Commonwealth of Kentucky
Division for Air Quality

FINAL PERMIT STATEMENT OF BASIS

TITLE V/SYNTHETIC MINOR NO. V-08-011
LOGAN ALUMINUM, INC.
RUSSELLVILLE, KY
August 25, 2008
HOSSEIN RAKHSHAN
Source I.D. #: 021-141-00038
Source A.I. #: 2761
Activity #: APE20070005

SOURCE DESCRIPTION:

Logan Aluminum is a secondary aluminum processing facility located in Russellville, KY. The plant produces rolled aluminum from recycled scrap and aluminum sows/pigs. Scrap aluminum is scalped, melted and refined with additional sows/pigs in several Group 1 and Group 2 furnaces. After processing, molten aluminum is cast into ingots that are then pre-heated, rolled, pretreated and finally coated before shipping to customers. Logan has only recently created significant secondary aluminum smelting capacity with the construction of the Multichamber Furnace in 2007. Prior to the construction of this unit, the plant was classified as an aluminum rolling mill only.

U.S. EPA REVIEW:
EPA did not object to the proposed permit, however, during the 45-day EPA comment period, the Division was in receipt of three significant comments from the U.S. EPA. The responses to the comments are as follows:

EPA's comment #1:

Conditions 1.g., 3.e.iii, 3.e.iv, 4.j, 4.l, 4.m, and 5.b.v, relating to the Scrap Processing and Multichamber Furnace System address reactive flux injection rates. It is EPA's understanding that the furnace does not utilize reactive flux; therefore, these respective conditions should not apply.

Response:

Listed permit citations have been modified to add wording that would change the conditions to be applicable only in the event that Logan chooses to utilize reactive chlorine flux. Logan recognizes that this change, if pursued, requires retesting and OMMP revision.

EPA's comment #2:

It is unclear how the source will demonstrate compliance with the PSD avoidance limit specified in Condition 2.g. of Section D, particularly with respect the emissions units that appear in Condition 2.f. as well as Condition 2.g. How will the respective incremental increases be determined? Also, is it to be assumed that the emissions from common units not designated as being increases

incremental increases are the total emissions (from such units)? Furthermore, based on a review of the associated monitoring and recordkeeping, Conditions 2.f. and 2.g. do not appear to be practically enforceable.

Response:

The two conditions (i.e., 2.f. and 2.g.) at focus here, only reflect the output of a series of ongoing historical communications and interpretations between Logan and KDAQ, that has over the years been established and became the basis for demonstrating compliance with the permit. The existing, as well as the proposed, Title V permit includes the methodology on how compliance is demonstrated just following the tables in 2.f. and 2.g. (5th bullet point on page 114 of 130), however the reference to 2.e. and 2.f is a typographical error in the proposed draft that needs to be remedied (see further explanation below).

Logan does maintain a comprehensive and well-documented emissions tracking tool that has been routinely evaluated and reviewed by KDAQ's compliance personnel. This tool utilizes the most current stack test data or best emissions factors available for regulated sources at the plant. The extensive output tables totaling the emissions utilizing these assumptions and calculations developed through the years are provided to KDAQ, giving the detail of the emissions by pollutant, by source, by month and by the emissions groupings, in its routine Semi-Annual Reports (SAR) submitted in January and July every year. This is Logan's primary tool for making its compliance certification. Logan continues to review and analyze this emissions tracking tool and continues to make enhancements to its function and documentation when deemed prudent. The layout of the spreadsheet was most recently revamped in January 2007 to improve its functionality and use by personnel at the plant, better document the foundational data and assumptions used to establish the source-specific emissions factors for all regulated units, verify and update emissions factors with new information where appropriate, better account for emissions from the smaller sources, and to normalize all emissions on a per production basis or fuel basis. These changes have allowed Logan to provide KDAQ with more comprehensive and organized data summaries in their semiannual monitoring reports.

<u>Incremental and Total Emissions</u>:

Incremental emissions increases are tabulated by utilizing the operating hours, production rates or amount of fuel consumed, and multiplying them by the emissions factors that have been established for each source on a pollutant by pollutant basis. As such, for the "named" sources in Conditions 2.f. and 2.g. in the two emissions groupings, the total emissions for these units are included in the emissions tracking tool. For those units that are only included in only one of the emissions groupings (i.e., namely for the expansion grouping only), those emissions are the total emissions for the sources.

<u>Sources in Both Emissions Groups</u>:

For the Hot Mill Finishing Mill and Reversing Mill sources, the existing Title V permit allocated the first 4,066 hours of operation for these sources to be attributed to the base plant grouping (previous Section B, Conditions 2.d. (i.) and (ii), page 57 of 109) and all additional "incremental hours" up to and including the total would be allocated to the expansion plant grouping. While specific documentation is not available, it is believed that this was the actual operating rates experienced by these units at the time the "expansion" emissions sources began operations. Footnotes have been added to the tables contained in Conditions 2.f. and g. which clarify the

basis for determining the incremental emissions from the respective emission units common to both tables (i.e., Unit ID# 07 and 08).
For the other plant sources that are "named" in both emissions groupings, Logan calculate and report the entire emissions units for those sources completely in both groups. This was done as a matter of administrative convenience for reporting purposes as it would be very difficult to try to allocate the specific emissions associated with the plant expansion.
Further, as part of this more detailed review of Conditions 2.f. and 2.g., there are a few cross-referencing errors in various sections of the Proposed Permit in the unit specific compliance demonstration methods, where the condition language inadvertently refers to Conditions 2.e. and 2.f instead of Conditions 2.f and 2.g. These administrative oversights have been corrected in the final version of the permit.
The monitoring and reporting provisions in the existing Title V permit, and the system Logan has developed to comply with these provisions, with full knowledge and approval from KDAQ's compliance inspectors, ensure that the two 250-tpy emission limits are practically enforceable. Therefore, there were no significant changes to the existing permit language, beyond the minor updates suggested herein were made.

EPA's comment #3:

The language contained in Conditions 2.f. and 2.g. of Section D is not adequate. Rather than stating emissions "shall not exceed 250 tons per year," the language must be revised to read "shall not equal or exceed 250 tons per year.

Response:

The language relates to the 250 tpy limit in Conditions 2.f. and 2.g., has been revised to reflect the EPA comment.

PUBLIC AND U.S. EPA REVIEW:

Public notice was placed in the Russellville Democrat/Leader in Russellville, Kentucky on June 6, 2008. The comment period ended 30 days from the date of publication. Two comments received from Logan Aluminum on July 7, 2008. Minor changes were made to the permit as a result of the comments received; however, in no case were any emissions standards, or any monitoring, recordkeeping or reporting requirements relaxed. The following is a detailed explanation of changes made to the permit and supporting documents. The Division's response to comments is discussed below. Please see Response to Comments for a detailed explanation of the changes made to the permit. The U.S. EPA has 45 days to comment on this proposed permit.

COMMENTS AND RESPONSE:

The following comments from the source were submitted to the Division in a letter dated July 7, 2008.

Section B:

1) To clarify which emissions points in the group, Scrap Processing and Multichamber Furnace

System, need visible emission observations and how often the observations should be performed, the following changes are requested:

GROUP REQUIREMENTS: **Scrap Processing and Multichamber Furnace System**

Please change Section 2. Emission Limitations, Condition 2.e. to:

e. Pursuant to 401 KAR 59:010, Section 3(1)(a), the opacity of visible emissions from the Scrap Processing System and the Multichamber Furnace system shall not equal or exceed 20%.

Please add to Section 4. Specific Monitoring Requirements the following:

In order to demonstrate compliance with Condition **2.e.** above, the permittee shall conduct monthly visible emissions observations using EPA Reference Method 9.

Division's response: The Division concurs with the comment and has revised the permit as suggested by the source.

2) The Propane Flare (EU 46 (4041-5)) is used when preventive maintenance is performed, the propane system is started-up when natural gas is curtailed and to burn off the propane in the lines when the propane system is shut down. During a year the flare may be used only three to four times. For 2007 natural gas was not curtailed and the flare only ran when maintenance was performed. Logan would to request a change to reflect that a Method 9 reading is not needed each month when the flare is not in operation. Readings will be performed each time the flare is used. Therefore, Logan would like to request the following changes:

Emissions Unit: **46 (4021-5) Propane Flare**

Please change Section 4. Specific Monitoring Requirements: to

In order to demonstrate compliance with Condition **2.a.** above, the permittee shall monitor visible emissions on a monthly basis using EPA Reference Method 9 *only* when the flare is in operation. If flare is not in operation, a Method 9 reading is not needed and a note will be logged that it is not in use that month.

Division's response: The Division concurs with the comment and has revised the permit as suggested by the source.

Current Permitting Action: Title V/Synthetic Minor Renewal

On December 17, 2007, Logan Aluminum submitted a permit renewal application to its existing Title V/Synthetic Minor V-03-017 (R4) for a secondary aluminum plant in Russellville, KY. Logan is seeking to streamline its air permit by making a series of administrative revisions through the renewal process and requested that as part of the minor permit modification the following (minor permit application was submitted on December 7, 2007) be incorporated formally in the Title V

permit during the renewal process:
(1) Eliminate unnecessary production, raw material or fuel usage operating limits for two sources (Cold Mill 1 and Pusher Furnaces 1/2) and (2) request approval for a proposed speed increase project on the Coating Line 1 and removal of operating limits for this source as well.

The speed on the Coating Line is anticipated to increase from its current rate of 650 to anticipated future speed of about 700 fpm as part of this upgrade that will allow Logan to meet the long-term business needs. PSD significant threshold emission rates for all regulated pollutants will not be exceeded based on the analysis provided, and the plant's ability to meet the 250 tpy PSD avoidance limit for the base plant to which the coating line contributes will not be jeopardized. No new limits or monitoring requirements will be needed for this upgrade. Additionally, the speed that the Coating Line operates (i.e., estimated at 700 fpm after the proposed modification) is not the basis for emissions tracking calculations (production throughput is the basis) and should not be separately construed as an implicit operating limit or constraint.

Logan is not proposing to modify any existing emission units or to construct any new emission units and therefore, there will be no change in the emissions or the production rate as part of this renewal application. Logan is, however, seeking significant enhancements to the existing permit conditions applicable to some units at the Russellville plant. As most of the proposed permit changes are administrative in nature, the affected permit requirements for Logan's facility will remain entirely unchanged. Some new permit conditions have been added based on newly applicable regulations triggered by the submittal of this renewal application (i.e., conditions based on 40 CFR Part 64 for Compliance Assurance Monitoring). Also, the Division has added new permit conditions based on previously applicable provisions derived from existing applicable regulations to make the air permit more complete, such that it can be used as the main resource for determining Logan's compliance obligations without the need to frequently or directly consult the applicable regulations for the facility.
The major changes to the permit fall into the following general categories:

- Reformatting/reorganization of Secondary Aluminum Maximum Available Control Technology (SMACT-derived permit conditions),
- Removing redundancy of PSD avoidance limits and corresponding annual operating limits ,
- Removing hourly operating limits absent a regulatory basis ,
- Revisions to conditions derived from various SIP provisions ,
- Modifications to permit conditions based on changes in applicable regulations, and
- Other minor rewording/reorganization of permit conditions without changing requirements

The following explain and provide justification for the permit changes that fit into each category identified above:

Changes to SMACT-derived Permit Conditions:

To allow for the Title V permit to be relied on as the primary reference for Logan's SMACT compliance obligations, Division is seeking to rephrase existing permit conditions derived from the SMACT and to add permit conditions based on SMACT provisions which were previously applicable but were not explicitly included in the permit. The suggested changes to existing SMACT derived permit conditions and proposed addition of new conditions are administrative in nature and are intended solely to clarify the permit language to match more closely the SMACT rule

text rather than to change any compliance requirements Logan faces. To this end, rule citations have been added for all SMACT conditions, such that any paraphrasing of the rule text to create the permit condition could be identified by consulting the appropriate section of the SMACT. As the organization of the SMACT very closely parallels the organization of Section B of Logan's air permit, Logan proposed explicit permit conditions and updated existing conditions based on the applicable SMACT operating requirements (from §63.1506 of the SMACT into Section B.1. of the permit), emission limitations (from §63.1505 into Section B.2), and testing, monitoring, recordkeeping, and reporting requirements (from §63.1511, §63.1510, §63.1516, and §63.1517 into Sections B.3 through B.6 of the permit) for each affected source included in Section B of the permit.

Historically, in accordance with §63.1505(k)(4), Logan chose to demonstrate compliance with the applicable SMACT emission limitations based on individual compliance of each SMACT affected source with its respective emission limit. Logan has recently decided, however, to move to the default compliance option for secondary aluminum processing units (SAPU) under §63.1505(k)(1) through (3). Logan has chosen to utilize its option under §63.1512(h)(2) to limit the rate at which reactive chlorine flux is added to Flux Boxes and assume, for the purposes of demonstrating compliance with the SAPU emission limit, that all chlorine in the reactive flux is emitted as HCl. Since Logan has chosen to limit the flux injection rate to Flux Boxes and assumes that all flux injected is emitted as HCl, the PM emission rate used in the SAPU calculations for the Flux Boxes is set by default to the level of the PM emission limit. Accordingly, no HCl or PM emissions testing was conducted during the performance testing program recently conducted for Flux Boxes and a baghouse is no longer required to specifically comply with the SAPU emission limits for HCl and PM[1].

