



WASHINGTON STATE  
DEPARTMENT OF  
E C O L O G Y

**Documentation of a Natural Event Due to  
High Winds,  
November 11, 2003  
Walla Walla and Wallula Port,  
Washington**

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04-02-008  
April 2004

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Prepared by:

Washington State Department of Ecology  
Air Quality Program

04-02-008  
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Agriculture

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## Summary

On November 11, 2003, the Federal Reference Method monitors in Walla Walla and Wallula Port, Washington measured concentrations of 165 and 218 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), respectively, for particulate matter 10 microns and smaller in size ( $\text{PM}_{10}$ ). These concentrations exceeded the primary 24-hour  $\text{PM}_{10}$  National Ambient Air Quality Standard (NAAQS) of 150  $\mu\text{g}/\text{m}^3$ .

The Washington State Department of Ecology (Ecology) has determined that the Walla Walla and Wallula Port exceedances were due to a natural event caused by high winds. Thus, these data points should be excluded from assessments of the attainment status for the areas. Ecology flagged the data points for November 11, 2003 in the AIRS database maintained by the U.S. Environmental Protection Agency (EPA) to indicate that a natural event was involved. This documentation is being submitted to EPA in support of the data flags for EPA's acknowledgement and flagging of the data points.

## Natural Events Policy

EPA issued the policy on "Areas Affected by PM-10 Natural Events" (hereafter referred to as Natural Events Policy or NEP) on May 30, 1996. EPA's reasons for issuing the NEP are described in the following terms:

In issuing the natural events policy, EPA now believes that, under certain circumstances, it is appropriate to again exclude PM-10 air quality data that are attributable to uncontrollable natural events from the decisions regarding an area's nonattainment status.

Under the policy, ambient  $\text{PM}_{10}$  concentrations raised by unusually high winds are treated as uncontrollable natural events when the dust originates from nonanthropogenic (other than human-caused) sources, or when the dust originates from contributing anthropogenic sources controlled with best available control measures (BACM).

After natural events cause the  $\text{PM}_{10}$  concentration to violate the  $\text{PM}_{10}$  NAAQS, the NEP requires a state to develop a natural events action plan (NEAP) to deal with future exceedances. The NEP specifies that the NEAP is available for public review and comment. A state submits the NEAP to EPA for review and comment.

Under the NEP, when a state has reason to believe that natural events have caused monitored exceedances of the  $\text{PM}_{10}$  standard, the state is responsible for establishing a clear causal relationship between the natural event and the exceedance. Documentation of the natural event should be sufficient to demonstrate that the natural event occurred and that it impacted a particular monitoring site. The documentation should provide evidence that concentrations at the monitoring site would not have exceeded the  $\text{PM}_{10}$  standard in the absence of a natural event.

# Ecology's Response to High Wind Events on the Columbia Plateau

During the late 1980s and early 1990s, a large number of exceedances of the 24-hour standard for PM<sub>10</sub> were recorded in Spokane, Kennewick, and Wallula, Washington. Detailed examination of these exceedances showed a close correlation to high wind events. Upwind agricultural fields were identified as the chief source of the windblown dust. Accordingly, Ecology developed the *Natural Events Action Plan for High Wind Events in the Columbia Plateau* in March 1998, to deal with high wind natural events in eastern Washington.

EPA's NEP identifies various criteria states are expected to address in a NEAP, including a commitment to re-evaluate the NEAP every five years. Ecology completed a re-evaluation and submitted a revised NEAP to EPA in June 2003. The Columbia Plateau NEAP continues to address the NEP by providing for:

- Notification of citizens when air quality is likely to be impaired due to high wind events.
- Advice to citizens on steps to minimize exposure.
- Development of a program to identify and implement controls for anthropogenic sources of windblown dust in the Columbia Plateau.

As well, based on the re-evaluation, several changes were incorporated into the 2003 NEAP. Significant changes include a more refined definition for a high wind event and a finding that BACM is in place throughout the Columbia Plateau.

The 2003 NEAP refined the definition of a high wind event for Washington State in accordance with the provisions of the NEP allowing the states to determine this definition. This provision recognizes the multiple variables that affect the wind erosion processes that result in windblown dust and the generation and transport of PM<sub>10</sub>.

*“A high wind event occurs when the wind entrains and suspends dust to the extent that concentrations of PM<sub>10</sub> are elevated. This typically occurs when the average hourly wind speed at 33 ft is 18 miles per hour or greater for two or more hours; or in excess of 13 miles per hour for two hours or more hours when conditions of higher susceptibility to wind erosion exist. A high wind event that exceeds the PM<sub>10</sub> standard is a natural event.”*

The Columbia Plateau NEAP documents the research and explains the logic behind this “high wind event” definition. The high wind event definition necessarily includes the concept that the intensity of the wind event is a combination of wind speed and significant duration (sustained wind).

The state of Washington finds that windblown dust from agricultural fields is still a significant contributing source of PM<sub>10</sub> exceedances throughout the Columbia Plateau. The soil is very fine



with low organic content. This, coupled with low precipitation weather patterns, means very dry soil that is highly susceptible to wind erosion.

The 2003 NEAP identified BACM for agricultural fields as conservation programs and practices that reduce or minimize wind erosion. Specifically, this means USDA Conservation Title Programs supplemented by incentive based implementation of wind-erosion conservation practices or best management practices (BMPs).

Washington State evaluated BACM implementation for agricultural fields in the 2003 NEAP. Based on the evaluation, Washington State views these levels of wind erosion control as sufficient to fulfill BACM criterion of the NEP. A 2003 Annual Status Report regarding BACM implementation is found in Appendix C.

## **Evaluation of the November 11, 2003 Exceedances at Walla Walla and Wallula Port, Washington**

### **1. Walla Walla and Wallula Port PM<sub>10</sub> Data**

The Walla Walla monitor operated on a 1-in-3-day monitoring schedule throughout 2003. The average PM<sub>10</sub> concentration was 39 µg/m<sup>3</sup>. Monthly maxima ranged from a low of 8 µg/m<sup>3</sup> in April, to a high of 48 µg/m<sup>3</sup> in August, after the October 28, 2003 natural event value is excluded. The October average concentration is 181 µg/m<sup>3</sup> prior to excluding the October 28, 2003 natural event.

The November 11, 2003 concentration of 165 µg/m<sup>3</sup> was one of two monitored exceedances of the PM<sub>10</sub> NAAQS for the year in Walla Walla, the other being a monitored concentration of 1338 µg/m<sup>3</sup> on October 28, 2003. The exceedance of October 28, 2003 has been flagged as a natural event due to high winds.

Throughout 2003, the Wallula Port monitor operated on a 1-in-3-day schedule. The average PM<sub>10</sub> concentration was 32 µg/m<sup>3</sup>. Monthly maxima ranged from a low of 9 µg/m<sup>3</sup> in January, to a high of 53 µg/m<sup>3</sup> in October, after the October 30, 2003 natural event value is excluded. The October average concentration is 62 µg/m<sup>3</sup> prior to excluding the October 30, 2003 natural event value.

The November 11, 2003, concentration of 218 µg/m<sup>3</sup> was the only monitored PM<sub>10</sub> NAAQS exceedance for the year at Wallula Port. A monitored concentration of 134 µg/m<sup>3</sup> was measured on October 28, 2003 and this data point has been flagged as natural event due to high winds.

### **2. Walla Walla and Wallula Port Meteorological Data**

Ecology operates meteorological equipment co-located with Ecology's PM<sub>10</sub> monitor in Burbank, Washington. The Wallula Port monitoring site is located about six miles southeast of Burbank, Washington, thus meteorological data collected at Burbank is representative of the general area, including conditions at the Wallula Port monitoring site.

Data from both Burbank and the National Weather Service (NWS) at Walla Walla (Walla Walla Regional Airport) shows high winds consistently from the southwest through west-southwest for the majority of the day on November 11, 2003. Wind speeds during this time ranged from the low to the upper 20s. Gusts measured at Walla Walla ranged from 21 to 33 mph. The meteorological data is found in Appendix B.

#### A. Walla Walla Meteorological Data

Data from the Walla Walla Regional Airport shows windy and gusty conditions from about 0200 to about 1400 hours, November 11, 2003, Pacific Standard Time (Table 1). Wind speeds ranged from 18 to 28 mph; gusts ranged from 21 to 33 mph. Winds were primarily from the southwest, through west, southwest. The data shows the winds at Walla Walla met Ecology’s definition for a high wind event:

*“A high wind event occurs when the wind entrains and suspends dust to the extent that concentrations of PM<sub>10</sub> are elevated. This typically occurs when the average hourly wind speed at 33 ft is 18 miles per hour or greater for two or more hours; or in excess of 13 miles per hour for two hours or more hours when conditions of higher susceptibility to wind erosion exist. A high wind event that exceeds the PM<sub>10</sub> standard is a natural event.”*

Table 1. Select Walla Walla Wind Observations, November 11, 2003

Time (PST)	Wind Direction	Wind Speed (mph)	Peak Wind Speed (mph)
0153	SW (230°)	26	28
0253	SW (230°)	23	29
0353	SW (230°)	21	25
0453	SW (230°)	24	32
0553	SW (230°)	23	29
0653	SW (230°)	23	27
0753	WSW (240°)	18	30
0853	WSW (240°)	24	33
0953	WSW (240°)	25	33
0955	WSW (250°)	28	33
1053	WSW (240°)	26	NA
1129	WSW (240°)	21	NA
1153	WSW (250°)	21	NA
1253	WSW (250°)	21	21
1353	W (260°)	20	NA

#### B. Wallula Port Meteorological Data

The Burbank meteorological data shows windy conditions beginning November 10, 2003 and continuing through the morning of November 11, 2003. For 13 consecutive hours, from about 2000 hours on November 10, 2003 to 0800 hours on November 11, 2003, Pacific Standard Time (Table 2) winds, primarily from the southwest, ranged from 20 to 26 mph. Gust measurements are not included in Ecology’s suite of meteorological data at Burbank. The data shows the winds at Burbank and Wallula Port, Washington clearly met Ecology’s definition for a high wind event.

Table 2. Select Burbank Wind Observations, November 10 and 11, 2003

Time (PST)	Wind Direction	Wind Speed (mph)	Peak Wind Speed (mph)
2000 (11/10/03)	SW (219°)	23	NA
2100 (11/10/03)	SW (220°)	23	NA
2200 (11/10/03)	SW (220°)	23	NA
2300 (11/10/03)	SW (217°)	21	NA
0000	SW (218°)	26	NA
0100	SW (215°)	26	NA
0200	SSW (213°)	24	NA
0300	SW (216°)	23	NA
0400	SW (218°)	23	NA
0500	SW (220°)	21	NA
0600	SW (217°)	21	NA
0700	SW (218°)	20	NA
0800	SW (220°)	21	NA

Wind speeds and wind direction at Walla Walla and Burbank from 2000, November 10, 2003, to 0000, November 11, 2003 are displayed in Figures 1 and 2.

### C. Additional Meteorological Data

1. Table 3 summarizes precipitation data from several reporting meteorological stations in the vicinity of Walla Walla and Wallula Port, Washington. These sites are operated by Washington State University's Public Agricultural Weather System (PAWS), the National Weather Service (NWS), and the United States Bureau of Reclamation (Agrimet). The sites are generally located in an arc ranging from south, southwest to west, upwind of Walla Walla and Wallula Port, Washington, with respect to the direction of the prevailing winds on November 11, 2003. None of the sites are greater than about 25 miles of either Walla Walla or Wallula Port, Washington.

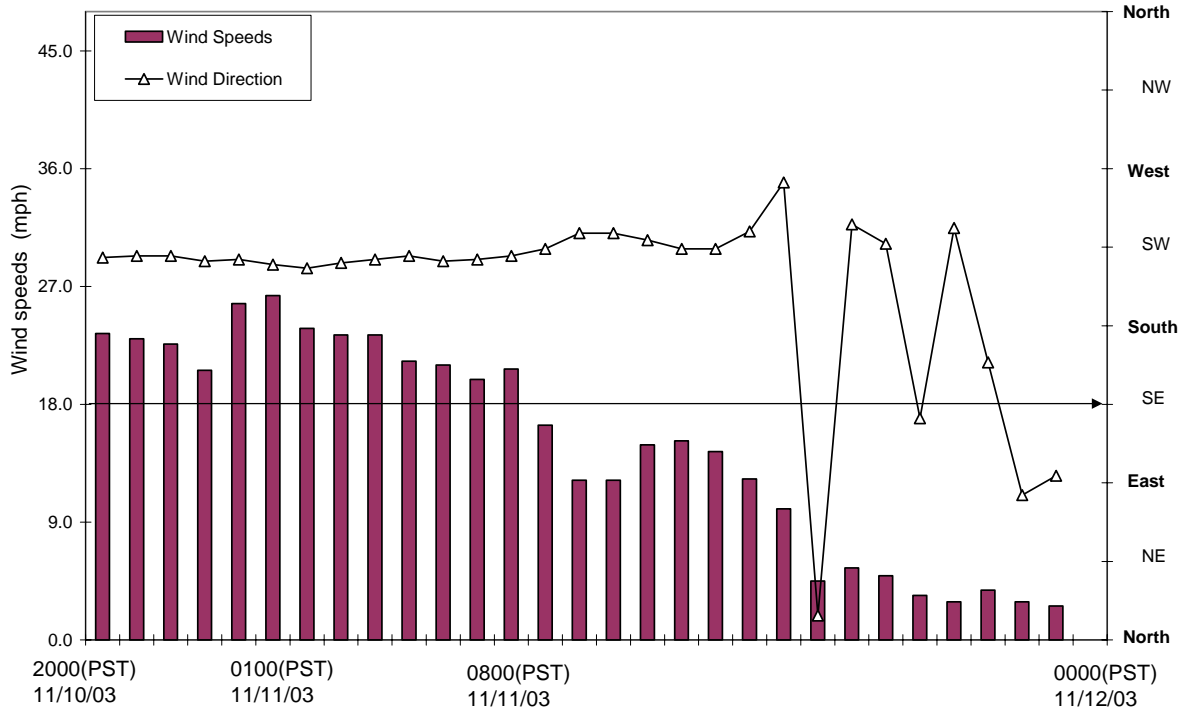
Data from the eight sites was analyzed in order to assess the general vulnerability of soils to high winds. The data shows that two sites (ECHO and Walla Walla (NWS)) of the eight recorded precipitation within 72 hours prior to the high winds on November 11, 2003. Four of the eight sites report no precipitation ranging from eight to 27 days and two of the eight report no precipitation for more than 30 days prior to the high wind event.

