	15	12/12/2003	346	1:30	-0.3
sapmlmet	15	12/12/2003	346	1:45	-0.4
sapmlmet	15	12/12/2003	346	2:00	-0.3
sapmlmet	60	12/12/2003	346	2:00	-1.3
sapmlmet	15	12/12/2003	346	2:15	-0.4
sapmlmet	15	12/12/2003	346	2:30	-0.4
sapmlmet	15	12/12/2003	346	2:45	-0.4
sapmlmet	15	12/12/2003	346	3:00	-0.4
sapmlmet	60	12/12/2003	346	3:00	-1.6
sapmlmet	15	12/12/2003	346	3:15	-0.5
sapmlmet	15	12/12/2003	346	3:30	-0.4
sapmlmet	15	12/12/2003	346	3:45	-0.4
sapmlmet	15	12/12/2003	346	4:00	-0.4
sapmlmet	60	12/12/2003	346	4:00	-1.7
sapmlmet	15	12/12/2003	346	4:15	-0.3
sapmlmet	15	12/12/2003	346	4:30	-0.2
sapmlmet	15	12/12/2003	346	4:45	-0.2

sapmlmet	15	12/12/2003	346	5:00	-0.1
sapmlmet	60	12/12/2003	346	5:00	-0.8
sapmlmet	15	12/12/2003	346	5:15	-0.2
sapmlmet	15	12/12/2003	346	5:30	-0.2
sapmlmet	15	12/12/2003	346	5:45	-0.2
sapmlmet	15	12/12/2003	346	6:00	-0.2
sapmlmet	60	12/12/2003	346	6:00	-0.8
sapmlmet	15	12/12/2003	346	6:15	-0.2
sapmlmet	15	12/12/2003	346	6:30	-0.2
sapmlmet	15	12/12/2003	346	6:45	-0.3
sapmlmet	60	12/12/2003	346	7:00	-0.6
sapmlmet	15	12/12/2003	346	21:00	-0.1
sapmlmet	60	12/12/2003	346	21:00	-0.1
sapmlmet	15	12/12/2003	346	21:15	-0.1
sapmlmet	15	12/12/2003	346	21:30	-0.1
sapmlmet	15	12/12/2003	346	21:45	-0.1
sapmlmet	60	12/12/2003	346	22:00	-0.4
sapmlmet	15	12/12/2003	346	22:15	-0.1
sapmlmet	15	12/12/2003	346	22:30	-0.1
sapmlmet	15	12/12/2003	346	23:00	-0.1
sapmlmet	60	12/12/2003	346	23:00	-0.3
sapmlmet	15	12/12/2003	346	23:15	-0.2
sapmlmet	15	12/12/2003	346	23:30	-0.2
sapmlmet	60	12/12/2003	346	0:00	-0.1
sapmlmet	15	12/16/2003	350	18:15	-0.2
sapmlmet	15	12/16/2003	350	18:30	-0.1
sapmlmet	15	12/16/2003	350	18:45	-0.1
sapmlmet	60	12/16/2003	350	19:00	-0.5
sapmlmet	15	12/17/2003	351	21:45	-0.1
sapmlmet	15	12/17/2003	351	22:00	-0.1
sapmlmet	60	12/17/2003	351	22:00	-0.2
sapmlmet	15	12/17/2003	351	22:15	-0.2
sapmlmet	15	12/17/2003	351	22:30	-0.2
sapmlmet	15	12/17/2003	351	22:45	-0.2
sapmlmet	15	12/17/2003	351	23:00	-0.3
sapmlmet	60	12/17/2003	351	23:00	-0.9
sapmlmet	15	12/17/2003	351	23:15	-0.3
sapmlmet	15	12/17/2003	351	23:30	-0.3
sapmlmet	15	12/17/2003	351	23:45	-0.3
sapmlmet	15	12/17/2003	351	0:00	-0.3
sapmlmet	60	12/17/2003	351	0:00	-1.2
sapmlmet	15	12/18/2003	352	0:15	-0.4
sapmlmet	15	12/18/2003	352	0:30	-0.4
sapmlmet	15	12/18/2003	352	0:45	-0.4
sapmlmet	15	12/18/2003	352	1:00	-0.4

