Oetiker Limited

Toxics Reduction Plan Summary

Prepared For:
Oetiker Limited
Alliston, Ontario

EKG Project 12-21-036

December 2012

Prepared by:
E. K. Gillin & Associates Inc.
356 Ontario St., Suite 362, Stratford, ON, N5A 7X6, Canada
Bus: 519-662-3819 or 888-771-6754 Fax: 519-662-6595
Email: ekginc@ekginc.com Website: www.ekginc.com

About The Company

Customized consulting and training specialties include:

Ergonomics	Claims Management
➢ Physical Demands Assessments	➢ Claims Management
➢ Pre-employment Screening	➢ Claims Management Certification
➢ Ergonomics Certification	➢ Effective Labour Relations
➢ Back Care	➢ Policy & Procedure Development
➢ Manual Material Handling	➢ Worker Re-entry Program (WREP)
➢ Job Specific Ergonomics	➢ Absenteeism Management
➢ Cumulative Trauma Prevention	➢ Win-Win Termination
➢ Task Analysis/Hazard Analysis	➢ Long/Short Term Disability
➢ Workstation Design/Re-design	➢ WSIAT defense

Environmental Health & Safety	Occupational Health & Safety
➢ ISO 14000 Audits/Implementation	➢ Workwell Audits/Implementation
➢ Certificate of Approval for Air Registration	➢ Critical Injury Management
➢ Emergency Response	➢ Lockout/Tagout Audits/Procedures
➢ Air Quality, Water, Soil and Noise Testing	➢ Policy & Procedure Development
➢ Transportation of Dangerous Goods	➢ Due Diligence
➢ Waste Management	➢ Accident/Incident Investigation
➢ Spill Cleanup	➢ Confined Space
➢ HACCP Audits/Implementation	➢ Safety Auditor Certification
➢ WHMIS and WHMIS II and MSDS	➢ Fall Arrest

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1.0 PURPOSE, STATEMENT OF INTENT AND OBJECTIVE OF PLAN

1.1 Purpose

This plan is being written as required by the Toxics Reduction Act, 2009. All information in this plan is included as required by this act and any applicable regulations. In addition to the creation of this plan, a summary of its contents will be submitted to the Ministry of Environment (MOE) and made publicly available no later than December 31, 2012.

1.2 Statement of Intent and Objective

Chromium, cobalt, copper, lead, manganese and nickel are currently used at the Oetiker facility as a main component in its raw steel. It is used in most process throughout the entire facility. Oetiker intends to reduce the use of these toxic substances at the facility through the implementation of the reduction options set out in the plan. This plan will determine the technical and economic feasibility of each of the reduction options to determine which, if any, are viable for implementation.

1.3 Target

Oetiker Limited intends to explore the possibility of reducing toxic substance use at its facility and to implement any available options that are both technically and economically feasible

2.0 FACILITY ACCOUNTING INFORMATION

Name: Oetiker Limited
Address: 203 Dufferin Street
Alliston, Ontario
L9R 1W7
NPRI Identification Number: 00000007300
Six Digit NAICS Code: 336390
Number of Full-time Employees: 120
UTM Spatial Coordinates (NAD83): Latitude: 44.147288
Longitude: -79.8602

2.1 Operator of the Facility Information

Name: Dan Roche
Address: 203 Dufferin Street South
Alliston, Ontario
L9R 1W7
Phone Number: (705) 435-4394
E-mail: droche@ca.oetiker.com

2.2 Highest Ranking Employee at the Facility Information

Name: Dan Roche
Title: Quality & Environmental Manager - Americas
Address: 203 Dufferin Street South
Alliston, Ontario
L9R 1W7
Phone Number: (705) 435-4394
E-mail: droche@ca.oetiker.com

2.3 Parent Company Information

Legal Name of Parent Company: Inter Camp Holding AG
Address of Parent Company: Florastrasse 49
Postfach 1914
Zurich
CH-8032
Switzerland
Percentage of Facility Owned by Company: 100%

2.4 Toxic Substances for Which Facility Must Prepare Plan

Substance: Chromium
CAS Number: *

Substance: Cobalt
CAS Number: *

Substance: Copper
CAS Number: *

Substance: Lead
CAS Number: *

Substance: Manganese
CAS Number: *

Substance: Nickel
CAS Number: *

The facility-wide quantification data for the 2011 year, as determined by the accounting in the previous sections, is shown in Table 1 below.

