

1 Q. On page 18, line 5 of Hydro's Report to the Board re Additions for Load Growth –  
2 New Distribution Feeder, the Applicant states that Hydro did not seek contributions  
3 in aid of construction from the two mining companies.

4

5 (a) Were there any discussions and/or correspondence with either company in  
6 reference to seeking contributions in aid of construction, and to what  
7 result?

8 (b) Have the two mining companies actually commenced operations and, if not,  
9 when?

10 (c) Has Hydro been provided a business plan from each of the two company?

11 (d) Has either of the two companies been a customer of NL Hydro previously  
12 and, if so, for how long and where?

13 (e) What is the projected life of the mines which NL Hydro will be servicing?

14 (f) What is NL Hydro's policy re contributions in aid of construction to facilitate  
15 mining companies?

16 (g) Has NL Hydro, in the past, received contributions in aid of construction for  
17 servicing mining companies and, if so, when and where and under what  
18 terms?

19 (h) Based on a cost of \$3,045,000, how long will it take NL Hydro to recover that  
20 amount from the two mining companies through their energy usage? Please  
21 provide specifics on NL Hydro's plan to recover this amount?

22

23

24 A. (a) **General**

25 Newfoundland and Labrador Hydro (Hydro) applies the General Service CIAC Policy  
26 approved by the Board in determining contributions from customers requiring line

1 extensions or three phase upgrades. Hydro's CIAC Policy is provided as CA-NLH-003,  
2 Attachment 1.

3  
4 The CIAC Policy does not require a contribution from a new or existing customer  
5 when the additional load being added requires capital investment in the system to  
6 maintain acceptable system voltage levels. While customers can be charged for  
7 upgrades in the CIAC Policy, upgrade, as defined in the CIAC Policy, means the  
8 upgrade of "either (i) single phase line to two phase or (ii) single phase or two phase  
9 line to three phase line." The requirement to construct another distribution feeder  
10 at Bottom Waters Terminal Station is a result of load growth in the area and is not  
11 an upgrade as defined in the Board approved CIAC policy; therefore, the additional  
12 costs should not be attributable to a single customer.

#### 13 14 **CIAC Requirements**

15 Rambler Metals & Mining PLC (Rambler) has been a customer of Hydro on the  
16 Bottom Waters distribution system since December 2005. Rambler plans to  
17 increase its peak demand from 701 kW to 1614 kW over 5 years. Because Rambler  
18 did not request an extension or an upgrade, there was no request for a contribution  
19 from this customer.

20  
21 The new service request is from Shore Line Aggregates Inc. (Shore Line), which has  
22 entered into an agreement with Hydro's existing customer, Anaconda Mining Inc.  
23 (Anaconda).<sup>1</sup> Anaconda has been a customer of Hydro on the Bottom Waters  
24 distribution system since February 2008. Shore Line has commenced operations on  
25 the Anaconda site and is using its own diesel generation for its power supply until it

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<sup>1</sup> <http://anacondamining.com/october-27-2016-anaconda-mining-enters-into-an-aggregates-royalty-agreement-monetizes-waste-rock/>

1 can be connected to the system, subsequent to the completion of construction of  
2 the new feeder.

3  
4 Shore Line have indicated a projected project life of at least 20 years. To provide  
5 service to Shore Line, a 3-phase line extension of approximately 1.2 km costing  
6 approximately \$67,000 is required. Hydro has provided a CIAC quotation to provide  
7 this extension; however, this extension is not part of the proposed project to  
8 construct a new feeder at the Bottom Waters Terminal Station.

9  
10 **Obligation to Serve**

11 Section 54 of the *Public Utilities Act* sets forth Hydro's obligation to serve and the  
12 requirement for customer contributions under certain circumstances. The Board  
13 approved CIAC Policy is applied by Newfoundland Power and Hydro to determine  
14 whether contributions are required from customers. As indicated above, the terms  
15 of the CIAC Policy do not require contributions from Rambler (the extension  
16 request) or Shore Line (the new service request) for system modifications to supply  
17 area load growth.

18  
19 Section 3(b) of the *Electrical Power Control Act* requires all sources and facilities for  
20 the production, transmission and distribution of power in the province should be  
21 managed and operated in a manner:

22 *...(i) that would result in the most efficient production, transmission*  
23 *and distribution of power;*

24 *(ii) that would result in consumers in the province having equitable*  
25 *access to an adequate supply of power;*

1                    *(iii) that would result in power being delivered to consumers in the*  
2                    *province at the lowest possible cost consistent with reliable*  
3                    *service;...*

4  
5                    Hydro's Application proposes to ensure that its customers served through the  
6                    Bottom Waters Terminal Station have equitable access to an adequate supply of  
7                    power. Appendix A to the Application demonstrates that Hydro's proposed  
8                    approach provides least cost, equitable access to reliable service.

9  
10                  (b)        As noted in Hydro's application, on May 2, 2016, Hydro received a new  
11                  service request for a new customer with a forecast peak demand of approximately  
12                  1300 kW. On May 27, 2016, Hydro received a service expansion request for an  
13                  existing customer of approximately 700 kW, indicating that it expected to grow its  
14                  peak demand by more than 1600 kW over 5 years.

15  
16                  The new service request was from Shore Line which has entered into an agreement  
17                  with Hydro's existing customer, Anaconda<sup>2</sup> . Shore Line will pay a contribution in aid  
18                  of construction for approximately 1.2 km of three phase line extension required to  
19                  connect its facility. However, the capital cost for the distribution line extension to  
20                  serve the new customer is not a component of the proposed capital project for the  
21                  new distribution feeder. This customer has commenced operations and is using  
22                  diesel powered self-generation for its operations until Hydro can provide service.

