MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

NOTICE OF DECISION AND ORDER

Western Sugar Cooperative

FINDINGS OF FACT

1. On June 19, 2025, The Western Sugar Cooperative – Billings, Montana, facility ("WSC") submitted to the Montana Department of Environmental Quality ("DEQ") a complete, formal petition and supporting documentation ("petition") in support of the proposed modification of the subject 1998 Stipulation Agreement ("1998 Stipulation") between WSC, the United States Environmental Protection Agency ("EPA"), and DEQ related to attainment of the 1971 National Ambient Air Quality Standards ("NAAQS") for sulfur dioxide ("SO_2") in the Billings/Laurel area. (see attached).

2. The 1998 Stipulation, and associated Exhibit A, providing requirements specific to WSC operations, was adopted by the Montana Board of Environmental Review ("Board") through an Order issued pursuant to § 75-2-111(3), MCA (1997). *See In re The Western Sugar Co.*, Findings of Fact Conclusions of Law and Order Adopting Stip. of Dep't and Western Sugar Co. (Mont. Board Envtl. Rev. Ju. 12, 1998).

3. DEQ accepted public comment regarding the proposed 1998 Stipulation modification for 30 days beginning July 1, 2025, through July 31, 2025. No comments and no formal requests for hearing were received by DEQ during the public comment period.

4. DEQ has issued a Decision modifying Exhibit A to the 1998 Stipulation. A copy of DEQ's Decision and Order; WSC's supporting petition, including the modified Exhibit A to the 1998 Stipulation; and a copy of the original 1998 Stipulation and associated Exhibit A are also available for review on DEQ's website, https://deq.mt.gov/public/publicnotice

CONCLUSIONS OF LAW

1. When the 1998 Stipulation was implemented, only the Board had the authority to modify orders under the Clean Air Act of Montana. *See* § 75-2-111(3), MCA (1997). In 2021, the Montana's legislature granted DEQ the same power as the Board to issue orders. *See* § 75-2-112(2)(b), MCA ("the department shall . . . issue orders necessary to effectuate the purposes of this chapter"). The process used to modify the 1998 Stipulation is, accordingly, no longer legally necessary and DEQ may use its statutory authority to modify the 1998 Stipulation through this Notice of Decision and Order.

2. The Decision and associated Order shall become final and effective on **August 29, 2025**, unless the Board of Environmental Review (Board) orders a stay. *See* § 75-2-211(10), MCA.

3. Any person who is directly and adversely affected by the Decision and Order may request a hearing before the Board. *Id.* The appeal must be filed by **August 28, 2025**. *Id.* The request for a hearing must contain an affidavit setting forth the grounds for the request. *Id.* The hearing will be held under the provisions of the Montana Administrative Procedures Act. *Id.* Submit requests for a hearing to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620 or the Board Secretary: DEQBERSecretary@mt.gov.

4. The state of Montana makes reasonable accommodations for any disability that may interfere with a person's ability to participate in these state government proceedings. Any persons requiring accommodation must contact DEQ at (406) 444-3490 or DEQAir@mt.gov.

5. The existing requirements within the 1998 Stipulation (prior to modification) are also enforceable pursuant to Montana's federally approved air quality state implementation plan (SIP), WSC's existing Montana Air Quality Permit (MAQP), and WSC's existing Title V operating permit. Therefore, DEQ must submit the 1998 Stipulation modification to EPA for federal approval. Further, should EPA approve the changes to the SIP, WSC must apply to DEQ for an amendment to their existing MAQP and Title V operating permits.

ORDER

Based on the foregoing Findings of Fact and Conclusions of Law, IT IS HEREBY ORDERED THAT:

1. DEQ's Decision modifying Exhibit A to the 1998 Stipulation is incorporated herein as a part of this Order.

2. This Order shall be enforceable by DEQ.

3. Modifications of this Order shall be conducted pursuant to § 75-2-112(2)(b), MCA.

Attachments (2):

1) The Western Sugar Cooperative – Billings, Montana, 1998 Stipulation Agreement Modification Request and Supporting Documentation (Petition) (*Bill_Stipulation_Agreement_Modification_Request_Rev.04_Submittal_06.19.pdf*)
2) Copy of Original 1998 Stipulation

Western Sugar Cooperative
(Grower Owned)

7555 E. Hampden Ave., Suite 520
Denver, Colorado 80231
Telephone: (303) 830-3939

June 19, 2025

Via Email

Montana Department of Environmental Quality
ATTN: Director Sonja Nowakowski
1520 E Sixth Ave
Helena, MT 59601
sonja.nowakowski@mt.gov

RE: The Western Sugar Cooperative – Billings, MT
1998 Stipulation Agreement Modification Request

Dear Ms. Nowakowski:

The Western Sugar Cooperative - Billings, Montana facility (WSC) is writing this letter to formally request modifications to the 1998 Stipulation Agreement between WSC, US Environmental Protection Agency (EPA), and Montana Department of Environmental Quality (MTDEQ) related to attainment with the 1971 SO_2 National Ambient Air Quality Standards (NAAQS) in the Laurel/Billings area. WSC's Title V operating permits since 1998 have included language to meet the requirements of the 1998 Stipulation Agreement. This submittal has been updated from the November 27, 2024 to address minor changes to Exhibit A of the 1998 Stipulation Agreement in consultation with MTDEQ staff.

WSC submitted a renewal application for a Title V operating permit (permit) to the MTDEQ in August of 2021 and the renewed permit was issued in October 2022. Within the permit renewal application, WSC requested modifications to two significant burdensome conditions that were placed in the permit to address the requirements in Exhibit A of the 1998 Stipulation Agreement. The conditions do not align with the intent of the 1998 Stipulation Agreement, to ensure attainment with the SO_2 NAAQS. The requested modifications to the conditions were supported by empirical data presented by WSC, changes to operations at the WSC facility, and changes to ambient air concentrations of SO_2 that have occurred over the last 24 years.

Not all of WSC's requested modifications related to the 1998 Stipulation Agreement were addressed in the renewed permit as the MTDEQ's determination was they could not address some of the requested modifications without first modifying Exhibit A of the 1998 Stipulation Agreement. Since renewal of the permit, WSC has discussed alternate approaches with the MTDEQ and EPA Region 8 to complete the outstanding requested modifications. After review of the 1998 Stipulation Agreement and discussions with internal counsel, MTDEQ has determined that Exhibit A of the 1998 Stipulation Agreement can be modified if WSC were to conduct cumulative modeling of SO_2 emissions and petition the Director of MTDEQ. This interpretation was relayed to WSC via email from Julie Merkel, MTDEQ on Thursday June 29, 2023 (Attachment A). Accordingly, WSC hereby requests MTDEQ modify the following requirements in Exhibit A to the 1998 Stipulation agreement:

1.) Replace the 190-day limit on the duration of each annual campaign with a heat input limit on the boiler that corresponds with the current allowable annual emissions in the Stipulation Agreement [Exhibit A, Section 3(C)];
2.) Removal of the requirement to continuously monitor and report SO_2 emissions from the Boiler House [Exhibit A, Section 4(A) and Section 7]; and,
3.) Removal of all pulp dryer monitoring and reporting and related requirements as the dryers no longer have the capability to combust fuel oil
4.) Removal the natural gas fired boilers (Erie City and Cleaver Brooks)

WSC is providing this formal request to modify the 1998 Stipulation Agreement to remove the 190-day campaign duration limit, the requirements to maintain SO_2 CEMS on the Boiler House, and removal of mention of the pulp dryers as stated. This letter provides a summary of the justification WSC has presented to MTDEQ and EPA to support the requested modifications. A complete cumulative SO_2 modeling analysis showing model-predicted impacts in attainment with the 1971 SO_2 NAAQS is provided in Attachment B.

Billings/Laurel Area Background

Stipulation agreements were drafted with several facilities in the Billings / Laurel, Montana area to address elevated ambient concentrations of SO_2 compared to the 1971 SO_2 National Ambient Air Quality Standard (NAAQS). The Billings / Laurel area is currently identified as nonattainment with the primary 1971 SO_2 NAAQS. In 2010, the EPA promulgated a primary 1-hour SO_2 standard which is significantly more stringent than the primary annual and 24-hour 1971 SO_2 standards. In 2013, Billings was designated as nonattainment with the 2010 SO_2 standard but then redesignated as maintenance in 2016. Billings is currently designated as maintenance with the more stringent 2010 SO_2 standard. Additionally, WSC emissions of SO_2 are a fraction of the potential annual emissions of SO_2 from facilities in the Billings / Laurel area as illustrated in Figure 1.

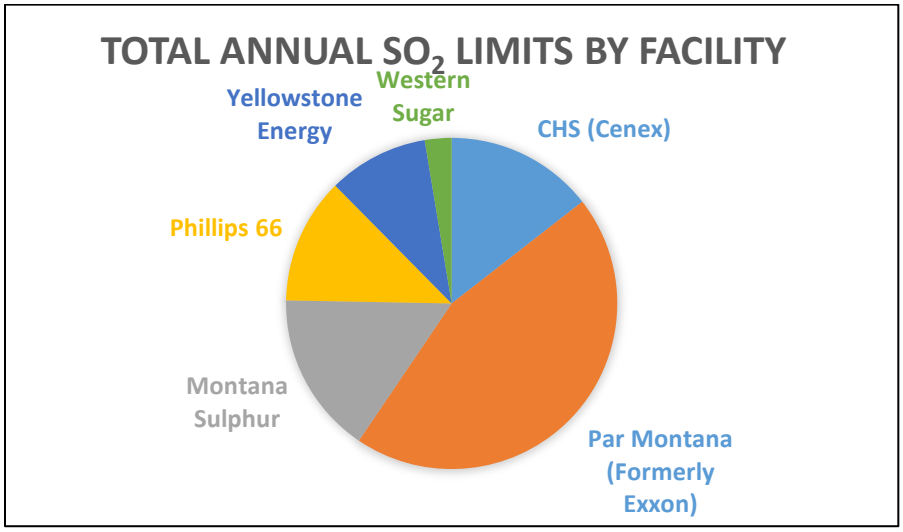

Figure 1 Billings / Laurel Area Facility SO_2 Emissions

The ambient levels of SO_2 have declined significantly over time and specifically have dropped in the last 10 years to well below the 1-hour standard. The 1-hour monitor data is summarized below in Figure 2.

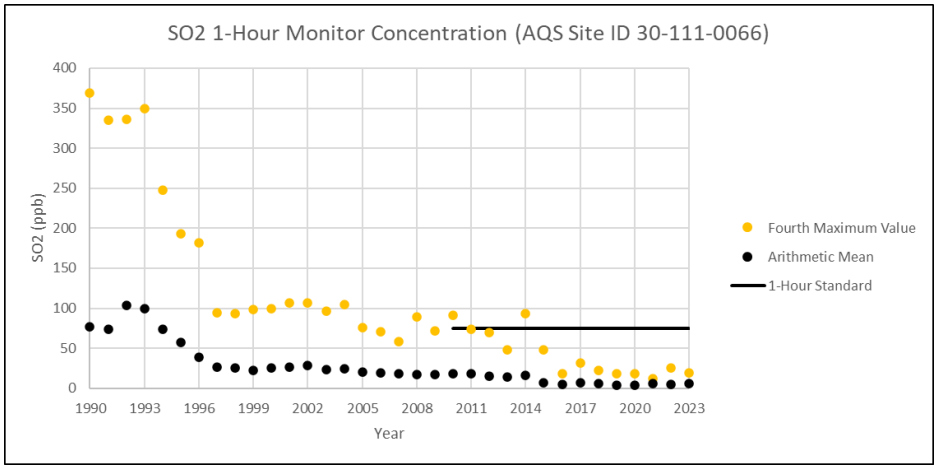

Figure 2 Billings / Laurel Area 1-hour SO_2 Concentrations

Replace the 190-day limit on the duration of each annual campaign

WSC is proposing to reconcile an inconsistency within the permit regarding campaign duration by removing the limit altogether. The current permit has a condition limiting campaign duration to 190 days based on Exhibit A, Section 3(C) of the 1998 Stipulation Agreement which states "The length of any campaign (normally September through the following February) shall not exceed 190 days"; however, Section 3(A) of the 1998 Stipulation Agreement only lists two emission units, Boiler House Stack (EU002) and Pulp Dryers (EU004), as affected sources.

The 1998 Stipulation Agreement established 3-hour, daily, and annual SO_2 limits for EU002 and EU004, consistent with the averaging periods of the 1971 primary and secondary NAAQS standards. EU002's annual SO_2 emissions limit as written in the 1998 Stipulation Agreement is based on the daily limit of 6,849.6 pounds of SO_2 multiplied by 210 source (not campaign) operating days totaling 1,438,416 pounds per calendar year. However, the current limit written into the Stipulation Agreement is set to 190 days of campaign duration, not source operating time. The annual 190 day campaign limit is burdensome on the facility's operation and inadvertently restricts WSC's entire operation beyond what is necessary to maintain compliance with EU002's annual SO_2 emission limits. This does not align with the intent of the Stipulation Agreement. WSC proposes to replace the annual campaign limit with an annual heat input limit on EU002 that correlates with the current annual SO_2 emissions limit. The maximum annual heat input that correlates with the annual SO_2 emission limit has been calculated as follows:

- Combined Boiler Heat Input Capacity – 1,332 MMBtu / 3 hrs
- EU002 3-hour SO_2 emission limit – 856.2 lbs / 3 hrs
- EU002 Annual SO_2 emission limit – 1,438,416 lbs / yr
- Proposed Annual Heat Input Limit on EU002 =
    - 1,332 (MMBtu/3hrs) / 856.2 (lbs SO_2/3hrs) x 1,438,416 (lbs SO_2/yr) = **2,237,760 MMBtu / yr**

The intent of the Stipulation Agreement was not to place restrictions on methods of operation of the facility; however, employing a limit on the number of annual operating days was one of many approaches to assure the maximum allowable annual emissions would not be exceeded. The Stipulation Agreement as written redundantly states that the intent of the agreement is to limit emissions as part of the control strategy to maintain attainment with the SO_2 standards. The air dispersion modeling results included as Attachment B show that the maximum model-predicted annual SO_2 impacts are less than 60% of the applicable NAAQS. This includes all nearby sources listed in Attachment C and a very conservative background concentration from a monitor that is within the modeling domain and likely already includes impacts from the sources modeled. With no potential for an increase in SO_2 emissions as a result of this change, there is no potential to threaten attainment with the NAAQS.

This proposed limit on heat input directly correlates with the current allowable annual SO_2 emissions and demonstrates that there is no potential to exceed the permit SO_2 limits for EU002. There will be no increase in SO_2 emissions as a result of replacing the limit on annual "campaign" days with an annual heat input limit. Campaign is a reference to the period in which beets are harvested and sliced, during which the consistency and manner in which EU002 and EU004 operate can vary greatly. The three-hour and daily SO_2 emissions would not be affected because campaign days do not directly correlate to operation of either EU002 and EU004.

EU004's maximum annual SO_2 emissions are less than 1% of the permitted limit. When EU004's SO_2 limits were implemented, EU004 was equipped to combust fuel oil which is higher in sulfur content than natural gas. The fuel oil equipment was decommissioned and removed in the 1999 – 2000 timeframe. Without the ability to use fuel oil, maximum annual emissions are significantly less than when the 1998 Stipulation Agreement was implemented. This sufficiently demonstrates that with the proposed change, there is no potential to exceed the permit SO_2 limits for EU004.

Removal of the requirement to continuously monitor and report SO_2 emissions from the Boiler House

WSC is currently required to operate EU002 while maintaining SO_2 emissions less than the limits established within the 1998 Stipulation Agreement. These limits were developed as part of the 1998 Stipulation Agreement at levels that would assure maintenance and attainment with the NAAQS. In addition to an annual SO_2 emissions stack testing requirement, the 1998 Stipulation Agreement requires WSC to operate and maintain an SO_2 continuous emission monitoring system (CEMS) on EU002.

WSC has reviewed historic operational and CEMS data in conjunction with the applicable SO_2 limits. Figure 3 through Figure 5 have been included to illustrate the magnitude of the 3-hour, daily, and annual SO_2 emissions and their respective limits.

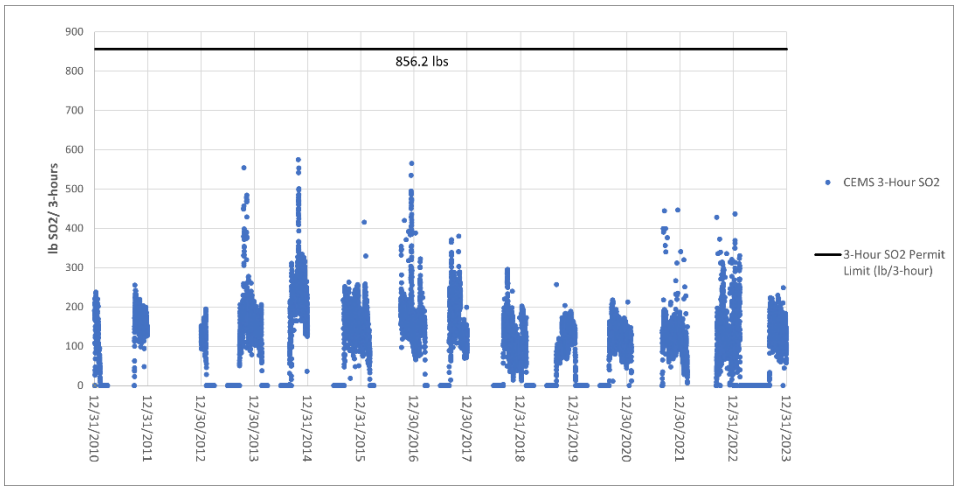

Figure 3 CEMS Measured SO_2 3-hour Emissions (2011-2023)

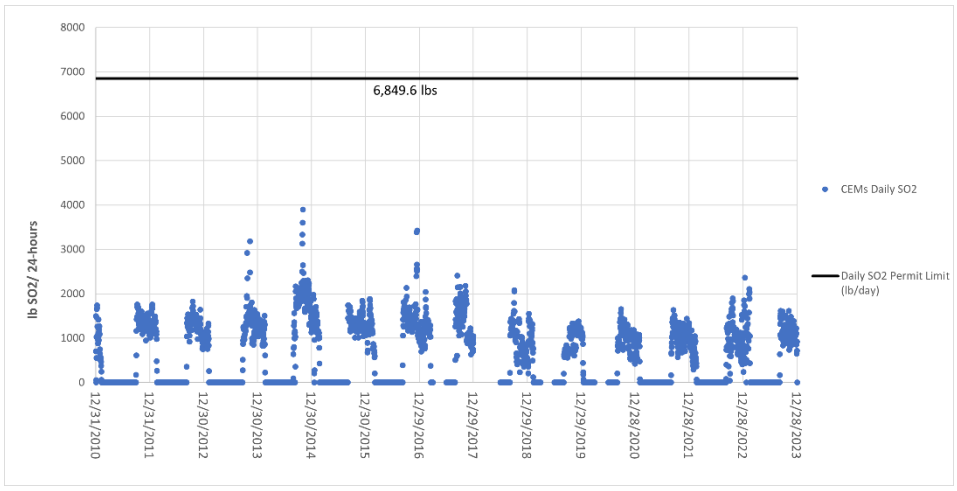

Figure 4 CEMS Measured SO_2 24-hour Emissions (2011-2023)

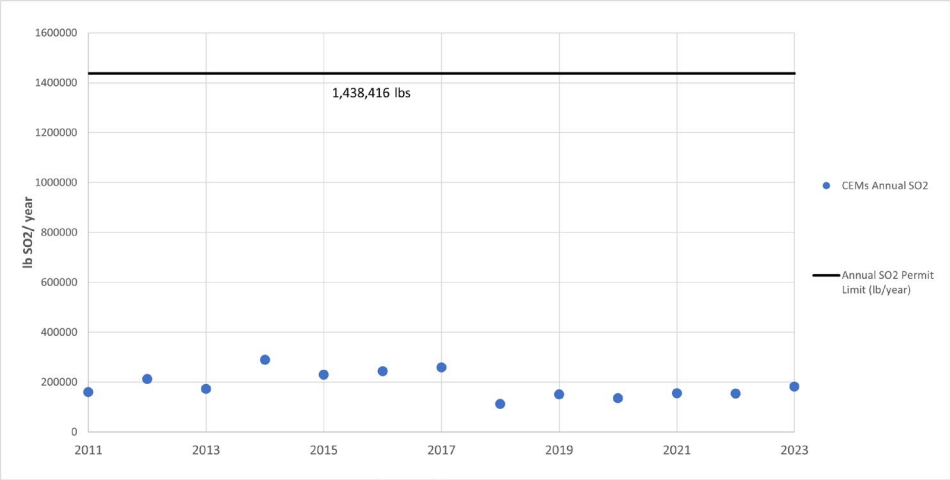

Figure 5 CEMS Measured SO_2 Annual Emissions (2011-2023)

As shown in Figure 3 through Figure 5, WSC has maintained emissions significantly below the applicable emission limits imposed by the limits in the 1998 Stipulation Agreement. The maximum annual SO_2 emissions over the past ten years approached approximately 25% of the allowable limit. This further supports that the proposed change to the limit on annual operation of EU002 would not threaten attainment of the NAAQS, which is the intent of the Stipulation Agreement.

The results of sulfur content analyses of the fuel used at EU002 during the last 8 years were also evaluated. The maximum sulfur content from the available analyses and the maximum fuel throughput at capacity were used to calculate maximum achievable SO_2 emissions on a 3-hour, daily and annual basis. These calculated emissions for each averaging period using mass balance, and without considering additional reductions in SO_2 emissions due to scrubber control, are all less than the applicable limits in the 1998 Stipulation Agreement. An example SO_2 emissions calculation for the 3-hour averaging period using the combined maximum capacity of the boiler and the maximum historical sulfur content in the fuel is included below:

Combined Boiler Heat Input Capacity – 444 MMBtu/hr
Coal Heat Content – 17.44 MMBtu/ton
Coal Throughput – 25.5 ton/hour = 444 MMBtu/hr / 17.44 MMBtu/ton
Maximum Coal Sulfur Content – 0.27%
Sulfur Molecular Weight – 32.06 g/mol
Sulfur Dioxide Molecular Weight – 64.058 g/mol

Maximum 3-hour SO_2 Emission Rate – 25.5 ton/hr x 2000 lb/ton x 0.27% x 64.058 / 32.06 x 3 hr
Maximum 3-hour SO_2 Emission Rate – 824.1 lb SO_2 / 3 hrs
Combined Boiler House Emission limit – 856 lb SO_2 / 3 hrs

Calculated emissions of SO_2 at the magnitude of the limits in the 1998 Stipulation Agreement cannot even be achieved under the most conservative assumptions. Therefore, a requirement for ongoing continuous emissions monitoring, maintenance, and reporting is an unnecessary burden on WSC and the requirement itself does not do anything to reduce SO_2 emissions or assure maintenance of the NAAQS. Further, WSC is not requesting the removal of the permit condition that requires WSC to conduct annual performance testing under normal operating conditions. This condition would remain to fulfill the obligation to monitor and report.

Removal of all pulp dryer requirements

The Pulp Dryers (EU004) were previously equipped to fire Fuel Oil #6. In the 1999 – 2000 timeframe, WSC decommissioned and removed the fuel oil system so the pulp dryers no longer have the capability to combust fuel oil. The pulp dryers have since operated solely on natural gas. In the 1998 Stipulation Agreement, monitoring requirements were included to address SO_2 emissions from fuel oil. WSC is proposing to remove requirements related to EU004 from Exhibit A

to the 1998 Stipulation agreement in its entirety since they are no longer applicable, and they do not accurately reflect facility operations.

The requirements address installation and monitoring of the in-line fuel oil flow meters as well as requiring weekly beet sulfur analyses and beet pulp feed rate to the dryer. WSC and MDEQ have previously established that the weekly beet sulfur content requirement must only be met when firing fuel oil. Since WSC is no longer able to fire fuel oil, WSC proposes to remove this requirement from Exhibit A to the 1998 Stipulation agreement altogether.

Removal the natural gas fired boilers (Erie City and Cleaver Brooks)

The Erie City and Cleaver Brooks boilers have had blinds installed on fuel oil supply lines; therefore, they are no longer capable of firing natural gas. The requirement in the stipulation agreement to remove the fuel oil capability has been met and can be removed.

WSC has provided adequate information contained in this letter submittal for MTDEQ to modify the 1998 Stipulation Agreement and demonstrated that the modifications to the 1998 Stipulation Agreement related to the 190-day campaign duration limit and requirements to maintain SO_2 CEMS on the Boiler House will not adversely affect the air quality in the Billings/Laurel area.

WSC has worked closely with the MTDEQ air permitting section to develop the proposed revisions to Exhibit A of the 1998 Stipulation Agreement. A redline strikeout version of Exhibit A of the 1998 Stipulation Agreement is provided as Attachment D to demonstrate WSC's proposed modifications and a clean version of the proposed Exhibit A is provided as Attachment E. The proposed modifications are limited to the removal of requirements related to those items specifically discussed in this document. The only addition WSC is requesting is the combined annual heat input limit for the three (3) Riley Boilers (EU002) that has been proposed to replace the current annual campaign limit in Section 3(C) of Exhibit A. In addition to modifying Exhibit A, Exhibit A-1 includes state-imposed requirements which should be revised to reflect the proposed Exhibit A changes.

We appreciate your time and support for consideration of these proposed modifications that once in place will remove significant burdensome conditions placed on the facility that do not materially improve the ability to maintain attainment with the 1971 SO_2 NAAQS. Please contact me at (720) 584-7506 or our consultant on this project, Aaron Aamold with Barr Engineering at (218) 779-8708, if you have questions or need additional information regarding this request.

Sincerely,

Chelsea Villalba

Chelsea Villalba, Director of Environmental
The Western Sugar Cooperative

Attachments:

Attachment A	Correspondence with Julie Merkel
Attachment B	Air Quality Modeling Results of the 1971 SO_2 National Ambient Air Quality Standards Report
Attachment C	Nearby Sources Included in Modeling
Attachment D	Stipulation Agreement Exhibit A Redline / Strikeout
Attachment E	Proposed Stipulation Agreement Exhibit A

Attachments

Attachment A

Correspondence with Julie Merkel

From: Merkel, Julie <jmerkel@mt.gov>
Sent: Thursday, June 29, 2023 5:25 PM
To: Chelsea Villalba
Cc: Ulrich, Liz; Wilkins, Bo; Heather Luther; Joe Vesey; Joe Bladecki; Aaron G. Aamold
Subject: Western Sugar, STIP Discussion Follow-up

Chelsea –

After considering Western Sugar's request to discontinue using SO2 CEMS on the Boiler Stack, and sifting through regulations, the State Implementation Plan and the Stipulation, DEQ has concluded that we cannot remove the requirement to use SO2 monitor on the Boiler Stack through our Title V process. Our review is summarized below.