Therefore, the SMACT-derived permit conditions from Section B for the Flux Boxes relevant to baghouse have been removed as they are no longer applicable. Logan does, however, plan to continue operating the baghouse in accordance with Condition B.7.a. in the Flux Box portion of Section B of the permit. The SAPU compliance demonstration provisions in Section D of the permit have also been updated based on recent communications between Logan and U.S. EPA Region 4 regarding the appropriate implementation of the SAPU compliance provisions to the Russellville plant.

The following list provides a description of the existing SMACT permit conditions that have been significantly revised or removed and previously applicable SMACT provisions for which new permit conditions have been added for each of the affected sources in Section B of the permit and for the SAPU compliance provisions in Section D of the permit.

Section B - Multichamber Furnace and Scrap Processing System:

- Condition 2.a. has been rephrased to more accurately reflect the fact that Logan has a choice to limit emissions from the Multichamber Furnace based on either individual compliance or based on the SAPU. The compliance demonstration method has also

1 *Secondary Aluminum NESHAP Compliance Test Report: Compliance Testing for Holding Furnaces – PM, HCl and Flux Boxes – SAPU Production Rate,* prepared by Trinity Consultants and Almega Environmental dated October 5, 2007.

been updated to refer to Section D of the permit where the SAPU equations are presented.

- Conditions 3.a.ii. and 3.a.iii., which specify the duration of SMACT performance testing, have been rephrased to more closely match §63.1511(b)(2) and (3).
- Condition 3.e.iii.(C), which specifies the method for determining the total reactive flux injection rate for a performance test, has been changed by removing the explicit equations from the §63.1512(o)(3).
- Conditions 3.f. and 3.g., which specify the calculations for assessing compliance with the individual HCl and D/F emission limits during a performance test, have been removed and replaced with a more generic reference to §63.1513 in the compliance demonstration method for the individual SMACT emission limits in Condition 2.a.
- Conditions 4.d. and 4.e. have been simplified by removing the description of the alternate feed/charge or aluminum production weight monitoring and accuracy provisions in the §63.1510(e) of the SMACT.
- Condition 4.i.iii. has been removed since Logan does not intend at this time to utilize a device to monitor the concentration of HCl from the Multichamber Furnace Baghouse.
- Condition 4.j.ii has been simplified by removing the description of the application process for alternate flux weight measurement device accuracy.
- Condition 4.k, which specifies the application process for alternate flux injection rate monitoring, has been removed to simplify the permit.
- Conditions 4.m., 4.n., and 4.o. have been removed since they are redundant with other conditions in Section 4.
- Conditions derived from §63.1510(j)(2) through (j)(4) have been moved from Condition 5.b. in the current permit to Conditions 4.k., 4.l., and 4.m. in the revised permit as these conditions are more appropriately located in Section 4.
- Condition 5.a has been removed as it is redundant with condition 5.e.viii. in the current permit.
- Condition 5.c in the current permit has been moved to Condition 5.b.xi. in the revised permit and rephrased to match language from §63.1517(b)(17) of the SMACT.

Section B - Swarf Furnace with Molten Metal Holder:

- Conditions 1.h. in the current permit has been replaced with Condition 1.a. in the revised permit, which more closely matches the rule text from §63.1506(b) for proper unit labeling of the Swarf Furnace.
- Condition 1.f. in the current permit has been replaced with Condition 1.b. in the revised permit, which more closely matches the provisions of §63.1506(c).
- Condition 1.g. in the current permit has been replaced with Condition 1.c. in the revised permit to more accurately specify the feed/charge or aluminum production weight operating requirements from the §63.1506(d).

- Conditions 1.f.vi. and 1.f.vii. in the current permit have been replaced with Condition 1.d. in the revised permit to more closely match the bag leak detector operating requirements in §63.1506(e).
- Condition 1.f.v. has been replaced with Condition 1.e. to more closely match the baghouse inlet temperature operating requirements in §63.1506(m)(3).
- Condition 1.b. has been replaced by Condition 1.g. to match the language in §63.1506(m)(5) for flux injection rate operating requirements.
- Conditions 1.c. and 1.d. have been replaced with Condition 1.h. to more accurately detail the sidewell furnace operating requirements in §63.1506(m)(6).
- Condition 1.i. in the revised permit, derived from §63.1506(p), which specifies the proper corrective action to address operating limit deviations or excursions, has been added to further clarify Logan's operating requirements under the SMACT.
- Condition 2.c. in the current permit has been replaced with Conditions 2.a. and 2.b. in the revised permit and the compliance demonstration method has been rephrased to more accurately reflect the fact that Logan is using the SAPU compliance option under §63.1505(k) for PM and HCl and the individual compliance option under §63.1505(i)(3) for D/F in accordance with §63.1505(k)(4).
- Condition 2.c. of the revised permit derived from §63.1505(i)(6) has been added to demonstrate that Logan has a choice whether to comply with the SMACT emission limits based on the feed/charge or aluminum production weight.
- Condition 3.a in the current permit has been removed and replaced with applicable provisions derived from the SMACT testing requirements in §63.1511 and §63.1512. This change clarifies the methods required for performing the once per 5-year repeat SMACT compliance test for the Swarf Furnace. The specific conditions included in the revised permit are 3.a. through 3.c.
- Condition 4.o. in the current permit has been replaced with Condition 4.a. in the revised permit to more clearly demonstrate the Operations, Maintenance, and Monitoring (OMM) Plan requirements in §63.1510(b).
- Condition 4.n. in the current permit has been replaced with Condition 4.b. in the revised permit to more closely match the monthly equipment label inspection requirements in §63.1510(c).
- Condition 4.l.i. of the current permit has been replaced with Condition 4.c. in the revised permit to clearly state the capture and collection system (CCS) annual inspection requirements in §63.1510(d).
- Condition 4.m. and 4.p. have been replaced with Conditions 4.d., 4.e., and 4.f. to more clearly demonstrate the feed/charge or aluminum production weight monitoring provisions in §63.1510(e).
- Condition 4.l.iv. of the current permit has been replaced with Condition 4.g. in the revised permit to specifically outline all bag leak detection monitoring provisions included in §63.1510(f).

- Condition 4.l.iii. of the current permit has been replaced with Condition 4.h. in the revised permit to more closely match the baghouse inlet temperature monitoring provisions in §63.1510(h).
- Condition 4.l.ii. of the current permit has been replaced with Condition 4.i. in the revised permit to more closely match the lime flow monitoring provisions in §63.1510(i).
- Condition 4.q. of the current permit has been replaced with Conditions 4.j. and 4.k. in the revised permit to more clearly demonstrate the flux injection rate monitoring provisions in §63.1510(j).
- Condition 4.k. of the current permit has been replaced with Conditions 4.l. in the revised permit to more clearly specify the requirements for molten metal level monitoring for a sidewell furnace in §63.1510(n).
- Condition 4.m. in the revised permit derived from §63.1517(b)(1)(i) (which specifies that monitoring of the hours of operation for a unit equipped with a bag leak detection system must occur) has been added to the permit.
- Condition 5.a in the revised permit specifying the general SMACT recordkeeping requirements has been added to the permit.
- Conditions 5.i. and 5.j. of the current permit have been replaced with Condition 5.b. in the revised permit to specify in more detail all records that are required to be kept for the Swarf Furnace under §63.1517(b).
- Various conditions in Section 6 derived from the applicable reporting requirements in §63.1510 and §63.1516 have been added to the permit to outline the SMACT reporting requirements applicable to the Swarf Furnace. The specific conditions included in the revised permit are Conditions 6.a. through 6.i.

Section B - Electric Induction Furnace:

- Condition 1.c. in the current permit has been replaced with Condition 1.a. in the revised permit which more closely matches the rule text from §63.1506(b) for proper unit labeling of the Induction Furnace.
- Condition 1.a. in the current permit has been replaced with Condition 1.b. in the revised permit to provide the exact rule language for the clean charge and no flux operating requirement for Group 2 Furnaces in §63.1506(o).
- Condition 4.h. in the current permit has been replaced with Condition 4.a. in the revised permit to more clearly demonstrate the OM&M Plan requirements in §63.1510(b).
- Condition 4.g. in the current permit has been replaced with Condition 4.b. in the revised permit to more closely match the monthly equipment label inspection requirements in §63.1510(c).
- Condition 5.h. in the current permit has been replaced with Condition 4.c. in the revised permit to more accurately specify the charge material monitoring and recordkeeping required for Group 2 Furnaces.

- Condition 5.a in the revised permit specifying the general SMACT recordkeeping requirements has been added to the permit.
- Conditions 5.g., 5.h., and 5.i. of the current permit have been replaced with Condition 5.b. in the revised permit to specify in more detail all records that are required to be kept for the Induction Furnace under §63.1517(b).
- Various conditions in Section 6 derived from the applicable reporting requirements in §63.1510 and §63.1516 have been added to the permit to outline the SMACT reporting requirements applicable to the Induction Furnace. The specific conditions included in the revised permit are Conditions 6.a. through 6.g.

Section B - Reservoir Furnace:

- Condition 1.d. in the current permit has been replaced with Condition 1.a. in the revised permit which more closely matches the rule text from §63.1506(b) for proper unit labeling of the Reservoir Furnace.
- Condition 1.a. in the current permit has been replaced with Condition 1.b. in the revised permit to provide the exact rule language for the clean charge and no flux operating requirement for Group 2 Furnaces in §63.1506(o).
- Condition 4.i. in the current permit has been replaced with Condition 4.a. in the revised permit to more clearly demonstrate the OMM Plan requirements in §63.1510(b).
- Condition 4.h. in the current permit has been replaced with Condition 4.b. in the revised permit to more closely match the monthly equipment label inspection requirements in §63.1510(c).
- Condition 5.i. in the current permit has been replaced with Condition 4.c. in the revised permit to more accurately specify the charge material monitoring and recordkeeping required for Group 2 Furnaces.
- Condition 5.a in the revised permit specifying the general SMACT recordkeeping requirements has been added to the permit.
- Conditions 5.h., 5.i., and 5.j. in the current permit have been replaced with Condition 5.b. in the revised permit to specify in more detail all records that are required to be kept for the Reservoir Furnace under §63.1517(b).
- Various conditions in Section 6 derived from the applicable reporting requirements in §63.1510 and §63.1516 have been added to the permit to outline the SMACT reporting requirements applicable to the Reservoir Furnace. The specific conditions included in the revised permit are Conditions 6.a. through 6.g.

Section B - DC1, DC2, and DC3 Melting Furnaces:

- Condition 1.d. in the current permit has been replaced with Condition 1.a. in the revised permit which more closely matches the rule text from §63.1506(b) for proper unit labeling of the Melting Furnaces.

- Condition 1.a. in the current permit has been replaced with Condition 1.b. in the revised permit to provide the exact rule language for the clean charge and no flux operating requirement for Group 2 Furnaces in §63.1506(o).
- Condition 4.i. in the current permit has been replaced with Condition 4.a. in the revised permit to more clearly demonstrate OMM Plan requirements in §63.1510(b).
- Condition 4.h. in the current permit has been replaced with Condition 4.b. in the revised permit to more closely match the monthly equipment label inspection requirements in §63.1510(c).
- Condition 5.j. in the current permit has been replaced with Condition 4.c. in the revised permit to more accurately specify the charge material monitoring and recordkeeping required for Group 2 Furnaces.
- Condition 5.a in the revised permit specifying the general SMACT recordkeeping requirements has been added to the permit.
- Conditions 5.i., 5.j., and 5.k. of the current permit have been replaced with Condition 5.b. in the revised permit to specify in more detail all records that are required to be kept for the Melting Furnaces under §63.1517(b).
- Various conditions in Section 6 derived from the applicable reporting requirements in §63.1510 and §63.1516 have been added to the permit to outline the SMACT reporting requirements applicable to the Melting Furnaces. The specific conditions included in the revised permit are Conditions 6.a. through 6.g.

Section B - DC1, DC2, and DC3 Holding Furnaces:

- Condition 1.g. in the current permit has been replaced with Condition 1.a. in the revised permit which more closely matches the rule text from §63.1506(b) for proper unit labeling of the Holding Furnaces.
- Condition 1.f. in the current permit has been replaced with Condition 1.b. in the revised permit to more accurately specify the feed/charge or aluminum production weight operating requirements from the §63.1506(d).
- Condition 1.d. in the current permit has been replaced with Conditions 1.c. and 1.d. to more accurately reflect the applicable operating requirements in §63.1506(n) for Group 1 furnaces without add-on air pollution control devices.
- Condition 1.e. in the revised permit derived from §63.1506(p) which specifies the proper corrective action to address operating limit deviations or excursions has been added to further clarify Logan's operating requirements under the SMACT.
- Condition 2.c. in the current permit has been replaced with Condition 2.a. in the revised permit and the compliance demonstration method has been rephrased to more accurately reflect the fact that Logan is using the SAPU compliance option under §63.1505(k).