Table 1. Facility-Wide Accounting Information for 2011

Form of Involvement	Amount of Substance (kg)					
	Cr	Co	Cu	Pb	Mn	Ni
Inventory from 2010	16299	3123	2147	129	15885	8327
Used	212916	40800	37217	2756	210864	108779
Created at Facility	0	0	0	0	0	0
Released to Air	0	0	3	< 1	1	0
Released to Land	0	0	0	0	0	0
Released to Water	0	0	0	0	0	0
Disposed of (on-site)	0	0	0	0	0	0
Disposed of (off-site)	0	0	0	0	0	0
Transferred for Recycling	25327	4456	4195	275	25696	13187
Contained in Product	203888	39467	35165	2609	201053	103920
Transformed	0	0	0	0	0	0
Destroyed	0	0	0	0	0	0

The facility-wide quantification data for the current year, as determined by the accounting in the previous sections, is shown in Table 2 below.

Table 2. Facility-Wide Accounting Information for 2015

Form of Involvement	Amount of Substance (kg)					
	Cr	Co	Cu	Pb	Mn	Ni
Inventory from 2015	16299	3123	2147	129	15885	8327
Used	212916	40800	37217	2756	210864	108779
Created at Facility	0	0	0	0	0	0
Released to Air	0	0	3	< 1	1	0
Released to Land	0	0	0	0	0	0
Released to Water	0	0	0	0	0	0
Disposed of (on-site)	0	0	0	0	0	0
Disposed of (off-site)	0	0	0	0	0	0
Transferred for Recycling	25327	4456	4195	275	25696	13187
Contained in Product	203888	39467	35165	2609	201053	103920
Transformed	0	0	0	0	0	0
Destroyed	0	0	0	0	0	0

3.0 TECHNICALLY AND ECONOMICALLY FEASIBLE OPTIONS

There were no reduction options identified that could reduce toxic substance use at the Oetiker facility. Oetiker will continue to explore new ideas and technologies as they become available in the future.

4.0 IDENTIFICATION AND DESCRIPTION OF REDUCTION OPTIONS

Table 5.7-A. Summary of Reduction Option 1

Reduction Category	1. Materials or Feedstock Substitution
Option 1	Replacement of Current Steel with Steel that Contains No Reportable Substances
Details	Replacement of the current steel with a zero reportable substances alternative would have a great impact on the amount of reportable substances that enter the facility. Because steel is used at every stage and process at the facility, implementing this option would reduce the amount of reportable substances used at every process in the facility. A possible implication of this option would be whether use of steel that does not contain these components is appropriate for use with their products. Another possible implication would be whether or not alternative steels as mentioned above are commercially available on the market.
Reduction Potential	Implementation of this option would completely eliminate use of any reportable substances at the facility.
Technical Feasibility Analysis	*Not feasible for implementation.* The facility is unable to eliminate the reportable substances from their raw materials due to the desired effects that these substances give to the steel. Improved corrosion resistance, tensile strength, wear resistance and hardening effects, are all essential properties of the steel required to create the products at the facility.
Economic Feasibility Analysis	*Not technically feasible therefore economic feasibility analysis is not warranted.*

Table 5.7-B. Summary of Reduction Option 2

Reduction Category	2. Product Design or Reformulation
Option 2	Redesign of the Clamp Material to use an Alternative Substance that is Not Made of Steel
Details	This option would involve the redesign of the products currently made at the facility. Currently the majority of the products manufactured at the Oetiker facility are made of steel. Steel clamps and rings are made that are used in many industrial applications for machines, automobiles, etc. A redesign of the clamp material could be done to use a type of plastic material or alternative material. A most notable implication of this option would be the cost of conversion of the current manufacturing lines to manufacturing of an alternative material. An additional implication of implementing this reduction option would be whether the customers of Oetiker would subscribe to a new type of clamp or ring material.
Reduction Potential	Implementation of this option would completely eliminate use of any reportable substances at the facility.
Technical Feasibility Analysis	*Not feasible for implementation.* Due to the degree of change at the facility implementation of this option was deemed not technically feasible. Implementation of this option will deem all machine assets as unusable. No research and development has been complete. This would require entirely new processes, machines and regulations. The desired product from the customer would not be produced. Plastics and other alternative materials are highly subjective to temperature fluctuations that are essential to customer applications
Economic Feasibility Analysis	*Not technically feasible therefore economic feasibility analysis is not warranted.*