The Stipulation, Exhibit A and Attachment #1 were agreed upon by the Department of Environmental Quality's Board of Environmental Review and Western Sugar Company in 1998. It is clearly stated that *modifications of the Order shall only be by initiation of the Board or by petition to the Board and the issuance of a subsequent order revising this Order*. Because of statutory changes, this petition would now be addressed to the Director of DEQ.

Paragraph 16 of the Stipulation states that *This Stipulation, Exhibit A or Attachment #1 may be subject to modification upon the occurrence of certain modifying conditions. Such modifying conditions include, but are not limited to, the following:*

(e) a demonstration by Western Sugar, utilizing Department and EPA approved dispersion modeling techniques…… ……that the NAAQS can be achieved and maintained by implementing an alternative control plan. Please note that the modeling would be required to include all facilities in the area.

Paragraph 17 (a) reiterates that *all modifications of the text of this Stipulation and Exhibit A shall require issuance of a revised Board order*. (Director of DEQ)

Paragraph 17(c*) <u>Implementation Approvals</u>. Where Exhibit A or Attachment #1 authorizes the Department and EPA to approve an alternative requirement or methodology, the implementation of such approval shall not require issuance of a revised Board order*.

Exhibit A, which pertains to the CEMS, does not provide for the authorization of the Department and EPA to approve an alternative requirement or methodology.
Exhibit A also is very specific in Section 4(A)(3) about addressing a CEMS that is not functioning properly.

Paragraph 17 (d) pertains to the EPA Approval for SIP changes and states that *…all modifications of the text of this Stipulation, exhibit A, and Attachment #1 shall require the approval of EPA under either subparagraph 17(f) or (g)*. 17(f) pertains to Title 1 – initial issuance of Title V permits. 17(g) pertains to the Title V process.

Paragraph 17 (g) Title V Procedures. Title V operating permit revision procedures may be used to modify the SIP to include textual modification under subparagraph 17(d) and implementation approvals under subparagraph 17(e), provided that the following two conditions are met:

(i) Western Sugar has been issued a Title V operating permit and the State has adopted an enabling administrative rule that complies with the federal requirements for modification of SIP requirements through the Title V process; and
(ii) the particular modification of the plan or implementation approval pertains to testing, monitoring, recordkeeping, calculation, reporting, or operating requirements or methodologies.

The State has not adopted an enabling administrative rule that complies with the federal requirements for modification of SIP requirements through the Title V process.

Our interpretation leads us to a few options:

1. Western Sugar conducts modeling and petitions to the Director of DEQ to modify the Stipulation and Exhibit A
2. Western Sugar petitions EPA to modify the SIP

A variance is not an option for this situation. We have authority to provide a variance for the Title V permit, but we do not have authority to provide a variance for the SIP.

Please let me know if you would like to discuss this further, have any questions, or have any other ideas on how to proceed.

Thanks!
Julie

Julie Merkel | *Permitting Services Section Supervisor*
Air Quality Bureau
Montana Department of Environmental Quality
Office: 406-444-3626

Attachment B

Air Quality Modeling Results of the 1971 SO2 National Ambient Air Quality Standards Report

Air Quality Modeling Results of the 1971 SO_2 National Ambient Air Quality Standards

Request to Modify the WSC 1998 Stipulation Agreement

Prepared for
The Western Sugar Cooperative

December 2023

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
952.832.2600
www.barr.com

Air Quality Modeling Results of the 1971 SO2 National Ambient Air Quality Standards

December 2023

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1 Purpose of Modeling Demonstration

The Western Sugar Cooperative (WSC) owns and operates the Billings sugar beet processing facility in Billings, Montana. Sugar beets are transported to the plant, screened for dirt and rock, and then either fed into the plant or moved to storage on the facility's piling grounds. Additional dirt is removed in a washing process at the beginning of the process. The beets are then sliced into long thin strips, referred to as "cosettes." Cossettes are conveyed into a diffuser where the beet sugar is extracted with water and heat. The juice is purified, followed by evaporation of a portion of the entrainment liquid, and finally crystallized. The remaining liquid (molasses) is removed in a centrifuge. The crystallized sugar is then sized, packaged, and shipped. The molasses is sent to the WSC Scottsbluff, Nebraska facility, where additional sugar is extracted. De-sugared molasses is then shipped back to Billings and sold as a feed supplement or added to pulp in the drying and pelletizing process and sold as animal feed. Steam is generated by the facility using three (3) Riley coal-fired boilers.

This modeling has been conducted at the direction of Montana Department of Environmental Quality (MTDEQ) to support WSC's request to modify requirements in Exhibit A of the 1998 Stipulation Agreement between WSC – Billings, MTDEQ, and the Environmental Protection Agency (EPA). Stipulation agreements were put in place with several facilities in the Billings / Laurel area to achieve attainment with the 1971 SO_2 national ambient air quality standards (NAAQS). WSC made an initial request to modify the Stipulation Agreement in its application to revise its Billings, Montana facility Title V operating permit (TVOP) submitted on August 24, 2021. The requests were presented to MTDEQ during conversations that preceded that submittal and subsequent presentations to both MTDEQ and EPA. Since the permit was renewed, WSC has discussed alternative ways with the MTDEQ and EPA Region 8 to complete the requested changes. After review of the 1998 Stipulation Agreement and discussions with internal counsel, MTDEQ has determined that one path to modify Exhibit A is by WSC conducting modeling of SO_2 emissions and to petition the Director of MTDEQ directly. This interpretation was relayed to WSC via email from Julie Merkel of MTDEQ on Thursday June 29, 2023. The modeling results summarized in this report shows attainment with the 1971 SO_2 NAAQS. The details of the modeling evaluation conducted are provided in this report and supporting modeling input / output files will be provided electronically.

2 Modeling Approach

Modeling used the AERMOD model (AERMOD – version 22112). This model is preferred by EPA, under Title 40 Code of Federal Regulations, Part 51, Appendix W (Guideline on Air Quality Models) [1] for complex facilities that include multiple point sources subject to the downwash effect of several structures. AERMOD is appropriate for use in all types of terrain. The EPA's regulatory default options were used for all model runs.

Preprocessed meteorological data from the Billings, Montana station during 2015-2019 was provided by MTDEQ and used in the analysis.

3 Modeled Source Parameters and Emission Rates

WSC has one main source of SO_2 emissions at the Billings facility, the main boiler house stack (EU002), which consolidates emissions from three (3) independent coal-fired boilers. There are other insignificant sources of SO_2 which are not included as they do not have measurable contributions to the modeling. These sources and their corresponding emission rates are listed in Table 3-1.

Table 3-1 Modeled Point Source Parameters

Source Description	Emission Unit ID	SO2 Emissions (lb/hr)	SO2 Emissions (tpy)
Natural Gas Erie City Boiler #1	EU001	0.08	0.34
Main Boiler House Stack	**EU002**	**285.40**	**719.21**
Natural Gas Cleaver Brooks Boiler #5 (17 MMBtu/hr)	EU003	0.01	0.04
Pulp Dryers –East and West (120 MMBtu/hr each)[1]	EU004	0.16	0.72

1 - SO_2 emissions contributed by the beet pulp dryers are addressed as "affected equipment" in Exhibit A of the STIP; however, the implementation of modifications disabled the units' ability to combust fuel oil. SO_2 emissions from the pulp dryers are calculated using AP-42 emission factors for natural gas combustion.

Table 3-2 summarizes the main boiler house stack (EU002) flow rate, exit velocity, and stack temperature measured during the 2022 relative accuracy test audit (RATA) performed on the boiler stack.

Table 3-2 Main Boiler House Stack (EU002) 2022 RATA Measurements

Source Description	Flow Rate (ACFM)	Exit Velocity (ft/s)	Stack Temperature (°F)
Main Boiler House Stack (EU002)	133,000	21.65	151

The modeled boiler stack point source parameters used in the modelling are summarized in Table 3-3. These source parameters are conservatively based on measurements collected during the annual RATA, which is not conducted at the maximum firing rate that would correlate with maximum allowable emissions.

Table 3-3 Modeled Point Source Parameters

Source Description	AERMOD ID	Stack Height (m)	Exhaust Temp. (K)	Exit Velocity (m/s)	Stack Diameter (m)
Main Boiler House Stack (EU002)	EU002	54.9	339	6.6	2.9

The emission rates used in the modeling analysis are listed in Table 3-4. The emission rates are based on the permit (OP2912-09) limit rate of 285.4 lb/hr. Annual SO_2 rates were modeled based on a 210-day campaign period, consistent with the annual SO_2 emissions limit in the Stipulation Agreement.

Table 3-4 Modeled SO_2 Emission Rates

Source Description	AERMOD ID	SO_2 – 3-Hour, g/s	SO_2 – 24-Hour, g/s	SO_2 – Annual, g/s
Main Boiler House Stack (EU002)	EU002	35.96	35.96	20.69

Figure 1 shows the facility location in relation to the county. The facility and nearby source locations and buildings associated with the facility are shown in Figure 2 and Figure 3. Building downwash was included in the modeling analysis using EPA's Building Profile Input Program (BPIP-PRIME version 04274). Modeled point source and building elevations were set using AERMAP version 18081 and National Elevation Dataset (NED) files at 1/3 arc second (10-m) resolution. All coordinates are based on NAD 83 datum, UTM zone 12.

4 Base Receptor Grids and Ambient Air Boundary

The ambient air boundary and nearby receptors are shown in Figure 3. The ambient air boundary is represented by the facility's controlled boundary. A base receptor grid was developed for the SIL analyses, with grid spacing originating from approximately the center of the facility sources:

- 50 m spacing along the ambient air boundary and out to 1 km;
- 100 m spacing out to 2 km;
- 250 m spacing from 2 km to 5 km; and
- 500 m spacing from 5 km to 10 km.

Terrain data and receptor elevations were processed with AERMAP version 18086 using National Elevation Dataset (NED) files at 1/3 arc second (10-m) resolution. All coordinates are based on NAD 83 datum, UTM zone 12.

5 Significant Impact Analysis

A significant impact analysis was conducted for 1971 SO_2 NAAQS (3-hour, 24-hour, and annual) to determine whether a cumulative impact analysis was required. The Class II significant impact levels (SILs) for 1971 SO_2 NAAQS are summarized in Table 5-1.

Table 5-1 Class II Significant Impact Levels

Averaging Period	SO_2 ($\mu g/m^3$)[1]
3-hour	25
24-hour	5
Annual	1

[1] Maximum value for each averaging period over five (5) years.

5.1 SO_2 Significant Impact Level Analysis

Modeling was conducted for the 1971 SO_2 NAAQS averaging periods over the five-year meteorological data set. The highest modeled impact for SO_2 did exceed the SIL for each of the averaging periods as shown in Table 5-2. A cumulative impact analysis including nearby sources and background concentrations was conducted for the 1971 SO_2 NAAQS at the receptors where the SIL was exceeded. The five-year maximum modeled concentrations at each receptor for the 1971 SO_2 NAAQS SIL analyses are shown in Figure 4 through Figure 6.

Table 5-2 Results of Significant Impact Analysis for 1971 SO_2 NAAQS

Averaging Period	Maximum Modeled Impact	Class II Significant Impact Level
	($\mu g/m^3$)	($\mu g/m^3$)
3-hour	426	25
24-hour	236	5
Annual	34	1

6 Class II National Ambient Air Quality Standards

6.1 National Ambient Air Quality Standards

The NAAQS are established at 40 CFR 50. The ambient air quality standards applicable to the cumulative SO_2 analyses for each averaging period at receptors where modeled impacts exceeded the SILs (described in Section 5) are shown below in Table 6-1.

Table 6-1 1971 SO_2 NAAQS

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)
SO_2	3-hour[1]	1,300
	24-hour[1]	365
	Annual[2]	80

[1] The second highest SO2 impact over the five-year meteorological period is compared to the 3-hour and 24-hour SO2 NAAQS.
[2] The maximum annual SO2 impact over the five-year meteorological period is compared to the maximum annual arithmetic mean SO2 NAAQS.

6.2 Background Concentrations

Background concentrations from the Billings monitoring station (Site ID 30-111-0066) in the Montana Air Quality Monitoring Network are used in this analysis by adding to the cumulative modeled impacts. This is conservative as the background monitor is already impacted by the sources already included in the model. Background concentrations used in the analysis are listed in Table 6-2. Figure 2 shows the background monitor location relative to the facility and nearby facilities included in the model.

Table 6-2 SO_2 Background Concentrations

Averaging Period	Background Concentration, $\mu g/m^3$	Description
3-hour	46.2	3-year maximum of the 2nd highest SO_2 3-hour concentration annually from 2020-2022. (Site ID 30-111-0066).
24-hour	14.0	3-year maximum of the 2nd highest SO_2 24-hour concentration annually from 2020-2022. (Site ID 30-111-0066).
Annual	12.2	2020-2022 3-year average annual concentration of SO_2 (Site ID 30-111-0066).

6.3 Nearby Sources

In addition to modeling the WSC facility, several nearby sources were included in the cumulative impact analyses. The facilities in Table 6-3 were included in the cumulative analyses. Figure 2 shows the locations of the nearby sources relative to the facility.

Table 6-3 Nearby Sources Included in the NAAQS Analyses

Facility Name
Par Montana – Billings Refinery
CHS, Inc. – Laurel Refinery
Montana Sulphur and Chemical, Co.
Phillips 66 – Billings Refinery
Yellow Stone Power Plant
Billings Wastewater Plant

6.4 Summary of National Ambient Air Quality Standards Modeling Results

Model runs were conducted for SO_2 over the five-year meteorological data set for the WSC main boiler house stack and the nearby sources.

Table 6-4 presents the results of the 1971 SO_2 NAAQS modeling for WSC including background concentrations and nearby sources. Figure 7 through Figure 9 show the modeled concentrations for the receptors where WSC exceeded the NAAQS.

Table 6-4 1971 SO_2 NAAQS Modeling Results

Pollutant	Averaging Period	Year	Maximum Modeled Impact	Background Concentration	Total Modeled Concentration	NAAQS
			(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)
SO_2	3-hour	2015-2019 Max[1]	385.9	46.2	432.1	1,300
	24-hour	2015-2019 Max[2]	230.5	14.0	244.5	365
	Annual	2015-2019 Max[3]	35.2	12.2	47.4	80

[1] Model result is the maximum second highest 3-hour modeled concentrations annually over five years.
[2] Model result is the maximum second highest 24-hour modeled concentrations annually over five years.
[3] Model result is the maximum annual arithmetic mean modeled concentrations annually over five years.

7 Summary

The results of the modeling analysis demonstrate that the predicted impacts of SO_2 from the facility will not prevent the attainment or maintenance of any ambient air quality standard. The modeling files and model results shown are included with this report.

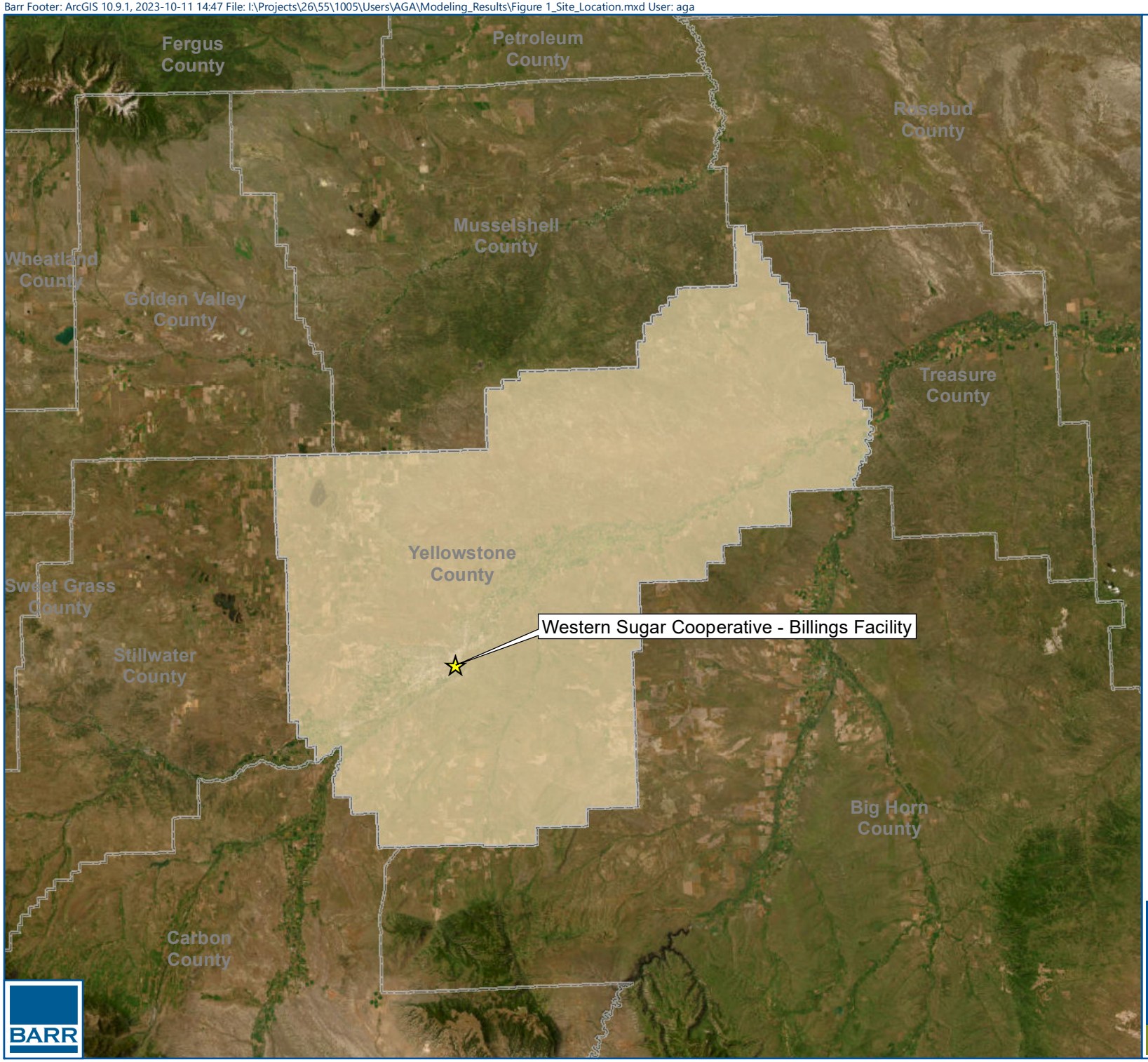
8 References

[1] U. S. E. P. Agency, "Support Center for Regulatory Atmospheric Modeling (SCRAM), 2017 Appendix W Final Rule," 2017. [Online]. Available: https://www.epa.gov/scram/2017-appendix-w-final-rule. [Accessed 17 11 2023].

[2] Montana Department of Environmental Quality, "State of Montana Modeling Guideline," 01 November 2007. [Online]. Available: https://www.providenceoris.com/wp-content/uploads/2018/04/Montana-Modeling-Guideline-for-Air-Quality-Permits2007.pdf. [Accessed 17 November 2023].

Figures

Barr Footer: ArcGIS 10.9.1, 2023-10-11 14:47 File: I:\Projects\26\55\1005\Users\AGA\Modeling_Results\Figure 1_Site_Location.mxd User: aga



N

0 12,500 25,000 37,500

Meters

FACILITY LOCATION
Western Sugar Cooperative
Billings, MT

FIGURE 1

BARR

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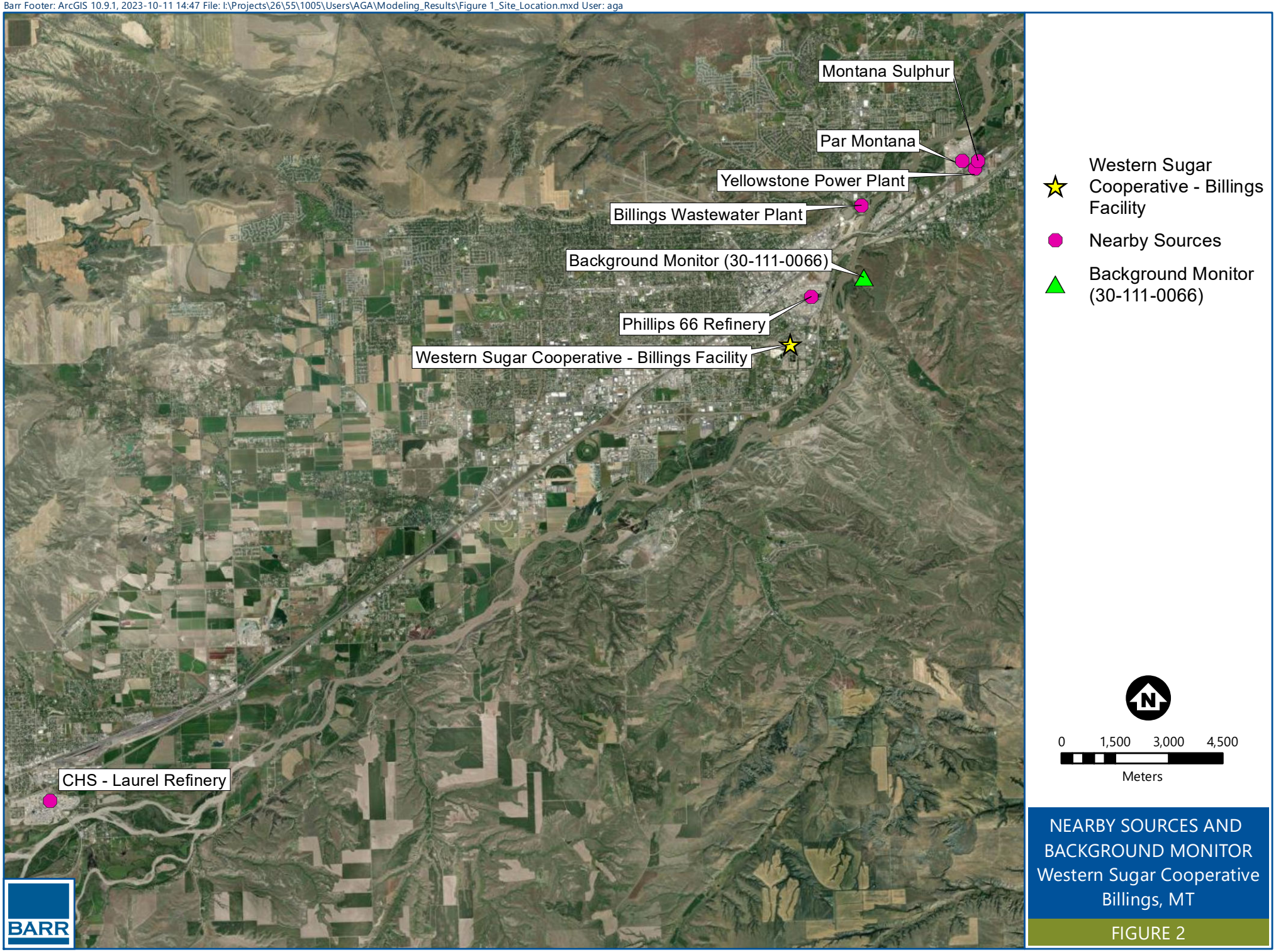

NEARBY SOURCES AND BACKGROUND MONITOR
Western Sugar Cooperative
Billings, MT

FIGURE 2

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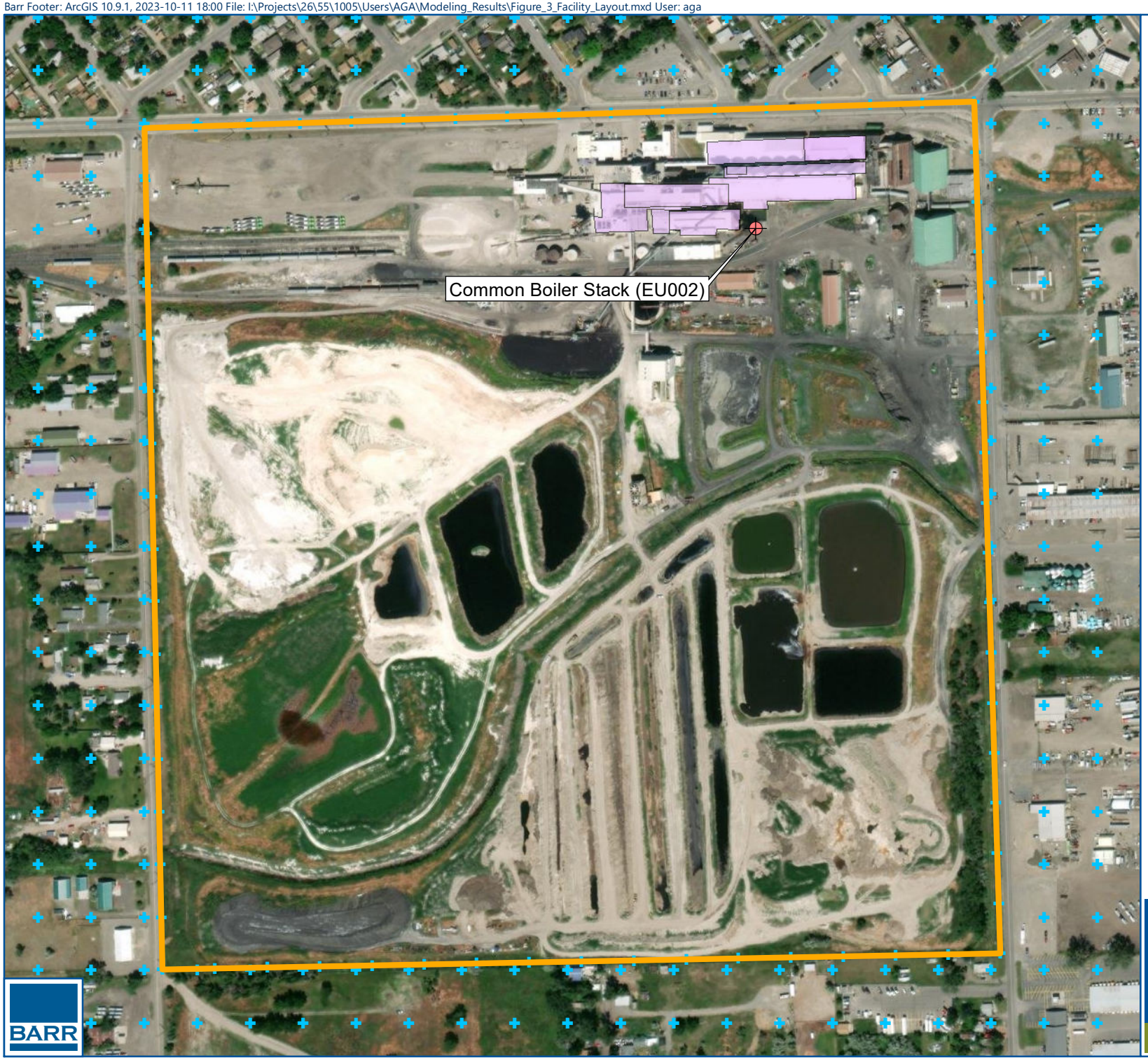


