
Workshops on Validating the Environmental Codes of Practice for the Mining Industry Georgetown, Guyana

Summary Report

NRCan (CANMET) – GENCAPD Mining Project

Our File M-6763 (603430)

December 2003

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December 16, 2003

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SUBJECT: Summary report
Workshop on validating Codes of Practice
PWGSC contract No. 23440-021003
Our file M-6763 (603430)

Sir:

Please find enclosed the Summary Report regarding the Workshops on Validating the Environmental Codes of Practice for the Mining Industry of Guyana, held in Georgetown, Guyana from November 21st to 27th, 2003.

Should you have further questions or comments please do not hesitate in communicating with the undersigned.

Yours truly,

SNC-LAVALIN ENVIRONMENT INC.

Marc Arpin, M.Sc., P.Geo.
Project Director

MA/lj

Encl.

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1. **INTRODUCTION**

1.1 **General**

The GENCAPD Mining Project held, from November 21st to November 27th, 2003 a total of 6 Multi-Stakeholder Workshops in Georgetown, Guyana in order to validate with the GENCAPD stakeholders the six (6) Environmental Codes of Practice for the Mining Industry in Guyana. Draft versions of these Codes of Practice had been prepared and submitted beforehand to the stakeholders by SNC-LAVALIN ENVIRONMENT INC. These Codes deal with the following issues:

- Use of mercury;
- Tailings management;
- Contingency and response plans;
- Mine effluents;
- Mine reclamation and closure plans;
- Mine waste management and disposal.

1.2 **GENCAPD Mining Project and context of the workshops**

The Canada Centre for Mineral and Energy Technology (CANMET) of Natural Resources Canada has been selected by the Canadian International Development Agency (CIDA) to execute the Guyana Environmental Capacity Development Mining Project (GENCAPD). The project's main partner in Guyana is the Guyana Geology and Mines Commission (GGMC). The objective is to modernize Guyana's environmental protection standards in the mining sector.

Guyana has extensive alluvial gold deposits and artisanal gold mining contributes significantly to its economic development. In the near future, GGMC is seeking to regularize mining activities and to ensure that environmental concerns are integrated within, and become central in mining operations. In support of the industry, draft Environmental Codes of Practice have been prepared by SNC-LAVALIN ENVIRONMENT INC. and submitted to stakeholders (namely GGMC, EPA and GGDMA) for review.

1.3 Purpose of Workshops

The purpose of the Workshops was to provide GENCAPD's main stakeholders, that is GGMC, the Guyana Environmental Protection Agency (EPA) and Guyana Gold and Diamonds Miners Association (GGDMA) with an opportunity to express their opinions, comments and concerns regarding the draft version of the Codes and to suggest improvements. The most relevant comments and suggestions (many of them were) have been used to produce a revised version of the Codes that was issued by SNC-LAVALIN ENVIRONMENT INC. during the first week of December 2003. The agendas for the 6 Workshop are provided in Appendix A.

1.4 Methodology

All 6 workshops were facilitated by SNC-LAVALIN ENVIRONMENT INC. In order to achieve its objective, the Workshops have been designed to be interactive and participative. There were two (2) one-day and four (4) half-day workshops distributed as follows:

- November 21st : Workshop on use of mercury;
- November 25th : Workshop on mine reclamation and closure plans;
- November 26th (AM) : Workshop on mine effluents;
- November 26th (PM) : Workshop on contingency and response plans;
- November 27th (AM) : Workshop on Mine waste management and disposal;
- November 27th (PM) : Workshop on tailings management

One of the main objectives of the workshops was to collect a wide diversity of opinions from as many and varied participants as possible. To achieve that goal, all workshops were designed on the same participative methodology which consisted in three (3) steps.

At step 1, the Code to be discussed was first briefly described by the facilitator. Instructions on methodology were also given at that stage. Then, at step 2, the group was divided into smaller work teams. The work teams were asked to review and discuss each of the different topics addressed by the Code through a number of

“rounds of discussion”. A period of time ranging in duration from 30 to 45 minutes per topic was allowed for discussing the Code’s content. In order to create some dynamism and movement, a table was identified for each topic and at the end of each round of discussion, teams would move on to the next table in a clockwise fashion. This way every team would discuss every topic.

Step 3 consisted of a plenary session whereby the teams would communicate their findings and comments to the main group. Comments and observations were written down on flip charts by the participants and given to the facilitator at the end of the workshop. A detailed description of the methodology used in each workshop is provided in Appendix B.

1.5 Participants

Participants representing GGMC, EPA, GGDMA, University of Guyana and Cambior attended the different workshops. The attendees for each workshop are listed in Appendix C.

