Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
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Date: September 28, 2016
Mr. Andrew P. Costa
Metalor Technologies USA, Inc.
255 John L. Dietsch Boulevard
North Attleborough, MA 02761

RE: NORTH ATTLEBOROUGH
Transmittal No.: X268077
Application No.: SE-16-002
Class: *SM-50*
FMF No.: 130075
AIR QUALITY PLAN APPROVAL

Dear Mr. Costa:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-Major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed modification of Non-major Comprehensive Plan Application number 4I03022 and subsequent operation of an existing Precious Metal Recovery Furnace at your precious metal recovery, recycling and refining facility located at 255 John L. Dietsch Boulevard in North Attleborough, Massachusetts ("Facility"). The Application bears the seal and signature of Eric A. Pearson, Massachusetts Registered Professional Engineer Number 39741.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Metalor Technologies USA, Inc. ("Metalor") conducts precious metal recovery, recycling and refining on a job shop, customer demand basis. The services provided to customers include evaluating recyclable material for precious metal content and recovering and refining those materials to produce precious metal products such as bullion, powder, flakes and metal salts for return to the customer or sale by Metalor. The Metalor facility will process a "distinct amount" of recyclable material that is kept segregated throughout the precious metal recovery process for accounting purposes. This distinct amount will vary by weight and is referred to by Metalor as a "lot". The facility includes fuel burning and process operations which result in the emission of criteria and non-criteria air pollutants.

On December 2, 2004, Metalor was issued Conditional Approval No. 4I03022 authorizing the installation and operation of one (1) Tulsa Combustion, Model CRO-6-6-15, batch fed, precious metal reclamation furnace (PMRF).

The PMRF has a maximum design capacity of 100 pounds of waste per hour. The Tulsa Combustion, Model CRO-6-6-15 will incinerate Type 0 Waste (dry rubbish, trash), Type 5 Waste (liquid industrial waste), and Type 6 Waste (solid industrial waste), which contain precious metals.

The primary chamber has a volume of 108 cubic feet (ft^3). The secondary chamber has a volume of 169.2 ft^3. The primary chamber is equipped with a Midco/Tulsa Model J81A-3 natural gas fired burner with a maximum heat input rating of 800,000 Btu per hour. The secondary chamber is equipped with a Midco/Tulsa J121A-3/CRO natural gas fired burner with a maximum heat input rating of 1.2 MMBtu per hour. The secondary chamber is also equipped with an additional natural gas fired "boost" burner with a maximum heat input rating of 2.53 MMBtu per hour.

The Tulsa Combustion, Model CRO-6-6-15 PMRF is designed to operate in an induced draft mode and discharge flue gases through air pollution control equipment. Operation of the PMRF in accordance with the manufacturer's specification shall result in an assumed 100% capture of combustion gases. The products of combustion are vented through a D.R. Technology's, custom manufactured quench/ venturi/ cyclone system followed by a D.R. Technology's custom manufactured packed bed scrubber unit. Exhaust from the PMRF system is vented through a 37-foot stack.

The Permittee has proposed to modify the existing approval No. 4I03022, as requested in a letter dated January 13, 2014 and in this application. The modification of Plan Approval No. 4I03022 is based on emission limit changes for the Tulsa Combustion PMRF as a result of initial stack testing.

In addition to the Tulsa Model CRO-6-6-15, the Permittee operates two other existing PMRF, a United Corporation model G-466 and a Consumat Systems model C-120, in accordance with

Plan Approval No. SM-84-069-IN issued on April 18, 1986. There are no modifications being proposed for these emission units.

Best Available Control Technology (BACT) for this project is defined in Table 2.