Buildings Included in the Model

Receptors

Ambient Air Boundary

N

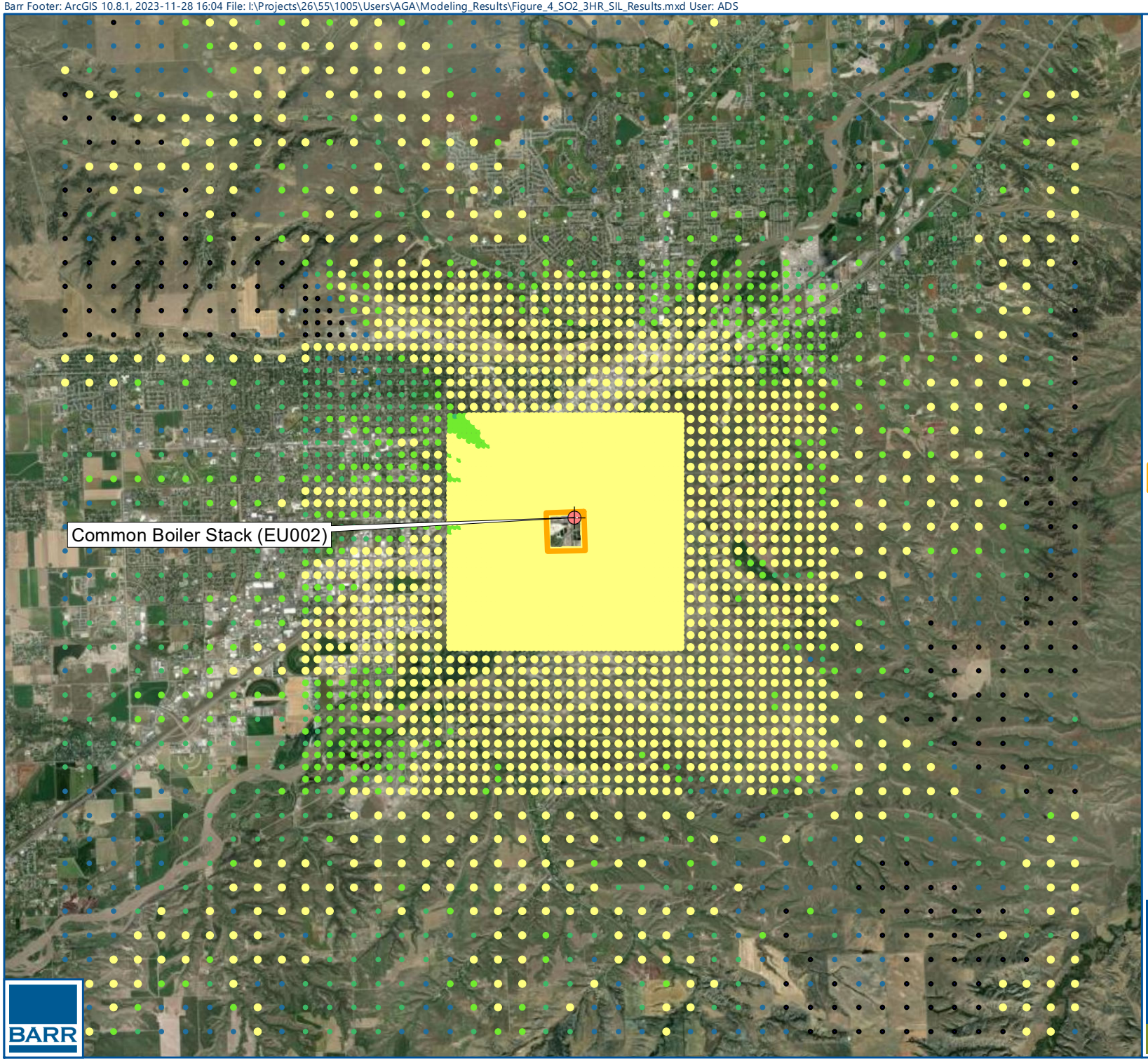
0 210

Meters

FACILITY LAYOUT
Western Sugar Cooperative
Billings, MT

FIGURE 3

BARR



SO_2 3-hour SIL Results, µg/m^3

- 3 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- > SIL
- Ambient Air Boundary

SO_2 3-hour SIL = 25 µg/m^3

Maximum SO_2 3-hour Concentration = 426 µg/m^3

N

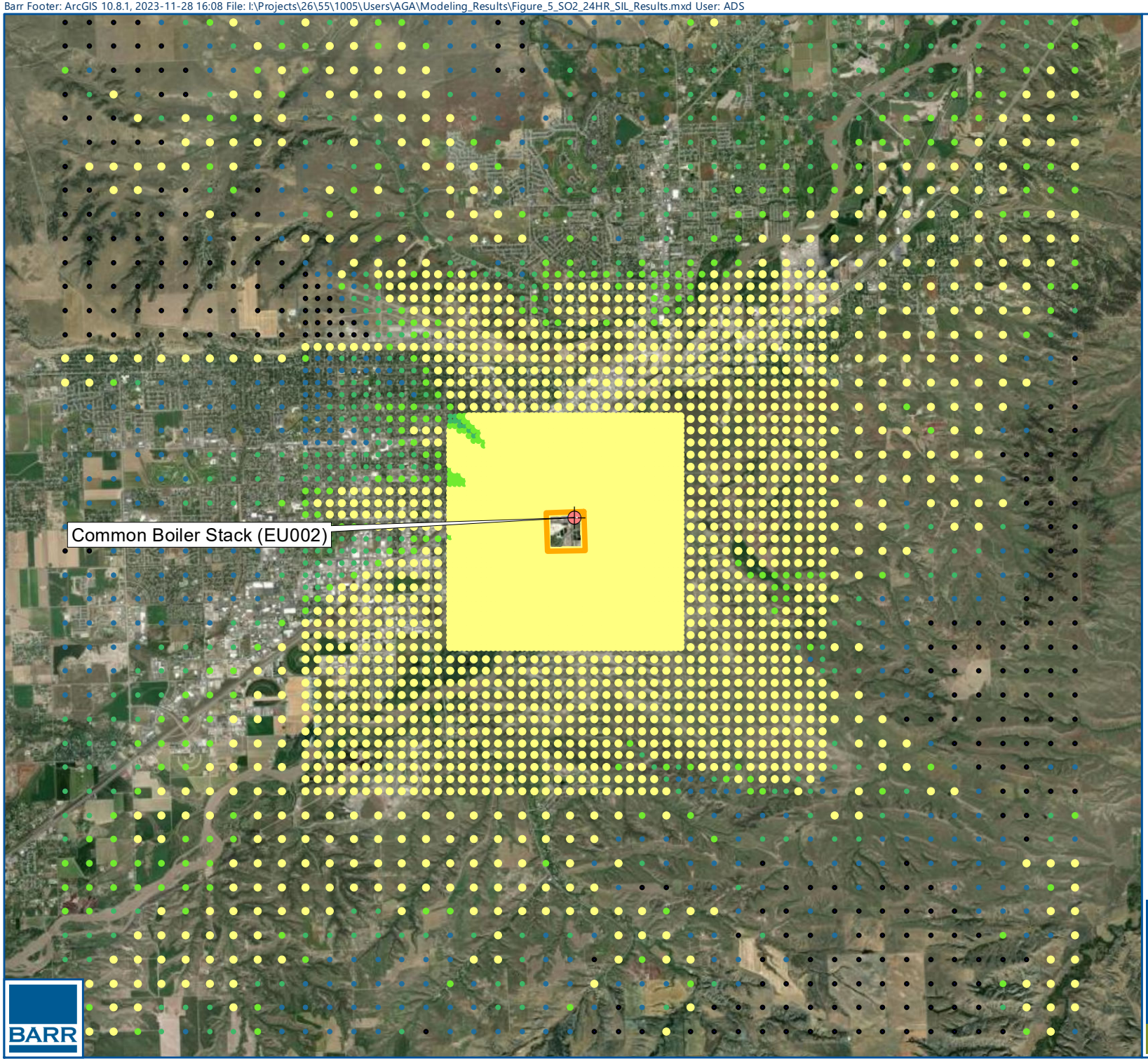
0 1,000 2,000 3,000

Meters

BARR

SO_2 3-HOUR SIL RESULTS
Western Sugar Cooperative
Billings, MT

FIGURE 4



SO_2 24-hour SIL Results, µg/m^3

- 0 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- > SIL
- Ambient Air

SO_2 24-hour SIL = 5 µg/m^3

Maximum SO_2 24-hour Concentration = 236 µg/m^3

N

0 1,000 2,000 3,000

Meters

BARR

SO_2 24-HOUR SIL RESULTS
Western Sugar Cooperative
Billings, MT

FIGURE 5

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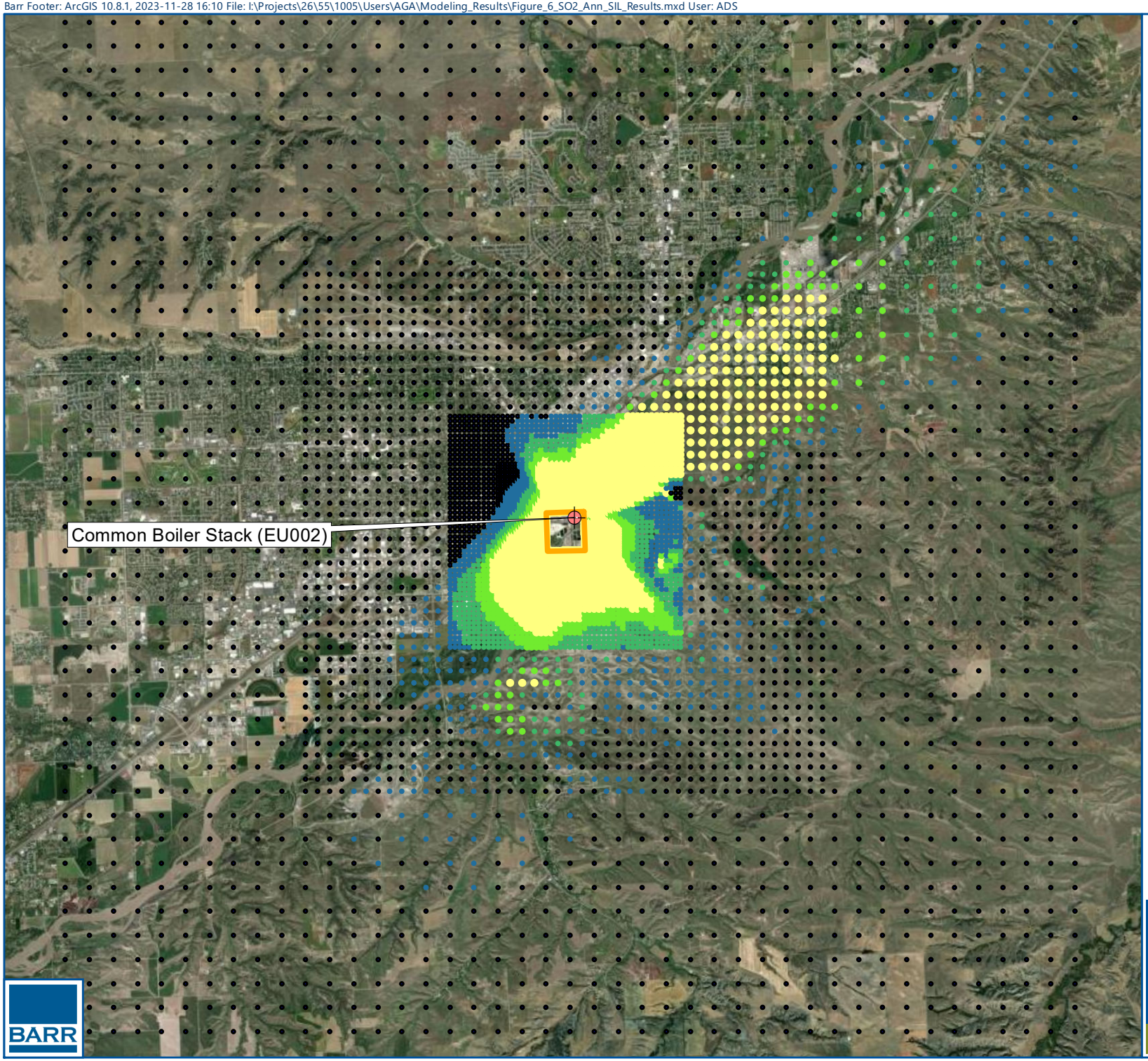

SO_2 Annual SIL Results, µg/m^3

- 0.0 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1.0
- > SIL
- Ambient Air Boundary

SO_2 Annual SIL = 1 µg/m^3

Maximum SO_2 Annual Concentration = 34 µg/m^3

N

0 1,000 2,000 3,000

Meters

BARR

SO_2 ANNUAL SIL RESULTS
Western Sugar Cooperative
Billings, MT

FIGURE 6

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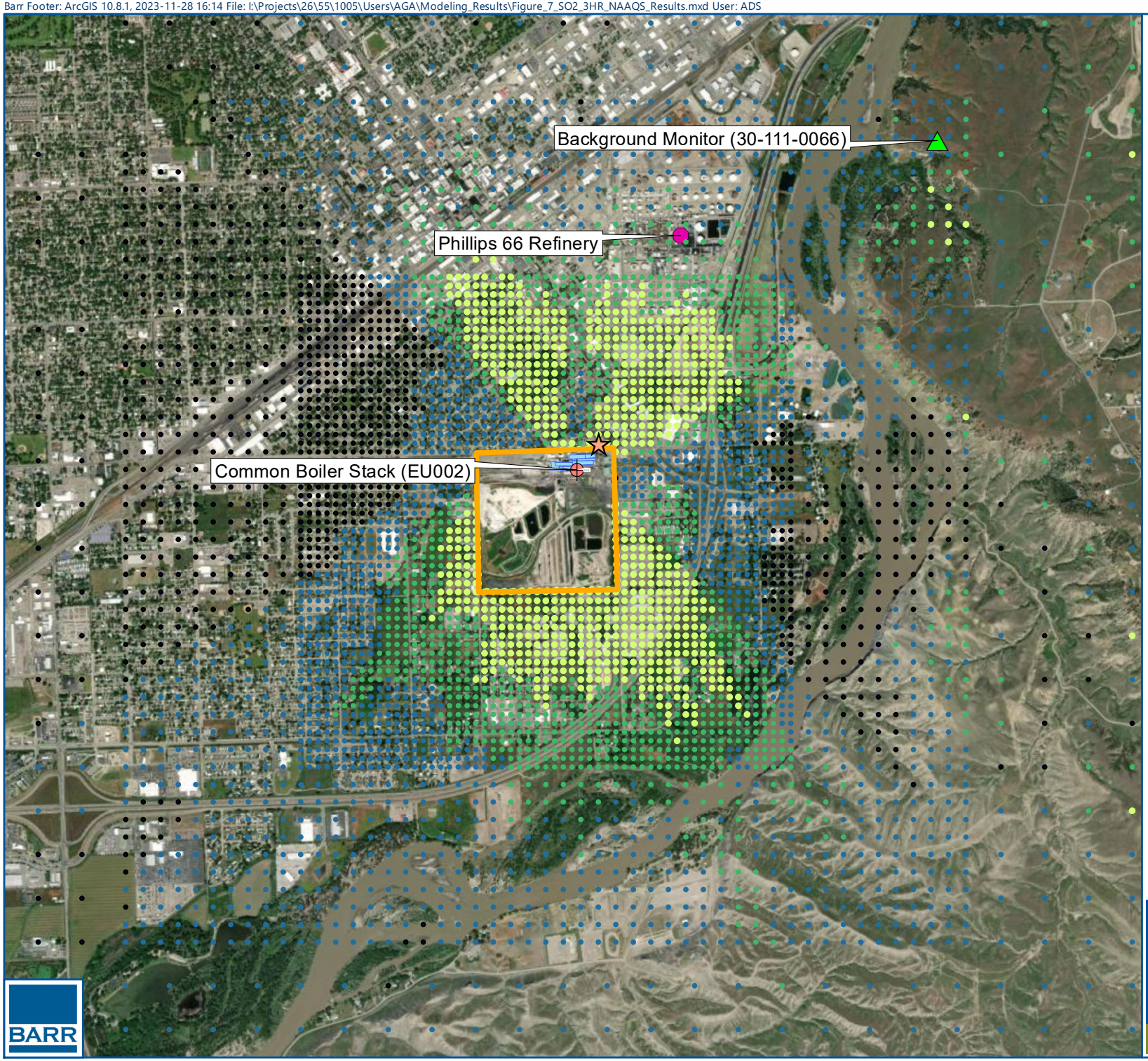


SO_2 3-hour NAAQS Results, µg/m³

- 3 - 100
- 100 - 150
- 150 - 200
- > 200
- Maximum Concentration
- Nearby Sources
- Background Monitor (30-111-0066)
- Ambient Air

SO_2 3-hour NAAQS = 1,300 µg/m³

Maximum SO_2 3-hour Concentration = 432 µg/m³

N

0 500 1,000

Meters

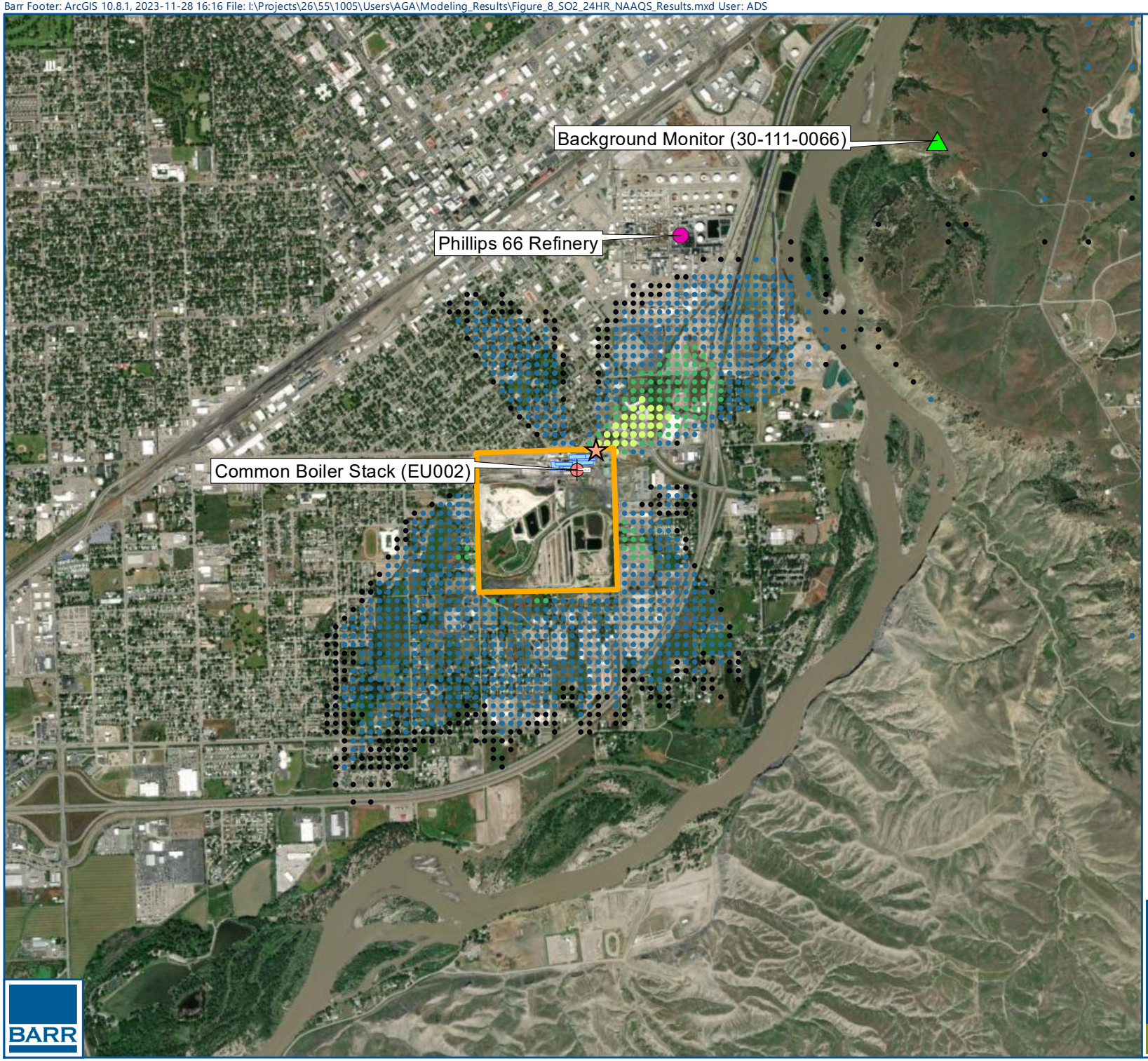
SO_2 3-HOUR NAAQS RESULTS

Western Sugar Cooperative
Billings, MT

FIGURE 7

BARR

Barr Footer: ArcGIS 10.8.1, 2023-11-28 16:16 File: I:\Projects\26\55\1005\Users\AGA\Modeling_Results\Figure_8_SO2_24HR_NAAQS_Results.mxd User: ADS



SO_2 24-hour NAAQS Results, µg/m³

- 46 - 50
- 50 - 100
- 100 - 150
- > 150
- Maximum Concentration
- Nearby Sources
- Background Monitor (30-111-0066)
- Ambient Air Boundary

SO_2 24-hour NAAQS = 365 µg/m³

Maximum SO_2 24-hour Concentration = 245 µg/m³

N

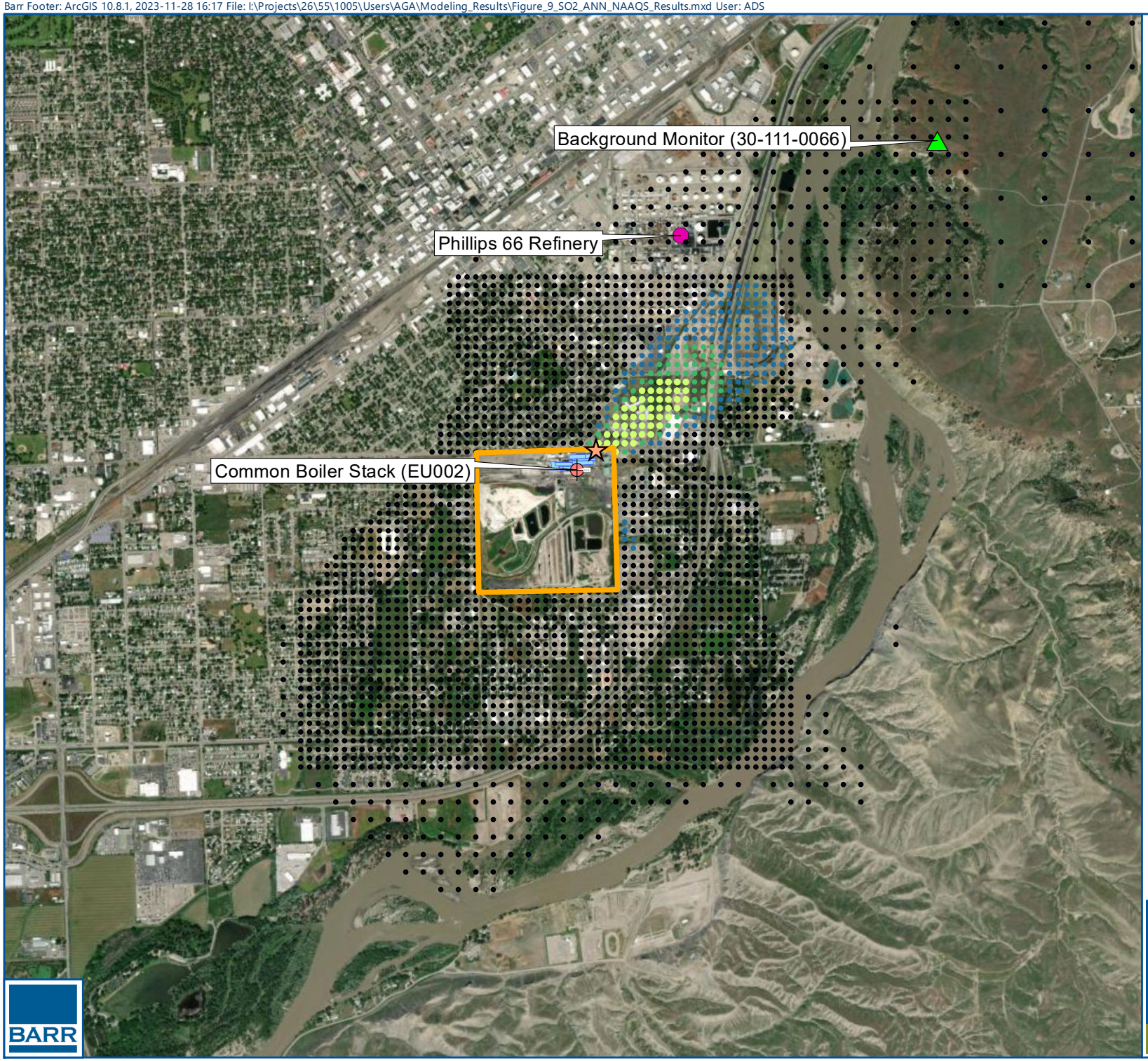
0 500 1,000

Meters

BARR

SO_2 24-HOUR NAAQS RESULTS
Western Sugar Cooperative
Billings, MT

FIGURE 8



SO_2 Annual NAAQS Results, µg/m^3

- 15 - 20
- 20 - 25
- 25 - 30
- > 30
- Maximum Concentration
- Nearby Sources
- Background Monitor (30-111-0066)
- Ambient Air

SO_2 Annual NAAQS = 80 µg/m^3

Maximum SO_2 Annual Concentration = 47 µg/m^3

N

0 500 1,000

Meters

SO_2 ANNUAL NAAQS RESULTS
Western Sugar Cooperative
Billings, MT

FIGURE 9

BARR

Attachment C

Nearby Sources Included in Modeling

Facility Name	Modeled Stack Description	AERMOD Source ID
Yellowstone Power Plant	Representative single stack	OFFSTE32
Billings Wastewater Plant	Representative single stack	OFFSTE33
Montana Sulphur	Representative single stack	OFFSTE34
PAR Montana	Representative single stack	OFFSTE35
CHS	#3 Hydrogen Plant Reformer	HPPREF
	FCC Process	FCCVSSL1
	H-102 Reformer Heater	H102
	Main Crude Heater (RFG)	CVHTR2
	Crude Preheater (Petrochem)	CVHTR1
	No. 1 Vacuum Heater	CVHTR4
	NHT Charge Heater	H8301
	No. 1 Naphtha Unifiner Stripper Reboiler	H8302
	NHT Splitter Reboiler	H8304
	NHT No. 2 Stripper Reboiler	H8303
	Platformer Heater Four Sections	PHTR1
	Platformer Debutanizer Heater	PHTR2
	Platformer Splitter Reboiler	PHTR3
	New FCC Feed Preheater	FCCHTR1N
	H-201 Charge Heater	H201
	H-202 Charge Heater	H202
	ULSD Heater H-901	H901
	ULSD Heater H-902	H902
	Alky Oil Heater	ALKYHTR1
	Coker Charge Heater	H7501
	Zone A SRU-TGTU-TGI	SRUAUX4
	Zone D	ZONED
	Coker Unit SRU through TGI	ZONEESRU
	Railcar Light Product Loading VCU	RVCU
	H2 Plant H-1001 Heater	H1001
	Coker Unit Flare	FL7201
	No. 11 Boiler	RBOIL
	No. 12 Boiler	BOIL12
	#1 Asphalt/RO Loading Heater	ASPROHTR
	No. 2 Crude Heater (new location)	2CVHTR1
	No. 10 Boiler	BOIL10

Facility Name	Modeled Stack Description	AERMOD Source ID
	New Flare	NEWFLR
	NH3 Incinerator	INC701
	H-101 Reformer Heater	H101
	No. 2 CU Vacuum Heater	5HT0002
	Coker Charge Heater #2	H7502
	New Boiler (Boiler No. 13)	BOIL13
Phillips 66 Refinery	Boiler House (B-1, B-2, B-5, & B-6) Stack	P_51_54
	Small Crude Unit Heater (H-1)	P_56
	No. 2 HDS Heater (H-10)	P_61
	No. 2 HDS Debutanizer Reboiler (H-11)	P_62
	No. 2 HDS Main Fractionator Reboiler (H-12)	P_63
	Catalytic Reforming Unit #2 (H-13)	P_64
	Catalytic Reforming Unit #2 (H-14)	P_65
	Sat Gas Stabilizer Reboiler (H-16)	P_67
	Vacuum Furnace (H-17) - NEW	P_68NEW
	FCCU Preheater (H-18)	P_69
	Butamer Heater (H-20)	P_70
	Alky Heater (H-21)	P_71
	Catalytic Reforming Unit #2 (H-23)	P_72
	Large Crude Unit Heater (H-24)	P_73
	Coker Furnace (H-3901)	P_74
	No. 4 HDS Recycle Hydrogen Heater (H-8401)	P_75
	No. 4 HDS Fractionator Feed Heater (H-8402)	P_76
	No. 5 HDS Charge Heater (H-9501)	P_78
	No. 5 HDS Stabilizer Reboiler Heater (H-9502)	P_79
	Flare	P_81
	Jupiter Main Stack No. 1 - Max ATS	P_83_T
	Jupiter Main Stack No. 2 - Max ATS	P_85_T
	FCCU Stack	P_86

Attachment D

Stipulation Agreement Exhibit A Redline / Strikeout

~~Exhibit~~**EXHIBIT A**

~~**EMISSION LIMITATIONS AND CONDITIONS**~~

EMISSION LIMITATIONS AND CONDITIONS

The Wester Sugar Company
Billings, Montana

~~Section~~

SECTION 1. ~~Affected Facilities~~**AFFECTED FACILITIES**

(A) Plant Location:

Western Sugar is located in southeast Billings. The plant is located in Yellowstone County, Township 1 South, Range 26 East, NE¼ Section 10.