Photo 1-1
Workshop on the use of mercury



Photo 1-2
Workshop on mine reclamation and closure plans



Photo 1-3
Workshop on mine effluents



Photo 1-4
Workshop on contingency and response plans



Photo 1-5
Workshop on waste management and disposal



Photo 1-6
Workshop on tailings management



This report has been prepared par Marc Arpin, M.Sc., P.Geo., project manager and reviewed by Benoit Demers, M.Sc.A., Eng., Director, Mining and Environment.

SNC-LAVALIN ENVIRONMENT INC.

Marc Arpin, M.Sc., P.Geo.
Project Manager

Verified for conformity
with ISO 9001 by :

Benoît Demers, M.A.Sc., Eng.
Director
Mining and Environment

MA/lj

Distribution:

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APPENDIX A

Workshops agendas

AGENDA
WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR THE USE OF
MERCURY IN THE MINING INDUSTRY OF GUYANA

November 21, 2003 - Location: Georgetown Club, Georgetown

Facilitator: Mr. Marc Arpin, M.Sc., P.Geo.

08:00-08:30	Registration
08:30-09:00	Word of welcome and opening remarks (Mr. Ayalew Legesse, GENCAPD and Mr. Robeson Benn, Commissioner of GGMC)
09:00-10:00	Presentation of the Code and instructions regarding the workshop's methodology
10:00-10:30	First round of discussion
10:30-10:50	Coffee break
10:50-11:20	Second round of discussion
11:20-11:50	Third round of discussion
11:50-13:00	Lunch break
13:00-13:30	Fourth round of discussion
13:30-14:00	Fifth round of discussion
14:00-14:30	Sixth round of discussion
14:30-14:45	Coffee break
14:45-16:45	Plenary session
16:45-17:00	Closing remarks
17:00	End of workshop

AGENDA
**WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR MINE
RECLAMATION AND CLOSURE PLANS IN THE MINING INDUSTRY OF GUYANA**

November 25,2003 - Location: Georgetown Club, Georgetown

Facilitator: Mr. Marc Arpin, M.Sc., P.Geo.

08:00-09:00	Registration
09:00-10:00	Presentation of the Code and instructions regarding the workshop's methodology
10:00-10:30	First round of discussion
10:30-10:50	Coffee break
10:50-11:20	Second round of discussion
11:20-11:50	Third round of discussion
11:50-13:00	Lunch break
13:00-13:30	Fourth round of discussion
13:30-14:00	Fifth round of discussion
14:00-14:30	Sixth round of discussion
14:30-14:45	Coffee break
14:45-16:45	Plenary session
16:45-17:00	Closing remarks
17:00	End of workshop

AGENDA
WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR MINE EFFLUENTS
IN THE MINING INDUSTRY OF GUYANA

November 26 (AM), 2003 - Location: Georgetown Club, Georgetown

Facilitator: Mr. Marc Arpin, M.Sc., P.Geo.

08:00-09:00	Registration
09:00-09:30	Presentation of the Code and instructions regarding the workshop's methodology
10:00-10:30	First round of discussion
10:30-10:50	Coffee break
10:50-11:20	Second round of discussion
11:20-12:20	Plenary
12:20-12:30	Closing remarks
12:30	End of workshop

AGENDA
WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR CONTINGENCY
AND RESPONSE PLANS IN THE MINING INDUSTRY OF GUYANA

November 26 (PM), 2003. Location: Georgetown Club, Georgetown

Facilitator: Mr. Marc Arpin, M.Sc., P.Geo.

12:30-13:00	Registration
13:00-13:30	Presentation of the Code and instructions regarding the workshop's methodology
13:30-14:00	First round of discussion
14:00-14:30	Second round of discussion
14:30-14:45	Coffee break
14:45-15:15	Third round of discussion
15:15-16:30	Plenary
16:30-16:45	Closing remarks
16:45	End of workshop

AGENDA
**WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR WASTE
MANAGEMENT AND DISPOSAL IN THE MINING INDUSTRY OF GUYANA**

November 27 (AM), 2003 - Location: Georgetown Club, Georgetown

Facilitator: Mr. Marc Arpin, M.Sc., P.Geo.

08:00-09:00	Registration
09:00-09:30	Presentation of the Code and instructions regarding the workshop's methodology
10:00-10:30	First round of discussion
10:30-10:50	Coffee break
10:50-11:20	Second round of discussion
11:20-12:20	Plenary
12:20-12:30	Closing remarks
12:30	End of workshop

AGENDA
WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR TAILINGS
MANAGEMENT IN THE MINING INDUSTRY OF GUYANA

November 27 (PM), 2003 - Location: Georgetown Club, Georgetown

Facilitator: Mr. Marc Arpin, M.Sc., P.Geo.