Table 3. Precipitation prior to a Natural Event due to high winds, November 11, 2003

STATION:	Precipitation (inches)			# Days w/o precipitation prior to event day
	November 11, 2003	72 hrs prior to event day (10/30/03)	Last measured prior to 72 hr. period	
Walla Walla (NWS)	0.05	0.09	0.01 (10/30)	0
HERO (Agrimet)	0	0	0.01 (10/30)	8
HRMO (Agrimet)	0	0	0.04 (10/17)	25
ECHO (Agrimet)	0.2	0.2 (11/11)	?	0
College Place (PAWS)	0	0	0.06 (10/16)	26
R. Eby (PAWS)	0	0	0.09 (10/15)	27
Finley (PAWS)	0	0	0	>30
Touchet (PAWS)	0	0	0	>30

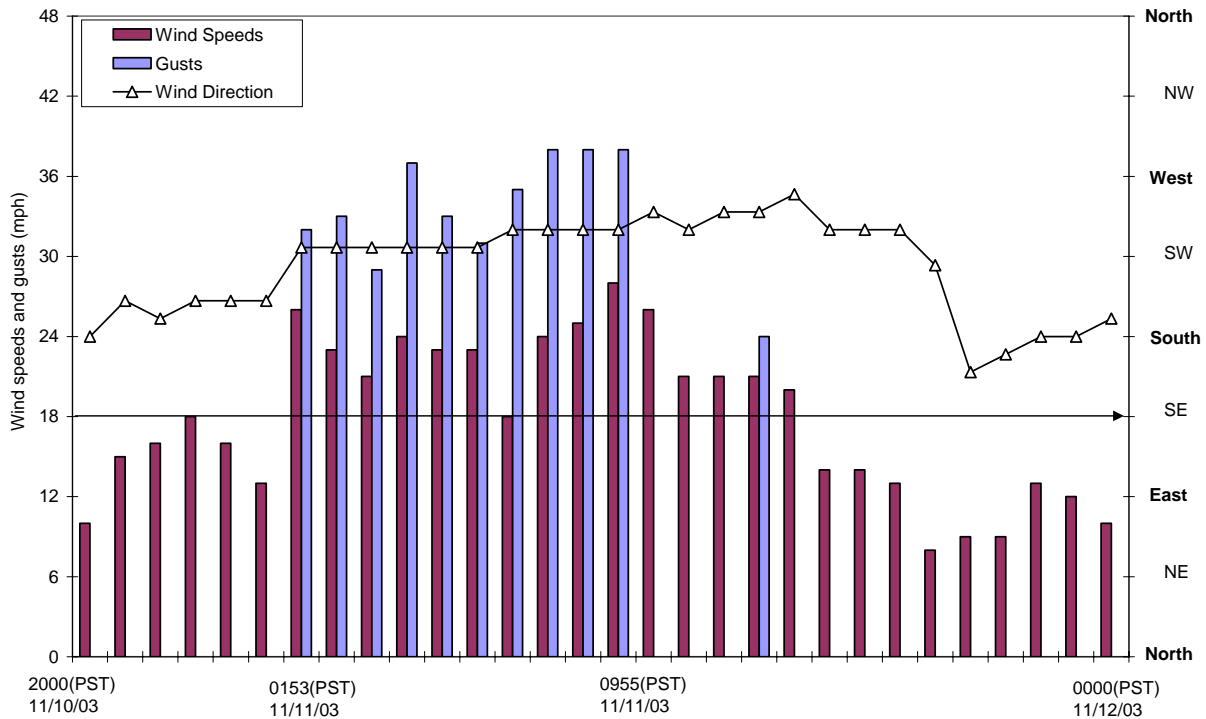


**Wind speeds, gusts and wind direction, Burbank, WA**  
 2000(PST), November 10, 2003 - 0000(PST), November 12, 2003



**Figure 1**

**Wind speeds, gusts and wind direction, Walla Walla, WA**  
 2000(PST), November 10, 2003 - 0000(PST), November 12, 2003



**Figure 2**



Archived surface observations from the University of Washington’s Department of Atmospheric Sciences reveal light rain was measured at the Walla Walla Regional Airport the evening of November 10, 2003 and the early morning of November 11, 2003. Otherwise, the most recent measured precipitation was on October 30, 2003 resulting in dry conditions.

The data further reveals high winds, blowing dust and reduced visibility followed the last reported rain on November 11, 2003. Clearly, the high winds were sufficient to overcome any possible advantage the precipitation may have provided the dry soil. The data is found in Appendix B.

October 2003 precipitation data from seven of the eight sites was compared to long-term mean precipitation for the same time period in order to further assess the likelihood that soils were vulnerable to erosion by high winds. Long-term mean precipitation data is not readily available for Agrimet’s HERO site, which was therefore excluded from the assessment. The period of record for each site is found in Appendix B. All sites report October 2003 measurable precipitation well below the long-term mean.

Table 3. October 2003 precipitation compared to mean precipitation (inches)

Station	October Precip.	October 2003	Percent of mean
Walla Walla	3.5	0.47	13
HRMO	0.73	0.2	27
ECHO	0.84	0.48	57
College Place	0.9	0.28	31
R. Eby	0.8	0.19	24
Finley	0.5	0	0
Touchet	0.5	0	0

Thus, all sites analyzed show conditions were sufficiently dry for wind-blown dust generation 72 hours prior to the high winds on November 11, 2003. Moreover, October 2003 was especially dry when compared to the long-term mean precipitation. Such dry conditions leave soils vulnerable to wind erosion, particularly in light of the observed high winds for 13 consecutive hours recorded both at Burbank, and Walla Walla, Washington.

## BACM Implementation

The 2003 NEAP evaluated data for the year 2000 and determined BACM is implemented in the Columbia Plateau based on 68 percent use of conservation practices. BACM for agricultural fields is defined as USDA Conservation Title Programs supplemented by incentive based implementation of wind erosion conservation practices or BMPs. In short, the BACM definition recognizes the critical role of agricultural agencies in defining and instituting BACM on the Columbia Plateau. The NEAP acknowledges the combined expertise of these agencies and relies on the various programs of these agencies in implementing the conservation practices that constitute BACM.

For defining BACM, the NEAP uses the USDA's CRP program and the wind erosion BMPs encouraged by NRCS and/or the Columbia Plateau Wind Erosion /Air Quality Project (referred to as the CP3). Use of these practices is tracked by the Conservation Technology Information Center's (CTIC) Core 4 program. The CTIC's Core 4 program tracks conservation tillage (No-Till, Ridge-Till, Mulch-Till) and conventional tillage (0-15% and 15-30% residue) practices and CRP enrollment on a county-by-county basis.

A 2003 Annual Status Report regarding BACM implementation evaluated data for the year 2002 (Appendix C). Comparing the 2003 NEAP to the annual report shows the level of Conservation Reserve Program (CRP) and Best Management Practice (BMP) use have increased, from the years 2000 to 2002, from 68 to 70 percent in the priority counties of the Columbia Plateau. Seventy percent of the total farmable acres in these counties are now part of a United States Department of Agriculture (USDA) conservation program, use one of the minimum till practices, or contain 15-30% residue.

Washington State finds this level of CRP and BMP implementation fulfills BACM criteria. A full discussion on Ecology's BACM definition and tracking mechanism may be found in the revised NEAP.

## Findings

The meteorological data from Burbank, Washington and the Walla Walla Regional Airport show that the late evening of November 10, 2003 and morning of November 11, 2003 were characterized by windy and gusty conditions. Wind speeds and gusts were in the low to high 20s at both Burbank and Walla Walla for as many as 13 consecutive hours. The winds meet Ecology's high wind event definition.

In the area lying upwind of Walla Walla and Wallula Port, with respect to the prevailing winds, no precipitation is reported the day of high winds. Minor precipitation is reported, within 72 hours prior to high winds, at one of the eight sites assessed. Five of the eight sites report no precipitation ranging from eight to 27 days and two of the eight report no precipitation for more than 30 days prior to the high wind event. The data shows precipitation for the month of October, 2003 was well below normal when compared to long-term mean precipitation for the area. Such conditions are consistent with areas being susceptible to windblown dust. Moreover, Ecology finds that BACM was implemented on agricultural fields.

Under the dry conditions so common in this area, the windy conditions are likely to raise dust that led to the monitored high PM<sub>10</sub> levels. Therefore, the monitored PM<sub>10</sub> concentrations of 165 µg/m<sup>3</sup> at Walla Walla, Washington and 218 µg/m<sup>3</sup> at Wallula Port, Washington on November 11, 2003, are reasonably attributed to a natural event due to high winds.



**Appendix A  
Walla Walla and  
Walla Walla Port, Washington  
PM<sub>10</sub> Data**



Annual Parameter Report  
Reporting Year: 2003  
Time of Report: 03/23/04 13:32

STATION: WALLULA PORT  
SITE: 0710003 AIRS : Parameter Code: 81102 Method Code: 063 Units Code: 001 Decimal Positioner: 0  
Parameter: PM10 SAROAD: Parameter Code: 81102 Method Code: 63 Units Code: 01 Units:

Day	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX	MEAN	NO
1			12					36							
2						53					49	13			
3	6			8	22					75					
4		10						70							
5		13					29				42	16			
6	6			22					20	22					
7								49							
8		20				38	34				86	22			
9	10			39	18				80	24					
10								17							
11		19				54	44				218	9			
12	13			18	11				27	100					
13			29					44							
14		25				29	38				57				
15	11			18	23				34	15					
16								64							
17		5				46	33				59	5			
18	11			21	51				44	36					
19			16					53							
20		7	6			15					7	18			
21				4	25					86					
22								38							
23		7				23	36				20				
24					35				65	65					
25								30							
26		35	6			28					7	12			
27			3	5	21				66						
28			18					67							
29	9					43	79				12	11			
30	8			9	33				59	134					
31	9							81							
AVG	9	16	13	16	27	37	42	50	49	62	56	13		32	
MAX	13	35	29	39	51	54	79	81	80	134	218	22	218		
DAYS	9	9	7	9	9	9	7	11	8	9	10	8			

Annual Parameter Report  
 Reporting Year: 2003  
 Time of Report: 04/08/04 09:55

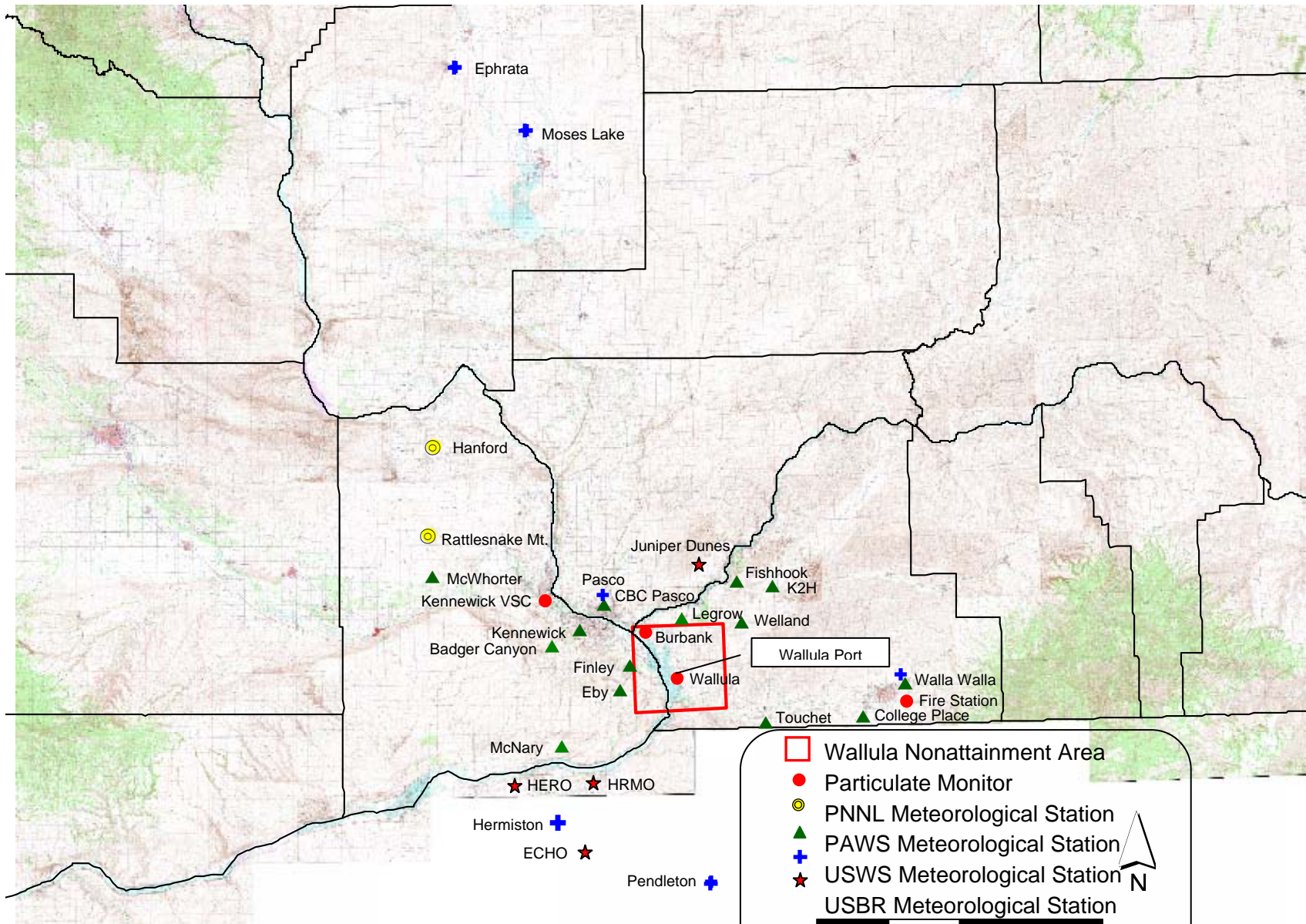
STATION: FIRE STATION  
 SITE: 0710005  
 Parameter: PM10

AIRS : Parameter Code: 81102 Method Code: 063 Units Code: 001 Decimal Positioner: 0  
 SAROAD: Parameter Code: 81102 Method Code: 63 Units Code: 01 Units:

Day	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX	MEAN	NO
1			22					53							
2		3				24	22				25	21			
3					6				90	61					
4			9	8				28							
5		27				29	15				36	14			
6	7				13				27	96					
7			8					28							
8		11				43						15			
9	13				16					23					
10			4					26							
11		35									165	12			
12	18				7		40								
13			24												
14		22				16	20				56				
15	13			8	16			104		11					
16			7												
17						41	28				14	20			
18	10			9	13					24					
19			17												
20		4				36	30	57	25						
21				14	15					23		5			
22			2					47	29						
23		6					58								
24	15			6	31				43	22		6			
25			6					51							
26		28				27	31					9			
27	5			1	27				42						
28								38		1338					
29			13			61					10	17			
30	4				23		38		65	35					
31			9												
AVG	11	17	11	8	17	35	31	48	46	181	51	13		39	
MAX	18	35	24	14	31	61	58	104	90	1338	165	21	1338		
DAYS	8	8	11	6	10	8	9	9	7	9	6	9			100

**Appendix B**  
**Meteorological Data for Burbank**  
**and Walla Walla, Washington**





□ Wallula Nonattainment Area

● Particulate Monitor

⊙ PNNL Meteorological Station

+ PAWS Meteorological Station

★ USWS Meteorological Station

▲ USBR Meteorological Station







Monthly Running Average Report  
 Run Date: 03/16/04 11:55  
 (1 Hour Rolling Averages)

SITE NAME: BURMAPLE : 53-071-0006  
 ADDRESS: 755 MAPLE STREET BURBANK  
 LAT/LONG: 046 12' 00" / 119 00' 30"  
 ELEVATION: 590

PARAMETER NAME: WD  
 PARAMETER CODE: 61102  
 METHOD: 50 UNITS: DEG

MONTH: November  
 YEAR: 2003  
 DECIMAL POSITIONER: 0  
 PROJECT: 01

Hourly Averages  
 Beginning Hour (PST)

DA	C	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	AVG	MAX	RDS	
01	SA	77	83	97	121	126	138	150	159	179	357	50	118	149	145	116	95	104	76	48	339	329	337	311	310	167	357	24	
02	SU	314	318	324	342	333	340	336	342	334	333	329	339	337	339	335	341	340	338	340	345	339	342	331	314	334	345	24	
03	MO	311	326	343	329	56	61	12	25	44	34	280	278	270	274	291	300	270	186	139	60	40	21	185	297	185	343	24	
04	TU	296	269	299	293	315	347	327	332	317	298	309	304	321	335	338	252	318	323	4	316	318	338	352	360	303	360	24	
05	WE	315	314	340	347	325	304	324	311	300	303	314	323	327	334	305	319	317	330	311	296	303	309	317	334	318	347	24	
06	TH	333	323	313	315	332	323	310	325	322	313	330	341	339	335	325	327	316	317	312	301	290	347	334	320	323	347	24	
07	FR	321	308	320	306	314	321	334	356	325	334	326	296	267	219	174	146	134	131	113	115	112	112	108	99	233	356	24	
08	SA	90	81	82	89	79	59	88	49	42	313	327	337	346	352	332	321	306	298	291	288	302	329	324	334	227	352	24	
09	SU	324	303	319	325	313	359	78	60	40	26	56	111	102	115	128	125	177	139	72	30	55	71	88	128	148	359	24	
10	MO	133	70	324	286	294	341	265	220	222	229	221	218	221	219	226	220	225	223	227	223	219	220	220	217	228	341	24	
11	TU	218	215	213	216	218	220	217	218	220	224	233	229	224	224	234	262	14	238	227	127	236	159	83	94	199	262	24	
12	WE	52	41	50	67	67	42	36	341	328	320	326	266	311	343	238	200	201	323	330	293	298	310	312	314	225	343	24	
13	TH	319	313	312	317	319	324	347	344	343	332	314	0	356	76	97	128	126	120	106	76	77	80	76	80	208	356	24	
14	FR	65	58	330	329	337	297	351	327	334	314	312	314	290	278	249	251	291	299	304	317	345	350	340	331	292	351	24	
15	SA	300	314	320	327	304	350	347	6	67	152	38	24	88	105	145	143	115	128	161	113	144	131	136	127	170	350	24	
16	SU	152	195	98	118	144	176	158	205	167	175	177	192	174	155	160	195	226	218	232	224	221	221	218	220	184	232	24	
17	MO	222	218	227	222	226	229	234	228	224	222	222	222	213	221	220	218	223	216	214	166	154	158	191	200	212	234	24	
18	TU	200	197	184	184	171	196	217	210	208	204	210	219	222	229	256	253	245	244	224	225	177	178	163	137	206	256	24	
19	WE	153	175	168	144	153	199	201	222	308	314	276	133	214	213	212	218	221	220	225	226	236	262	241	232	215	314	24	
20	TH	224	220	221	229	252	236	315	143	191	210	242	189	124	131	121	178	169	175	214	239	286	288	282	278	215	315	24	
21	FR	241	241	203	250	8	28	40	313	309	325	333	338	354	2	2	14	1	359	355	326	329	325	332	347	224	359	24	
22	SA	3	3	355	346	333	353	1	334	314	311	219	104	161	170	191	193	181	194	217	81	4	343	349	52	200	355	24	
23	SU	321	350	309	288	303	295	300	304	298	298	308	307	301	284	287	287	285	310	315	319	10	95	66	105	264	350	24	
24	MO	118	173	204	304	274	225	262	234	220	222	227	230	231	234	229	230	237	235	230	223	200	198	215	212	224	304	24	
25	TU	210	225	203	193	171	159	168	170	170	179	224	220	224	222	226	227	227	239	232	227	231	227	226	228	210	239	24	
26	WE	229	225	224	224	223	218	219	220	229	226	223	220	222	221	220	215	213	225	241	187	200	196	156	133	213	241	24	
27	TH	152	104	110	122	137	151	138	98	112	128	165	343	277	278	278	272	291	294	282	282	304	306	305	311	218	343	24	
28	FR	314	310	311	335	92	96	357	72	325	347	68	127	94	102	81	337	213	129	112	132	121	146	149	140	188	357	24	
29	SA	113	49	9	225	56	110	168	168	201	218	216	225	225	223	221	223	220	228	272	254	197	69	39	17	164	272	24	
30	SU	343	290	293	315	313	306	299	306	329	328	325	325	336	325	314	310	313	327	335	323	311	321	313	318	317	343	24	
AVG		215	210	237	250	220	227	220	221	234	253	240	230	244	223	218	227	217	236	223	222	213	226	225	220	227			
MAX		343	350	355	347	337	359	357	356	343	357	333	343	356	352	338	341	340	359	355	345	345	350	352	360		360		
DAYS		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30			720	