(B) Affected Equipment and Facilities:

(1) Boiler house (#2, #3, and #4 Riley Coal boilers)

~~(1)~~(2) Pulp Dryers

~~(1) Erie City boiler~~

~~(2) Clever Brooks boiler~~

~~(3) East dryer unit~~

~~(4) West dryer unit~~

~~Section~~

SECTION 2. ~~Definitions~~**DEFINITIONS**

(A) The following definitions apply throughout this Stipulation and Exhibit A.

(1) "Annual Emissions" means the amount of SO_2 emitted in a calendar year, expressed in pounds per year rounded to the nearest pound.

~~Where:~~

~~[Annual Emissions] = ∑ [Daily Emissions]~~

~~(5) "Attachment #1" means the "Performance Specifications for Stack Flow Rate Monitors, Fuel Oil Flow Meters, and Fuel Oil Sulfur Analysis", attached to this Exhibit and incorporated herein by reference.~~

(2) "Calendar Day" means a 24-hour period starting at 12:00 midnight and ending at 12:00 midnight, 24 hours later.

~~(6) "Clock Hour" means one twenty-fourth (1/24) of a Calendar Day and refers to any of the standard 60-minute periods in a day which are generally identified and separated on a clock by the whole numbers one through twelve.~~

~~(7) "Continuous Emission Monitoring System (CEMS)" means all equipment necessary to obtain an Hourly SO_2 Emission Rate, provided each SO_2 concentration, stack gas volumetric flow rate and fuel oil flowmeter is designed to achieve a temporal sampling resolution of at least one concentration or flow rate measurement per minute. Such equipment includes:~~

(a) a continuous emission monitor (CEM) which determines SO_2 concentrations in a stack gas, a continuous stack gas volumetric flow rate monitor which determines stack gas flow rates, and associated data acquisition equipment; or

(b) a pair of fuel oil flowmeters which in combination measure the combined fuel oil firing rate for the fuel oil combustion units, and associated data acquisition equipment.

(3) "Daily Emissions" means the amount of SO_2 emitted in a Calendar Day expressed in pounds per day rounded to the nearest pound.
Where:
[Daily Emissions]= [Three Hour Emissions]

Each Calendar Day is comprised of eight non-overlapping 3-hour periods. The Three Hour Emissions from all of the 3-hour periods in a Calendar Day shall be used to determine that day's emissions.

(8) "Hourly Average" means an arithmetic average of all Valid and complete 15-minute data blocks in a Clock Hour. Four (4) Valid and complete 15- minute data blocks are required to determine an Hourly Average for each monitor and source per Clock Hour.

Exclusive of the above definition, an Hourly Average may be determined with two (2) Valid and complete 15-minute data blocks, for two of the 24 hours in any Calendar Day.

A complete 15-minute data block for each sulfur dioxide continuous emission monitor, stack gas flow rate monitor, and fuel oil flow meter shall have a minimum of one (1) data point value; however, each monitor shall be operated such that all Valid data points acquired in any 15-minute block shall be used to determine that 15-minute block's reported concentration and flow rate.

(9) "Hourly SO_2 Emission Rate" means the pounds per Clock Hour of SO_2 emissions from a stack or fuel oil system determined using Hourly Averages and rounded to the nearest one tenth of a pound.

(a) For stack systems, SO_2 concentrations shall be measured in parts per million (PPM) on either a wet or dry basis.

(i) If the SO_2 concentration is measured on a wet basis, Western Sugar shall calculate the Hourly SO_2 Emission Rate using the following equation:

$$E_H = K * C_H * Q_H$$

Where:

EH = Hourly SO_2 Emission Rate in pounds per hour arid rounded to the nearest tenth of a pound;
K = 1.663 X 10^{-1} in (pounds/SCF)/PPM;
CH = Hourly Average SO2 concentration in PPM; and

QH = stack gas Hourly Average volumetric flow rate, measured on an actual wet basis, converted to Standard Conditions, and reported in standard cubic feet per hour (SCFH).

(ii) If the SO_2 concentration is measured on a dry basis, Western Sugar shall either install, operate, and maintain a continuous moisture monitor for measuring and recording the moisture content of the stack gases or determine the moisture content of the stack gases continuously (or on an hourly basis) and correct the measured hourly volumetric stack gas flow rates for moisture. Western Sugar shall calculate the Hourly SO_2 Emission Rate using the following equation:

$$EH = K * CH * QH * \frac{(100 - \%H\&)}{100}$$

Where:

EH = Hourly SO2 Emission Rate in pounds per hour and rounded to the nearest tenth of a pound;
K = 1.663 X 10-1 in (pounds/SCF)/PPM;
CH= Hourly Average SO2 concentration in PPM (dry basis);
QH = stack gas Hourly Average volumetric flow rate, measured on an actual wet basis, converted to Standard Conditions, and reported in standard cubic feet per hour (SCFH); and
%H2O = Hourly Average stack gas moisture content, in percent by volume.

(b) For fuel oil combustion with mass flow metering at the beet pulp dryers the following equation shall be used to calculate the Hourly SO_2 Emission Rate in pounds per hour.

Ms= 2.0 * [(Mo* ¾Sjl00) +(Mb* %SJ100)] * (1 – CE)

Where:

Ms = Hourly SO2 Emission Rate in pounds per hour and rounded to the nearest tenth of a pound;
2.0 = ratio of pounds of SO2 per pound of sulfur;
M0 = mass of fuel oil consumed per hour in pounds per hour;
%S0 = percentage of sulfur by weight measured in the fuel oil;
Mb = mass of beet pulp feed to the dryers in pounds per hour;
¾Sb = percentage of sulfur by weight in the beet pulp; and
CE= control efficiency of the water curtain scrubber, mist eliminator, and the beet pulp, expressed as a decimal.

To determine the percentage of sulfur by weight in the beet pulp, Western Sugar shall implement a program to sample the feed of beet pulp to the dryers on a weekly basis and analyze the samples for percent sulfur [unless the Department and EPA approve the use of a constant for sulfur content as provided in Section 6

~~(E)(9)]. The percent sulfur (Sb) for a particular week shall be the percent sulfur for the most recent sample.~~

~~The control efficiency of the water curtain scrubber, mist eliminator, and the beet pulp shall be determined once during each campaign (and applied for the entire campaign) using the results of the source testing required by Section 5 (B) and the results of concurrent sampling and analysis of the beet pulp processed and fuel oil burned to determine the sulfur input to the dryer being tested. The control efficiency shall be calculated in accordance with the following equation:~~

~~Where:~~

$$CE = [(2.0 * S_i) - (S_)] \div (2.0 * S_i)$$

~~CE = control efficiency expressed as a decimal;~~

~~2.0 = ratio of pounds of SO2 per pound of sulfur;~~

~~S; = sulfur input to the beet pulp dryer expressed in pounds per hour and determined in accordance with the following equation:~~

~~(M0 * %Sjl00) +(Mb* %SJ100); and~~

~~S[= SO2 emission rate in pounds per hour rounded to the nearest tenth of a pound as determined by source testing.~~

"Operating" means whenever an affected facility is starting up, shutting down, using fuel, or processing materials and SO_2 emissions are expected from the source or stack.

~~(10) "Quarterly Data Recovery Rate" means the percentage of hours in a calendar quarter)'/hen CEMS derived Hourly SO2 Emission Rate data are available for a source (stack or fuel oil system) in comparison to the number of corresponding Operating hours for that source.~~

~~The Quarterly Data Recovery Rate (QDRR) for a source shall be calculated in accordance with the following equation:~~

$$QDRR = \frac{VH}{OH} \times 100\%$$

~~Where:~~

~~VH = number of hours of Hourly SO2 Emission Rate data that are also source Operating hours in a calendar quarter;~~

~~OH = total number of source Operating hours in a calendar quarter; and~~

~~QDRR = Quarterly Data Recovery Rate.~~

~~(11) "Standard Conditions" means 20.0°C (527.7°R, 68.0°F, or 293.2°K) and 1 atmosphere pressure (29.92" Hg).~~

(4) "Three Hour Emissions" means the amount of SO_2 emitted in each of the eight non-overlapping three- hour periods in a Calendar Day, expressed in pounds and rounded to the nearest pound.

~~Where:~~

~~[Three Hour Emissions]= [Hourly SO_2 Emission Rates]~~

~~Whenever Hourly SO_2 Emission Rates are unavailable and the facility is not Operating, zero pounds per hour shall be substituted for the missing Hourly SO_2 Emission Rates.~~

~~"Valid" means data that is obtained from a monitor or meter serving as a component of a CEMS which meets the applicable specifications, operating requirements, and quality assurance and control requirements of . Section 6.~~

SECTION 3. ~~EMISSION~~**EMISSIONS AND OPERATING LIMITATIONS**~~, CAMPAIGN LENGTH, AND FACILITY MODIFICATIONS~~

(A) Emission Limitations

(1) Affected Sources:

(a) Boiler house stack;

(i) Three Hour Emissions of SO_2 from the boiler house stack shall not exceed 856.2 pounds per three~~-~~hour period,

(ii) Daily Emissions of SO_2 from the boiler house stack shall not exceed 6,849.6 pounds per Calendar Day, and

(iii) Annual Emissions of SO_2 from the boiler house stack shall not exceed 1,438,416 pounds per. calendar year.

~~(a) East dryer stack and West dryer stack;~~

(b) ~~Combined Three Hour Emissions of SO_2 from~~Riley Boilers

~~(i)~~ The annual combined heat input to the ~~East dryer stack and West dryer stack~~Riley Boilers (EU002) shall not exceed ~~88.5 pounds per three hour period,~~

~~(ii) Combined Daily Emissions of SO_2 from the East dryer stack and West dryer stack shall not exceed 708.0 pounds per Calendar Day, and~~

~~(iv)~~(i) ~~Combined Annual Emissions of SO_2 from the East dryer stack and West dryer stack shall not exceed 148,680 pounds per~~2,237,760 MMBtu / calendar year.

~~(b)~~(c) Other Minor Sources~~;~~

(i) Western Sugar shall utilize appropriate maintenance, repair, and operating practices to control emissions of sulfur bearing gases from minor sources such as ducts, stacks, valves, vents vessels, and flanges which are not otherwise subject to this Stipulation and Exhibit A.

(ii) Western Sugar shall use good engineering judgement and appropriate engineering calculations to quantify emissions from activities that are not otherwise addressed by this Stipulation and Exhibit A but are known to contribute to emissions from sources listed in Section 1(B). In addition, Western Sugar shall account for such emissions in determining compliance with all applicable emission limits contained in Section 3.

(d) Pulp Dryers

~~(ii)~~(i) Only natural gas shall be used for fuel in the pulp dryers

~~(B) Facility Modifications~~

~~(1) By October 1, 1996, Western Sugar shall modify the existing boiler house stack or construct a new stack which exhausts at a height of at least 54.9.~~

~~(2) By October 1, 1996, Western Sugar shall remove the fuel oil guns from the Erie City boiler and Clever Brooks boiler and install a blind insert in the fuel oil header to each unit.~~

~~(C) The length of any campaign (normally September through the following February) shall not exceed 190 days.~~

~~Section~~

SECTION 4. COMPLIANCE DETERMINATIONS

(A) Compliance with the emission limitations contained in Section 3 (A)(~~1~~1)(a) shall be determined using data from the ~~CEMS required by Section 6 (B)(1) and (2) and in accordance with the appropriate equation(s) in Section 2 (A)(1), (6), (8) and (12) except when CEMS data is not available as provided in Section 2 (A)(12). Although the CEMS data is the method of demonstrating compliance on a continuous basis, the data from the~~ testing required by ~~Sections~~Section 5(A) or ~~6(C) and shall also be used to demonstrate compliance.~~a combination of the test data and the calculations in Section 5 (B).

~~(D) Compliance with the emission limitations contained in Section 3 (A)(1)(b) shall be determined by using total hourly mass of fuel oil consumed from the fuel oil flowmeters required by Section 6 (B)(3), daily fuel oil sulfur analysis as required by Section 6 (E)(3), the hourly mass of beet pulp feed to the dryers, the weekly beet sulfur analysis as required by Section 2 (A)(8)(b), and the control efficiency determined in accordance with Section 2 (A)(8)(b), and in accordance with the appropriate equation(s) in Section 2 (A)(1), (6), (8) and (12) except when CEMS data is not available as provided in Section 2 (A)(12). Although the CEMS data and above procedures (beet feed rate and sulfur content and scrubber control efficiency) is the method of demonstrating compliance on a continuous basis, the data from the testing required by Section 5 (B) shall also be used to demonstrate compliance.~~

~~(E) By October 1, 1996, Western Sugar shall certify to the Department that the facility modifications described in Section 3(B) have been completed and are permanent in nature.~~

~~(F) Compliance with the facility modifications contained in Section 3(B) shall be determined by inspection by the Department.~~

~~(G) Compliance with the Quarterly Data Recovery Rate requirements.~~

~~(1) Compliance with the Quarterly Data Recovery Rate requirements contained in Section 6 (A)(2) shall be determined in accordance with Section 2 (A)(10), with no exceptions for out of specification data or monitor downtime, except as provided in Section 6(A)(2).~~

~~(2) For quarters in which Operating hours are reduced (short quarters), a determination of whether Western Sugar has violated the Quarterly Data Recovery Rate (QDRR)~~

~~requirements in Section 6(A)(2)(b) shall include consideration of whether the reduced Operating hours made compliance with Section 6(A)(2)(b) unreasonable.~~

~~(3) Upon determination that the CEMS is not functioning properly, Western Sugar shall implement short term corrective measures and if necessary, long term corrective measures to accomplish, as expeditiously as practicable, either:~~

~~(a) correction of the failure, or~~

~~(b) development, installation (if necessary), testing, maintenance, and operation of a new CEMS or appropriate replacement portions of the affected CEMS.~~

~~**SECTION 5. EMISSION TESTING**~~

(B) Compliance with the limit in Section 3 (A)(1)(b) on annual combined heat input to the Riley Boilers shall be determined using the tons of coal fired by the boilers and the heat content of the coal.

(C) Compliance with the fuel limitation in Section 3 (A)(1)(d) shall be documented by maintaining on site, a record noting any instance in which any fuel other than natural gas is combusted.

SECTION 5. EMISSIONS TESTING AND MONITORING

~~(A)~~ In order to accurately determine the sulfur dioxide emission rate in pounds per hour for the boiler stack~~,~~ and limits in Section 3 (A)(1)(a), Western Sugar shall perform annual source testing using EPA approved methods (40 CFR Part 60, Appendix A, Methods 1-4 and 6/6C as appropriate for this Stipulation and Exhibit A) or an equivalent method approved by the Department and EPA, and in accordance with the Montana Source Testing Protocol (ARM 17.8.106). ~~The annual Relative Accuracy Test Audits (RATAs) required by Sections 6(C) and (D) may substitute for the annual source tests provided that the flow rate RATA and the concentration RATA are performed simultaneously and additional calculations are made to determine and report the data in pounds per hour of sulfur dioxide.~~

(A) ~~In order to accurately determine the sulfur dioxide emission rate in pounds per hour for the beet pulp dryer stacks and the control efficiency of the water curtain scrubbers, mist eliminators, and the beet pulp, Western Sugar shall perform annual source testing on the beet dryer stack that is expected to emit the most sulfur dioxide during the campaign. In determining the projected sulfur dioxide emissions for each stack, Western Sugar shall consider expected beet production and fuel oil consumption. The annual source testing shall be conducted within 30 days after the start of a campaign and use EPA approved methods (40 CFR Part 60, Appendix A, Methods 1-4 and 6/6C as appropriate for this Stipulation and Exhibit A) or an equivalent method approved by the Department and EPA, and in accordance with the Montana Source Testing Protocol (ARM 17.8.106).~~

(1) Western Sugar shall notify the Department in writing of each annual source test a minimum of 25 working days prior to the actual testing (unless otherwise specified by the Department).

SECTION 6. CONTINUOUS MONITORING AND FUEL OIL FLOWMETERING

(A) CEM Quarterly Data Recovery Rates

(1) "Unusual Circumstances" means circumstances which are unforeseeable, beyond Western Sugar's control, and which could not reasonably have been prevented or mitigated by Western Sugar. Such circumstances may include but are not limited to earthquakes; power outages, or fire; but do not include failures of any monitoring or metering equipment or associated data acquisition equipment unless such failures meet the following conditions:

(a) prior to the failure, the equipment was installed, operated, and maintained in accordance with the requirements of Section 6;

(b) upon failure, Western Sugar initiates the short term corrective measures and the long term corrective measures required by Section 4(E);

(c) within two working days of occurrence, Western Sugar notifies the Department's Permitting and Compliance Division by telephone of the occurrence of Unusual Circumstances, as defined herein; and

(d) Western Sugar demonstrates, by utilizing properly signed contemporaneous CEMS operating logs and other relevant evidence, in the first quarterly report following the failure that the failure meets the above conditions.

(2) Quarterly Data Recovery Rates

(a) Notwithstanding the QDRR requirements specified in Section 6(A)(2)(b), whenever a source or stack is Operating, Western Sugar shall use best efforts to operate the associated CEMS in a manner to achieve the highest Quarterly Data Recovery Rate (QDRR) that is technically feasible.

(b) At a minimum, Western Sugar shall achieve the following QDRR requirements, unless prevented by Unusual Circumstances or by reduced Operating hours as provided in Section 4(E)(2):

(i) for the boiler house stack CEMS and the fuel oil system CEMS, Western Sugar shall achieve a QDRR for each CEMS of equal to or greater than 90%.

(c) In its evaluation of whether Western Sugar used best efforts to achieve the highest QDRR technically feasible, the Department will consider:

(i) the design capabilities of the CEMS; and whether:

(ii) Western Sugar has properly operated and maintained the CEMS, including the maintenance of an adequate spare parts inventory;

(iii) Western Sugar has complied with the quality assurance requirements described in Section 6;

(iv) Western Sugar has taken timely and appropriate action to correct a failure in the CEMS; and

(v) Unusual Circumstances have occurred, as defined in Section 6 (A)(l).

(d) Any time that a CEMS, including the associated data acquisition system, is not functioning properly, Western Sugar shall implement the short term corrective measures and if necessary, the long term corrective measures required by Section 4(E)(3).

(B) Affected Sources

(1) By July 1, 1997, Western Sugar shall install, operate, and maintain a continuous emission monitor to measure SO_2 concentrations from the boiler house stack.

(2) By July I, 1997, Western Sugar shall install, operate, and maintain a continuous stack flow rate monitor to measure the stack gas flow rates from the boiler house stack.

(3) By October 1, 1996, Western Sugar shall install, operate, and maintain two in-line fuel oil flowmeters on the fuel oil loop, one immediately upstream from the East dryer furnace and one downstream from the West dryer furnace.

(4) All continuous emission monitors required by *this* control plan shall be required to operate only when Western Sugar is Operating.

(C) CEM Performance Specifications

(1) All continuous SO_2 concentration monitors required by this control plan shall:

(a) be installed, certified (on a concentration basis), and operated in accordance with the performance specifications in 40 CFR Part 60, Appendix B, Performance Specifications 2; and

(b) be subject to and meet the quality assurance and quality control requirements (on a concentration basis) of 40 CFR Part 60 Appendix F including but not limited to:

(i) daily calibration drift checks (zero/span or Z/S) using either electro-optical methods or certified calibration gas (however, in addition to the requirements of Appendix F at least one Z/S per calendar week must be conducted using a certified calibration gas),

(ii) quarterly Cylinder Gas Audits (CGA) or Relative Accuracy Audits (RAA), and

(iii) the annual Relative Accuracy Test Audit (RATA).

(2) Western Sugar shall notify the Department in writing of each annual Relative Accuracy Test Audit a minimum of twenty-five (25) working days prior to the actual testing (unless otherwise specified by the Department).

(D) Stack Gas Flow Rate Monitor Performance Specifications

(1) All continuous stack gas flow rate monitors required by this control plan shall:

(a) be installed, certified (on a flow rate basis), and operated in accordance with Department Method A-1 of Attachment #1, and

~~(b) be subject to and meet (on a flow rate basis) the quality assurance and quality control requirements of Department Method B-1 of Attachment #1.~~

~~(2) Western Sugar shall notify the Department in writing of each annual Relative Accuracy Test Audit a minimum of twenty-five (25) working days prior to the actual testing (unless otherwise specified by the Department).~~

~~(E) Fuel Oil Flowmetering and Fuel Oil and Beet Analysis Specifications~~

~~(1) Western Sugar shall operate and maintain all fuel oil flowmeters required by this control plan in accordance with Method C-1 of Attachment#1.~~

(2) Western Sugar shall conduct ~~daily fuel oil sampling in accordance with Method C-1 of Attachment #1~~source testing once per campaign period.

~~(2) Western Sugar shall analyze all fuel oil samples .collected, as required by Section 6 (E)(2), for sulfur content in accordance with Method C-1 of Attachment #1.~~

~~(3) Each fuel oil flowmeter required by this control plan shall demonstrate a flowmeter accuracy of2.0 percent of the upper range value (i.e. maximum calibrated oil flow rate) as measured under laboratory conditions by the manufacturer or by the owner or operator, and pursuant to the calibration procedures as specified by Method C-1 of Attachment #1.~~

~~(4) Western Sugar shall archive a split (at least 200 cc) of each fuel oil sample collected, as required by Section 6 (E)(2), in accordance with Method C-1 of Attachment #1.~~

~~(5) Western Sugar shall collect weekly grab samples of the beet pulp feed to the dryers.~~

~~(6) Western Sugar shall prepare and analyze the beet pulp samples in accordance with the following Association of Official Analytical Chemists methods: 22.008 "Preparation of Sample Procedures" and 22.050 "Total Sulfur (23) Official First Action". Western Sugar may also perform the sample preparation and sulfur analysis by alternative methods. Prior to implementing an alternative sample preparation or analytical method, Western Sugar shall first seek and acquire approval from the Department and EPA.~~

~~(7) Western Sugar shall archive and maintain in a frozen state a split (at least 600 grams) of the beet pulp feed sample for at least 150 days after the submittal of the quarterly report for the quarter in which the sample was collected.~~

~~(8) Upon completion of two campaigns for which weekly beet pulp sulfur content data is available, Western Sugar may make a demonstration to the Department that the beet sulfur content is relatively constant and comprises a minor portion of the total sulfur input to the beet pulp dryers. If the Department and EPA determines that Western Sugar's demonstration is credible, the Department and EPA may approve of the use of a constant value for beet pulp sulfur content (a conservative value based upon the sulfur content data) and the discontinuation of weekly sampling and analysis for beet pulp sulfur content.~~

(3) ~~Section 7. DATA~~ Western Sugar shall develop an emission factor from each boiler stack source test in units of ~~lbs~~pounds of SO_2 per ton of coal combusted. This emission factor

shall be used along with the coal tonnage combustion to demonstrate compliance with the Annual, Daily and Three-Hour emission limits.

(B) Western sugar will track coal usage rates and use the emission factor derived from boiler stack tests to calculate annual sulfur dioxide emissions, daily emissions, and three–hour emissions.