sapmlmet	60	12/18/2003	352	1:00	-1.5
sapmlmet	15	12/18/2003	352	1:15	-0.5
sapmlmet	15	12/18/2003	352	1:30	-0.4
sapmlmet	15	12/18/2003	352	1:45	-0.5
sapmlmet	15	12/18/2003	352	2:00	-0.4
sapmlmet	60	12/18/2003	352	2:00	-1.8
sapmlmet	15	12/18/2003	352	2:15	-0.4
sapmlmet	15	12/18/2003	352	2:30	-0.3
sapmlmet	15	12/18/2003	352	2:45	-0.4
sapmlmet	15	12/18/2003	352	3:00	-0.4
sapmlmet	60	12/18/2003	352	3:00	-1.5
sapmlmet	15	12/18/2003	352	3:15	-0.4
sapmlmet	15	12/18/2003	352	3:30	-0.4
sapmlmet	15	12/18/2003	352	3:45	-0.3
sapmlmet	15	12/18/2003	352	4:00	-0.2
sapmlmet	60	12/18/2003	352	4:00	-1.2
sapmlmet	15	12/18/2003	352	4:15	-0.3
sapmlmet	15	12/18/2003	352	4:30	-0.2
sapmlmet	15	12/18/2003	352	4:45	-0.1
sapmlmet	15	12/18/2003	352	5:00	-0.1
sapmlmet	60	12/18/2003	352	5:00	-0.7
sapmlmet	15	12/18/2003	352	5:15	-0.1
sapmlmet	15	12/18/2003	352	5:30	-0.1
sapmlmet	60	12/18/2003	352	6:00	-0.3
sapmlmet	15	12/18/2003	352	18:15	-0.5
sapmlmet	15	12/18/2003	352	18:30	-0.4
sapmlmet	15	12/18/2003	352	18:45	-0.3
sapmlmet	15	12/18/2003	352	19:00	-0.2
sapmlmet	60	12/18/2003	352	19:00	-1.5
sapmlmet	15	12/18/2003	352	19:15	-0.2
sapmlmet	15	12/18/2003	352	19:30	-0.2
sapmlmet	15	12/18/2003	352	19:45	-0.2
sapmlmet	15	12/18/2003	352	20:00	-0.1
sapmlmet	60	12/18/2003	352	20:00	-0.6
sapmlmet	15	12/18/2003	352	20:15	-0.1
sapmlmet	15	12/18/2003	352	20:30	-0.1
sapmlmet	15	12/18/2003	352	20:45	-0.1
sapmlmet	15	12/18/2003	352	21:00	-0.1
sapmlmet	60	12/18/2003	352	21:00	-0.5
sapmlmet	15	12/18/2003	352	21:15	-0.1
sapmlmet	15	12/18/2003	352	21:30	-0.3
sapmlmet	15	12/18/2003	352	21:45	-0.1
sapmlmet	15	12/18/2003	352	22:00	-0.1
sapmlmet	60	12/18/2003	352	22:00	-0.6
sapmlmet	15	12/18/2003	352	22:15	-0.1

sapmlmet	15	12/18/2003	352	22:30	-0.1
sapmlmet	15	12/18/2003	352	22:45	-0.1
sapmlmet	15	12/18/2003	352	23:00	-0.2
sapmlmet	60	12/18/2003	352	23:00	-0.5
sapmlmet	15	12/18/2003	352	23:15	-0.2
sapmlmet	15	12/18/2003	352	23:30	-0.3
sapmlmet	15	12/18/2003	352	23:45	-0.4
sapmlmet	15	12/18/2003	352	0:00	-0.4
sapmlmet	60	12/18/2003	352	0:00	-1.2
sapmlmet	15	12/19/2003	353	0:15	-0.2
sapmlmet	15	12/19/2003	353	0:30	-0.1
sapmlmet	15	12/19/2003	353	0:45	-0.1
sapmlmet	15	12/19/2003	353	1:00	-0.2
sapmlmet	60	12/19/2003	353	1:00	-0.6
sapmlmet	15	12/19/2003	353	1:15	-0.2
sapmlmet	15	12/19/2003	353	1:30	-0.3
sapmlmet	15	12/19/2003	353	1:45	-0.2
sapmlmet	15	12/19/2003	353	2:00	-0.2
sapmlmet	60	12/19/2003	353	2:00	-0.9
sapmlmet	15	12/19/2003	353	2:15	-0.2
sapmlmet	15	12/19/2003	353	2:30	-0.2
sapmlmet	15	12/19/2003	353	2:45	-0.3
sapmlmet	15	12/19/2003	353	3:00	-0.4
sapmlmet	60	12/19/2003	353	3:00	-1.1
sapmlmet	15	12/19/2003	353	3:15	-0.4
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sapmlmet	60	12/19/2003	353	5:00	-1.7
sapmlmet	15	12/19/2003	353	5:15	-0.4
sapmlmet	15	12/19/2003	353	5:30	-0.3
sapmlmet	15	12/19/2003	353	5:45	-0.3
sapmlmet	15	12/19/2003	353	6:00	-0.2
sapmlmet	60	12/19/2003	353	6:00	-1.2
sapmlmet	15	12/19/2003	353	6:15	-0.2
sapmlmet	15	12/19/2003	353	6:30	-0.2
sapmlmet	15	12/19/2003	353	6:45	-0.3
sapmlmet	15	12/19/2003	353	7:00	-0.2
sapmlmet	60	12/19/2003	353	7:00	-0.9
sapmlmet	15	12/19/2003	353	18:15	-0.5

