



State of Oregon
Department of
Environmental
Quality

Klamath Falls

PM_{2.5} Intrusions - Fall 2006
And March 2008



DEQ

State of Oregon
Department of
Environmental
Quality

Klamath Falls – Mount Shasta Dec 6, 2006





DEQ

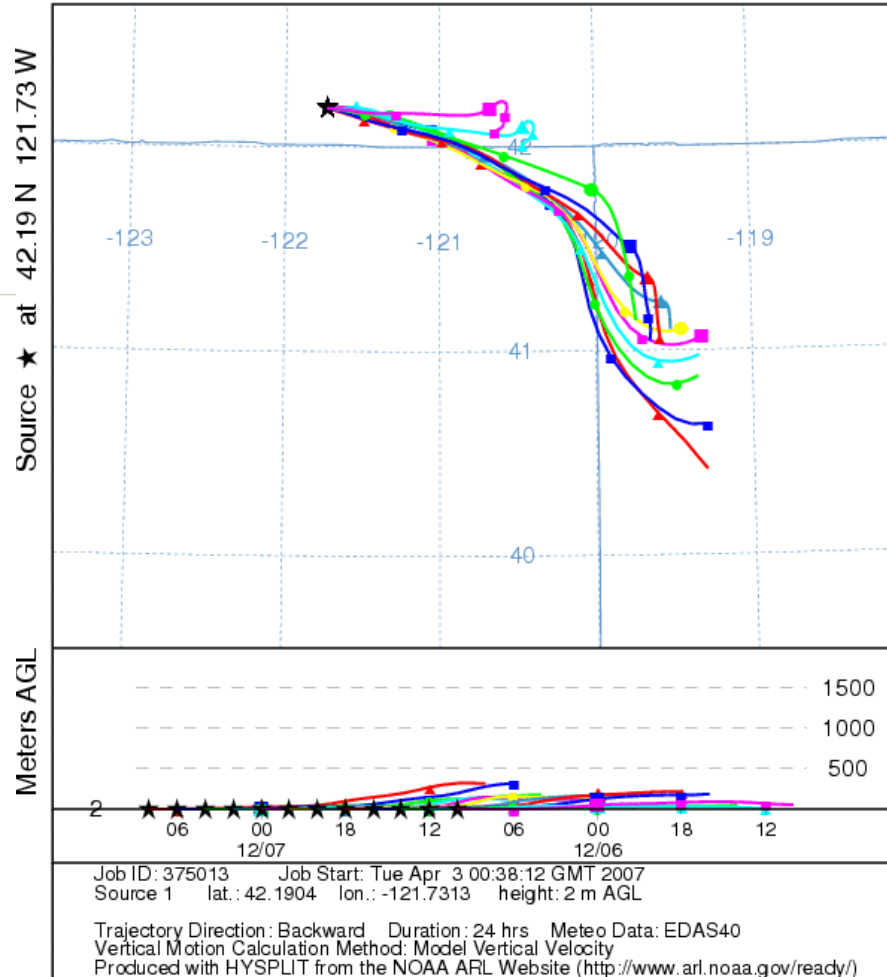
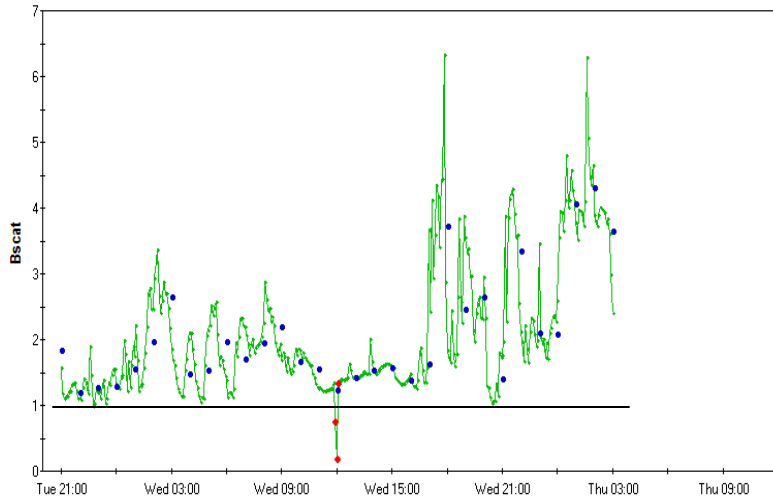
State of Oregon
Department of
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Quality

Old AQI = 88 Moderate
New AQI = 98 Moderate

Klamath Falls Backward Trajectory 12-06-06

NOAA HYSPLIT MODEL
Backward trajectories ending at 08 UTC 07 Dec 06
EDAS Meteorological Data

DATA NEPH 10118 Klamath Falls - Peterson School



Dec 6, 2006



State of Oregon
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Quality

Oregon Burned
300 ac
1500 Tons
Klamath-Lake Dist.

Unfav. Burning Sit.
Poor Smoke Dispersal
25 miles from PA
Not larger than 500 t



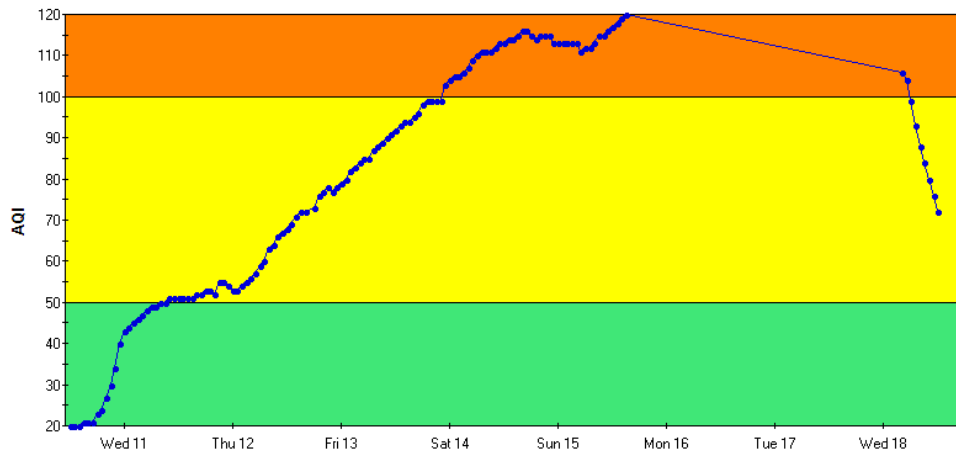


DEQ

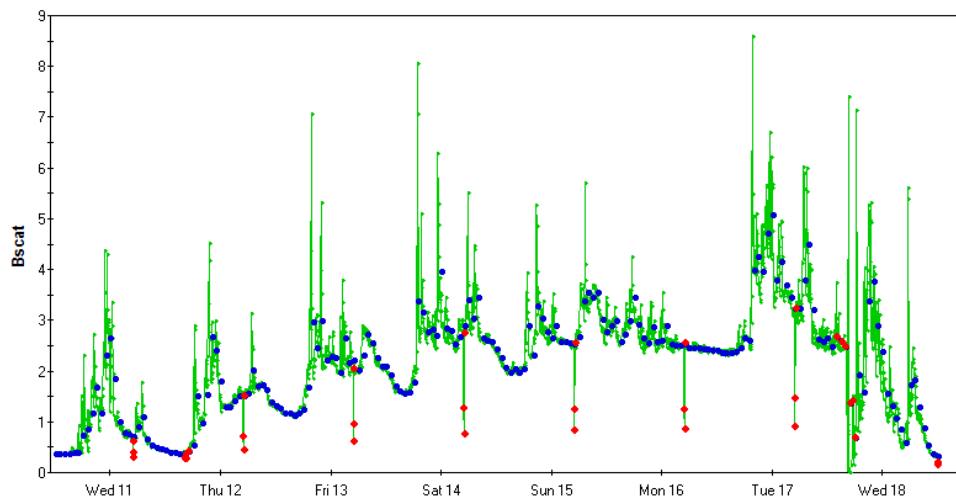
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Klamath Falls – October 11 – 18, 2006

AQI PM2.5 10118 Klamath Falls - Peterson School



DATA NEPH 10118 Klamath Falls - Peterson School



Date Time	Value	Status
10/18/06 12:00	0.34	1
10/18/06 12:00	0.18	9
10/18/06 11:55	0.22	9
10/18/06 11:50	0.40	1
10/18/06 11:45	0.38	1
10/18/06 11:40	0.36	1
10/18/06 11:35	0.34	1
10/18/06 11:30	0.34	1
10/18/06 11:25	0.36	1
10/18/06 11:20	0.34	1
10/18/06 11:15	0.34	1
10/18/06 11:10	0.36	1
10/18/06 11:05	0.36	1
10/18/06 11:00	0.38	1
10/18/06 11:00	0.34	1
10/18/06 10:55	0.34	1
10/18/06 10:50	0.36	1
10/18/06 10:45	0.36	1
10/18/06 10:40	0.36	1
10/18/06 10:35	0.36	1
10/18/06 10:30	0.40	1
10/18/06 10:25	0.40	1
10/18/06 10:20	0.40	1
10/18/06 10:15	0.42	1
10/18/06 10:10	0.42	1
10/18/06 10:05	0.46	1
10/18/06 10:00	0.56	1
10/18/06 10:00	0.48	1
10/18/06 09:55	0.50	1
10/18/06 09:50	0.48	1
10/18/06 09:45	0.52	1
10/18/06 09:40	0.56	1
10/18/06 09:35	0.54	1
10/18/06 09:30	0.54	1
10/18/06 09:25	0.62	1
10/18/06 09:20	0.60	1
10/18/06 09:15	0.62	1
10/18/06 09:10	0.66	1
10/18/06 09:05	0.70	1
10/18/06 09:00	0.90	1
10/18/06 09:00	0.74	1
10/18/06 08:55	0.80	1
10/18/06 08:50	0.86	1
10/18/06 08:45	0.92	1
10/18/06 08:40	0.82	1
10/18/06 08:35	0.84	1
10/18/06 08:30	0.92	1
10/18/06 08:25	0.94	1
10/18/06 08:20	1.06	1
10/18/06 08:15	1.10	1
10/18/06 08:10	1.00	1
10/18/06 08:05	1.00	1
10/18/06 08:00	1.30	1
10/18/06 08:00	1.16	1
10/18/06 08:00	1.14	1



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Lakeview Ranger District

- 6000 acres planned
- Ignited 1/2
- Oct 11th began at 2PM until 5PM
- Oct 12th Began at 11AM until 4PM
- Oct 12th impacted by smoke from South
- S and SW light wind
- 12 T/ac fuel loading
- Smoke stayed in area, until hot enough to rise
- ODF – Oct 12 - Delay until 10AM – Avoid w/in 15 mi, 35 miles if smoldering.