SECTION 6. REPORTING REQUIREMENTS
~~**REPORTING REQUIREMENTS**~~

~~(A) Western Sugar shall submit quarterly reports on a calendar year basis for the quarters that Western Sugar is operating, beginning with the first calendar quarter of 1998. The quarterly reports shall be submitted within 30 days of the end of each calendar quarter, except that the first quarterly report of a campaign shall be submitted within 30 days after the annual source testing on the beet pulp dryers. The quarterly reports shall be submitted to the Department's Permitting and Compliance Division office in Helena and the Billings Regional Office. The quarterly report format shall consist of both a comprehensive electronic-magnetic report and a written or hard copy data summary report.~~

~~(B) The electronic report format and records structure shall require hourly CEMS data, stack temperature and calibration data to be submitted to the Department as required in Section 7(A). The data shall be submitted to the Department on magnetic or optical media, and such submittal shall follow the reporting format specified by the Department in 1996, as may be subsequently amended. The Department shall reserve the right to call for any necessary future revisions to the reporting format delineated in this Section.~~

~~(1) The electronic report shall contain the following:~~

~~(a) Hourly Average SO_2 concentrations in PPM from the boiler house stack;~~

~~(b) Hourly Average stack volumetric flow rates in SCFH from the boiler house stack;~~

~~(c) Hourly Average stack gas temperature in °F from the boiler house stack;~~

~~(d) Hourly SO_2 Emission Rates in pounds per Clock Hour from the boiler house stack;~~

~~(e) total hourly mass of fuel oil consumed in pounds per hour;~~

~~(f) total hourly feed of beet pulp to the dryers in pounds per hour;~~

~~(g) combined Hourly SO_2 Emission Rate in pounds per Clock Hour from the East and West dryer stacks; and~~

~~(h) daily calibration data from CEMS required by Section 6(B).~~

~~(2) In addition to submitting the electronic-magnetic quarterly reports to the Department, Western Sugar shall also record, organize and archive for at least five years the same data, and upon request by the Department, Western Sugar shall provide the Department with any data archived in accordance with this Section.~~

(C) The quarterly written report shall consist of summarized CEMS data for Daily Emissions, Three Hour Emissions, fuel oil and beet pulp sulfur content data, Quarterly Data Recovery Rates and text regarding excess emissions.

(1) The following data shall be recorded, organized, reported, and archived for a minimum of five years:

(a) Three Hour Emissions of SO_2 in pounds per three hour period from the boiler house stack and combined Three Hour Emissions from the East dryer stack and West dryer stack;

(b) Daily Emissions of SO_2 in pounds per Calendar Day from the boiler house stack and combined Daily Emissions from the East and West dryer stacks;

(c) the Quarterly Data Recovery Rate for each CEMS required by Section 6 (B)(1), (2), and (3) expressed in percent;

(d) the Operating hours during the calendar quarter for the source or units associated with boiler house stack and fuel oil system;

(e) daily fuel oil sulfur content in percent sulfur by weight;

(f) weekly beet pulp sulfur content in percent sulfur by weight;

(g) the date and time identifying each period of continuous monitoring system downtime during the reporting period, including quality control and quality assurance checks, and the nature of system repairs or adjustments;

(h) the results of the quarterly CGA's or RAA's and flow rate checks, the annual RATAs required in Section 6 (C) and (D), and the annual source tests required by Section 5 (A) and (B); and

(i) any documentation which demonstrates that a CEMS failure meets the conditions of Unusual Circumstances.

(2) For each Calendar Day on which any emission limitations are exceeded, the written report shall identify the source or unit with excess emissions and include the following information in a report submittal as specified in Section 7(A):

(a) total hours of operation with excess emissions, the Hourly SO2 Emission Rates, and Three Hour Emissions;

(b) all information regarding reasons for Operating with excess emissions; and

(c) corrective actions taken to mitigate excess emissions.

(D) Upon request from a representative of the Department, EPA or Yellowstone County Air Pollution Control, Western Sugar shall provide Hourly SO_2 Emission Rate data for any prior day not covered by the latest quarterly report for the sources or units covered by this control plan and listed in Section 1(B).

(E) By January 1, 2000, the Department shall reevaluate the reporting requirements of this Section and determine if revisions are necessary or desirable. The purpose of the reevaluation

~~is to determine if the reporting requirements should be modified to more closely meet the informational needs of the Department and the public, and to reduce or simplify the requirements for Western Sugar while still providing the necessary information. Any revisions shall be made only after consultation with Western Sugar, consideration of the number and type of data requests made by the public, and the Department's emission inventory and compliance needs.~~

(A) ~~Section 8~~Western Sugar shall submit a report of the annual testing required by Section 5(A) following MTDEQ stack test reporting guidance in accordance with MTDEQ's stack test protocol. This report shall include the calculated emission factor in pounds of SO_2 per ton of coal combusted.

(B) Reports of annual stack tests demonstrating compliance with limits in Section 3(A)(1)(a) and historical quarterly reports of monitor data will be maintained in an onsite archive for a minimum of five years.

(C) Annual SO_2 emissions will be calculated according to Section 5(B) and reported annually following emissions inventory reporting requirements and deadlines.

(D) Annual heat input will be calculated according to the tonnage of coal combusted and heat content as measured from test data available from the coal supplier; and reported annually.

SECTION 7. ADDITIONAL REQUIREMENTS AND CONDITIONS

(A) Except as otherwise provided herein, nothing in this Stipulation~~,~~ or Exhibit A~~, or Attachment #1~~ shall be construed to alter Western Sugar's obligation under any other applicable state, federal and local laws and regulations, orders, and permit conditions. In any enforcement proceeding pertaining to such other requirements, Western Sugar reserves the right to raise any and all available equitable or legal defenses.

~~**SECTION 9. GENERAL CONDITIONS**~~

SECTION 8. GENERAL CONDITIONS

~~(A)~~ Inspection - For purposes of ensuring compliance with this Stipulation~~,~~ and Exhibit A~~, and Attachment #1~~, Western Sugar shall, pursuant to 75-2-403, MCA, allow the Department representative(s) access to all SO_2 emitting sources at the Western Sugar facility such that, the Department representative(s) may, pursuant to 75-2- 403, MCA, enter and inspect, at any reasonable time, any property, premises, or place, except a private residence, on or at which an SO_2 emitting source is located or is being constructed or installed. The Department representatives shall be allowed to conduct surveys, collect samples, obtain emissions data, ~~audit any monitoring equipment (CEMS),~~ or observe any monitoring or testing, and conduct all other necessary functions related to this control plan.

(A) As provided in Section 75-2-105, MCA, Western Sugar may seek a court order declaring certain trade secret information as confidential and not a matter of public record. If Western Sugar claims that certain information is entitled to trade secret protection, the Department shall maintain such information as confidential pending issuance of a court order under Section 75-2-105, MCA,

provided that Western Sugar initiate such court action within 14 days of delivering the information to the Department.

(B) Enforcement - Any violation of a limitation, condition, or other requirement contained herein ("Stipulation Requirement") constitutes grounds for judicial or administrative enforcement action. If the incident causing the violation would also form the basis of a violation of ARM Title 17, Chapter 8, or of Title 75, Chapter 2, MCA, the Department shall not count the violation of the Stipulation Requirement as an additional or separate violation incident for penalty calculation and assessment purposes.

Attachment E

Proposed Stipulation Agreement Exhibit A

EXHIBIT A
EMISSION LIMITATIONS AND CONDITIONS
The Wester Sugar Company
Billings, Montana

SECTION 1. AFFECTED FACILITIES

(A) Plant Location:

Western Sugar is located in southeast Billings. The plant is located in Yellowstone County, Township 1 South, Range 26 East, NE¼ Section 10.

(B) Affected Equipment and Facilities:

(1) Boiler house (#2, #3, and #4 Riley Coal boilers)

(2) Pulp Dryers

SECTION 2. DEFINITIONS

(A) The following definitions apply throughout this Stipulation and Exhibit A.

(1) "Annual Emissions" means the amount of SO_2 emitted in a calendar year, expressed in pounds per year rounded to the nearest pound.

(2) "Calendar Day" means a 24-hour period starting at 12:00 midnight and ending at 12:00 midnight, 24 hours later.

(3) "Daily Emissions" means the amount of SO_2 emitted in a Calendar Day expressed in pounds per day rounded to the nearest pound.
Where:
"Operating" means whenever an affected facility is starting up, shutting down, using fuel, or processing materials and SO_2 emissions are expected from the source or stack.

(4) "Three Hour Emissions" means the amount of SO_2 emitted in each of the eight non-overlapping three-hour periods in a Calendar Day, expressed in pounds and rounded to the nearest pound.

SECTION 3. EMISSIONS AND OPERATING LIMITATIONS

(A) Emission Limitations

(1) Affected Sources:

(a) Boiler house stack;

(i) Three Hour Emissions of SO_2 from the boiler house stack shall not exceed 856.2 pounds per three-hour period,

(ii) Daily Emissions of SO_2 from the boiler house stack shall not exceed 6,849.6 pounds per Calendar Day, and

(iii) Annual Emissions of SO_2 from the boiler house stack shall not exceed 1,438,416 pounds per. calendar year.

(b) Riley Boilers

(i) The annual combined heat input to the Riley Boilers (EU002) shall not exceed 2,237,760 MMBtu / calendar year.

(c) Other Minor Sources

(i) Western Sugar shall utilize appropriate maintenance, repair, and operating practices to control emissions of sulfur bearing gases from

minor sources such as ducts, stacks, valves, vents vessels, and flanges which are not otherwise subject to this Stipulation and Exhibit A.

(ii) Western Sugar shall use good engineering judgement and appropriate engineering calculations to quantify emissions from activities that are not otherwise addressed by this Stipulation and Exhibit A but are known to contribute to emissions from sources listed in Section 1(B). In addition, Western Sugar shall account for such emissions in determining compliance with all applicable emission limits contained in Section 3.

(d) Pulp Dryers

(i) Only natural gas shall be used for fuel in the pulp dryers.

SECTION 4. COMPLIANCE DETERMINATIONS

(A) Compliance with the emission limitations contained in Section 3 (A)(1)(a) shall be determined using data from the testing required by Section 5(A) or a combination of the test data and the calculations in Section 5 (B).

(B) Compliance with the limit in Section 3 (A)(1)(b) on annual combined heat input to the Riley Boilers shall be determined using the tons of coal fired by the boilers and the heat content of the coal.

(C) Compliance with the fuel limitation in Section 3 (A)(1)(d) shall be documented by maintaining on site, a record noting any instance in which any fuel other than natural gas is combusted.

SECTION 5. EMISSIONS TESTING AND MONITORING

(A) In order to accurately determine the sulfur dioxide emission rate in pounds per hour for the boiler stack and limits in Section 3 (A)(1)(a), Western Sugar shall perform annual source testing using EPA approved methods (40 CFR Part 60, Appendix A, Methods 1-4 and 6/6C as appropriate for this Stipulation and Exhibit A) or an equivalent method approved by the Department and EPA, and in accordance with the Montana Source Testing Protocol (ARM 17.8.106).

(1) Western Sugar shall notify the Department in writing of each annual source test a minimum of 25 working days prior to the actual testing (unless otherwise specified by the Department).

(2) Western Sugar shall conduct source testing once per campaign period.

(3) Western Sugar shall develop an emission factor from each boiler stack source test in units of pounds of SO_2 per ton of coal combusted. This emission factor shall be used along with the coal tonnage combustion to demonstrate compliance with the Annual, Daily and Three-Hour emission limits.

(B) Western sugar will track coal usage rates and use the emission factor derived from boiler stack tests to calculate annual sulfur dioxide emissions, daily emissions, and three-hour emissions.

SECTION 6. REPORTING REQUIREMENTS

(A) Western Sugar shall submit a report of the annual testing required by Section 5(A) following MTDEQ stack test reporting guidance in accordance with MTDEQ's stack test protocol. This report shall include the calculated emission factor in pounds of SO_2 per ton of coal combusted.

(B) Reports of annual stack tests demonstrating compliance with limits in Section 3(A)(1)(a) and historical quarterly reports of monitor data will be maintained in an onsite archive for a minimum of five years.
(C) Annual SO_2 emissions will be calculated according to Section 5(B) and reported annually following emissions inventory reporting requirements and deadlines.
(D) Annual heat input will be calculated according to the tonnage of coal combusted and heat content as measured from test data available from the coal supplier; and reported annually.

SECTION 7. ADDITIONAL REQUIREMENTS AND CONDITIONS

(A) Except as otherwise provided herein, nothing in this Stipulation or Exhibit A shall be construed to alter Western Sugar's obligation under any other applicable state, federal and local laws and regulations, orders, and permit conditions. In any enforcement proceeding pertaining to such other requirements, Western Sugar reserves the right to raise any and all available equitable or legal defenses.

SECTION 8. GENERAL CONDITIONS

(A) Inspection - For purposes of ensuring compliance with this Stipulation and Exhibit A, Western Sugar shall, pursuant to 75-2-403, MCA, allow the Department representative(s) access to all SO_2 emitting sources at the Western Sugar facility such that, the Department representative(s) may, pursuant to 75-2- 403, MCA, enter and inspect, at any reasonable time, any property, premises, or place, except a private residence, on or at which an SO_2 emitting source is located or is being constructed or installed. The Department representatives shall be allowed to conduct surveys, collect samples, obtain emissions data, or observe any monitoring or testing, and conduct all other necessary functions related to this control plan. As provided in Section 75-2-105, MCA, Western Sugar may seek a court order declaring certain trade secret information as confidential and not a matter of public record. If Western Sugar claims that certain information is entitled to trade secret protection, the Department shall maintain such information as confidential pending issuance of a court order under Section 75-2-105, MCA, provided that Western Sugar initiate such court action within 14 days of delivering the information to the Department.
(B) Enforcement - Any violation of a limitation, condition, or other requirement contained herein ("Stipulation Requirement") constitutes grounds for judicial or administrative enforcement action. If the incident causing the violation would also form the basis of a violation of ARM Title 17, Chapter 8, or of Title 75, Chapter 2, MCA, the Department shall not count the violation of the Stipulation Requirement as an additional or separate violation incident for penalty calculation and assessment purposes.

BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

In the Matter of the Application of the Department of Health and Environmental Sciences for Revision of the Montana State Air Quality Control Implementation Plan Relating to Control of Sulfur Dioxide Emissions in the Billings/Laurel Area, Affecting the Following Industries: Cenex, Inc. (Laurel); Conoco, Inc.; Exxon Company, USA; Montana Power Company, (J.E. Corette and F. Bird Plants); Montana Sulphur and Chemical Company; The Western Sugar Company; and Yellowstone Energy Limited Partnership.	FINDINGS OF FACT CONCLUSIONS OF LAW AND ORDER ADOPTING STIPULATION OF DEPARTMENT AND WESTERN SUGAR COMPANY

The Department of Environmental Quality (Department) has requested an Order from the Board of Environmental Review (Board) adopting a sulfur dioxide control plan for The Western Sugar Company (Western Sugar). The control plan, together with the control plans for the other above-captioned industries, is intended to attain and maintain the SO_2 National Ambient Air Quality Standards ("NAAQS") in the Billings/Laurel Area.

Pursuant to public notice, and on June 12, 1998, the Board conducted a hearing in Helena, Montana on the proposed revisions to the control plans. At the hearing an opportunity for comment was provided to the Department, the affected industries, and interested members of the public. Based on the record in this proceeding, the Board enters the following Findings of Fact, Conclusions of Law and Order in regard to this matter:

FINDINGS OF FACT

1. The above-captioned matter was initiated in 1994 by a petition of the Department of Health and Environmental Sciences. The petition requested an Order from the Board of Health and Environmental Sciences adopting sulfur dioxide control plans for the seven named Billings/Laurel industries. The sulfur dioxide control plans were developed in response to a March 4, 1993, letter from the U.S. Environmental Protection Agency (EPA) calling for revisions to Montana's sulfur dioxide State Implementation Plan (SIP). The Board of Health and Environmental Sciences approved six of the control plans

in May of 1995. This Board approved the seventh plan (with corresponding revisions to the other plans) in August of 1996. On August 27, 1996, Montana submitted the plans to EPA as a SIP revision. Prior to EPA action on the plans, minor adjustments to the Exxon plan were approved by this Board in February of 1997.

2. In February and June of 1997, without issuing a formal approval or disapproval of the initial control plans, EPA notified the Department of several areas in which EPA had questions about the approvability of the SIP. After discussions with EPA and the affected industries, the Department, in January of 1998, committed to make revisions to the plans to address most of EPA's concerns. Negotiations between the Department and the affected Billings/Laurel industries have resulted in the set of revised control plans currently before this Board.

3. The sulfur dioxide control plan for Western Sugar is contained in the Stipulation, Exhibit A, and Attachment(s) that are attached to this Order and are incorporated herein by reference. The Board has examined the Findings of the Stipulation and hereby ratifies and adopts them as the Board's Findings.

4. It is the intent of the parties that the attached emission control plan for Western Sugar, after adoption and incorporation by Board Order, shall be submitted to the EPA for review and approval as part of the revised SO_2 SIP for the Billings/Laurel area.

5. The Department has issued public notice of the proposed revisions to the sulfur dioxide control plans. Notice was published, at least 30 days prior to the date of the hearing in this matter, by prominent advertisement in the affected area. A copy of the proposed revisions was made available for public inspection.

CONCLUSIONS OF LAW

Based on the foregoing Findings of Fact, the Board hereby enters the following Conclusions of Law:

1. The public has been provided with appropriate notice and an opportunity to

participate in this matter. Title 2, chapters 3 and 4, MCA. The federal requirements for notice and hearing prior to adoption and submittal of SIP revisions have been met. 40 CFR §51.102.

2. The Department is required to prepare and develop a comprehensive plan for the prevention, abatement, and control of air pollution in this state. Section 75-2-112(2)(c), MCA.

3. The Board has authority to issue orders necessary to effectuate the purposes of Title 75, Chapter 2, MCA. Section 75-2-111(3), MCA.

4. A Board Order adopting the attached Stipulation, Exhibit A, and Attachment(s) is necessary to comply with the March 4, 1993, EPA request that the Billings/Laurel SIP be revised.

5. All Findings of Fact are hereby incorporated in these Conclusions of Law.

ORDER

Based on the foregoing Findings of Fact and Conclusions of Law, IT IS HEREBY ORDERED THAT:

1. The sulfur dioxide control plan for Western Sugar set forth in the attached Stipulation, Exhibit A, and Attachment(s) is adopted by the Board and incorporated herein as part of this Order.

2. This Order shall be enforceable by the Department.

3. Modifications of this Order shall only be by initiation of the Board or by petition to the Board and the issuance of a subsequent order revising this Order.

DATED this 12th day of June, 1998

By: Cindy E. Younkin
CINDY E. YOUNKIN
Chairperson
Board of Environmental Review

BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

In the Matter of the Application of the Department of Health and Environmental Sciences for Revision of the Montana State Air Quality Control Implementation Plan Relating to Control of Sulfur Dioxide Emissions in the Billings/Laurel Area, Affecting the Following Industries: Cenex, Inc. (Laurel); Conoco, Inc.; Exxon Company, USA; Montana Power Company, (J.E. Corette and F. Bird Plants); Montana Sulphur & Chemical Company; The Western Sugar Company; and Yellowstone Energy Limited Partnership.	STIPULATION OF DEPARTMENT AND WESTERN SUGAR COMPANY

The Department of Environmental Quality ("Department"), and Western Sugar Company ("Western Sugar"), hereby stipulate to the following paragraphs 1-20, including Exhibit A and Attachment #1, in regard to the above-captioned matter and present the same for consideration and adoption by the Board of Environmental Review ("Board").

This Stipulation nullifies and supersedes all Stipulations which were executed by Western Sugar and the Department in this matter and which were adopted by the Board prior to June 12, 1998.

1. On April 30, 1971, the United States Environmental Protection Agency ("EPA") promulgated national ambient air quality standards ("NAAQS") for Sulfur Oxides (measured as sulfur dioxide "SO_2"). The primary annual standard is 80 micrograms per cubic meter (annual arithmetic mean) or 0.03 parts per million (PPM); the primary 24-hour standard is 365 micrograms per cubic meter (24-hour maximum concentration) or 0.14 parts per million (PPM), not to be exceeded more than once per year. A secondary standard for SO_2 was also promulgated by EPA. The secondary standard is 1300 micrograms per cubic meter (maximum 3-hour concentration) or 0.5 PPM of SO_2 not to be exceeded more than once per year. These standards were promulgated by EPA pursuant to Section 109 of the Federal Clean Air Act, 42 U.S.C. 7401, as amended by the Clean Air

Act Amendments of 1990 ("Act").

2. Section 110 of the Act requires each state to submit an implementation plan for the control of each air pollutant for which a national ambient air quality standard has been promulgated. Since a national standard has been promulgated for sulfur oxides, the State of Montana is required to submit to EPA an implementation plan for SO_2.

3. In April, 1979, the Department submitted an addendum to the State Implementation Plan for the Billings/Laurel area designed to achieve compliance with the NAAQS for SO_2 (hereafter "Billings/Laurel Plan"). EPA approved the Billings/Laurel Plan in September, 1979.

4. In a March 4, 1993, letter to the Governor of Montana, EPA stated that it had determined the Billings/Laurel Plan to be substantially inadequate to attain and maintain the SO_2 NAAQS and EPA stated that the Plan must be revised. The letter called for a SIP revision for the Billings/Laurel area to assure attainment and maintenance of the SO_2 NAAQS.

5. The EPA letter of March 4, 1993, established September 4, 1994, as the deadline to submit to EPA a revised or new SO_2 plan for the Billings/Laurel area.

6. Utilizing a dispersion modeling analysis, Western Sugar and the Department have developed an emission control strategy that, together with similar control strategies for other Billings/Laurel industries, is intended to assure attainment and maintenance of the primary and secondary SO_2 NAAQS. Western Sugar's acceptance of this Stipulation and of the assumptions and results of the dispersion modeling analysis conducted in this case is for the sole and exclusive purpose of implementing the SO_2 emis-sion control strategy contained in this Stipulation, Exhibit A, and Attachment #1. In the event of future revisions to the SO_2 emission control strategy contained in this Stipulation, Exhibit A, and Attachment #1, Western Sugar does not waive and shall not be precluded from raising any objections it may have including but not limited to those pertaining to the dispersion modeling analysis.

7. The purpose of this Stipulation and the emission limitations and other limitations contained in Exhibit A and Attachment #1 is to establish an emission control strategy for Western Sugar which, together with similar control strategies for the other Billings/Laurel industries, will assure attainment and maintenance of the primary and secondary SO_2 NAAQS. The Stipulation, Exhibit A, and Attachment #1 do not address attainment or maintenance of the Montana Ambient Air Quality Standards (MAAQS).

8. Exhibit A, which is attached to this Stipulation and incorporated herein by reference, contains emission limitations and other conditions, including but not limited to: methods for determining compliance with emission limitations, requirements by which such emission limitations are made quantifiable and enforceable by the Department, and facility modification requirements. Western Sugar shall comply with the terms of this Stipulation, the emission limitations and other conditions set forth in Exhibit A and Attachment #1.

9. The following Attachment is attached to Exhibit A and is incorporated therein and in this Stipulation by reference:

Attachment 1: Performance Specifications for Stack Flow Rate Monitors, Fuel Oil Flow Meters, and Fuel Oil Sulfur Analysis.

10. Upon written certification by the Department that Attachment #1 has been revised in accordance with the requirements of Exhibit A, the revision shall be deemed incorporated in Exhibit A and this Stipulation by reference, and shall be enforceable from the date of the Department certification.

11. Disputes between the parties, during the development of a revised Attachment #1, as to whether a draft revision is in accordance with the requirements of Exhibit A must be submitted to the Board prior to judicial review of the dispute. The Board will exercise reasonable diligence in rendering a determination on the disputed matter. This paragraph shall not be construed to preclude the Department from directly seeking judicial enforcement of the final Attachment #1 or of any other provision of this

Stipulation or Exhibit A.

12. For the exclusive purpose of implementing the sulfur dioxide emission control strategy contained in this Stipulation, Exhibit A, and Attachment #1, ARM 17.8.322 shall be interpreted to mean that no person shall burn solid, liquid, or gaseous fuels such that the aggregate sulfur content of all fuels burned within a plant during any day exceeds one pound of sulfur per million BTU fired. The rule shall be interpreted to allow for a daily deviation of 0.1 pound of sulfur per million BTU fired. The rule shall be interpreted to allow the blending of all fuels burned in a plant during a given time period in determining the aggregate sulfur content for purposes of the rule, and it shall not be construed to require blending or physical mixing of fuels at any given furnace or heater within the plant complex.

13. The Stipulation, Exhibit A, and Attachment #1 shall become effective immediately upon the issuance of an order by the Board in this proceeding, except where another effective date is specified in Exhibit A or Attachment #1.

14. It is the intent of the parties that this Stipulation, Exhibit A, and Attachment #1, after adoption and incorporation by Board order, shall be submitted to the Environmental Protection Agency for review and approval as the Western Sugar control strategy for the attainment and maintenance of the primary and secondary SO_2 NAAQS in Yellowstone County, as part of the State Implementation Plan. The Stipulation Requirements shall supersede any less stringent corresponding conditions pertaining to SO_2 sources in any existing permit currently issued to Western Sugar.

15. The Stipulation, Exhibit A, and Attachment #1 are intended to assure attainment and maintenance of the primary and secondary NAAQS for SO_2. The Stipulation, Exhibit A, and Attachment #1 are not intended to address attainment or maintenance of the Montana Ambient Air Quality Standards (MAAQS).

16. This Stipulation, Exhibit A, or Attachment #1 may be subject to modification upon the occurrence of certain modifying conditions. Such modifying

conditions include, but are not limited to, the following:

(a) an EPA determination that the submitted plan is incomplete;

(b) an EPA disapproval, either partial or complete, of the submitted plan;

(c) an EPA conditional approval of the submitted plan;

(d) a determination by EPA that this plan has failed to achieve or maintain the NAAQS; or

(e) a demonstration by Western Sugar, utilizing Department and EPA approved dispersion modeling techniques (provided for in Appendix W of 40 CFR Part 51. These approved dispersion modeling techniques include, but are not limited to CTDMplus and ISC.), that the NAAQS can be achieved and maintained by implementing an alternative control plan.

Such alternative control plans, include but are not limited to:

(i) plans based upon a single emission limitation for several sources or stacks (emission bubbling or trading);

(ii) a stack height of 65 meters; or a taller stack height that Western Sugar demonstrates, through a fluid model or field study approved by the Department and EPA, is Good Engineering Practice;

(iii) an emission limitation that varies in accordance with the buoyancy flux of the plume; or

(iv) the realignment of emission limitations among the emission points within a facility

17. Procedures for modification of this Stipulation, Exhibit A, and Attachment #1 shall be as follows:

Board Approval

a. Stipulation and Exhibit. All modifications of the text of this Stipulation and Exhibit A shall require issuance of a revised Board order. Minor and clerical corrections may be made to this Stipulation and Exhibit A by mutual agreement of the parties, without

the necessity for a revised Board order.

b. Attachment #1. As provided in Paragraph 10, upon written certification by the Department that Attachment #1 has been revised in accordance with the requirements of Exhibit A, the revision shall be deemed incorporated in Exhibit A and this Stipulation by reference, without the necessity for a revised Board order.

c. Implementation Approvals. Where Exhibit A or Attachment #1 authorizes the Department and EPA to approve an alternative requirement or methodology, the implementation of such approval shall not require issuance of a revised Board order.