23                  The service expansion request was from Rambler, which is also operational. Please  
24                  note that either service expansion request on its own would have precipitated  
25                  Hydro's request to upgrade the Bottom Waters system.

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<sup>2</sup> <http://anacondamining.com/october-27-2016-anaconda-mining-enters-into-an-aggregates-royalty-agreement-monetizes-waste-rock/>

1 (c) The business plan for Rambler is available at:

2

3 <http://www.ramblermines.com/files/January-2017-Rambler-Presentation.pdf>

4

5 The business plan for Shore Line is available through Anaconda's website at:

6

7 <http://anacondamining.com/CorporatePresentation.pdf>

8

9 Note that in conjunction with its load forecasting and system planning processes,

10 Hydro monitors both of these websites on a regular basis and reviews the posted

11 business plans of these two companies.

12

13 (d) Rambler has been a customer of Hydro on the Bottom Waters distribution  
14 system since December 2005. Anaconda has been a customer of Hydro on the  
15 Bottom Waters distribution system since February 2008. The new customer, which  
16 has a contract with Anaconda, is Shore Line. Shore Line is currently operating with  
17 self-generation facilities and is expected to be connected subsequent to the  
18 completion of the requested system upgrade. Shore Line will pay a contribution in  
19 aid of construction for approximately 1.2 km of three phase line extension required  
20 to connect its facility; however, the capital cost for the distribution line extension to  
21 serve the new customer is not a component of the proposed capital project for the  
22 new distribution feeder.

23

24 (e) The projected lives of the two mining operations is based on information  
25 published by the Department of Natural Resources in October 2016 and is 20+  
26 years for Rambler and 3 years for Anaconda. Anaconda is currently exploring and

1 evaluating other nearby mineral properties and is working to extend the project life  
2 beyond three years. Please see page 3 of CA-NLH-003, Attachment 2.

3  
4 The projected life of Shore Line operation (i.e., the new customer), indicated in the  
5 new service request to Hydro, is 20+ years.

6  
7 As noted in Hydro's response to item (b) above, the request from Rambler alone  
8 would have required that Hydro construct the fourth distribution feeder.

9  
10 (f) As stated in Hydro's response to item (a) above, Hydro follows the General  
11 Service CIAC Policy approved by the Board in determining contributions from  
12 customers requiring line extensions or three phase upgrades. This includes mining  
13 companies in Hydro's rural service areas.

14  
15 Mining companies generally have shorter life cycles than the depreciable life of the  
16 capital assets installed to provide service. Clause 5(f) of the CIAC Policy for General  
17 Service customers states that:

18  
19 *"The Company's Additional Load Based Investment for a Permanent*  
20 *Service will be reduced by 2.5% for each year that the estimated life*  
21 *of the customer's operation is less than the depreciable life of the*  
22 *distribution plan used in the Line Extension or Upgrade."*

23  
24 The reduced load based investment described in Clause 5(f) is commonly used in  
25 determine the required contribution for line extensions or three phase upgrades  
26 when requested by mining companies. Please see Hydro's response to item (a)

1 above which explains why no contribution is required from the mining companies  
2 for the proposed capital project.

3

4 (g) Please see Hydro's response to items (a) and (f) above with respect to the  
5 CIAC Policy that was approved by the Board in determining if contributions are  
6 required from all General Service customers, including mining companies in Hydro's  
7 rural areas.

8

9 Detailed information on CIAC's charged to other customers are not relevant to the  
10 current Application.

11

12 (h) With respect to recovery of the cost of the new distribution feeder at  
13 Bottom Waters Terminal Station, Hydro is not proposing to deem this cost as  
14 specifically assigned for recovery from the two mining companies. Please see  
15 Hydro's response to item (a) above.

**NEWFOUNDLAND AND LABRADOR HYDRO**

**CONTRIBUTION IN AID OF CONSTRUCTION POLICY:  
DISTRIBUTION LINE EXTENSIONS AND UPGRADES  
TO GENERAL SERVICE CUSTOMERS**

**July 1, 2016**



**1. THE POLICY: GENERAL**

The Corporation will provide Line extensions or Upgrades for Permanent Service to General Service Customers without a CIAC when the cost to provide and maintain the Line extension or Upgrade will be recovered through electricity rates paid by those customers. Otherwise, a CIAC calculated in accordance with this policy will be required.

**2. INTERPRETATION**

**Board** means the Board of Commissioners of Public Utilities for Newfoundland and Labrador.

**CIAC** means a contribution in aid of construction.

**Clearing Costs** means the estimated costs for the required brush clearing along the route of a Line extension or Upgrade.

**Corporation** means Newfoundland and Labrador Hydro.

**Cost per Metre** means the average construction and maintenance cost per metre of Line extension or Upgrade as calculated by the Corporation and approved from time to time by the Board. For Upgrades, this includes only the costs associated with the primary conductor and related hardware. See Appendix A.

**Demand** means the quantity of electricity which is delivered to a customer. It is expressed in kilowatts or kilovoltamperes, either at a given point in time or averaged over a period of time.

**Domestic Policy** means the Corporation's policy entitled "Contribution in Aid of Construction Policy: Distribution Line Extensions to Domestic Customers" as approved by the Board.

**Easement Costs** means the estimated costs to complete a survey of the right-of-way for a Line extension or Upgrade, and includes the labour costs to complete the survey, survey document and drawing; travel costs; and registration fees.