Air Quality Program

Klamath Falls – October 12, 2006 24 hours Ending 5PM

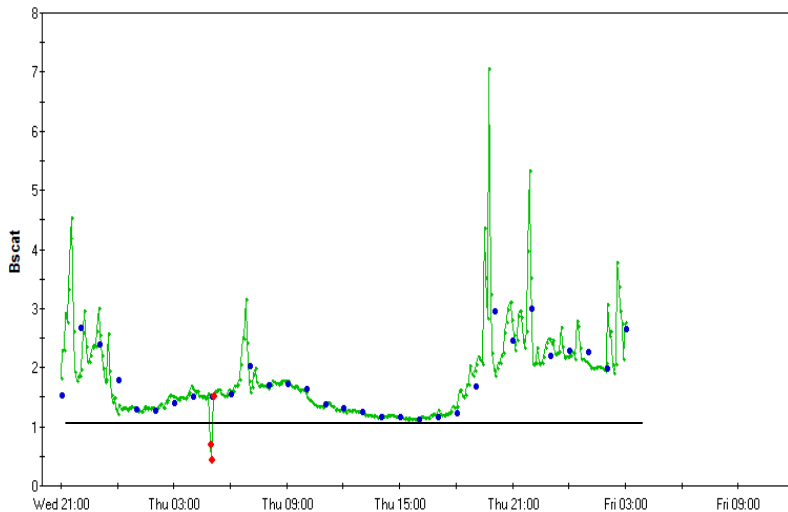


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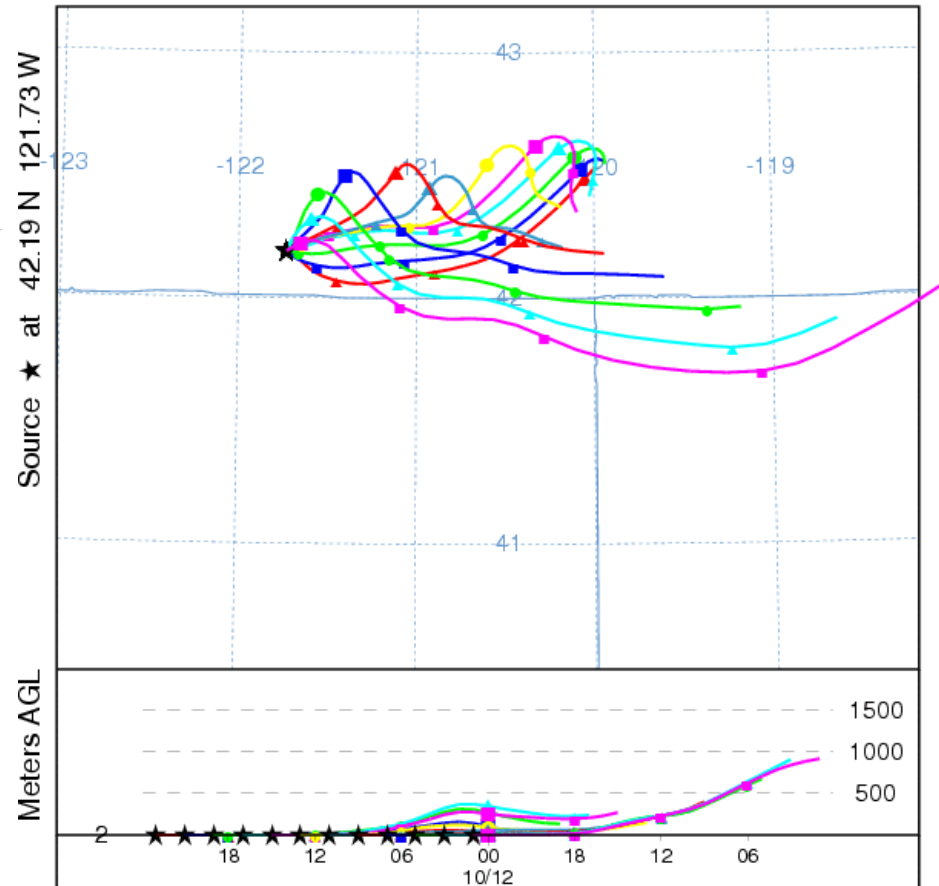
Old AQI = 65 Moderate
New AQI = 69 Moderate

Oct 11&12, 2007 ~3000
acres by Lakeview RD

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 12 Oct 06
EDAS Meteorological Data



Job ID: 374011 Job Start: Mon Apr 2 20:33:34 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

Air Quality Program

Klamath Falls – October 13, 2006 24 hours Ending 5PM

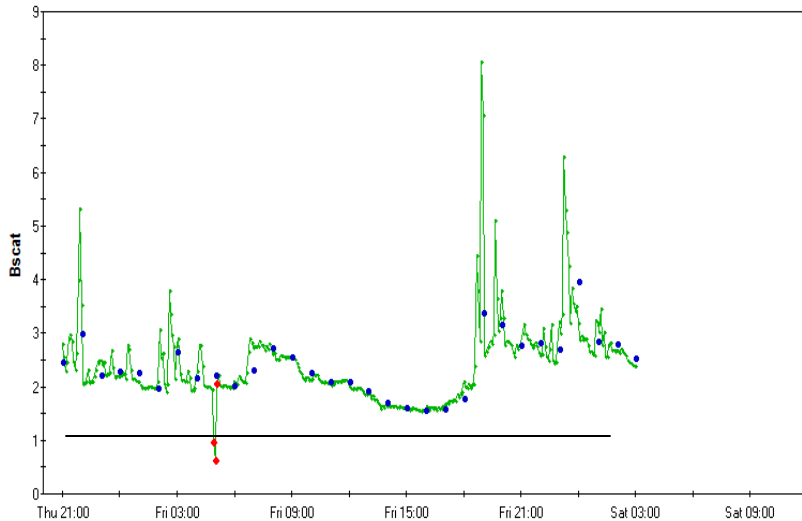


DEQ

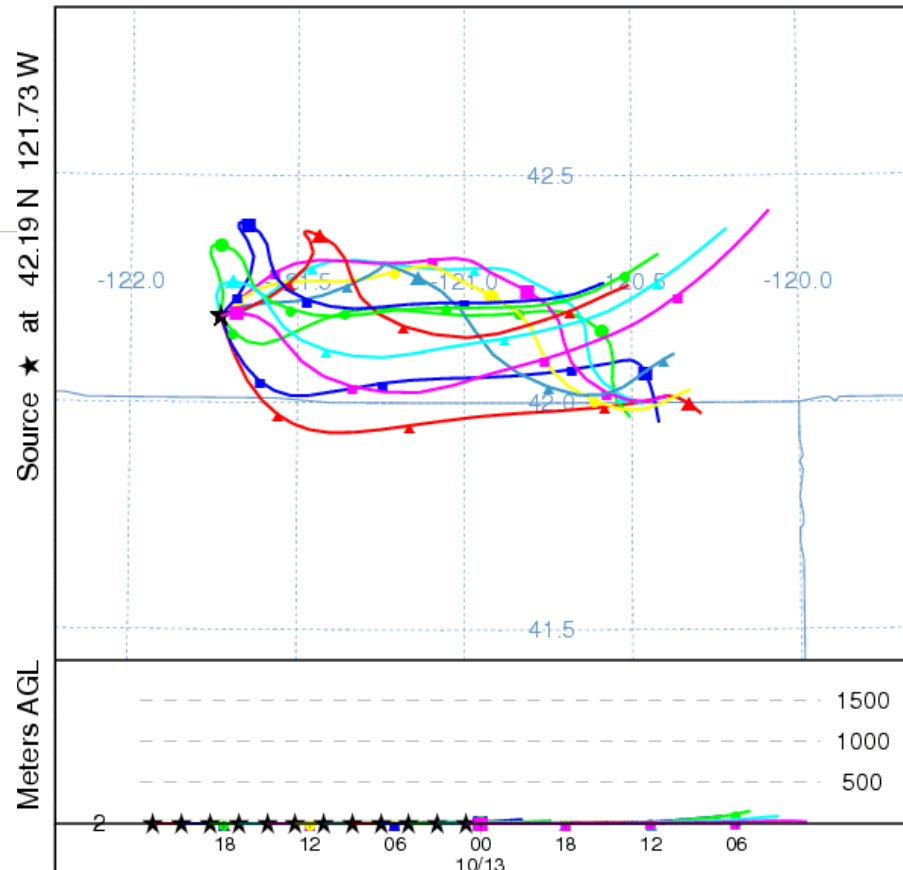
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Old AQI = 84 Moderate
New AQI = 93 Moderate

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 13 Oct 06
EDAS Meteorological Data



Job ID: 374020 Job Start: Mon Apr 2 20:36:47 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