EPA Approval for SIP Changes

d. Stipulation, Exhibit, and Attachment #1. Following EPA approval pursuant to paragraph 14, all modifications of the text of this Stipulation, Exhibit A, and Attachment #1 shall require the approval of EPA under either subparagraph 17(f) or (g). To the extent allowed under federal requirements, minor and clerical corrections may be made by mutual agreement of the parties, without the necessity for formal approval by EPA.

e. Implementation Approvals. Where Exhibit A or Attachment #1 authorizes the Department and EPA to approve an alternative requirement or methodology, such EPA approval shall be obtained under either subparagraph 17(f) or (g).

f. Title I Procedures. Until the issuance of a Title V operating permit for Western Sugar and the adoption of the enabling state administrative rule described in paragraph 17(g), all nonclerical modifications to the text of this Stipulation, Exhibit A, or Attachment #1 described in paragraph 17(d), and all implementation approvals described in subparagraph 17(e), shall be submitted to EPA under Title I of the federal Clean Air Act. The SIP revision procedures contained in 40 CFR Part 51 Subpart F shall not apply to modifications and approvals under subparagraphs 17(d) and (e) that constitute "minor modifications" as determined pursuant to subparagraph 17(h).

g. Title V Procedures. Title V operating permit revision procedures may be used to modify the SIP to include textual modifications under subparagraph 17(d) and

implementation approvals under subparagraph 17(e), provided that the following two conditions are met:

(i) Western Sugar has been issued a Title V operating permit and the State has adopted an enabling administrative rule that complies with the federal requirements for modification of SIP requirements through the Title V process; and

(ii) the particular modification of the plan or implementation approval pertains to testing, monitoring, recordkeeping, calculation, reporting, or operating requirements or methodologies.

h. Minor Modifications. When a modification or approval under subparagraph 17(d) or (e) is proposed the Department shall consult with EPA to determine whether the modification or approval is a "major" or "minor" modification. Such determinations shall be made within 45 days from the submittal of the proposed modification or approval to EPA..

18. Western Sugar does not waive and expressly reserves its right to contest any Board order or Department or federal action which, without the written consent of Western Sugar, modifies this stipulation, Exhibit A, or Attachment #1.

19. Accordingly, the parties agree that the Board shall issue an order adopting the terms of this Stipulation, including the emission limitations and other conditions contained in Exhibit A and Attachment #1. Except where another effective date is provided in Exhibit A or Attachment #1, upon adoption in a Board Order, the Stipulation, Exhibit A, and Attachment #1 shall be enforceable by the Department.

20. Notwithstanding any other provision of this Stipulation, Western Sugar's and the Department's consent to be bound by the terms of this Stipulation is conditioned upon the adoption of SO_2 emission control strategies, for all the affected industries in this matter, which are in their common terms substantially similar to one another. This condition of substantial similarity extends only to the initial control strategies, adopted by the Board or by the U.S. EPA as a Federal Implementation Plan, and which are adopted in

response to the EPA letter of March 4, 1993 calling for revision of the Billings/Laurel SO_2 SIP. This condition of substantial similarity does not extend to subsequent revisions of such initial emissions control strategies, but does extend to and include any revisions of such emission control strategies resulting from any challenge or appeal of the initial adopted emissions control strategies. In the event that an initial control strategy is finally adopted by the Board or EPA, for any of the affected industries in this matter, which is not substantially similar in its common terms to this Stipulation or Exhibit A, either Western Sugar or the Department may, in a writing delivered to the other party and to the other affected industries in this matter within 60 days of receiving written notice of the adoption, withdraw its consent to this Stipulation.

Western Sugar Company	Montana Department of Environmental Quality
By Raymond Bodle	By Mark A. Simonich
	Mark Simonich, Director
Date 5/29/98	Date 6/9/98
Approved as to form:	Approved as to form:
By _____	By James M Madden
Attorney	Attorney
Date _____	Date 6/9/98

EXHIBIT A

EMISSION LIMITATIONS AND CONDITIONS

The Western Sugar Company
Billings, Montana

SECTION 1. AFFECTED FACILITIES

(A) Plant Location:

Western Sugar is located in southeast Billings. The plant is located in Yellowstone County, Township 1 South, Range 26 East, NE ¼ Section 10.

(B) Affected Equipment and Facilities:

(1) Boiler house (#2, #3, and #4 Riley Coal boilers)
(2) Erie City boiler
(3) Clever Brooks boiler
(4) East dryer unit
(5) West dryer unit

SECTION 2. DEFINITIONS

(A) The following definitions apply throughout this Stipulation and Exhibit A.

(1) "Annual Emissions" means the amount of SO_2 emitted in a calendar year, expressed in pounds per year rounded to the nearest pound.

Where:

[Annual Emissions] = Σ [Daily Emissions]

(2) "Attachment #1" means the "Performance Specifications for Stack Flow Rate Monitors, Fuel Oil Flow Meters, and Fuel Oil Sulfur Analysis", attached to this Exhibit and incorporated herein by reference.

(3) "Calendar Day" means a 24-hour period starting at 12:00 midnight and ending at 12:00 midnight, 24 hours later.

(4) "Clock Hour" means one twenty-fourth (1/24) of a Calendar Day and refers to any of the standard 60-minute periods in a day which are generally identified and separated on a clock by the whole numbers one through twelve.

(5) "Continuous Emission Monitoring System (CEMS)" means all equipment necessary to obtain an Hourly SO_2 Emission Rate, provided each SO_2 concentration, stack gas volumetric flow rate and fuel oil flowmeter is designed to achieve a temporal sampling resolution of at least one concentration or flow rate measurement per minute. Such equipment includes:

(a) a continuous emission monitor (CEM) which determines SO_2 concentrations in a stack gas, a continuous stack gas volumetric flow rate monitor which determines stack gas flow rates, and associated data acquisition equipment; or

(b) a pair of fuel oil flowmeters which in combination measure the combined fuel oil firing rate for the fuel oil combustion units, and associated data acquisition equipment.

(6) "Daily Emissions" means the amount of SO_2 emitted in a Calendar Day expressed in pounds per day rounded to the nearest pound.

Where:

[Daily Emissions] = Σ [Three Hour Emissions]

Each Calendar Day is comprised of eight non-overlapping 3-hour periods. The Three Hour Emissions from all of the 3-hour periods in a Calendar Day shall be used to determine that day's emissions.

(7) "Hourly Average" means an arithmetic average of all Valid and complete 15-minute data blocks in a Clock Hour. Four (4) Valid and complete 15-minute data blocks are required to determine an Hourly Average for each monitor and source per Clock Hour.

Exclusive of the above definition, an Hourly Average may be determined with two (2) Valid and complete 15-minute data blocks, for two of the 24 hours in any Calendar Day.

A complete 15-minute data block for each sulfur dioxide continuous emission monitor, stack gas flow rate monitor, and fuel oil flow meter shall have a minimum of one (1) data point value; however, each monitor shall be operated such that all Valid data points acquired in any 15-minute block shall be used to determine that 15-minute block's reported concentration and flow rate.

(8) "Hourly SO_2 Emission Rate" means the pounds per Clock Hour of SO_2 emissions from a stack or fuel oil system determined using Hourly Averages and rounded to the nearest one tenth of a pound.

(a) For stack systems, SO_2 concentrations shall be measured in parts per million (PPM) on either a wet or dry basis.

(i) If the SO_2 concentration is measured on a wet basis, Western Sugar shall calculate the Hourly SO_2 Emission Rate using the following equation:

$$E_H = K * C_H * Q_H$$

Where:

E_H = Hourly SO_2 Emission Rate in pounds per hour and rounded to the nearest tenth of a pound;
K = 1.663×10^{-7} in (pounds/SCF)/PPM;
C_H = Hourly Average SO_2 concentration in PPM; and
Q_H = stack gas Hourly Average volumetric flow rate, measured on an actual wet basis, converted to Standard Conditions, and reported in standard cubic feet per hour (SCFH).

(ii) If the SO_2 concentration is measured on a dry basis, Western Sugar shall either install, operate, and maintain a continuous moisture monitor for measuring and recording the moisture content of the stack gases or determine the moisture content of the stack gases continuously (or on an hourly basis) and correct the measured hourly volumetric stack gas flow rates for moisture. Western Sugar shall calculate the Hourly SO_2 Emission Rate using the following equation:

$$E_H = K * C_H * Q_H * \frac{(100 - \%H_2O)}{100}$$

Where:

E_H = Hourly SO_2 Emission Rate in pounds per hour and rounded to the nearest tenth of a pound;
K = 1.663×10^{-7} in (pounds/SCF)/PPM;
C_H = Hourly Average SO_2 concentration in PPM (dry basis);
Q_H = stack gas Hourly Average volumetric flow rate, measured on an actual wet basis, converted to Standard Conditions, and reported in standard cubic feet per hour (SCFH); and
$\%H_2O$ = Hourly Average stack gas moisture content, in percent by volume.

(b) For fuel oil combustion with mass flow metering at the beet pulp dryers the following equation shall be used to calculate the Hourly SO_2 Emission Rate in pounds per hour.

$$M_s = 2.0 * [(M_o * \%S_o/100) + (M_b * \%S_b/100)] * (1 - CE)$$

Where:

M_s = Hourly SO_2 Emission Rate in pounds per hour and rounded to the nearest tenth of a pound;
2.0 = ratio of pounds of SO_2 per pound of sulfur;
M_o = mass of fuel oil consumed per hour in pounds per hour;
$\%S_o$ = percentage of sulfur by weight measured in the fuel oil;
M_b = mass of beet pulp feed to the dryers in pounds per hour;
$\%S_b$ = percentage of sulfur by weight in the beet pulp; and
CE = control efficiency of the water curtain scrubber, mist eliminator, and the beet pulp, expressed as a decimal.

To determine the percentage of sulfur by weight in the beet pulp, Western Sugar shall implement a program to sample the feed of beet pulp to the dryers on a weekly basis and analyze the samples for percent sulfur [unless the Department and EPA approve the use of a constant for sulfur content as provided in Section 6 (E)(9)]. The percent sulfur (S_b) for a particular week shall be the percent

sulfur for the most recent sample.

The control efficiency of the water curtain scrubber, mist eliminator, and the beet pulp shall be determined once during each campaign (and applied for the entire campaign) using the results of the source testing required by Section 5 (B) and the results of concurrent sampling and analysis of the beet pulp processed and fuel oil burned to determine the sulfur input to the dryer being tested. The control efficiency shall be calculated in accordance with the following equation:

$$CE = [(2.0 * S_i) - (S_t)] \div (2.0 * S_i)$$

Where:

CE = control efficiency expressed as a decimal;
2.0 = ratio of pounds of SO_2 per pound of sulfur;
S_i = sulfur input to the beet pulp dryer expressed in pounds per hour and determined in accordance with the following equation:

$$(M_o * \%S_o/100) + (M_b * \%S_b/100)$$; and

S_t = SO_2 emission rate in pounds per hour rounded to the nearest tenth of a pound as determined by source testing.

(9) "Operating" means whenever an affected facility is starting up, shutting down, using fuel, or processing materials and SO_2 emissions are expected from the source or stack.

(10) "Quarterly Data Recovery Rate" means the percentage of hours in a calendar quarter when CEMS derived Hourly SO_2 Emission Rate data are available for a source (stack or fuel oil system) in comparison to the number of corresponding Operating hours for that source.

The Quarterly Data Recovery Rate (QDRR) for a source shall be calculated in accordance with the following equation:

$$QDRR = \frac{VH}{OH} \times 100\%$$

Where:

VH = number of hours of Hourly SO_2 Emission Rate data that are also source Operating hours in a calendar quarter;
OH = total number of source Operating hours in a calendar quarter; and
QDRR = Quarterly Data Recovery Rate.

(11) "Standard Conditions" means 20.0°C (527.7°R, 68.0°F, or 293.2°K) and 1 atmosphere pressure (29.92" Hg).

(12) "Three Hour Emissions" means the amount of SO_2 emitted in each of the eight non-overlapping three hour periods in a Calendar Day, expressed in pounds and rounded to the nearest pound.

Where:

[Three Hour Emissions] = Σ [Hourly SO_2 Emission Rates]

Whenever Hourly SO_2 Emission Rates are unavailable and the facility is not Operating, zero pounds per hour shall be substituted for the missing Hourly SO_2 Emission Rates.

(13) "Valid" means data that is obtained from a monitor or meter serving as a component of a CEMS which meets the applicable specifications, operating requirements, and quality assurance and control requirements of Section 6.

SECTION 3. EMISSION LIMITATIONS, CAMPAIGN LENGTH, AND FACILITY MODIFICATIONS

(A) Emission Limitations

(1) Affected Sources:

(a) Boiler house stack;

(i) Three Hour Emissions of SO_2 from the boiler house stack shall not exceed 856.2 pounds per three hour period,

(ii) Daily Emissions of SO_2 from the boiler house stack shall not exceed 6,849.6 pounds per Calendar Day, and

(iii) Annual Emissions of SO_2 from the boiler house stack shall not exceed 1,438,416 pounds per calendar year.

(b) East dryer stack and West dryer stack;

(i) Combined Three Hour Emissions of SO_2 from the East dryer stack and West dryer stack shall not exceed 88.5 pounds per three hour period,

(ii) Combined Daily Emissions of SO_2 from the East dryer stack and West dryer stack shall not exceed 708.0 pounds per Calendar Day, and

(iii) Combined Annual Emissions of SO_2 from the East dryer stack and West dryer stack shall not exceed 148,680 pounds per calendar year.

(c) Other Minor Sources;

(i) Western Sugar shall utilize appropriate maintenance, repair, and operating practices to control emissions of sulfur bearing gases from minor sources such as ducts, stacks, valves, vents, vessels, and flanges which are not otherwise subject to this Stipulation and Exhibit A.

(ii) Western Sugar shall use good engineering judgement and appropriate engineering calculations to quantify emissions from activities that are not otherwise addressed by this Stipulation and Exhibit A but are known to contribute to emissions from sources listed in Section 1(B). In addition, Western Sugar shall account for such emissions in determining compliance with all applicable emission limits contained in Section 3.

(B) Facility Modifications

(1) By October 1, 1996, Western Sugar shall modify the existing boiler house stack or construct a new stack which exhausts at a height of at least 54.9

meters above ground level.

(2) By October 1, 1996, Western Sugar shall remove the fuel oil guns from the Erie City boiler and Clever Brooks boiler and install a blind insert in the fuel oil header to each unit.

(C) The length of any campaign (normally September through the following February) shall not exceed 190 days.

SECTION 4. COMPLIANCE DETERMINATIONS

(A) Compliance with the emission limitations contained in Section 3 (A)(1)(a) shall be determined using data from the CEMS required by Section 6 (B)(1) and (2) and in accordance with the appropriate equation(s) in Section 2 (A)(1), (6), (8) and (12) except when CEMS data is not available as provided in Section 2 (A)(12). Although the CEMS data is the method of demonstrating compliance on a continuous basis, the data from the testing required by Sections 5(A) or 6(C) and (D) shall also be used to demonstrate compliance.

(B) Compliance with the emission limitations contained in Section 3 (A)(1)(b) shall be determined by using total hourly mass of fuel oil consumed from the fuel oil flowmeters required by Section 6 (B)(3), daily fuel oil sulfur analysis as required by Section 6 (E)(3), the hourly mass of beet pulp feed to the dryers, the weekly beet sulfur analysis as required by Section 2 (A)(8)(b), and the control efficiency determined in accordance with Section 2 (A)(8)(b), and in accordance with the appropriate equation(s) in Section 2 (A)(1), (6), (8) and (12) except when CEMS data is not available as provided in Section 2 (A)(12). Although the CEMS data and above procedures (beet feed rate and sulfur content and scrubber control efficiency) is the method of demonstrating compliance on a continuous basis, the data from the testing required by Section 5 (B) shall also be used to demonstrate compliance.

(C) By October 1, 1996, Western Sugar shall certify to the Department that the facility modifications described in Section 3(B) have been completed and are permanent in nature.

(D) Compliance with the facility modifications contained in Section 3(B) shall be determined by inspection by the Department.

(E) Compliance with the Quarterly Data Recovery Rate requirements.

(1) Compliance with the Quarterly Data Recovery Rate requirements contained in Section 6 (A)(2) shall be determined in accordance with Section 2 (A)(10), with no exceptions for out-of-specification data or monitor downtime, except as provided in Section 6(A)(2).

(2) For quarters in which Operating hours are reduced (short quarters), a determination of whether Western Sugar has violated the Quarterly Data Recovery Rate (QDRR) requirements in Section 6(A)(2)(b) shall include consideration of whether the reduced Operating hours made compliance with Section 6(A)(2)(b) unreasonable.

(3) Upon determination that the CEMS is not functioning properly, Western Sugar shall implement short term corrective measures and if necessary, long term corrective measures to accomplish, as expeditiously as practicable, either:

(a) correction of the failure, or

(b) development, installation (if necessary), testing, maintenance, and operation of a new CEMS or appropriate replacement portions of the affected CEMS.

SECTION 5. EMISSION TESTING

(A) In order to accurately determine the sulfur dioxide emission rate in pounds per hour for the boiler stack, Western Sugar shall perform annual source testing using EPA approved methods (40 CFR Part 60, Appendix A, Methods 1-4 and 6/6C as appropriate for this Stipulation and Exhibit A) or an equivalent method approved by the Department and EPA, and in accordance with the Montana Source Testing Protocol (ARM 17.8.106). The annual Relative Accuracy Test Audits (RATAs) required by Sections 6(C) and (D) may substitute for the annual source tests provided that the flow rate RATA and the concentration RATA are performed simultaneously and additional calculations are made to determine and report the data in pounds per hour of sulfur dioxide.

(B) In order to accurately determine the sulfur dioxide emission rate in pounds per hour for the beet pulp dryer stacks and the control efficiency of the water curtain scrubbers, mist eliminators, and the beet pulp, Western Sugar shall perform annual source testing on the beet dryer stack that is expected to emit the most sulfur dioxide during the campaign. In determining the projected sulfur dioxide

emissions for each stack, Western Sugar shall consider expected beet production and fuel oil consumption. The annual source testing shall be conducted within 30 days after the start of a campaign and use EPA-approved methods (40 CFR Part 60, Appendix A, Methods 1-4 and 6/6C as appropriate for this Stipulation and Exhibit A) or an equivalent method approved by the Department and EPA, and in accordance with the Montana Source Testing Protocol (ARM 17.8.106)

(C) Western Sugar shall notify the Department in writing of each annual source test a minimum of 25 working days prior to the actual testing (unless otherwise specified by the Department).

SECTION 6. CONTINUOUS MONITORING AND FUEL OIL FLOWMETERING

(A) CEM Quarterly Data Recovery Rates

(1) "Unusual Circumstances" means circumstances which are unforeseeable, beyond Western Sugar's control, and which could not reasonably have been prevented or mitigated by Western Sugar. Such circumstances may include but are not limited to earthquakes, power outages, or fire; but do not include failures of any monitoring or metering equipment or associated data acquisition equipment unless such failures meet the following conditions:

(a) prior to the failure, the equipment was installed, operated, and maintained in accordance with the requirements of Section 6;

(b) upon failure, Western Sugar initiates the short term corrective measures and the long term corrective measures required by Section 4(E);

(c) within two working days of occurrence, Western Sugar notifies the Department's Permitting and Compliance Division by telephone of the occurrence of Unusual Circumstances, as defined herein; and

(d) Western Sugar demonstrates, by utilizing properly signed contemporaneous CEMS operating logs and other relevant evidence, in the first quarterly report following the failure that the failure meets the above conditions.

(2) Quarterly Data Recovery Rates

(a) Notwithstanding the QDRR requirements specified in Section 6(A)(2)(b), whenever a source or stack is Operating, Western Sugar shall use best efforts to operate the associated CEMS in a manner to achieve the highest Quarterly Data Recovery Rate (QDRR) that is technically feasible.

(b) At a minimum, Western Sugar shall achieve the following QDRR requirements, unless prevented by Unusual Circumstances or by reduced Operating hours as provided in Section 4(E)(2):

(i) for the boiler house stack CEMS and the fuel oil system CEMS, Western Sugar shall achieve a QDRR for each CEMS of equal to or greater than 90%.

(c) In its evaluation of whether Western Sugar used best efforts to achieve the highest QDRR technically feasible, the Department will consider:

(i) the design capabilities of the CEMS; and whether:

(ii) Western Sugar has properly operated and maintained the CEMS, including the maintenance of an adequate spare parts inventory;

(iii) Western Sugar has complied with the quality assurance requirements described in Section 6;

(iv) Western Sugar has taken timely and appropriate action to correct a failure in the CEMS; and

(v) Unusual Circumstances have occurred, as defined in Section 6 (A)(1).

(d) Any time that a CEMS, including the associated data acquisition system, is not functioning properly, Western Sugar shall implement the short term corrective measures and if necessary, the long term corrective measures required by Section 4(E)(3).

(B) Affected Sources

(1) By July 1, 1997, Western Sugar shall install, operate, and maintain a

continuous emission monitor to measure SO_2 concentrations from the boiler house stack.

(2) By July 1, 1997, Western Sugar shall install, operate, and maintain a continuous stack flow rate monitor to measure the stack gas flow rates from the boiler house stack.

(3) By October 1, 1996, Western Sugar shall install, operate, and maintain two in-line fuel oil flowmeters on the fuel oil loop, one immediately upstream from the East dryer furnace and one downstream from the West dryer furnace.

(4) All continuous emission monitors required by this control plan shall be required to operate only when Western Sugar is Operating.

(C) CEM Performance Specifications

(1) All continuous SO_2 concentration monitors required by this control plan shall:

(a) be installed, certified (on a concentration basis), and operated in accordance with the performance specifications in 40 CFR Part 60, Appendix B, Performance Specifications 2; and

(b) be subject to and meet the quality assurance and quality control requirements (on a concentration basis) of 40 CFR Part 60 Appendix F including but not limited to:

(i) daily calibration drift checks (zero/span or Z/S) using either electro- optical methods or certified calibration gas (however, in addition to the requirements of Appendix F at least one Z/S per calendar week must be conducted using a certified calibration gas),

(ii) quarterly Cylinder Gas Audits (CGA) or Relative Accuracy Audits (RAA), and

(iii) the annual Relative Accuracy Test Audit (RATA).

(2) Western Sugar shall notify the Department in writing of each annual Relative Accuracy Test Audit a minimum of twenty-five (25) working

days prior to the actual testing (unless otherwise specified by the Department).

(D) Stack Gas Flow Rate Monitor Performance Specifications

(1) All continuous stack gas flow rate monitors required by this control plan shall:

(a) be installed, certified (on a flow rate basis), and operated in accordance with Department Method A-1 of Attachment #1, and

(b) be subject to and meet (on a flow rate basis) the quality assurance and quality control requirements of Department Method B-1 of Attachment #1.

(2) Western Sugar shall notify the Department in writing of each annual Relative Accuracy Test Audit a minimum of twenty-five (25) working days prior to the actual testing (unless otherwise specified by the Department).

(E) Fuel Oil Flowmetering and Fuel Oil and Beet Analysis Specifications

(1) Western Sugar shall operate and maintain all fuel oil flowmeters required by this control plan in accordance with Method C-1 of Attachment #1.

(2) Western Sugar shall conduct daily fuel oil sampling in accordance with Method C-1 of Attachment #1.

(3) Western Sugar shall analyze all fuel oil samples collected, as required by Section 6 (E)(2), for sulfur content in accordance with Method C-1 of Attachment #1.

(4) Each fuel oil flowmeter required by this control plan shall demonstrate a flowmeter accuracy of 2.0 percent of the upper range value (i.e. maximum calibrated oil flow rate) as measured under laboratory conditions by the manufacturer or by the owner or operator, and pursuant to the calibration procedures as specified by Method C-1 of Attachment #1.

(5) Western Sugar shall archive a split (at least 200 cc) of each fuel oil sample collected, as required by Section 6 (E)(2), in accordance with Method C-1 of Attachment #1.

(6) Western Sugar shall collect weekly grab samples of the beet pulp feed to the dryers.

(7) Western Sugar shall prepare and analyze the beet pulp samples in accordance with the following Association of Official Analytical Chemists methods: 22.008 "Preparation of Sample Procedures" and 22.050 "Total Sulfur (23) Official First Action". Western Sugar may also perform the sample preparation and sulfur analysis by alternative methods. Prior to implementing an alternative sample preparation or analytical method, Western Sugar shall first seek and acquire approval from the Department and EPA.

(8) Western Sugar shall archive and maintain in a frozen state a split (at least 600 grams) of the beet pulp feed sample for at least 150 days after the submittal of the quarterly report for the quarter in which the sample was collected.

(9) Upon completion of two campaigns for which weekly beet pulp sulfur content data is available, Western Sugar may make a demonstration to the Department that the beet sulfur content is relatively constant and comprises a minor portion of the total sulfur input to the beet pulp dryers. If the Department and EPA determines that Western Sugar's demonstration is credible, the Department and EPA may approve of the use of a constant value for beet pulp sulfur content (a conservative value based upon the sulfur content data) and the discontinuation of weekly sampling and analysis for beet pulp sulfur content.

SECTION 7. DATA REPORTING REQUIREMENTS

(A) Western Sugar shall submit quarterly reports on a calendar year basis for the quarters that Western Sugar is operating, beginning with the first calendar quarter of 1998. The quarterly reports shall be submitted within 30 days of the end of each calendar quarter, except that the first quarterly report of a campaign shall be submitted within 30 days after the annual source testing on the beet pulp dryers. The quarterly reports shall be submitted to the Department's Permitting and Compliance Division office in Helena and the Billings Regional Office. The quarterly report format shall consist of both a comprehensive electronic-magnetic report and a written or hard copy data summary report.

(B) The electronic report format and records structure shall require hourly CEMS

data, stack temperature and calibration data to be submitted to the Department as required in Section 7(A). The data shall be submitted to the Department on magnetic or optical media, and such submittal shall follow the reporting format specified by the Department in 1996, as may be subsequently amended. The Department shall reserve the right to call for any necessary future revisions to the reporting format delineated in this Section.

(1) The electronic report shall contain the following:

(a) Hourly Average SO_2 concentrations in PPM from the boiler house stack;

(b) Hourly Average stack volumetric flow rates in SCFH from the boiler house stack;

(c) Hourly Average stack gas temperature in °F from the boiler house stack;

(d) Hourly SO_2 Emission Rates in pounds per Clock Hour from the boiler house stack;

(e) total hourly mass of fuel oil consumed in pounds per hour;

(f) total hourly feed of beet pulp to the dryers in pounds per hour;

(g) combined Hourly SO_2 Emission Rate in pounds per Clock Hour from the East and West dryer stacks; and

(h) daily calibration data from CEMS required by Section 6(B).