Monthly Running Average Report  
 Run Date: 03/16/04 11:55  
 ( 1 Hour Rolling Averages )

SITE NAME: BURMAPLE : 53-071-0006  
 ADDRESS: 755 MAPLE STREET BURBANK  
 LAT/LONG: 046 12' 00" / 119 00' 30"  
 ELEVATION: 590

PARAMETER NAME: WS  
 PARAMETER CODE: 61101  
 METHOD: 50 UNITS: MPH

MONTH: November  
 YEAR: 2003  
 DECIMAL POSITIONER: 1  
 PROJECT: 01

Hourly Averages  
 Beginning Hour (PST)

DA	C	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	AVG	MAX	RDS
01	SA	29	37	46	74	72	87	74	47	50	46	26	35	65	50	64	45	21	20	14	19	51	34	37	48	4.5	8.7	24
02	SU	45	32	46	82	65	67	72	102	113	125	124	123	130	140	147	147	151	133	112	117	118	98	98	73	10.3	15.1	24
03	MO	66	63	56	26	13	8	34	27	20	7	35	44	43	59	76	48	34	32	21	22	28	39	21	54	3.7	7.6	24
04	TU	38	14	52	36	53	47	61	65	72	71	72	51	58	44	30	21	36	50	29	19	44	33	17	32	4.4	7.2	24
05	WE	35	46	35	31	40	41	45	38	39	40	42	49	46	44	36	60	60	28	56	47	28	27	43	67	4.3	6.7	24
06	TH	60	64	48	51	59	60	60	82	67	58	59	83	93	93	82	80	50	55	65	53	49	42	64	53	6.4	9.3	24
07	FR	63	67	67	54	51	61	33	36	60	51	48	28	22	17	27	43	38	51	43	43	44	43	50	55	4.6	6.7	24
08	SA	37	39	28	28	24	22	23	13	12	27	54	83	89	98	88	84	64	44	52	63	50	68	74	64	5.1	9.8	24
09	SU	45	55	57	54	45	32	21	21	12	18	26	16	12	13	21	43	60	32	26	27	34	43	46	71	3.5	7.1	24
10	MO	83	41	46	41	54	63	101	174	168	201	206	223	201	204	188	172	199	186	179	190	234	230	226	206	15.9	23.4	24
11	TU	257	263	238	233	233	213	210	199	207	164	122	149	152	144	123	100	45	55	49	34	29	38	29	26	13.8	26.3	24
12	WE	27	28	32	22	18	24	20	32	21	24	26	24	30	29	27	28	21	36	53	51	68	64	54	42	3.3	6.8	24
13	TH	53	60	57	55	52	52	54	46	24	21	19	19	25	38	46	50	46	38	44	37	28	40	53	55	4.2	6.0	24
14	FR	36	26	25	20	23	13	24	43	27	38	22	18	28	33	41	43	50	53	64	44	31	30	22	18	3.2	6.4	24
15	SA	40	43	45	60	23	29	27	13	19	13	15	22	22	56	99	90	72	52	49	77	69	81	68		4.8	9.9	24
16	SU	56	39	39	51	94	88	98	72	94	87	108	114	125	149	110	81	127	171	144	198	214	245	204	210	12.2	24.5	24
17	MO	239	255	207	214	189	144	143	231	226	239	228	188	210	193	177	193	158	147	139	89	92	81	102	170	17.7	25.5	24
18	TU	199	172	166	107	61	120	204	153	190	201	213	207	198	153	71	61	66	79	67	78	57	57	81	54	12.6	21.3	24
19	WE	57	29	70	78	82	125	140	147	185	125	54	49	108	181	187	195	192	194	170	163	157	83	85	105	12.3	19.5	24
20	TH	52	151	137	121	64	50	38	37	53	75	54	42	43	31	44	99	85	59	93	133	87	79	79	59	7.4	15.1	24
21	FR	35	31	14	15	17	14	20	24	38	67	100	95	87	58	51	67	57	68	23	5	16	27	33	42	4.2	10.0	24
22	SA	59	59	55	60	24	29	31	20	23	21	11	14	29	30	90	93	66	32	45	20	20	37	41	17	3.9	9.3	24
23	SU	35	37	18	47	55	51	50	55	63	45	55	68	67	45	52	53	47	55	55	40	22	51	41	85	5.0	8.5	24
24	MO	61	69	130	90	87	175	101	168	206	207	197	181	155	153	143	130	94	93	112	125	74	106	146	139	13.1	20.7	24
25	TU	88	100	85	83	112	124	112	167	125	91	62	196	190	208	182	166	161	168	178	155	176	184	182	166	14.4	20.8	24
26	WE	157	150	175	178	187	186	157	137	145	145	139	147	149	151	137	122	111	123	88	52	29	45	42	35	12.4	18.7	24
27	TH	39	25	41	50	56	70	71	53	46	53	22	30	59	66	61	81	93	87	73	83	35	52	44	40	5.5	9.3	24
28	FR	60	28	37	27	37	24	17	18	30	17	19	30	42	31	24	11	30	63	70	64	52	58	112	106	4.2	11.2	24
29	SA	78	38	60	95	35	55	105	75	76	160	147	167	174	165	145	112	104	106	59	44	29	33	28	23	8.8	17.4	24
30	SU	31	37	52	76	97	88	70	97	109	111	94	107	115	93	70	65	73	90	95	73	84	92	68	67	8.1	11.5	24
AVG		72	70	72	72	67	72	74	80	84	85	80	87	92	92	88	86	80	81	76	71	69	71	73	75	7.7		
MAX		257	263	238	233	233	213	210	231	226	239	228	223	210	208	188	195	199	194	179	198	234	245	226	210		26.3	
DAYS		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30			720

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#
# This data is from: Walla Walla (stn. code alw)
#
#
Walla Walla Site and Instrument specifications
Walla Walla, WA
NWS: This site is a National Weather Service site.

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Archived data available via this UW link since: 01 Jul 1996

STATION NAME	ID	LAT	Lon	ELEV M	ELEV FT	WMO															
WALLA WALLA RGN WA US	KALW	46.10	-118.28	367 m	1204 ft	72788															
#							# Station precip: maximum and daily avg (inches) over entire period of record -----*														
#							# Station extrema: daily hi/lo temperatures over entire period of record -----*														
#							# Station average: daily hi/lo temperatures over entire period of record -----*														
#							# Station 6-hour hi/lo temperatures -----*														
#							# Rain Gauge (inches) -----*														
#							# Relative humidity (%) -----*														
#							# Solar irradiance (W/m^2) -----*														
#							# Visibility (miles) -----*														
#							# Cloud height (100's of feet) -----*														
#							# Cloud cover (1/8ths of sky) -----*														
#							# Wind peak (nautical miles per hour) -----*														
#							# Wind speed (nautical miles per hour) -----*														
#							# Wind direction (clockwise degrees from North) --*														
#							# Dewpoint temperature (F) -----*														
#							# Air temperature (F) -----*														
#							# Pressure (millibars) -----*														
#							#														
Date(GMT)	Julian date	Pres	Tair	Tdew	Dir	Spd	Peak	Cc	Cht	Vis	Radn	RelH	Rain	hi	lo	hi	lo	hi	lo	max	avg
2003-10-01 07:53	2452914.3284722	1016.7	60.0	47.0	110	7.0	NA	0	120	10	NA	62.1	NA	M	M	M	M	M	M	M	M
2003-10-01 08:53	2452914.3701389	1017.2	56.0	46.0	130	4.0	NA	0	120	10	NA	69.0	NA	M	M	M	M	M	M	M	M
2003-10-01 09:53	2452914.4118056	1017.2	56.0	46.0	100	4.0	NA	0	120	10	NA	69.0	NA	M	M	M	M	M	M	M	M
2003-10-01 10:53	2452914.4534722	1017.1	55.0	46.0	70	5.0	NA	0	120	10	NA	71.6	NA	M	M	M	M	M	M	M	M
2003-10-01 11:53	2452914.4951389	1017.6	55.0	46.0	120	4.0	NA	0	120	10	NA	71.6	0.00	60	55	M	48.2	M	35	M	M
2003-10-01 12:53	2452914.5368056	1017.6	56.0	45.0	0	0.0	NA	0	120	10	NA	66.5	NA	M	M	M	M	M	M	M	M
2003-10-01 13:53	2452914.5784722	1018.0	54.0	45.0	150	6.0	NA	0	120	10	NA	71.5	NA	M	M	M	M	M	M	M	M
2003-10-01 14:53	2452914.6201389	1018.3	56.0	45.0	150	6.0	NA	0	120	10	NA	66.5	NA	M	M	M	M	M	M	M	M
2003-10-01 15:53	2452914.6618056	1018.4	59.0	46.0	210	6.0	NA	0	120	10	NA	62.0	NA	M	M	M	M	M	M	M	M
2003-10-01 16:53	2452914.7034722	1018.3	61.0	44.0	230	6.0	NA	0	120	10	NA	53.5	NA	M	M	M	M	M	M	M	M
2003-10-01 17:53	2452914.7451389	1018.2	63.0	43.0	220	6.0	NA	0	120	10	NA	47.9	NA	63	53	M	M	M	M	M	M













2003-10-12 06:53	2452925.2868056	1015.6	53.0	47.0	210	8.0	NA	6	50	10	NA	80.0	NA	M	M	M	M	M	M	M	M
2003-10-12 07:53	2452925.3284722	1016.7	52.0	47.0	220	7.0	NA	8	95	10	NA	83.0	NA	M	M	M	M	M	M	M	M
2003-10-12 08:53	2452925.3701389	1017.8	52.0	47.0	210	8.0	NA	8	28	10	NA	83.0	NA	M	M	M	M	M	M	M	M
2003-10-12 09:12	2452925.3833333	NA	52.0	46.0	200	10.0	NA	8	55	10	NA	79.9	NA	M	M	M	M	M	M	M	M
2003-10-12 09:53	2452925.4118056	1018.7	50.0	45.0	200	8.0	NA	6	85	10	NA	82.8	NA	M	M	M	M	M	M	M	M
2003-10-12 10:53	2452925.4534722	1019.3	50.0	44.0	190	9.0	18.0	6	55	10	NA	79.7	NA	M	M	M	M	M	M	M	M
2003-10-12 11:53	2452925.4951389	1019.9	49.0	44.0	190	12.0	NA	1	120	10	NA	82.8	0.08	54	49	M	45.1	M	35	M	M
2003-10-12 12:53	2452925.5368056	1020.0	47.0	42.0	180	9.0	NA	0	120	10	NA	82.6	NA	M	M	M	M	M	M	M	M
2003-10-12 13:53	2452925.5784722	1020.6	48.0	40.0	190	11.0	NA	0	120	10	NA	73.6	NA	M	M	M	M	M	M	M	M
2003-10-12 14:53	2452925.6201389	1021.3	50.0	40.0	190	12.0	NA	8	70	10	NA	68.3	NA	M	M	M	M	M	M	M	M
2003-10-12 15:53	2452925.6618056	1021.7	54.0	40.0	200	12.0	NA	6	85	10	NA	59.0	NA	M	M	M	M	M	M	M	M
2003-10-12 16:53	2452925.7034722	1022.1	56.0	38.0	210	19.0	NA	1	120	10	NA	50.7	NA	M	M	M	M	M	M	M	M
2003-10-12 17:53	2452925.7451389	1022.2	57.0	37.0	220	13.0	NA	3	120	10	NA	47.0	NA	57	47	M	M	M	M	M	M
2003-10-12 18:53	2452925.7868056	1022.2	57.0	40.0	200	13.0	NA	3	120	10	NA	52.9	NA	M	M	M	M	M	M	M	M
2003-10-12 19:53	2452925.8284722	1022.1	57.0	40.0	190	12.0	NA	8	70	10	NA	52.9	NA	M	M	M	M	M	M	M	M
2003-10-12 20:53	2452925.8701389	1021.9	59.0	41.0	190	10.0	NA	6	100	10	NA	51.2	NA	M	M	M	M	M	M	0.74	0.058
2003-10-12 21:53	2452925.9118056	1021.9	60.0	40.0	230	15.0	NA	8	70	10	NA	47.5	NA	M	M	M	M	M	M	M	M
2003-10-12 22:53	2452925.9534722	1022.1	58.0	43.0	200	7.0	NA	8	60	10	NA	57.3	NA	M	M	M	M	M	M	M	M
2003-10-12 23:53	2452925.9951389	1022.5	57.0	43.0	230	7.0	NA	8	65	10	NA	59.4	NA	60	57	67.4	M	81	M	M	M
2003-10-13 00:53	2452926.0368056	1022.2	57.0	40.0	220	11.0	NA	3	120	10	NA	52.9	NA	M	M	M	M	M	M	M	M
2003-10-13 01:53	2452926.0784722	1022.9	57.0	42.0	210	12.0	NA	8	90	10	NA	57.1	NA	M	M	M	M	M	M	M	M
2003-10-13 02:53	2452926.1201389	1023.5	55.0	40.0	210	15.0	NA	8	110	10	NA	56.8	NA	M	M	M	M	M	M	M	M
2003-10-13 03:53	2452926.1618056	1023.9	54.0	40.0	210	11.0	NA	6	120	10	NA	59.0	NA	M	M	M	M	M	M	M	M
2003-10-13 04:53	2452926.2034722	1023.8	53.0	39.0	200	11.0	NA	3	120	10	NA	58.8	NA	M	M	M	M	M	M	M	M
2003-10-13 05:53	2452926.2451389	1024.2	53.0	39.0	200	12.0	NA	0	120	10	NA	58.8	NA	58	51	M	M	M	M	M	M
2003-10-13 06:53	2452926.2868056	1024.7	52.0	39.0	200	13.0	NA	1	120	10	NA	61.0	NA	M	M	M	M	M	M	M	M
2003-10-13 07:53	2452926.3284722	1025.4	51.0	38.0	190	10.0	20.0	8	85	10	NA	60.9	NA	M	M	M	M	M	M	M	M
2003-10-13 08:53	2452926.3701389	1025.8	51.0	38.0	200	12.0	NA	8	80	10	NA	60.9	NA	M	M	M	M	M	M	M	M
2003-10-13 09:53	2452926.4118056	1026.2	52.0	38.0	200	13.0	NA	8	85	10	NA	58.7	NA	M	M	M	M	M	M	M	M
2003-10-13 10:53	2452926.4534722	1026.5	51.0	37.0	200	11.0	NA	8	80	10	NA	58.5	NA	M	M	M	M	M	M	M	M
2003-10-13 11:53	2452926.4951389	1026.9	51.0	37.0	200	10.0	NA	8	80	10	NA	58.5	0.00	53	51	M	44.8	M	33	M	M
2003-10-13 12:53	2452926.5368056	1027.4	49.0	36.0	170	9.0	NA	1	120	10	NA	60.6	NA	M	M	M	M	M	M	M	M
2003-10-13 13:53	2452926.5784722	1027.8	48.0	36.0	170	10.0	NA	0	120	10	NA	62.9	NA	M	M	M	M	M	M	M	M
2003-10-13 14:53	2452926.6201389	1028.2	49.0	36.0	180	9.0	NA	0	120	10	NA	60.6	NA	M	M	M	M	M	M	M	M
2003-10-13 15:53	2452926.6618056	1028.5	50.0	38.0	180	8.0	NA	0	120	10	NA	63.2	NA	M	M	M	M	M	M	M	M
2003-10-13 16:53	2452926.7034722	1028.9	54.0	39.0	200	9.0	NA	3	120	10	NA	56.7	NA	M	M	M	M	M	M	M	M
2003-10-13 17:53	2452926.7451389	1028.6	57.0	40.0	220	10.0	NA	6	42	10	NA	52.9	NA	57	48	M	M	M	M	M	M
2003-10-13 18:53	2452926.7868056	1028.0	59.0	40.0	190	13.0	NA	0	120	10	NA	49.2	NA	M	M	M	M	M	M	M	M
2003-10-13 19:53	2452926.8284722	1027.0	61.0	38.0	210	10.0	NA	0	120	10	NA	42.4	NA	M	M	M	M	M	M	M	M
2003-10-13 20:53	2452926.8701389	1026.1	63.0	38.0	220	11.0	NA	0	120	10	NA	39.5	NA	M	M	M	M	M	M	0.29	0.020
2003-10-13 21:53	2452926.9118056	1025.1	62.0	37.0	280	5.0	NA	0	120	10	NA	39.3	NA	M	M	M	M	M	M	M	M
2003-10-13 22:53	2452926.9534722	1024.3	63.0	37.0	NA	3.0	NA	0	120	9	NA	38.0	NA	M	M	M	M	M	M	M	M
2003-10-13 23:53	2452926.9951389	1023.2	63.0	37.0	360	3.0	NA	0	120	10	NA	38.0	NA	64	57	66.9	M	81	M	M	M
2003-10-14 00:53	2452927.0368056	1022.2	57.0	38.0	30	9.0	NA	0	120	10	NA	48.9	NA	M	M	M	M	M	M	M	M
2003-10-14 01:53	2452927.0784722	1021.5	54.0	37.0	70	9.0	NA	0	120	10	NA	52.4	NA	M	M	M	M	M	M	M	M
2003-10-14 02:53	2452927.1201389	1020.7	54.0	37.0	80	9.0	NA	0	120	10	NA	52.4	NA	M	M	M	M	M	M	M	M
2003-10-14 03:53	2452927.1618056	1019.7	54.0	37.0	80	8.0	NA	0	120	10	NA	52.4	NA	M	M	M	M	M	M	M	M
2003-10-14 04:53	2452927.2034722	1018.4	55.0	35.0	80	8.0	NA	0	120	10	NA	46.7	NA	M	M	M	M	M	M	M	M
2003-10-14 05:53	2452927.2451389	1017.6	53.0	38.0	140	4.0	NA	0	120	10	NA	56.6	NA	63	52	M	M	M	M	M	M
2003-10-14 06:53	2452927.2868056	1017.2	52.0	38.0	150	4.0	NA	0	120	10	NA	58.7	NA	M	M	M	M	M	M	M	M