12:30-13:00	Registration
13:00-13:30	Presentation of the Code and instructions regarding the workshop's methodology
13:30-14:00	First round of discussion
14:00-14:30	Second round of discussion
14:30-14:45	Coffee break
14:45-15:15	Third round of discussion
15:15-16:30	Plenary
16:30-16:45	Closing remarks by Mr. Robeson Benn, GGMC Commissioner
16:45	End of workshop
16:45-17:30	Cocktail

Description of methodology

WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR THE USE OF MERCURY IN THE MINING INDUSTRY OF GUYANA

METHODOLOGY

- ❑ A total of six (6) topics will be discussed:
 1. Storage, handling and transport of mercury
 2. Amalgamation of gold particles
 3. Disposal of amalgamation tailings
 4. Burning of amalgam to recover gold
 5. Burning of residual mercury to purify gold
 6. Occupational health management and Environmental monitoring
- ❑ There will be one discussion table for each of the above topics.
- ❑ The group will be divided into six (6) teams.
- ❑ There will be six (6) 30-minute rounds of discussion: one for each topic.
- ❑ Teams will spend a round at a specific table and then move on the next table. The six topics will therefore be covered by all the teams.
- ❑ Team No. 1 starts at table No.1, team No. 2 starts at table No.2 and so on.

Plenary session

- ❑ The plenary session will consist of six (6) 20-minute rounds on each topic.
- ❑ A single microphone will be placed in the middle of the room. Those who wish to express comments or make suggestions to improve the Code are welcome to do so.
- ❑ To ensure that all the teams have an opportunity to express themselves, we strongly suggest that a spokesperson is designated to speak on behalf of the team. Depending on the topic discussed, it can be a different person every time.
- ❑ All the comments will be written down in the proceedings of the workshop in order to be used in the final draft of the Code.
- ❑ Remember that the purpose of the workshop is to give every stakeholder an opportunity to express his/her opinion. Therefore, try to be concise and brief and let's avoid long and animated debates!

WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR RECLAMATION AND MINE CLOSURE PLANS IN THE MINING INDUSTRY OF GUYANA

METHODOLOGY

- A total of six (6) topics will be discussed:
 1. Reclamation planning
 2. Progressive reclamation
 3. Physical and chemical stability of the Site
 4. Land use
 5. Pre and post-closure monitoring
 6. Relinquishment
- There will be one discussion table for each of the above topics.
- The group will be divided into six (6) teams.
- There will be six (6) 30-minute rounds of discussion: one for each topic.
- Teams will spend a round at a specific table and then move on the next table. The six topics will therefore be covered by all the teams.
- Team No. 1 starts at table No.1, team No. 2 starts at table No.2 and so on.

Plenary session

- The plenary session will consist of six (6) 20-minute rounds on each topic.
- A single microphone will be placed in the middle of the room. Those who wish to express comments or make suggestions to improve the Code are welcome to do so.
- To ensure that all the teams have an opportunity to express themselves, we strongly suggest that a spokesperson is designated to speak on behalf of the team. Depending on the topic discussed, it can be a different person every time.
- All the comments will be written down in the proceedings of the workshop in order to be used in the final draft of the Code.
- Remember that the purpose of the workshop is to give every stakeholder an opportunity to express his/her opinion. Therefore, try to be concise and brief and let's avoid long and animated debates!

WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR MINE EFFLUENTS IN THE MINING INDUSTRY OF GUYANA

METHODOLOGY

- ❑ A total of two (2) topics will be discussed:
 1. Site preparation and construction
 2. Mining operations
- ❑ There will be one discussion table for each of the above topics.
- ❑ The group will be divided into two (2) teams.
- ❑ There will be two (2) 30-minute rounds of discussion: one for each topic.
- ❑ Teams will spend a round at a specific table and then move on the next table. The two (2) topics will therefore be covered by all the teams.
- ❑ Team No. 1 starts at table No.1, team No. 2 starts at table No.2 and so on.

Plenary session

- ❑ The plenary session will consist of two (2) 30-minute rounds on each topic.
- ❑ A single microphone will be placed in the middle of the room. Those who wish to express comments or make suggestions to improve the Code are welcome to do so.
- ❑ To ensure that all the teams have an opportunity to express themselves, we strongly suggest that a spokesperson is designated to speak on behalf of the team. Depending on the topic discussed, it can be a different person every time.
- ❑ All the comments will be written down in the proceedings of the workshop in order to be used in the final draft of the Code.
- ❑ Remember that the purpose of the workshop is to give every stakeholder an opportunity to express his/her opinion. Therefore, try to be concise and brief and let's avoid long and animated debates!

WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR CONTINGENCY AND RESPONSE PLANS IN THE MINING INDUSTRY OF GUYANA

METHODOLOGY

- A total of five (5) topics will be discussed:
 1. Defining the local community
 2. Raising awareness
 3. Forming a coordinating group
 4. Developing the APELL
 5. Communication, training and testing
- There will be three (3) discussion tables:
 1. Defining the local community
 2. Raising awareness and Forming a Coordinating Group
 3. Developing the APELL and Communication, Training and Testing
- The group will be divided into three (3) teams.
- There will be three (3) 30-minute rounds of discussion: one for each topic or group of topics.
- Teams will spend a round at a specific table and then move on the next table. The three (3) topics will therefore be covered by all the teams.
- Team No. 1 starts at table No.1, team No. 2 starts at table No.2 and so on.

Plenary session

- The plenary session will consist of three (3) 25-minute rounds on each topic.
- A single microphone will be placed in the middle of the room. Those who wish to express comments or make suggestions to improve the Code are welcome to do so.
- To ensure that all the teams have an opportunity to express themselves, we strongly suggest that a spokesperson is designated to speak on behalf of the team. Depending on the topic discussed, it can be a different person every time.
- All the comments will be written down in the proceedings of the workshop in order to be used in the final draft of the Code.
- Remember that the purpose of the workshop is to give every stakeholder an opportunity to express his/her opinion. Therefore, try to be concise and brief and let's avoid long and animated debates!

WORKSHOP ON VALIDATING THE CODE OF PRACTICE FOR MINE WASTE MANAGEMENT AND DISPOSAL IN THE MINING INDUSTRY OF GUYANA

METHODOLOGY

- ❑ A total of two (2) topics will be discussed:
 1. Waste dumps
 2. Topsoil and overburden
- ❑ There will be one discussion table for each of the above topics.
- ❑ The group will be divided into two (2) teams.
- ❑ There will be two (2) 30-minute rounds of discussion: one for each topic.
- ❑ Teams will spend a round at a specific table and then move on the next table. The two (2) topics will therefore be covered by all the teams.
- ❑ Team No. 1 starts at table No.1, team No. 2 starts at table No.2.

Plenary session

- ❑ The plenary session will consist of two (2) 30-minute rounds on each topic.
- ❑ A single microphone will be placed in the middle of the room. Those who wish to express comments or make suggestions to improve the Code are welcome to do so.
- ❑ To ensure that all the teams have an opportunity to express themselves, we strongly suggest that a spokesperson is designated to speak on behalf of the team. Depending on the topic discussed, it can be a different person every time.
- ❑ All the comments will be written down in the proceedings of the workshop in order to be used in the final draft of the Code.
- ❑ Remember that the purpose of the workshop is to give every stakeholder an opportunity to express his/her opinion. Therefore, try to be concise and brief and let's avoid long and animated debates!

WORKSHOP ON VALIDATING THE CODE OF PRACTICE TAILINGS MANAGEMENT IN THE MINING INDUSTRY OF GUYANA

METHODOLOGY

- A total of five (5) topics will be discussed:
 1. Overburden stripping
 2. Tailings dam site selection and design
 3. Tailings dam construction
 4. Tailings dam operation
 5. Decommissioning and closing of a tailings facility
- There will be three (3) discussion tables:
 1. Overburden stripping
 2. Tailings dam site selection, design and construction
 3. Tailings dam operation and decommissioning
- The group will be divided into three (3) teams.
- There will be three (3) 30-minute rounds of discussion: one for each topic or group of topics.
- Teams will spend a round at a specific table and then move on the next table. The three (3) topics will therefore be covered by all the teams.
- Team No. 1 starts at table No.1, team No. 2 starts at table No.2 and so on.

Plenary session

- The plenary session will consist of three (3) 25-minute rounds on each topic.
- A single microphone will be placed in the middle of the room. Those who wish to express comments or make suggestions to improve the Code are welcome to do so.
- To ensure that all the teams have an opportunity to express themselves, we strongly suggest that a spokesperson is designated to speak on behalf of the team. Depending on the topic discussed, it can be a different person every time.
- All the comments will be written down in the proceedings of the workshop in order to be used in the final draft of the Code.
- Remember that the purpose of the workshop is to give every stakeholder an opportunity to express his/her opinion. Therefore, try to be concise and brief and let's avoid long and animated debates!