Air Quality Program



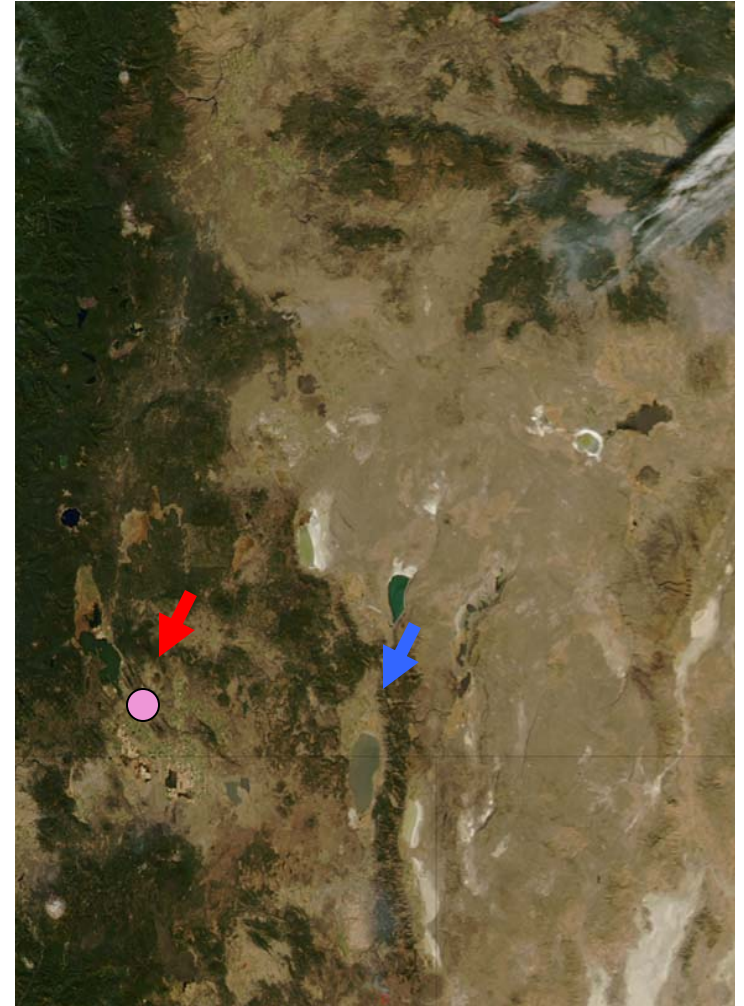
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October 12, 2006



October 13, 2006



Air Quality Program

Klamath Falls – October 14, 2006 24 hours Ending 5PM

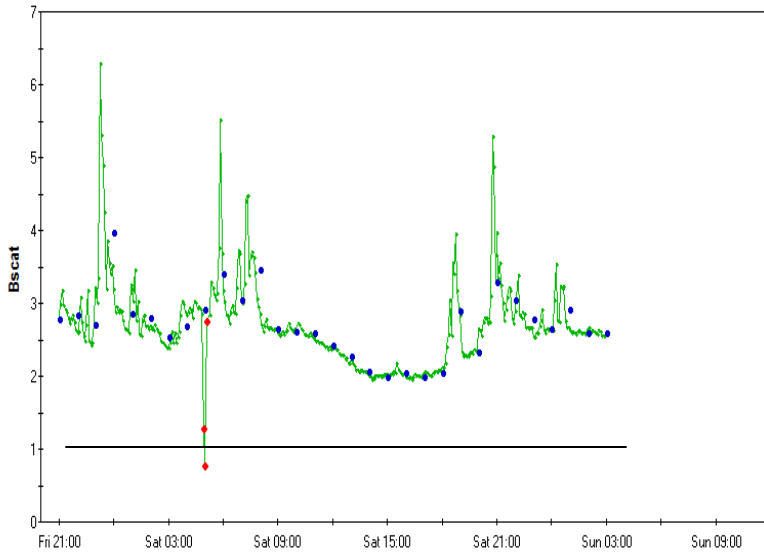


DEQ

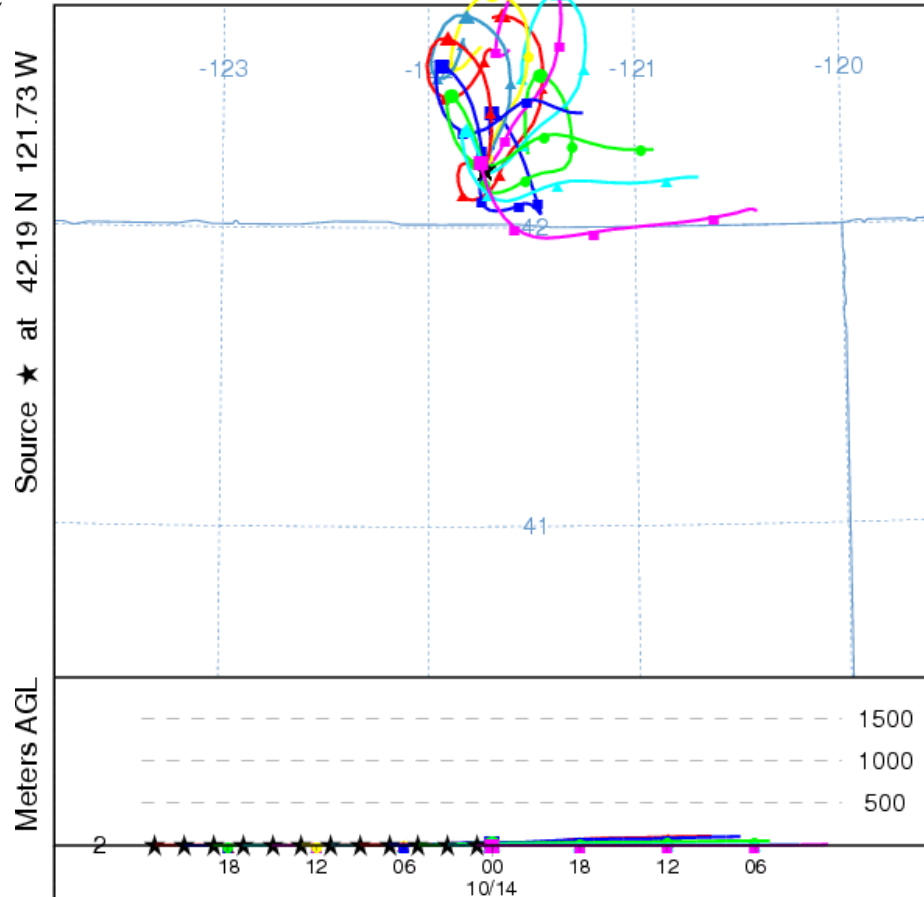
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Old AQI = 90 Moderate
New AQI = 100 USG

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 14 Oct 06
EDAS Meteorological Data



Job ID: 374036 Job Start: Mon Apr 2 20:38:19 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

Air Quality Program

Klamath Falls – October 15, 2006 24 hours Ending 5PM

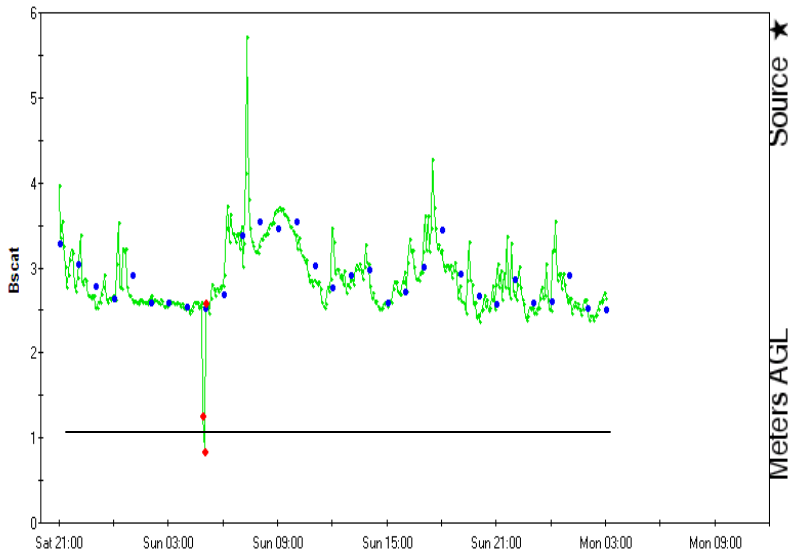


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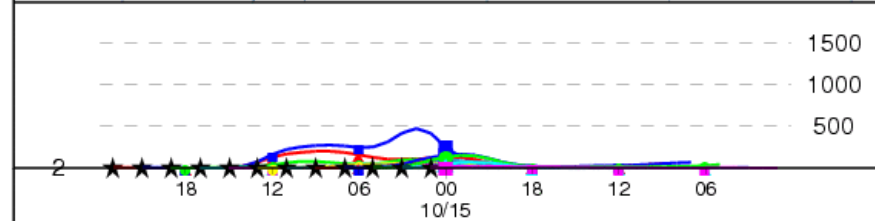
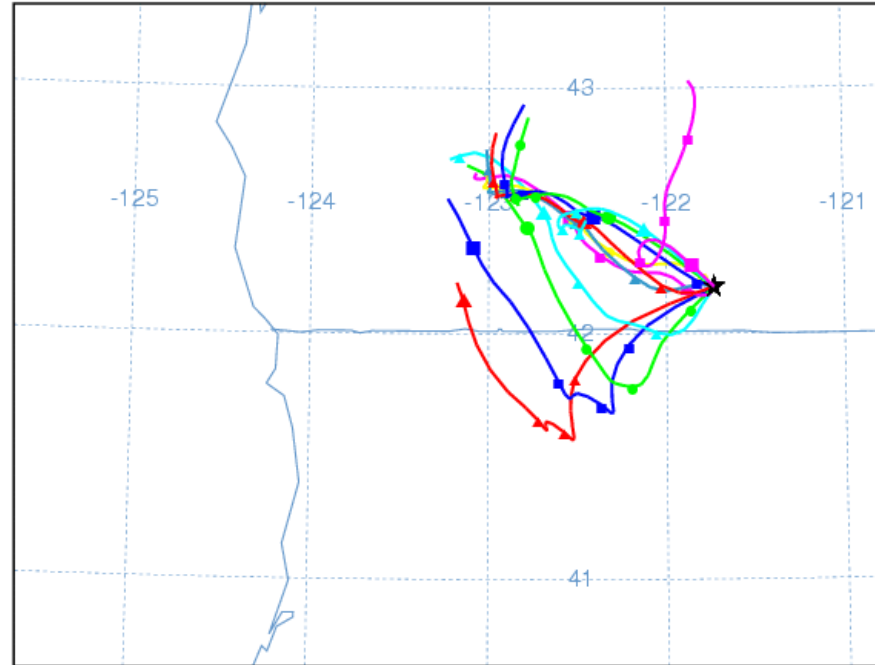
Old AQI = 97 OR USG
New AQI = 109 USG

