

# Memorandum

DATE:		September 29, 2015		
TO:	Tania S	Steele	FROM:	Eshetu Beshada, Ph.D., P.Eng. Environmental Engineer
SUBJE	CT:	Brunswick Enterprise Ltd. –	· Information f	or Public Registries
Tania,				
	find Bru blic regist		.10) response t	to the TAC comments for distribution to
17 pag	es total			
Thank	you.			
Eshetu	Beshada	a, Ph.D., P. Eng.		

#### **Justin Copp**

From:

Justin Copp < justin@bruswicksteel.com>

Sent:

August-04-15 4:37 PM

To:

'Beshada, Eshetu (CWS)'

Subject:

RE: File 649.10 Brunswick Steel - EAP Review

Attachments:

Manufacturing Emergency Response Plan.docx; 2439 Brunswick Steel Metals Mar 12

2015 Report.pdf

Hi Eshetu,

Attached are my answers from the memorandum sent by Krista Olafson.

- 1. Yes the air quality is tested every 2-3 years. Attached is an air quality test done earlier this year and you can see that we are well within limits.
- 2. No we do not use any air abatement machines. The cutting tables have downdraft air removal which is ducted to the dust collector. The particles (steel dust) are recycled with our scrap and made into steel again.
- 3. No we do not use any acid wash, nor do we "clean" the steel.
- 4. No we do not generate any waste oil or waste paint products. We don't do any painting and vehicles are serviced by outside vendors.
- 5. The waste haulers we use are:
  - a. Metals Recyclers They pick up the scrap bin and take the steel scrap to the mill where it is melted again to make steel.
  - b. Liquid Waste Septic tanks and floor drainage pits are pumped as required.
  - c. Garbage Removed by a garbage contractor weekly and disposed of.
  - d. Recycling We recycle paper, tin cans, plastics, etc. from offices and lunchrooms.
- 6. The wastewater is simply water that is tracked into the buildings from vehicles driving in and it gets accumulated in drainage pits. These pits are pumped as required by the same company that removes our sewage waste.
- 7. Our existing Emergency Response Plan is attached.

Let me know if you need anything else.

Justin

From: Beshada, Eshetu (CWS) [mailto:Eshetu.Beshada@gov.mb.ca]

**Sent:** August-04-15 1:03 PM

To: Justin Copp

Subject: File 649.10 Brunswick Steel - EAP Review

Hello Justine,

The review period for the EAP you submitted has ended. I have receive the attached two comments that require your consideration. Please note that the comment from the Water Control Works and Drainage Licensing is for your



### **Practical Health and Safety Solutions**

121 Keedian Drive, East St. Paul, MB R2E 0K3 Phone (204) 668-3141 Fax (204) 654-9583 Email: winning airtesting@shaw.ca

Email: winnipegairtesting@shaw.ca

John McLaughlin Brunswick Steel 125 Bismarck St. Winnipeg, MB R2C 2Z2 maintenance@brunswicksteel.com

March 24, 2015 Project Number: 2439

**RE: AIRBORNE METALS EXPOSURE SURVEYS** 

Dear Sir:

Please find below the results of the air survey performed on March 12, 2015 at Brunswick Steel located at 125 Bismarck St. Winnipeg, MB.

## **Background**

As part of an ongoing health and safety program, air testing was performed to evaluate the personal exposures of two workers at one location. One worker from the day shift was working at the flame cutter station and one worker from the night shift was working at the Plasma cutting station.

# Methodology

Personal samples were collected by having the workers wear a small pump with a tube running up to the lapel of the worker and drawing air through a MCE filter cassette. The sampling pump worn by the worker was positioned in order to collect air from his breathing zone.

The samples were collected using normal industrial hygiene sampling pumps. The sampling pump was calibrated both before and after the survey to ensure a reliable flowrate. A flowrate of 1.5 litres per minute was used for all samples. The samples were analysed using NIOSH (National Institute of Occupational Safety and Health) Analytical Method 7300 and analysed for a 14 metal scan.

