of its stipulated control plan for low-level emission of SO_2, filed April 28, 1978, based on the terms of Paragraph 10 of a Stipulation and Agreement entered into by ASARCO and the Department on September 30, 1977, and incorporated by reference into the Order of the Board of Health and Environmental Sciences ("Board") dated October 25, 1977 regarding such variance. (Enclosures D, E).

Section 172 of the federal Clean Air Act requires that any state which designates an area as non-attainment must amend its SIP to achieve compliance with the applicable National Ambient Air Quality Standard (NAAQS) "as expeditiously as practicable, but, in the case of national primary ambient air quality standards, not later than December 31, 1982." Section 172(a)(1). Section 172(b) of the federal Clean Air Act sets forth requirements for the SIP revisions required by Section 172(a). (See Enclosure F.)

The information set forth herein is for the purpose of substantiating that the proposed revision to the Montana SIP will meet the requirements of the federal Clean Air Act, the Montana Clean Air Act, and associated statutes and regulations pertaining thereto, with respect to the aforesaid designation of non-attainment areas. The following enclosures are part hereof and support this request for a SIP revision:

A - Montana State Ambient Air Quality Control Implementation Plan, Ch. 3;

B - Letter from A.C. Knight to Alan Hersen dated January 6, 1978, recommending areas as non-attainment for sulfur oxides and total supended particulates (TSP) (in pertinent part);

C - 43 Fed. Reg. 8962 (March 3, 1978) designating certain areas non-attainment for sulfur oxides and total suspended particulates (in pertinent part);

D - Stipulation and Agreement of September 30, 1977;

E - Order of the Board of Health and Environmental Sciences dated October 25, 1977 (incorporating the Stipulation and Agreement of September 30, 1977);

F - § 172 of the Clean Air Act, 42 U.S.C. § 7502;

G - 40 C.F.R. §§ 51.4, 51.6 (revision of SIP's);

H - A.R.M. 16-2.14(11)-S1470(2)-Sulfur Oxide Emissions - Primary Non-Ferrous Smelters;

I - Stipulation of June 5, 1974;

J - Application for Renewal of Variance filed by ASARCO on April 26, 1978;

K - Agreement between ASARCO Incorporated and the Department of Health and Environmental Sciences dated February 1, 1978 regarding study plan to be conducted with respect to ASARCO's plant.

L - 40 Fed. Reg. 43216 (Sept. 19, 1975) - Montana SIP Revision relating to ASARCO Incorporated;

M - § 123 of the federal Clean Air Act, 42 U.S.C. § 7423.

N - Proposed Montana regulations governing stack heights;

O - Summation of results of air quality dispersion modeling conducted, assuming proposed blast furnace baghouse stack;

P - Engineer's drawing of proposed blast furnace baghouse stack;

Q - New Source Performance Standards, 39 Fed. Reg. 37040 (October 16, 1974); 41 Fed. Reg. 2332 (January 15, 1976);

R - Montana New Source Performance Standards, A.R.M. 16-2.14(1)-S14082.

To comply with the public hearing procedures set forth in 40 C.F.R. § 51.4 (Enclosure G), one copy of the enclosures hereto and of any other pertinent documents must be made available for inspection at a location in the Helena Intrastate Air Quality Control Region, which location is assumed will be in the Department's office. Additional copies have been submitted for use by the Department as may be required.