- Condition 2.b. of the revised permit derived from §63.1505(i)(6) has been added to demonstrate that Logan has a choice whether to comply with the SMACT emission limits based on the feed/charge or aluminum production weight.
- Condition 3.a in the current permit has been removed and replaced with applicable provisions derived from the SMACT testing requirements in §63.1511 and §63.1512. This change clarifies the methods required for performing the once per 5-year SMACT compliance test for the Holding Furnaces. The specific conditions included in the revised permit are Conditions 3.a. through 3.c.
- Condition 4.n. in the current permit has been replaced with Condition 4.a. in the revised permit to more clearly demonstrate the OMM Plan requirements in §63.1510(b).
- Condition 4.k. in the current permit has been replaced with Condition 4.b. in the revised permit to more closely match the monthly equipment label inspection requirements in §63.1510(c).
- Condition 4.j. and 4.l. have been replaced with Conditions 4.c., 4.d., and 4.e. to more clearly demonstrate the feed/charge or aluminum production weight monitoring provisions in §63.1510(e).
- Condition 4.m. of the current permit has been replaced with Conditions 4.f. and 4.g. in the revised permit to more clearly demonstrate the flux injection rate monitoring provisions in §63.1510(j).
- Condition 4.h., 4.i., and 4.j. in the revised permit derived from the site-specific monitoring plan requirements in §63.1510(o) have been added to the permit to specify the required content for the plan.
- Condition 5.a in the revised permit specifying the general SMACT recordkeeping requirements has been added to the permit.
- Conditions 5.i. and 5.j. of the current permit have been replaced with Condition 5.b. in the revised permit to specify in more detail all records that are required to be kept for the Holding Furnaces under §63.1517(b).
- Various conditions in Section 6 derived from the applicable reporting requirements in §63.1510 and §63.1516 have been added to the permit to outline the SMACT reporting requirements applicable to the Holding Furnaces. The specific conditions included in the revised permit are Conditions 6.a. through 6.h.

Section B - DC1, DC2, and DC3 Flux Boxes:

- Condition 1.g. in the current permit has been replaced with Condition 1.a. in the revised permit which more closely matches the rule text from §63.1506(b) for proper unit labeling of the Flux Boxes.
- Condition 1.f. and 1.h. in the current permit has been replaced with Condition 1.b. in the revised permit to more accurately specify the feed/charge or aluminum production weight operating requirements from the §63.1506(d).

- Condition 1.c. has been updated to match the exact language in §63.1506(k)(4) for flux injection rate operating requirements.
- Condition 1.d. in the revised permit, derived from §63.1506(p), which specifies the proper corrective action to address operating limit deviations or excursions, has been added to further clarify Logan's operating requirements under the SMACT.
- Condition 1.a. of the current permit has been removed since by definition the Flux Boxes as in-line fluxers only process molten aluminum which is classified as clean charge under §63.1503.
- Condition 1.d. of the current permit has been removed since this condition cites the incorrect section of the SMACT and is redundant to Condition 1.c.
- Condition 1.e. of the current permit has been removed since as previously discussed the baghouse serving the Flux Boxes is no longer used for SMACT compliance purposes.
- Condition 2.c. in the current permit has been replaced with Condition 2.a. in the revised permit and the compliance demonstration method has been rephrased to more accurately reflect the fact that Logan is using the SAPU compliance option under §63.1505(k).
- Condition 2.b. of the revised permit derived from §63.1505(j)(5) has been added to demonstrate that Logan has a choice whether to comply with the SMACT emission limits based on the feed/charge or aluminum production weight.
- Condition 3.a in the current permit has been removed and replaced with a series of conditions derived from the SMACT testing requirements in §63.1511 and §63.1512. This change clarifies the methods required for performing the once per 5-year SMACT compliance testing of the Flux Boxes. The specific conditions included in the revised permit are Conditions 3.a. through 3.d.
- Condition 4.m. in the current permit has been replaced with Condition 4.a. in the revised permit to more clearly demonstrate the OMM Plan requirements in §63.1510(b).
- Condition 4.k. in the current permit has been replaced with Condition 4.b. in the revised permit to more closely match the monthly equipment label inspection requirements in §63.1510(c).
- Condition 4.l. and 4.i. have been replaced with Conditions 4.c., 4.d., and 4.e. to more clearly demonstrate the feed/charge or aluminum production weight monitoring provisions in §63.1510(e).
- Condition 4.j. of the current permit has been replaced with Conditions 4.f. and 4.g. in the revised permit to more clearly demonstrate the flux injection rate monitoring provisions in §63.1510(j).
- Condition 5.a in the revised permit specifying the general SMACT recordkeeping requirements has been added to the permit.
- Conditions 5.g. and 5.h. of the current permit have been replaced with Condition 5.b. in the revised permit to specify in more detail all records that are required to be kept for the Flux Boxes under §63.1517(b).

- Various conditions in Section 6 derived from the applicable reporting requirements in §63.1510 and §63.1516 have been added to the permit to outline the SMACT reporting requirements applicable to the Flux Boxes. The specific conditions included in the revised permit are Conditions 6.a. through 6.h.

Section D - SAPU Calculations:

- Condition D.2.d, in the current permit has been updated to more accurately reflect the SAPU emission limit provisions in the §63.1505(k). Based on recent U.S. EPA guidance documents regarding implementation of the SAPU compliance approach and on-going communications with U.S. EPA Region 4, Logan has determined that the SAPU emission limits are fixed quantities that only change if new performance testing is completed. As such, the SAPU compliance provisions in the current permit have been clarified to reflect this guidance.
- The compliance demonstration methodology for Condition D.2.d in the current permit has been updated to reflect the differences between demonstrating initial and on-going compliance with the SAPU emission limits in accordance with §63.1513(e) and §63.1510(u), respectively, and to more clearly delineate Logan's options for complying with the applicable SMACT emission limitations (i.e., individual compliance based on performance testing alone or SAPU compliance based on on-going SAPU emissions tracking).

REMOVING REDUNDANT ANNUAL OPERATING LIMITS:

Pursuant to Conditions D.2.e and D.2.f of the current Title V permit, Logan is subject to two grouped PSD avoidance limits for certain regulated pollutants (namely PM, VOC, and NO_X). These PSD avoidance limits cap actual emissions from the "base" and "expansion" plants (emission unit groupings based on construction dates of affected units) to less than the defined PSD major source thresholds applicable to the facility when the limits were instituted, i.e., 250 tpy. The emission units that are included in the base plant were collectively subject to a PSD avoidance limit in the original operating permit for the initial Russellville plant. On March 26, 1997, the Division issued Permit Number F-97-003 covering the installation of the DC3 production line (in Remelt) and a new Cold Mill 3, with all the associated modifications to existing emission units in the base plant required to accommodate the increased aluminum production from the plant expansion. Logan agreed to take a second 250 tpy PSD avoidance limit on actual emissions for the same pollutants as the base plant limit for the units affected by this permit action, the "expansion" plant.[2]

The compliance demonstration methodology for the two PSD avoidance emissions limits requires Logan to maintain an emissions tracking system that uses monthly production, fuel usage, and raw material usage data and conservative and well documented actual emissions factors to calculate the

2 As discussed during the pre-application meeting, although Logan is not proposing any changes to the form or compliance demonstration methodology of the current PSD avoidance limits in the Title V permit, future modifications to emission units covered in the avoidance limits which significantly increase actual emissions may require Logan to revisit these emission limits to address the fact that the limits are only applicable to the units as they existed when the limits were established and not as they exist after any future modifications.

emissions of PM, VOC, and NO_X on a short-term (monthly average hourly emissions) and 12-month rolling average basis.[3] Therefore, Logan is able to definitively assess compliance with the two 250 tpy PSD avoidance limits applicable to the facility on a monthly basis both in the short-term and for previous 12-month periods. These 12-month rolling emission calculations used for assessing compliance with the PSD avoidance limits are submitted to KDAQ's Bowling Green Regional Office in the semiannual monitoring report in accordance with Condition F.5. of the permit allowing the Division to confirm that Logan is maintaining compliance with these avoidance limits.

At various time in the permitting history of the plant, annual aluminum production, fuel usage, and raw material usage operating limits for units covered in the base and expansion plant have been added to Logan's air permit. The inclusion of these operating limits occurred consistent with the agency's pre-Title V permit program policies of incorporating production data represented on application forms into air permits, even when synthetic limitations on operations were not otherwise required to avoid applicability to a regulation or permitting requirement. In retrospect, production rates represented in past applications were provided for documentation purposes and were never intended to be included in the permit as operating limits.

The current operating limitations that are described here are, for the most part, basic production or raw material or fuel usage inputs included in the plant's compliance tracking tool that become the basis for determining the emissions contribution from each of the affected units included in the two PSD avoidance groups. They are entirely redundant with the emission limitations taken for PSD avoidance purposes as Logan's operations are inherently restricted to production levels that will maintain compliance with the emission limits.[4] Therefore, Logan has requested the removal of all annual production, fuel usage, and raw material usage operating limitations in Section B.1. of the revised permit for all emission units included in either the base or expansion plant. Revisions to the permit concerning the removal of annual operating limits are shown in the revised permit provided in Appendix B of the application.

REMOVING HOURLY OPERATING LIMITS:

Certain emission units at the Russellville plant are also currently subject to hourly (based on a monthly average) operating limitations on aluminum production that were established absent any regulatory basis. Similarly, emission units in the hot and cold rolling mills, the Reversing and Finishing Mills and Cold Mills 1-3, respectively, are subject to monthly coolant usage limits that are not derived from any applicable regulation. As these units are not subject to any corresponding short term emission limitations besides the generally applicable process weight rule PM emission limitation from 401 KAR 59:010, hourly operating limitations are not required to ensure compliance with any applicable emission limitations. Therefore, Logan requested that these short-term

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3 Annual potential emissions of all other regulated pollutants from the base and expansion plants are less than 250 tpy as documented in the supporting PTE calculations provided in Appendix D of the application. Therefore, actual emissions tracking for these units is unnecessary.

4 The compliance demonstration methodology for Conditions D.2.e. and D.2.f in the current permit requires Logan to track monthly operating parameter data for all units in the base and expansion plant. Therefore, operating parameter data will be tracked on a monthly basis regardless of whether the current operating limitations are in place.

operating limits be excised from the permit.[5]

Finally, Logan will not make any physical changes or changes in the method of operation to any emissions generating unit at the Russellville plant without first evaluating whether the Division needs to be notified of the change through a formal permit action. Such evaluations will be made on a case-by-case basis at the time of planning for any applicable change. Accordingly, Logan is requesting the removal of all monthly average hourly aluminum production and monthly coolant usage operating limits in Section B.1. of the permit as reflected in the revised permit provided in Appendix B of the application.

REVISIONS TO SIP DERIVED PERMIT CONDITIONS:

While Logan is not proposing to remove any existing permit conditions derived from Kentucky SIP regulations, some administrative changes to clarify the regulatory basis and to more accurately reflect the rule language are being proposed as discussed in the following subsections:

Conditions from 401 KAR 53:010:

401 KAR 53:010 establishes ambient air quality standards (AAQS) for hydrogen fluoride (HF) and total fluorides for the state of Kentucky that typically apply to sources with expected or measurable fluoride emissions. Logan charges a solid reactive salt flux to the Swarf Furnace that contains potassium aluminum fluoride, $KAlF_4$, and, as a result, the Swarf Furnace is a source which has the potential to emit fluoride-containing compounds. Based on this operational practice for the Swarf Furnace, the Division has included an explicit reference to the fluoride AAQS in Condition B.2.d for the Swarf Furnace in Logan's current Title V permit. This condition states that fluoride emissions from the Swarf Furnace cannot cause an exceedance of the secondary gaseous fluoride AAQS [expressed as hydrogen fluoride (HF)] for all averaging periods (12-hour, 24-hour, one week, and one-month). The current compliance demonstration methodology for this permit condition states "compliance with the fluoride ambient air quality standard shall be determined through monitoring and recordkeeping".

As an alternative to that requirement, Logan has conducted a screening modeling analysis which demonstrates that, based on the current flux injection rate limits for SMACT compliance purposes, the Swarf Furnace cannot cause any exceedances to the fluoride AAQS. As described in Appendix F of the application, Logan has used a conservative mass balance approach to estimate HF emissions based on the current flux injection rate limit for the Swarf Furnace (i.e., assuming all fluorides in salt flux is emitted as HF). Along with stack parameter data from the most recent SMACT performance test, Logan has applied this mass balance derived potential HF emission rate in the EPA regulatory guideline model for screening modeling analyses, SCREEN3, to demonstrate that Logan is in compliance with the applicable fluoride AAQS listed in Condition B.2.d. of the current permit (Condition B.2.f. in the revised permit) for the Swarf Furnace (results are shown below). Appendix F contains a presentation of the HF emission calculation methodology with all assumptions and basis

5 Logan demonstrates compliance with the 401 KAR 59:010 emission limitations through the operation of baghouses and other PM control devices that are continuously operated in conjunction with the following emission units: Multichamber Furnace, Scrap Processing System, Swarf Furnace, Flux Boxes, Electric Induction Furnace, Skimming House, Reversing and Finishing Mills, and Cold Mills 1-3. Therefore, compliance with the 401 KAR 59:010 is assured without the need for additional operating limitations.

for inputs documented, a complete description of the screening modeling methodology that was employed, and copies of the input and output modeling files from SCREEN3.

SCREEN3 Modeling Results Summary

Averaging Period for Standard	Averaging Period for Compliance Assessment**	Primary AAQS (μg/m3)	Secondary AAQS (μg/m3)	Multiplying Factor for 1-hr Modeling Results***	Maximum Impact (μg/m^3)	Distance to Maximum Receptor (feet)	Maximum Impact at Fenceline (μg/m^3)	Distance to Fenceline**** (feet)
12-hour*	8-hr	--	3.68	0.7	0.48	422	0.44	600
24-hour*	24-hr	800	2.86	0.4	0.28	422	0.25	600
1-week*	24-hr	--	1.64	0.4	0.28	422	0.25	600
1-month*	24-hr	--	0.82	0.4	0.28	422	0.25	600
Annual	Annual	400	--	0.08	0.06	422	0.05	600

* Not to be exceeded more than once per year.

