DRAFT
PARTICULATE SAMPLING/ IDAHO DEQ/ PM-10
CITY OF SALMON
Up-dated December 11, 2001

LOCATION: TOP OF HIGH SCHOOL (EAST OF THE MAIN PART OF TOWN)

1991 SUMMER/ JULY 5- AUGUST 28: AVERAGE= 42 micrograms/cubic meter (ug/m3). Smoke in valley from (FCW- Kitchen, Cabin and Rush Creeks) & Selway.

1991 FALL/ SEPTEMBER 9 - NOVEMBER 26: AVERAGE= 56 ug/m3
3 days over 100 ug/m3 (106, 128, 146) from Rush Creek and Selway Fires.

1991 WINTER/ DECEMBER 2 - FEBRUARY 24: AVERAGE= 50 ug/m3

1992 SPRING/ MARCH 1 - MAY 30: AVERAGE= 38 ug/m3

1992 SUMMER/ JUNE 5- AUGUST 28: AVERAGE= 39 ug/m3
1 day over 100 ug/m3 (136. Smoke in valley from Boise Foothill and Payette Fires.

1992 FALL/ SEPTEMBER 3 - NOVEMBER 26: AVERAGE = 61 ug/m3
Smoke in the Salmon Valley.

1992 WINTER/ DECEMBER 2 - FEBRUARY 24: AVERAGE = 53 ug/m3
Winter smoke from the wood burning fireplaces.

1993 SPRING/ MARCH 2 - MAY 31: AVERAGE = 33 ug/m3

1993 SUMMER/ JUNE 6 - AUGUST 29: AVERAGE = 21 ug/m3

1993 FALL/ SEPTEMBER 4 - NOVEMBER 27: AVERAGE = 68 ug/m3
1 day over 100 (150). Heavy smoke in the Salmon Valley from Payette Fires in early fall and late fall it was due to home/business heating with wood.

TOTAL AVERAGE FOR SUMMER	1991	= 42 micrograms /cubic meter
TOTAL AVERAGE FOR FALL	1991	= 56 micrograms /cubic meter
TOTAL AVERAGE FOR WINTER	1991	= 50 micrograms/cubic meter
TOTAL AVERAGE FOR SPRING	1992	= 38 micrograms/cubic meter
TOTAL AVERAGE FOR SUMMER	1992	= 39 micrograms/cubic meter
TOTAL AVERAGE FOR FALL	1992	= 61 micrograms/cubic meter
TOTAL AVERAGE FOR WINTER	1992	= 53 micrograms/cubic meter
TOTAL AVERAGE FOR SPRING	1993	= 33 micrograms/cubic meter
TOTAL AVERAGE FOR SUMMER	1993	= 21 micrograms/cubic meter
TOTAL AVERAGE FOR FALL	1993	= 68 micrograms/cubic meter

The High School was using wood by-products (sawdust) from the Salmon sawmill for Fall and Winter heating and reflects the higher numbers at these times. Also, during this same period some local business and residential homes were burning wood for heating. Throughout the year, the local Salmon lumber mill Teepee, was burning scrap wood.

1991 through 1993 AVERAGES:

SUMMER AVERAGE= 34 micrograms per cubic meter (ug/m3)
FALL AVERAGE= 62 ug/m3
WINTER AVERAGE= 51 ug/m3
SPRING AVERAGE= 35 ug/m3

LOCATION: MOVED TO THE ROOFTOP OF ELEMENTARY SCHOOL (VERY CLOSE TO THE SAWDUST BURNING BOILERS) AND THE RESIDENTIAL PART OF TOWN.

1994 FALL / OCTOBER 11- NOEMBER 28: AVERAGE= 53 micrograms / cubic meter
2 days over 100 ug / m3 (100,110) Wood smoke in town.

1994 WINTER / DECEMBER 4- FEBRUARY 26: AVERAGE= 58 ug / m3
1 day over 100 ug / m3. Wood smoke in town.

1995 SPRING / MARCH 4 - MAY 27: AVERAGE= 29 ug / m3
2 days over 100 ug / m3 (100,119)

1995 SUMMER / JUNE 2- AUGUST 31: AVERAGE= 26 ug / m3
Smoke in Salmon Valley from Canada.

1995 FALL / SEPTEMBER 6 - NOVEMBER 29: AVERAGE= 38 ug / m3

1995 WINTER / DECEMBER 5 - FEBRUARY 27: AVERAGE= 51 ug / m3
1 day over 100 (119) Wood smoke in town. Salmon sawmill Teepee closed.

1996 SPRING / MARCH 4 - MAY 27: AVERAGE= 39 ug / m3
1 day at 100

1996 SUMMER / JUNE 2- AUGUST 31: AVERAGE= 97 ug / m3
Heavy smoke in valley from Swet Fire in late summer.

1996 FALL / SEPTEMBER 12 - NOVEMBER 29: AVERAGE= 38 ug / m3
Moderate amount of smoke in valley from the Challis Bridge Fire.

1996 WINTER / DECEMBER 5 - FEBRUARY 27: AVERAGE= 51 ug / m3

1 day over 100 (155) Heavy wood smoke in town at times.