# **Observations**

Both Steven and Adam were working in the same location. Steven was working at the flame cutting station and Adam was working at the plasma cutting station. Both of these stations were located right next to each other and both were running during the day and night shifts. It was reported that the day shift was slow and had a lower workload and the night shift was busier.

## **Results**

The results of airborne chemicals were compared to the 2014 Threshold Limit Values (TLVs). TLVs represent time-weighted average airborne concentrations to which it is believed that a worker can be exposed, 8 hours per day, 40 hours per week, without adverse effect. TLVs have been adopted in the Safety and Health legislation as the allowable exposure guidelines in Manitoba.

The results of the air samples are provided in the following table. The results are presented as a percentage of the allowable exposure under current occupational exposure guidelines. An exposure equal to the allowable exposure would be represented as 100%. An exposure greater than the allowable limits would be a number greater than 100%. An exposure at half of the allowable level would be 50%.

# **Sampling Results of Metals Exposure**

Worker	Station	Dominant Health Effect	Exposure as a % of Allowable
Steven	Flame (Day shift)	CNS (Central Nervous System Effects)	37
Adam	Plasma (Night shift)	CNS	26

The exposure from the air samples are provided in the table above. Welding and other metal processes typically generate a possible exposure to a number of different metals. Any possible additive effects resulting from exposure to different metals were considered in the exposure calculation. If a worker is exposed to more than one agent that produces the same physiological response or acts upon the same organ of the body, the combined effect of the total exposure must be considered. The chemicals were grouped into common health effects. The dominant health effect was used in interpreting the significance of the exposures. That is to say that the health effect which recorded the highest sum of exposure relative to the permissible exposure limit was the dominant health group.

# **Conclusion**

Manganese represents the majority of exposure for each worker, however, the level of exposure received by both Steven and Adam were well within the TLV for manganese without the use of a respirator.

I hope this is information is of assistance to you. Should you have any questions or if we can be of any further assistance, please contact me at (204) 668 – 3141.

Sincerely

Winnipeg Air Testing

Per:

Caroline Gebel

Caroline Gebel, B.Sc. Industrial Hygienist

Reviewed by:

Douglas N. Wylie

Doug Wylie, CIH, ROH, CRSP, CRM Occupational Hygienist

# Copy of Metals Exposure Calculation METALS EXPOSURE DATA & CALCULATIONS

CLIENT: Brunswick Steel TYPE OF SAMPLE: Personal LOCATION: Steven - Flame Cutter 125 Bismarck St. WORK STATION: DATE: March 12, 2015 CONTROLS: None

Cassette		Flow Rate		
Number	Run Time (minutes)	(LPM)	Volume ( m3	)
	378	1.5	0.567	

	2014 TLV	Result	Health	TWA	Exposure
Chemical	( mg/m3 )	( ug )	Effect	( mg/m3 )	( % of TLV )
Aluminum	1	3.43	lung, irritation, neurotoxicity	0.006	0.6
Antimony	0.5	0.4	Respiratory tract irritation	0.001	0.1
Cadmium	0.01	0.4	kidney damage	0.001	7.1
Chromium (III)	0.5	1	irritation	0.002	0.4
Cobalt	0.02	0.4	asthma, lung, CVS	0.001	3.5
Copper-Fume	0.2	6.45	irritation, GI, fume fever	0.011	5.7
Iron Oxide	5	134	pneumoconiosis	0.338	6.8
Lead	0.05	0.4	CNS, blood, kidney, repro	0.001	1.4
Manganese	0.02	3.96	CNS Impairment	0.007	34.9
Molybdenum	10	0.4	Respiratory tract irritation	0.001	0.0
Nickel (elemental)	1.5	0.985	lung, irritation, dermatitis	0.002	0.1
Titanium Dioxide	10	0.4	lung	0.000	0.0
Vanadium Pentox	0.05	0.4	irritation, lung	0.002	3.6
Zinc Oxide - Fume	2	5.08	Metal Fume Fever	0.011	0.6