** SCREEN3 only produces modeling results for 1-hr averaging period and U.S. EPA screening modeling guidance only provides adjustment factors to obtain 3-hr, 8-hr, 24-hr and annual modeling results. Therefore, Logan has used the averaging period from EPA modeling guidance which most closely matches the averaging period for the standard. Short-term averaging periods generally yield higher modeling results, so to be conservative the 24-hr average modeling results were used to assess compliance with the 1-week and 1-month standards.

*** From Section 4.2 Step 5 of U.S. EPA Guidance Document entitled *Screening Procedures for Estimating the Air Quality Impact of Stationary Sources* (EPA-454/R-92-019), October 1992.

**** Estimated distance between baghouse stack and closest point on fenceline based on aerial photo.

Based on the results of the fluoride AAQS screening modeling analysis, Logan has requested that the compliance demonstration methodology be revised to refer to the results of the modeling analysis submitted with this Title V renewal application rather than to any on-going monitoring or recordkeeping. By this method, any future inquiries regarding the basis for this permit condition will lead to the comprehensive discussions provided here and in Appendix F. After reviewing the modeling results, the Division concurs with the requested compliance determination methodology and has modified the permit accordingly.

Conditions from 401 KAR 59:010:

In the current permit all process weight based PM emission limitations from 401 KAR 59:010 Section 3(1)(a) are represented explicitly in numerical form as both hourly (monthly average) and annual limits. The current permit does not provide the underlying process weight equation from Appendix A of 401 KAR 59:010 that was used to calculate the explicit hourly limits. In the renewal permit, the PM emission limitations are generically represented. All permit conditions derived from 401 KAR 59:010 Section 3(1)(a) provide the appropriate emission limit algorithm. The compliance demonstration methodology for the process weight rule PM emission limits in Condition D.2.c of the revised permit remains unchanged.

As 401 KAR 59:010 has no provisions that require affected facilities to limit PM emission on an annual basis and the current annual limits in the permit are simply the associated hourly limits converted to an annual basis assuming continuous operation, the annual PM emission limits in the current permit have no regulatory basis and compliance with them is implicit based on compliance with the corresponding hourly limit. Therefore, the annual PM emission limitations have been removed from Section B.2. o f the revised permit for all affected facilities.

For consistency and to prevent unnecessary repetition of identical permit conditions, the monitoring and recordkeeping provisions associated with the PM emission limitations have been moved from 401 KAR 59:010 Section 3(1)(a) to Sections D.4. and D.5. of the permit, respectively.

Conditions from 401 KAR 59:015:

Boilers 1-3 [Title V Unit 15(4021-A)] are affected facilities under 401 KAR 59:015.[6] While all applicable provisions from 401 KAR 59:015 are included in Section B of the current permit for Boilers 1-3, the following administrative changes to the permit conditions for Boilers 1-3 have been made:

- Condition 2.a. in the current permit has been replaced with Conditions 2.a. and 2.b. in the revised permit to more explicitly reflect the opacity standards from 401 KAR 59:015 Section 4(2).
- Condition 2.b. in the current permit derived from 401 KAR 59:015 Section 4(1)(c) has been replaced with Condition 2.c. in the revised permit. The existing condition has been revised by removing the hourly PM emission limit since compliance with the limit is implicit (i.e., the hourly limit was derived by multiplying the fuel based limit by the maximum rated capacity of the unit). Also, the applicable algorithm for calculating the allowable PM emission rate and the associated maximum source heat input capacity has been added. The compliance demonstration methodology for the fuel based PM emission limit remains unchanged, but the references to the hourly and annual emission limit have been removed.
- Condition 2.c. in the current permit derived from 401 KAR 59:015 Section 5(1)(c) has been replaced with Condition 2.c. in the revised permit. The existing condition by removing the hourly SO_2 emission limit since compliance with the limit is implicit as in the case of the PM emission limit. Also, the applicable algorithm for calculating the allowable SO_2 emission rate and the associated maximum source heat input capacity has been added. The compliance demonstration methodology for the fuel based SO_2 emission limit remains unchanged, but the references to the hourly and annual emission limit have been removed.

Conditions from 401 KAR 59:185:

The Parts Washer in the Cold Mill 3 Area is the only affected facility under 401 KAR 59:185 in operation at the Russellville plant. The current permit conditions appropriately cite many of the applicable operating and control device requirements in the rule. For the sake of completeness, however, conditions 1.d. through 1.h. derived from 401 KAR 59:185 Section 4(2) have been added. Some minor changes to the permit condition language derived from 401 KAR 59:185 have been made to more closely match the rule text.

Conditions from 401 KAR 63:021:

Logan is subject to monthly average hourly air toxics emission limits that apply to a group of affected units originally subject to the provisions of the since repealed SIP regulation, 401 KAR 63:022. The compliance demonstration method for these air toxics emission limits requires Logan to

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6 Boiler 4 and the associated Soot Blower and Baghouse were never installed. Therefore, any permit conditions addressing these units have been revised or removed from the permit entirely.

calculate the emission rates of each toxic air pollutant for each affected emission unit using actual monthly production data, a KYEIS emission factor, and the total monthly hours of operation. Based on the air toxics emissions analysis presented in Appendix G of the application, Logan has demonstrated that the potential emissions of each toxic air pollutant from the group affected units under 401 KAR 63:022 are less than the 20% of the allowable rates specified in the current permit (with the potential rates less than 2% of the allowable for all pollutants except aluminum metal and oxides and arsenic). Therefore, Logan proposed and the Division concurred that it was appropriate to revise the compliance demonstration methodology for the air toxics emission limits to refer to the contents of this permit action rather than to require on-going tracking of actual air toxics emissions.

REVISIONS BASED ON CHANGES IN APPLICABLE REGULATIONS:

Conditions from NSPS Subpart Kb:

As reflected in the group requirements for volatile organic storage tanks in Section B of Logan's current Title V permit, certain volatile organic liquid (VOL) storage tanks at the Russellville plant were originally affected sources under NSPS Subpart Kb. The U.S. EPA promulgated changes to the applicability criteria for NSPS Subpart Kb on October 15, 2003 making Subpart Kb no longer applicable to the storage vessels listed below.[7]

- **CM3 Tanks TA01, TA02, and TA05** [Title V Emission Unit ID: 24(3040-5)];
- **Castor Oil Tank** [Title V Emission Unit ID: 45(1004-1)];
- **WS Tank 4** [Title V Emission Unit ID: 48(4021-10)]; and
- **WS Tanks 6B and 8** [Title V Emission Unit ID: 24(4021-10)].

When the original NSPS Subpart Kb applicability determination for these tanks was made, any VOL storage tanks larger than 10,568 gallons were affected facilities under Subpart Kb. Based on the current version of the rule, only VOL storage vessels with a capacity greater than 19,812 gallons are affected facilities. The Castor Oil Tank and Cold Mill 3 Tanks TA05 both have capacities in the range of 10,568 to 19,812 gallons, and therefore, are no longer considered affected facilities under NSPS Subpart Kb based on the most recent rule changes.

In addition to the capacity criteria, the current version of NSPS Subpart Kb has applicability exemptions based on the vapor pressure of the liquid being stored not included in previous versions of the rule. Pursuant to §60.110b(b), Subpart Kb is not applicable to storage vessels with a capacity greater than or equal to 151 m^3 (39,890 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kPa (0.51 psia). Cold Mill 3 Tanks TA01 and TA02 and Water Services (WS) Tanks 4, 6B, and 8 all have capacities greater than 39,890 gallons and store volatile organic liquids with maximum true vapor pressures less than 0.51 psia.[8]

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7 68 FR 59328, October 15, 2003

8 Refer to original Title V permit application submitted on May 29, 1997 for demonstration that tanks store volatile organic liquids with a maximum true vapor pressure less than 0.51 psia.

As demonstrated in the original Title V permit application for the Russellville plant each of the tanks listed above have potential emissions less than 5 tpy of all regulated pollutants and 0.5 tpy of total HAPs and therefore, they meet the emissions thresholds for being classified as insignificant activities under 401 KAR 52:020 Section 6. In addition, these units are no longer subject to any federal requirements besides those that are generally applicable. As such, Logan requested that these storage tanks be removed from Section B of the permit and placed on the insignificant activities list in Section C of the permit as shown in the revised permit provided in Appendix B of the application. Logan also requested that NSPS Subpart Kb be removed from the list of applicable regulations for the Gasoline and Waste Solvent Tank 3 since these tanks have capacities less than 19,812 gallons.

Conditions from NSPS Subpart Ka:

Based on the informational notes included on the DEP7007 V form provided with the original Title V application regarding NSPS Subpart Ka applicability to Hot Mill Tanks 2 and 17, however, also Logan recognized that these tanks were affected facilities under Subpart Ka. Logan, inadvertently listed these tanks on the DEP7007 DD form leading the Division to list these tanks on the insignificant activities list. Hot Mill Tanks 2 and 17 store mineral oil coolant which has a "true vapor pressure" less than 10.3 kPa (1.5 psia) and a "Reid vapor pressure" less than 6.9 kPa (1.0 psia), and therefore, pursuant to §60.112a(a) and §60.115a(d)(1), these tanks are not subject to the control, testing, or recordkeeping requirements in Subpart Ka. These tanks are subject to Subpart Ka in name only and Logan's previous mistake in filling out the forms for the original Title V application would not have changed any compliance requirements in the current version of the Title V permit. To accurately reflect the fact that Hot Mill Tanks 2 and 17 are affected facilities under Subpart Ka, these units have been moved from the insignificant activities list to the Section B of the permit.

Although Water Service (WS) Tank was identified as a Subpart Kb affected source on the DEP7007 V forms submitted with the original Title V application, the current permit incorrectly identifies this tank as a Subpart Kb affected source. The tank was constructed before July 23, 1984 and has not been modified since, so the vessel is not an affected facility under Subpart Kb. The tank does, however, store petroleum liquids and has a capacity greater than 40,000 gallons and is therefore a Subpart Ka affected facility. WS Tank 6A stores a mineral oil coolant-water emulsion which has a "true vapor pressure" less than 10.3 kPa (1.5 psia) and a "Reid vapor pressure" less than 6.9 kPa (1.0 psia), and therefore, pursuant to §60.112a(a) and §60.115a(d)(1), it is not subject to the control, testing, or recordkeeping requirements in Subpart Ka. Although WS Tank 6A is subject to Subpart Ka in name only, to accurately reflect the fact that it is an affected facility under Subpart Ka and not Subpart Kb, changes to the list of applicable regulations for this tank have been made.

Conditions from 40 CFR Part 64 (CAM Rule):

Logan has developed CAM plans for all pollutant-specific emission units (PSEUs) at the Russellville plant listed below (see appendix E of the application for a copy of the CAM plans). For each PSEU indicated below, the control device monitoring Logan is proposing to comply with the applicable CAM requirements in 40 CFR Part 64 and the associated permit conditions updates required under §64.6(c) are briefly described.

- **Scrap Processing System** [Title V Emission Unit ID: 56(1010-1)]: The Scrap Processing System utilizes a baghouse to control PM emissions from the shredders, vibratory screeners, and conveyor transfer points in the system. The process weight rule PM emission limit derived from 401 KAR 59:010 and the PM emission limit for PSD avoidance are the only CAM eligible emission limitation applicable to the unit. Logan is proposing continuous operation of a bag leak detection system in conjunction with the baghouse to meet the applicable CAM requirements. The compliance demonstration methodologies for the 401 KAR 59:010 PM emission limitation and the PSD avoidance limit have been updated in the revised permit to reflect the proposed CAM approach for the Scrap Processing System Baghouse.
- **Multichamber Furnace** [Title V Emission Unit ID: 57(1011-1)]: A lime-injected baghouse serving the Multichamber Furnace collects PM emissions from the furnace itself and from dross cooling and storage areas. The process weight rule PM emission limit derived from 401 KAR 59:010 and the PM emission limit for PSD avoidance are the only CAM eligible emission limitation applicable to the unit. Logan is proposing continuous operation of a bag leak detection system in conjunction with the baghouse to meet the applicable CAM requirements. The compliance demonstration methodologies for the 401 KAR 59:010 PM emission limitation and the PSD avoidance limit have been updated in the revised permit to reflect the proposed CAM approach for the Multichamber Furnace Baghouse.
- **Swarf Furnace** [Title V Emission Unit ID: 26(1009-1A & B)]: PM emissions collected by hoods over the sidewell and main hearth door of Swarf Furnace are routed to a lime-injected baghouse. The process weight rule PM emission limit derived from 401 KAR 59:010 is the only CAM eligible emission limitation applicable to the unit. Logan is proposing continuous operation of a bag leak detection system in conjunction with the baghouse to meet the applicable CAM requirements. The compliance demonstration methodology for the 401 KAR 59:010 PM emission limitation has been updated in the revised permit to reflect the proposed CAM approach for the Swarf Furnace Baghouse.
- **Skimming House** [Title V Emission Unit ID: 56(1010-1)]: A baghouse is operated in conjunction with the Aluminum Skimming House to collect PM emissions generated as dross cools prior to storage and eventual shipment offsite. The process weight rule PM emission limit derived from 401 KAR 59:010 is the only CAM eligible emission limitation applicable to the unit. Logan is proposing daily differential pressure drop readings to meet the applicable CAM requirements. The compliance demonstration methodology for the 401 KAR 59:010 PM emission limitation has been updated in the revised permit to reflect the proposed CAM approach for the Skimming House Baghouse.
- **Reversing and Finishing Mills** [Title V Emission Unit IDs: 07(2015-1) and 08(2015-2), respectively]: The Reversing and Finishing Mills are equipped with inertial separators for the control of PM emissions generated as coolant is sprayed onto the rollers in each unit. The process weight rule PM emission limit derived from 401 KAR 59:010 is the only CAM eligible emission limitation applicable to the units. Logan is proposing daily differential pressure drop readings for each separator o meet the applicable CAM requirements. The compliance demonstration methodology for the 401

KAR 59:010 PM emission limitation has been updated in the revised permit to reflect the proposed CAM approach for the Reversing and Finishing Mill inertial separators.