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1

EU	Description	Design Capacity	Pollution Control Device (PCD)
1	Tulsa Model CRO-6-6-15 Precious Metal Recovery Furnace	Maximum input: 100 pounds per hour Primary Chamber: 0.8 MMBtu/hr Secondary Chamber: 1.2 MMBtu/hr Boost Burner: 2.53MMBtu/hr	D.R. Technology: Quench/Venturi/Cyclone + Packed Bed Wet Scrubber (5060 acfm at 170°F)

Table 1 Key:
acfm = actual cubic feet per minute
°F = degrees Fahrenheit
EU = Emission Unit
MMBtu/hr = million British thermal units per hour

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2

EU	Operational / Production Limit	Air Contaminant	Emission Limit
1	1. Charge rate ≤ 100 lbs/hr 2. Primary chamber burner ≤ 0.8 MMBtu/hr 3. Secondary chamber burner ≤ 1.2 MMBtu/hr 4. Boost burner ≤ 2.53 MMBtu/hr 5. Secondary chamber temp ≥ 1600°F [Note 1] 6. Residence Time ≥ 1.15 seconds 7. Capture Efficiency = 100% [Note 2] 8. PM Destruction Efficiency = 99% by weight 9. HCl Destruction Efficiency = 98% 10. Scrubbing solution pH ≥ 8.0	PM	0.0047 gr/dscf [Note 3] 0.015 lbs/hr [Note 3] 0.01 TPM 0.07 TPY
		NO_x	0.46 lbs/hr [Note 3] 0.17 TPM 2.01 TPY
		CO	0.50 lbs/hr [Note 3] 0.18 TPM 2.19 TPY
		SO_2	0.13 lbs/hr [Note 3] 0.05 TPM 0.55 TPY
		VOC	0.15 lbs/hr [Note 3] 0.055 TPM 0.66 TPY
		Organic HAP	0.15 lbs/hr [Note 3] 0.055 TPM 0.66 TPY
		Lead	0.0001 lbs/hr [Note 3] 0.00004 TPM 0.00045 TPY
		HCl	3.8 ppmv @12% CO_2 [Note 3] 0.044 lbs/hr [Note 3] 0.016 TPM 0.19 TPY
		Visible Emissions	10% opacity [Note 4]

Table 2 Notes:

Note 1 – Minimum temperature as measured by the thermocouple located on the downstream end of the combustion chamber.
Note 2 – Tulsa PMRF achieves 100% capture by its inherent design and operation in accordance with the manufacturer's specifications. Demonstration of capture shall not be necessary while unit is operated as manufacturer specifies.
Note 3 – ppm, lb/hr and gr/dscf emission limits are for stack test purposes only.
Note 4 – Opacity is exclusive of uncombined water vapor.

Table 2 Key:
CO = Carbon monoxide
°F = degrees Fahrenheit
gr/dscf = grains per dry standard cubic foot
EU = Emission Unit
HAP = Hazardous air pollutant(s)
hrs/yr = hours per consecutive twelve month period
HCl = Hydrogen chloride
lbs/hr = pounds per hour
MMBtu/hr = million British thermal units per hour
NO_x = Oxides of Nitrogen
PM = particulate matter, includes particulate matter having a diameter of 10 microns or less (PM_{10}) and particulate matter having a diameter of 2.5 microns or less ($PM_{2.5}$)
SO_2 = Sulfur dioxide
TPM = tons per month
TPY = tons per consecutive twelve month period
VOC = volatile organic compound(s)
$\leq$ = less than or equal to
$\geq$ = greater than or equal to
% = percent

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3

EU	Monitoring and Testing Requirements
1	1. The Permittee shall continuously monitor the pH of the packed bed scrubber scrubbing solution. The pH monitor shall be connected to a visual and audible alarm to alert operator if pH is below approved range.
	2. The Permittee shall continuously monitor to ensure the packed bed scrubber solution is circulating at all times the unit is in operation. The scrubbing solution flow monitor shall be connected to a visual and audible alarm to alert operator if flow is out of expected range.
	3. The Permittee shall monitor operations to ensure that the charge rate of Emission Unit No. 1 has not exceeded its maximum hourly capacity as averaged over the duration of the burn cycle.
	4. The Permittee shall continuously monitor the PMRF secondary chamber temperature.
	5. The Permittee shall perform visual emissions observations on the EU 1 stack in accordance with 40 CFR 60 Appendix A Method 9 on a monthly basis. The observation timeframe shall be 30 minutes and shall occur during a time of normal operation.
Facility-wide	6. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration
	7. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13
	8. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	9. Within 45 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.