**General Service Customer** means a customer eligible for Permanent Service or Temporary Service pursuant to any Rate #'s 2.1, 2.2, 2.3 or 2.4 of the Corporation's Schedule of Rates, Rules & Regulations.

**Line** means an electrical distribution line and includes a Main Line or a Service Line.

**Load Factor** means the ratio of the average Demand in kilowatts supplied during a designated period to the maximum Demand in kilowatts supplied in that period. The average Demand is determined by dividing the energy consumption in kilowatt hours by 730 hours (if monthly) or by 8760 hours (if yearly).

**Main Line** means any Line required to supply electricity that is not a Service Line.

**Municipality** is as defined in the *Municipalities Act, 1999*.

**Peak Demand** means the maximum annual Demand that will be required by a customer.

**Permanent Service** means electrical service required for at least three years.

**Schedule of Rates, Rules & Regulations** means the schedule setting out the rates, rules and regulations relating to the Corporation's service as approved from time to time by the Board.

**Service Drop** means the span of Service Line from a customer's service entrance to the first pole that is connected to the Corporation's electrical system.

**Service Line** means any Line across private property or along a private road required to serve a single customer.

**Temporary Service** means a service that is required for a period of less than three years.

**Upgrade** means the upgrade of either (i) single phase Line to two phase, or (ii) single or two phase Line to three phase.

### 3. BASIC INVESTMENT

The Corporation's Basic Investment in a Line extension for Permanent Service to General Service Customers shall include:

- (i) Up to 85 metres of Line<sup>1</sup>, as measured from the point where the customer takes service, and all plant directly associated with that specific length of Line;
- (ii) transformation for service up to 500 kVA where the required service voltage is one of the Corporation's standard service voltages and installation is in accordance with Corporation standards<sup>2</sup>,
- (iii) secondary metering; and,
- (iv) where the service location is on the side of the road opposite the Corporation's Line, the number of metres of Service Line equal to the width of the road right-of-way.

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<sup>1</sup> The line will be single phase or three phase depending on the requirement of the customer..

<sup>2</sup> The Corporation may, on such conditions as it deems acceptable, provide transformation for services greater than 500 kVA as set out in Regulation 5(i) of the Schedule of Rates, Rules & Regulations.

**4. ADDITIONAL INVESTMENT****(a) Additional Growth Based Investment**

In addition to its Basic Investment, the Corporation will provide Additional Growth Based Investment in the form of single phase Main Line extensions for Permanent Service to General Service Customers. Additional Growth Based Investment will be provided if there is satisfactory evidence that future growth along the route of the Main Line extension will be sufficient to support the cost to construct and maintain the Main Line extension. The existence of a foundation for a new building along the route of the Main Line extension shall constitute satisfactory evidence of sufficient future growth.

For each such foundation, the Corporation will provide the number of metres of single phase Main Line, and all plant directly associated with that specific length of Main Line, that would be provided as Basic Investment under this policy or the Domestic Policy to a customer requiring service at the location of the foundation.

**(b) Additional Load Based Investment**

In addition to its Basic Investment and Additional Growth Based Investment, the Corporation will provide Additional Load Based Investment for Permanent Service to General Service Customers with a Demand exceeding 10 kW. Additional Load Based Investment will be provided to the extent that it will be recovered from revenue generated by the customer(s) requesting the Line extension or Upgrade. The amount of Additional Load Based Investment that will be supported by such revenue shall be determined by reference to the anticipated Load Factor and Peak Demand of the customer(s) in accordance with the Plant Support Table in Appendix B.

**5. CALCULATION OF CIACs**

- (a) The cost of a Line extension or Upgrade for a General Service Customer shall, as applicable, be composed of the following:
- (i) for all other Line extensions or Upgrades, construction cost that is equal to the product of (1) the total number of metres of Line extension or Upgrade, and (2) the applicable Cost per Metre as set out in Appendix A;
  - (ii) applicable Clearing Costs and Easement Costs;
  - (iii) for an Upgrade, the costs associated with the replacement, transfer or installation of additional poles or anchors, including, without limitation, the costs set out in Appendix C.
- (b) The CIAC for Line extensions or Upgrades for General Service Customers shall, subject to Clause 5 (c), be equal to the cost of the Line extension or Upgrade, as determined in accordance with Clause 5 (a), less the value of the Corporation's Basic and Additional Investment as provided for in Clauses 3 and 4.
- (c) In cases where the Line extension or Upgrade will be shared by more than one customer, any CIAC required will be apportioned based on the length of the Line extension or Upgrade required to serve each customer. Where a customer is connected to a Line extension or Upgrade in respect of which a CIAC was paid within ten years from the date that the Line extension or Upgrade was placed in service, that customer shall pay a CIAC calculated as if service was connected to that customer when the Line extension or Upgrade was originally placed in service.
- (d) For Upgrades, Clause 5 (c) does not apply to customers that require single phase service and are connected to a Line for which a CIAC was paid solely for an Upgrade.

- (e) Detailed cost estimates will be used in place of the applicable Cost per Metre in determining the cost of a Line extension or Upgrade when either: (i) the cost of a Line extension or Upgrade calculated using the applicable Cost per Metre is estimated to be greater than \$100,000, or (ii) an Upgrade is required from single phase to two phase Line.
- (f) The Corporation's Additional Load Based Investment for a Permanent Service will be reduced by 2.5% for each year that the estimated life of the customer's operations is less than the depreciable life of the distribution plant used in the Line extension or Upgrade.