**Dominant Health Effect: CNS** 37% Combined Exposure (as % of permissible)

#### METALS EXPOSURE DATA & CALCULATIONS

CLIENT:	Brunswick Steel	TYPE OF SAMPLE:	Personal
LOCATION:	125 Bismarck St.	WORK STATION:	Adam - Plasma Cutter
DATE:	March 12, 2015	CONTROLS:	None

Cassette		Flow Rate		
Number	Run Time (minutes)	(LPM)	Volume ( m	13)
	435	1.5	0.653	

Chemical	2014 TLV ( mg/m3 )	Result ( ug )	Health Effect	TWA ( mg/m3 )	Exposure ( % of TLV)
Aluminum	1	3.89	lung, irritation, neurotoxicity	0.006	0.6
Antimony	0.5	0.4	Respiratory tract irritation	0.001	0.1
Cadmium	0.01	0.4	kidney damage	0.001	6.1
Chromium (III)	0.5	1	irritation	0.002	0.3
Cobalt	0.02	0.4	asthma, lung, CVS	0.001	3.1
Copper-Fume	0.2	8.64	irritation, GI, fume fever	0.013	6.6
Iron Oxide	5	148	pneumoconiosis	0.324	6.5
Lead	0.05	0.4	CNS, blood, kidney, repro	0.001	1.2
Manganese	0.02	3.2	CNS Impairment	0.005	24.5
Molybdenum	10	0.966	Respiratory tract irritation	0.001	0.0
Nickel (elemental)	1.5	1.17	lung, irritation, dermatitis	0.002	0.1
Titanium Dioxide	10	0.4	lung	0.000	0.0
Vanadium Pentox	0.05	0.4	irritation, lung	0.002	3.1
Zinc Oxide - Fume	2	3.97	Metal Fume Fever	0.008	0.4

Dominant Health Effect: CNS
Combined Exposure (as % of permissible) 26%

# **Copy of Laboratory Results**

122016-001	Steven	03/12/15		567 L	
Aluminum	NIOSH 7300M	3.43 µg	1.00 µg	6.05 µg/m3	
Antimony	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Beryllium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Cadmium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Chromium	NIOSH 7300M	<1.00 µg	1.00 µg	<1.77 µg/m3	
Cobalt	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Copper	NIOSH 7300M	6.45 µg	1.00 µg	11.4 µg/m3	
Iron	NIOSH 7300M	134 µg	1.00 µg	237 µg/m3	
Lead	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Manganese	NIOSH 7300M	3.96 µg	0.400 µg	6.98 µg/m3	
Molybdenum	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Nickel	NIOSH 7300M	0.985 µg	0.400 µg	1.74 µg/m3	
Titanium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Vanadium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.706 µg/m3	
Zinc	NIOSH 7300M	5.08 µg	1.00 µg	8.96 µg/m3	
22016-002	Adam	03/12/15		653 L	
Aluminum	NIOSH 7300M	3.89 µg	1.00 µg	5.96 µg/m3	
Antimony	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Beryllium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Cadmium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Chromium	NIOSH 7300M	<1.00 µg	1.00 µg	<1.54 µg/m3	
Cobalt	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Copper	NIOSH 7300M	8.64 µg	1.00 µg	13.2 µg/m3	
Iron	NIOSH 7300M	148 µg	1.00 µg	226 µg/m3	
Lead	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Manganese	NIOSH 7300M	3.20 µg	0.400 µg	4.91 µg/m3	
Molybdenum	NIOSH 7300M	0.966 µg	0.400 µg	1.48 µg/m3	
Nickel	NIOSH 7300M	1.17 µg	0.400 µg	1.79 µg/m3	
Titanium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Vanadium	NIOSH 7300M	<0.400 µg	0.400 µg	<0.613 µg/m3	
Zinc	NIOSH 7300M	3.97 µg	1.00 µg	6.08 µg/m3	

# **Brunswick**Steel

# **Emergency Response Plan**

July 21, 2014

#### **Building Description and Use**

125 Bismarck Street off of Springfield Road East R.M. of Springfield R2C 2Z2

#### **Description:**

Single story steel frame construction comprising an area of approximately 60,000 sq. ft

Notable features include:

- Main Production facility 19' ceilings
- Laser Shop
- Office area with second floor mezzanine area of approx. 800 sq. ft.