Table 3 Key:
CMR = Code of Massachusetts Regulations
EU = Emission Unit Number
pH = potential of Hydrogen, acid-base scale
PMRF = Precious Metal Reclamation Furnace
USEPA = United States Environmental Protection Agency

Table 4

EU	Record Keeping Requirements
1	1. The Permittee shall maintain a record of the pH of the packed bed scrubber scrubbing solution.
	2. The Permittee shall maintain a record of the secondary combustion chamber temperature.
	3. The Permittee shall maintain records that document the charge rate of Emission Unit No. 1 has not exceeded its maximum hourly capacity as averaged over the burn duration of each lot. At minimum, these records shall include the load weight of each lot and the duration of the burn cycle for that lot.
	4. The Permittee shall maintain a log of the monthly Method 9 observations including results and action(s) taken, if any.
Facility-wide	5. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	6. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	7. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	8. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	9. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	11. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	12. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

CMR = Code of Massachusetts Regulations
EU = Emission Unit Number
PCD = Pollution Control Device
pH = Acid - Base scale
SOMP = Standard Operating and Maintenance Procedure
USEPA = United States Environmental Protection Agency

Table 5

EU	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Southeast Regional Office of MassDEP, BAW Compliance & Enforcement Chief by telephone: 508-946-2817, email: sero.Air@massmail.state.ma.us, or fax : 508-947-6557, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Compliance& Enforcement Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.

Table 5 Key:
EU = Emission Unit
BAW = Bureau of Air and Waste
CMR = Code of Massachusetts Regulations

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6

EU	Special Terms and Conditions
1	1. Plan Approval No. SE-16-002, Transmittal No. X268077, supersedes Plan Approval No. 4I03022, Transmittal No. W044242, issued to the Permittee on December 2, 2004, in its entirety, with the exception that all plan application materials submitted as part of the Transmittal No. W044242 become part of this Transmittal No. X268077.
	2. Tulsa Model CRO-6-6-15 shall be operated in accordance with this approval and the Manufacturer's specifications, including but not limited to "Interlocks for Safe Incinerator Operation", to ensure compliance with emission limits and flue gas capture efficiency of 100%.

Table 6	
EU	**Special Terms and Conditions**
Facility-wide	3. Any prior Plan Approvals issued under 310 CMR 7.02 shall remain in effect unless specifically changed or superseded by this Plan Approval. The Facility shall not exceed the emission limits and shall comply with approved conditions specified in the prior Plan Approval(s) unless specifically altered by this Plan Approval.

Table 6 Key:
EU = Emission Unit Number
CMR = Code of Massachusetts Regulations

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as "shanty caps" and "egg beaters."

C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU	**Stack Height Above Ground (feet)**	**Stack Inside Exit Dimensions (feet)**	**Stack Gas Exit Velocity Range (feet per second)**	**Stack Gas Exit Temperature Range (^{o}F)**
1	37	1.5	5-10 (Note 1)	140-180

Table 7 Notes:
Note 1: Normal, with doors closed

Table 7 Key:
EU = Emission Unit Number
^{o}F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Peter Russell by telephone at 508-946-2821, or in writing at the letterhead address.

Sincerely,

Thomas Cushing
Chief, Air Quality Permitting
Bureau of Air and Waste

Enclosure

ecc: N. Attleborough Board of Health
N. Attleborough Fire Department
Diane George – Metalor
MassDEP/Boston – Yi Tian
Eric Pearson – ESS Group
Maria Pinaud, Lisa Ramos, Peter Russell – MassDEP/SERO