2003-10-16	03:53	2452929.1618056	1017.2	49.0	41.0	190	9.0	NA	3	120	10	NA	73.7	NA	M	M	M	M	M	M	M
2003-10-16	04:53	2452929.2034722	1017.6	49.0	42.0	180	10.0	NA	0	120	10	NA	76.7	NA	M	M	M	M	M	M	M
2003-10-16	05:53	2452929.2451389	1017.8	49.0	41.0	170	8.0	NA	0	120	10	NA	73.7	NA	53	48	M	M	M	M	M
2003-10-16	06:53	2452929.2868056	1017.8	50.0	40.0	170	9.0	NA	0	120	10	NA	68.3	NA	M	M	M	M	M	M	M
2003-10-16	07:53	2452929.3284722	1017.9	51.0	39.0	170	8.0	NA	6	120	10	NA	63.3	NA	M	M	M	M	M	M	M
2003-10-16	08:53	2452929.3701389	1017.7	52.0	38.0	150	6.0	NA	6	110	10	NA	58.7	NA	M	M	M	M	M	M	M
2003-10-16	09:53	2452929.4118056	1017.9	50.0	39.0	110	5.0	NA	8	85	10	NA	65.7	NA	M	M	M	M	M	M	M
2003-10-16	10:53	2452929.4534722	1017.2	51.0	38.0	150	7.0	NA	6	90	10	NA	60.9	NA	M	M	M	M	M	M	M
2003-10-16	11:53	2452929.4951389	1016.2	52.0	40.0	0	0.0	NA	6	80	10	NA	63.5	0.21	53	48	M	43.9	M	29	M
2003-10-16	12:53	2452929.5368056	1016.3	51.0	41.0	0	0.0	NA	8	70	10	NA	68.5	NA	M	M	M	M	M	M	M
2003-10-16	13:53	2452929.5784722	1016.0	54.0	41.0	140	3.0	NA	8	65	10	NA	61.3	NA	M	M	M	M	M	M	M
2003-10-16	14:53	2452929.6201389	1015.1	57.0	42.0	180	10.0	NA	8	100	10	NA	57.1	NA	M	M	M	M	M	M	M
2003-10-16	15:53	2452929.6618056	1015.3	59.0	42.0	160	14.0	NA	8	70	10	NA	53.2	NA	M	M	M	M	M	M	M
2003-10-16	16:53	2452929.7034722	1016.2	60.0	44.0	180	16.0	NA	8	60	10	NA	55.4	NA	M	M	M	M	M	M	M
2003-10-16	17:53	2452929.7451389	1016.7	59.0	49.0	150	13.0	NA	8	65	10	NA	69.4	NA	61	50	M	M	M	M	M
2003-10-16	18:53	2452929.7868056	1016.8	60.0	50.0	180	9.0	NA	8	60	10	NA	69.5	NA	M	M	M	M	M	M	M
2003-10-16	19:53	2452929.8284722	1016.7	60.0	50.0	190	8.0	NA	8	60	10	NA	69.5	NA	M	M	M	M	M	M	M
2003-10-16	20:53	2452929.8701389	1016.1	61.0	51.0	170	12.0	NA	8	60	10	NA	69.6	NA	M	M	M	M	M	M	0.36
2003-10-16	21:53	2452929.9118056	1015.3	63.0	51.0	170	12.0	NA	8	80	10	NA	64.8	NA	M	M	M	M	M	M	0.012
2003-10-16	22:53	2452929.9534722	1015.0	64.0	50.0	170	12.0	NA	8	110	10	NA	60.3	NA	M	M	M	M	M	M	M
2003-10-16	23:53	2452929.9951389	1014.1	65.0	49.0	180	11.0	21.0	8	110	10	NA	56.1	NA	66	59	65.4	M	86	M	M
2003-10-17	00:53	2452930.0368056	1013.7	66.0	49.0	160	11.0	NA	1	120	10	NA	54.2	NA	M	M	M	M	M	M	M
2003-10-17	01:53	2452930.0784722	1013.7	64.0	49.0	160	7.0	NA	1	120	10	NA	58.1	NA	M	M	M	M	M	M	M
2003-10-17	02:53	2452930.1201389	1013.7	64.0	48.0	180	3.0	NA	0	120	10	NA	56.0	NA	M	M	M	M	M	M	M
2003-10-17	03:53	2452930.1618056	1014.3	57.0	48.0	300	4.0	NA	0	120	10	NA	71.8	NA	M	M	M	M	M	M	M
2003-10-17	04:53	2452930.2034722	1014.7	56.0	48.0	110	3.0	NA	0	120	10	NA	74.4	NA	M	M	M	M	M	M	M
2003-10-17	05:53	2452930.2451389	1014.7	55.0	48.0	110	5.0	NA	0	120	10	NA	77.2	NA	66	54	M	M	M	M	M
2003-10-17	06:53	2452930.2868056	1014.5	58.0	47.0	160	4.0	NA	0	120	10	NA	66.7	NA	M	M	M	M	M	M	M
2003-10-17	07:53	2452930.3284722	1014.9	58.0	46.0	0	0.0	NA	0	120	10	NA	64.2	NA	M	M	M	M	M	M	M
2003-10-17	08:53	2452930.3701389	1016.3	52.0	46.0	60	3.0	NA	0	120	10	NA	79.9	NA	M	M	M	M	M	M	M
2003-10-17	09:53	2452930.4118056	1016.7	55.0	47.0	160	7.0	NA	0	120	10	NA	74.3	NA	M	M	M	M	M	M	M
2003-10-17	10:53	2452930.4534722	1015.6	57.0	46.0	180	10.0	NA	0	120	10	NA	66.6	NA	M	M	M	M	M	M	M
2003-10-17	11:53	2452930.4951389	1015.9	59.0	45.0	NA	3.0	NA	0	120	10	NA	59.6	0.16	59	52	M	43.6	M	29	M
2003-10-17	12:53	2452930.5368056	1016.2	52.0	45.0	50	5.0	NA	0	120	10	NA	76.9	NA	M	M	M	M	M	M	M
2003-10-17	13:53	2452930.5784722	1016.0	54.0	44.0	110	5.0	NA	0	120	10	NA	68.8	NA	M	M	M	M	M	M	M
2003-10-17	14:53	2452930.6201389	1016.4	59.0	44.0	200	9.0	NA	0	120	10	NA	57.4	NA	M	M	M	M	M	M	M
2003-10-17	15:53	2452930.6618056	1016.9	64.0	47.0	200	8.0	NA	0	120	10	NA	53.9	NA	M	M	M	M	M	M	M
2003-10-17	16:53	2452930.7034722	1017.4	68.0	49.0	180	8.0	NA	0	120	10	NA	50.6	NA	M	M	M	M	M	M	M
2003-10-17	17:53	2452930.7451389	1017.3	72.0	49.0	210	7.0	NA	0	120	10	NA	44.1	NA	72	51	M	M	M	M	M
2003-10-17	18:53	2452930.7868056	1017.3	74.0	47.0	240	10.0	18.0	0	120	10	NA	38.3	NA	M	M	M	M	M	M	M
2003-10-17	19:53	2452930.8284722	1016.7	76.0	46.0	270	8.0	NA	0	120	10	NA	34.5	NA	M	M	M	M	M	M	M
2003-10-17	20:53	2452930.8701389	1016.0	77.0	47.0	280	5.0	NA	0	120	10	NA	34.6	NA	M	M	M	M	M	M	0.28
2003-10-17	21:53	2452930.9118056	1015.5	78.0	47.0	0	0.0	NA	0	120	10	NA	33.5	NA	M	M	M	M	M	M	0.022
2003-10-17	22:53	2452930.9534722	1015.5	79.0	49.0	360	5.0	NA	0	120	10	NA	34.9	NA	M	M	M	M	M	M	M
2003-10-17	23:53	2452930.9951389	1015.3	76.0	50.0	340	5.0	NA	0	120	10	NA	40.1	NA	79	72	64.8	M	80	M	M
2003-10-18	00:53	2452931.0368056	1015.5	68.0	54.0	40	6.0	NA	0	120	10	NA	60.9	NA	M	M	M	M	M	M	M
2003-10-18	01:53	2452931.0784722	1015.6	63.0	52.0	90	9.0	NA	0	120	10	NA	67.3	NA	M	M	M	M	M	M	M
2003-10-18	02:53	2452931.1201389	1015.4	61.0	50.0	100	8.0	NA	0	120	10	NA	67.1	NA	M	M	M	M	M	M	M
2003-10-18	03:53	2452931.1618056	1015.1	60.0	49.0	100	9.0	NA	0	120	10	NA	66.9	NA	M	M	M	M	M	M	M
2003-10-18	04:53	2452931.2034722	1015.5	55.0	49.0	90	4.0	NA	0	120	10	NA	80.1	NA	M	M	M	M	M	M	M