sapmlmet	15	12/19/2003	353	18:30	-0.6
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sapmlmet	15	12/19/2003	353	19:30	-0.3
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sapmlmet	15	12/19/2003	353	20:45	-0.4
sapmlmet	15	12/19/2003	353	21:00	-0.4
sapmlmet	60	12/19/2003	353	21:00	-1.4
sapmlmet	15	12/19/2003	353	21:15	-0.4
sapmlmet	15	12/19/2003	353	21:30	-0.4
sapmlmet	15	12/19/2003	353	21:45	-0.4
sapmlmet	15	12/19/2003	353	22:00	-0.4
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sapmlmet	15	12/19/2003	353	22:30	-0.3
sapmlmet	15	12/19/2003	353	22:45	-0.3
sapmlmet	15	12/19/2003	353	23:00	-0.3
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sapmlmet	15	12/19/2003	353	23:15	-0.3
sapmlmet	15	12/19/2003	353	23:30	-0.3
sapmlmet	15	12/19/2003	353	23:45	-0.2
sapmlmet	15	12/19/2003	353	0:00	-0.2
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sapmlmet	15	12/20/2003	354	0:15	-0.3
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sapmlmet	15	12/20/2003	354	0:45	-0.3
sapmlmet	15	12/20/2003	354	1:00	-0.4
sapmlmet	60	12/20/2003	354	1:00	-1.3
sapmlmet	15	12/20/2003	354	1:15	-0.4
sapmlmet	15	12/20/2003	354	1:30	-0.5
sapmlmet	15	12/20/2003	354	1:45	-0.5
sapmlmet	15	12/20/2003	354	2:00	-0.5
sapmlmet	60	12/20/2003	354	2:00	-1.9
sapmlmet	15	12/20/2003	354	2:15	-0.4
sapmlmet	15	12/20/2003	354	2:30	-0.4
sapmlmet	15	12/20/2003	354	2:45	-0.5
sapmlmet	15	12/20/2003	354	3:00	-0.6
sapmlmet	60	12/20/2003	354	3:00	-1.9
sapmlmet	15	12/20/2003	354	3:15	-0.6

sapmlmet	15	12/20/2003	354	3:30	-0.6
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sapmlmet	15	12/20/2003	354	4:00	-0.6
sapmlmet	60	12/20/2003	354	4:00	-2.3
sapmlmet	15	12/20/2003	354	4:15	-0.4
sapmlmet	15	12/20/2003	354	4:30	-0.3
sapmlmet	15	12/20/2003	354	4:45	-0.1
sapmlmet	60	12/20/2003	354	5:00	-0.9
sapmlmet	15	12/20/2003	354	5:15	-0.1
sapmlmet	15	12/20/2003	354	5:45	-0.1
sapmlmet	60	12/20/2003	354	6:00	-0.2
sapmlmet	15	12/20/2003	354	18:15	-0.2
sapmlmet	15	12/20/2003	354	18:30	-0.5
sapmlmet	15	12/20/2003	354	18:45	-0.5
sapmlmet	15	12/20/2003	354	19:00	-0.3
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sapmlmet	15	12/20/2003	354	19:30	-0.3
sapmlmet	15	12/20/2003	354	19:45	-0.3
sapmlmet	15	12/20/2003	354	20:00	-0.2
sapmlmet	60	12/20/2003	354	20:00	-1
sapmlmet	15	12/20/2003	354	20:15	-0.2
sapmlmet	15	12/20/2003	354	20:30	-0.1
sapmlmet	15	12/20/2003	354	20:45	-0.1
sapmlmet	60	12/20/2003	354	21:00	-0.4
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sapmlmet	15	12/20/2003	354	21:30	-0.1
sapmlmet	60	12/20/2003	354	22:00	-0.2
sapmlmet	15	12/21/2003	355	4:00	-0.2
sapmlmet	60	12/21/2003	355	4:00	-0.4
sapmlmet	15	12/21/2003	355	4:15	-0.3
sapmlmet	15	12/21/2003	355	4:30	-0.3
sapmlmet	15	12/21/2003	355	4:45	-0.3
sapmlmet	15	12/21/2003	355	5:00	-0.3
sapmlmet	60	12/21/2003	355	5:00	-1.2
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sapmlmet	15	12/21/2003	355	5:45	-0.2
sapmlmet	60	12/21/2003	355	6:00	-0.6
sapmlmet	15	12/21/2003	355	0:00	-0.1
sapmlmet	60	12/21/2003	355	0:00	-0.1
sapmlmet	15	12/22/2003	356	0:15	-0.1
sapmlmet	15	12/22/2003	356	0:45	-0.1
sapmlmet	60	12/22/2003	356	1:00	-0.2
sapmlmet	15	12/22/2003	356	1:45	-0.2