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Source ★ at 42.19 N 121.73 W
Meters AGL

NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 15 Oct 06
EDAS Meteorological Data



Job ID: 374046 Job Start: Mon Apr 2 20:40:02 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

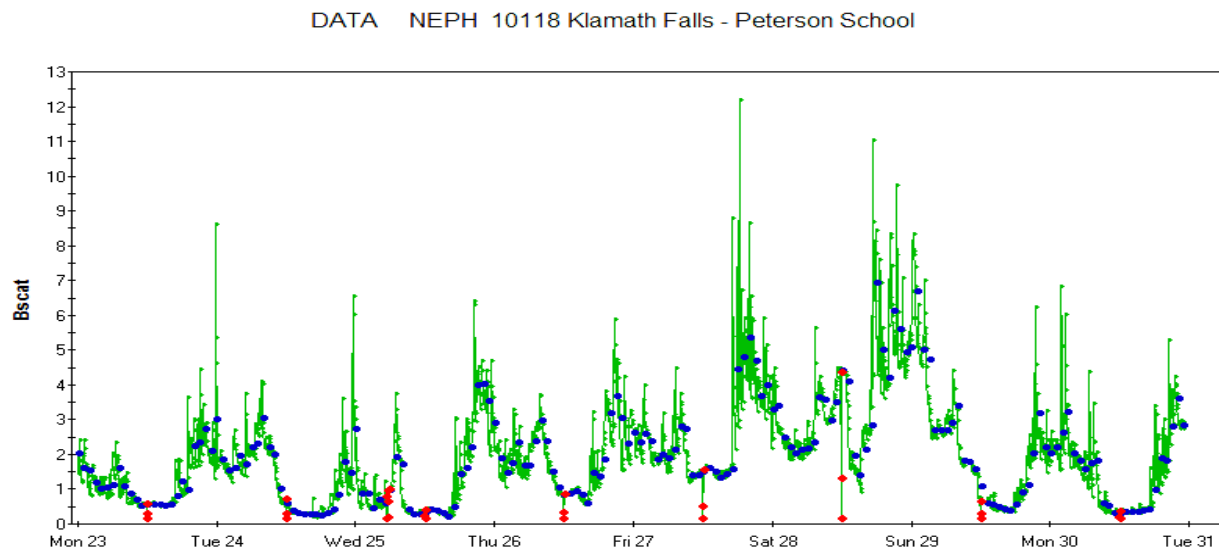
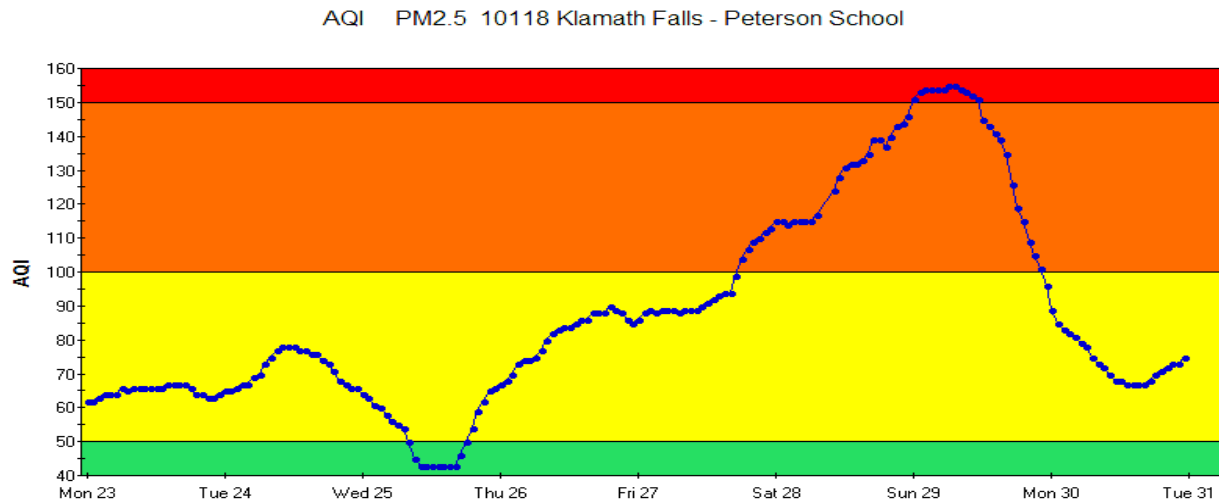
Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)



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Klamath Falls – October 23 – 30, 2006



Date	Time	Value	Status
10/23/2006			12.4
10/30/2006			11.1
10/30/06	23:00	2.88	1
10/30/06	23:00	2.98	1
10/30/06	22:55	2.84	1
10/30/06	22:50	2.78	1
10/30/06	22:45	2.90	1
10/30/06	22:40	3.02	1
10/30/06	22:35	3.02	1
10/30/06	22:30	2.88	1
10/30/06	22:25	2.84	1
10/30/06	22:20	2.76	1
10/30/06	22:15	2.76	1
10/30/06	22:10	2.92	1
10/30/06	22:05	2.92	1
10/30/06	22:00	3.64	1
10/30/06	22:00	2.98	1
10/30/06	21:55	3.46	1
10/30/06	21:50	3.80	1
10/30/06	21:45	3.36	1
10/30/06	21:40	4.02	1
10/30/06	21:35	4.08	1
10/30/06	21:30	4.28	1
10/30/06	21:25	4.00	1
10/30/06	21:20	3.18	1
10/30/06	21:15	2.92	1
10/30/06	21:10	3.76	1
10/30/06	21:05	3.88	1
10/30/06	21:00	2.84	1
10/30/06	21:00	3.34	1
10/30/06	20:55	3.44	1
10/30/06	20:50	2.64	1
10/30/06	20:45	2.30	1
10/30/06	20:40	2.80	1
10/30/06	20:35	5.32	1
10/30/06	20:30	3.36	1
10/30/06	20:25	2.90	1
10/30/06	20:20	1.86	1
10/30/06	20:15	2.54	1
10/30/06	20:10	2.24	1
10/30/06	20:05	1.54	1
10/30/06	20:00	1.84	1
10/30/06	20:00	1.62	1
10/30/06	19:55	1.50	1
10/30/06	19:50	2.14	1
10/30/06	19:45	3.04	1
10/30/06	19:40	1.40	1
10/30/06	19:35	1.38	1
10/30/06	19:30	1.86	1
10/30/06	19:25	2.42	1
10/30/06	19:20	2.78	1
10/30/06	19:15	1.56	1
10/30/06	19:10	1.16	1
10/30/06	19:05	1.22	1
10/30/06	19:00	1.92	1
10/30/06	19:00	2.00	1



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Oregon Burning

Winema NF, Freemont NF, Klamath-Lake Dist. Lakeview

- Oct 23 – 368 ac 7006 tons
- Oct 24 – 170 ac 3695 tons – Avoid w/in 15 mi, avoid smold w/in 30 mi
- Oct 25 – 197 ac 2541 tons – Poor disp. – Avoid 20 mi, smold 35 mi.
- Oct 26 – 342 ac 6424 tons – Poor disp. – Avoid 20 mi, smold 35 mi.
- Oct 27 – 3462 ac 41,814 tons – Poor disp. – Avoid 20 mi, smold 35 mi.
- Oct 28 – none
- Oct 29 – none