2003-10-24	08:53	2452937.3701389	1030.2	45.0	34.0	130	5.0	NA	0	120	10	NA	65.1	NA	M	M	M	M	M	M	M
2003-10-24	09:53	2452937.4118056	1031.1	42.0	33.0	100	3.0	NA	0	120	10	NA	70.2	NA	M	M	M	M	M	M	M
2003-10-24	10:53	2452937.4534722	1031.2	42.0	34.0	100	6.0	NA	0	120	10	NA	73.0	NA	M	M	M	M	M	M	M
2003-10-24	11:53	2452937.4951389	1030.9	43.0	34.0	110	4.0	NA	0	120	10	NA	70.3	0.00	49	41	M	41.6	M	32	M
2003-10-24	12:53	2452937.5368056	1031.1	42.0	34.0	100	3.0	NA	0	120	10	NA	73.0	NA	M	M	M	M	M	M	M
2003-10-24	13:53	2452937.5784722	1032.0	41.0	34.0	110	3.0	NA	0	120	10	NA	75.9	NA	M	M	M	M	M	M	M
2003-10-24	14:53	2452937.6201389	1032.5	40.0	34.0	80	4.0	NA	0	120	10	NA	78.9	NA	M	M	M	M	M	M	M
2003-10-24	15:53	2452937.6618056	1033.0	46.0	36.0	0	0.0	NA	0	120	10	NA	67.9	NA	M	M	M	M	M	M	M
2003-10-24	16:53	2452937.7034722	1033.6	48.0	35.0	0	0.0	NA	0	120	10	NA	60.5	NA	M	M	M	M	M	M	M
2003-10-24	17:53	2452937.7451389	1033.7	50.0	36.0	290	4.0	NA	0	120	10	NA	58.4	NA	51	40	M	M	M	M	M
2003-10-24	18:53	2452937.7868056	1033.8	52.0	36.0	270	4.0	NA	0	120	10	NA	54.2	NA	M	M	M	M	M	M	M
2003-10-24	19:53	2452937.8284722	1033.6	54.0	31.0	0	0.0	NA	0	120	10	NA	41.2	NA	M	M	M	M	M	M	M
2003-10-24	20:53	2452937.8701389	1033.3	56.0	30.0	330	5.0	NA	0	120	10	NA	36.8	NA	M	M	M	M	M	M	0.73
2003-10-24	21:53	2452937.9118056	1032.9	56.0	30.0	260	4.0	NA	0	120	10	NA	36.8	NA	M	M	M	M	M	M	0.079
2003-10-24	22:53	2452937.9534722	1033.1	58.0	28.0	350	3.0	NA	0	120	10	NA	31.6	NA	M	M	M	M	M	M	M
2003-10-24	23:53	2452937.9951389	1033.2	57.0	28.0	0	0.0	NA	0	120	10	NA	32.7	NA	58	50	61.0	M	75	M	M
2003-10-25	00:53	2452938.0368056	1033.6	54.0	27.0	0	0.0	NA	0	120	10	NA	35.0	NA	M	M	M	M	M	M	M
2003-10-25	01:53	2452938.0784722	1034.1	50.0	32.0	140	5.0	NA	0	120	10	NA	49.8	NA	M	M	M	M	M	M	M
2003-10-25	02:53	2452938.1201389	1035.0	45.0	31.0	90	7.0	NA	0	120	10	NA	57.7	NA	M	M	M	M	M	M	M
2003-10-25	03:53	2452938.1618056	1034.8	45.0	31.0	110	7.0	NA	0	120	10	NA	57.7	NA	M	M	M	M	M	M	M
2003-10-25	04:53	2452938.2034722	1034.8	45.0	31.0	120	6.0	NA	0	120	10	NA	57.7	NA	M	M	M	M	M	M	M
2003-10-25	05:53	2452938.2451389	1035.2	46.0	30.0	120	3.0	NA	0	120	10	NA	53.3	NA	58	44	M	M	M	M	M
2003-10-25	06:53	2452938.2868056	1035.7	42.0	30.0	100	6.0	NA	0	120	10	NA	62.1	NA	M	M	M	M	M	M	M
2003-10-25	07:53	2452938.3284722	1035.6	43.0	30.0	100	6.0	NA	0	120	10	NA	59.8	NA	M	M	M	M	M	M	M
2003-10-25	08:53	2452938.3701389	1036.2	39.0	29.0	80	8.0	NA	0	120	10	NA	67.0	NA	M	M	M	M	M	M	M
2003-10-25	09:53	2452938.4118056	1036.5	39.0	28.0	120	3.0	NA	0	120	10	NA	64.3	NA	M	M	M	M	M	M	M
2003-10-25	10:53	2452938.4534722	1036.2	37.0	28.0	100	4.0	NA	0	120	10	NA	69.6	NA	M	M	M	M	M	M	M
2003-10-25	11:53	2452938.4951389	1036.1	39.0	28.0	90	6.0	NA	0	120	10	NA	64.3	0.00	46	37	M	41.3	M	27	M
2003-10-25	12:53	2452938.5368056	1036.7	39.0	29.0	0	0.0	NA	0	120	10	NA	67.0	NA	M	M	M	M	M	M	M
2003-10-25	13:53	2452938.5784722	1037.0	38.0	28.0	110	4.0	NA	0	120	10	NA	66.9	NA	M	M	M	M	M	M	M
2003-10-25	14:53	2452938.6201389	1037.3	39.0	28.0	0	0.0	NA	0	120	10	NA	64.3	NA	M	M	M	M	M	M	M
2003-10-25	15:53	2452938.6618056	1038.1	44.0	29.0	0	0.0	NA	0	120	10	NA	55.2	NA	M	M	M	M	M	M	M
2003-10-25	16:53	2452938.7034722	1038.5	48.0	29.0	240	3.0	NA	0	120	10	NA	47.5	NA	M	M	M	M	M	M	M
2003-10-25	17:53	2452938.7451389	1038.3	49.0	29.0	250	5.0	NA	0	120	10	NA	45.7	NA	50	37	M	M	M	M	M
2003-10-25	18:53	2452938.7868056	1038.4	53.0	30.0	260	4.0	NA	0	120	10	NA	41.1	NA	M	M	M	M	M	M	M
2003-10-25	19:53	2452938.8284722	1037.7	54.0	31.0	270	5.0	NA	0	120	10	NA	41.2	NA	M	M	M	M	M	M	M
2003-10-25	20:53	2452938.8701389	1037.4	57.0	30.0	NA	3.0	NA	0	120	10	NA	35.5	NA	M	M	M	M	M	M	0.32
2003-10-25	21:53	2452938.9118056	1036.9	58.0	28.0	0	0.0	NA	0	120	10	NA	31.6	NA	M	M	M	M	M	M	0.021
2003-10-25	22:53	2452938.9534722	1036.6	60.0	28.0	0	0.0	NA	0	120	10	NA	29.4	NA	M	M	M	M	M	M	M
2003-10-25	23:53	2452938.9951389	1036.0	60.0	28.0	0	0.0	NA	0	120	10	NA	29.4	NA	61	49	60.4	M	81	M	M
2003-10-26	00:53	2452939.0368056	1036.2	55.0	32.0	260	7.0	NA	0	120	10	NA	41.4	NA	M	M	M	M	M	M	M
2003-10-26	01:53	2452939.0784722	1036.6	52.0	34.0	100	5.0	NA	0	120	10	NA	50.1	NA	M	M	M	M	M	M	M
2003-10-26	02:53	2452939.1201389	1036.9	50.0	34.0	0	0.0	NA	0	120	10	NA	53.9	NA	M	M	M	M	M	M	M
2003-10-26	03:53	2452939.1618056	1036.9	47.0	34.0	120	4.0	NA	0	120	10	NA	60.3	NA	M	M	M	M	M	M	M
2003-10-26	04:53	2452939.2034722	1037.1	46.0	34.0	100	5.0	NA	0	120	10	NA	62.7	NA	M	M	M	M	M	M	M
2003-10-26	05:53	2452939.2451389	1037.0	45.0	34.0	100	6.0	NA	0	120	10	NA	65.1	NA	60	44	M	M	M	M	M
2003-10-26	06:53	2452939.2868056	1036.8	44.0	34.0	0	0.0	NA	0	120	10	NA	67.6	NA	M	M	M	M	M	M	M
2003-10-26	07:53	2452939.3284722	1036.6	44.0	34.0	110	3.0	NA	0	120	10	NA	67.6	NA	M	M	M	M	M	M	M
2003-10-26	08:53	2452939.3701389	1036.5	43.0	33.0	0	0.0	NA	0	120	10	NA	67.5	NA	M	M	M	M	M	M	M
2003-10-26	09:53	2452939.4118056	1037.0	42.0	34.0	80	3.0	NA	0	120	10	NA	73.0	NA	M	M	M	M	M	M	M

2003-10-26	10:53	2452939.4534722	1036.7	45.0	34.0	130	5.0	NA	0	120	10	NA	65.1	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	11:53	2452939.4951389	1036.4	43.0	33.0	130	3.0	NA	0	120	10	NA	67.5	0.00	46	41	M	41.0	M	29	M	M	M	M	M
2003-10-26	12:53	2452939.5368056	1036.1	42.0	33.0	0	0.0	NA	0	120	10	NA	70.2	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	13:53	2452939.5784722	1036.2	42.0	33.0	90	3.0	NA	0	120	10	NA	70.2	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	14:53	2452939.6201389	1036.1	43.0	32.0	150	4.0	NA	0	120	10	NA	64.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	15:53	2452939.6618056	1036.1	48.0	34.0	0	0.0	NA	0	120	10	NA	58.1	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	16:53	2452939.7034722	1036.4	50.0	34.0	220	4.0	NA	0	120	10	NA	53.9	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	17:53	2452939.7451389	1036.2	52.0	32.0	NA	3.0	NA	0	120	10	NA	46.2	NA	52	41	M	M	M	M	M	M	M	M	M
2003-10-26	18:53	2452939.7868056	1035.4	55.0	31.0	220	5.0	NA	0	120	10	NA	39.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	19:53	2452939.8284722	1034.5	58.0	33.0	NA	4.0	NA	0	120	10	NA	38.7	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	20:53	2452939.8701389	1033.3	59.0	31.0	0	0.0	NA	0	120	10	NA	34.4	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	21:53	2452939.9118056	1032.0	61.0	31.0	0	0.0	NA	0	120	10	NA	32.0	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	22:53	2452939.9534722	1031.5	62.0	31.0	0	0.0	NA	0	120	10	NA	30.9	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-26	23:53	2452939.9951389	1031.0	63.0	32.0	0	0.0	NA	0	120	10	NA	31.1	NA	63	52	59.8	M	79	M	M	M	M	M	M
2003-10-27	00:53	2452940.0368056	1030.1	57.0	35.0	320	4.0	NA	0	120	10	NA	43.4	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	01:53	2452940.0784722	1029.7	54.0	34.0	80	7.0	NA	0	120	10	NA	46.5	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	02:53	2452940.1201389	1029.8	50.0	36.0	60	8.0	NA	0	120	10	NA	58.4	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	03:53	2452940.1618056	1028.8	52.0	37.0	140	5.0	NA	0	120	10	NA	56.4	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	04:53	2452940.2034722	1028.5	52.0	37.0	160	6.0	NA	0	120	10	NA	56.4	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	05:53	2452940.2451389	1028.1	50.0	37.0	0	0.0	NA	0	120	10	NA	60.8	NA	63	47	M	M	M	M	M	M	M	M	M
2003-10-27	06:53	2452940.2868056	1027.2	49.0	37.0	130	4.0	NA	0	120	10	NA	63.1	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	07:53	2452940.3284722	1026.7	49.0	39.0	0	0.0	NA	0	120	10	NA	68.2	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	08:53	2452940.3701389	1026.3	50.0	42.0	100	4.0	NA	0	120	10	NA	73.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	09:53	2452940.4118056	1025.6	50.0	40.0	170	5.0	NA	0	120	10	NA	68.3	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	10:53	2452940.4534722	1025.3	47.0	40.0	40	3.0	NA	0	120	10	NA	76.5	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	11:53	2452940.4951389	1024.7	48.0	39.0	120	6.0	NA	0	120	10	NA	70.8	0.00	52	45	M	40.7	M	30	M	M	M	M	M
2003-10-27	12:53	2452940.5368056	1024.5	49.0	40.0	130	5.0	NA	0	120	10	NA	70.9	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	13:53	2452940.5784722	1023.9	53.0	41.0	130	5.0	NA	0	120	10	NA	63.6	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	14:53	2452940.6201389	1023.3	56.0	40.0	170	7.0	NA	0	120	10	NA	54.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	15:53	2452940.6618056	1023.4	59.0	41.0	200	8.0	NA	0	120	10	NA	51.2	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	16:53	2452940.7034722	1023.5	63.0	41.0	NA	3.0	NA	0	120	10	NA	44.4	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	17:53	2452940.7451389	1023.3	66.0	39.0	250	6.0	NA	0	120	10	NA	37.0	NA	66	48	M	M	M	M	M	M	M	M	M
2003-10-27	18:53	2452940.7868056	1023.4	65.0	40.0	210	7.0	NA	6	120	10	NA	39.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	19:53	2452940.8284722	1022.9	66.0	42.0	210	9.0	NA	8	110	10	NA	41.5	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	20:53	2452940.8701389	1022.7	66.0	42.0	210	8.0	NA	3	120	10	NA	41.5	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	21:53	2452940.9118056	1022.0	67.0	42.0	220	5.0	NA	0	120	10	NA	40.1	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	22:53	2452940.9534722	1022.0	67.0	43.0	0	0.0	NA	0	120	10	NA	41.7	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-27	23:53	2452940.9951389	1021.6	65.0	46.0	0	0.0	NA	1	120	10	NA	50.1	NA	67	65	59.3	M	84	M	M	M	M	M	M
2003-10-28	00:53	2452941.0368056	1021.2	63.0	45.0	120	5.0	NA	0	120	9	NA	51.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	01:53	2452941.0784722	1020.8	62.0	43.0	160	5.0	NA	8	120	10	NA	49.7	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	02:53	2452941.1201389	1020.8	60.0	42.0	130	5.0	NA	6	110	10	NA	51.3	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	03:53	2452941.1618056	1020.5	56.0	41.0	110	6.0	NA	1	120	10	NA	57.0	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	04:53	2452941.2034722	1020.1	60.0	43.0	170	10.0	NA	1	120	10	NA	53.3	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	05:53	2452941.2451389	1020.0	59.0	44.0	180	12.0	NA	0	120	10	NA	57.4	NA	65	56	M	M	M	M	M	M	M	M	M
2003-10-28	06:53	2452941.2868056	1020.0	58.0	43.0	180	11.0	NA	0	120	10	NA	57.3	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	07:53	2452941.3284722	1019.5	60.0	43.0	190	12.0	NA	6	65	10	NA	53.3	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	08:53	2452941.3701389	1019.1	60.0	43.0	190	12.0	NA	8	70	10	NA	53.3	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	09:53	2452941.4118056	1018.1	61.0	43.0	190	13.0	NA	6	70	10	NA	51.5	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	10:53	2452941.4534722	1017.5	60.0	46.0	180	12.0	NA	8	65	10	NA	59.8	NA	M	M	M	M	M	M	M	M	M	M	M
2003-10-28	11:53	2452941.4951389	1016.5	60.0	48.0	190	11.0	NA	1	120	10	NA	64.5	0.00	61	57	M	40.4	M	24	M	M	M	M	M







2003-10-31	23:53	2452944.9951389	1026.3	34.0	10.0	270	3.0	NA	0	120	10	NA	36.2	NA	37	28	56.9	M	72	M	M	M	M			
2003-11-01	00:53	2452945.0368056	1026.6	31.0	10.0	190	5.0	NA	0	120	10	NA	40.9	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	01:53	2452945.0784722	1026.9	30.0	11.0	150	5.0	NA	0	120	10	NA	44.5	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	02:53	2452945.1201389	1027.0	26.0	9.0	100	5.0	NA	0	120	10	NA	48.0	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	03:53	2452945.1618056	1026.9	25.0	9.0	100	6.0	NA	0	120	10	NA	50.0	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	04:53	2452945.2034722	1027.0	24.0	11.0	110	5.0	NA	0	120	10	NA	57.0	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	05:53	2452945.2451389	1026.7	24.0	11.0	120	4.0	NA	0	120	10	NA	57.0	NA	35	22	M	M	M	M	M	M	M			
2003-11-01	06:53	2452945.2868056	1026.5	22.0	9.0	110	5.0	NA	0	120	10	NA	56.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	07:53	2452945.3284722	1026.4	21.0	9.0	110	5.0	NA	0	120	10	NA	59.2	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	08:53	2452945.3701389	1026.1	22.0	9.0	120	4.0	NA	0	120	10	NA	56.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	09:53	2452945.4118056	1026.2	20.0	9.0	110	5.0	NA	0	120	10	NA	61.8	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	10:53	2452945.4534722	1025.5	22.0	9.0	110	6.0	NA	0	120	10	NA	56.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	11:53	2452945.4951389	1025.7	22.0	10.0	110	4.0	NA	0	120	10	NA	59.3	0.00	24	20	M	39.3	M	25	M	M	M			
2003-11-01	12:53	2452945.5368056	1025.5	25.0	11.0	120	4.0	NA	0	120	10	NA	54.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	13:53	2452945.5784722	1025.3	25.0	12.0	120	3.0	NA	6	120	10	NA	57.2	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	14:53	2452945.6201389	1025.1	24.0	12.0	90	3.0	NA	8	120	10	NA	59.6	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	15:53	2452945.6618056	1024.5	28.0	12.0	140	3.0	NA	6	110	10	NA	50.5	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	16:53	2452945.7034722	1024.1	30.0	11.0	0	0.0	NA	1	120	10	NA	44.5	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	17:53	2452945.7451389	1024.0	33.0	10.0	0	0.0	NA	0	120	10	NA	37.7	NA	33	22	M	M	M	M	M	M	M			
2003-11-01	18:53	2452945.7868056	1023.8	35.0	9.0	0	0.0	NA	0	120	10	NA	33.3	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	19:53	2452945.8284722	1022.7	37.0	9.0	NA	3.0	NA	6	100	10	NA	30.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	20:53	2452945.8701389	1021.9	38.0	9.0	NA	3.0	NA	6	110	10	NA	29.6	NA	M	M	M	M	M	M	M	1.56	0.121			
2003-11-01	21:53	2452945.9118056	1021.4	39.0	10.0	NA	3.0	NA	1	120	10	NA	29.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	22:53	2452945.9534722	1020.8	40.0	10.0	0	0.0	NA	6	110	10	NA	28.6	NA	M	M	M	M	M	M	M	M	M			
2003-11-01	23:53	2452945.9951389	1020.4	39.0	11.0	340	5.0	NA	8	110	10	NA	31.1	NA	41	33	56.3	M	71	M	M	M	M			
2003-11-02	00:53	2452946.0368056	1020.0	37.0	11.0	40	3.0	NA	8	110	10	NA	33.6	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	01:53	2452946.0784722	1019.8	36.0	13.0	50	4.0	NA	8	110	10	NA	38.2	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	02:53	2452946.1201389	1019.5	36.0	14.0	100	5.0	NA	8	110	10	NA	39.9	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	03:53	2452946.1618056	1019.1	34.0	16.0	100	4.0	NA	8	95	10	NA	47.2	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	04:53	2452946.2034722	1019.2	34.0	16.0	0	0.0	NA	8	95	10	NA	47.2	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	05:53	2452946.2451389	1019.0	34.0	14.0	170	4.0	NA	8	100	10	NA	43.2	NA	39	34	M	M	M	M	M	M	M			
2003-11-02	06:53	2452946.2868056	1018.5	34.0	14.0	140	4.0	NA	8	90	10	NA	43.2	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	07:53	2452946.3284722	1018.6	35.0	14.0	0	0.0	NA	8	36	10	NA	41.6	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	08:53	2452946.3701389	1018.6	34.0	13.0	200	5.0	NA	8	60	10	NA	41.4	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	09:53	2452946.4118056	1018.7	33.0	14.0	190	4.0	NA	8	70	10	NA	45.0	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	10:53	2452946.4534722	1018.3	33.0	13.0	170	6.0	NA	8	85	10	NA	43.1	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	11:53	2452946.4951389	1018.1	33.0	14.0	160	4.0	NA	8	60	10	NA	45.0	0.00	35	33	M	39.0	M	20	M	M	M			
2003-11-02	12:53	2452946.5368056	1017.8	33.0	14.0	170	3.0	NA	8	55	10	NA	45.0	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	13:53	2452946.5784722	1017.6	31.0	16.0	0	0.0	NA	8	40	10	NA	53.3	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	14:53	2452946.6201389	1017.2	30.0	17.0	0	0.0	NA	8	80	10	NA	57.9	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	15:53	2452946.6618056	1017.3	33.0	20.0	0	0.0	NA	8	85	10	NA	58.4	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	16:53	2452946.7034722	1017.1	34.0	18.0	180	3.0	NA	8	75	10	NA	51.5	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	17:53	2452946.7451389	1016.6	35.0	20.0	250	3.0	NA	8	70	10	NA	53.9	NA	35	29	M	M	M	M	M	M	M			
2003-11-02	18:53	2452946.7868056	1016.5	37.0	24.0	250	3.0	NA	8	50	10	NA	58.9	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	19:53	2452946.8284722	1016.0	39.0	24.0	NA	3.0	NA	8	46	10	NA	54.5	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	20:53	2452946.8701389	1015.4	39.0	27.0	NA	3.0	NA	8	27	10	NA	61.7	NA	M	M	M	M	M	M	M	M	0.60	0.084		
2003-11-02	21:00	2452946.8750000	NA	41.0	28.0	30	9.0	NA	8	36	10	NA	59.5	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	21:53	2452946.9118056	1015.1	41.0	26.0	NA	3.0	NA	8	49	10	NA	54.8	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	22:53	2452946.9534722	1014.5	43.0	25.0	360	7.0	NA	0	120	10	NA	48.7	NA	M	M	M	M	M	M	M	M	M			
2003-11-02	23:53	2452946.9951389	1014.6	40.0	24.0	360	7.0	NA	0	120	10	NA	52.4	NA	44	35	55.8	M	74	M	M	M	M			