sapmlmet	15	12/22/2003	356	2:00	-0.1
sapmlmet	60	12/22/2003	356	2:00	-0.4
sapmlmet	15	12/22/2003	356	2:15	-0.1
sapmlmet	15	12/22/2003	356	2:30	-0.1
sapmlmet	15	12/22/2003	356	2:45	-0.1
sapmlmet	15	12/22/2003	356	3:00	-0.1
sapmlmet	60	12/22/2003	356	3:00	-0.5
sapmlmet	15	12/22/2003	356	3:15	-0.2
sapmlmet	15	12/22/2003	356	3:30	-0.1
sapmlmet	15	12/22/2003	356	3:45	-0.2
sapmlmet	15	12/22/2003	356	4:00	-0.2
sapmlmet	60	12/22/2003	356	4:00	-0.6
sapmlmet	15	12/22/2003	356	4:15	-0.2
sapmlmet	15	12/22/2003	356	4:30	-0.2
sapmlmet	15	12/22/2003	356	4:45	-0.2
sapmlmet	15	12/22/2003	356	5:00	-0.2
sapmlmet	60	12/22/2003	356	5:00	-0.7
sapmlmet	15	12/22/2003	356	5:15	-0.2
sapmlmet	15	12/22/2003	356	5:30	-0.2
sapmlmet	15	12/22/2003	356	5:45	-0.1
sapmlmet	15	12/22/2003	356	6:00	-0.1
sapmlmet	60	12/22/2003	356	6:00	-0.6
sapmlmet	15	12/22/2003	356	6:15	-0.1
sapmlmet	15	12/22/2003	356	20:45	-0.1
sapmlmet	15	12/22/2003	356	21:00	-0.1
sapmlmet	60	12/22/2003	356	21:00	-0.2
sapmlmet	15	12/22/2003	356	21:15	-0.2
sapmlmet	15	12/22/2003	356	21:30	-0.3
sapmlmet	15	12/22/2003	356	21:45	-0.4
sapmlmet	15	12/22/2003	356	22:00	-0.4
sapmlmet	60	12/22/2003	356	22:00	-1.3
sapmlmet	15	12/22/2003	356	22:15	-0.3
sapmlmet	15	12/22/2003	356	22:30	-0.2
sapmlmet	15	12/22/2003	356	22:45	-0.1
sapmlmet	15	12/22/2003	356	23:00	-0.1
sapmlmet	60	12/22/2003	356	23:00	-0.7
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sapmlmet	60	12/22/2003	356	0:00	-0.1
sapmlmet	15	12/23/2003	357	18:15	-0.2
sapmlmet	15	12/23/2003	357	18:30	-0.2
sapmlmet	15	12/23/2003	357	18:45	-0.3
sapmlmet	15	12/23/2003	357	19:00	-0.3
sapmlmet	60	12/23/2003	357	19:00	-1
sapmlmet	15	12/23/2003	357	19:15	-0.2
sapmlmet	15	12/23/2003	357	19:30	-0.2