Air Quality Program

Klamath Falls – Thurs. October 26, 2006

24 hours Ending 5PM



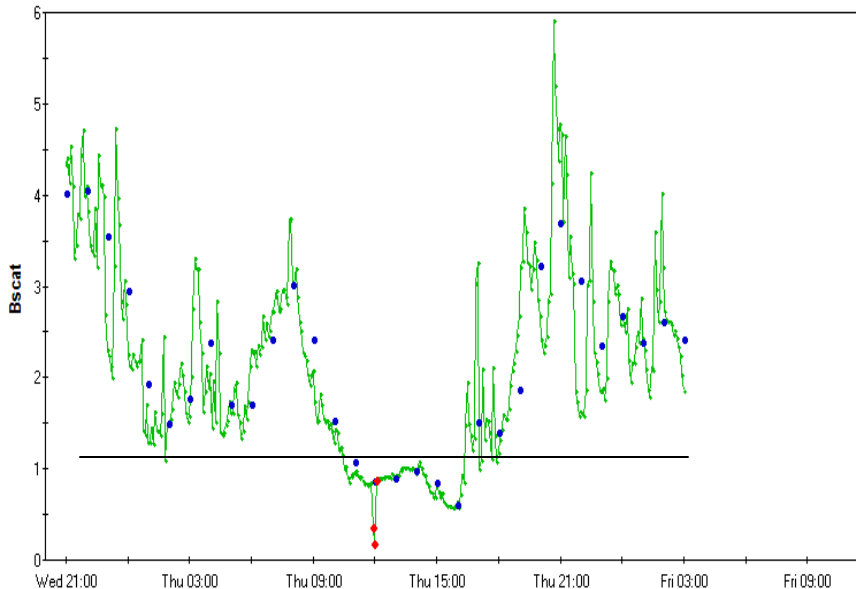
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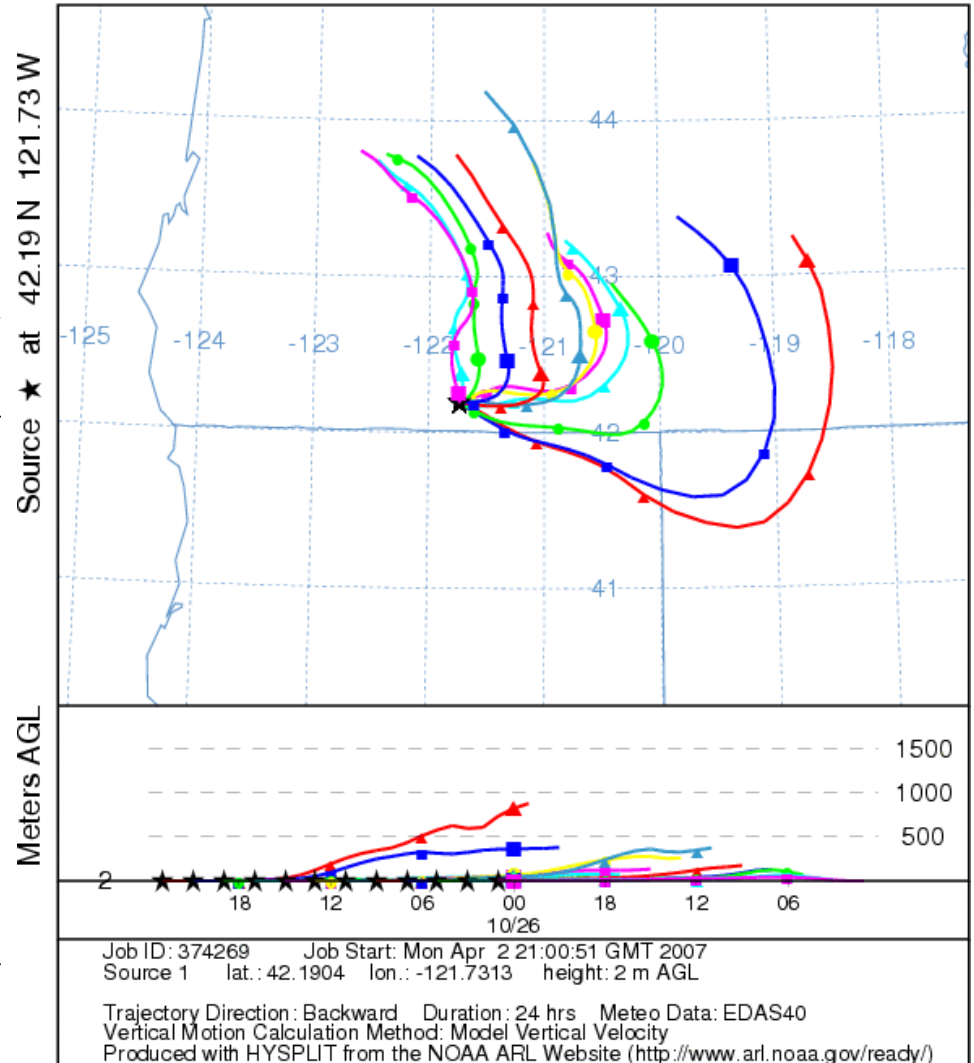
140 ac USFS Chilo
Nature Conserv
12 ac USFW
300 ac BLM
3500 ac Lava Beds
25 ac Goose Nest

New AQI = 94 Moderate
PM2.5 = 30 $\mu\text{g}/\text{m}^3$

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 26 Oct 06
EDAS Meteorological Data



Air Quality Program

Klamath Falls – Fri. October 27, 2006

24 hours Ending 5PM

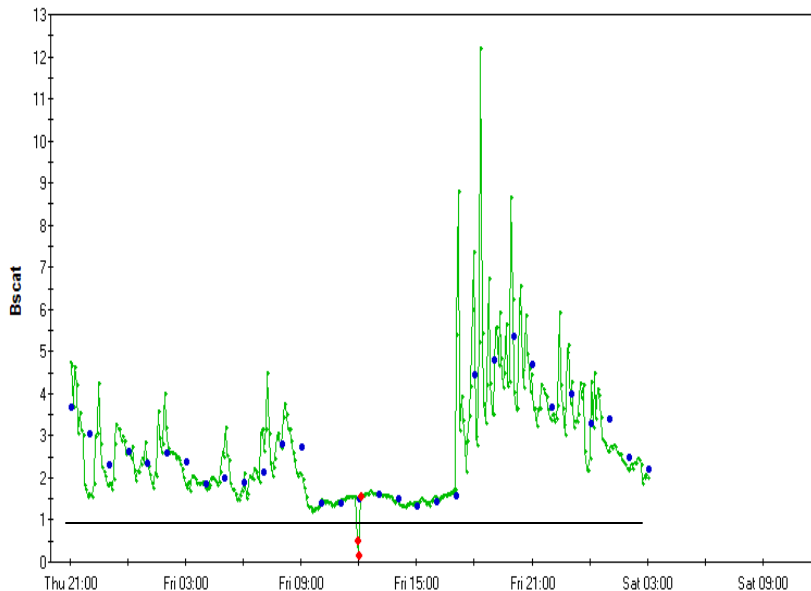


DEQ

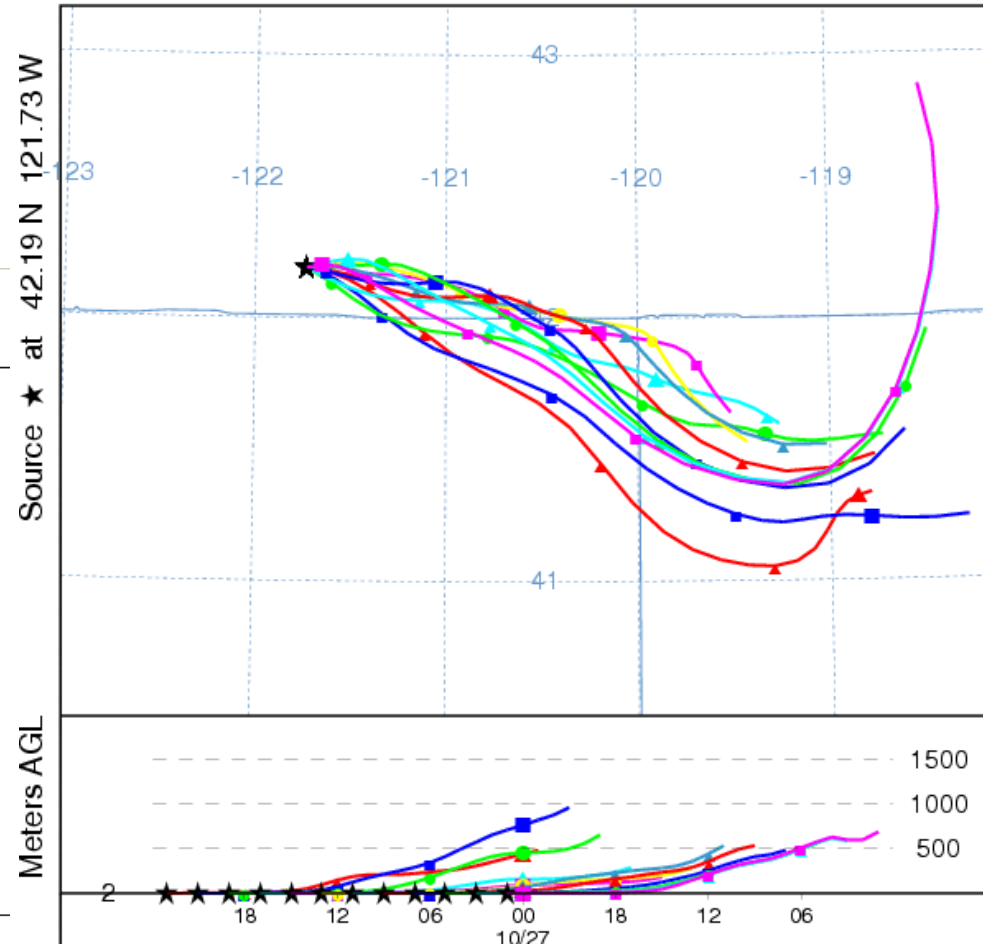
State of Oregon
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Advisory = RED
New AQI = 129 USG
PM2.5 = 47 $\mu\text{g}/\text{m}^3$

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 27 Oct 06
EDAS Meteorological Data



Job ID: 374287 Job Start: Mon Apr 2 21:03:22 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