(2) In addition to submitting the electronic-magnetic quarterly reports to the Department, Western Sugar shall also record, organize and archive for at least five years the same data, and upon request by the Department, Western Sugar shall provide the Department with any data archived in accordance with this Section.

(C) The quarterly written report shall consist of summarized CEMS data for Daily Emissions, Three Hour Emissions, fuel oil and beet pulp sulfur content data, Quarterly Data Recovery Rates and text regarding excess emissions.

(1) The following data shall be recorded, organized, reported, and archived for

a minimum of five years:

(a) Three Hour Emissions of SO_2 in pounds per three hour period from the boiler house stack and combined Three Hour Emissions from the East dryer stack and West dryer stack;

(b) Daily Emissions of SO_2 in pounds per Calendar Day from the boiler house stack and combined Daily Emissions from the East and West dryer stacks;

(c) the Quarterly Data Recovery Rate for each CEMS required by Section 6 (B)(1), (2), and (3) expressed in percent;

(d) the Operating hours during the calendar quarter for the source or units associated with boiler house stack and fuel oil system;

(e) daily fuel oil sulfur content in percent sulfur by weight;

(f) weekly beet pulp sulfur content in percent sulfur by weight;

(g) the date and time identifying each period of continuous monitoring system downtime during the reporting period, including quality control and quality assurance checks, and the nature of system repairs or adjustments;

(h) the results of the quarterly CGA's or RAA's and flow rate checks, the annual RATAs required in Section 6 (C) and (D), and the annual source tests required by Section 5 (A) and (B); and

(i) any documentation which demonstrates that a CEMS failure meets the conditions of Unusual Circumstances.

(2) For each Calendar Day on which any emission limitations are exceeded, the written report shall identify the source or unit with excess emissions and include the following information in a report submittal as specified in Section 7(A):

(a) total hours of operation with excess emissions, the Hourly SO_2 Emission Rates, and Three Hour Emissions;

(b) all information regarding reasons for Operating with excess

emissions; and

(c) corrective actions taken to mitigate excess emissions.

(D) Upon request from a representative of the Department, EPA or Yellowstone County Air Pollution Control, Western Sugar shall provide Hourly SO_2 Emission Rate data for any prior day not covered by the latest quarterly report for the sources or units covered by this control plan and listed in Section 1(B).

(E) By January 1, 2000, the Department shall reevaluate the reporting requirements of this Section and determine if revisions are necessary or desirable. The purpose of the reevaluation is to determine if the reporting requirements should be modified to more closely meet the informational needs of the Department and the public, and to reduce or simplify the requirements for Western Sugar while still providing the necessary information. Any revisions shall be made only after consultation with Western Sugar, consideration of the number and type of data requests made by the public, and the Department's emission inventory and compliance needs.

SECTION 8. ADDITIONAL REQUIREMENTS AND CONDITIONS

Except as otherwise provided herein, nothing in this Stipulation, Exhibit A, or Attachment #1 shall be construed to alter Western Sugar's obligation under any other applicable state, federal and local laws and regulations, orders, and permit conditions. In any enforcement proceeding pertaining to such other requirements, Western Sugar reserves the right to raise any and all available equitable or legal defenses.

SECTION 9. GENERAL CONDITIONS

(A) Inspection - For purposes of ensuring compliance with this Stipulation, Exhibit A, and Attachment #1, Western Sugar shall, pursuant to 75-2-403, MCA, allow the Department representative(s) access to all SO_2 emitting sources at the Western Sugar facility such that, the Department representative(s) may, pursuant to 75-2-403, MCA, enter and inspect, at any reasonable time, any property, premises, or place, except a private residence, on or at which an SO_2 emitting source is located or is being constructed or installed. The Department representatives shall be allowed to conduct surveys, collect samples, obtain emissions data, audit any monitoring equipment (CEMS), or observe any monitoring or testing, and conduct all other necessary functions related to this control plan.

As provided in Section 75-2-105, MCA, Western Sugar may seek a court order declaring certain trade secret information as confidential and not a matter of public record. If Western Sugar claims that certain information is entitled to trade secret protection, the Department shall maintain such information as confidential pending issuance of a court order under Section 75-2-105, MCA, provided that Western Sugar initiate such court action within 14 days of delivering the information to the Department.

(B) Enforcement - Any violation of a limitation, condition, or other requirement contained herein ("Stipulation Requirement") constitutes grounds for judicial or administrative enforcement action. If the incident causing the violation would also form the basis of a violation of ARM Title 17, Chapter 8, or of Title 75, Chapter 2, MCA, the Department shall not count the violation of the Stipulation Requirement as an additional or separate violation incident for penalty calculation and assessment purposes.

ATTACHMENT 1
PERFORMANCE SPECIFICATIONS FOR STACK FLOW RATE MONITORS,
FUEL OIL FLOWMETERS, AND FUEL OIL SULFUR ANALYSIS
(Includes Methods A-1, B-1, & C-1)

METHOD A-1
INSTALLATION AND INITIAL CERTIFICATION
IN-STACK OR IN-DUCT FLOW MONITORS

1.0 FLOW MONITOR INSTALLATION AND MEASUREMENT LOCATION

Install the flow monitor in a location that provides representative volumetric flow for all operating conditions. Such a location provides an average velocity of the flue gas flow over the stack or duct cross section, provides a representative SO_2 emission rate (in lb/hr), and is representative of the pollutant concentration monitor location. Where the moisture content of the flue gas affects volumetric flow measurements, use the procedures in both Reference Methods 1 and 4 of 40 CFR Part 60, Appendix A to establish a proper location for the flow monitor.

The department recommends (but does not require) performing a flow profile study following the procedures in 40 CFR Part 60, Appendix A, Test Method 1, Section 2.5 to determine the acceptability of the potential flow monitor location and to determine the number and location of flow sampling points required to obtain a representative flow value. The procedure in 40 CFR part 60, Appendix A, Test Method 1, Section 2.5 may be used even if the flow measurement location is greater than or equal to 2 equivalent stack or duct diameters downstream or greater than or equal to 1/2 duct diameter upstream from a flow disturbance. If a flow profile study shows that cyclonic (or swirling) or stratified flow conditions exist at the potential flow monitor location that are likely to prevent the monitor from meeting the performance specifications of this Method, then the department recommends either (1) selecting another location where there is no cyclonic (or swirling) or stratified flow condition, or (2) eliminating the cyclonic (or swirling) or stratified flow condition by straightening the flow, e.g., by installing straightening vanes. The department also recommends selecting flow monitor locations to minimize the effects of condensation, coating, erosion, or other conditions that could adversely affect flow monitor performance.

1.1 Acceptability of Flow Monitor Location

The installation of a flow monitor is acceptable if (1) the location satisfies the minimum siting criteria of Method 1 in Appendix A to 40 CFR Part 60 (i.e., the location is greater than or equal to eight stack or duct diameters downstream and two diameters upstream from a flow disturbance; or, if necessary, two stack or duct diameters downstream and one-half stack or duct diameter upstream from, a flow disturbance), (2) the results of a flow profile study, if

performed, are acceptable (i.e., there are no cyclonic (or swirling) or stratified flow conditions), and (3) the flow monitor satisfies the performance specifications of this Method. If the flow monitor is installed in a location that does not satisfy these physical criteria, but the monitor achieves the performance specifications of this Method, then the department and EPA may certify the location as acceptable.

1.2 Alternative Flow Monitoring Location

Whenever the flow monitor is installed in a location that is greater than or equal to two stack or duct diameters downstream and greater or equal to one-half diameter upstream from a flow disturbance, and/or in a location that is acceptable based on a flow profile study, but nevertheless the monitor does not achieve the performance specifications of this Method, perform another flow profile study (the procedures described in 40 CFR Part 60, Appendix A, Method 1, Section 2.5 may be used) to select an alternative flow monitoring installation site.

Whenever the owner or operator successfully demonstrates that modifications to the exhaust duct or stack (such as installation of straightening vanes, modifications of ductwork, and the like) are necessary for the flow monitor to meet the performance specifications, the department and EPA may approve an interim alternative flow monitoring methodology and an extension to the required certification date for the flow monitor.

Where no location exists that satisfies the physical siting criteria in section 1.1, where the results of flow profile studies performed at two or more alternative flow monitor locations are unacceptable, or where installation of a flow monitor in either the stack or the ducts is demonstrated to be technically infeasible, the owner or operator may petition the department and EPA for an alternative method for monitoring flow.

2.0 FLOW MONITOR EQUIPMENT SPECIFICATIONS

2.1 Instrument Span - General Requirements

In implementing Section 2.1.1 of this Method, to the extent practicable, measure at a range such that the majority of readings obtained during normal operation are between 25 and 75 percent of full-scale range of the instrument.

2.1.1 Instrument Span for Flow Monitors

Select the full-scale range of the flow monitor so that it is consistent with Section 2.1 of this Method, and can accurately measure all potential volumetric flow rates at the flow monitor installation site. Establish the span value of the flow monitor at a level which is approximately 80% of the full-scale range and 125% of the maximum expected flow rate. Based upon the span value, establish reference values for the calibration error test in accordance with Section 2.2.1.

If the volumetric flow rate exceeds the flow monitor's ability to accurately measure and record values, adjust the full-scale range, span value, and reference values as described above and in Section 2.2.1. Record the new span value and report the new span value and reference values as parts of the results of the calibration error test required by Method B-1. Whenever the span value is adjusted, use reference values for the calibration error test based on the new span value.

2.2 Flow Monitor Design for Quality Control Testing

Design all flow monitors to meet the applicable performance specifications of this Method.

2.2.1 Flow Monitor Calibration Error Test

Design and equip each flow monitor to allow for a daily calibration error test consisting of at least two reference values: (1) Zero to 20 percent of span or an equivalent reference value (e.g., pressure pulse or electronic signal) and (2) 50 to 70 percent of span. Flow monitor response, both before and after any adjustment, must be capable of being recorded by the data acquisition and handling system. Design each flow monitor to allow a daily calibration error test of (1) the entire flow monitoring system, from and including the probe tip (or equivalent) through and including the data acquisition and handling system, or (2) the flow monitoring system from and including the transducer through and including the data acquisition and handling system.

2.2.2 Flow Monitor Interference Check

Design and equip each flow monitor in a manner to minimize interference due to moisture. Design and equip each flow monitor with a means to detect, on at least a daily basis, pluggage of each sample line and sensing port, and malfunction of each resistance temperature detector (RTD), transceiver or equivalent.

Design and equip each differential pressure flow monitor to provide (1) an automatic, periodic back purging (simultaneously on both sides of the probe) or equivalent method of sufficient force and frequency to keep the probe and lines sufficiently free of obstructions on a least a daily basis to prevent velocity sensing interference, and (2) a means for detecting leaks in the system on a least a quarterly basis (manual check is acceptable).

Design and equip each thermal flow monitor with a means to ensure on at least a daily basis that the probe remains sufficiently clean to prevent velocity sensing interference.

Design and equip each ultrasonic flow monitor with a means to ensure on at least a daily basis that the transceivers remain sufficiently clean (e.g., backpurging system) to prevent velocity sensing interference.

3.0 FLOW MONITOR PERFORMANCE SPECIFICATIONS

3.1 Flow Monitor Calibration Error

The calibration error of flow monitors shall not exceed 3.0 percent based upon the span of the instrument as calculated using Equation A-1 of this Method.

3.2 Flow Monitor Relative Accuracy

Except as provided in this Section, the relative accuracy for flow monitors, where volumetric gas flow is measured in scfh, shall not exceed 20.0 percent. For affected units where the average of the flow monitor measurements of gas velocity during the relative accuracy test audit is less than or equal to 10.0 fps, the mean value of the flow monitor velocity measurements shall not exceed ±2.0 fps of the reference method mean value in fps wherever the relative accuracy specification above is not achieved.

4.0 DATA ACQUISITION AND HANDLING SYSTEMS

Automated data acquisition and handling systems shall: (1) read and record the full range of pollutant concentrations and volumetric flow from zero through span; and (2) provide a continuous record of all measurements and required information in an electronic format specified by the department and capable of transmission via an IBM-compatible personal computer diskette or other electronic media. These systems also shall have the capability of interpreting and converting the individual output signals from a pollutant concentration monitor and a flow monitor to produce a continuous readout of pollutant mass emission rates in pounds per hour.

Data acquisition and handling systems shall also compute and record monitor calibration error.

5.0 INITIAL FLOW MONITOR CERTIFICATION TESTS AND PROCEDURES

5.1 Flow Monitor Pretest Preparation

Install the components of the continuous flow monitor as specified in Sections 1.0, 2.0, and 3.0 of this Method, and prepare each system component and the combined system for operation in accordance with the manufacturer's written instruction. Operate the unit(s) during each period when measurements are made.

5.2 7-Day Calibration Error Test for Flow Monitors

Measure the calibration error of each flow monitor according to the following procedures.

Introduce the reference signal corresponding to the values specified in Section 2.2.1 of this Method to the probe tip (or equivalent), or to the transducer. During the 7-day certification test period, conduct the calibration error test once each day while the unit is operating (as close to 24-hour intervals as practicable). Record the flow monitor responses by means of the data acquisition and handling system. Calculate the calibration error using Equation A-1 of this Method.

Do not perform any corrective maintenance, repair, replacement or manual adjustment to the flow monitor during the 7-day certification test period other than that required in the monitor operation and maintenance manual. If the flow monitor operates within the calibration error performance specification, (i.e., less than or equal to 3 percent error each day and requiring no corrective maintenance, repair, replacement or manual adjustment during the 7-day test period) the flow monitor passes the calibration error test portion of the certification test. Whenever automatic adjustments are made, record the magnitude of the adjustments. Record all maintenance and required adjustments. Record output readings from the data acquisition and handling system before and after all adjustments.

5.3 Flow Monitor Relative Accuracy

Within 90 days of installation concurrent relative accuracy test audits may be performed by conducting simultaneous SO_2 concentration and volumetric flow relative accuracy test audit runs, or by alternating an SO_2 relative accuracy test audit run with a flow relative accuracy test audit run until all relative accuracy test audit runs are completed. Where two or more probes are in the same proximity, care should be taken to prevent probes from interfering with each other's sampling. For each SO_2 pollutant concentration monitor and each flow monitor, calculate the relative accuracy with data from the relative accuracy test audits.

Perform relative accuracy test audits for each flow monitor at normal operating load expressed in terms of percent of flow monitor span. If a flow monitor fails the relative accuracy test, the relative accuracy test audit must be repeated.

Complete each relative accuracy test audit within a 7-day period while the unit is operating in a normal condition. Do not perform corrective maintenance, repairs, replacements or adjustments during the relative accuracy test audit other than as required in the operation and maintenance manual.

5.3.1 Calculations

Using the data from the relative accuracy test audits, calculate relative accuracy in accordance with the procedure and equations specified in Section 6 of this Method.

5.3.2 Reference Method Measurement Location

Select a location for reference method measurements that is (1) accessible; (2) in the same proximity as the monitor or monitoring system location; and (3) meets the requirements of Method 1 (or 1A) of 40 CFR Part 60, Appendix A for volumetric flow, except as otherwise indicated in this Section.

5.3.3 Reference Method Traverse Point Selection

Select traverse points that (1) ensure acquisition of representative samples of pollutant concentration, moisture content, temperature, and flue gas flow rate over the flue cross section; and (2) meet the requirements of Method 1 (or 1A) (for volumetric flow), and Method 4 (for moisture determination) in 40 CFR part 60, Appendix A.

5.3.4 Sampling Strategy

Conduct the reference method tests so they will yield results representative of the moisture content, temperature, and flue gas flow rate from the unit and can be correlated with the flow monitor measurements. Conduct any moisture measurements that may be needed simultaneously with the flue gas flow rate measurements. To properly correlate volumetric flow rate data with the reference method data, mark the beginning and end of each reference method test run (including the exact time of day) on the individual chart recorder(s) or other permanent recording device(s).

5.3.5 Correlation of Reference Method and Continuous Emission Monitoring System

Confirm that the monitor or monitoring system and reference method test results are on consistent moisture, pressure, and temperature basis (e.g., since the flow monitor measures flow rate on a wet basis, Method 2 test results must also be on a wet basis). Compare flow-monitor and reference method results on a scfh basis. Also consider the response time of the flow monitoring system to ensure comparison of simultaneous measurements. For each relative accuracy test audit run, compare the measurements obtained from the flow monitor against the corresponding reference method values. Tabulate the paired data in a table similar to the one shown in Figure 1.

5.3.6 Number of Reference Method Tests

Perform a minimum of nine sets of paired monitor (or monitoring system) and reference method test data for every required relative accuracy test audit. Conduct each set within a period of 30 to 60 minutes.

The tester may choose to perform more than nine sets of reference method tests. If this option is chosen, the tester may reject a maximum of three sets of the test results as long as the total number of test results used to determine the relative accuracy is greater than or equal to nine. Report all data, including the rejected data, and reference method test results.

5.3.7 Reference Methods

The following methods from 40 CFR Part 60, Appendix A or their approved alternatives are the reference methods for performing relative accuracy test audits: Method 1 or 1A for siting; Method 2 (or 2A, 2C, or 2D as appropriate) for velocity; and Method 4 for moisture.

6.0 CALCULATIONS

6.1 Flow Monitor Calibration Error (Drift)

For each reference value, calculate the percentage calibration error based upon span using the following equation:

$$CE = \frac{(R-A)}{S} x\ 100 \qquad \text{(EQ.A-1)}$$

Where:

CE = Calibration error;
R = Low or high level reference value specified in Section 2.2.1 of this Method;
A = Actual flow monitor response to the reference value; and
S = Flow monitor span.

Whenever the flow rate exceeds the monitor's ability to measure and record values accurately, adjust the span to prevent future exceedances. If process parameters change or other changes are made such that the expected flue gas velocity may change significantly, adjust the span to assure the continued accuracy of the monitoring system.

6.2 Relative Accuracy for Flow Monitors

Analyze the relative accuracy test audit data from the reference method tests for flow monitors using the following procedures. Summarize the results on a data sheet. An example is shown in Figure 1. Calculate the mean of the monitor or monitoring system measurement values. Calculate the mean of the reference method values. Using data from the automated data acquisition and handling system, calculate the arithmetic differences between the reference method and monitor measurement data sets. Then calculate the arithmetic mean of the difference, the standard deviation, the confidence coefficient, and the monitor or monitoring system relative accuracy using the following procedures and equations.

6.2.1 Arithmetic Mean

Calculate the arithmetic mean of the differences, $\bar{d}$, of a data set as follows.

$$\bar{d} = \frac{1}{n} \sum_{i=1}^{n} d_i \qquad \text{(Eq. A-2)}$$

Where:

n = Number of data points

$\sum_{i=1}^{n} d_i$ = Algebraic sum of the individual differences d_i

d_i = The difference between a reference method value and the corresponding continuous flowrate monitoring system value (RM_i-FR_i) at a given point in time i.

When calculating the arithmetic mean of the difference of a flow monitor data set, be sure to correct the monitor measurements for moisture if applicable.

6.2.2 Standard Deviation

Calculate the standard deviation, S_d of a data set as follows:

$$S_d = \sqrt{\frac{\sum_{i=1}^{n} d_i^2 - [\frac{(\sum_{i=1}^{n} d_i)^2}{n}]}{n-1}} \qquad \text{(Eq. A-3)}$$

6.2.3 Confidence Coefficient

Calculate the confidence coefficient (one-tailed), cc, of a data set as follows.

$$cc = t_{0.025} \frac{S_d}{\sqrt{n}} \qquad \text{(Eq. A-4)}$$

Where:

$t_{0.025}$ = t value (see Table 2)

TABLE 2 T-VALUES

n-1	$t_{0.025}$	n-1	$t_{0.025}$	n-1	$t_{0.025}$
1.....	12.706	12	2.179	23	2.069
2.....	4.303	13	2.160	24	2.064
3.....	3.182	14	2.145	25	2.060
4.....	2.776	15	2.131	26	2.056
5.....	2.571	16	2.120	27	2.052
6.....	2.447	17	2.110	28	2.048
7.....	2.365	18	2.101	29	2.045
8.....	2.306	19	2.093	30	2.042
9.....	2.262	20	2.086	40	2.021
10.....	2.228	21	2.080	60	2.000
11.....	2.201	22	2.074	>60	1.960

6.2.4 Relative Accuracy

Calculate the relative accuracy of a data set using the following equation.

$$RA = \frac{|\bar{d}| + |cc|}{\overline{RM}} x\ 100 \qquad \text{(Eq. A-5)}$$

Where:

RM = Arithmetic means of the reference method values.

$|\bar{d}|$ = The absolute value of the mean difference between the reference method values and the corresponding continuous flow monitor values.

$|cc|$ = The absolute value of the confidence coefficient.

FIGURE 1.-RELATIVE ACCURACY DETERMINATION (FLOW MONITORS)

Run No.	Date & Time	Flow rate (Normal) (scf/hr)*		
		RM	M	Diff
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
Mean or mean of differences				
			Confidence coefficient	
			Relative accuracy	

* Make sure RM and M are on a consistent moisture basis.

METHOD B-1
ON-GOING QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES FOR IN-STACK AND IN-DUCT FLOW MONITORS

1.0 FREQUENCY OF FLOW MONITOR TESTING

A summary chart showing each quality assurance test and the frequency at which each test is required is located at the end of this Method in Table 1.

1.1 **Daily** Flow Monitor Assessments

For each flow monitor perform the following assessments during each day in which the unit is operating. These requirements are effective as of the date when the monitor or continuous emission monitoring system completes certification testing.

1.1.1 Calibration Error Test for Flow Monitors

Test, compute, and record the calibration error of each flow monitor at least once on each operating day. Introduce the reference values (specified in section 2.2.1 of Method A-1) to the probe tip (or equivalent) or to the transducer. Record flow monitor output from the data acquisition and handling system before and after any adjustments to the flow monitor. Keep a record of all maintenance and adjustments. Calculate the calibration error using Equation A-1 in Method A-1.

1.1.2 Flow Monitor Interference Check

Perform the daily flow monitor interference checks specified in section 2.2.2 of Method A-1 at least once per operating day (when the unit(s) operate for any part of the day).

1.1.3 Flow Monitor Recalibration

Adjusts the calibration, at a minimum, whenever the daily calibration error exceeds the limits of the applicable performance specification for the flow monitor in Method A-1. Repeat the calibration error test procedure following the adjustment or repair to demonstrate that the corrective actions were effective.

1.1.4 Flow Monitor Out-of-Control Period

An out-of-control period occurs when either the low or high level reference value calibration error exceeds 6.0 percent based upon the span value for five consecutive daily periods or 12.0 percent for any daily period. The out-of-control period begins with the hour of completion of the failed calibration error test and ends with the hour of completion following an effective recalibration. Whenever the failed calibration, corrective action, and effective

recalibration occur within the same hour, the hour is not out of control if two or more complete and valid readings are obtained during that hour. An out-of-control period also occurs whenever interference of a flow monitor is identified. The out-of-control period begins with the hour of completion of the failed interference check and ends with the hour of completion of an interference check that is passed. During any period that the flow monitor is out-of-control, the data may not be used in calculating emission compliance nor be counted towards meeting minimum data recovery requirements.

1.1.5 Flow Monitor Data Recording

Record and tabulate all calibration error test data according to month, day, clockhour, and magnitude in scfh. Program monitors that automatically adjust data to the corrected calibration values (e.g., microprocessor control) to record either: (1) The unadjusted flow rate measured in the calibration error test prior to resetting the calibration or (2) the magnitude of any adjustment. Record the following applicable flow monitor interference check data: (1) sample line/sensing port pluggage, and (2) malfunction of each RTD, transceiver, or equivalent.

1.2 **Quarterly** Flow Monitor Assessments

For each flow monitor, conduct a quarterly stack velocity and flow rate check by performing a velocity traverse and visual inspection of the pitot tubes. Perform the following assessments during each calendar quarter in which the unit operates. This requirement is effective as of the calendar quarter following the calendar quarter in which the flow monitor is provisional certified.

1.2.1 Flow Monitor Leak Check

For differential pressure flow monitors, perform a leak check of all sample lines (a manual check is acceptable) at least once during each unit operating quarter. Conduct the leak checks no less than two months apart.

1.2.2 Flow Monitor Flow Rate Check

Once during each operating quarter and for each flow monitor, perform a flow rate check by completing a single velocity traverse, calculating the associated average flow rate, and comparing the average flow with the concurrent flow measured by the continuous flow monitor. The flow rate check shall be performed at normal operating rates or load level. The flow rate check shall be performed in accordance with Section 5.3 of Method A-1 as appropriate for a single traverse. The difference (PD) between the average flow rate determined by the single velocity traverse and the continuous flow monitor shall not exceed 20 percent as determined by equation B-1. If the single velocity traverse fails to meet the 20% difference specification, the owner/operator may conduct an additional single velocity traverse or a complete Relative Accuracy Test Audit (RATA) in accordance with Section 5.3 of Method A-1 in order to demonstrate compliance with the 20% difference or 20% relative accuracy requirements.

$$PD = \frac{TF - FR}{TF} \times 100 \qquad \text{(Eq. B-1)}$$

Where:

PD = Percent Difference;
TF = Traverse Flow (scfh);
FR = Continuous Flow Monitor Flow (scfh); and
TF and FR are on a consistent moisture basis.

If the Relative Accuracy of the latest annual Relative Accuracy Test Audit (RATA) conducted pursuant to Section 1.3.1 is less than 10%, the single velocity traverse flow rate check may be discontinued. However, if future RATAs indicate a Relative Accuracy of 10% or greater, performance of the single velocity traverse flow rate check shall resume.

1.2.3 Flow Monitor Out-of-Control Period

An out-of-control period occurs when a flow monitor fails the quarterly flow rate check (the difference between the average flow rate determined by the velocity traverse and the continuous flow monitor exceeds 20%), the visual inspection of the pitot tube indicates pluggage or wear, or if a sample line leak is detected. The out-of-control period begins with the hour of the failed flow rate check, visual inspection, or leak check and ends with the hour of a satisfactory flow rate check, RATA, leak check, or cleaning or replacement of the pitot tube. During any period that the flow monitor is out-of-control, the data may not be used in calculating emission compliance nor be counted towards meeting minimum data recovery requirements.

1.3 **Annual** Flow Monitor Assessments

For each flow monitor, perform the following assessments once annually. This requirement is effective as of the calendar quarter in which the monitor or continuous emission monitoring system is provisionally certified.

1.3.1 Flow Monitor Relative Accuracy Test Audit

For flow monitors, relative accuracy test audits shall be performed annually. The relative accuracy audit shall be performed at the normal operating rate or load level (with a minimum of 9 paired velocity traverses). The relative accuracy test audit shall be conducted according to the procedures and specifications of Method A-1.