## 6. REFUNDS

- (a) Subject to Clause 5 (d), where additional customers are connected to a Line extension or Upgrade within 10 years from the date that the Line extension or Upgrade was placed in service, the Corporation will refund all or part of a CIAC previously paid in respect of that Line extension or Upgrade by the existing customers. The amount of the refund to each existing customer will be the amount by which (i) the CIAC paid by that existing customer less any refunds already received thereon, exceeds (ii) the CIAC which would have been payable by that existing customer under Clause 5 if the additional customers had taken service at the time the Line extension or Upgrade was originally placed in service. A refund becomes due 90 days following the connection of the additional customer(s).
- (b) Interest paid through the financing option outlined in Clause 8 is not refundable.
- (c) The Corporation shall advise customers of its CIAC refund policy. The Corporation shall make all reasonable efforts to identify customer refunds. A refund that is past due will accrue interest at the rate prescribed in Clause 8 (b) commencing on the day following the day it became due.

**7. SERVICE ENTRANCE LOCATIONS**

Should a General Service Customer request the Corporation to attach to a service entrance that is not as close as practical to the distribution pole from which the Service Line is to be run, the customer will be required to pay the costs associated with any additional plant.

**8. PAYMENT**

- (a) All CIACs shall be paid in advance of construction, except in the following cases:
- (i) Federal or Provincial Government Departments may provide a purchase order;
  - (ii) General Service Customers, if approval has been given in advance by the Corporation's credit personnel, may provide a purchase order; and,
  - (iii) where approval has been given in advance by the Corporation's credit personnel, a customer may pay a CIAC on the following basis:
    - (1) \$300 or  $\frac{1}{4}$  of the CIAC, whichever is greater, as a down-payment in advance of construction; and,
    - (2) the balance together with interest by way of not more than 60 equal monthly installments of not less than \$20 each.
- (b) The interest rate applied to an unpaid CIAC balance shall be set at the time of the issuance of the customer's CIAC quote. The rate shall be equal to the prime rate of the Corporation's bankers as of the last day of the month immediately preceding the issuance of the CIAC quote to the customer, plus 3%.

- (c) CIAC Installments shall be subject to the Corporation's credit policy. Default in payment of any installment on a CIAC shall, at the Corporation's option, render the unpaid balance immediately due and payable.
- (d) Should a customer wish to prepay all or a portion of the unpaid balance, the Corporation will accept such pre-payment without bonus or penalty.

**9. REVIEW OF CIACs**

All CIACs collected from General Service Customers will be subject to a review after a period of 24 months from the date the service is made available. The purpose of the review is to determine the reasonableness of the original CIAC calculation. If the recalculated CIAC differs from that originally calculated by more than \$100, such difference will, as applicable, be charged or refunded to the customer's electric service account.

**10. BOARD APPROVALS**

The Corporation shall apply to the Board for approval of:

- (i) all Line extensions or Upgrades involving CIACs where the costs of the Line extension or Upgrade calculated pursuant to Clause 5 (a) are estimated to be greater than \$50,000; and,
- (ii) all Line extensions or Upgrades involving CIACs where the costs of the Line extension or Upgrade are calculated pursuant to Clause 5 (e); and,
- (iii) any deviations from this policy in the calculation of CIACs for Line extensions and Upgrades to General Service Customers.



**NEWFOUNDLAND AND LABRADOR HYDRO  
DISTRIBUTION LINE COST PER METRE  
FOR GENERAL SERVICE CIAC's**

TYPE OF CONSTRUCTION	COST / METRE <sup>2</sup> (\$)
<u>LINE EXTENSIONS</u>	
Single Phase	35
Three Phase	51
<u>UPGRADES<sup>3</sup></u>	
Single Phase to Three Phase	46
Two Phase to Three Phase	27

<sup>2</sup> These costs do not include any clearing costs for clearing or obtaining easements. When clearing is required, an additional charge of \$4.00/meter will apply to the section of line beyond the distance at the Basic Investment. A \$400.00 charge will be applied for each required easement, beyond the distance of the Basic Investment.

<sup>3</sup> These costs include only the cost associated with primary conductors and related hardware in upgrades. For additional costs refer to Appendix C.

**NEWFOUNDLAND AND LABRADOR HYDRO  
DISTRIBUTION PLANT SUPPORT TABLE  
FOR GENERAL SERVICE CIAC's**

Annual Load Factor	Dollars per kW/kVA <sup>4</sup>
Less than 5%	93
5%-9.9%	135
10%-14.9%	148
15%-19.9%	168
20%-24.9%	181
25%-29.9%	189
30%-34.9%	201
35%-39.9%	214
40%-44.9%	225
44%-49.9%	235
50%-54.9%	242
54%-59.9%	249
60%-64.9%	260
65%-66.9%	265
70% and over	270

<sup>4</sup> The Additional Load Based Investment, which applies to customers with a maximum annual demand exceeding 10 KW, will be determined by multiplying (i) the estimated maximum annual demand, less 10 kW, and (ii) the appropriate dollars per kW/kVA.