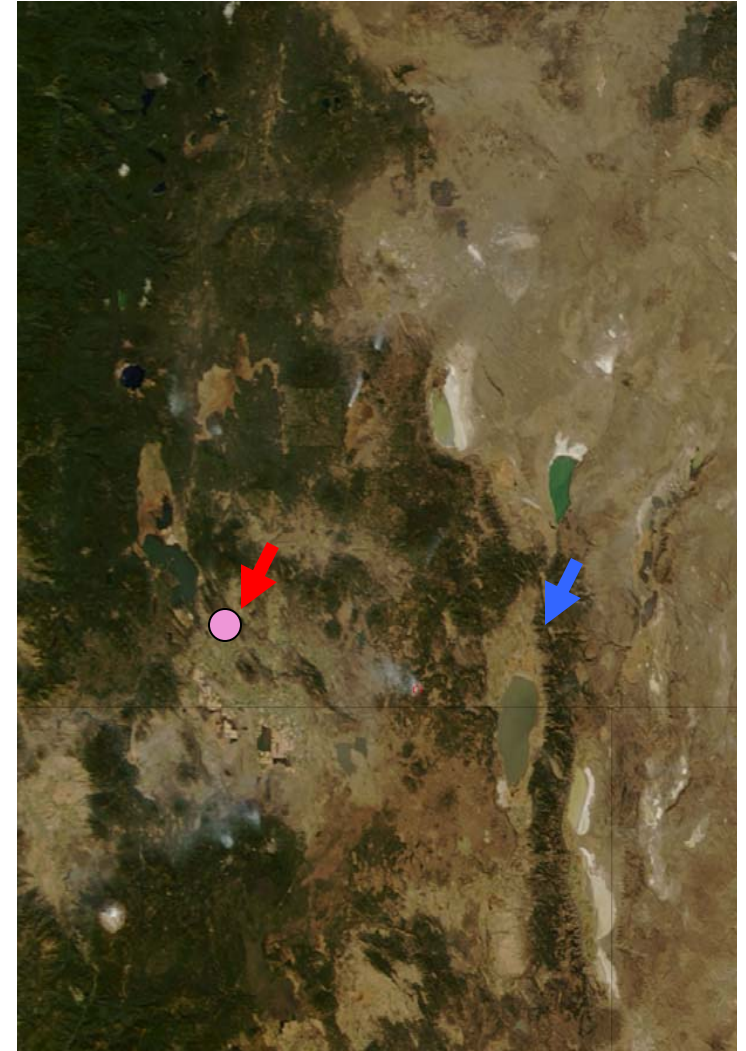


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October 26, 2006



October 27, 2006



Air Quality Program

Klamath Falls – Sat. October 28, 2006

24 hours Ending 5PM

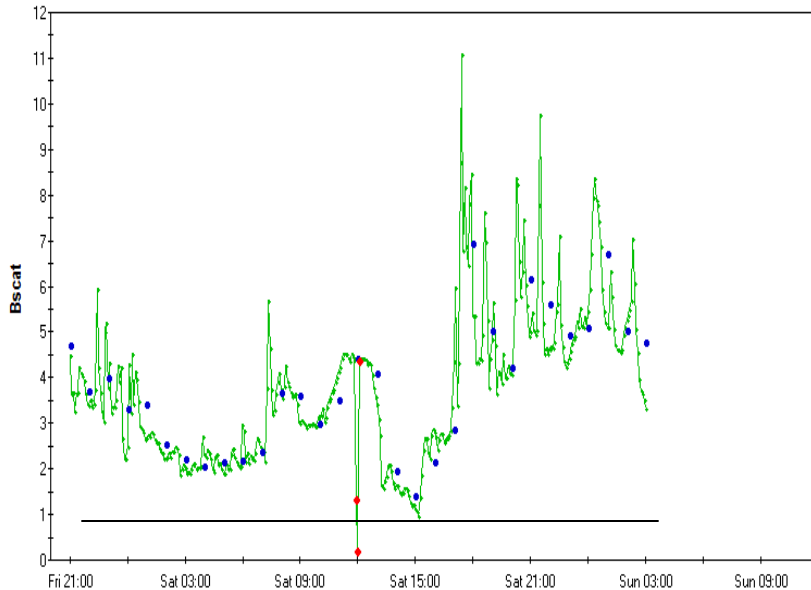


DEQ

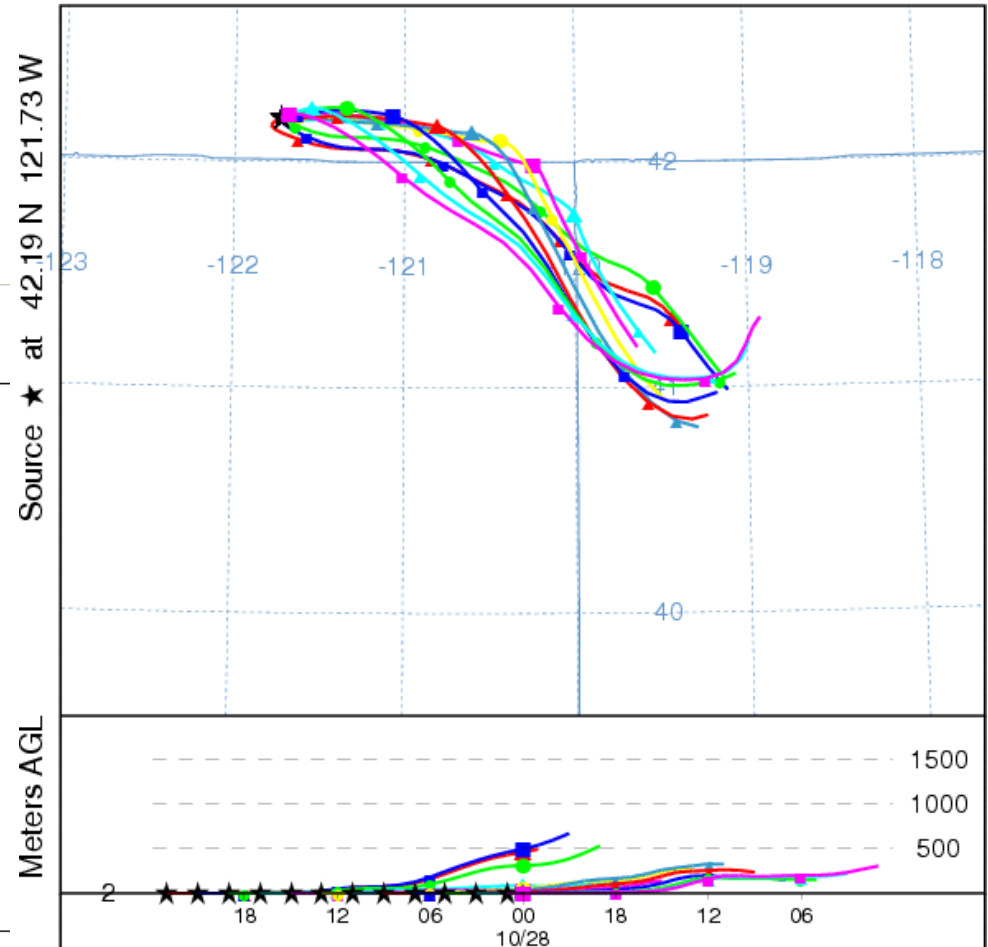
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Advisory = RED
AQI = 146 USG

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 28 Oct 06
EDAS Meteorological Data



Job ID: 374291 Job Start: Mon Apr 2 21:04:28 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

Air Quality Program

Klamath Falls – Sun. October 29, 2006 24 hours Ending 5PM

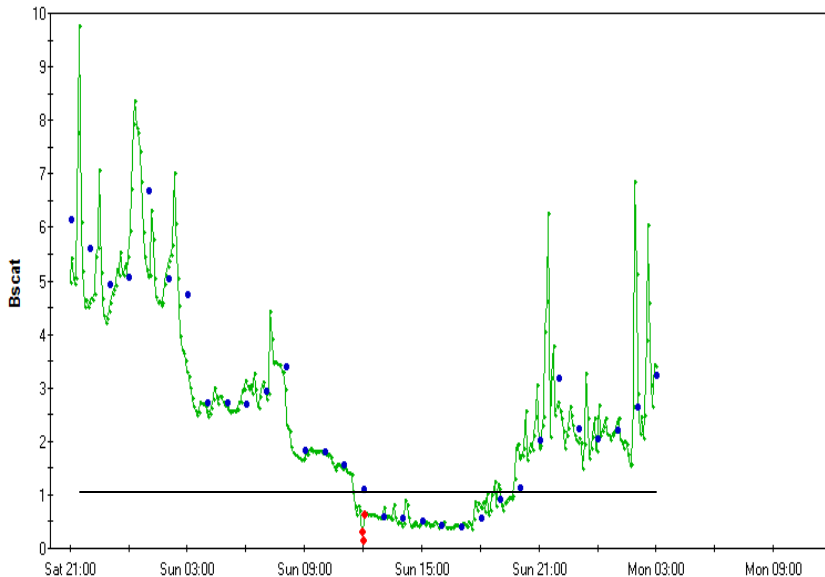


DEQ

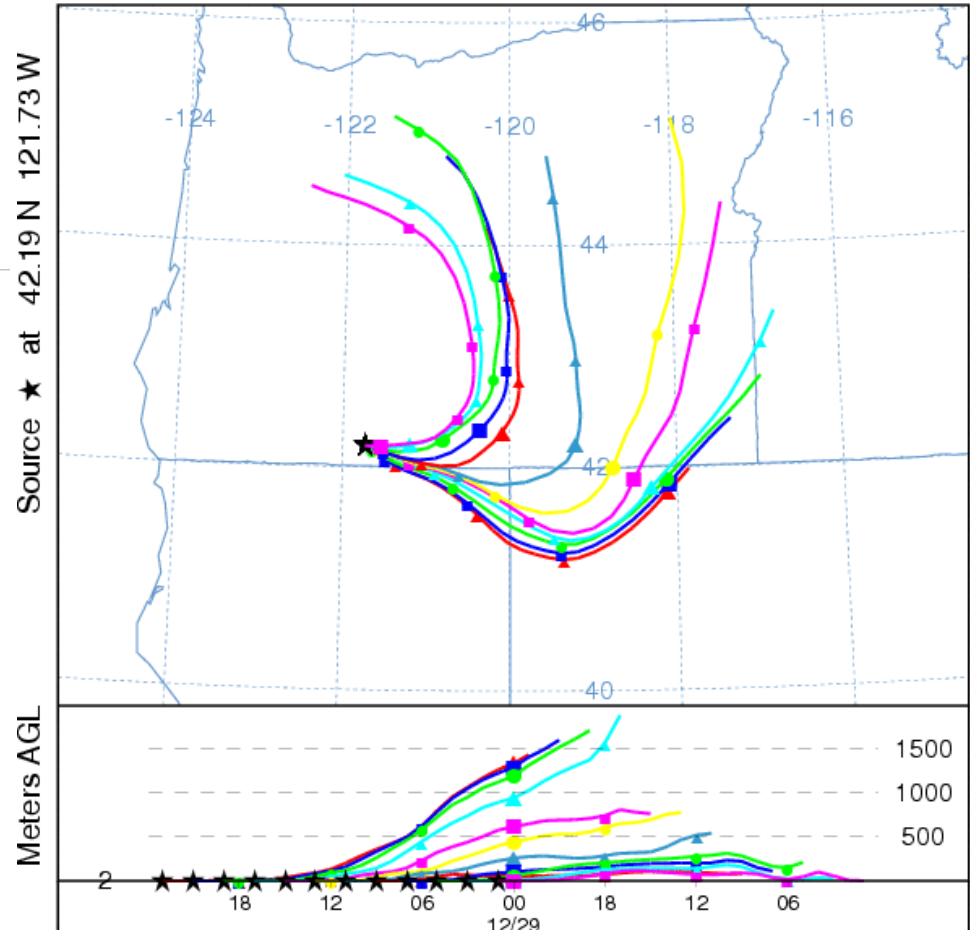
State of Oregon
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Quality