BACKGROUND: SO_2

Current Montana Air Quality Regulation A.R.M. 16-2.14(1)-1470(2) (Enclosure H) requires a primary non-ferrous smelter the size of ASARCO's East Helena complex to reduce its sulfur dioxide (SO_2) emissions by approximately 94%. ASARCO, based on a Stipulation entered into by it and the Department on June 5, 1974 (Enclosure I), obtained a variance from this regulation on September 5, 1974, such variance to run for a period of one year commencing on July 1, 1974. Under the Stipulation of June 5, 1974 ASARCO agreed to construct a sulfuric acid plant as a pollution control facility. The purpose of this plant is to convert SO_2 from the sinter plant off-gases to sulfuric acid by a catalytic process. Since that

time, ASARCO has applied for and been granted annual variance renewals through June 30, 1978, for the purpose of completing acid plant construction and testing. A request for a renewal of this variance, to cover the period July 1, 1978 through June 30, 1979, has been applied for and is pending. (Enclosure J.) All such variances and renewals, granted and applied for, are in accordance with the original Stipulation of June 5, 1974 (Enclosure I).

The acid plant construction phase was completed on schedule in July, 1977. There is currently in progress a joint study of the operation of the ASARCO plant, being conducted by ASARCO and the Department. (Enclosure K). The purpose of this study, which was agreed to in the Stipulation and Agreement of September 30, 1977 (Enclosure D), is to analyze plant operations to determine whether the SO_2 emission limitations under which ASARCO is operating (Enclosure L) are sufficient to protect the health and welfare of the citizens of Montana.

ASARCO believes that the joint study, which will be completed in February, 1979, will conclude that current levels of sinter plant emission control are more than sufficient to protect the health and welfare of Montana's citizens. However, it has recently become evident that there is another problem which had not been taken into consideration and which is totally unrelated to the sinter machine SO_2 emissions. This new problem relates to low-level SO_2 emissions, which over the past year have caused NAAQS to be violated at air quality monitors near the smelter. This low volume of low-level emissions of weak, variable-strength gases has been traced to

the blast furnace baghouse and the relatively short stacks associated therewith. The emissions cause readings relatively near the plant in excess of the NAAQS. It is evident that these violations are not the product of emissions from the acid plant or sinter plant.

These low-level problems caused a circular area centered on the East Helena smelter complex to be classified as a SO_2 non-attainment area on January 6, 1978 pursuant to § 107 of the Clean Air Act. (See Enclosures B, C).

Under terms of Paragraph 10 of the Stipulation and Agreement of September 30, 1977 (Enclosure D), as amended by an Order effected by the Board on March 10, 1978, ambient air quality levels exceeding NAAQS caused by low-level emissions would not be considered violations for a period ending May 1, 1978. If a problem with low-level emissions continued after that date, ASARCO was to submit a proposal for compliance with NAAQS. ASARCO submitted its proposal on April 28, 1978, providing for construction of a new blast furnace baghouse stack.

BACKGROUND: TSP

In his letter of January 6, 1978 to the Region VIII Administrator, Dr. Knight proposed that a portion of the East Helena area be designated non-attainment for TSP, because the national secondary ambient air quality standard for particulates had been violated during the year 1976. In the proposal, it was stated that: "The East Helena area is a localized problem which is proposed for designation because of the nearness of an industrial slag dump and contaminated soil." (Enclosure B).

PROPOSAL

(1) ASARCO proposes that Chapter 5 of the Montana SIP be revised as follows:

PARTICULATE MATTER

. . .

4) Non-Attainment Areas

Section 107 of the federal Clean Air Act, 42 U.S.C. § 7407, requires Montana to designate those areas that fail to meet National Ambient Air Quality Standards (NAAQS) for particulates.

a. East Helena - The State of Montana submitted a non-attainment designation for a portion of the East Helena area on January 6, 1978. This non-attainment designation is codified at 40 C.F.R. § 81.327. ASARCO Incorporated shall take the following steps to achieve compliance with the NAAQS. These steps are considered consistent with the requirements of A.R.M. 16-2.14 (1)-S1430 (Particulate Matter, Industrial Processes) and A.R.M. 16-2.14(1)-S1440 (Particulate Matter, Airborne):

Facility	Control Strategy
(a) Slag piles, ASARCO Incorporated, East Helena Lead-zinc smelter.	Spray piles with water or other coating material periodically as needed to minimize airborne particulate matter.