2003-11-04 22:53	2452948.9534722	1024.4	38.0	20.0	0	0.0	NA	0	120	10	NA	47.9	NA	M	M	M	M	M	M	M	M
2003-11-04 23:53	2452948.9951389	1024.3	38.0	19.0	0	0.0	NA	0	120	10	NA	45.8	NA	39	32	54.7	M	76	M	M	M
2003-11-05 00:53	2452949.0368056	1024.2	35.0	18.0	0	0.0	NA	0	120	10	NA	49.5	NA	M	M	M	M	M	M	M	M
2003-11-05 01:53	2452949.0784722	1024.7	30.0	19.0	120	4.0	NA	0	120	10	NA	63.1	NA	M	M	M	M	M	M	M	M
2003-11-05 02:53	2452949.1201389	1024.5	29.0	20.0	100	7.0	NA	0	120	10	NA	68.6	NA	M	M	M	M	M	M	M	M
2003-11-05 03:53	2452949.1618056	1024.4	26.0	19.0	90	7.0	NA	0	120	10	NA	74.4	NA	M	M	M	M	M	M	M	M
2003-11-05 04:53	2452949.2034722	1024.3	24.0	18.0	80	9.0	NA	0	120	10	NA	77.5	NA	M	M	M	M	M	M	M	M
2003-11-05 05:53	2452949.2451389	1024.4	25.0	18.0	80	10.0	NA	0	120	10	NA	74.3	NA	38	24	M	M	M	M	M	M
2003-11-05 06:53	2452949.2868056	1024.3	27.0	18.0	160	5.0	NA	0	120	10	NA	68.4	NA	M	M	M	M	M	M	M	M
2003-11-05 07:53	2452949.3284722	1024.6	23.0	18.0	110	4.0	NA	0	120	10	NA	80.8	NA	M	M	M	M	M	M	M	M
2003-11-05 08:53	2452949.3701389	1024.7	23.0	17.0	150	3.0	NA	0	120	10	NA	77.4	NA	M	M	M	M	M	M	M	M
2003-11-05 09:53	2452949.4118056	1025.0	22.0	18.0	0	0.0	NA	0	120	10	NA	84.3	NA	M	M	M	M	M	M	M	M
2003-11-05 10:53	2452949.4534722	1024.9	21.0	16.0	0	0.0	NA	0	120	10	NA	80.7	NA	M	M	M	M	M	M	M	M
2003-11-05 11:53	2452949.4951389	1024.9	19.0	14.0	160	3.0	NA	0	120	10	NA	80.5	0.00	27	19	M	38.2	M	25	M	M
2003-11-05 12:53	2452949.5368056	1025.7	20.0	15.0	180	4.0	NA	0	120	10	NA	80.6	NA	M	M	M	M	M	M	M	M
2003-11-05 13:53	2452949.5784722	1026.2	19.0	15.0	160	5.0	NA	0	120	10	NA	84.1	NA	M	M	M	M	M	M	M	M
2003-11-05 14:53	2452949.6201389	1026.8	19.0	17.0	160	6.0	NA	0	120	10	NA	91.7	NA	M	M	M	M	M	M	M	M
2003-11-05 15:53	2452949.6618056	1027.4	22.0	18.0	170	4.0	NA	0	120	10	NA	84.3	NA	M	M	M	M	M	M	M	M
2003-11-05 16:53	2452949.7034722	1027.8	23.0	18.0	210	4.0	NA	0	120	10	NA	80.8	NA	M	M	M	M	M	M	M	M
2003-11-05 17:53	2452949.7451389	1027.9	26.0	19.0	NA	3.0	NA	0	120	10	NA	74.4	NA	27	18	M	M	M	M	M	M
2003-11-05 18:53	2452949.7868056	1027.8	30.0	19.0	240	4.0	NA	0	120	10	NA	63.1	NA	M	M	M	M	M	M	M	M
2003-11-05 19:53	2452949.8284722	1027.7	31.0	19.0	0	0.0	NA	0	120	10	NA	60.6	NA	M	M	M	M	M	M	M	M
2003-11-05 20:53	2452949.8701389	1027.2	33.0	18.0	0	0.0	NA	0	120	10	NA	53.6	NA	M	M	M	M	M	M	1.50	0.103
2003-11-05 21:53	2452949.9118056	1026.8	35.0	18.0	270	3.0	NA	0	120	10	NA	49.5	NA	M	M	M	M	M	M	M	M
2003-11-05 22:53	2452949.9534722	1026.7	37.0	18.0	NA	3.0	NA	0	120	10	NA	45.7	NA	M	M	M	M	M	M	M	M
2003-11-05 23:53	2452949.9951389	1026.8	36.0	18.0	260	4.0	NA	0	120	10	NA	47.5	NA	37	26	54.2	M	80	M	M	M
2003-11-06 00:53	2452950.0368056	1027.0	31.0	17.0	270	5.0	NA	0	120	10	NA	55.6	NA	M	M	M	M	M	M	M	M
2003-11-06 01:53	2452950.0784722	1027.3	29.0	17.0	130	3.0	NA	0	120	10	NA	60.3	NA	M	M	M	M	M	M	M	M
2003-11-06 02:53	2452950.1201389	1027.5	26.0	16.0	110	3.0	NA	0	120	10	NA	65.4	NA	M	M	M	M	M	M	M	M
2003-11-06 03:53	2452950.1618056	1027.8	24.0	16.0	100	5.0	NA	0	120	10	NA	71.1	NA	M	M	M	M	M	M	M	M
2003-11-06 04:53	2452950.2034722	1028.5	23.0	16.0	90	5.0	NA	0	120	10	NA	74.1	NA	M	M	M	M	M	M	M	M
2003-11-06 05:53	2452950.2451389	1028.8	24.0	17.0	150	4.0	NA	0	120	10	NA	74.2	NA	36	23	M	M	M	M	M	M
2003-11-06 06:53	2452950.2868056	1028.8	23.0	16.0	130	4.0	NA	0	120	10	NA	74.1	NA	M	M	M	M	M	M	M	M
2003-11-06 07:53	2452950.3284722	1029.4	20.0	15.0	120	4.0	NA	0	120	10	NA	80.6	NA	M	M	M	M	M	M	M	M
2003-11-06 08:53	2452950.3701389	1029.6	23.0	18.0	150	5.0	NA	0	120	10	NA	80.8	NA	M	M	M	M	M	M	M	M
2003-11-06 09:53	2452950.4118056	1029.7	22.0	15.0	130	4.0	NA	0	120	10	NA	74.0	NA	M	M	M	M	M	M	M	M
2003-11-06 10:53	2452950.4534722	1029.7	22.0	15.0	150	4.0	NA	0	120	10	NA	74.0	NA	M	M	M	M	M	M	M	M
2003-11-06 11:53	2452950.4951389	1030.1	21.0	15.0	160	5.0	NA	0	120	10	NA	77.2	0.00	26	20	M	37.9	M	24	M	M
2003-11-06 12:53	2452950.5368056	1030.6	20.0	15.0	150	5.0	NA	0	120	10	NA	80.6	NA	M	M	M	M	M	M	M	M
2003-11-06 13:53	2452950.5784722	1030.9	20.0	15.0	160	4.0	NA	0	120	10	NA	80.6	NA	M	M	M	M	M	M	M	M
2003-11-06 14:53	2452950.6201389	1031.5	19.0	15.0	160	6.0	NA	0	120	10	NA	84.1	NA	M	M	M	M	M	M	M	M
2003-11-06 15:53	2452950.6618056	1032.1	21.0	17.0	170	6.0	NA	0	120	10	NA	84.2	NA	M	M	M	M	M	M	M	M
2003-11-06 16:53	2452950.7034722	1032.1	23.0	17.0	180	5.0	NA	0	120	10	NA	77.4	NA	M	M	M	M	M	M	M	M
2003-11-06 17:53	2452950.7451389	1032.0	25.0	18.0	220	5.0	NA	0	120	10	NA	74.3	NA	25	19	M	M	M	M	M	M
2003-11-06 18:53	2452950.7868056	1031.8	27.0	18.0	250	5.0	NA	0	120	10	NA	68.4	NA	M	M	M	M	M	M	M	M
2003-11-06 19:53	2452950.8284722	1030.9	31.0	18.0	NA	3.0	NA	0	120	10	NA	58.1	NA	M	M	M	M	M	M	M	M
2003-11-06 20:53	2452950.8701389	1030.2	33.0	19.0	0	0.0	NA	0	120	10	NA	55.9	NA	M	M	M	M	M	M	1.04	0.077
2003-11-06 21:53	2452950.9118056	1029.4	35.0	19.0	0	0.0	NA	0	120	10	NA	51.6	NA	M	M	M	M	M	M	M	M
2003-11-06 22:53	2452950.9534722	1028.7	37.0	19.0	290	4.0	NA	0	120	10	NA	47.7	NA	M	M	M	M	M	M	M	M
2003-11-06 23:53	2452950.9951389	1028.1	36.0	19.0	240	3.0	NA	0	120	10	NA	49.6	NA	37	25	53.6	M	71	M	M	M



2003-11-09	02:53	2452953.1201389	1017.7	36.0	22.0	130	5.0	NA	1	120	10	NA	56.4	NA	M	M	M	M	M	M	M	M
2003-11-09	03:53	2452953.1618056	1017.4	36.0	22.0	140	6.0	NA	0	120	10	NA	56.4	NA	M	M	M	M	M	M	M	M
2003-11-09	04:53	2452953.2034722	1016.7	37.0	24.0	100	4.0	NA	1	120	10	NA	58.9	NA	M	M	M	M	M	M	M	M
2003-11-09	05:53	2452953.2451389	1016.3	39.0	25.0	140	3.0	NA	8	90	10	NA	56.8	NA	46	36	M	M	M	M	M	M
2003-11-09	06:53	2452953.2868056	1016.0	40.0	25.0	170	4.0	NA	6	100	10	NA	54.6	NA	M	M	M	M	M	M	M	M
2003-11-09	07:53	2452953.3284722	1016.2	37.0	25.0	170	7.0	NA	6	110	10	NA	61.5	NA	M	M	M	M	M	M	M	M
2003-11-09	08:53	2452953.3701389	1016.0	35.0	24.0	170	6.0	NA	3	120	10	NA	63.8	NA	M	M	M	M	M	M	M	M
2003-11-09	09:53	2452953.4118056	1015.9	34.0	24.0	170	4.0	NA	1	120	10	NA	66.4	NA	M	M	M	M	M	M	M	M
2003-11-09	10:53	2452953.4534722	1015.7	35.0	24.0	150	5.0	NA	6	120	10	NA	63.8	NA	M	M	M	M	M	M	M	M
2003-11-09	11:53	2452953.4951389	1015.5	34.0	23.0	150	6.0	NA	6	120	10	NA	63.7	0.00	40	34	M	37.1	M	25	M	M
2003-11-09	12:53	2452953.5368056	1015.6	34.0	24.0	160	5.0	NA	8	80	10	NA	66.4	NA	M	M	M	M	M	M	M	M
2003-11-09	13:53	2452953.5784722	1016.4	33.0	23.0	180	8.0	NA	8	100	10	NA	66.3	NA	M	M	M	M	M	M	M	M
2003-11-09	14:53	2452953.6201389	1016.0	34.0	24.0	90	4.0	NA	6	100	10	NA	66.4	NA	M	M	M	M	M	M	M	M
2003-11-09	15:53	2452953.6618056	1016.5	36.0	26.0	0	0.0	NA	8	100	10	NA	66.7	NA	M	M	M	M	M	M	M	M
2003-11-09	16:53	2452953.7034722	1016.8	38.0	26.0	210	4.0	NA	6	120	10	NA	61.6	NA	M	M	M	M	M	M	M	M
2003-11-09	17:53	2452953.7451389	1016.9	39.0	24.0	0	0.0	NA	0	120	10	NA	54.5	NA	39	33	M	M	M	M	M	M
2003-11-09	18:53	2452953.7868056	1016.2	44.0	25.0	220	5.0	NA	1	120	10	NA	46.8	NA	M	M	M	M	M	M	M	M
2003-11-09	19:53	2452953.8284722	1015.9	46.0	25.0	250	8.0	NA	0	120	10	NA	43.4	NA	M	M	M	M	M	M	M	M
2003-11-09	20:53	2452953.8701389	1015.9	45.0	24.0	270	6.0	NA	3	120	10	NA	43.2	NA	M	M	M	M	M	M	0.91	0.086
2003-11-09	21:53	2452953.9118056	1015.9	44.0	24.0	280	5.0	NA	3	120	10	NA	44.9	NA	M	M	M	M	M	M	M	M
2003-11-09	22:53	2452953.9534722	1015.5	44.0	24.0	0	0.0	NA	0	120	10	NA	44.9	NA	M	M	M	M	M	M	M	M
2003-11-09	23:53	2452953.9951389	1015.8	44.0	24.0	0	0.0	NA	6	85	10	NA	44.9	NA	46	39	52.1	M	65	M	M	M
2003-11-10	00:53	2452954.0368056	1015.6	43.0	25.0	70	3.0	NA	8	60	10	NA	48.7	NA	M	M	M	M	M	M	M	M
2003-11-10	01:53	2452954.0784722	1015.4	42.0	24.0	100	6.0	NA	0	120	10	NA	48.5	NA	M	M	M	M	M	M	M	M
2003-11-10	02:53	2452954.1201389	1015.8	39.0	24.0	130	3.0	NA	0	120	10	NA	54.5	NA	M	M	M	M	M	M	M	M
2003-11-10	03:53	2452954.1618056	1015.8	37.0	24.0	130	4.0	NA	0	120	10	NA	58.9	NA	M	M	M	M	M	M	M	M
2003-11-10	04:53	2452954.2034722	1015.9	39.0	26.0	150	7.0	NA	0	120	10	NA	59.2	NA	M	M	M	M	M	M	M	M
2003-11-10	05:53	2452954.2451389	1017.0	37.0	26.0	170	6.0	NA	0	120	10	NA	64.1	NA	45	32	M	M	M	M	M	M
2003-11-10	06:53	2452954.2868056	1016.9	37.0	27.0	140	7.0	NA	0	120	10	NA	66.8	NA	M	M	M	M	M	M	M	M
2003-11-10	07:53	2452954.3284722	1017.0	40.0	30.0	170	6.0	NA	0	120	10	NA	67.1	NA	M	M	M	M	M	M	M	M
2003-11-10	08:53	2452954.3701389	1016.7	43.0	32.0	180	10.0	NA	6	95	10	NA	64.8	NA	M	M	M	M	M	M	M	M
2003-11-10	09:53	2452954.4118056	1017.1	42.0	32.0	190	5.0	NA	6	95	10	NA	67.4	NA	M	M	M	M	M	M	M	M
2003-11-10	10:53	2452954.4534722	1016.8	45.0	33.0	190	9.0	NA	8	80	10	NA	62.5	NA	M	M	M	M	M	M	M	M
2003-11-10	11:53	2452954.4951389	1016.7	47.0	34.0	190	11.0	NA	8	70	10	NA	60.3	0.00	47	37	M	36.9	M	24	M	M
2003-11-10	12:53	2452954.5368056	1016.8	48.0	35.0	180	12.0	NA	8	75	10	NA	60.5	NA	M	M	M	M	M	M	M	M
2003-11-10	13:53	2452954.5784722	1016.9	47.0	35.0	200	15.0	NA	3	120	10	NA	62.8	NA	M	M	M	M	M	M	M	M
2003-11-10	14:53	2452954.6201389	1017.3	48.0	36.0	210	13.0	NA	8	46	10	NA	62.9	NA	M	M	M	M	M	M	M	M
2003-11-10	15:53	2452954.6618056	1017.5	49.0	36.0	200	11.0	NA	8	36	10	NA	60.6	NA	M	M	M	M	M	M	M	M
2003-11-10	16:53	2452954.7034722	1017.6	51.0	36.0	210	14.0	NA	8	34	10	NA	56.3	NA	M	M	M	M	M	M	M	M
2003-11-10	17:53	2452954.7451389	1017.9	52.0	37.0	220	14.0	NA	8	80	10	NA	56.4	NA	52	46	M	M	M	M	M	M
2003-11-10	18:53	2452954.7868056	1017.7	53.0	38.0	230	14.0	22.0	6	65	10	NA	56.6	NA	M	M	M	M	M	M	M	M
2003-11-10	19:53	2452954.8284722	1016.9	54.0	38.0	230	17.0	26.0	6	100	8	NA	54.5	NA	M	M	M	M	M	M	M	M
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2003-11-10	21:53	2452954.9118056	1016.6	53.0	40.0	240	11.0	NA	8	45	6	NA	61.2	NA	M	M	M	M	M	M	M	M
2003-11-10	22:53	2452954.9534722	1016.8	52.0	41.0	220	11.0	NA	8	43	10	NA	66.0	NA	M	M	M	M	M	M	M	M
2003-11-10	23:53	2452954.9951389	1017.1	49.0	44.0	210	6.0	NA	8	50	10	NA	82.8	NA	55	49	51.7	M	69	M	M	M
2003-11-11	01:53	2452955.0784722	1016.8	49.0	43.0	190	10.0	NA	8	50	10	NA	79.7	NA	M	M	M	M	M	M	M	M
2003-11-11	01:53	2452955.0784722	1016.8	49.0	43.0	200	13.0	19.0	8	50	10	NA	79.7	NA	M	M	M	M	M	M	M	M
2003-11-11	02:53	2452955.1201389	1016.2	48.0	43.0	190	11.0	NA	8	60	10	NA	82.7	NA	M	M	M	M	M	M	M	M
2003-11-11	03:53	2452955.1618056	1015.6	48.0	43.0	180	9.0	NA	8	47	10	NA	82.7	NA	M	M	M	M	M	M	M	M