Advisory = Green
AQI = 96 Moderate
PM2.5 = 32.1 $\mu\text{g}/\text{m}^3$

DATA NEPH 10118 Klamath Falls - Peterson School



NOAA HYSPLIT MODEL
Backward trajectories ending at 23 UTC 29 Dec 06
EDAS Meteorological Data



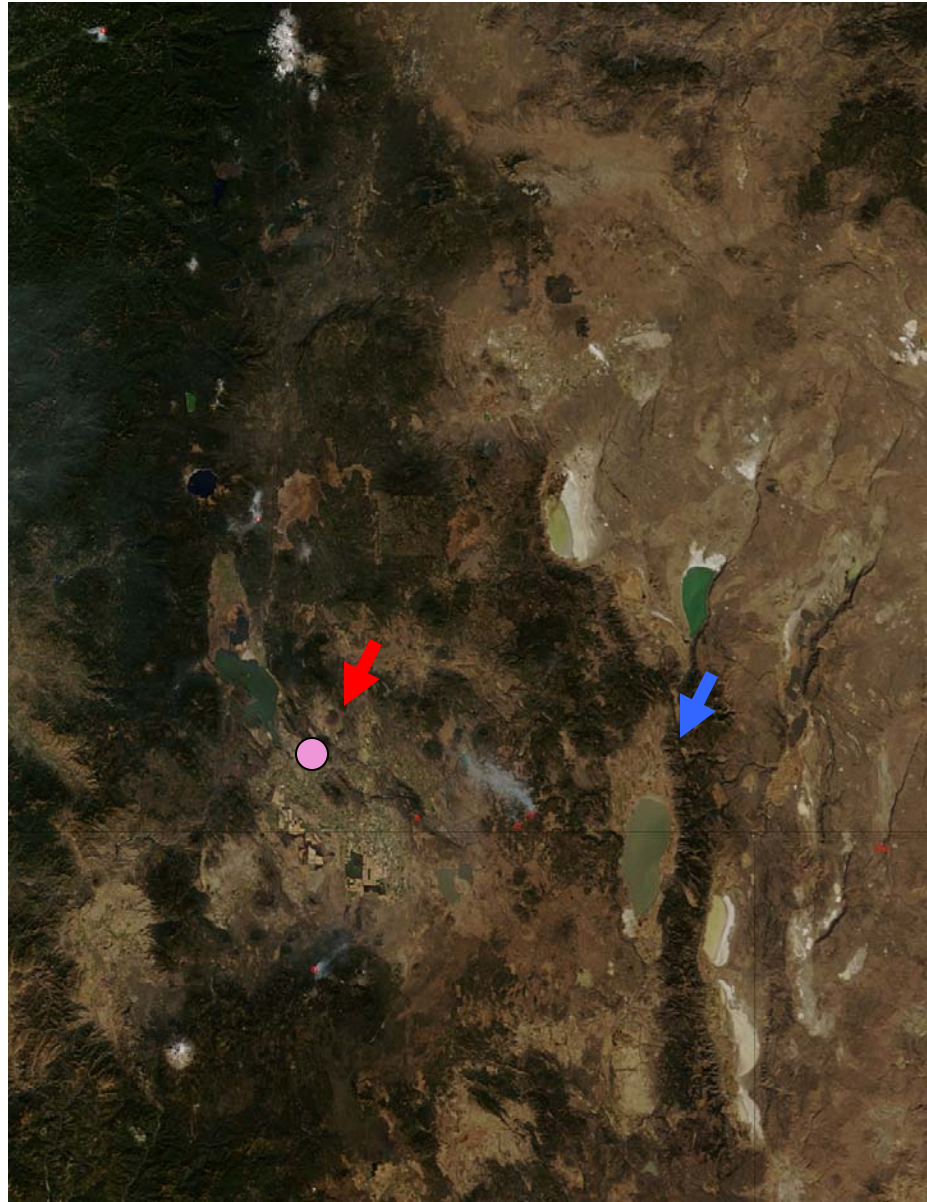
Job ID: 374466 Job Start: Mon Apr 2 21:34:49 GMT 2007
Source 1 lat.: 42.1904 lon.: -121.7313 height: 2 m AGL

Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

October 28, 2006



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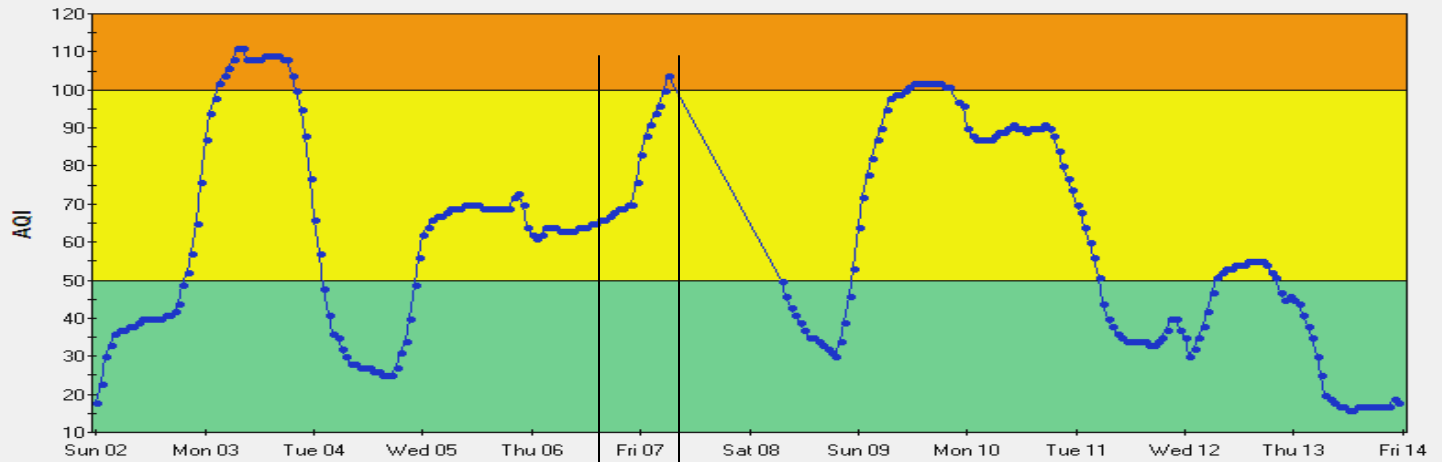


DEQ

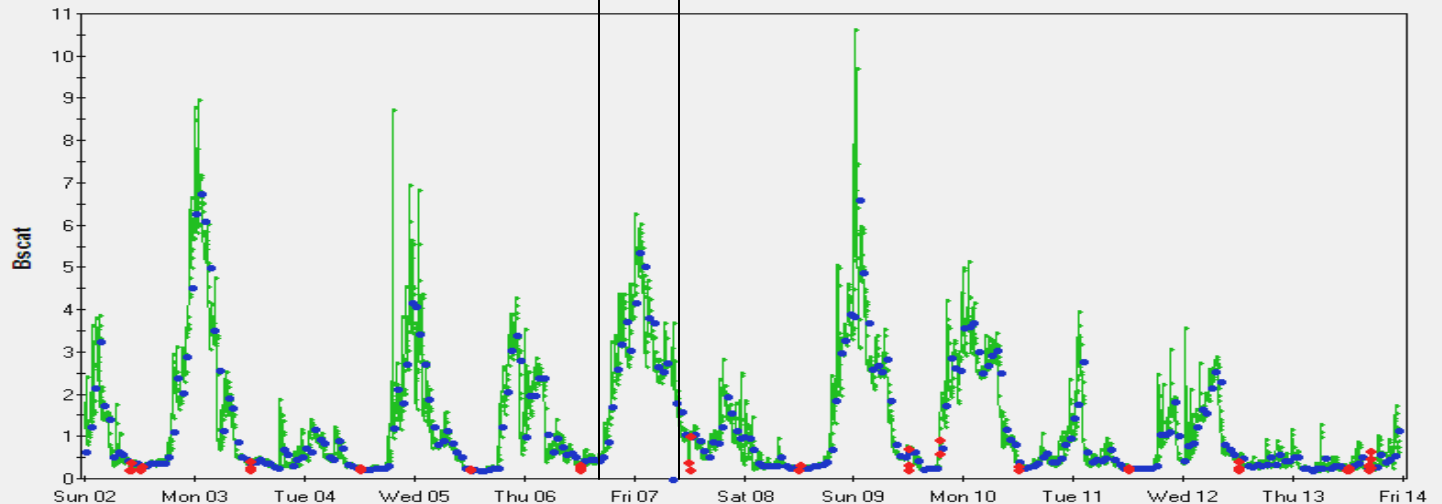
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Klamath Falls – March 2-13, 2008