sapmlmet	15	12/23/2003	357	19:45	-0.2
sapmlmet	15	12/23/2003	357	20:00	-0.1
sapmlmet	60	12/23/2003	357	20:00	-0.7
sapmlmet	15	12/23/2003	357	20:15	-0.2
sapmlmet	15	12/23/2003	357	20:30	-0.2
sapmlmet	15	12/23/2003	357	20:45	-0.2
sapmlmet	15	12/23/2003	357	21:00	-0.3
sapmlmet	60	12/23/2003	357	21:00	-0.9
sapmlmet	15	12/23/2003	357	21:15	-0.4
sapmlmet	15	12/23/2003	357	21:30	-0.2
sapmlmet	15	12/23/2003	357	21:45	-0.1
sapmlmet	60	12/23/2003	357	22:00	-0.7
sapmlmet	60	12/25/2003	359	1:00	-0.1
sapmlmet	15	12/25/2003	359	1:30	-0.2
sapmlmet	15	12/25/2003	359	1:45	-0.3
sapmlmet	15	12/25/2003	359	2:00	-0.5
sapmlmet	60	12/25/2003	359	2:00	-1
sapmlmet	15	12/25/2003	359	2:15	-0.5
sapmlmet	15	12/25/2003	359	2:30	-0.5
sapmlmet	15	12/25/2003	359	2:45	-0.5
sapmlmet	15	12/25/2003	359	3:00	-0.3
sapmlmet	60	12/25/2003	359	3:00	-1.7
sapmlmet	15	12/25/2003	359	3:15	-0.1
sapmlmet	15	12/25/2003	359	3:30	-0.1
sapmlmet	60	12/25/2003	359	4:00	-0.2
sapmlmet	15	12/26/2003	360	18:15	-0.3
sapmlmet	15	12/26/2003	360	18:30	-0.5
sapmlmet	15	12/26/2003	360	18:45	-0.5
sapmlmet	15	12/26/2003	360	19:00	-0.5
sapmlmet	60	12/26/2003	360	19:00	-1.9
sapmlmet	15	12/26/2003	360	19:15	-0.6
sapmlmet	15	12/26/2003	360	19:30	-0.6
sapmlmet	15	12/26/2003	360	19:45	-0.3
sapmlmet	15	12/26/2003	360	20:00	-0.2
sapmlmet	60	12/26/2003	360	20:00	-1.7
sapmlmet	15	12/27/2003	361	19:00	-0.2
sapmlmet	60	12/27/2003	361	19:00	-0.3
sapmlmet	15	12/27/2003	361	19:15	-0.4
sapmlmet	15	12/27/2003	361	19:30	-0.6
sapmlmet	15	12/27/2003	361	19:45	-0.6
sapmlmet	15	12/27/2003	361	20:00	-0.4
sapmlmet	60	12/27/2003	361	20:00	-1.9
sapmlmet	15	12/27/2003	361	20:15	-0.2
sapmlmet	15	12/27/2003	361	20:30	-0.1
sapmlmet	15	12/28/2003	362	21:00	-0.1

sapmlmet	60	12/28/2003	362	21:00	-0.1
sapmlmet	60	12/28/2003	362	22:00	-0.1
sapmlmet	15	12/28/2003	362	22:45	-0.1
sapmlmet	60	12/28/2003	362	23:00	-0.2
sapmlmet	15	12/28/2003	362	23:15	-0.1
sapmlmet	15	12/28/2003	362	23:45	-0.1
sapmlmet	60	12/28/2003	362	0:00	-0.2
sapmlmet	15	12/29/2003	363	0:15	-0.1
sapmlmet	15	12/29/2003	363	1:00	-0.1
sapmlmet	60	12/29/2003	363	1:00	-0.2
sapmlmet	15	12/29/2003	363	2:00	-0.1
sapmlmet	60	12/29/2003	363	2:00	-0.2
sapmlmet	15	12/29/2003	363	2:30	-0.1
sapmlmet	15	12/29/2003	363	2:45	-0.1
sapmlmet	60	12/29/2003	363	3:00	-0.2
sapmlmet	60	12/29/2003	363	4:00	-0.2
sapmlmet	15	12/29/2003	363	5:00	-0.1
sapmlmet	60	12/29/2003	363	5:00	-0.2
sapmlmet	15	12/29/2003	363	5:15	-0.1
sapmlmet	15	12/29/2003	363	5:45	-0.1
sapmlmet	15	12/29/2003	363	6:00	-0.1
sapmlmet	60	12/29/2003	363	6:00	-0.3
sapmlmet	15	12/30/2003	364	23:00	-0.1
sapmlmet	60	12/30/2003	364	23:00	-0.2
sapmlmet	15	12/30/2003	364	23:15	-0.2
sapmlmet	15	12/30/2003	364	23:30	-0.2
sapmlmet	15	12/30/2003	364	23:45	-0.3
sapmlmet	15	12/30/2003	364	0:00	-0.3
sapmlmet	60	12/30/2003	364	0:00	-0.9
sapmlmet	15	12/31/2003	365	0:15	-0.3
sapmlmet	15	12/31/2003	365	0:30	-0.3
sapmlmet	15	12/31/2003	365	0:45	-0.3
sapmlmet	15	12/31/2003	365	1:00	-0.3
sapmlmet	60	12/31/2003	365	1:00	-1.1
sapmlmet	15	12/31/2003	365	1:15	-0.3
sapmlmet	15	12/31/2003	365	1:30	-0.3
sapmlmet	15	12/31/2003	365	1:45	-0.3
sapmlmet	15	12/31/2003	365	2:00	-0.2
sapmlmet	60	12/31/2003	365	2:00	-1.1
sapmlmet	15	12/31/2003	365	3:00	-0.1
sapmlmet	60	12/31/2003	365	3:00	-0.1
sapmlmet	15	12/31/2003	365	3:15	-0.1
sapmlmet	15	12/31/2003	365	3:30	-0.1
sapmlmet	15	12/31/2003	365	3:45	-0.1
sapmlmet	15	12/31/2003	365	4:00	-0.3