1997 SPRING / MARCH 5 - MAY 28: AVERAGE= 40 ug / m3
1 day over 100 (123) Wood and grass burning in valley.

1997 SUMMER / JUNE 3 - AUGUST 26: AVERAGE= 24 ug / m3

1997 FALL / SEPTEMBER 1 - NOVEMBER 30: AVERAGE= 44 ug / m3
Smoke in town during late fall.

1997 WINTER / DECEMBER 6 - FEBRUARY 28: AVERAGE= 62 ug / m3
1 day over 100 (124) Moderate to heavy wood smoke in town.

1998 SPRING / MARCH 6 - MAY 29: AVERAGE= 40 ug / m3
Heating from wood smoke in early spring. Asian dust storm in April.

1998 SUMMER / JUNE 4 - AUGUST 27: AVERAGE= 30 ug / m3
Heavy smoke in valley during late August

1998 FALL / SEPTEMBER 2 - NOVEMBER 25: AVERAGE= 46 ug / m3
1 day over 100 (102). Moderate to heavy smoke in valley from Sheepeater Fire.

1998 WINTER / DECEMBER 1 - FEBRUARY 23: AVERAGE= 46 ug / m3
Moderate to heavy smoke in town.

1999 SPRING / MARCH 1 - MAY 30: AVERAGE= 38 ug / m3
1 day over 100 (112). Heavy smoke in town during early spring.

1999 SUMMER / JUNE 5 - AUGUST 28: AVERAGE= 27 ug / m3

1999 FALL / SEPTEMBER 3 - NOVEMBER 26: AVERAGE= 35 ug / m3

1999 WINTER / DECEMBER 2 - FEBRUARY 24: AVERAGE= 46 ug / m3
Moderate to high amounts of smoke in town.

2000 SPRING / MARCH 1 - MAY 30: AVERAGE= 27 ug / m3

2000 SUMMER / JUNE 5 - AUGUST 31: AVERAGE= 76 ug / m3
Clear Creek fire: high amounts of smoke in valley with many inversions
19 days over 100 including 6 days over 200.

2000 FALL / SEPTEMBER 1 - NOVEMBER 26: AVERAGE= 25 ug / m3

2000 WINTER / DECEMBER 2 - FEBRUARY 24: AVERAGE= 50 ug / m3

Moderate to high amounts of wood burning smoke.

2001 SPRING / MARCH 2 - MAY 31: AVEEAGE= 30 ug / m3
Moderate amounts of smoke in town during early spring.

TOTAL AVERAGE FOR FALL	1994	= 53 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	1994	= 58 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	1995	= 29 micrograms / cubic meter
TOTAL AVERAGE FOR SUMMER	1995	= 26 micrograms / cubic meter
TOTAL AVERAGE FOR FALL	1995	= 38 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	1995	= 51 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	1996	= 39 micrograms / cubic meter
TOTAL AVERAGE FOR SUMMER	1996	= 97 micrograms / cubic meter
TOTAL AVERAGE FOR FALL	1996	= 38 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	1996	= 51 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	1997	= 40 micrograms / cubic meter
TOTAL AVERAGE FOR SUMMER	1997	= 24 micrograms / cubic meter
TOTAL AVERAGE FOR FALL	1997	= 44 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	1997	= 62 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	1998	= 40 micrograms / cubic meter
TOTAL AVERAGE FOR SUMMER	1998	= 30 micrograms / cubic meter
TOTAL AVERAGE FOR FALL	1998	= 46 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	1998	= 46 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	1999	= 38 micrograms / cubic meter
TOTAL AVERAGE FOR SUMMER	1999	= 27 micrograms / cubic meter
TOTAL AVERAGE FOR FALL	1999	= 35 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	1999	= 46 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	2000	= 27 micrograms / cubic meter
TOTAL AVERAGE FOR SUMMER	2000	= 76 micrograms / cubic meter
TOTAL AVERAGE FOR FALL	2000	= 25 micrograms / cubic meter
TOTAL AVERAGE FOR WINTER	2000	= 50 micrograms / cubic meter
TOTAL AVERAGE FOR SPRING	2001	= 30 micrograms / cubic meter

1994 through 2000 AVERAGES:

SUMMER AVERAGE= 47 micrograms per cubic meter
FALL AVERAGE= 40
WINTER AVERAGE= 52
SPRING AVERAGE= 35

1991 through 1993 AVERAGES:

SUMMER AVERAGE= 34 micrograms per cubic meter
FALL AVERAGE= 62
WINTER AVERAGE= 51
SPRING AVERAGE= 35

This above data shows that during the summer months, when the Salmon Valley has smoke from the west, southwest and northwest, due to forest fires, that the level of particulate matter is **LESS** than the winter months for the City of Salmon. The City and general area, during the winter months have heavy amounts of smoke from wood burning and other wood by-products for heating that produces particulate matter and generally it is held close to the ground (generally within 200-700 feet elevation) due to the local inversion layers. The Salmon local sawmill "Teepee" stopped burning wood in December 1995, and in 1999, the Salmon High School converted to propane gas and in 2001, the Elementary Junior High School (Pioneer) was converted. Since the high school was located east of the air sampling machine, it is nearly impossible to see the difference in converting to propane gas from the air monitoring machine numbers, but you can visually see the difference, since there is no smoke at all now from the high school. This is also true of the monitoring site located on the roof at the Junior High School. The site was located about 150 feet west of the smoke stack and except during the night inversions, the wind would blow it to the east, away from the sampling machine. During the fall and winter, you could see the smoke from the sawdust being burned in the furnace, but with all of the residential wood burning in town, it will be hard to separate out the amount that was collected by the sampling machine.

Gary L. Jackson
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Salmon - Challis National Forest
Idaho