Table 5.7-C. Summary of Reduction Option 3

Reduction Category	3. Equipment or Process Modification
Option 3	Adjustment of Machine to Reduce the Overlap of the Material on Clamp Products
Details	Currently, there is an overlap of the clamp material that is present for the function of the clamp. The overlap provides the necessary grooves that the teeth of the grab in order to make the clamp work. Implementation of this option would suggest removal of some of this overlap material. For the purposes of reduction potential estimation the amount of material that would be removed is 5mm based on an average 40mm clamp.
Reduction Potential	$\text{Option } 3_{Cr} = 212{,}916 kg_{\text{Clamp Cr}} \times \left(1 - \frac{5mm}{40mm}\right)$ $= 186{,}301 kg_{Cr}$ $\text{Option } 3_{Co} = 40{,}800 kg_{\text{Clamp Co}} \times \left(1 - \frac{5mm}{40mm}\right)$ $= 35{,}700 kg_{Co}$ $\text{Option } 3_{Cu} = 16{,}995 kg_{\text{Clamp Cu}} \times \left(1 - \frac{5mm}{40mm}\right) + 20{,}221 kg_{\text{Ring Cu}}$ $= 35{,}092 kg_{Cu}$ $\text{Option } 3_{Pb} = 397 kg_{\text{Clamp Pb}} \times \left(1 - \frac{5mm}{40mm}\right) + 2{,}359 kg_{\text{Ring Pb}}$ $= 2{,}706 kg_{Pb}$ $\text{Option } 3_{Mn} = 203{,}470 kg_{\text{Clamp Mn}} \times \left(1 - \frac{5mm}{40mm}\right) + 7{,}394 kg_{\text{Ring Mn}}$ $= 185{,}430 kg_{Mn}$ $\text{Option } 3_{Ni} = 108{,}779 kg_{\text{Clamp Ni}} \times \left(1 - \frac{5mm}{40mm}\right)$ $= 95{,}182 kg_{Ni}$
Technical Feasibility Analysis	*Not technically feasible for implementation.* Implementation of this option is not feasible for a few reasons. The first is that by changing the amount of overlap would result in a change of the design of the product itself and break the company patent. The second is that the amount of material that is on the overlap is optimized to retain the functionality of the clamp. Reducing this material would jeopardize the structural integrity of the clamp. Also redesign of this clamp would need to be established at the head office in Switzerland.
Economic Feasibility Analysis	*Not technically feasible therefore economic feasibility analysis is not warranted.*

Table 5.7-D. Summary of Reduction Option 4

Reduction Category	4 Spill or Leak Prevention
Option 4	*No Option Identified*
Details	Considering the nature of the materials that contain the reportable substances in the facility, there were no suitable reduction options for this category. All of the reportable substances used at the facility are contained in the steel and welding consumables used at the facility. It was determined that there were no spill or leak prevention measures that could be employed that would reduce the amount of these substances used at the facility.

Table 5.7-E. Summary of Reduction Option 5

Reduction Category	5. On-site Reuse or Recycling
Option 5	Introduce an On-Site Electrical Arc Furnace to Melt Down Scrap Made back into Rolled Steel.
Details	Introduction of an on-site electrical arc furnace would allow the facility to reuse scrap made on site by melting it down and turning it back into rolled steel. This would allow the facility to reduce its use of the reportable substances by redirecting a recycling stream to a feedstock material.
Reduction Potential	
Technical Feasibility Analysis	*Not technically feasible for implementation.* Electric arc furnaces require significant indoor space for operation, which does not exist currently at the facility. Although modern electric arc furnaces are highly efficient recyclers of scrap steel, they also have a very dynamic quality of the arc furnace load. The power systems needed for such an operation may require technical measures to maintain the quality of the power supply for other customers on the grid. Flicker and harmonic distortion are common side-effects of arc furnace operation on a power system. Electric arc steelmaking is only feasible where there is plentiful electricity, with a well-developed electrical grid. Often times, even with well developed grids, these types of operations operate during off-peak hours when utilities have surplus power generating capacity
Economic Feasibility Analysis	*Not technically feasible therefore economic feasibility analysis is not warranted.*