#### **Type of Occupancy**

Occupancy Class Group F Division 2

Medium -hazard industrial occupancy.

Manufacturing Plant designed for:

- Metal (steel, stainless, aluminum) processing
- Machine shop
- Grinding/finishing
- Administrative offices

#### Fire protection System and Equipment

#### **Alarm System**

Smoke alarms are situated throughout the office areas, which sound a general alarm throughout those areas when activated.

Push station alarms are situated throughout the production areas, which sound a general alarm throughout areas when activated. These are for emergency evacuation use only.

#### Fire extinguishers

Fire extinguishers are located throughout the entire facility. They are clearly marked with signs.

#### **Water Supply**

Water is supplied to the facility by private well only.

#### **Voice Communication System**

A voice communication system (P/A system) has been installed throughout the site/building. This system allows the management, a designated announcer or fire department personnel to broadcast important information or special instructions in the event of an emergency.

#### **Emergency Lighting**

Emergency lights have been installed throughout all floor areas, including the stairways. Should a power failure occur, the emergency lights provide sufficient light for evacuation for 15 minutes.

#### Video Surveillance

The production facilities, including ancillary buildings (laser shop, saw shack) and exterior locations, have been equipped with video surveillance cameras. Monitoring and recorded data is located in the Plant Manager's Office.

#### Site Plan and Floor Plan

Site Plan

Muster point 1 is located at the north side of the front (west) gate.

Muster point 2 is located at the north side of the back (east) gate.

Visitor and management parking is only permitted close to the building. Employee parking is permitted only in a designated lot northeast of the facility allowing for sufficient space for a fire route. Unauthorized parking is controlled daily by management

MAIN Natural Gas shut off valve is located on the corner of the plant building between the Shipping Office entrance (C) and Overhead Door 2.

The Natural Gas shut off valve for the Laser Shop is on the outside west wall.

Floor Plan

The Floor plan indicates the location of

- Fire extinguishers
- Smoke Alarms
- Emergency Exists and Escape routes
- Natural Gas shutoff
- Electrical shut off -main breaker

#### **Human Resources**

# Plant Emergency Phone Numbers

NAME	CELL #	HOME#
Tom Hayden	204-791-4035	204-885-4732
Justin Copp	204-299-6060	204-663-3636
Christine Dockter	204-299-6200	204-444-4724
John McLaughlin – Maintenance	204-997-9569	
Paul Skanes – IT	204-226-7610	

### **Contractors / Agencies**

RCMP	204-444-3391	911
Ambulance		911
Fire		911
Springfield Fire & Rescue (non- emergency)		204-981-4042
Manitoba Hydro Emergency (Electrical & Gas)		204-480-5900
General Scrap		204-222-4221

#### **EMERGENCY REPORTING**

Types of emergencies to be reported by all employees are:

- MEDICAL
- FIRE
- SEVERE WEATHER ex: blizzards
- BOMB THREAT
- CHEMICAL SPILL, LEAK OR RUPTURE
- EXTENDED POWER LOSS

#### **Emergency Response Team**

The effectiveness of the Emergency Response Plan depends largely upon the ability, energy and experience of the Emergency Response Team. This team will be given clearly defined authority, so that the building and occupants may be safeguarded against emergency

The staff must be instructed in the Emergency Response Plan before they are given any responsibility for safety.

#### **Incident Commander**

The Incident Commander is authorized to co-ordinate all activity and take all necessary actions to deal with an incident. The Plant Manager is designated as the Incident Commander.

Alternates will be selected to act in the event the Incident Commander is unavailable or incapacitated.

