



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

FEB 16 1990

Ref: 8AT-AP

MEMORANDUM

TO: Joseph Tikvart, Chief
Source Receptor Analysis Branch (MD-14)

Robert Bauman, Chief
SO₂/Particulate Matter Programs Branch (MD-15)

FROM: Douglas M. Skie, Chief *Dean Williams Acting for*
Air Programs Branch, Region VIII (8AT-AP)

SUBJECT: East Helena Lead SIP

The reason for this letter is to ask for your concurrence on the enclosed CMB and dispersion modeling approach proposed by ASARCO for the East Helena Lead SIP. The Region has reviewed the document and our comments are provided below. Prior to our comments is a brief explanation and history of the situation precipitating the enclosure.

As you know, Region VIII called for a SIP revision in East Helena, MT on October 1, 1988, for continued violations of the lead NAAQS. Throughout 1989 we received various workplans from the State and ASARCO, the principal lead source in East Helena. Through review of these plans we concluded that the final East Helena Lead SIP had to be submitted to EPA by February 1, 1992. This submittal date has been stretched out to 1992 because the State and ASARCO decided to: 1) complete one year of on-site meteorological monitoring for the dispersion modeling analyses EPA is requiring for the SIP; and 2) continue with the chemical mass balance (CMB) analyses.

The meteorological monitoring has already begun. The CMB sampling was to have begun in April 1990 with completion in April 1991. However, because of construction at ASARCO that was to be completed in January 1990 which will not be completed until March 31, 1990, ASARCO is requesting that the CMB analyses not be started until July 1990. Although the building will be completed at the end of the first quarter of 1990, another quarter is needed for "shakedown" of the building. During the shakedown period outdoor ore storage piles will either be used up or moved inside the new building.

Originally, Region VIII decided that the CMB sampling had to begin in April 1990, regardless of when the building was finished. ASARCO has indicated that any data collected prior to the removal of the ore storage piles will be difficult, if not

impossible, to interpret. Because Region VIII has been adamant about meeting the February 1992 date, ASARCO has developed a compromise that will allow them to begin the CMB modeling in July 1990 and still meet the February 1992 submittal date.

A brief description of the compromise follows. Please see the enclosed submittal from ASARCO, dated February 14, 1990, for more detail. Basically, ASARCO would like to reconcile the CMB and dispersion modeling with two quarters (third and fourth calendar quarters of 1990) of data. Once the models are reconciled for those two quarters, the model would be compared with data collected in the first two quarters in 1991. This approach, per ASARCO, will define the validity of the reconciled model on a year-round basis.

We are asking for a determination as to whether or not headquarters can accept this approach. The "Protocol for Reconciling Differences Among Receptor and Dispersion Models" (EPA-450/4-87-008) does not address quarterly standards. Since the seasons are very different and distinct in East Helena, this guidance might be construed to imply that one year of data is needed for reconciliation, i.e. the guidance states "the number of samples to be compared must reflect the seasonal differences in measured concentrations."

Region VIII would be inclined to accept ASARCO's approach. Although CMB analyses is not required for lead SIPs, its use in this case will provide the State and the source with more information to make sound decisions in their control strategy selections. Additionally, if we have any hope of meeting the February 1992 deadline, we will have to make a few concessions.

Region VIII's comments to ASARCO's February 14, 1990 submittal, were developed by Dale Wells, regional CMB contact, and John Notar, regional meteorologist, and are as follows:

1. The CMB analysis must be consistent with the EPA "Protocol for Applying and Validating the CMB Model" (EPA-450/4-87-010) and EPA's "Protocol for Reconciling Differences Among Receptor and Dispersion Models" (EPA-450/4-87-008) and must be used.
2. The receptor modeling would be improved if the filters used were collected with dichotomous samplers, since the fugitive portion of the particulate matter is contained in the coarse fraction, while the stack emissions would be contained in the fine fraction.
3. It would be preferable to increase the sampling frequency in the January 1 to June 30, 1991 period to every day, but if this is not practical, to at least every other day. Although the one in six day monitoring is minimally

acceptable, according to the regulations, it would be more statistically robust to monitor every day, or every other day. This would allow a more statistically complete data set to be analyzed, to ensure that the dispersion modeling is performing correctly. It would also provide for the availability of additional monitor filters to perform additional CMB analysis should the ten planned CMB filter analyses for that half of the year not be reconcilable with the emission inventory or the dispersion modeling.

Five samples is the minimum number which must be analyzed per season. These should be the days with the highest lead concentrations. Again, if there is a lot of variability in the CMB source apportionment for these samples, more samples should be analyzed.