OTHER MINOR PERMIT CHANGES:

The Coating Line [Title V Emission Unit ID: 09(6020-A)] is an affected source under NSPS Subpart TT and NESHAP Subpart SSSS for surface coating of metal coil. Consistent with Logan's intent to use its air permit at the main resource for determining its specific compliance obligations and similar to the types of changes made for the SMACT derived permit conditions described above, Logan is proposing various revisions to existing conditions for the Coating Line derived from NSPS Subpart TT and NESHAP Subpart SSSS and the addition of new conditions derived from previously applicable provisions that were not explicitly included the permit.
The following list provides a description of the existing NSPS and/or NESHAP permit conditions that have been significantly revised or removed and previously applicable NSPS and/or NESHAP provisions for which new permit conditions have been added for the Coating Line in Section B of the permit.

- Condition 1.e.i. in the current permit has been replaced with Condition 1.b. in the revised permit to provide the regulatory basis of the NESHAP derived operating limit for incinerator combustion temperature.
- Condition 1.e.ii. in the current permit has been moved to the compliance demonstration methodology for Condition 1.b. in the revised permit and has been reworded to make the compliance requirements for incinerator combustion temperature monitoring more clear.
- Condition 1.e.iii. in the current permit has been replaced with Condition 1.c. to more closely match the rule text for the capture system monitoring plan in §63.5150(a)(4).
- Condition 1.d in the revised permit derived from the incinerator combustion temperature operating requirements in §60.464(c) has been added to fully demonstrate the NSPS compliance requirements for the Coating Line.
- The compliance demonstration methodology for the organic HAP emission limitation from NESHAP Subpart SSSS (Condition 2.f. in the current and revised permits) has been revised to more accurately reflect the compliance demonstration requirements for a source using a capture system and incinerator to comply with applicable NESHAP emission limitation based on outlet organic HAP concentration in §63.5170(c)(4).
- Condition 3.a. in the current permit was revised by changing the wording to more accurately reflect the NESHAP performance test requirements of §63.5160(d).
- Condition 3.b. in the revised permit has been added to clearly define the method for establishing the incinerator combustion temperature operating limit during the initial performance test in accordance with §63.5150(d)(3)(i).
- Condition 3.c. in the revised permit has been added to describe the capture system performance criteria the must be met during a performance test in accordance with §63.5160(e).

- Condition 3.d. has been added to demonstrate the NSPS performance testing obligations in §60.463(b).
- Condition 3.b. in the current permit has been replaced with Condition 3.e. in the revised permit to clarify the regulatory intent of the PM emissions testing required for the Coating Line.
- Condition 4.j. in the current permit has been replaced with Conditions 4.a., 4.b. and 4.d in the revised permit to more clearly define the incinerator combustion temperature monitoring requirements in NESHAP Subpart SSSS and NSPS Subpart TT.
- Condition 4.l. in the current permit has been replace with Condition 4.c. in the revised permit to more closely match the rule language for PTE differential pressure monitoring in §63.5170(c)(4).
- Condition 4.k. in the current permit has been removed since incinerator residence time monitoring is not a requirement of either NESHAP Subpart SSSS and NSPS Subpart TT nor was it specified as a monitoring parameter in the capture system monitoring plan submitted in accordance with Condition 1.e.iii in the current permit.
- Condition 5.j. and 5.l. in the current permit have been replaced with Condition 5.a in the revised permit to provide all applicable NESHAP recordkeeping requirements from §63.5190(a) and not just those for incinerator combustion temperature and PTE differential pressure monitoring records.
- Condition 5.b. in the revised permit has been added to describe the NSPS incinerator combustion temperature records required to be kept under §60.464(c).
- Condition 5.k. in the current permit has been removed since the condition has no regulatory basis.
- Condition 6.d. in the current permit has been replaced with Conditions 6.a. through 6.f. in the revised permit to describe in more detail the applicable NESHAP reporting requirements in §63.5180.

Miscellaneous Minor Permit Changes:

Throughout the revised permit Logan has made a series of formatting changes and minor edits to permit condition language have been made that in no way affect the permit requirements applicable to the Russellville plant. In particular, the descriptions of the compliance demonstration methodology for all permit conditions in the subsections of Section B of the permit have been moved to a single location at the end of each subsection. A regulatory citation for all permit conditions derived from the applicable regulations for the emission units in Section B of the permit is included.

Previous Permitting Actions:

PUBLIC AND U.S. EPA REVIEW (FOR REVISION 4):

EPA did not object to the proposed permit, however, during the 45-day EPA comment period, the Division was in receipt of another set of comments from the U.S. EPA. The responses to the comments are as follows:

EPA Comment # 1 - Scrap Processing and Multichamber Furnace System

Since the new melting furnace will produce material that will be used in downstream process, it appears that downstream equipment throughput will increase as well. Were the emission increases from the downstream process taken into account when establishing the PSD avoidance limits for PM and NOx. Provide the calculations and data and assumptions to support the calculations.
Response:
No additional information or calculations to be provided. The new multi-chamber furnace is a new "plug-in" process addition for Logan's plant that will create molten aluminum from used beverage cans and other aluminum scrap that an outside company now provides to Logan. This project only displaces the type and source of input aluminum entering the process, and the molten aluminum will enter the process at the same location as that material received from outside. As such, this project does not enable or create any downstream throughput increases and no emissions from these units are needed for the PSD avoidance calculations. The Statement of Basis at the bottom page 2 has confirmed that "T(t)he proposed project will not directly affect the operation or utilization of the existing melting, casting, rolling, or finishing operations at the plant."

EPA Comment # 2 - 2. Emission Limitations
2.a. This condition references 63.1505(k), if the permit is going to allow the company flexibility to demonstrate compliance on individual basis or a SAPU, then there should be language in the section, that if the company wants to demonstrate on a SAPU basis then the limits that will be calculated using the equations in 63.1505(k) should be incorporated into the permit.
Response:
No changes necessary. Condition 2.a. already refers to 63.1505(k) applicability including the calculations, and the detailed language for the SAPU compliance approach are already included in Section D, Condition 2.d.(iii), page 90 of 109.

EPA Comment # 3 - Compliance Demonstration Method
Add language that SAPU will demonstrate compliance using the performance testing and the procedures in 63.1513(e).
Response:
No changes necessary. Detailed language for the SAPU compliance demonstration is already included in Section D, Condition 2.d.(iii), page 91 (middle of page) of 109.

EPA Comment # 4 - 3. Testing requirements
Add that the three aluminum scrap shredders should test in accordance to 63.1512(a).
Response:
63.1512(a) has been added in Section 3, Testing Requirements of the permit.

EPA Comment #5 - If the company wants to demonstrate compliance on a SAPU basis then reference the procedures needed to determine compliance should be incorporated into the permit.
Response:
No changes necessary. The detailed language for the SAPU compliance approach are already included in Section D, beginning at Condition 2.d.(ii), page 90 of 109 and continuing through page 92 of 109.

EPA Comment # 6 - 4. Specific monitoring Requirements
If the company selects to demonstrate on a SAPU basis then requirements in 63.1510(s), 63.1510(t)

should be listed or incorporated into the permit.
Response:
No changes necessary. The detailed language for the SAPU monitoring pursuant to these sections is already included in Condition 6.d on page 16 of 109 and Section D, Condition 4.(c) on page 95 of 109.

EPA Comment # 7 - 5. Specific Recordkeeping Requirements
5.b.iii. Include the language for each operating cycle or time period used in the performance test using the procedures in 63.1512(o).
Response:
No changes necessary. Condition 5.b.iii. actually references the reader back to Condition 3.d.iii on page 7 of 109, where the named regulation language from the applicable requirement is included.

EPA Comment # 8 - 5.c. Reference sections 63.1510(s) and (t) which are the procedures for calculating the 3-day, 24-hour rolling average. Section 63.1517(b)(17) are the specific recordkeeping requirements of the rolling average.
Response:
See response to EPA Comment #6 above where the language for the references is already made. Condition 5.e. actually references 1517(b) as well.
EPA Comment # 9 - 6. Specific Reporting Requirements
6.f.i. Must include the approved site-specific test plan.
Response:
In response to comment #9 and per source request, the following paragraph has been added to Section 3(a), Testing Requirement of the permit to address site-specific test plan:
The permittee must submit a site-specific test plan in accordance with procedures set forth at 63.1511(a) and 63.7(c) and conduct the initial performance tests within 90 days after the initial startup date for the aluminum processing system (per 63.1512(a)) and multichamber furnace (per 63.1511(b))."

EPA Comment # 10 - 6.f.ii. Labeling requirements are described in 63.1506(b).
Response:
No changes necessary. The condition cited already refers to reader to Condition 1.a. on page 2 of 109 where the regulatory citation is made.

EPA Comment # 11 - Cold Mill
1. Operating limits
1.a. Why did the pound per hour and the tons per year of total aluminum processed for cold mill 2 increase?

1.b. Why did the gallons per month and gallons per year of mineral oil usage for cold mill 2 increase?
Response:
No changes needed. The aluminum processing throughput rates and mineral oil usage limits for Cold Mill 2 were requested and approved by the Kentucky Division of Air Quality in late 2004 and early 2005, and were just now incorporated into this revision of the Title V permit as they were not included in Revision 3 just completed and issued in November 2006. This project is not related to

the multi-chamber furnace project.

EPA Comment # 12 - Coating line #1
1. Operating limitations
1.b. Why did the total annual coating usage increased from 2,125,000 gallons per year to 2,350,000 gallons per year?
Response:
No changes needed. The total annual coating usage limits for Coating Line #1 were requested and approved by the Kentucky Division of Air Quality in 2005, and were just now incorporated into this revision of the Title V permit as they were not included in Revision 3 just completed and issued in November 2006. This project is not related to the multi-chamber furnace project.

Proposed (Revision 4):

Public notice was placed in the News Democrat & Leader on December 19, 2006. The comment period ended on January 18, 2007. No comments were received during the 30-day comment period. The U.S. EPA has 45 days to comment on this proposed permit.

Change(s) to Permit (Revision 4):

Comments**:**

1. On November 7, 2006 the Division was in receipt of nine significant comments from Mr. Art Hofmeister concerning the minor revision of the Title V Permit V-03-017 (Revision 3). The Division requested that EPA relegate comments 8 and 9, if needed, for further discussion as part of significant Revision 4 to the Title V Permit for a new capital project. With the completion of Revision 4, responses from the source to comments 8 and 9 were accepted and finalized by the Division and the EPA.
Furthermore, Logan Aluminum is taking limits to avoid the PSD applicability and, therefore, Logan will be classified as a Title V/ Synthetic Minor source.

Item # 8:
☐For Swarf Furnace (26) under Section B. 2.c.iii, Holding Furnaces (04, 17 and 42) under Section B. 2.c.ii and Flux Boxes (22) under Section B. 2.c.ii, a modified language has been inserted for the SAPU Compliance Demonstration Method and formulas in Subpart 63.1505 (k), 63.1513 (e) and 63.1510(t) have been inserted in Section D for Emission Limitation, Compliance and Monitoring requirements respectively.

Item # 9:
☐ Logan produces rolled aluminum from ingots that are cast at the facility from molten aluminum or from imported ingots. Therefore, the facility is currently classified under Standard Industrial Classification (SIC) code 3353, "Aluminum Sheet, Plate, and Foil". This classification covers establishments primarily engaged in flat rolling aluminum and also producing similar products by continuous casting.
☐ Logan does not believe that EPA intends to regulate aluminum rolling mills in the same category as secondary metal production plants under the NSR permitting program. The primary function of a

secondary metal production plant is to smelt various pre- and post-consumer aluminum scraps to produce molten aluminum or hard aluminum charges (sows, pigs,T-bars, ingots) that are distributed to facilities like Logan.
☐ Although remelting of aluminum charges occurs at the Logan facility, these activities are not the primary source of emissions and are secondary to the primary function at the plant. Nearly all of the aluminum received at the facility is in the form of molten or hard charge aluminum.
☐ Given that KDAQ has previously and consistently agreed that the Logan facility is not classified as a secondary metal production plant, the existing PSD avoidance limits are correctly placed at the level of 250tpy.
☐The only reason certain emission units are included in both the original plant PSD avoidance limit and the expansion project avoidance limit is for administrative purposes based on how the emissions are calculated and monitored.