AQI PM2.5 10118 Klamath Falls - Peterson School



DATA NEPH 10118 Klamath Falls - Peterson School



Air Quality Program

BLM Burn – March 6-7, 2008



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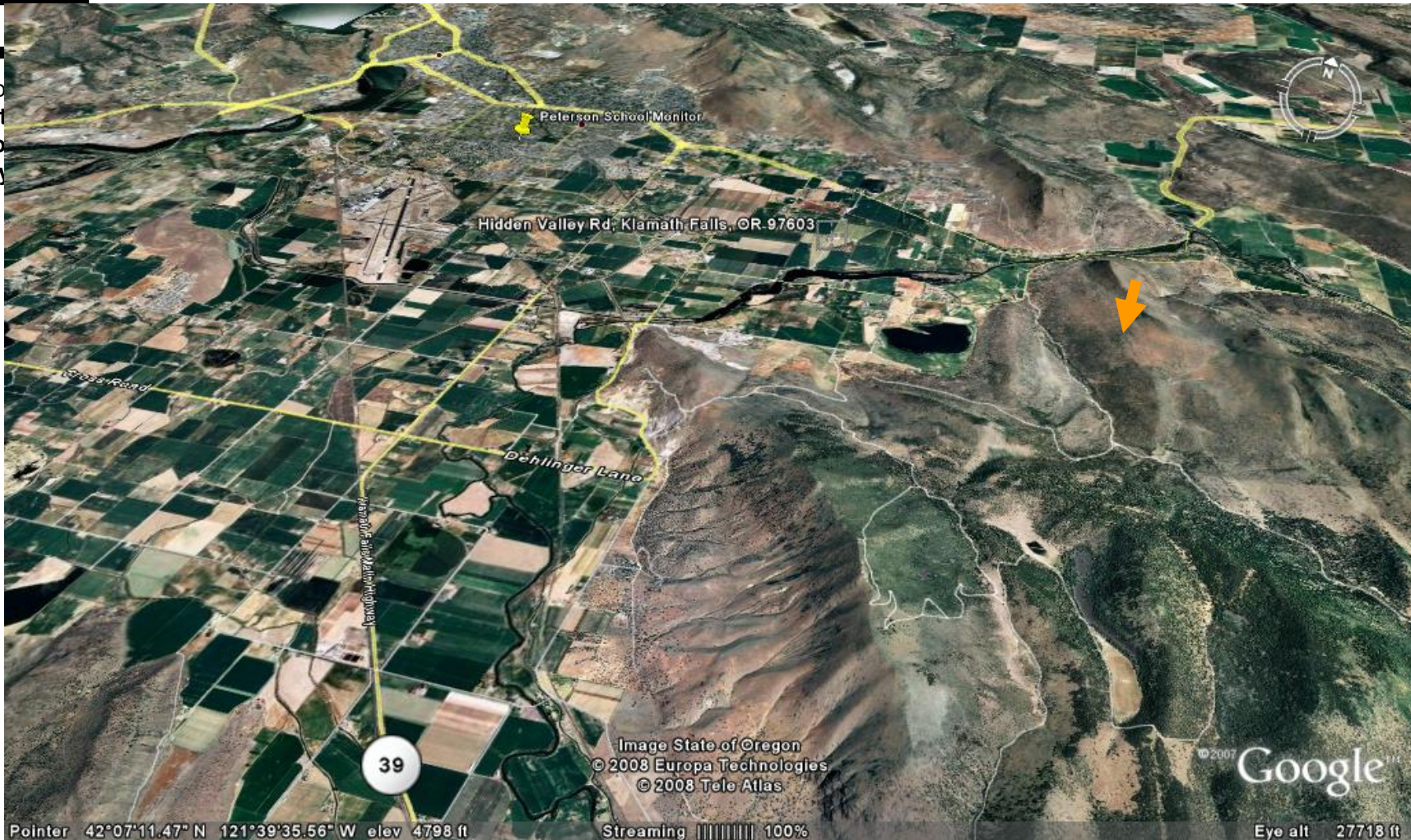




BLM Burn

D

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Smoke Intrusion Report Into Klamath Falls – 6-7 miles from monitor

- Drifting smoke and residual smoke impacts – evening hours; likely from several sources including woodstoves, and burning in Tule Lake area
- 3/6/08 – BLM – 10 acres - Beginning at 5PM - 16+ hours
- Verbal instructions – indicated marginal mixing and poor ventilation – No written instruction
- 4.8 b-scat above background – moderate intrusion
- Subsidence behind trough created the inversion that picture shows
- Klamath County - Yellow Advisory



DEQ

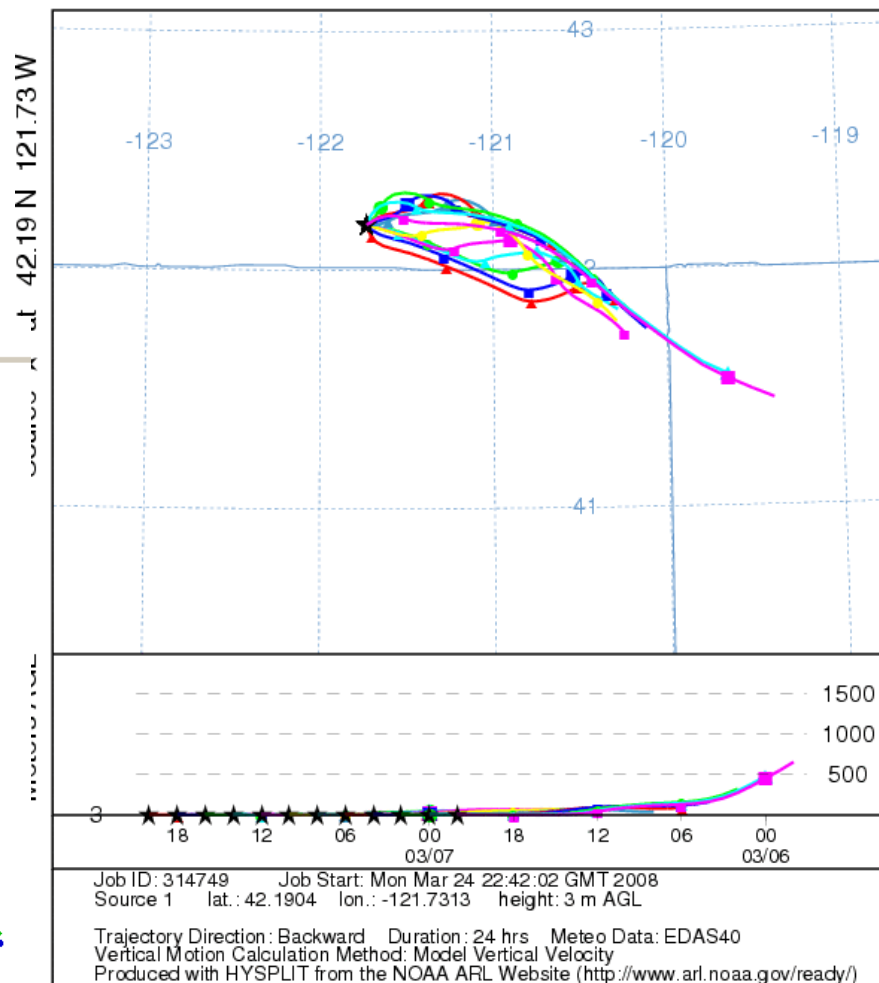
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March 6 and 7, 2008 Back Trajectories

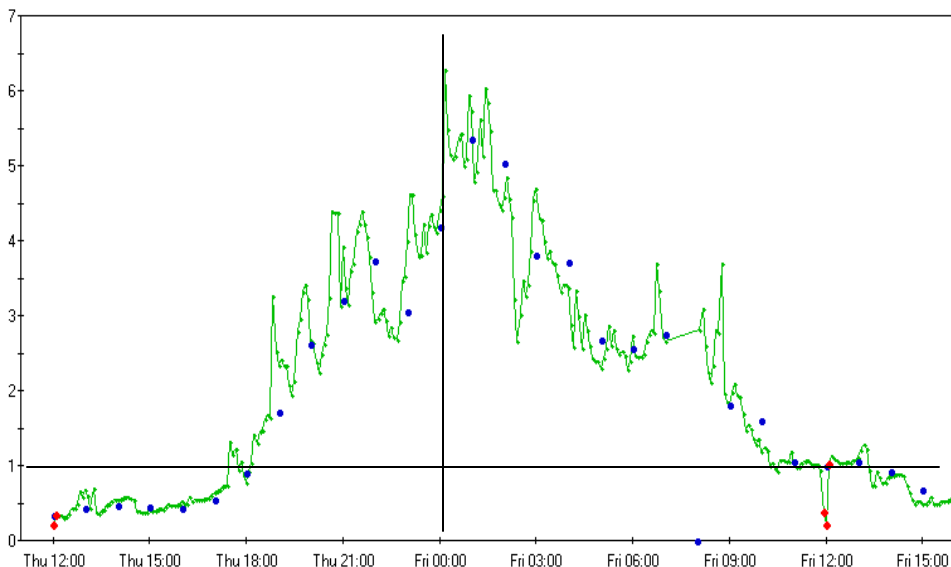
March 6 -
Yellow Advisory
AQI - 76

March 7 -
Yellow Advisory
AQI - 104

NOAA HYSPLIT MODEL
Backward trajectories ending at 20 UTC 07 Mar 08
EDAS Meteorological Data



DATA NEPH 10118 Klamath Falls - Peterson School





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Birds Eye View 3-6-08