**NEWFOUNDLAND AND LABRADOR HYDRO  
DISTRIBUTION PLANT UPGRADE COST  
FOR GENERAL SERVICE CIAC's**

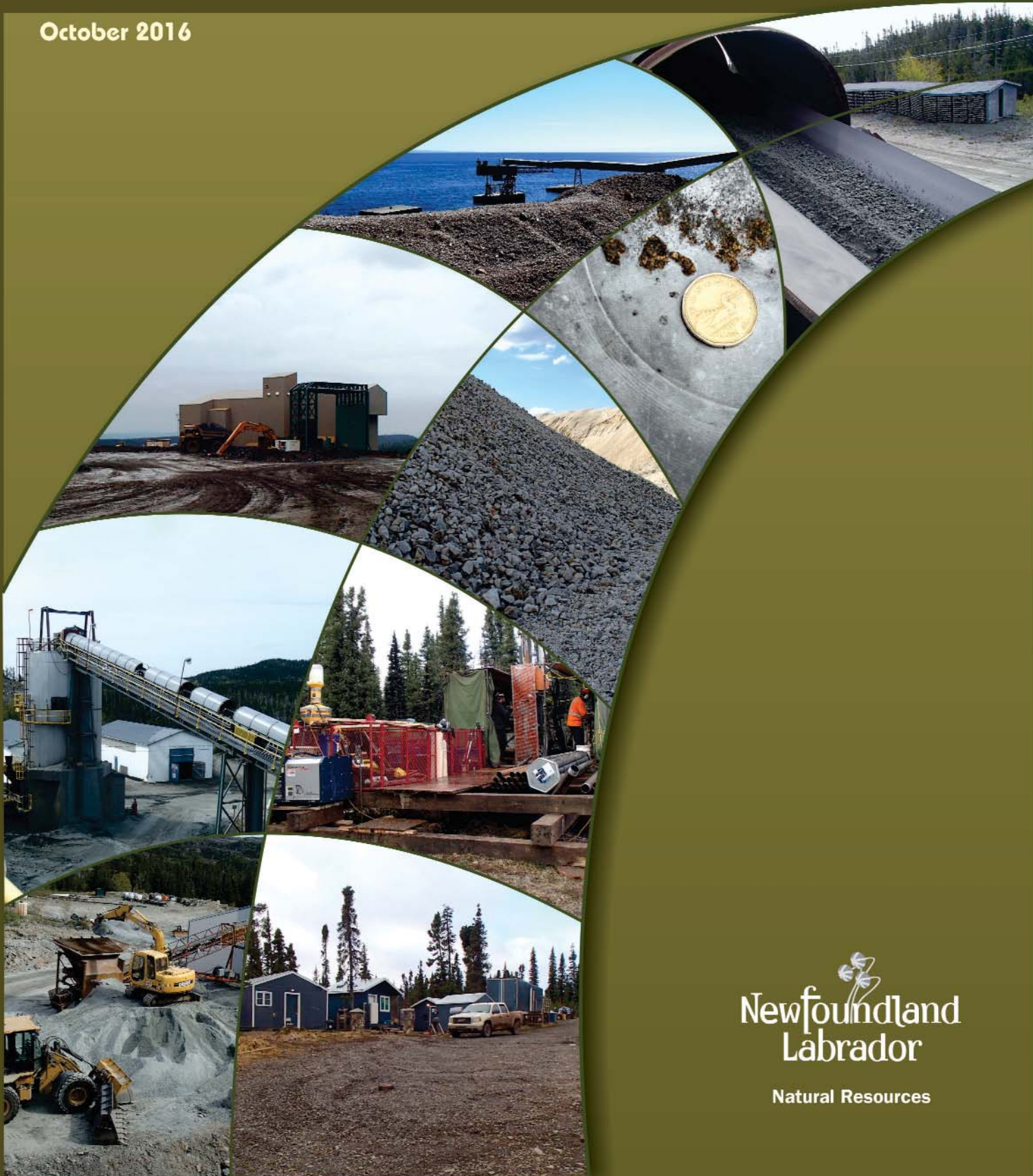
TYPE OF TRANSFER OR REPLACEMENT	COST <sup>5</sup> \$
REPLACE POLES – UP TO 45'	2,230
ADDITIONAL POLES	1,310
DISTRIBUTION SECONDARY PER POLE/SPAN	
Transfer Only	800
Replace Conductor	980
SERVICE DROP PER POLE/SPAN	
Transfer Only	80
Replace Conductor	140
TRANSFORMER MOUNTINGS	
Single Transformer	950
Two or Three Transformers	2,320
POLE GUY	
Transfer Only	40
Replace Guy	80
REPLACE ANCHOR	560
ADDITIONAL ANCHOR	300
STREETLIGHTING – TRANSFER SINGLE FIXTURE	240
STREETLIGHTING DUPLEX PER POLE/SPAN	
Transfer only	80
Replace Conductor	140

<sup>5</sup> Includes all overheads.

# MINING IN NEWFOUNDLAND AND LABRADOR

October 2016

Department of Natural Resources, Mines Branch



Newfoundland  
Labrador

Natural Resources

## MINES BRANCH - KEY CONTACTS

Assistant Deputy Minister.....	709 729 2768
Director, Mineral Development.....	709 729 6379
Director, Mineral Lands.....	709 729 6425
Director, Geological Survey.....	709 729 3419
Geoscience Publications and Information.....	709 729 2775



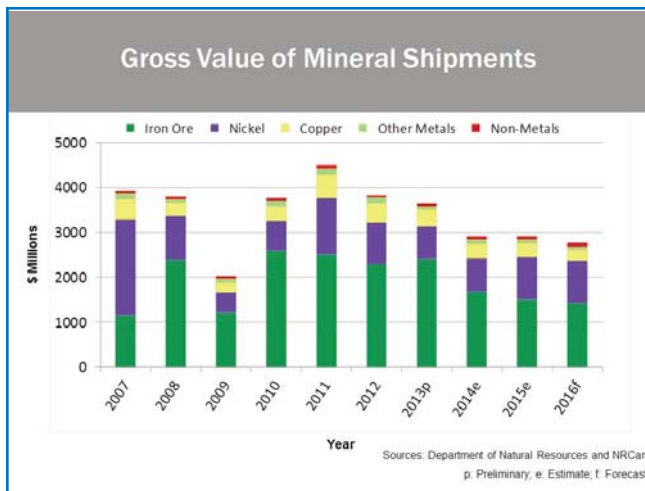
## TABLE OF CONTENTS

Mineral Development Review. . . . .	Page 1
Producing Mines. . . . .	Page 1
Developing Projects. . . . .	Page 4
Inactive Mines. . . . .	Page 5