STA	TP	HHMM	N	CIG	VS	WEA	SLP	T	TD	DIR	SP	GS	ALT	PTND	PCP	PCPD	SNW	XT	COMMENTS
KALW	sa	2353	8	50	10		171	49	44	210	6		003	3	06	03		55	AO2 RAE45 01   BKN OVC   050 065
KALW	sa	0053	8	50	10	R-	166	49	43	190	10		001						AO2 RAB24 T   BKN OVC   050 065
KALW	sa	0153	8	50	10	R-	168	49	43	200	13	19	002						AO2 RAE0058B49 T   BKN OVC   050 070
KALW	sa	0253	8	60	10	R-	162	48	43	190	11		000	8	09	03			AO2 03   SCT OVC   044 060
KALW	sa	0353	8	47	10		156	48	43	180	9		998						AO2 RAE35 T   OVC   047
KALW	sa	0453	8	37	10	R-	153	50	42	200	13		997						AO2 RAB41 T   BKN OVC   037 049
KALW	sa	0553	8	43	10	R-	147	49	43	190	14		996	6	14	06		50	AO2 03   BKN OVC   043 050
KALW	sa	0653	8	47	10	R-	139	49	43	200	16		993						AO2 04   OVC   047
KALW	sa	0753	8	45	10	R-	136	49	42	200	14		993						AO2 Mx=55 Mn=41 T 55 41 OVC   045
KALW	sa	0853	8	45	10	R-	134	49	42	200	11		992	6	11	05			AO2 01   OVC   045
KALW	sa	0953	8	45	10		130	53	39	230	23	28	991						AO2 RAE17 PK WND 23028/0952 T   BKN BKN OVC
KALW	sa	1053	6	90	10		129	53	40	230	20	29	991						AO2 PK WND 23029/1051 0  FEW BKN
KALW	sa	1153	6	75	10		134	52	40	230	18	25	992	5	01	05	14	48	AO2 PK WND 22030/1136 0  SCT BKN BKN
KALW	sa	1253	0>120	10			134	52	40	230	21	32	992						AO2 PK WND 23032/1245 0  CLR
KALW	sa	1353	6	70	10		139	52	40	230	20	29	994						AO2 PK WND 23029/1345 0  BKN
KALW	sa	1453	3>120	10			149	51	40	230	20	27	996	3	14	0			AO2 PK WND 22028/1423 0  SCT
KALW	sa	1553	8	70	10		159	52	41	240	16	30	999						AO2 PK WND 24030/1546 0  OVC
KALW	sp	1755	3>120	2		HBD		54	43	240	24	33	006						AO2 PK WND 24030/1755 0  SCT SCT
KALW	sa	1753	6	16	2	HBD	180	54	41	240	22	33	006	3	31	0		51	AO2 PK WND 24033/1749 0  BKN
KALW	sa	1853	3>120	2		HBD	194	56	40	250	23		010						AO2 PK WND 24031/1828 0  SCT SCT
KALW	sa	1953	0>120	4		HBD	201	57	38	250	18		012						AO2 PK WND 24030/1902 0  CLR
KALW	sa	2053	0>120	4		HBD	204	57	37	250	18	21	013	1	23	0			AO2 0  CLR
KALW	sa	2153	0>120	4		HBD	208	56	38	260	17		014						AO2 0  CLR
KALW	sa	2353	0>120	6		HBD	225	52	37	240	12		019	3	20	0		58	AO2 0  CLR
KALW	sa	0053	0>120	10		BD	234	50	36	240	12		021						AO2 0  CLR
KALW	sa	0153	0>120	10		BD	243	49	36	240	11		024						AO2 0  CLR
KALW	sa	0253	0>120	10		BD	256	47	36	220	7		028	3	28	0			AO2 0  CLR
KALW	sa	0353	6	65	10		266	46	35	160	8		030						AO2 0  BKN



USBR Pacific Northwest Region  
**Hydromet System Data Access**

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10/25/2003	0.00
10/26/2003	0.00
10/27/2003	0.00
10/28/2003	0.03
10/29/2003	0.23
10/30/2003	0.03
10/31/2003	0.00
11/01/2003	0.00
11/02/2003	0.00
11/03/2003	0.00
11/04/2003	0.00
11/05/2003	0.00
11/06/2003	0.00
11/07/2003	0.00
11/08/2003	0.00
11/09/2003	0.00
11/10/2003	0.04
11/11/2003	0.02

END DATA

---

**ECHO, OREGON (352564)**  
**Period of Record Monthly Climate Summary**  
**Period of Record : 7/ 1/1948 to 7/31/1971**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Total Precipitation (in.)	1.47	0.94	0.92	0.64	0.83	0.66	0.23	0.23	0.47	0.84	1.16	1.32	9.70

---

**HERMISTON 2 S, OREGON (353847)**  
**Period of Record Monthly Climate Summary**  
**Period of Record : 1/ 1/1928 to 12/31/2003**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Total Precipitation (in.)	1.24	0.88	0.80	0.69	0.67	0.62	0.20	0.25	0.42	0.73	1.14	1.26	8.92

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**WALLA WALLA FAA AIRPORT, WASHINGTON**  
**(458928)**

**Period of Record Monthly Climate Summary**  
**Period of Record : 12/1/1949 to 12/31/2003**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Total Precipitation (in.)	2.29	1.75	1.96	1.65	1.80	1.18	0.58	0.75	0.88	1.68	2.51	2.30	19.34

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

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Western Regional Climate Center, [wrcc@dri.edu](mailto:wrcc@dri.edu)

WSU Public Agricultural Weather System

Data Extracted:2004-04-02 14:58:53

[COLLEGE PLACE, 1 MI S of College Place, Wa](#)

Lat:46.0 Lng:118.3 elevation:691

Dates Range From 1992-04-28 To 2004-04-01

DATE	Total Precip Gregorian inches
-----	-----
2003-10-01	.00
2003-10-02	.00
2003-10-03	.00
2003-10-04	.00
2003-10-05	.00
2003-10-06	.00
2003-10-07	.00
2003-10-08	.00
2003-10-09	.00
2003-10-10	.00
2003-10-11	.04
2003-10-12	.00
2003-10-13	NA
2003-10-14	.00
2003-10-15	.18
2003-10-16	.06
2003-10-17	.00
2003-10-18	.00
2003-10-19	.00
2003-10-20	.00
2003-10-21	.00
2003-10-22	.00
2003-10-23	.00
2003-10-24	.00
2003-10-25	.00
2003-10-26	.00
2003-10-27	.00
2003-10-28	.00
2003-10-29	.00
2003-10-30	.00
2003-10-31	.00
2003-11-01	.00
2003-11-02	.00
2003-11-03	.00
2003-11-04	.00
2003-11-05	.00
2003-11-06	.00
2003-11-07	.00
2003-11-08	.00
2003-11-09	.00
2003-11-10	.00
2003-11-11	.00

Data Extracted:2004-04-02 14:58:53

R. EBY, 6 MI S of Finley, Wa

Lat:46.0 Lng:119.0 elevation:1176  
Dates Range From 1989-03-31 To 2004-04-01

DATE	Total Precip Gregorian inches
-----	-----
2003-10-01	.00
2003-10-02	.00
2003-10-03	.00
2003-10-04	.00
2003-10-05	.00
2003-10-06	.00
2003-10-07	.00
2003-10-08	.00
2003-10-09	.00
2003-10-10	.00
2003-10-11	.02
2003-10-12	.00
2003-10-13	.00
2003-10-14	.08
2003-10-15	.09
2003-10-16	.00
2003-10-17	.00
2003-10-18	.00
2003-10-19	.00
2003-10-20	.00
2003-10-21	.00
2003-10-22	.00
2003-10-23	.00
2003-10-24	.00
2003-10-25	.00
2003-10-26	.00
2003-10-27	.00
2003-10-28	.00
2003-10-29	.00
2003-10-30	.00
2003-10-31	.00
2003-11-01	.00
2003-11-02	.00
2003-11-03	.00
2003-11-04	.00
2003-11-05	.00
2003-11-06	.00
2003-11-07	.00
2003-11-08	.00
2003-11-09	.00
2003-11-10	.00
2003-11-11	.00



Data Extracted:2004-04-02 14:58:54

[FINLEY, 1.5 MI S of Finley, Wa](#)

Lat:46.1 Lng:119.0 elevation:755

Dates Range From 1992-06-02 To 2004-04-01

DATE	Total
Gregorian	Precip
-----	-----
2003-10-01	.00
2003-10-02	.00
2003-10-03	.00
2003-10-04	.00
2003-10-05	.00
2003-10-06	.00
2003-10-07	.00
2003-10-08	.00
2003-10-09	.00
2003-10-10	.00
2003-10-11	.00
2003-10-12	.00
2003-10-13	.00
2003-10-14	.00
2003-10-15	.00
2003-10-16	.00
2003-10-17	.00
2003-10-18	.00
2003-10-19	.00
2003-10-20	.00
2003-10-21	.00
2003-10-22	.00
2003-10-23	.00
2003-10-24	.00
2003-10-25	.00
2003-10-26	.00
2003-10-27	.00
2003-10-28	.00
2003-10-29	.00
2003-10-30	.00
2003-10-31	.00
2003-11-01	.00
2003-11-02	.00
2003-11-03	.00
2003-11-04	.00
2003-11-05	.00
2003-11-06	.00
2003-11-07	.00
2003-11-08	.00
2003-11-09	.00
2003-11-10	.00
2003-11-11	.00

Data Extracted:2004-04-02 14:58:54

[TOUCHET, 1.5 MI S of Touchet, Wa](#)

Lat:46.0 Lng:118.6 elevation:492

Dates Range From 1989-01-01 To 2004-04-01

DATE	Total
Gregorian	Precip
-----	-----
2003-10-01	.00
2003-10-02	.00
2003-10-03	.00
2003-10-04	.00
2003-10-05	.00
2003-10-06	.00
2003-10-07	.00
2003-10-08	.00
2003-10-09	.00
2003-10-10	.00
2003-10-11	.00
2003-10-12	.00
2003-10-13	.00
2003-10-14	.00
2003-10-15	.00
2003-10-16	.00
2003-10-17	.00
2003-10-18	.00
2003-10-19	.00
2003-10-20	.00
2003-10-21	.00
2003-10-22	.00
2003-10-23	.00
2003-10-24	.00
2003-10-25	.00
2003-10-26	.00
2003-10-27	.00
2003-10-28	.00
2003-10-29	.00
2003-10-30	.00
2003-10-31	.00
2003-11-01	.00
2003-11-02	.00
2003-11-03	.00
2003-11-04	.00
2003-11-05	.00
2003-11-06	.00
2003-11-07	.00
2003-11-08	.00
2003-11-09	.00
2003-11-10	.00
2003-11-11	.00

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**WSU Public Agricultural Weather System**

Data Extracted:2004-04-13 12:51:14  
[COLLEGE PLACE, 1 MI S of College Place, Wa](#)  
 Lat:46.0 Lng:118.3 elevation:691  
 Dates Range From 1992-04-28 To 2004-04-12

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Precipitation											
1.8	1.3	1.2	1.4	1.3	.9	.5	.5	.5	.9	1.5	1.5
Min Precipitation											
.6	.4	.3	.5	.4	.0	.0	.0	.0	.2	.4	.6
2002	1997	2004	2002	1992	2003	2003	2003	1993	2002	1997	1994

Data Extracted:2004-04-13 12:51:16  
[R. EBY, 6 MI S of Finley, Wa](#)  
 Lat:46.0 Lng:119.0 elevation:1176  
 Dates Range From 1989-03-31 To 2004-04-12

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Precipitation											
1.1	.8	.8	.8	.9	.6	.5	.4	.2	.8	1.3	1.2
Min Precipitation											
.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.2	.6
2003	2003	2000	2000	1992	2003	2003	2003	2003	2003	2002	1992

Data Extracted:2004-04-13 12:51:17  
[FINLEY, 1.5 MI S of Finley, Wa](#)  
 Lat:46.1 Lng:119.0 elevation:755  
 Dates Range From 1992-06-02 To 2004-04-12

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Precipitation											
.9	.7	.7	.6	.5	.4	.2	.3	.2	.5	.9	.9
Min Precipitation											
.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2004	2004	2004	2001	2004	2003	2003	2003	2003	2004	2003	2003

Data Extracted:2004-04-13 12:51:20  
[TOUCHET, 1.5 MI S of Touchet, Wa](#)  
 Lat:46.0 Lng:118.6 elevation:492  
 Dates Range From 1989-01-01 To 2004-04-12

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Mean Precipitation

1.2 .9 .8 .7 .8 .6 .3 .4 .2 .5 1.0 1.0

Min Precipitation

.0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .1 .4  
2003 2003 2004 2003 1994 2003 2003 2003 2003 2003 2003 1989

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**Reports**  
subscription only

**FAQ**

**Other Sites**

**Notices**

**Feedback**

*This page was generated on 2004-04-13*

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# **Appendix C**

## **STATUS REPORT**

### **2003 Best Available Control Measures**

### **Columbia Plateau Agriculture**

**January 2004**

#### **Summary**

This report fulfills Ecology's commitment to review and report annually on the use of Best Available Control Measures (BACM) in the Columbia Plateau. Ecology committed to provide such a report to the Environmental Protection Agency (EPA) in the revised Natural Events Action Plan (NEAP).

The level of Conservation Reserve Program (CRP) and Best Management Practice (BMP) use has increased from 68 to 70 percent in the priority counties of the Columbia Plateau. Seventy percent of the total farmable acres in these counties are now part of a United States Department of Agriculture (USDA) conservation program, use one of the minimum till practices, or contain 15-30% residue. Washington State finds this level of CRP and BMP implementation fulfills BACM criteria.