2. With the new additions, Logan Aluminum will become a secondary aluminum facility and its new SIC code will be 3353/3341

3. New units (EPs) have been added to Sections B and C of the permit.

Source Description:

Logan Aluminum owns and operates a rolled aluminum facility in Russellville, Kentucky (Logan County). The facility is a major source under the Title V operating permit program and currently operates in accordance with Kentucky Division for Air Quality (KDAQ) Title V operating permit V-03-017 (Revision 3), issued on November 21, 2006. The permittee is seeking a modification to its existing Title V permit, in accordance with 401 KAR 52:020, authorizing the installation of a new multichamber furnace system and associated support equipment. New emission units that will be defined as a result of this project consist of the following:

1. 1010-1 Scrap Processing System
2. 1011-1 Multichamber Furnace System
3. 1012-1 Multichamber Furnace Crucible Preheat Station (Insignificant Activity)

The multichamber design, which represents the state-of-the-art in aluminum melting technology, will provide significant energy and environmental benefits as compared with traditional rotary or reverberatory style aluminum scrap melting furnaces. The permittee will be the first company to implement this technology in the United States. The permittee will utilize the proposed equipment to process a wide variety of clean and coated aluminum scraps, including used beverage cans (UBC), new and old painted siding, lithographic printing scrap, mixed low copper scrap, and Class 1 and 3 aluminum scraps.

The proposed project will not directly affect the operation or utilization of the existing melting, casting, rolling, or finishing operations at the plant. Completion of the project will provide the facility greater flexibility and control in ensuring that a sufficient and economical supply of molten aluminum is available to meet the plant's needs.

The new scrap processing and furnace system will be a source of certain criteria and hazardous air

pollutant emissions. Particulate matter emissions that may be released during the processing, shredding, and conveying of aluminum scraps will be collected and controlled in a high-efficiency baghouse system. Emissions from the multichamber furnace operations, lower by design than other types of aluminum melting furnaces, will be further minimized through use of a lime-injected high-efficiency baghouse system. The lime-injected baghouse will also provide control for particulate matter, HCl and other trace contaminants.

Source Classification:

Logan Aluminum is located in Logan County, which has been designated by U.S. EPA as unclassified/attainment for all criteria pollutants. Therefore, with respect to the federal New Source Review permitting program, only Prevention of Significant Deterioration (PSD) requirements could potentially apply to the proposed project. KDAQ has incorporated the requirements of the PSD permitting program into its State Implementation Plan (SIP) at 401 KAR 51:017. These PSD regulations specifically define 28 industrial source categories for which the "major" source threshold is 100 tpy of any regulated pollutant.[9] The major source threshold for facilities not on this "List of 28" is 250 tpy. The primary function of Logan's facility is to produce ingots and roll those ingots into aluminum coils which are coated. As such, the Russellville facility is classified under SIC 3353 (Aluminum Sheet, Plant and Foil Plants). This classification of facility is not included on the "List of 28" source categories.[10] Thus, consistent with past determinations by KDAQ, the major source threshold under the PSD program for the facility is 250 tpy of a regulated pollutant. Since the potential emissions of at least one regulated air pollutant (e.g., VOC) currently exceeds 250 tpy, the Logan facility is classified as an existing major source under the PSD program.

401 KAR 52:020 specifies the provisions of Title V operating program in Kentucky. As specified in 401 KAR 52:001, Section 1(46), a major source with respect to the Title V regulations encompass facilities with potential emissions of 100 tpy of any regulated pollutant, 10 tpy of any single HAP and/or 25 tpy of any combination of HAPs. The Russellville plant is an existing major source and is currently operating under a Title V operating permit No. V-03-017 (Revision 3), issued on November 21, 2006. As existing potential emissions of HCl exceed 10 tpy, the Logan facility is also classified as an existing major source of HAPs.

The only emission increases associated with the project are those tied to the newly installed emission units. The potential NO_X and PM_{10} emissions from the proposed modification will be limited to less than 40 and 15 tpy, respectively, by newly established emission limits. Emission limits will not be necessary for other criteria pollutants since their uncontrolled maximum potential emissions will be less than PSD Significant Emission Rates. The emission limits for the affected equipment are included in Condition 2.c. in Section B of the permit. The table on the following page provides a comparison of the potential emission increases from the proposed project with the PSD significant emission rates. The furnace emissions during startup, shutdowns, and emergency shutdown periods

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[9] 401 KAR 51:001, Section 1 (120)(a)(1)(b)

[10] Although "secondary metal production plants" are included on the List of 28, EPA has established that facilities classified under SIC 3353 (Aluminum Rolling Mills) are not considered a secondary metal production plant. (Refer to memo from Mr. Edward Reich, EPA titled "PSD Applicability of Aluminum Rolling Mills", March 29, 1982, www.epa.gov/ttn/nsr/psd1/p3_20.html.)

will be less than during normal operation. Therefore, these emissions will have no impact on the potential emissions from the project. Fugitive emissions also are not included in the annual emissions total for making a PSD applicability determination since the Logan facility does not belong to any of the specifically defined source categories in 401 KAR 51:017 Section 7(1)(c), for which this is required.

Comparison of Project Emissions to PSD Thresholds:

Pollutant[1]	Potential Emissions Increase (tpy)	PSD Significant Emission Rate (tpy)[2]	PSD Triggered?	Emission Limit Proposed?
PM	13.8	25	No	No
PM_{10} (and $PM_{2.5}$)[3]	13.8	15	No	**Yes**
NO_X	39.8	40	No	**Yes**
CO	16.6	100	No	No
VOC	10.8	40	No	No
SO_2	<< 40	40	No	No
Pb	<< 0.6	0.6	No	No
Fluorides	<< 3	3	No	No

1. Only regulated PSD pollutants that could be associated with the proposed type of emission units are listed.
2. 401 KAR 51:001, Section 1 (221)(a).
3. Per EPA guidance, PM_{10} is used as a surrogate to address PSD applicability for $PM_{2.5}$ until SIP revisions implementing the $PM_{2.5}$ standard have been approved. (Refer to memo from John Seitz, EPA, "Interim Implementation of New Source Review Requirements for $PM_{2.5}$", October 21, 1997, www.epa.gov/ttn/caaa/t1/memoranda/pm25.pdf.)

Proposed Construction Project:

Scrap Processing and Shredding System

Scrap will be delivered by truck and off-loaded via fork lift trucks to bunkers and segregated storage areas both inside and outside the new building enclosure. "Clean" scrap types, such as Class 1 and 3 scraps and lithographic scrap generally will not require preprocessing prior to charging in the furnace. These clean scraps will be stored in bunkers, and then will be picked up via front-end loaders and transported to the charging bin of the furnace. "Dirty" scrap types, such as UBCs (in briquette or bale forms) and used painted siding, will be sorted and arranged for processing through a shredder system. The shredding system will consist of three low-speed, high torque shredders.

The scrap processing system (EU 1010-1) will be a minor source of particulate matter emissions, resulting from the release of dirt and other contaminants as the material is handled and shredded. Although the total emissions generated will be low, the permittee will install a capture system to route particulate matter generated from the conveying and shredding processes to a new baghouse system. Exhaust from the baghouse will be discharged out a new dedicated stack, which will be located outside the north end of the expanded production building with the baghouse.

Multichamber Melting Furnace:

The multichamber furnace will be designed to handle and melt a variety of scrap types, including scrap that contains organic and inorganic contaminants (oil, paint, plastic, etc.). The nonmetallic

contamination in the scrap charge generally will be limited to 5% or less. The furnace will operate on a continuous basis except during periods of refractory relining, major cold maintenance, general maintenance and unscheduled downtime. Taking into account expected utilization on an annual basis, the furnace will be capable of producing approximately 200 million pounds of molten aluminum per year. Actual annual production will be less than this amount.

The ability of the multichamber furnace to accept and process both clean and contaminated scraps directly, while still providing high metal yields with less energy demand, is derived from the its use of three chambers located within a single integrated furnace. The three chambers are termed the preheat shaft chamber, the melting chamber, and the main chamber. The preheat shaft is a vertical cell within the melting chamber and is open at the top and bottom. Scrap is loaded into the preheat shaft from the top. Hot gases from the melting and main chambers are vigorously recirculated up through the scrap, gasifying the organic coatings and preheating the metal. The melting chamber is then flooded with molten aluminum causing scrap to flow out of the bottom of the shaft as it is submerged into the molten aluminum. The molten aluminum is circulated via electromagnetic pumps between the melting chamber and main chamber. Inside the main chamber, natural gas fired regenerative burners provide heat to keep the molten aluminum at the desired temperature. Hydrocarbons and carbon monoxide generated from the gasification of contaminants on the scrap are also oxidized in the main chamber providing energy input that is directly recovered, thereby minimizing the natural gas used. In addition, because the gasification of hydrocarbons on the scrap is done in the multichamber furnace, the scrap does not have to be heated, cooled and then reheated in a separate furnace, also reducing the total energy required to produce the molten aluminum.

Due to the design of the multichamber furnace, the furnace will operate with either little or no salt flux addition, while still achieving high yields. Therefore, the emission rate of HCl and HF from the furnace will be low. Moreover, the low flux usage will prevent the generation of solid waste. When necessary, the permittee will utilize a magnesium chloride reactive flux in the furnace. Thus, except for residual amounts of fluoride that may be present on the scrap, there will no source of fluoride introduced in the furnace and HF emissions from the furnace will be negligible.

The multichamber furnace will be equipped with a high efficiency baghouse system. The baghouse will be equipped with a bag leak detector and lime will be injected into the air stream upstream of the baghouse, which will accumulate in the filter cake on the filter bags. Lime usage will be monitored by a mass flow meter and will be maintained at or above the rate established during the most recent performance test of the system. The baghouse will capture the reacted lime and other particulate matter from the melting process, which will then be disposed on-site at the existing landfill or reused in the injection system.

Despite the low oxidation losses achieved by the multichamber furnace, dross will still form in the furnace because of inorganic contaminants in the scrap (e.g., paint and plastic contain 20-25% of inorganic fillers). As the dross produced will contain approximately 80-90% aluminum, the permittee will ship it out to a separate facility that will recover the aluminum. Dross will be removed from the melting chamber and main chamber of the furnace on a daily basis. Minimal emissions will be generated during the dross removal operations. Hoods situated over the side walls of the furnace (one for the melting chamber and one for the main chamber) will capture any residual fumes released and route them to the baghouse system.

After dross is transferred to the dross pans, the pans will be transported by fork trucks to a staging area near the new furnace to cool. This staging area will be hooded to capture residual fume released as the dross cools, and to route these fumes to the baghouse system. After the dross is cooled, it will be moved and stored temporarily in a new 4,000 sq ft. dross house building, which will be built adjacent to but separate from the existing dross house storage building. Particulate matter will be drawn from this new storage building and sent to the multichamber baghouse system. The dross will be shipped to an outside dross processor for metal recovery.

Crucible Pre-Heat Stations:

Molten aluminum tapped from the multichamber furnace will be pumped up into pre-heated crucibles, which serve as intermediate storage and transfer vessels. The crucibles will be carried by a molten metal transport vehicle to the existing reservoir furnace (1008-1) or melting furnaces (DC1 [1005-1A&B], DC2 [1005-4A&B], or DC3 [1006-2]), to which the molten aluminum will be transferred. The transfer process will be essentially the same as currently used when transferring molten aluminum from crucibles received at the facility by truck into these furnaces. Thus, no changes to the existing furnaces will be required to accommodate the new supply of molten aluminum from the multichamber furnace.

The permittee will construct two new crucible preheat stations, which will be used for holding filled crucibles at temperature or for preheating crucibles to prepare them to receive molten aluminum. Each preheat station will be equipped with a natural gas fired burner, which provides direct heating to the crucible vessels. The burners for each station will have a maximum heat input capacity of 4 MMBtu/hr. Other than the combustion products from the natural gas burners, there would be no other quantifiable emissions associated with crucible stations and crucible filling operation.

Type of Control and Efficiency:

The permittee will control the emissions from the multichamber furnace, dross cooling and storage operations using a lime-injected baghouse. The emissions from the scrap processing system will also be controlled by a baghouse system. The permittee will install and operate a bag leak detection system to meet the monitoring requirements for the lime-injected baghouse. A bag-leak detection system will also be installed on the scrap processing system baghouse. The permittee will have procedures in place to initiate corrective action within 1-hour of any alarm of the bag-leak detectors and complete the corrective action procedures in accordance with the OM&M plan. The permittee will operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period. The permittee will maintain the 3-hour block average inlet temperature for the lime-injected baghouse at or below the average temperature established during the performance test, plus 14°C (plus 25 °F). The permittee will also maintain the free-flowing lime in the hopper to the feed device for the lime-injected baghouse at all times and maintain the lime feeder setting at the same level established during the performance test. The particulate matter control efficiency of the scrap processing system baghouse and lime-injected baghouse will be at least 95%. The HCl control efficiency of the lime injected baghouse will be at least 90%.

Emission Factors and Their Source:

Emissions from Scrap Processing System:

The PM_{10} emissions from the scrap processing system baghouse will be limited to 1.5 lb/hr. Therefore, the potential PM_{10} emissions from the scrap processing system will be 1.5 lb/hr (6.57 tpy) for permitting purposes. Compliance with the emission limit of 1.5 lb/hr will also assure compliance with the 40 CFR 63 Subpart RRR (S-MACT) emission limit of 0.01 gr/dscf for the scrap shredding system.

The expected particulate emissions from the scrap processing system will be based on the design exit grain loading capacity and maximum exhaust flow rate to the baghouse system. Based on the manufacturer specifications, the permittee will be in compliance with the particulate matter emission limits at all times.

Emissions from the Multichamber Furnace System:

The PM_{10} emissions from the multichamber baghouse stack will be limited to 1.6 lb/hr. Therefore, the potential PM_{10} emissions from the multichamber baghouse system will be 1.6 lb/hr (7.01 tpy) for permitting purposes. When combined with the potential emissions from the scrap processing system baghouse, total PM_{10} emission increases from the proposed project will be kept below the 15 tpy PSD triggering threshold. Compliance with the emission limit of 1.6 lb/hr will also assure compliance with the S-MACT emission limit of 0.4 lb/ton and 401 KAR 59:010 emission limit of 21.25 lb/hr. The expected particulate emissions from the multichamber furnace will be based on the design exit grain loading capacity and maximum exhaust flow rate to the baghouse system.

To minimize the NO_X emissions, the primary burners in the main chamber will be of a low-NO_X design and will use a wide but low temperature flame to provide heat in the main chamber. The NO_X emissions from the multichamber furnace will be limited to 8.3 lb/hr. Therefore, the potential NO_X emissions from the multichamber furnace will be 8.3 lb/hr (36.35 tpy) for permitting purposes. When combined with the potential emissions from the crucible preheat stations, total NO_X emission increases from the proposed project will be kept below the 40 tpy PSD triggering threshold. The expected NO_X emissions from the multichamber furnace are based on the vendor guarantee and maximum furnace exhaust flow rate.

To represent potential CO and VOC emissions, furnace vendor emission estimates have been inflated by 50% and emissions have been calculated based on a worst-case temperature and exhaust flow profile for the furnace. Based on this conservative methodology, potential CO and VOC emissions will be 13.7 tpy and 3.9 tpy, respectively.

The multichamber furnace will use a relatively small amount of flux (magnesium chloride) and HCl emissions from the furnace will be controlled by a lime-injected baghouse. As a Group 1 furnace, HCl emissions from the multichamber furnace will be limited by the S-MACT to 0.4 lb/ton, or alternatively to 10% of the uncontrolled HCl emissions by weight. Potential emissions are calculated based on the allowable emission rate of 0.4 lb/ton. Based on the maximum short-term feed rate, potential HCl emissions will be 7.0 lb/hr.

The multichamber furnace will have a low D/F emissions profile because of the high thermal

destruction efficiency in the main chamber and the rapid quenching provided through the design of the multichamber furnace exhaust system. D/F emissions will be further reduced via the lime injected baghouse since D/F compounds would be adsorbed on the lime particles. As a Group 1 furnace, D/F emissions from the multichamber furnace will be regulated under the S-MACT to 15 μg TEQ/Mg of feed (2.1×10^{-4} gr of D/F TEQ per ton). Potential D/F emissions from the multichamber furnace will be based on the allowable emission limit and maximum design feed rate. The expected actual D/F emissions are assumed to be equal to the maximum potential emissions.

Since the multichamber furnace will be fired on pipeline quality natural gas and no sulfur other than trace amounts will be present in the contaminants on the scrap processed, there will be no quantifiable emissions of SO_2 emissions from the furnace. No lead will be introduced into the furnace except trace amounts that may be present in the scrap. The lime injected baghouse system would also provide some control for any trace amounts of lead that may be emitted. Based on the vendor emission guarantee, lead emissions will be fall well below the PSD Significant Emission Rate for lead of 0.6 tpy. Trace amounts of gaseous and metallic HAP compounds, as normal combustion by-products, will be emitted by the multichamber furnace. Using standard emissions factors published by EPA for natural gas combustion in furnace systems, total HAP emissions would be less than 1 tpy.[11]

Based on the manufacturer specifications, the permittee will be in compliance with the emission limits for the multichamber furnace at all times.

Emissions from Crucible Preheat Stations

To quantify the potential emissions from the two crucible stations, standard AP-42 emission factors for external natural gas combustion systems are used.[12] The potential emissions are based continuous operation at the maximum design rating of the crucible pre-heat burners (4 mmBtu/hr for each station).

Emissions from Increased Truck Traffic:

The potential fugitive emissions increase associated with truck traffic due to the proposed project are based on the estimation method outlined in AP-42 Section 13.2.1.1 for paved roads.

Applicable Regulations:

The source is subject to:

40 CFR 63 Subpart RRR, NESHAP for Secondary Aluminum Production as incorporated by reference in 401 KAR 63:002.

- 401 KAR 63:002, 40 CFR 63 National Emission Standards for Hazardous Air Pollutants.
- 401 KAR 59:010, New Process Operations.

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[11] U.S. EPA, AP 42, Fifth Edition, Volume I, Chapter 1.4, *External Natural Gas Combustion,* Supplement D, July 98.

[12] Ibid.

The permittee will comply with the emission limits specified in §63.1505 for the scrap processing system and multichamber furnace. The permittee will also comply with all the applicable operating, monitoring, recordkeeping and reporting provisions of 40 CFR 63, Subpart RRR. 401 KAR 63:002 incorporates Subpart RRR by reference. Therefore, KDAQ retains the enforcement authority for this rule except for the provisions specified in 40 CFR § 63.1519(c).
Compliance with the applicable particulate emission limits specified in the permit will assure compliance with the 401 KAR 59:010 emission limits for the scrap processing system and multichamber furnace.

Regulations Not Applicable:

1. 401 KAR 51:017, Prevention of Significant Deterioration.
   The potential NO_X and PM_{10} emissions from the proposed modification will be limited to less than 40 and 15 tpy, respectively. The scrap processing system and multichamber furnace will be subject to short-term PM_{10} emission limits of 1.5 and 1.6 lb/hr, respectively. The NO_X emissions from the multichamber furnace will be limited to 8.3 lb/hr. Federally enforceable emission limits will not be necessary for other criteria pollutants since the uncontrolled maximum potential emissions will be less than PSD Significant Emission Rates.

2. 40 CFR 64, Compliance Assurance Monitoring (CAM).
   The CAM regulations apply to a pollutant-specific emissions unit (PSEU), as defined in 40 CFR § 64.1, at a major Title V source if the PSEU is subject to an emission limitation, uses a control device as defined in 40 CFR § 64.1 to comply with that emission limitation, and has a potential to emit before controls equal to or greater than a Title V major source threshold. Although the scrap processing system and multichamber furnace will both utilize a control device (baghouse) to comply with the S-MACT emission standards, pursuant to 40 CFR § 64.2 (b)(1)(i), emission standards proposed after November 15, 1990 pursuant to section 111 or 112 of the Clean Air Act are exempt from the requirements of CAM rule. Hence, the CAM requirements will not apply to any equipment associated with the proposed project.

3. 401 KAR 59:015, New Indirect Heat Exchangers.
   This regulation applies to equipment, apparatus, or contrivances used for the combustion of fuel in which the energy produced is transferred to its point of usage through a medium that does not come into contact with or add to the products of combustion. The proposed multichamber furnace would not be classified as indirect heat exchangers because the combustion products will be in direct contact with the aluminum scrap. Similarly, the pre-heat crucible stations also utilize direct heating. Therefore, the proposed emission units will be exempt from this rule.

4. 401 KAR 63:020, Potentially Hazardous Matter or Toxic Substances.
   Pursuant to 401 KAR 63:020, Section 1, the requirements of this rule are applicable only to the extent that such emissions are not elsewhere subject to the provisions of the Kentucky Administrative Regulations. The toxic air pollutant emissions from the proposed project will be subject to the requirements the NESHAP Subpart RRR. 401 KAR 63:002 Section 3 (1)(eee) incorporates NESHAP Subpart RRR by reference. Since the toxic air pollutant emissions are already regulated under this rule, no additional requirements under 401 KAR 63:020 will apply to this permit action.

5. 40 CFR 60, Subpart S, Standards of Performance for Primary Aluminum Reduction Plants. This regulation applies only to potroom groups and anode bake plants at a primary aluminum reduction plants, which are defined as any facility manufacturing aluminum by electrolytic reduction. The permittee does not manufacture aluminum by electrolytic reduction at the Russellville plant. On the contrary, aluminum scrap and other hard charge aluminum pieces are melted, refined, cast, and rolled to produce rolled aluminum. Therefore, NSPS Subpart S does not apply.

Periodic Monitoring:

The permittee shall be subject to the following monitoring provisions that are included in the permit:

1. The permittee shall install, operate, and maintain a capture/collection system for the scrap processing system and multichamber furnace. The permittee shall inspect each capture/collection system at least once each calendar year to ensure that each system is operating properly.
2. The permittee shall install, calibrate, operate, and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the multichamber furnace over the same operating cycle or time period used in the performance test. The permittee will verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.
3. The permittee shall install, calibrate, maintain, and continuously operate the bag leak detection system on the lime-injected baghouse serving the multichamber furnace and the baghouse serving the scrap processing system.
4. The permittee shall install, calibrate, maintain, and operate a device to continuously monitor and record the temperature of the multichamber furnace baghouse inlet gases consistent with the requirements for continuous monitoring systems in 40 CFR 63 Subpart A.
5. The permittee shall verify that lime is always free-flowing by installing, operating and maintaining a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system or other system to confirm that lime is free-flowing.
6. The permittee shall inspect the labels for the multichamber furnace at least once per calendar month to confirm that posted labels are intact and legible.
7. The permittee shall install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to the multichamber furnace (or production of molten aluminum from the furnace).
8. The permittee shall monitor the number of total operating hours during each 6-month reporting period for the multichamber furnace.

Change(s) to permit (Revision 3):

On March 15, 2006 Logan Aluminum submitted an application to modify its existing permit #V-03-017. The proposed modification includes an increase in yearly tons/year throughput for Hot Mill Scalper to 1,600,000. Page 2 of the permit has been changed to reflect the requested amount. Increase in yearly throughput will cause no increase in permitted emissions and hourly throughput

pounds per hour. Emissions for this facility are permitted at an estimated 8760 hrs per year and will not exceed with the proposed increase throughput. Therefore, yearly throughput increase will not trigger a major modification, as the annual emissions will remain the same.

The Division has incorporated EPA's comments addressed in the August 23, 2006 memorandum from Mr. Art Hofmeister in the permit for compliance with the MACT language. Items 21, 25 and the Subpart § 63.1506)(m)(5) in item 24 under Group: DC1-DC3 Holding Furnaces are not applicable to Logan Aluminum because Logan's Holding Furnaces are not controlled by a Lime Injected Fabric Filter, do not have Dioxin and Furan emissions, and are not limited by 3-hour block average inlet temperatures.

On November 7, 2006 the Division was in receipt of nine significant comments from Mr. Art Hofmeister concerning the minor revision of Title V Permit V-03-017 (Revision 3). Comments 1-7 were incorporated in the permit but comments 8 and 9 are new significant comments, which were not part of the previous comment by EPA. Comments 8 and 9 are unrelated to the reasons EPA initially commented on Revision 3, which was to obtain permit language associated with the enforcement injunctive relief. The Division requested that EPA at this time to relegate comments 8 and 9, if needed, for further discussion as part of significant Revision 4 to the Title V Permit, which will be forthcoming as a result of an application submitted to KDAQ by Logan in September 2006 for a new capital project. In conclusion, EPA did not object to the issuance of this minor revision.

In Section C of the permit, Level, Clean & Prelube Process Line and Natural Gas Boiler rated at 9.66MM BTU with the potential for Particulate, NOX and SO2 falling below the 5 tpy threshold, were added to insignificant activities list.

In performing this review, no permit conditions (except for the requested modification) were changed in any substantive way. All previously reviewed operating, emission, monitoring and record keeping requirements have been maintained.

Change(s) to Permit (Revision 2):
On November 30, 2005 Logan submitted an application to modify its existing permit #V-03-017. The proposed modification includes an increase the process rates for coating line 1[09(6020-A)] from the currently permitted 23750 lbs/hr to 26000 lbs/hr (94299tons/yr to 103233 tons/yr). Logan will not exceed the annual tons per year limit of 95,000 and only needs some flexibility in the hourly limit. This change will not trigger PSD review, as the annual emissions will remain the same.

In performing this review, no permit conditions (except for the requested modification) were changed in any substantive way. All previously reviewed operating, emission, monitoring and record keeping requirements have been maintained.

Emissions Unit: 09 (6020-A) Coating Line 1

Operating Limitation (Revision 2):

a. Total aluminum processed shall not exceed 26000lbs/hr and 95000 tons/yr.

Change(s) to Permit (Revision 1):
Logan submitted an application to modify its existing permit # V-03-017. The proposed modifications include an increase in the process rates for Coating Line 1 [09 (6020-A)] and the Reversing Mill [07 (2015-1)]. With this permit revision, Logan has taken limits to preclude PSD applicability. In performing this review, the Division found several administrative errors and inconsistencies throughout the rest of the permit. In light of this discovery, the permit was reorganized and reformatted to make it more consistent, readable and accurate. In the resulting permit, no permit conditions (except for the requested modifications) were changed in any substantive way. All previously reviewed operating, emission, monitoring and record keeping requirements have been maintained.

Initial Issuance:

1. **GROUP REQUIREMENTS: Scalping, Sorting and Conveying**

Unit ID#	Unit Name
05 (2005-1A-C)	Scalper 1 w/Cyclones 1-3
25 (1009-1)	Swarf Furnace Chip Conveyor

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, the units remain unchanged.

2. **Emissions Unit: 44 (1003-1) Sow Dryer**

With the exception of formatting changes, this unit remains unchanged.

3. **Emission unit: 26 (1009-1A-C) Swarf Furnace with Molten Metal Holder**

Previously, emission limits and compliance demonstrations pursuant to 40 CFR Part 63 Subpart RRR were incorrectly described in the permit. With the exception of these corrections and formatting changes, this unit remains unchanged.

4. **Emission Unit: 55 (1111-1) Electric Induction Furnace**

Under **1. Operating Limitations**, Logan will now be required to charge only clean scrap to the Electric Induction Furnace. As described in their application, Logan plans to melt uncoated/unpainted/unlubricated edge trim material that is scrapped from their rolling process. This material meets the definition of runaround scrap: scrap materials generated on-site by aluminum casting, extruding, rolling, scalping, forming/stamping, cutting, and trimming operations and that do not contain paint or solid coatings. Runaround scrap is included in the list of clean charge material in 40 CFR 63, Subpart RRR. With the exception of these requested modifications and formatting changes, this unit remains unchanged.

5. **Emissions unit: 27 (1008-1) Reservoir Furnace**

With the exception of formatting changes, this unit remains unchanged.

6. **GROUP REQUIREMENTS: Direct Chill Lines DC1-DC3 – Pre-Heaters & Melt Furnaces**

Unit ID#	Unit Name
02 (1005-1A&B)	DC1 Pre-Heater and Melt Furnace (East)
03 (1005-4A&B)	DC2 Pre-Heater and Melt Furnace (West)
40 (1006-2)	DC3 Melt Furnace

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, these units remain unchanged.

7. **GROUP REQUIREMENTS: Direct Chill Lines DC1-DC3 – Holding Furnaces**

Unit ID#	Unit Name
04 (1005-2)	DC1 Hold Furnace (East)
17 (1005-5)	DC2 Hold Furnace (West)
42 (1006-2)	DC3 Hold Furnace

The units listed above have the same regulatory requirements and were combined under a common functional group. Previously, emission limits and compliance demonstrations pursuant to 40 CFR Part 63 Subpart RRR were incorrectly described in the permit. With the exception of these corrections and formatting changes, this unit remains unchanged.

8. **GROUP REQUIREMENTS: Direct Chill Lines DC1-DC3 – Flux Boxes**

Unit ID#	Unit Name
22 (1001-1)	DC1 Flux Box
22 (1001-1)	DC2 Flux Box
22 (1001-1)	DC3 Flux Box

The units listed above have the same regulatory requirements and were combined under a common functional group. Previously, emission limits and compliance demonstrations pursuant to 40 CFR Part 63 Subpart RRR were incorrectly described in the permit. With the exception of these corrections and formatting changes, this unit remains unchanged.

9. **Emission Unit: 01 (1002-1) Aluminum Skimming House**

With the exception of formatting changes, this unit remains unchanged.

10. **GROUP REQUIREMENTS: Carbottom &Pusher Furnaces**

Unit ID#	Unit Name
06 (2010-A&B)	Carbottom Furnaces 1 - 7
18 (2011-A)	Pusher Furnaces 1 and 2
19 (2011-B)	Pusher Furnace 3

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, these units remain unchanged.

11. **GROUP REQUIREMENTS: Reversing & Finishing Mill**

Unit ID#	Unit Name
07 (2015-1)	Reversing Mill
08 (2015-2)	Finishing Mill

a. Total aluminum throughputs for the Reversing Mill have been changed from 375,000 lbs/hr to 400,000 lbs/hr; annual throughputs remain at 1,481,250 tons/yr.

b. Total severely hydrotreated mineral oil coolant usage for the Reversing Mill remains at the currently permitted 11,566 gals/month and 138,672 gals/yr.

c. There are 2 oils used as coolant in the Reversing Mill: Sunpar 2280 (primary oil) and Sunpar 150 (secondary oil). Degradation of the oils is the source of pollutant emissions whereas the milling of the aluminum sheet produces negligible emissions. Therefore, the hourly PM emission limitation has been changed to 2.34 lbs/hr to reflect oil usage as opposed to aluminum throughput. The new allowable emission rate is based on 138,672 gals/yr of severely hydrotreated mineral oil process weight and 7941 hrs/yr.

d. Although the basis for calculating particulate emissions has changed, there is no increase in the pollutants emission since the severely hydrotreated mineral oil usage rate remains unchanged.

e. To demonstrate compliance, the overall control efficiency at the Reversing Mill (72%) is obtained by multiplying capture efficiency (90%) with control device efficiency (80%).

f. The units listed above have the same regulatory requirements and were combined under a common functional group. Previously, emission limits and compliance demonstrations to preclude PSD applicability were incorrectly described in the permit. With the exception of these requested modifications, corrections and formatting changes, these units remain unchanged.

12. **GROUP REQUIREMENTS: Cold Mills**

Unit ID#	Unit Name

10 (3005-1)	Cold Mill 1
14 (3010-1)	Cold Mill 2
21 (3040-1A)	Cold Mill 3

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, these units remain unchanged.

13. **Emission Unit: 12 (3030-A,B,C,D) Annealing Furnaces 1, 2, 3, 4, and 5**

With the exception of formatting changes, this unit remains unchanged.

14. **Emissions Unit: 53 (4022-5) Parts Washer – Cold Mill 3 Area**

With the exception of formatting changes, this unit remains unchanged.

15. **Emissions Unit: 09 (6020-A) Coating Line 1**

a. 40 CFR 63, Subpart SSSS, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil is applicable and has been added to the permit. The compliance date is June 10, 2005.

b. Logan requested an increase in aluminum throughput from the currently permitted 19,000 lbs/hr to 23,750 lbs/hr (75,440 tons/yr to 95,000 tons/yr).

c. Logan requested an increase in coating application rate from 1,870,000 gals/yr to 2,125,000 gals/yr.

d. The work practice standard of shutting mix room doors at all times to prevent MEK from escaping into ambient air has been added.

e. On May 27, 2004, Logan Aluminum performed a stack test to demonstrate compliance with the HAP emission standards required by 40 CFR 63 Subpart SSSS. Prior to this test, the incinerator was permitted to operate at or above 1450^0F. During this test, however, Logan demonstrated that lowering the incinerator temperature did not significantly affect the VOC/organic HAP emission rate. Subpart SSSS requires 98% organic HAP destruction; during the May test, Logan showed that this could still be achieved at incinerator temperatures of 1308ºF (708ºC) and 1166ºF (630ºC) for solvent and water-based coatings respectively. The current permit has been changed to reflect this as a new operating condition.

f. Applicable operating limitations from 40 CFR 63, Subpart SSSS have been added.

g. To preclude PSD applicability, the total VOC emissions increase from modifications to the pretreatment line and coating line 1 shall be less than 40 tons/yr for coating applied in excess of the original limit. For any 12-month period, total coating (as applied) and

MEK (in the coating room) usage that exceed 1,870,000 gallons and 34,419 gallons respectively shall be considered in the plant-wide VOC emissions increase calculation for this modification.

h. The previous compliance demonstration method did not represent true, worst-case VOC and MEK emissions from the unit. The new compliance demonstration method included in this revision will more accurately reflect actual VOC emissions. MEK emissions from the mix room are negligible as long as the room doors remain shut at all times.

i. Provisions have been added requiring each coil coating affected source to limit organic HAP emissions to no more than 2% of the organic HAP applied for each month during the 12-month rolling compliance period (98% reduction) [40 CFR 63.5120(a)(1)].

j. To demonstrate continuous compliance with the 98% reduction in organic HAP emissions, the permittee shall maintain the incinerator combustion temperature above what's specified in the permit and demonstrate overall control efficiency is ≥ 99% during any required stack test.

k. VOC emissions from Coating Line 1 shall be controlled to less than 10% of the VOCs applied each month [40 CFR 60.462(a)(3)]. Since the HAP emission limitation is more stringent than the VOC's, compliance with the HAP limitation is deemed compliance with the VOC limitation.

l. The particulate matter pounds per hour emission limitation has been revised from 14.5 lbs/hr to 3.99 lbs/hr. The 14.5 lbs/hr limitation was incorrectly based on 19,000 lbs/hr of aluminum throughput. The process weight is defined as the total weight of all materials introduced into any affected facility which may cause any emission of particulate matter, but does not include liquid as well as gaseous fuels charges, combustion air, or combined water. Thus, the process weight should be based on the hourly coating (as applied) usage.

m. To preclude the applicability of PSD, the Particulate Matter emission increase from the coating line shall not exceed 15 tons/yr.

n. The increase of aluminum throughput will not affect other emission sources in the plant.

o. Tests required by 40 CFR 63, Subpart SSSS have been added into the permit.

p. The Division requires that Logan Aluminum conduct a performance test on their roll coating operation to determine the transfer efficiency. Typically, roll coating has a transfer efficiency of at least 95%, but to better account for the PM emissions from the coating line, accurate transfer efficiency is needed. It is also needed to ensure that Logan Aluminum meets the 15 tons/yr PM emission increase limitation on their coating line.

q. The Division requires that Logan Aluminum monitor the incinerator residence time and the roll coating transfer efficiency. In addition to the incinerator combustion temperature, residence time is vital to the VOC emissions removal.

r. Recordkeeping required by 40 CFR 63, Subpart SSSS has been added to the permit.

s. Reporting required by 40 CFR 63, Subpart SSSS has been added to the permit.

16. **GROUP REQUIREMENTS: Boilers**

Unit ID#	Unit Name	Primary Fuel	Secondary Fuels
15 (4021-A)	Boiler #1	Natural Gas	#2 fuel oil & propane
15 (4021-A)	Boiler #2	Natural Gas	#2 fuel oil & propane
15 (4021-A)	Boiler #3	Natural Gas	#2 fuel oil & propane
54 (4021-B)	Boiler #4	#2 fuel oil	Natural gas & propane

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, these units remain unchanged.

17. **Emissions Unit: 46 (4021-5) Propane Flare**

With the exception of formatting changes, this unit remains unchanged.

18. **Emissions Units: 49 (4021-11) Cooling Tower 1**

With the exception of formatting changes, this unit remains unchanged.

19. **Emissions Unit: 47 (4021-6) Propane Tanks 1, 2, 3, and 4**

With the exception of formatting changes, this unit remains unchanged.

20. **GROUP REQUIREMENTS: Volatile Organic Storage Tanks**

Unit ID#	Unit Name
24 (3040-5)	Cold Mill 3 Tanks TA01, TA02, TA05
45 (1004-1)	Castor Oil Tank
48 (4021-10)	Water Services Tanks 4, 6A
48 (4021-10)	Water Services Tanks 6B, 8
51 (6035-A)	Coating Tanks A, B, and C

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, these units remain unchanged.

21. **GROUP REQUIREMENTS: Liquid Petroleum Storage Tanks**

Unit ID#	Unit Name
50 (4021-15)	Gasoline Tank
50 (4021-15)	Diesel Tank
52 (6035-3)	Waste Solvent Tank 3

The units listed above have the same regulatory requirements and were combined under a common functional group. With the exception of formatting changes, these units remain unchanged.

22. **GROUP REQUIREMENTS:** Plant-wide emissions of aluminum metal and oxide, arsenic, cadmium, chromium metal, cobalt, copper, formaldehyde, hydrogen chloride, and selenium are subject to Regulation 401 KAR 63:022. The following units are affected:

Unit ID#	Unit Name
01 (1002-1)	Aluminum Skimming House
02 (1005-1A&B)	DC1 Pre-Heater and Melt Furnace (East)
03 (1005-4A&B)	DC2 Pre-Heater and Melt Furnace (West)
04 (1005-2)	DC1 Hold Furnace (East)
06 (2010-A&B)	Carbottom Furnaces 1 - 7
07 (2015-1)	Reversing Mill
08 (2015-2)	Finishing Mill
09 (6020-A)	Coating Line 1
10 (3005-1)	Cold Mill 1
14 (3010-1)	Cold Mill 2
17 (1005-5)	DC2 Hold Furnace (West)
18 (2011-A)	Pusher Furnaces 1 and 2
19 (2011-B)	Pusher Furnace 3
21 (3040-1A)	Cold Mill 3
22 (1001-1)	DC Flux Boxes
24 (3040-5)	Cold Mill 3 Tanks TA01, TA02, TA05
25 (1009-1)	Storage Silos & Conveyer
26 (1009-1A-C)	Swarf Furnace with Molten Metal Holder
27 (1008-1)	Reservoir Furnace
40 (1006-2)	DC3 Melt Furnace
42 (1006-2)	DC3 Hold Furnace
45 (1004-1)	Castor Oil Tank
48 (4021-10)	Water Services Tanks 4, 6A
51 (6035-A)	Coating Tanks A, B, and C
55 (1111-1)	Electric Induction Furnace

In reviewing the permit, several discrepancies were found between the emission points listed under this group requirement and references to this group under the individual units. The shaded units referenced this group requirement under their individual requirements but were not previously listed.

1. **SECTION D** was re-formatted to match **SECTION B** requirements.

2. Since several of the emission units have the same compliance demonstrations for operating and emission limits, these equations were moved to **SECTION D** and standardized. Specifically, see **SECTION D (1) (b), (c), (d)** and **SECTION D (2) (c), (f), (g)**.

3. Previously, SAPU emission limits and compliance demonstrations pursuant to 40 CFR Part 63 Subpart RRR were listed with individual units. These requirements, being the same for all units within a SAPU, were removed from the individual units to **SECTION D**. In addition, the language for these requirements was changed to be more concise and readable.

4. With the exception of these requested modifications, corrections and formatting changes, the requirements in this section remain unchanged.

CREDIBLE EVIDENCE:

1. This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.