## MINERAL DEVELOPMENT REVIEW

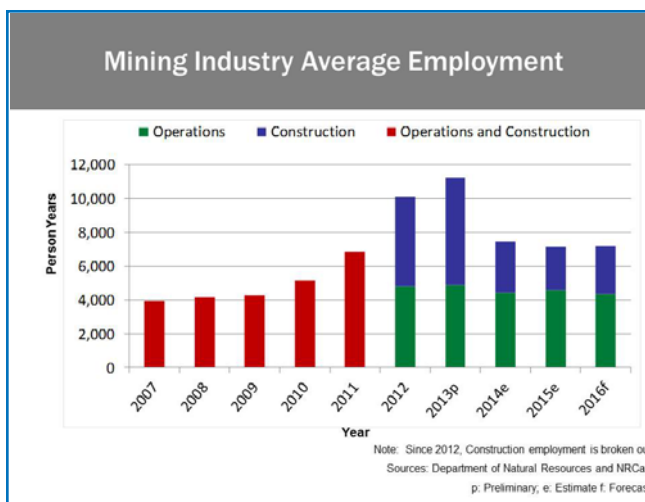
### **Value of Mineral Shipments**

The 2016 forecast gross value of mineral shipments for Newfoundland and Labrador is \$2.7 billion. This is a 3.5 per cent decrease from the 2015 estimated value of \$2.8 billion and is the result of lower shipment values for all commodities except iron ore and gold.



### **Employment**

Employment in the mining industry has risen 3.3 percent from last year's 7267 to 7509 person years. Employment



gains are primarily the result of activity associated with the Voisey's Bay project, including employment at the Long Harbour processing plant and the Voisey's Bay underground mine development.

## PRODUCING MINES

### **Vale Newfoundland and Labrador Limited**

Vale Newfoundland and Labrador Limited (VNL) operates a mine and mill in Voisey's Bay, and a hydromet processing plant at Long Harbour. The mine started operations in 2005, and produces both nickel and copper concentrates. The hydromet plant processes Voisey's Bay nickel concentrate into finished nickel.

During the first half of 2016, VNL reported production of 22 200 tonnes of nickel, 15 100 tonnes of copper and 339 tonnes of cobalt. Nickel production for the first half of 2016 was 22.5% lower than 2015 due to winter weather conditions and logistic constraints.

Employment for all aspects of the Voisey's Bay project is anticipated to be 4310 person years for 2016. About 450 people are employed at the Voisey's Bay mine site and another 475 are employed in operations at the Long Harbour processing plant. The remaining employment is generated by construction activity at the Long Harbour plant and at Voisey's Bay from the underground mine development.



*VNL – Bulk Carrier Umiak 1  
(photo courtesy of VNL).*

Page 4 of 8, Construct a Fourth Distribution Feeder at Bottom Waters Terminal Station

On August 10<sup>th</sup>, 2015, government announced that the underground mine at Voisey's Bay had been sanctioned by VNL's parent company (Vale) as per the terms of the Development Agreement. Construction activity started in 2016 and ore production is projected to begin in 2020. Underground mine development will include both the Reid Brook and Eastern Deeps deposits that are adjacent to the current open-pit mine. Hundreds of construction jobs will be created, as well as another 450 positions during operations from 2020 to beyond 2035. This next phase of the Voisey's Bay project is expected to generate significant additional industrial benefits to the province.

Beginning in 2016, VNL achieved a major milestone at Long Harbour by operating solely on high-grade nickel concentrate from Voisey's Bay. Construction of additional circuits required to enable processing of Voisey's Bay middling grade concentrate is continuing and is expected to be completed this year. Once fully operational, the Long Harbour Plant will process all nickel concentrates produced at Voisey's Bay and produce finished nickel, copper and cobalt.

**Iron Ore Company of Canada**

The Iron Ore Company of Canada (IOC) has been producing iron ore at the Carol Lake project in Labrador West, since the 1960s. Production capacity at the site is 23.3 million tonnes of concentrate, of which 12.5 million tonnes can be pelletized.

Labrador Iron Ore Royalty Corporation (LIORC) owns 15.1% of IOC, and reported IOC concentrate production for the first half of 2016 as 9 million tonnes. Despite continuing with the improvements from last year and the first quarter, production for the quarter was lower than expected. IOC plans to produce 10 million tonnes of pellets and 10 million tonnes of concentrate. IOC expects to be able to sell all the pellets and concentrate it can produce.

IOC has stated that it must demonstrate consistent and reliable production meeting targets before taking its new Wabush 3

project to the Rio Tinto board for capital funding. IOC had record production in August and September but will fall short of its 2016 production target. This new open pit would allow flexibility in providing iron ore feed to its existing concentrator to achieve and maintain production at the mill's rated capacity; and provide a new source of iron ore to extend the operating life of its Carol Project.

**Tata Steel Minerals Canada Ltd.**

Tata Steel Minerals Canada Limited (TSMC) is a joint venture between Tata Steel of India and New Millennium Iron Corporation (NML). TSMC operates a high-grade iron ore project in the Menihék area of northwestern Labrador. The project includes mining, crushing, washing, screening and drying ore to produce 4.2 million tonnes per year of sinter fines and pellet feed. TSMC completed its first shipment of direct shipping ore (DSO) to Europe from the project in September 2013. Current mining takes place in Labrador but in future years plant feed will come from both Labrador and Quebec.