sapmlmet	60	12/31/2003	365	4:00	-0.6
sapmlmet	15	12/31/2003	365	4:15	-0.2
sapmlmet	15	12/31/2003	365	4:30	-0.3
sapmlmet	15	12/31/2003	365	4:45	-0.2
sapmlmet	15	12/31/2003	365	5:00	-0.1
sapmlmet	60	12/31/2003	365	5:00	-0.9
sapmlmet	15	12/31/2003	365	5:15	-0.2
sapmlmet	15	12/31/2003	365	5:30	-0.2
sapmlmet	15	12/31/2003	365	5:45	-0.1
sapmlmet	15	12/31/2003	365	6:00	-0.1
sapmlmet	60	12/31/2003	365	6:00	-0.6
sapmlmet	15	12/31/2003	365	6:15	-0.2
sapmlmet	15	12/31/2003	365	6:30	-0.2
sapmlmet	15	12/31/2003	365	6:45	-0.3
sapmlmet	15	12/31/2003	365	7:00	-0.2
sapmlmet	60	12/31/2003	365	7:00	-0.9
sapmlmet	60	12/31/2003	365	21:00	-0.1
sapmlmet	15	12/31/2003	365	21:15	-0.1
sapmlmet	15	12/31/2003	365	21:30	-0.1
sapmlmet	15	12/31/2003	365	21:45	-0.2
sapmlmet	15	12/31/2003	365	22:00	-0.3
sapmlmet	60	12/31/2003	365	22:00	-0.6
sapmlmet	15	12/31/2003	365	22:15	-0.3
sapmlmet	15	12/31/2003	365	22:30	-0.4
sapmlmet	15	12/31/2003	365	22:45	-0.4
sapmlmet	15	12/31/2003	365	23:00	-0.5
sapmlmet	60	12/31/2003	365	23:00	-1.7
sapmlmet	15	12/31/2003	365	23:15	-0.5
sapmlmet	15	12/31/2003	365	23:30	-0.5
sapmlmet	15	12/31/2003	365	23:45	-0.5
sapmlmet	15	12/31/2003	365	0:00	-0.3
sapmlmet	60	12/31/2003	365	0:00	-1.9
sapmlmet	15	11/11/2003	315	4:00	-0.1
sapmlmet	60	11/11/2003	315	4:00	-0.1
sapmlmet	15	11/11/2003	315	4:30	-0.1
sapmlmet	15	11/11/2003	315	5:00	-0.2
sapmlmet	15	11/11/2003	315	5:45	-0.1
sapmlmet	15	11/11/2003	315	6:00	-0.2
sapmlmet	60	11/11/2003	315	6:00	-0.1
sapmlmet	15	11/11/2003	315	6:15	-0.2
sapmlmet	15	11/11/2003	315	18:15	-0.5
sapmlmet	15	11/11/2003	315	18:30	-0.4
sapmlmet	15	11/11/2003	315	18:45	-0.2
sapmlmet	15	11/11/2003	315	19:00	-0.1
sapmlmet	60	11/11/2003	315	19:00	-1.2