#### **Background**

EPA issued the policy on "Areas Affected by PM-10 Natural Events," or the Natural Events Policy (NEP), on May 30, 1996. Under the NEP, ambient PM<sub>10</sub> concentrations raised by unusually high winds may be treated as uncontrollable natural events when the dust originates from nonanthropogenic sources, or when the dust originates from contributing anthropogenic sources controlled with BACM. After natural events cause the PM<sub>10</sub> concentration to violate the PM<sub>10</sub> National Ambient Air Quality Standard, the NEP allows a state to develop a natural events action plan (NEAP) to deal with future exceedances.

A number of exceedances of the 24-hour standard for PM<sub>10</sub> were recorded in eastern Washington in the late 1980s and early 1990s. Examination of the exceedances showed a close correlation to high wind events and upwind agricultural fields were identified as the chief source of the wind-blown dust. The Washington State Department of Ecology (Ecology) developed the *Natural Events Action Plan for High Wind Events in the Columbia Plateau* in March 1998, and submitted it to Region 10 EPA, in accordance with the NEP.

The 1998 NEAP included Ecology's commitment to re-evaluate the NEAP at the end of 2001. The 2001 evaluation is embodied in the revised NEAP submitted to EPA in July, 2003. Several changes were incorporated into the revised NEAP including Ecology's commitment to review and report to EPA annual BACM implementation.

#### **BACM Definition and Tracking Mechanism**

The revised NEAP defines BACM for agricultural fields as USDA Conservation Title Programs supplemented by incentive based implementation of wind erosion conservation practices or BMPs. In short, the BACM definition recognizes the critical role of agricultural agencies in

defining and instituting BACM on the Columbia Plateau. The primary agencies include those directly reporting to the USDA such as the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), and the Agricultural Research Service (ARS). Additional agricultural agencies include the Washington State Conservation Commission, local Conservation Districts and various agriculture related departments of the Washington State University. The NEAP acknowledges the combined expertise of these agencies and relies on the various programs of these agencies in implementing the conservation practices that constitute BACM.

For defining BACM, the NEAP uses the USDA's CRP program and the wind erosion BMPs encouraged by NRCS and/or the Columbia Plateau Wind Erosion /Air Quality Project (referred to as the CP3). Use of these practices is tracked by the Conservation Technology Information Center's (CTIC), Core 4 program. The CTIC's Core 4 program tracks conservation tillage (No-Till, Ridge-Till, Mulch-Till) and conventional tillage (0-15% and 15-30% residue) practices and CRP enrollment on a county by county basis.

A full discussion on Ecology's BACM definition and tracking mechanism may be found in the revised NEAP.

### **STATUS REPORT: 2003 BACM**

The 2003 NEAP determined BACM is implemented in the Columbia Plateau based on 68 percent use of conservation practices. Attachment 1 shows the implementation of conservation practices for the seven priority counties, as defined in the NEAP. These counties have the lowest rainfall and thus are the most susceptible to windblown dust.

Data evaluated is for the year 2002, the most recent year for which data is available. The evaluation includes data on CRP, minimum tillage, and residue remaining on the field for the lowest rainfall counties of the Columbia Plateau - counties Ecology finds to be high priority in terms of addressing wind blown dust. Ecology identified Adams, Douglas, Franklin, Grant and Lincoln as priority counties in the 1998 NEAP. Benton and Walla Walla counties were added to the list more recently. The Core 4 data shows 70 percent of the priority counties' total farmable acres are in a USDA conservation program, use one of the minimum till practices, or contain 15-30% residue.

Similarly, attachment 2 shows the implementation of conservation practices for all counties of the Columbia Plateau NEAP. The data shows 71 percent use of conservation practices throughout the Columbia Plateau.

The results are consistent with the 2003 NEAP determination and show that we continue to meet BACM requirements.

### **Additional Efforts to Enhance Wind Erosion Conservation Measures**

Ecology is continuing to work with the various agricultural agencies to enhance the use of conservation practices in the Columbia Plateau. In doing so, implementation of wind erosion conservation measures is enhanced beyond that tracked and reported by the Core 4. For example, Ecology contracted with the Benton Conservation District (BCD) for tasks associated with a special funds grant from the EPA. The goal of the project is twofold: to provide

immediate, temporary treatment to critical areas and to promote other options for longer-term or permanent wind erosion control measures identified in the CP3.

The first goal is addressed by the purchase of a straw mulcher and cost share straw for use in the Horse Heaven Hills of Benton County. To date, the straw mulcher has been used by eight different farm operators. They have applied roughly 556 tons of grass straw on about 275 acres of "hot spots" (highly erodible areas). An additional 150 tons was applied without project-supplied cost-share. In total, roughly 706 tons of straw were applied to highly erodible areas in an effort to protect against the occurrence of windblown dust.

Education and outreach will address the second goal. The outreach will focus on installing wind erosion conservation buffers as a longer-term solution to wind erosion. Ecology, the BCD, the NRCS and the CTIC will conduct the outreach in the winter of 2004.

Moreover, Ecology's Water Quality Program recently awarded two funding requests that will enhance wind erosion control measures on the Columbia Plateau. The objectives of both water and wind erosion control are to prevent or minimize soil particle detachment and entrainment by the medium (air or water.) Consequently, conservation practices to reduce the effects from both types of erosion are substantially similar. For this reason, air quality is improved when conservation measures to reduce water erosion are increased.

The Water Quality Program awarded the Spokane County Conservation District a \$2,000,000 low interest State Revolving Fund loan for its Eastern Washington Conservation Tillage Program. This program promotes the implementation of direct seeding in Whitman and Asotin Counties, resulting in decreased erosion and improved water infiltration. The low interest loans provided to agricultural producers will facilitate the purchase of direct seeding equipment, making the transition to conservation tillage economically feasible. Direct seeding is recognized by both the CP3 and the NRCS as an effective wind erosion control measure.

Similarly, the Franklin Conservation District was awarded a \$250,000 Centennial Clean Water Fund grant to install perennial wheat erosion buffers. This project is designed to address water and soil runoff from fallow fields in dryland farm areas of Franklin and Whitman Counties. Erosion events increase sediments and contaminants in eastern Washington streams. Perennial wheat will be evaluated as an erosion control method, compared to conventional wheat/fallow and CRP cultivations. Conservation buffers, too, are recognized by both the CP3 and the NRCS as an effective wind erosion control measure.

## **Conclusion**

Ecology and the identified agricultural agencies continue to carry out the Columbia Plateau NEAP. Ecology finds the level of CRP and BMP implementation identified in this report continues to fulfill BACM criteria. Ecology will continue to document natural events and flag exceedances when justified under the terms of the 2003 NEAP.

## 2003 BACM Status Report: Columbia Plateau

		BACM (component 1)	BACM (component 2) - ADDITIONAL CONSERVATION MEASURES APPLIED				BACM total (components 1 & 2)	
			CRP	No-Till	Ridge-Till	Mulch-Till	15-30% Residue.	acres
<b>Adams</b>								
HEL withdrawn from production	212,524	212,524					212,524	100.00%
Fallow acres	226,183		11,878	0	11,878	11,397	35,153	15.54%
Planted acres	377,167		31,562	2,675	43,537	42,688	120,462	31.94%
Total farmable acres	815,874	26%	43,440	2,675	55,415	54,085	368,139	45.12%
<b>Asotin</b>								
HEL withdrawn from production	28,648	28,648					28,648	100.00%
Fallow acres	13,754		3,000	0	2,000	8,754	13,754	100.00%
Planted acres	31,035		650	0	9,235	11,650	21,535	69.39%
Total farmable acres	73,437	39%	3,650	0	11,235	20,404	63,937	87.06%
<b>Benton</b>								
HEL withdrawn from production	75,019	75,019					75,019	100.00%
Fallow acres	131,488		3,550	0	0	67,979	71,529	54.40%
Total planted acres	232,100		2,488	0	2,212	124,202	128,902	55.54%
Total farmable acres	438,607	17%	6,038	0	2,212	192,181	275,450	62.80%
<b>Chelan</b>								
HEL withdrawn from production	1,373	1,373					1,373	100.00%
Fallow acres	391		0	0	0	391	391	100.00%
Total planted acres	391		0	0	0	391	391	100.00%
Total farmable acres	2,155	64%	0	0	0	782	2,155	100.00%
<b>Columbia</b>								
HEL withdrawn from production	38,269	38,269					38,269	100.00%
Fallow acres	28,253		8,467	0	5,651	0	14,118	49.97%
Total planted acres	119,622		27,481	0	3,096	25,483	56,060	46.86%
Total farmable acres	186,144	21%	35,948	0	8,747	25,483	108,447	58.26%
<b>Douglas</b>								
HEL withdrawn from production	187,733	187,733					187,733	100.00%
Fallow acres	245,153		0	0	15,514	100,000	115,514	47.12%
Total planted acres	183,770		4,929	0	53,685	75,275	133,889	72.86%
Total farmable acres	616,656	30%	4,929	0	69,199	175,275	437,136	70.89%
<b>Ferry</b>								
HEL withdrawn from production	1,091	1,091					1,091	100.00%
Fallow acres	500		0	0	0	200	200	40.00%
Total planted acres	4,650		0	0	0	2,950	2,950	63.44%
Total farmable acres	6,241	17%	0	0	0	3,150	4,241	67.95%
<b>Franklin</b>								
HEL withdrawn from production	104,417	104,417					104,417	100.00%
Fallow acres	63,000		0	0	0	59,100	59,100	93.81%
Total planted acres	269,900		0	0	9,950	121,977	131,927	48.88%
Total farmable acres	437,317	24%	0	0	9,950	181,077	295,444	67.56%
<b>Garfield</b>								
HEL withdrawn from production	44,527	44,527					44,527	100.00%
Fallow acres	45,545		12,780	0	11,727	14,617	39,124	85.90%
Total planted acres	111,794		38,001	0	32,637	9,038	79,676	71.27%
Total farmable acres	201,866	22%	50,781	0	44,364	23,655	163,327	80.91%
<b>Grant</b>								
HEL withdrawn from production	60,747	60,747					60,747	100.00%
Fallow acres	102,000		1,020	0	24,480	60,180	85,680	84.00%
Total planted acres	342,700		5,310	0	59,290	101,340	165,940	48.42%



<b>Kittitas</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	3,294	3,294					3,294	100.00%
Fallow acres	3,100		0	0	0	2,480	2,480	80.00%
Planted acres	18,300		0	0	0	5,738	5,738	31.36%
Total farmable acres	24,694	13%	0	0	0	8,218	11,512	46.62%
<b>Klickitat</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	57,925	57,925					57,925	100.00%
Fallow acres	22,028		0	0	0	16,080	16,080	73.00%
Planted acres	69,451		30,963	0	0	31,003	61,966	89.22%
Total farmable acres	149,404	39%	30,963	0	0	47,083	135,971	91.01%
<b>Lincoln</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	86,330	86,330					86,330	100.00%
Fallow acres	239,832		23,983	0	83,941	119,916	227,840	95.00%
Total planted acres	483,639		47,182	0	175,071	230,057	452,310	93.52%
Total farmable acres	809,801	11%	71,165	0	259,012	349,973	766,480	94.65%
<b>Okanogan</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	4,057	4,057					4,057	100.00%
Fallow acres	7,151		0	0	0	3,933	3,933	55.00%
Total planted acres	25,425		0	0	0	18,372	18,372	72.26%
Total farmable acres	36,633	11%	0	0	0	22,305	26,362	71.96%
<b>Pend Oreille</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	0	0%					0	NA
Fallow acres	184		0	0	0	0	0	0.00%
Total planted acres	641		0	0	0	315	315	49.14%
Total farmable acres	825	0%	0	0	0	315	315	38.18%
<b>Spokane</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	32,033	32,033					32,033	100.00%
Fallow acres	225,203		11,260	0	45,041	135,122	191,423	85.00%
Total planted acres	224,672		17,133	0	53,535	104,542	175,210	77.98%
Total farmable acres	481,908	7%	28,393	0	98,576	239,664	398,666	82.73%
<b>Stevens</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	3,552	3,552					3,552	100.00%
Fallow acres	6,000		0	0	0	4,020	4,020	67.00%
Total planted acres	29,100		711	0	7,061	15,699	23,471	80.66%
Total farmable acres	38,652	9%	711	0	7,061	19,719	31,043	80.31%
<b>Walla Walla</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	148,578	148,578					148,578	100.00%
Fallow acres	120,084		12,000	0	60,042	33,023	105,065	87.49%
Total planted acres	295,888		29,343	0	99,662	91,884	220,889	74.65%
Total farmable acres	564,550	26%	41,343	0	159,704	124,907	474,532	84.05%
<b>Whitman</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	135,755	135,755					135,755	100.00%
Fallow acres	172,000		30,000	0	20,000	61,000	111,000	64.53%
Total planted acres	733,170		90,650	0	96,000	281,800	468,450	63.89%
Total farmable acres	1,040,925	13%	120,650	0	116,000	342,800	715,205	68.71%
<b>Yakima</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
HEL withdrawn from production	53,727	53,727					53,727	100.00%
Fallow acres	9,175		0	0	0	3,853	3,853	41.99%
Total planted acres	66,770		0	0	4,224	16,903	21,127	31.64%
Total farmable acres	129,672	41%	0	0	4,224	20,756	78,707	60.70%
<b>SUMMARY</b>		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
Total farmable acres	6,560,808	1,279,599	444,341	2,675	929,469	2,013,352	4,669,436	
		20%	7%	0%	14%	31%		71%

## 2003 BACM Status Report: Columbia Plateau Priority Counties

		<b>BACM (component 1)</b>	<b>BACM (component 2) - ADDITIONAL CONSERVATION MEASURES APPLIED</b>				<b>BACM total (components 1 &amp; 2)</b>	
		<b>CRP</b>	<b>No-Till</b>	<b>Ridge-Till</b>	<b>Mulch-Till</b>	<b>15-30% Residue.</b>	<b>acres</b>	<b>% acres</b>
<b>Adams</b>								
HEL withdrawn from production	212,524	212,524					212,524	100.00%
Fallow acres	226,183		11,878	0	11,878	11,397	35,153	15.54%
Planted acres	377,167		31,562	2,675	43,537	42,688	120,462	31.94%
Total farmable acres	815,874	<b>26%</b>	43,440	2,675	55,415	54,085	368,139	<b>45.12%</b>
<b>Benton</b>								
HEL withdrawn from production	75,019	75,019					75,019	100.00%
Fallow acres	131,488		3,550	0	0	67,979	71,529	54.40%
Total planted acres	232,100		2,488	0	2,212	124,202	128,902	55.54%
Total farmable acres	438,607	<b>17%</b>	6,038	0	2,212	192,181	275,450	<b>62.80%</b>
<b>Douglas</b>								
HEL withdrawn from production	187,733	187,733					187,733	100.00%
Fallow acres	245,153		0	0	15,514	100,000	115,514	47.12%
Total planted acres	183,770		4,929	0	53,685	75,275	133,889	72.86%
Total farmable acres	616,656	<b>30%</b>	4,929	0	69,199	175,275	437,136	<b>70.89%</b>
<b>Franklin</b>								
HEL withdrawn from production	104,417	104,417					104,417	100.00%
Fallow acres	63,000		0	0	0	59,100	59,100	93.81%
Total planted acres	269,900		0	0	9,950	121,977	131,927	48.88%
Total farmable acres	437,317	<b>24%</b>	0	0	9,950	181,077	295,444	<b>67.56%</b>
<b>Grant</b>								
HEL withdrawn from production	60,747	60,747					60,747	100.00%
Fallow acres	102,000		1,020	0	24,480	60,180	85,680	84.00%
Total planted acres	342,700		5,310	0	59,290	101,340	165,940	48.42%
Total farmable acres	505,447	<b>12%</b>	6,330	0	83,770	161,520	312,367	<b>61.80%</b>
<b>Lincoln</b>								
HEL withdrawn from production	86,330	86,330					86,330	100.00%
Fallow acres	239,832		23,983	0	83,941	119,916	227,840	95.00%
Total planted acres	483,639		47,182	0	175,071	230,057	452,310	93.52%
Total farmable acres	809,801	<b>11%</b>	71,165	0	259,012	349,973	766,480	<b>94.65%</b>
<b>Walla Walla</b>								
HEL withdrawn from production	148,578	148,578					148,578	100.00%
Fallow acres	120,084		12,000	0	60,042	33,023	105,065	87.49%
Total planted acres	295,888		29,343	0	99,662	91,884	220,889	74.65%
Total farmable acres	564,550	<b>26%</b>	41,343	0	159,704	124,907	474,532	<b>84.05%</b>
<b>SUMMARY</b>								
Total farmable acres	4,188,252	875,348	173,245	2,675	639,262	1,239,018	2,929,548	
		<b>21%</b>	<b>4%</b>	<b>0%</b>	<b>15%</b>	<b>30%</b>		<b>70%</b>