After a temporary winter scale down of operations in 2016 that included stabilization of the plant which remains in care and maintenance, TSMC will be operating on a seasonal basis in the near term. This action was in response to challenging conditions in the steel and iron ore markets and will be reviewed on an ongoing basis. TSMC forecasted 150 person years of employment during 2016 at the mining operation.

NML announced that TSMC has secured financing of \$175 million in support of its direct-shipping ore project. This, combined with rail and port improvements in the Sept-Îles area at Pointe Noire, will benefit the TSMC operation.

TSMC is working toward developing the Howse iron ore deposit. This was originally a joint venture between TSMC and Labrador Iron Mine (LIM), but on April 2, 2015 TSMC acquired LIM's remaining interest in the project. This DSO deposit will be a low capital mining venture and will use TSMC's adjacent infrastructure. Open-pit drill and blast min-



Mining activity at IOC's Luce Pit



Tata Steel – Kivivic 2

**Page 5 of 8, Construct a Fourth Distribution Feeder at Bottom Waters Terminal Station**

ing will be used and extracted ore will be crushed and screened on site. Ore will be trucked less than 5 km to TSMC's railloop and railed to Sept-Isles.

The company plans to begin the Howse project construction in 2017, with a seven to ten month construction period, followed by immediate production. The company has estimated an eleven year mine life. An environmental preview report was received by the Department of Environment and Conservation on April 20<sup>th</sup>, 2016, and is currently being reviewed. The project is also subject to review under the Canadian Environmental Assessment Act 2012, and is undergoing a separate environmental assessment with the Canadian Environmental Assessment Agency.

**Atlantic Minerals Limited**

Atlantic Minerals Limited (AML) began commercial production in 1996 and is located at Lower Cove on the Port au Port Peninsula. AML is a leading world producer of chemical-grade limestone, chemical-grade dolomite and construction aggregates. Product is exported by vessel from its 2000 tonnes-per-hour ship-loading marine terminal located adjacent to the mine. The operation has 88 year-round employees, plus seasonal jobs at the site that increase the total person years of employment to 151.



*Atlantic Minerals' Lower Cove*

AML's quarry expansion project, to access high-grade calcium limestone reserves adjacent to its current mining lease in the White Hills area on the Port au Port Peninsula, was released from environmental assessment in August 2016. The expansion would extend existing operations for approximately 25 years based on estimated annual production of two million tonnes of high-grade calcium limestone and one million tonnes of dolomite limestone. The quarry extension is planned for 2017.

**Anaconda Mining Incorporated**

Anaconda operates an open-pit gold mine and mill at Pine Cove on the Baie Verte Peninsula as part of its Point Rousse

Project. The project employs 95 people and produced 16 023 ounces of gold valued at \$24.4 million during its fiscal year ended May 2016.

The project has been consistently producing gold since the summer of 2010 after completing an upgrade to its milling infrastructure. Mill throughput is approximately 1200 tonnes per day with a recovery rate of 84–87% at an average historical grade of 1.8 gm per tonne. Last year, Anaconda began blending ore from its Stog'er Tight satellite deposit.



*Anaconda – Open pit at Pine Cove*

Anaconda is exploring and evaluating three gold trends in the vicinity of Pine Cove and the recently acquired Viking property as it works to expand its reserves to extend the project life beyond 2019.

**Rambler Metals and Mining Canada Limited**

Rambler Metals and Mining Canada Limited (RMM) owns and operates the underground Ming copper-gold mine and the Nugget Pond base and precious metals milling facility on the Baie Verte Peninsula. Copper and gold-rich ore from the Ming mine is trucked about 40 km to the Nugget Pond gold hydromet mill and copper flotation circuit for processing. Copper concentrate is shipped through the company's port facility at Goodyear's Cove. The project directly employs 165 people.

The company is transitioning from the Phase I high-grade massive sulphides Ming Mine to Phase II integration of the Lower Footwall Zone (LFZ) ore. Phase II will mean increased production, a much longer life of mine (from 6 to 21 years) and a greater capital investment in the Baie Verte area. The company has recently secured project financing for this expansion.

**Barite Mud Services Incorporated**

Barite Mud Services Incorporated (BMSI) has been reprocessing tailings since 2015 from ASARCO's former base-metal mine in Buchans to produce barite for use in the offshore drilling industry. Approximately 40 000 to 50 000 tonnes of tailings will be reprocessed to yield 10 000 to 15 000 tonnes of





Rambler's concentrate storage shed at Goodyear's Cove

barite annually. BMSI plans to operate for six months of the year from May to October with a projected 15 year mine life. The operation employs 25 people seasonally and 2 full time employees.

**Hi-Point Industries (1991) Limited**

Hi-Point Industries (1991) Limited produces horticultural peat and an oil absorbent product called Oclansorb. The company has provided Oclansorb to the international petroleum industry for over two decades; this lightweight peat product absorbs oil up to six times its natural weight. Located in Bishop's Falls, the operation employs 22 people seasonally with 8 full time employees.