. . .

3) Non-attainment Regions

a. East Helena - Section 107 of the federal Clean Air Act, 42 U.S.C. § 7407, requires Montana to designate those areas that fail to meet National Ambient Air Quality Standards (NAAQS) for sulfur oxides. The State of Montana submitted such a designation for a portion of the East Helena area on January 6, 1978. This non-attainment designation is codified at 40 C.F.R. § 81.327. ASARCO Incorporated will construct a 375 foot stack to vent the weak, low volume SO_2 gases from the blast furnace baghouses. In addition, ASARCO Incorporated will limit its emissions from such stack to the allowable amount of sulfur dioxide set forth below:

Facility	Emission Limit
(a) Blast Furnace	23 tons/day (5.75 tons per six hour period);

Baghouse Stack

A point source diffusion model was employed to assess the effects of this control strategy on ambient levels of SO_2. The modeling was conducted for a stack 375 feet in height, which corresponds to good engineering practices pursuant to

Section 123 of the federal Clean Air Act, 42 U.S.C. § 7423. Modeling discloses that the allowable SO_2 emissions from a stack of 175 feet will cause the National Ambient Air Quality Standards to be attained and maintained.

RATIONALE

A. Particulates Strategy.

With regard to the non-attainment for TSP, the control strategy presented is the only manner in which further control can and should be exercised. The non-attainment designation was based on two isolated instances in 1976 when the secondary TSP standard was violated. It is recognized in the Montana SIP that dirt roads in the area probably contribute to any particulate problem that still may exist. Moreover, there have been no violations of the NAAQS since 1976, therefore the violations cited may have resulted from road construction that was in progress in the area at that time. The only reason for the designation was the very strict requirement levied by EPA with respect to the number of violations required over what period of time to cause such designation. The spraying that will be conducted by ASARCO will minimize airborne particulate matter.

B. Sulfur Oxide Strategy.

Pursuant to § 123 (Enclosure #1) of the federal Clean Air Act, ASARCO may utilize a stack, the height of which does not exceed good engineering practice (GEP). That height is defined in the federal Clean Air Act as "the height necessary

to insure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies and wakes which may be created by the source itself, nearby structures or nearby terrain obstacles." Due to peculiar features in the East Helena area, that height is 375 feet. The construction of this stack will also comply with the applicable requirements of the Montana Administrative Regulations, as currently proposed. (Enclosure N).

Dispersion modeling conducted on a stack of 375 feet in height (Enclosure O) discloses that with a maximum emission limitation of 23 tons per day SO_2, NAAQS will be attained and maintained. Thus, ASARCO would be limited to 23 tons per day emissions from the blast furnace baghouse stacks. ASARCO proposes to construct the 375 foot stack (Enclosure P) as expeditiously as possible on the basis of increments of progress which will allow not more than 24 months for completion of construction after approval of the plans therefor.

It should be noted that in its New Source Performance Standards, EPA has determined after thorough investigation and analysis, that the only appropriate control technology for control of weak SO_2 gases from lead smelter blast furnaces is the dispersion thereof through a properly constructed stack. 39 Fed. Reg. 37040 (Oct. 16, 1974); 41 Fed. Reg. 2332 (Jan. 15, 1976) (Enclosure Q). Montana has adopted these NSPS by its A.R.M. 16-2.14(1)-S14082 (Enclosure R). ASARCO has also investigated this matter and concurs with these findings. Venting the weak and variable strength blast furnace gases

through the proposed new baghouse stack constitutes that degree of control which is appropriate in the case of new sources. Therefore such control is obviously proper for existing sources.

A detailed time schedule for carrying out the SIP revisions proposed herein will be set forth in a separate Stipulation entered into by the Department and ASARCO. The terms of the Stipulation will be referenced in and made an integral part of the Order of the Board adopting the SIP revision applied for herein.

Respectfully submitted,

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