sapmlmet	15	11/11/2003	315	19:15	-0.1
sapmlmet	60	11/11/2003	315	20:00	-0.1
sapmlmet	15	11/12/2003	316	18:15	-0.5
sapmlmet	15	11/12/2003	316	18:30	-0.4
sapmlmet	15	11/12/2003	316	18:45	-0.5
sapmlmet	15	11/12/2003	316	19:00	-0.5
sapmlmet	60	11/12/2003	316	19:00	-1.8
sapmlmet	15	11/12/2003	316	19:15	-0.4
sapmlmet	15	11/12/2003	316	19:30	-0.4
sapmlmet	15	11/12/2003	316	19:45	-0.4
sapmlmet	15	11/12/2003	316	20:00	-0.3
sapmlmet	60	11/12/2003	316	20:00	-1.6
sapmlmet	15	11/12/2003	316	20:15	-0.2
sapmlmet	15	11/12/2003	316	20:30	-0.2
sapmlmet	15	11/12/2003	316	20:45	-0.1
sapmlmet	15	11/12/2003	316	21:00	-0.1
sapmlmet	60	11/12/2003	316	21:00	-0.7
sapmlmet	15	11/12/2003	316	21:15	-0.1
sapmlmet	15	11/12/2003	316	21:30	-0.1

13. Missing data

Arrays:

During 2022 all pre-2007 weather data were revisited by the CDMO. Historically those datasets included 15 minute, hourly (60), and daily data arrays (144). As directed by the NERRS Data Management Committee, the CDMO removed the hourly and daily data arrays leaving only the 15 minute data to make the entire NERRS SWMP weather dataset consistent in its reporting. All references to the 60 and 144 arrays were left in the metadata document as they may still provide valuable information, but users should be aware that they are largely no longer relevant. The updated datasets were uploaded to the database and made available through the various data applications at www.nerrsdata.org/get/landing.cfm throughout the fall of 2022.

The station was down from 01/02/2003 @ 15:30 to 01/02/2003 @ 24:00 therefore all data are missing from this time period

The station was down from 3/05/03 @9:00 to 3/05/03 @15:45 therefore all data are missing from this time period.

The station was down from 5/13/03 @ 3:30 to 5/13/03 @ 11:15 therefore all data are missing from this time period.

The station was down from 5/14/03 @ 2:30 to 5/14/03 @11:15 therefore all data are missing from this time period.

The station was down from 5/16/03 @ 2:45 to 5/16/03 @ 15:45 therefore all data are missing from this time period.

The station was down from 5/17/03 @ 8:45 to 5/19/03 @10:15 therefore all data are missing from this time period.

The station was down from 5/21/03 @ 8:15 to 6/21/03 @ 2:00 therefore all data are missing from this time period.

The station was down from 7/24/03 @ 12:45 to 7/25 03 @ 13:00 therefore all data are missing from this time period.

The station was down from 7/25/03 @17:45 to 7/28/03 @ 13:00 therefore all data are missing from this time period.

The station was down from 8/01/03 @ 00:15 to 8/01/03 @ 5:00 therefore all data are missing from this time period.

The station got a new battery on 7/21/03 at 10:05 therefore 5 second data are missing .

The program was reloaded on 11/10/03 @7:15; the station came back on line on 11/10/03 @14:15 therefore data are missing from this time period.

14. Other remarks

Arrays:

During 2022 all pre-2007 weather data were revisited by the CDMO. Historically those datasets included 15 minute, hourly (60), and daily data arrays (144). As directed by the NERRS Data Management Committee, the CDMO removed the hourly and daily data arrays leaving only the 15 minute data to make the entire NERRS SWMP weather dataset consistent in its reporting. All references to the 60 and 144 arrays were left in the metadata document as they may still provide valuable information, but users should be aware that they are largely no longer relevant. The updated datasets were uploaded to the database and made available through the various data applications at www.nerrsdata.org/get/landing.cfm throughout the fall of 2022.