Peat harvesting equipment at Hi-Point Industries (1991) Ltd.'s operation

**Trinity Resources Limited**

Trinity Resources Limited (TRL) owns and operates the pyrophyllite mine and milling operation located in Conception Bay South. It also sells waste rock for use as aggregates in white cement. The company ships product from its own 6-acre ship

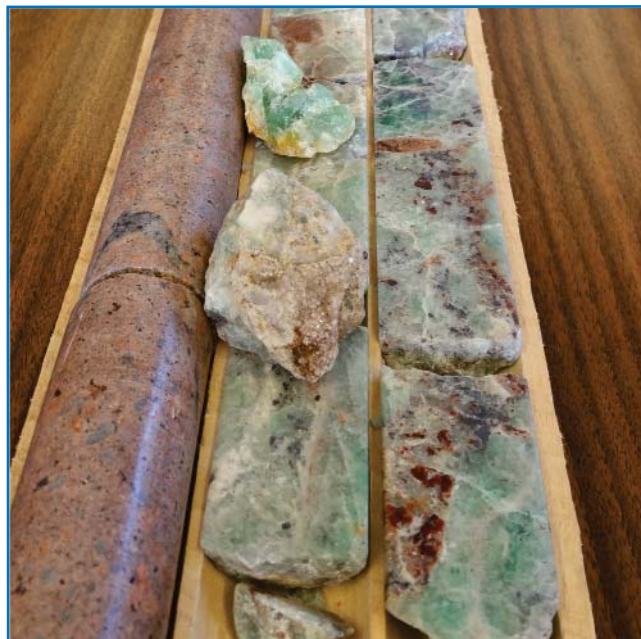
loading facility located within 6 km of the mine, and expects to generate 14 person years of employment in 2016.

**DEVELOPING PROPERTIES**

**Canada Fluorspar (NL) Incorporated**

Canada Fluorspar (NL) Incorporated (CFI), a subsidiary of US-based Golden Gate Capital, has begun construction of a surface and underground fluorspar mine in St. Lawrence, on the Burin Peninsula.

The CFI operation will produce up to 200 000 tonnes of acid-grade fluorspar concentrate annually from the AGS Vein, and will include a mill, tailings management facilities and supporting infrastructure. The company states that the mine will require a two-year construction period and will provide a 10-year mine life. Peak employment during construction is projected to be approximately 340 workers and the operation phase will create 164 full-time positions.



Canada Fluorspar – Fluorite mineralization in core

**INACTIVE MINES**

**Teck Duck Pond Operations**

Teck Duck Pond Operations officially closed on June 30<sup>th</sup>, 2015. The mine started producing copper and zinc concentrates in 2007 and exhausted the mineral reserves over an 8 year mine life as originally planned.

The project was located approximately 30 km southeast of Millertown and consisted of two small open pits, an under-

**Page 7 of 8, Construct a Fourth Distribution Feeder at Bottom Waters Terminal Station**

ground mine, a concentrator (mill), tailings facilities and a 100-person operations camp. Concentrate was trucked to a storage and shipping facility in St. George's and sold to smelters in North America and overseas.

At its peak, the mine employed over 350 people. Rehabilitation of the mine site has started and will be completed by 2018 followed by a period of environmental monitoring.

***Wabush Mines***

Wabush Mines started mining iron ore from the Scully Mine in Labrador in 1965. Cliffs Natural Resources (CNR) bought out its partners and became sole owner of the mine in 2011. Concentrate was railed for pelletizing in Pointe-Noire, Québec, until the pellet plant closed in 2013. In February 2014, CNR announced that mining and concentrating activities at Wabush Mines would be idled; later in 2014, CNR announced that the mine was permanently closed.

Wabush Mines is going through the Companies' Creditors Arrangement Act (CCAA) process. The Wabush CCAA Parties in consultation with its court-appointed monitor are in the process of analyzing liquidation offers for equipment located at the Wabush mine. The CCAA parties have been

granted an extension to the stay period until January 31, 2017.

Rehabilitation of the Wabush Mines Scully Mine was conditionally released from environmental assessment in February 2016. An updated Rehabilitation and Closure Plan has been submitted in accordance with Section 9.(1) of the Mining Act.

***Labrador Iron Mines Limited***

Labrador Iron Mines Limited (LIM) operated a direct shipping iron-ore mine in the Menihek area of Labrador. Declining iron ore prices prompted LIM to cease production in 2014.

In April 2015, LIM initiated a court-supervised restructuring process under the Companies' Creditors Arrangement Act. This restructuring is ongoing and reported on periodically by the court-appointed monitor.

***Beaver Brook Antimony Mine Incorporated***

Beaver Brook Antimony Mine Incorporated suspended operations at its antimony mine near Glenwood in January 2013, due to a combination of high operating costs and lower than expected ore grades. The operation has been placed on care and maintenance with nine employees working at the site. The mine employed 106 during full production.



# PRODUCING MINES, DEVELOPING PROPERTIES AND PROCESSING FACILITIES

October 2016



### Producers

1. Vale Newfoundland and Labrador Limited, Voisey's Bay
2. Iron Ore Company of Canada, Labrador City
3. Tata Steel Minerals Canada Ltd., Menihek Area
4. Atlantic Minerals Limited, Lower Cove
5. Anaconda Mining Inc., Pine Cove
6. Rambler Metals and Mining Canada Limited, Baie Verte Peninsula
7. Barite Mud Services Inc., Buchans
8. Hi-Point Industries (1991) Ltd., Bishop's Falls
9. Trinity Resources Ltd., Manuels

### Processing facilities

10. Vale Newfoundland and Labrador Limited, Long Harbour Hydromet Plant
11. Rambler Metals and Mining Canada Limited, Nugget Pond Mill

### Under development

12. Canada Fluorspar (NL) Inc., St. Lawrence

\* Note scale differences of Labrador and Newfoundland maps