1.3.2 Flow Monitor Out-of-Control Period

An out-of-control period occurs under any of the following conditions: (1) the relative accuracy of a flow monitor exceeds 20.0 percent or (2) for low flow situations (≤10.0 fps), the flow monitor mean value (if applicable) exceeds ±2.0 fps of the reference method mean whenever the relative accuracy is greater than 20.0 percent. For flow relative accuracy test

audits, the out-of-control period begins with the hour of completion of the failed relative accuracy test audit and ends with the hour of completion of a satisfactory relative accuracy test audit. During any period that the flow monitor is out-of-control, the data may not be used in calculating emission compliance nor be counted towards meeting minimum data recovery requirements.

TABLE 1.-FLOW MONITOR QUALITY ASSURANCE TEST REQUIREMENTS

Test	QA test frequency requirements		
	Daily	Quarterly	Annual
Calibration Error (2 pt.)	x		
Interference (flow)	x		
Visual probe check		x	
Flow rate check (single traverse)		x[1]	
Leak (flow)		x[2]	
RATA (flow)			x

[1] The owner/operator has an option to perform a RATA if the quarterly flow rate check (single traverse) fails specifications. In addition, if the Relative Accuracy determined by the latest RATA is less than 10%, the quarterly single velocity traverse flow rate check may be discontinued. However, if future RATAs indicate a Relative Accuracy of 10% or greater, performance of the quarterly single velocity traverse flow rate check shall resume.

[2] The leak check requirement only applies to differential pressure flow rate monitors and does not apply to thermal or ultrasonic flow rate monitors.

METHOD C-1
FUEL OIL FLOWMETERING AND ANALYSIS SPECIFICATIONS

1.0 FLOWMETER SPECIFICATIONS

Western Sugar shall measure and record the fuel oil consumption rate within the fuel oil loop on an hourly basis. Western Sugar shall measure the flow of fuel oil with in-line fuel oil flowmeters, as required by Section 6 (B)(3) of Exhibit A.

1.1 Initial Calibration and Certification

Design and equip each fuel oil flowmeter used to demonstrate a flowmeter accuracy of 2.0 percent of the upper range value (i.e, maximum calibrated oil flow rate) as measured under laboratory conditions by the manufacturer or by the owner or operator. Use the procedures in the following ASME codes for flow measurement for use in the laboratory, as appropriate to the type of flowmeter: ASME MFC-3M-1989 with September 1990 Errata (Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi), ASME MFC-5M-1985 (Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters), ASME MFC-6M-1987 with June 1987 Errata (Measurement of Fluid Flow in Pipes Using Vortex Flow Meters), or ASME MFC-9M-1988 with December 1989 Errata (Measurement of Liquid Flow in Closed Conduits by Weighing Method) for all other flowmeter types. More current ASME or NIST (National Institute of Standards and Technology) procedures or other ASME or NIST procedures which are appropriate to flowmeter construction may, upon Department approval, be substituted. If the flowmeter accuracy exceeds 2 percent of the upper range value, the flowmeter does not qualify for certification.

1.2 Annual Calibration

Recalibrate each fuel oil flowmeter to a flowmeter accuracy of 2.0 percent of the upper range value at least annually, or more frequently if required by manufacturer specifications using the same ASME procedures required for initial calibration and certification.

1.2.1 Alternative Annual Calibration Method

Alternatively, the fuel oil flowmeter may be recalibrated to a flowmeter accuracy of 2.0 percent of the upper range value at least annually by comparing the measured flow of a flowmeter to the measured flow from another flowmeter which has been calibrated or recalibrated during the previous 365 days using the procedures in ASME MFC-9M-1988 with December 1989 Errata, "Measurement of Liquid Flow in Closed Conduits by Weighing Method", or which has been recalibrated by the manufacturer. Perform the comparison over a period of no more than seven consecutive facility operating days. Compare the average of three fuel oil flow readings for each meter at three different flow levels: (1) a frequently used low operating level selected within the range between the minimum safe and stable operating level

and 50% of maximum operating level; (2) a frequently used high operating level selected within the range between 80% of maximum operating level and maximum operating level; and (3) normal operating level. Calculate the flowmeter accuracy using the following equation:

$$ACC = \frac{|R - A|}{URV} \times 100 \qquad \text{(Eq. C-1)}$$

Where:

ACC = Flow meter accuracy as a percentage of the upper range value.
R = Average of the three low-, mid-, or high-level flow measurements of the reference flowmeter.
A = Average of the three measurements of the flowmeter being tested.
URV = Upper range value of fuel flowmeter being tested (i.e. maximum measurable flow).

If the flowmeter accuracy exceeds 2% of the upper range value, either recalibrate the flowmeter until the accuracy is within the performance specification, or replace the flowmeter with another one that is within the performance specification.

2.0 FUEL OIL SAMPLING AND ANALYSIS

Western Sugar shall perform sampling and analysis of as-fired fuel oil from the fuel oil loop to determine the percentage of sulfur by weight in the fuel oil.

2.1 Sampling Frequency and Methods

Western Sugar shall perform daily fuel oil sampling using either the flow proportional method described in Section 2.2 or the daily manual method described in Section 2.3.

2.2 Flow Proportional Sampling Method

Western Sugar shall conduct flow proportional fuel oil sampling or continuous drip fuel oil sampling in accordance with ASTM D4177-82 (Reapproved 1990), "Standard Practice for Automatic Sampling of Petroleum and Petroleum Products", every day the facility is combusting fuel oil within the fuel oil loop. Extract fuel oil at least once every hour and blend into a daily composite sample. The sample compositing period may not exceed 24 hours.

2.3 Daily Manual Sampling Method

Representative as-fired fuel oil samples may be taken manually every 24 hours according to ASTM D4057-88, "Standard Practice for Manual Sampling of Petroleum and Petroleum Products", provided that the highest fuel oil sulfur content recorded at that facility from the most

recent 30 daily samples is used for the purposes of calculating SO_2 emissions.

2.4 Sample Archiving

Split and label each daily fuel oil sample. Maintain a portion (at least 200 cc) of each daily sample for not less than 150 calendar days after the submittal to the Department of the quarterly data report for the calendar quarter during which the sample was collected. Analyze fuel oil samples for percent sulfur content by weight in accordance with ASTM D129-91, "Standard Test Method for Sulfur in Petroleum Products (General Bomb Method)," ASTM D1552-90, "Standard Test Method for Sulfur in Petroleum Products (High Temperature Method)," ASTM D2622-92, "Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry," or ASTM D4294-90, "Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy".

3.0 VOLUMETRIC FLOW MEASUREMENT

3.1 Fuel Oil Density

Where the flowmeter records volumetric flow rather than mass flow, analyze daily fuel oil samples to determine the density or specific gravity of the fuel oil (not required where the flowmeter records mass flow). Determine the density or specific gravity of the fuel oil sample in accordance with ASTM D941-88, "Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Lipkin Bicapillary Pycnometer," ASTM D1217-91, "Standard Test Method for Density and Relative Density (Specific Gravity) of Liquids by Bingham Pycnometer," ASTM D1481-91, "Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Lipkin Bicapillary," ASTM D1480-91, "Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Bingham Pycnometer," ASTM D1298-85 (Reapproved 1990), "Standard Practice for Density, Relative Density (Specific Gravity) or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method," or ASTM D4052-91, "Standard Test Method for Density and Relative Density of Liquids by Digital Density Meter".

3.2 Calculation Of Mass Flow From Volumetric Flow

Where the flowmeter records volumetric flow rather than mass flow, calculate and record the fuel oil mass for each hourly period using hourly fuel oil flow measurements and the density or specific gravity of the daily oil sample.

Convert density, specific gravity, or API gravity of the fuel oil sample to density of the fuel oil sample at the sampling location's temperature using ASTM D1250-80 (Reapproved 1990), "Standard Guide for Petroleum Measurement Tables".

Where density of the fuel oil is determined by the applicable ASTM procedures from

Section 3.1 of Department Method C-1, use the following equation to calculate the mass of fuel oil consumed (in lb/hr).

$$M_{oil} = V_{oil} \times D_{oil} \qquad \text{(Eq. C-2)}$$

Where:

M_{oil} = Mass of oil consumed per hr, lb/hr.
V_{oil} = Volume of oil consumed per hr, measured in scf, gal, barrels, or m^3.
D_{oil} = Density of oil, measured in lb/scf, lb/gal, lb/barrel, or lb/m^3.

When the mass of fuel oil consumed is determined, in accordance with Section 3.0 of Department Method C-1, such data can be used in the equation in Section 2 (A)(12)(b) of Exhibit A to determine SO_2 emissions from fuel oil combustion.

BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

In the Matter of the Application of the Department of Health and Environmental Sciences for Revision of the Montana State Air Quality Control Implementation Plan Relating to Control of Sulfur Dioxide Emissions in the Billings/Laurel Area, Affecting the Following Industries: Cenex, Inc. (Laurel); Conoco, Inc.; Exxon Company, USA; Montana Power Company, (J.E. Corette and F. Bird Plants); Montana Sulphur and Chemical Company; The Western Sugar Company; and Yellowstone Energy Limited Partnership.	FINDINGS OF FACT CONCLUSIONS OF LAW AND ORDER ADOPTING STIPULATION OF DEPARTMENT AND WESTERN SUGAR COMPANY (ADDITIONAL STATE REQUIREMENTS)

The Department of Environmental Quality (Department) has requested this Order from the Board of Environmental Review (Board) to adopt state-only sulfur dioxide control requirements for Western Sugar Company (Western Sugar). These requirements are supplemental to the those contained in the Department and Western Sugar Stipulation, Exhibit A, and Attachment(s) approved by the Board on June 12, 1998 (hereinafter referred to as the "federal requirements Stipulation").

Pursuant to public notice, and on June 12, 1998, the Board conducted a hearing in Helena, Montana on the proposed additional state requirements. At the hearing an opportunity for comment was provided to the Department, the affected industries, and interested members of the public. Based on the record in this proceeding, the Board enters the following Findings of Fact, Conclusions of Law and Order in regard to this matter:

FINDINGS OF FACT

1. The additional state requirements for Western Sugar are contained in the Stipulation, Exhibit A-1, and Attachment(s) that are attached to this Order and are incorporated herein by reference. The terms and conditions of the federal requirements Stipulation are also incorporated herein by reference. The Board has examined the Findings of the attached Stipulation and hereby ratifies and adopts them as the Board's

Findings.

4. It is the intent of the parties that the attached state-only requirements shall be adopted by the Board as requirements enforceable by the Department.

5. The Department has issued public notice of the requirements that are attached to this Order. Notice was published, at least 30 days prior to the date of the hearing in this matter, by prominent advertisement in the affected area. A copy of the proposed requirements was made available for public inspection.

CONCLUSIONS OF LAW

Based on the foregoing Findings of Fact, the Board hereby enters the following Conclusions of Law:

1. The public has been provided with appropriate notice and an opportunity to participate in this matter. Title 2, chapters 3 and 4, MCA.

2. The Department is required to prepare and develop a comprehensive plan for the prevention, abatement, and control of air pollution in this state. Section 75-2-112(2)(c), MCA.

3. The Board has authority to issue orders necessary to effectuate the purposes of Title 75, Chapter 2, MCA. Section 75-2-111(3), MCA.

4. A Board Order adopting the attached Stipulation, Exhibit A-1, and Attachment(s) is necessary and appropriate.

5. All Findings of Fact are hereby incorporated in these Conclusions of Law.

ORDER

Based on the foregoing Findings of Fact and Conclusions of Law, IT IS HEREBY ORDERED THAT:

1. The additional state requirements for Western Sugar set forth in the attached Stipulation, Exhibit A-1, and Attachment(s) are adopted by the Board and incorporated

herein as part of this Order.

2. This Order shall be enforceable by the Department.

3. Modifications of this Order shall only be by initiation of the Board or by petition to the Board and the issuance of a subsequent order revising this Order.

DATED this 10th day of June, 1998

By: _____
CINDY E. YOUNKIN
Chairperson
Board of Environmental Review

BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

In the Matter of the Application of the Department of Health and Environmental Sciences for Revision of the Montana State Air Quality Control Implementation Plan Relating to Control of Sulphur Dioxide Emissions in the Billings/Laurel Area, Affecting the Following Industries: Cenex, Inc. (Laurel); Conoco, Inc.; Exxon Company, USA; Montana Power Company, (J.E. Corette and F. Bird Plants); Montana Sulphur & Chemical Company; and Yellowstone Energy Limited Partnership.	STIPULATION OF DEPARTMENT AND WESTERN SUGAR COMPANY (ADDITIONAL STATE REQUIREMENTS)

The Department of Environmental Quality ("Department"), and Western Sugar Company ("Western Sugar") hereby stipulate to the following Paragraphs 1-9, including Exhibit A-1 and Attachments, in regard to the above-captioned matter and present the same for consideration and adoption by the Board of Environmental Review ("Board").

1. This Stipulation, together with Exhibit A-1 and Attachments, contains requirements that are supplemental to those contained in the Department and Western Sugar Stipulation and Exhibit A approved by the Board on June 12, 1998 (hereinafter referred to as the "federal requirements Stipulation"). The terms and conditions of the federal requirements Stipulation are hereby incorporated in this Stipulation by reference. However, EPA approval is not required for modification of this Stipulation, Exhibit A-1, or Attachments. In addition, Western Sugar shall comply with the terms of this Stipulation and the terms and conditions set forth in Exhibit A-1 and Attachments.

2. The following Attachments must be developed in accordance with the applicable schedules and requirements in Exhibit A-1:

Attachment 2: Corrective Action Plan

Attachment 3: Alternative Monitoring Plan

Attachment 4: Quality Assurance Project Plan

Attachment 5: Standard Operating Procedures

3. Upon written certification by the Department that an Attachment has been developed or revised in accordance with the requirements of Exhibit A-1, the Attachment or revision shall be deemed incorporated in Exhibit A-1 and this Stipulation by reference, and shall be enforceable from the date of the Department certification.

4. Disputes between the parties, during the development or revision of an Attachment, as to whether a draft Attachment or revision is in accordance with the requirements of Exhibit A-1 must be submitted to the Board prior to judicial review of the dispute. The Board will exercise reasonable diligence in rendering a determination on the disputed matter. This paragraph shall not be construed to preclude the Department from directly seeking judicial enforcement of final Attachments or of any other provision of this Stipulation or Exhibit A-1.

5. This Stipulation and Exhibit A-1 shall become effective immediately upon the issuance of an order by the Board in this proceeding, except where another effective date is specified in Exhibit A-1 or Attachments. The requirements of this Stipulation and Exhibit A-1 shall supersede any less stringent corresponding conditions pertaining to SO_2 sources in any existing permit currently issued to Western Sugar.

6. Procedures for modification of this Stipulation, Exhibit A-1, and Attachments shall be as follows:

a. Stipulation and Exhibit. All modifications of the text of this Stipulation and Exhibit A-1 shall require issuance of a revised Board order. Minor and clerical corrections may be made to this Stipulation, Exhibit A-1, and Attachments by mutual agreement of the parties, without the necessity for a revised Board order.

b. Attachments. As provided in Paragraph 3, upon written certification by the Department that an Attachment has been developed or revised in accordance with the requirements of Exhibit A-1, the Attachment or revision shall be deemed incorporated in Exhibit A-1 and this Stipulation by reference, without the necessity for a revised Board order.

c. Implementation Approvals. Where Exhibit A-1 or an Attachment authorizes the Department to approve an alternative requirement or methodology, the implementation of such approval shall not require issuance of a revised Board order.

7. Western Sugar does not waive and expressly reserves its right to contest any Board order or Department action which, without the written consent of Western Sugar, modifies the terms or conditions of this Stipulation, Exhibit A-1, or Attachments.

8. Accordingly, the parties agree that the Board shall issue an order adopting the terms of this Stipulation, Exhibit A-1, and Attachments. Except where another effective date is provided in Exhibit A-1 or Attachments, the requirements of this Stipulation, Exhibit A-1, and Attachments shall be enforceable by the Department upon adoption by the Board.

9. Notwithstanding any other provision of this Stipulation, Western Sugar's and the Department's consent to be bound by the terms of this Stipulation is conditioned upon the adoption of SO_2 emission control strategies, for all the affected industries in this matter, which are in their common terms substantially similar to one another. This condition of substantial similarity extends only to the initial control strategies, which are adopted by the Board in response to the EPA letter of March 4, 1993, calling for revision of the Billings/Laurel SO_2 SIP. This condition of substantial similarity does not extend to subsequent revisions of such initial emissions control strategies, but does extend to and includes any revisions of such emission control strategies resulting from any challenge or appeal of the initial adopted emissions control strategies. In the event that an initial control strategy is finally adopted by the Board, for any of the affected industries in this matter, which is not substantially similar in its common terms to this Stipulation, Exhibit A-1, or Attachments, either Western Sugar or the Department may, in a writing delivered to the other party and to the other affected industries in this matter within 60 days of receiving written notice of the adoption, withdraw its consent to this Stipulation.

Western Sugar Company	Montana Department of Environmental Quality
By Raymond Bode	By Mark A. Simonich
	Mark Simonich Director
Date 5/29/98	Date 6/9/98

Approved as to form:

By _____
Attorney

Date _____

Approved as to form:

By James M Madden
Attorney

Date 6/9/98

EXHIBIT A-1

EMISSION LIMITATIONS AND OTHER CONDITIONS

The Western Sugar Company
Billings, Montana

SECTION 1. AFFECTED FACILITIES

(A) Plant Location:

Western Sugar is located in southeast Billings. The plant is located in Yellowstone County, Township 1 South, Range 26 East, NE ¼ Section 10.

(B) Affected Equipment and Facilities:

(1) Boiler house (#2, #3, and #4 Riley Coal boilers)
(2) Erie City boiler
(3) Clever Brooks boiler
(4) East dryer unit
(5) West dryer unit

SECTION 2. DEFINITIONS

(A) The following definitions apply throughout this Exhibit A-1 in addition to the definitions contained in Section 2 of Exhibit A.

(1) "Attachment #2" means the Corrective Action Plan required by Section 3(B) of Exhibit A-1. Upon approval by the Department, Attachment #2 shall be deemed incorporated herein by reference.

(2) "Attachment #3" means the Alternative Monitoring Plan required by Section 3 (B) of Exhibit A-1. Upon approval by the Department, Attachment #3 shall be deemed incorporated herein by reference.

(3) "Attachment #4" means the Quality Assurance Project Plan required by Section 4(C) and (D) of Exhibit A-1. Upon approval by the Department, Attachment #4 shall be deemed incorporated herein by reference.

(4) "Attachment #5" means the Standard Operating Procedures required by

Section 4(C) and (D) of Exhibit A-1. Upon approval by the Department, Attachment #5 shall be deemed incorporated herein by reference.

(5) "Exhibit A-1" means this document which contains the state-only requirements that supplement Exhibit A to the SO_2 emission control plan for the Billings and Laurel areas adopted by the Board of Environmental Review (Board) on June 12, 1998.

(6) "Surrogate Emission Rate" means an SO_2 emission rate expressed in pounds per hour and determined in accordance with a Department-approved Alternative Monitoring Plan as described in Section 3(B) of Exhibit A-1.

Surrogate Emission Rate data substituted in accordance with Section 3(A) of this Exhibit A-1 shall not be used to satisfy the QDRR requirement contained in Exhibit A unless the data is derived from equipment that by itself or in combination with the primary CEMS meets the specifications, operating requirements, and quality assurance and control requirements of Section 4 of Exhibit A-1 and Section 2(A)(5 and 7) and Section 6 of Exhibit A.

SECTION 3. COMPLIANCE DETERMINATIONS

(A) Whenever Hourly SO_2 Emission Rates are unavailable for any reason and the facility is Operating, either the Three Hour Emission limitations [contained in Section 3(A) of Exhibit A] divided by three (3.0) or a Surrogate Emission Rate shall be substituted for the missing Hourly SO_2 Emission Rates.

(B) Compliance with the Quarterly Data Recovery Rate requirements.

(1) The short term corrective measures required by Section 4(E)(3) of Exhibit A shall be described in the Standard Operating Procedures document required by Section 4(C and D) of Exhibit A-1.

(2) The long term corrective measures required by Section 4(E)(3) of Exhibit A shall be described in a Corrective Action Plan. The Corrective Action Plan must contain a schedule which includes appropriate milestones to accomplish, as expeditiously as practicable and within a period not to exceed six months, either:

(a) correction of the failure, or

(b) development, installation (if necessary), testing, maintenance, and operation of a new CEMS or appropriate replacement portions of the

affected CEMS.

(3) Upon determination that the CEMS is not functioning properly, Western Sugar may implement an approved Alternative Monitoring Plan to collect Surrogate Emission Rate data for the purpose of demonstrating compliance with the emission limitations in Section 3(A) of Exhibit A by substituting such data in accordance with Section 3(A) of Exhibit A-1. However, if Western Sugar claims an Unusual Circumstance has occurred, Western Sugar shall implement an approved Alternative Monitoring Plan. The Alternative Monitoring Plan must describe monitoring systems or procedures to monitor compliance with emission limitations until the existing or new CEMS is fully operational. The alternative monitoring system must be accurate or sufficiently conservative to assure compliance with the emission limitations.

(4) Western Sugar shall submit to the Department by March 1, 1997 a draft Corrective Action Plan and a draft Alternative Monitoring Plan which meet the objectives stated in Section 3(B)(2 and 3) of Exhibit A-1.

(a) Within 90 days after Western Sugar submits the draft Corrective Action Plan and draft Alternative Monitoring Plan, the Department shall approve, conditionally approve, or disapprove the plans as appropriate to meet the objectives stated in Section 3(B)(2 and 3) of Exhibit A-1.

(b) Within 45 days after receiving notice from the Department that the proposed plans require further revision (conditional approval) or are disapproved, Western Sugar shall correct the deficiencies and resubmit the revised (2nd draft) or new plans to the Department.

(c) Within 45 days after receiving resubmitted plans from Western Sugar, the Department shall approve or disapprove the resubmitted plans.

(d) Upon submittal, Western Sugar shall implement the originally submitted plans, and then the resubmitted plans (2nd draft), until final approval of each plan is issued by the Department, at which time the final plan shall be implemented.

(e) Western Sugar shall obtain approval from the Department of the final Corrective Action Plan (Attachment #2) and the final Alternative Monitoring Plan (Attachment #3) and implement the final plans by January 1, 1998. This deadline shall be extended to the extent that the Department has exceeded the time allowed in Section 3(B)(4) of Exhibit A-1 for its review and approval of the documents. Upon written certification by the Department that Attachments #2 and #3 have been

developed in accordance with the specific requirements of this Exhibit, the Attachments shall be deemed incorporated by reference in this Exhibit.

SECTION 4. CONTINUOUS MONITORING

(A) CEM Quarterly Data Recovery Rates

(1) The "requirements of Sections 6" referred to in Section 6(A)(1)(a) of Exhibit A shall also include the requirements of the Quality Assurance Project Plan and Standard Operating Procedures documents required and approved pursuant to Section 4(C, D, and E) of Exhibit A-1;

(2) The short term corrective measures required by Section 4(E)(3) of Exhibit A shall be described in the Standard Operating Procedures document required by Section 4(C and D) of Exhibit A-1.

(3) The long term corrective measures required by Section 4(E)(3) of Exhibit A shall be described in the Corrective Action Plan required by Section 3(B)(2) of Exhibit A-1.

(B) Quarterly Data Recovery Rates

(1) The "adequate spare parts inventory" required by Section 6(A)(2)(c)(ii) of Exhibit A shall be specified in the SOP document required by Section 4(C and D) of Exhibit A-1.

(2) The "immediate and appropriate action to correct a failure in the CEMS" required by Section 6(A)(2)(c)(iv) of Exhibit A shall include those actions specified by the Corrective Action Plan, Quality Assurance Project Plan, and Standard Operating Procedure document.

(C) Quality Assurance Project Plans and SOP Documents

Western Sugar shall develop, maintain, and utilize Quality Assurance Project Plans (QAPP) and Standard Operating Procedure (SOP) documents specifically for the instruments and equipment that are used for continuous pollutant concentration monitoring, fuel oil flowmetering, and stack gas flow rate monitoring. These documents will describe operational controls, procedures, activities, and requirements that are designed to ensure the collection of data which meets the requirements of this control plan. The topics that these documents will address include but are not limited to:

(1) procedures for proper installation and interfacing of the components of the

CEMS and associated data acquisition systems;

(2) procedures for routine operations and maintenance of CEMS and associated data acquisition equipment;

(3) procedures for the implementation of the quality assurance requirements of Section 6 of Exhibit A;

(4) procedures for performing repairs including the maintenance of a complete inventory (including sufficient quantity) of those spare parts for the CEMS and the associated data acquisition systems that are reasonably expected to fail as determined from previous operational experience and recommendations by the manufacturer of the system;

(5) procedures to minimize the period of inoperation of the CEMS and associated data acquisition equipment; and

(6) procedures to implement best efforts to mitigate Unusual Circumstances so as to avoid a failure to meet the required QDRR.

(D) If any instrument or equipment is changed or other hardware is placed into service, Western Sugar shall develop new QAPP and SOP documents as appropriate for the new equipment.

(E) The documents required by Sections 4(C and D) of this Exhibit A-1 are subject to review and approval by the Department, as described below.

(1) Western Sugar shall submit the QAPP and SOP documents for each CEMS to the Department for review and approval by March 1, 1997.

(2) Within 90 days of submittal of the QAPP and SOP documents the Department shall approve, require revision, or disapprove the documents.

(3) Within 45 days after receiving notice from the Department that the QAPP and SOP documents require further revision or are disapproved, Western Sugar shall correct the deficiencies and resubmit the revised or new documents (2nd draft) to the Department.

(4) Within 45 days after receiving the resubmitted QAPP and SOP documents from Western Sugar, the Department shall approve or disapprove the resubmitted documents.

(5) Upon submittal, Western Sugar shall implement the originally submitted

QAPP and SOP documents, and then the resubmitted documents (2nd draft), until final approval of each document is issued by the Department, at which time the final documents shall be implemented. Upon written certification by the Department that the QAPP and the SOP documents have been developed in accordance with the specific requirements of Exhibit A-1, the documents shall be deemed incorporated herein by reference as Attachments #4 and #5 respectively.

(6) Western Sugar shall obtain approval from the Department of the final QAPP and SOP documents and implement the final plans by January 1, 1998. This deadline shall be extended to the extent that the Department has exceeded the time allowed in Section 4(E) of this Exhibit A-1 for its review and approval of the documents.

(7) Any modifications to the QAPP and SOP documents shall be submitted to the Department within 60 days after the CEMS equipment changes have been made and shall follow similar timelines as presented in Section 4(E)(2 through 5) of this Exhibit A-1.

(8) For the purpose of developing the QAPP and SOP documents, Western Sugar shall utilize the general guidance provided in "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5)."