Table 5.7-F. Summary of Reduction Option 6

Reduction Category	6. Improved Inventory or Purchasing Techniques
Option 6	Stop Inventory Building for Custom Parts
Details	Currently at the Oetiker facility an inventory of parts is created for some customers. This is done to ensure that if a customer calls with an immediate need for additional parts, they are available on the spot. However, when a customer changes to a different type of custom part, the old custom part becomes obsolete and is recycled. Currently, there is approximately a 2.5% obsolete scrap rate of parts that were made but not sold. This option would involve changing to a more lean type of manufacturing that would involve not carrying extra inventory for custom parts. This would divert this obsolete scrap stream and would mean that less raw material would be needed at the facility. A potential implication of this option would be whether or not it would be feasible from a technical standpoint. Some contracts with customers have clauses that guarantee that parts be available upon request. Also, most often clients will pay a premium for this option, so the financial feasibility will also come into question.
Reduction Potential	$\text{Option } 6_{Cr} = UC1_{Cr} + UC2_{Cr} - TROBS_{Cr}$ $= 161{,}141kg_{Cr} + 48{,}775kg_{Cr} - 3{,}756kg_{Cr}$ $= 206{,}160kg_{Cr}$ $\text{Option } 6_{Co} = UC1_{Co} + UC2_{Co} - TROBS_{Co}$ $= 30{,}695kg_{Co} + 10{,}105kg_{Co} - 720kg_{Co}$ $= 40{,}080kg_{Co}$ $\text{Option } 6_{Cu} = UC1_{Cu} + UC2_{Cu} + UR1_{Cu} + UR2_{Cu} - TROBS_{Cu}$ $= 13{,}022kg_{Cu} + 3{,}974kg_{Cu} + 15{,}575kg_{Cu} + 4{,}647kg_{Cu}$ $-652kg_{Cu}$ $= 36{,}566kg_{Cu}$ $\text{Option } 6_{Pb} = UC1_{Pb} + UC2_{Pb} + UR1_{Pb} + UR2_{Pb} - TROBS_{Pb}$ $= 239kg_{Pb} + 104kg_{Pb} + 1{,}817kg_{Pb} + 542kg_{Pb} - 48kg_{Pb}$ $= 2{,}654kg_{Pb}$ $\text{Option } 6_{Mn} = UC1_{Mn} + UC2_{Mn} + UR1_{Mn} + UR2_{Mn} - TROBS_{Mn}$ $= 163{,}829kg_{Mn} + 39{,}641kg_{Mn} + 5{,}628kg_{Mn} + 1{,}766kg_{Mn}$ $-3{,}718kg_{Mn}$ $= 207{,}146kg_{Mn}$ $\text{Option } 6_{Ni} = UC1_{Ni} + UC2_{Ni} - TROBS_{Ni}$ $= 82{,}903kg_{Ni} + 25{,}876kg_{Ni} - 1{,}919kg_{Ni}$ $= 106{,}860kg_{Ni}$

Table 5.7-F. Summary of Reduction Option 6 (Continued)

Technical Feasibility Analysis	*Not feasible for implementation.* This option was deemed not technically feasible for a few reasons. The first is that contract negotiations with customers have demanded that a minimum amount of their product is held at all times. The second reason is for machine and worker efficiency. In order to for production to be efficient at the facility, many parts of the same type must be created all at once. Otherwise, in the case of making parts strictly to order, the facility would be in a perpetual state of changeover, decreasing productivity
Economic Feasibility Analysis	*Not technically feasible, therefore economic feasibility analysis is not warranted.*

Table 5.7-G. Summary of Reduction Option 7

Reduction Category	7. Training or Improved Operating Practices
Option 7	*No Option Identified*
Details	There is always a large focus on reducing scrap and using as much material as possible at the facility. Due to this there are no apparent changes to operating practices that can be made. Anything that has been identified as an option for process change has already been implemented or has been assessed by the facility. Also, due to the largely automated processes that are used at the facility the training opportunities for toxic substance use are very limited. For these reasons no opportunities were found for this category.

5.0 PLAN CERTIFICATION

As of Friday, December 21, 2012, I, Dan Roche, certify that I have read the toxic substance reduction plan and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Dan Roche
Quality & Environmental Manager – Americas (Highest Ranking Employee)

As of Friday, December 21, 2012, I, Patrick Smale, certify that I am familiar with the processes at Oetiker Limited that use or create reportable substances, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Patrick Smale #TRSP166, CCEP, CEA, IHT, CES
President, Industrial Hygienist