APPENDIX C

List of participants

Code of Practice Workshops

Friday 21 November 2003

Mercury Use

No	Mr/Ms	Name	Institution	Position Held
1	Ms.	Aretha Crawford	GGMC	Geologist
2	Ms.	Raihaana Ali	U.G	Lecturer
3	Mr.	Robeson Benn	GGMC	Commissioner
4	Mr.	Calvin Bernard	U. G	Lecturer I
5	Ms.	Nadine Livan	EPA	Environmental Officer I
6	Ms.	Karen Livan	GGMC	Manager
7	Mr.	Lloyd Stephen	GENCAPD	MEO
8	Ms.	Preya Rampersaud	EPA	Senior Env. Officer (a.g)
9	Ms.	Sonia Gimbs	EPA	Env. Officer
10	Mr.	Khalid Alladin	EPA	Env. Officer II
11	Mr.	Renwick English	EPA	Env. Officer
12	Mr.	Ryan Smith	GGMC	Env. Technician
13	Mr.	Evan Persaud	U. G	Head, Geology & Mining
14	Ms.	Dianne McDonald	GGMC	Mines Division Manager
15	Mr.	Ayalew Legesse	GENCAPD	Field Manager
16	Mr.	Marc Arpin	SNC-LAVALIN	Facilitator

Tuesday 25 November 2003

Reclamation & Mine Closure

No	Mr/Ms	Name	Institution	Position Held
1	Ms.	Aretha Crawford	GGMC	Geologist
2	Mr.	Calvin Bernard	U. G	Lecturer I
3	Ms.	Karen Livan	GGMC	Manager
4	Mr.	Lloyd Stephen	GENCAPD	MEO
5	Ms.	Preya Rampersaud	EPA	Senior Env. Officer (a.g)
6	Mr.	Renwick English	EPA	Env. Officer
7	Mr.	Ryan Smith	GGMC	Env. Technician
8	Ms.	Dianne McDonald	GGMC	Manager
9	Mr.	Ronald Glasglow	GGMC	Mining Engineer
10	Mr.	Dereck Babb	GGMC	Snr. Mining Engineer
11	Mr.	Haice Thompson	EPA	Env. Officer
12	Mr.	Ronald Cumberbatch	EPA	Env. Officer
13.	Mr.	Ayalew Legesse	GENCAPD	Field Manager
14	Mr.	Marc Arpin	SNC-LAVALIN	Facilitator

Wednesday 26 November 2003

Effluents/Contingency & Response

No	Mr/Ms	Name	Institution	Position Held
1	Ms.	Aretha Crawford	GGMC	Geologist
2	Mr.	Calvin Bernard	U. G	Lecturer I
3	Ms.	Karen Livan	GGMC	ED Manager
4	Mr.	Lloyd Stephen	GENCAPD	MEO
5	Ms.	Preya Rampersaud	EPA	Senior Env. Officer (a.g)
6	Mr.	Renwick English	EPA	Env. Officer
7	Mr.	Ryan Smith	GGMC	Env. Technician
8	Ms.	Dianne McDonald	GGMC	MD Manager
9	Mr.	Ronald Glasglow	GGMC	Mining Engineer
10	Mr.	Dereck Babb	GGMC	Snr. Mining Engineer
11	Mr.	Khalid Alladin	EPA	Env. Officer II
12	Mr.	Ayalew Legesse	GENCAPD	Field Manager
13	Mr.	Marc Arpin	SNC-LAVALIN	Facilitator

Thursday 27 November 2003

Waste & Tailings Management

No	Mr/Ms	Name	Institution	Position Held
1	Ms.	Aretha Crawford	GGMC	Geologist
2	Mr.	Evan Persaud	U. G	Head, Geology & Mining
3	Ms.	Karen Livan	GGMC	ED Manager
4	Mr.	Lloyd Stephen	GENCAPD	MEO
5	Ms.	Preya Rampersaud	EPA	Senior Env. Officer (a.g)
6	Mr.	Grant Feasby	OMAI	Env. Superintendent
7	Mr.	Ryan Smith	GGMC	Env. Technician
8	Ms.	Dianne McDonald	GGMC	MD Manager
9	Mr.	Ronald Glasglow	GGMC	Mining Engineer
10	Mr.	Dereck Babb	GGMC	Snr. Mining Engineer
11	Mr.	Khalid Alladin	EPA	Env. Officer II
12	Mr.	Ayalew Legesse	GENCAPD	Field Manager
13	Mr.	Marc Arpin	SNC-LAVALIN	Facilitator

Power Point presentations