Precipitation:

During the initial years of NERRS SWMP weather data collection the CR10X programming was inconsistent in how precipitation values were recorded. For most reserves, zeros were not recorded when rainfall had not occurred between 2001-2003, instead no rainfall was represented by a blank cell. The CDMO verified which datasets were impacted by this issue for the 2001-2006 datasets and inserted zeros when the metadata indicated that no precipitation occurred and data were not missing for other reasons. In some cases, zero values for precipitation data were evaluated and removed where the metadata confirmed that no rainfall should have been in the dataset. The pre-2007 data did not go through a thorough QAQC process again at that time (in addition to previous QAQC); however, if discrepancies were noticed between what was documented in the metadata and what was in the dataset, additional updates may have been made. The updated datasets were uploaded to the

database and made available through the various data applications at www.nerrsdata.org/get/landing.cfm throughout early 2023.

LiCor:

Prior to the installation of the new NERR_4.CSI program, all values less than 0 were altered in the raw data to read 0. These values may indicate an incorrect multiplier, calibration problems, or a sensor malfunction. Because these values are changed in the raw data, we cannot confirm that they are all valid data points.

Relative Humidity:

Prior to the installation of the new NERR_4.CSI program, all values over 100% were altered in the raw data to read 100%. These values may indicate super saturated air, calibration problems, or a sensor malfunction. Because these values are changed in the raw data, we cannot confirm that they are all valid data points.

Daily, Monthly, and Annual Precipitation Totals

sapmlmet marsh landing weather station

Daily Precip Totals (mm)

01/01/2003	0.3
01/13/2003	0.5
01/22/2003	7.4

Monthly Total (mm) 8.2

02/04/2003	2.5
02/06/2003	8.4
02/07/2003	11.4
02/09/2003	5.8
02/10/2003	1.3
02/16/2003	21.8
02/17/2003	1.3
02/21/2003	0.3
02/22/2003	15.5
02/26/2003	2.0
02/27/2003	29.7

Monthly Total (mm) 100.0

03/01/2003	36.1
03/02/2003	4.1
03/03/2003	8.9
03/04/2003	18.8
03/06/2003	0.5
03/07/2003	22.4
03/08/2003	1.0
03/09/2003	35.1

03/10/2003	0.3
03/13/2003	9.9
03/15/2003	5.8
03/17/2003	25.9
03/18/2003	0.3
03/19/2003	2.5
03/20/2003	0.8
03/21/2003	0.3
03/27/2003	2.5
03/28/2003	2.5
03/29/2003	0.3
03/30/2003	4.3

Monthly Total (mm) 182.3

04/07/2003	18.3
04/08/2003	32.5
04/09/2003	15.2
04/10/2003	0.8
04/11/2003	0.3
04/19/2003	0.8
04/22/2003	0.3
04/25/2003	10.4

Monthly Total (mm) 78.6

05/01/2003	30.5
05/03/2003	7.9
05/15/2003	3.3
05/18/2003	11.2

Monthly Total (mm) 52.9

06/29/2003	0.5
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Monthly Total (mm) .5

07/02/2003	1.3
07/05/2003	0.3
07/12/2003	0.3
07/13/2003	5.1
07/14/2003	40.1
07/15/2003	0.3
07/17/2003	0.8
07/18/2003	0.3
07/22/2003	8.9

07/23/2003	11.2
07/24/2003	32.0
07/25/2003	4.1

Monthly Total (mm) 104.7

08/04/2003	7.9
08/06/2003	23.4
08/07/2003	4.8
08/08/2003	3.8
08/09/2003	0.8
08/11/2003	1.0
08/12/2003	6.1
08/16/2003	2.3
08/17/2003	0.8
08/18/2003	19.3
08/22/2003	0.3

Monthly Total (mm) 70.5

09/03/2003	7.9
09/06/2003	9.9
09/07/2003	1.3

09/08/2003	0.5
09/09/2003	1.3
09/12/2003	0.5
09/22/2003	5.1
09/23/2003	1.5
09/26/2003	4.6
09/27/2003	7.9

Monthly Total (mm) 40.5

10/07/2003	10.9
10/11/2003	5.6
10/12/2003	0.5
10/13/2003	1.3
10/25/2003	3.0
10/26/2003	0.5
10/27/2003	3.8
10/28/2003	48.3
10/29/2003	0.3

Monthly Total (mm) 74.2

11/04/2003	1.3
11/24/2003	0.8
11/27/2003	0.3
11/28/2003	5.3

Monthly Total (mm) 7.7

12/04/2003	25.4
12/05/2003	0.3
12/10/2003	5.3
12/14/2003	17.3
12/17/2003	0.5
12/24/2003	1.0

Monthly Total (mm) 49.8

Annual Total (mm) 769.9