#### The Incident Commander shall

- Designate and train sufficient assistants to act in this position, during any absence from the building
- Coordinate an orderly evacuation of personnel
- Perform an accurate head count of personnel reported to the evacuation rally points
- Provide the Fire Department and/or Emergency personnel with the necessary information about the facility, the incident and/or missing personnel.
- Perform assessment and coordinate weather forecast office emergency closing procedure

#### **Emergency Response Team**

#### **Supervisors and Department Managers shall**

- Educate all building personnel and occupants in the use of the existing fire safety equipment and in the actions to be taken under the approved Emergency Response Plan
- Ensure that in the event of an evacuation that all employees, customers, and contractors have evacuated the area, including change rooms, lunch rooms, and washrooms.
- Survey the buildings daily to determine that the numbers of exits available and the fire safety equipment from each floor or area are accessible.
- Report all information and any problems to the Incident Commander in the event of an incident or evacuation.
- Maintain a daily roll call list.

#### Management, Supervisors, and Safety Committee Members shall

- Be in charge of the approved Emergency Response Plan and the specific responsibilities of employees.
- Designate and train sufficient personnel to be on the Emergency Response Team.
- Educate and train all building personnel and occupants in the use of the existing fire safety equipment and in the actions to be taken under the approved Emergency Response Plan.
- Ensure that diagrams showing type, location and operation of all building fire emergency systems (extinguishers) are maintained.

#### Responsibilities of the Building Occupants

Building occupants have a number of responsibilities.

#### They are to be familiar with:

- Evacuation procedures outlined in the Emergency Response Plan.
- Locations of exits and rally points.
- The location of extinguishers and other fire protection equipment.
- The correct address of the building.

#### They must also avoid hazards in the building by:

- Keep stairways, landings, hallways, passageways and all exits clear of obstructions at all times
- Prevent combustible materials from accumulating in any part of a stairway, fire escapes other means of egress
- Prevent combustible materials from accumulating in quantities or locations which would constitute a fire hazard.
- Promptly remove all combustible waste from areas where waste is collected for disposal.
- Report burnt out exit lights and fire equipment that is not in good condition.
- Ensure fire lanes are kept clear and accessible for fire department use.
- Dropping loads to the ground when unattended.

#### In the event of the evacuation alarm sounding, the building occupants are to:

- Leave the building immediately by the nearest exit.
- Turn off all gases.
- Lower all loaded cranes to the floor.
- Close all doors behind you.
- Report to designated rally point.
- Do not return to the building until it is declared safe to do so by the Fire Official and the Incident Commander.

#### **Emergency Evacuation Procedure**

#### Fire Response

#### In the event of an emergency that requires evacuation:

- IF YOU DISCOVER A FIRE OR SMELL SMOKE, remain calm, warn persons in your general area and contact your supervisor.
- IF YOU HEAR AN EVACUATION ALARM OR ANNOUNCEMENT, immediately leave the building using the nearest safe exit and go to the nearest muster point.
- EXIT THE BUILDING IMMEDIATELY without visiting lockers or stopping to pick up personal effects. Buildings must be evacuated immediately.
- ATTEMPT TO EXTINGUISH A FIRE only if it is small, if safe to do so, and you are trained with auxiliary fire apparatus operation.
- GIVE YOUR NAME to the muster point captain when you reach the closest muster point.

- KEEP DRIVEWAYS AND DOORWAYS CLEAR to facilitate the evacuation of others and for Emergency operations.
- DO NOT TURN BACK OR RE-ENTER for any reason until given permission by the Incident Commander.
- DO NOT LEAVE THE MUSTER POINT AREA until given permission by the Incident Commander.
- IF EXITS ARE BLOCKED OR INVOLVED IN THE FIRE, use other available exits.
- PERSONS WITH DISABILITIES should identify themselves and be stationed in a safe location, notify the Incident Commander of their location and allow them to assist evacuation.
- SUPERVISORS AND MANAGERS will assume lead roles and coordinate all evacuations.

When the evacuation alarm is sounded and/or the evacuation announcement is made, the evacuation plan will be implemented immediately.

If the alarm or announcement is verified false or a fire was small and was extinguished, the evacuation will be called off. Employees may then return to their work stations.

When the plant is in production, the Plant Manager or a Supervisor are the only people allowed to call off the fire alarm.

In the event an alarm is called off a Manager in the office will be responsible for informing the Emergency Crews arriving onsite.

The Safety Committee and Supervisors will start an incident report after the situation is under control.

#### **Extended Power Loss**

In the event of extended power loss to the facility, certain precautionary measures should be taken.

Unnecessary electrical equipment and appliances should be turned off or unplugged in the event that power restoration would surge causing damage to electronics and effecting sensitive equipment.

Management and/or Supervisors will contact Manitoba Hydro.

#### **Severe Weather**

#### Tornado

If a tornado is imminent seek inside shelter.

Consider the following:

- Small interior rooms on the lowest floor and without windows.
- Hallways on the lowest floor away from doors and windows, and
- Rooms constructed with reinforced concrete, brick, or block with no windows.

Stay away from outside walls and windows. Use your arms to protect your head and neck. Remain sheltered until the tornado threat is over.

#### **Blizzard**

#### If indoors:

Stay calm and await instructions from the Incident Commander or Supervisor. Stay indoors!

#### If there is no heat:

- Close off unneeded rooms or areas.
- Stuff towels or rags in cracks under doors.
- Cover windows at night.
- Eat and drink. Food provides the body with energy and heat. Fluids prevent dehydration.
- Wear layers of loose-fitting, light-weight, warm clothing, if available.

#### If stranded in a car or truck:

- Stay in the vehicle.
- Run the motor about ten minutes each hour. Open the windows a little for fresh air to avoid carbon monoxide poisoning. Make sure the exhaust pipe is not blocked.
- Turn on the dome light at night when running the engine.
- Tie a colored cloth to your antenna or door.
- Exercise to keep blood circulating and to keep warm.

#### Rules for Fighting a Fire:

Fires can be very dangerous and you should always be certain that you will not endanger yourself or others when attempting to put out a fire. For this reason, when a fire is discovered...

- 1. Assist any person in immediate danger to safety if it can be accomplished without risk to you.
- 2. Inform the Supervisor where the fire is located.
- 3. If you are trained and if the fire is small (and only after having done steps #1 & 2), you may attempt to use an extinguisher to put it out only if safe to do so.

#### **Quantities of Hazardous Materials**

Due to the nature of the operations, Brunswick Steel stores various quantities of dangerous goods on site; including indoor and outdoor storage.

Two primary classes are stored on-site. These are:

- Class 3 Flammable liquids
- Cylinders of Class 2 compressed gasses.

#### Main Building Indoor Storage:

Flame/Plasma Area: 1 Oxvgen Static, 1 Oxvgen Portable

1 Acetylene Static, 1 Acetylene Portable

South wall

Ring Roller / Saw Area: 1 Oxygen Portable, 1 Acetylene Portable

Barbay Middle (19E) Area: Cylinders of Oxygen, Nitrogen, Carbon Dioxide, Argon, Tank of Propane

Stored in caged area – east wall.

#### **Laser Shop Indoor Storage:**

Northeast wall: 5 Helium, 4 Carbon Dioxide, 5 Nitrogen cylinders

1 Oxygen Portable, 1 Acetylene Portable

#### **Outdoor Storage Main Building:**

By man door A on the southwest wall is bulk storage of Liquid Oxygen, Nitrogen and Propane.

At the north east corner of main building is bulk storage of diesel containing approximately 1,400 litres of diesel fuel.

#### **Outdoor Storage Laser Shop:**

The northwest side of the Laser shop is bulk storage of Nitrogen, Liquid Nitrogen and Oxygen.

On the southeast wall is storage rack with Acetylene and Oxygen cylinders.

#### **Chemical Spill**

When a Large Chemical Spill has occurred:

- Immediately notify a Supervisor.
- Contain the spill if trained.
- Secure the area and alert other employees in the area.
- Do not attempt to clean the spill unless trained to do so.
- Call the First Aid employee to attend to injured personnel if required.
- The Plant Manager or Supervisor will evacuate building as necessary.

When a Small Chemical Spill has occurred:

- Notify a supervisor.
- If toxic fumes are present, the Supervisor will secure the area (with caution tapes or cones) to prevent other employees from entering.
- Spills will be dealt with in accordance with the instructions described in the MSDS.
- Small spills must be handled in a safe manner, while wearing the proper PPE.