4. With respect to the complex terrain modeling, ASARCO has proposed to first perform a VALLEY screening analysis with the COMPLEX I model. If it fails the VALLEY screening technique of "F" stability and 2.5 m/s, then the use of RTDM (Rough Terrain Dispersion Model) is proposed. Region VIII believes that an analysis with COMPLEX I with the full year of meteorological data should be performed before going to the RTDM analysis.
5. Finally, Region VIII interprets from the write-up that once the models are reconciled, one full year of dispersion modeling will be completed for the development of the control strategies.

Since we have committed to inform the State by March 1, 1990, on whether this approach would be acceptable, we are requesting that you review this package and get back to us by February 28, 1990. Please contact Dale Wells if you need additional information with respect to the CMB and John Notar if you need additional information with respect to the dispersion modeling. Dale can be reached at FTS 330-1773 and John at FTS 330-1755. We are also enclosing the ambient lead data through the 3rd quarter 1989, for your information.

Enclosures (2)

LEAD (12128)

MONTANA

UNITS: 001 UG/CU METER (25 C)

SITE ID	P O M C T CITY	COUNTY	ADDRESS	REP YR ORG #OBS	---QUARTERLY ARITH MEANS---				MEANS >1.5	MAX VALUES		METH	
					1ST	2ND	3RD	4TH		1ST	2ND		
30-049-0007	1 0		LEWIS AND CL SCHNEIDER RESIDENC	83 000	25			1.99	1.02?	1	4.51	3.91	090
30-049-0008	1 0		LEWIS AND CL A&W EAST HELENA	80 000	46	.78	.27?	.76	1.19?	0	5.64	2.07	092
30-049-0008	1 2		LEWIS AND CL A&W EAST HELENA	81 000	40	.52	.55?	.17?	.50	0	1.74	1.71	092
30-049-0012	1 0	HELENA	LEWIS AND CL 3030 N MONTANA AVE	80 000	2				.30?	0	.49	.10	092
30-049-0012	1 0	HELENA	LEWIS AND CL 3030 N MONTANA AVE	81 000	19	.31?	.04?		.22?	0	1.01	.57	092
30-049-0712	1 0		LEWIS AND CL 1 1/2 MI EAST OF A	81 000	32	.67	.43?	2.58?	1.27	0	5.11	2.74	092
30-049-0713	1 0		LEWIS AND CL 3/4 MI EAST OF ASA	81 000	40	.92	.89?	1.72?	1.09	0	2.97	2.47	092
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	81 013	25	6.20	4.03?			1	16.98	13.91	092
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	83 013	55			4.78	5.26	2	16.75	13.13	090
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	84 013	115	5.77	2.74	5.62	6.83	4	19.27	17.12	090
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	85 013	115	5.46	3.30	2.26	2.26	4	17.08	12.99	090
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	86 013	116	3.17	1.77	2.34	5.16	4	19.49	14.25	090
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	87 013	116	3.44	2.35	3.10	4.11	4	12.75	11.54	090
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	88 013	121	2.71	2.99	4.74	3.43	4	18.10	15.70	090
30-049-0714	1 3		LEWIS AND CL FIREHALL, 1ST ST,	89 013	75	2.32	2.64	3.98		3	17.32	14.22	090
30-049-0714	3 0		LEWIS AND CL FIREHALL, 1ST ST,	81 000	23	6.89	4.03?			1	18.65	13.91	092
30-049-0715	1 0		LEWIS AND CL FIELD ON PADBURY S	81 000	27			.00?	.26	0	1.03	.78	092
30-049-0716	1 3		LEWIS AND CL KLEFFNER FIELD	81 013	34			1.08?	.88	0	6.09	2.75	092
30-049-0716	1 3		LEWIS AND CL KLEFFNER FIELD	83 013	67	.95?	1.07	.79	1.31	0	3.36	3.24	090
30-049-0716	1 3		LEWIS AND CL KLEFFNER FIELD	84 013	60	1.48	1.22	.99	1.43	0	7.11	5.53	090
30-049-0716	1 3		LEWIS AND CL KLEFFNER FIELD	85 013	17	1.85	1.46?			1	5.09	3.69	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	82 013	25	7.62?	1.59?	2.64?	1.96	1	7.62	6.18	000
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	83 013	62	3.28	3.20?	3.39	3.07	3	8.39	7.29	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	84 013	116	4.13	1.82	3.39	4.63	4	17.73	12.88	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	85 013	115	3.20	2.17	1.87	1.42	3	10.08	9.05	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	86 013	121	2.10	1.14	1.87	3.70	3	11.67	11.43	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	87 013	117	3.45	1.92	1.94	2.76	4	16.42	13.30	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	88 013	121	2.14	2.68	3.40	2.72	4	14.44	10.08	090
30-049-0719	1 3		LEWIS AND CL HADFIELD, 101 WEST	89 013	73	1.73	1.68	2.51		3	14.14	5.80	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	82 001	30	7.34?	2.75?	2.69?	2.15	1	7.34	6.55	000
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	83 001	67	3.47	3.36?	2.92	2.98	3	9.28	7.86	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	84 001	109	3.19	1.80	3.45	4.32	4	20.43	12.58	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	85 001	115	3.06	2.07	1.69	1.37	3	8.50	8.29	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	86 001	119	2.00	1.27	1.82	3.72	3	11.45	11.09	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	87 001	118	3.25	2.01	1.93	2.64	4	15.32	13.92	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	88 001	122	2.14	2.65	3.53	2.34	4	13.97	11.52	090
30-049-0719	3 3		LEWIS AND CL HADFIELD, 101 WEST	89 001	75	1.72	1.68	2.57		3	13.16	5.70	090
30-049-0719	5 0		LEWIS AND CL HADFIELD, 101 WEST	81 000	29			.40?	2.27	1	5.59	5.11	092
30-049-0722	1 2		LEWIS AND CL DARTMAN RANCH, NOR	82 001	26	2.97?	2.32?	2.00?	1.23	0	3.73	3.35	000
30-049-0722	1 2		LEWIS AND CL DARTMAN RANCH, NOR	83 001	15	1.56	1.84?			1	3.19	2.97	090
30-049-0724	1 0		LEWIS AND CL DARTMAN FIELD, NOR	83 000	42		1.03?	2.96	2.58	2	9.80	7.99	090
30-049-0724	1 0		LEWIS AND CL DARTMAN FIELD, NOR	84 000	59	3.19	1.27	3.10	3.23	3	10.96	8.34	090
30-049-0724	1 0		LEWIS AND CL DARTMAN FIELD, NOR	85 000	58	2.73	1.54	.61	1.27	1	7.14	6.74	090
30-049-0724	1 0		LEWIS AND CL DARTMAN FIELD, NOR	86 000	60	1.60	1.18	1.50	2.94	2	7.19	6.18	090

? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA

EPA AEROMETRIC INFORMATION RETRIEVAL SYSTEM (AIRS)
AIR QUALITY SUBSYSTEM
QUICK LOOK REPORT

LEAD (12128)

MONTANA

UNITS: 001 UG/CU METER (25 C)

SITE ID	P O M C T CITY	COUNTY	ADDRESS	REP YR ORG #OBS	----QUARTERLY ARITH MEANS----				MEANS MAX VALUES			METH
					1ST	2ND	3RD	4TH	>1.5	1ST	2ND	
30-049-0724	1 0	LEWIS AND CL	DARTMAN FIELD, NOR	87 000 59	2.48	1.28	2.06	2.85	3	7.25	6.87	090
30-049-0724	1 2	LEWIS AND CL	DARTMAN FIELD, NOR	88 000 55	1.95	2.05	2.49	1.82	4	13.25	5.70	090
30-049-0724	1 2	LEWIS AND CL	DARTMAN FIELD, NOR	89 000 46	1.20	.58	2.09	.24?	1	4.62	4.19	090
30-049-1002	1 3	LEWIS AND CL	HASTIE RESIDENCE,	80 000 54	2.61	1.84	2.75	2.72	4	8.07	7.42	092
30-049-1002	1 3	LEWIS AND CL	HASTIE RESIDENCE,	81 001 52	3.19	2.37?	.32?	2.51	2	13.70	10.70	092
30-049-1002	1 3	LEWIS AND CL	HASTIE RESIDENCE,	82 001 26	1.94?	1.46?	2.19?	2.23	1	5.20	4.08	000
30-049-1002	1 3	LEWIS AND CL	HASTIE RESIDENCE,	83 001 82	3.12	2.51	2.93	3.00	4	10.01	9.09	090
30-049-1002	1 3	LEWIS AND CL	HASTIE RESIDENCE,	84 001 107	3.26	1.72	2.66	3.87	4	12.89	11.09	090
30-049-1002	1 3	LEWIS AND CL	HASTIE RESIDENCE,	85 001 109	2.32	2.00	1.42	1.76	3	7.64	6.72	090

? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA