

AMENDED CERTIFICATE OF APPROVAL

AIR

NUMBER 8626-83UKP3

Issue Date: June 9, 2010

Masterloy Products Company
5663 Doncaster Rd
Gloucester, Ontario
K1G 3N4

Site Location: 5663 Doncaster Rd.
Gloucester, Ottawa City,
K1G 3N4

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- one (1) pulse jet type baghouse dust collector (Mixing Dust Collector - source 1), to control dust emission from raw materials weighing and handling, equipped with 743 square metres of cellulose filter media cartridges, discharging into the atmosphere at a maximum volumetric flow rate of 5.8 actual cubic metres per second, through a stack (Mixing Dept Stack), having a rectangular exit 0.61 metre by 0.51 metre, extending 0.87 metre above the roof and 14.5 metres above the grade;
- one (1) high efficiency Venturi scrubber unit (Wet Scrubber - source 2), to control particulate emissions from two process vessels, operating at a nominal water circulation rate of 12.0 litres per second, exhausting into the atmosphere at a maximum volumetric flow rate of 9.1 cubic metres per second at an approximate temperature of 32 degrees Celsius through a stack, having an exit diameter of 0.80 metre, extending 13.4 metres above the roof and 24.4 metres above the grade;
- one (1) mechanical shaker type baghouse dust collector (Wheelabrator Baghouse - source 3), to control dust emission from cleaning of metal product operation, equipped with 110 square metres of polyester felt filter bags, discharging into the atmosphere at a maximum volumetric flow rate of 0.56 actual cubic metre per second through a stack, having a rectangular exit 0.32 metre by 0.27 metre, extending 0.87 metre above the roof and 11.5 metres above the grade;
- one (1) pulse jet type baghouse dust collector (Alloy Crush Dust Collector - source 4), to control dust emission from crushing and grinding of ferroalloys, equipped with 336 square metres of synthetic cellulose media cartridges, discharging into the atmosphere at a maximum volumetric flow rate of 2.68 actual cubic metres per second through a stack, having a rectangular exit 0.36 metre by 0.21 metre, extending 1.03 metres above the roof and 14.5 metres above the grade;

- one (1) mechanical shaker type dust collector (Bagging Dust Collector -source 5), to control dust emission from bagging and packaging of finished products, equipped with 20 square metres of polyester filter bags, discharging into the atmosphere at a maximum volumetric flow rate of 0.85 actual cubic metres per second through a stack, having a rectangular exit 0.38 metre by 0.25 metre, extending 0.87 metres above the roof and 14.5 metres above the grade;
- one (1) pulse jet type dust collector (Slag Crushing Dust Collector - source 6), to control dust emission from a slag crushing operations, equipped with 77 square metres of polyester filter bags, discharging into the atmosphere at a maximum volumetric flow rate of 2.83 actual cubic metres per second, through a stack, having an exit diameter of 0.87 metre, extending 3.53 metres above the roof and 11.0 metres above the grade;

all in accordance with the Application for Approval (Air) submitted by Masterloy Products Company dated October 21, 2009 and signed by Tanya Bradley, Plant Manager, the two (2) letters from Masterloy Products Company both dated March 15, 2010 and signed by Tanya Bradley, Plant Manager, letters (e-mails) from Emily Lau (Golder Associates Ltd.) dated March 24, 2010, March 26, 2010, April 15, 2010 and April 30, 2010, and all information and documentation associated with the application.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

- (1) "Act" means the Environmental Protection Act;
- (2) "Best Management Practices Plan or BMPP" means a document or a set of documents which describe measures to minimize dust emissions from the Facility, including the report entitled "Masterloy Products Company, Best Management Practices Plan for the Control of Fugitive Dust April 2010", prepared by Golder Associates Ltd. and signed by Christopher Keast and Sean Capstick, P.Eng.;
- (3) "Certificate" means this Certificate of Approval, issued in accordance with Section 9 of the Act;
- (4) "Company" means Masterloy Products Company;
- (5) "District Manager" means the District Manager of the appropriate local district office of the *Ministry*, where the Facility is geographically located;
- (6) "Equipment" means the baghouse dust collectors and the Venturi scrubber described in the Company's application, this Certificate and in the supporting documentation submitted with the application, to the extent approved by this Certificate;
- (7) "Facility" means the entire operation located on the property where the Company is located;

- (8) "Manual" means a document or a set of documents that provide written instructions to staff of the Company;
- (9) "Ministry" means the Ontario Ministry of the Environment;
- (10) "Publication NPC-205" means the Ministry Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995 as amended; and
- (11) "Publication NPC-232" means the Ministry Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995 as amended.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:
 - (1) prepare, not later than three (3) months after the date of this Certificate, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:
 - (a) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
 - (b) emergency procedures, including spill clean-up procedures;
 - (c) procedures for any record keeping activities relating to operation and maintenance of the Equipment;
 - (d) the frequency of inspection and replacement of the filter material in the Equipment ;and
 - (e) all appropriate measures to minimize noise and odorous emissions from all potential sources;
 - (2) implement the recommendations of the Manual; and
 - (3) retain, for a minimum of two (2) years from the date of their creation, all records on the maintenance, repair and inspection of the Equipment, and make these records available for review by staff of the Ministry upon request.
2. The Company shall immediately implement the Best Management Practices Plan for the control of

fugitive dust emissions resulting from the operation of the Facility.

3. The Company shall periodically review and update the BMPP as proposed in the plan or as requested by the District Manager.
4. The Company shall record, in a log book, each time a specific preventative and control measure described in the BMPP is implemented.
5. The Company shall, at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-205 or Publication NPC-232, as applicable.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition Nos. 1, 2, 3 and 4 are included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

In addition, the Company is required to keep records and to provide information to staff of the Ministry so that compliance with the Act, the regulations and this Certificate can be verified.

2. Condition No. 5 is included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 7564-5LXSHE issued on May 8, 2003.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca

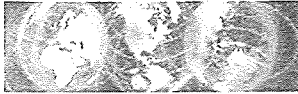
The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 9th day of June, 2010



Victor Low, P.Eng.
Director
Section 9, *Environmental Protection Act*

JK/
c: District Manager, MOE Ottawa
Emily Lau, Golder Associates Ltd.



Executive Summary

This Emission Summary and Dispersion Modelling (ESDM) Report was prepared to support an application for a Certificate of Approval (Air & Noise) (CofA [Air & Noise]) and was prepared in accordance with s.26 of O. Reg. 419/05. In addition, guidance in the Ontario Ministry of the Environment (MOE) publication "*Guideline A-10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report*", dated March 2009 (ESDM Procedure Document) PIBS 3614e03 was followed, as appropriate.

Masterloy Products Co. (Masterloy) operates a ferroalloy manufacturing facility located at 5663 Doncaster Road in Ottawa, Ontario (the Facility). The Facility is located in an area zoned for rural heavy industrial use.

Masterloy produces ferroalloys by the metallothermic reduction of metal oxides. The North American Industry Classification System (NAICS) code that best applies to the Facility is 3311 (iron and steel mills and ferro-alloy manufacturing), which is part of Schedule 4 of O.Reg.419/05.

The Facility is currently approved to operate under amended CofA No.7564-5LXSHE, May 8, 2003. The purpose of this CofA (Air & Noise) application is to amend the existing CofA to demonstrate compliance with s.20 of O.Reg.419/05 by February 1, 2010 and to include the increased heights of three (3) exhaust stacks, the Mixing Dust Collector, Alloy Crushing Dust Collector and Bagging Dust Collector.

The Facility's compliance is assessed using Schedule 3 of O. Reg. 419/05. Furthermore, the assessment of compliance was completed using the U.S. EPA AERMOD atmospheric dispersion model.

The Facility is expected to emit particulate matter, metals and products of natural combustion. Some of the sources and contaminants were considered negligible in accordance with s.8 of O. Reg. 419/05.

The maximum POI concentrations were calculated based on the operating conditions where all significant sources are operating simultaneously at their individual maximum rates of production. The maximum emission rates for each significant contaminant emitted from the significant sources were calculated in accordance with s.11 of O. Reg. 419/05 and the data quality assessment follows the process outlined in the requirements of the ESDM Procedure Document.

A POI concentration for each significant contaminant emitted from the Facility was calculated based on the calculated emission rates and the output from the approved dispersion model; the results are presented in the following Emission Summary Table in accordance s.26 of O. Reg. 419/05.

The POI concentrations listed in the Emission Summary Tables were compared against criteria listed in the MOE publication "*Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)*", dated February 2008 (List of MOE POI Limits).



EMISSION SUMMARY AND DISPERSION MODELLING REPORT

In order to focus the assessment of compliance, the 31 contaminants assessed have been categorized as follows:

Contaminant category	Number of Contaminants in this Category
Significant Contaminants	
Compounds with MOE POI Limits having predicted concentrations greater than 1% of the MOE POI Limit	12
Compounds without MOE POI Limits having predicted concentrations above <i>de minimus</i> concentration	2
Insignificant Contaminants	
Compounds with MOE POI Limits having predicted concentrations less than 1% of the MOE POI Limit	11
Compounds without MOE POI Limits having predicted concentrations less than the JSL	4
Compounds without MOE POI Limits having predicted concentrations below <i>de minimus</i> concentration	2

Contaminants released by the Facility that are not found on the List of MOE POI Limits are considered to be 'Contaminants with No MOE POI Limits'. There are eight (8) 'Contaminants with No Ministry POI Limits' at the Facility. There are Jurisdictional Screening Limits (JSLs) listed in the MOE publication "*Jurisdictional Screening Level (JSL) List a Screening Tool for Ontario Regulation 419: Air Pollution – Local Air Quality*" dated February 2008 for four (4) of these contaminants. Two (2) contaminants have concentrations below the *de minimus* limits and two (2) contaminants have concentrations above the *de minimus* limits. Therefore, a "*Maximum Ground Level Concentration Acceptability Request*" has been completed.

Of the remaining 23 contaminants assessed with MOE POI Limits; all the predicted POI concentrations are below the corresponding limits. At 51.71%, vanadium has the highest concentration relative to the corresponding MOE POI Limit.

This ESDM Report demonstrates that the Facility can operate in compliance with s.20 of O. Reg. 419/05.



EMMISSION SUMMARY AND DISPERSION MODELLING REPORT

Emission Summary Table

Contaminant	CAS No.	Total 24-hr Facility Emission Rate [g/s]	Air Dispersion Model Used	Maximum POI Concentration [µg/m ³]	POI Location	Averaging Period [hours]	MOE POI Limit [µg/m ³]	Limiting Effect	Regulation Schedule No.	Percentage of MOE Limit [%]
Aluminium Oxide	1344-28-1	8.51E-03	AERMOD	3.79E+00	1	24	120	Particulate	3	3.16%
Calcium Oxide	1305-78-8	1.53E-02	AERMOD	9.28E-01	2	24	10	Corrosion	3	9.26%
Chromium	7440-47-3	4.80E-04	AERMOD	2.88E-02	2	24	0.5	Health	POI Guidelines	5.70%
Iron	15438-31-0	2.68E-02	AERMOD	1.48E+00	2	24	4	Soiling	3	36.40%
Iron Oxide	1303-37-1	2.46E-02	AERMOD	1.48E+00	2	24	25	Soiling	3	5.92%
Magnesium Oxide	1309-48-4	2.45E-02	AERMOD	1.47E+00	2	24	120	Particulate	3	1.22%
Manganese	7439-96-5	1.20E-03	AERMOD	7.13E-02	2	24	0.4	Health	POI Guidelines	17.82%
Manganese Oxide	7439-96-5	2.40E-04	AERMOD	1.43E-02	2	24	0.4	Health	POI Guidelines	3.56%
Molybdenum Trioxide	1313-27-5	2.40E-02	AERMOD	1.43E-02	2	24	0.1	N/A	de minimus	Above de minimus
Nickel	7440-02-0	2.40E-04	AERMOD	1.43E-02	2	24	0.2	Vegetation	3	7.13%
Particulate Matter	N/A	4.30E-02	AERMOD	4.41E+00	1	24	120	Visibility	3	3.67%
Sodium Chlorate	7775-09-9	2.40E-02	AERMOD	1.43E+00	2	24	6	Health	POI Guidelines	23.76%
Vanadium	7440-62-2	8.31E-03	AERMOD	1.03E+00	3	24	2	Health	3	51.71%
Vanadium Pentoxide	1314-62-1	2.40E-02	AERMOD	1.43E+00	2	24	0.1	N/A	de minimus	Above de minimus