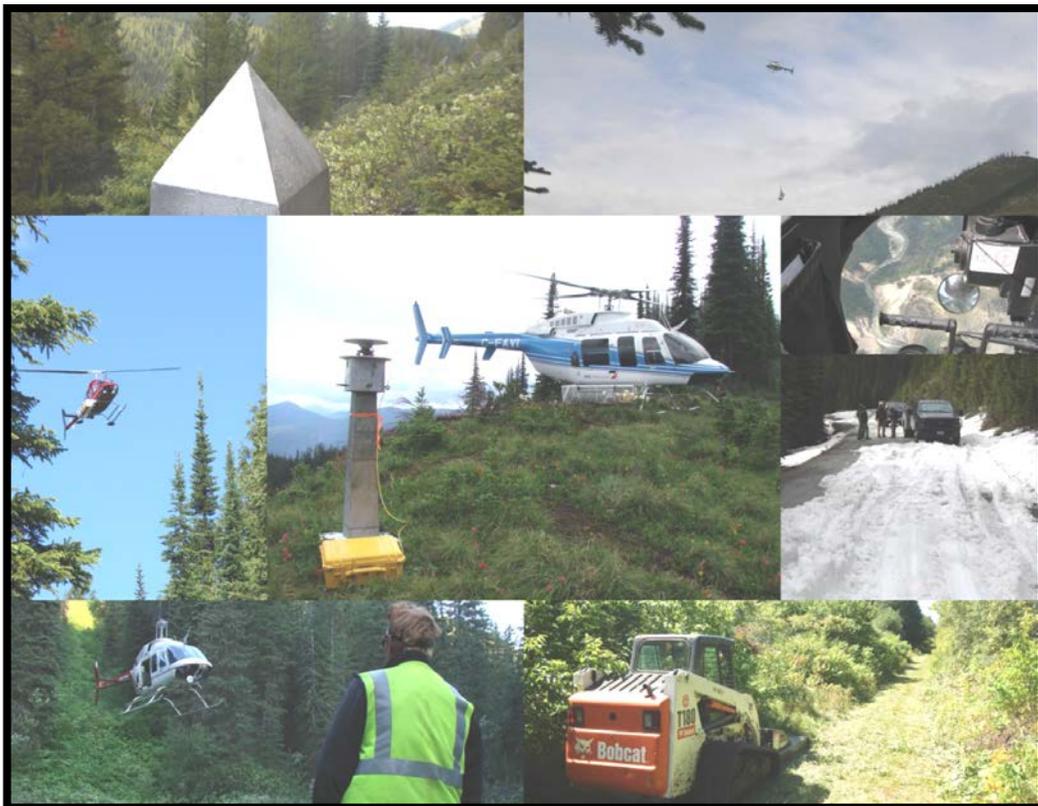


International Boundary Commission United States and Canada

Joint Annual Report

2014





International
Boundary
Commission



Commission
de la frontière
internationale



The Honorable John Kerry
The Secretary of State for the United States
Washington, D.C.

The Honorable Robert Nicholson
Minister of Foreign Affairs
Ottawa

Dear Mr. Kerry and Mr. Nicholson:

We have the honor to submit herewith to each government a joint report of the Commissioners regarding the maintenance and regulatory work performed in the calendar year 2014 with respect to the International Boundary between the United States and Canada.

This is the 90th annual joint report submitted by the Commissioners under the provision of Article IV of the Treaty of Washington, February 24, 1925. This report contains a complete account of all boundary inspection and maintenance work executed from January 1st to December 31st, 2014.

Respectfully submitted,

Kyle K. Hipsley
Commissioner, United States

Peter Sullivan
Commissioner, Canada

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION.....	2
MAJOR MAINTENANCE ACTIVITIES 2014	3
PASSAMAQUODDY BAY RANGE MARK REPAIRS (MAINE / NEW BRUNSWICK)	3
NORTH LINE VISTA CLEARING (MAINE/NEW BRUNSWICK)	4
DEMARCATIION AND CLEARING OF THE ST. FRANCIS RIVER (MAINE/QUEBEC)	4
MAINTENANCE OF THE WEST LINE (NEW YORK/QUEBEC)	4
WEST LINE VISTA CLEARING (VERMONT/QUEBEC)	5
HIGHLANDS CONTROL SURVEY (MAINE/QUEBEC).....	5
49TH PARALLEL (WASHINGTON, IDAHO, MONTANA/BRITISH COLUMBIA).....	5
CLEARING AND INSPECTION ALONG THE 141ST MERIDIAN (ALASKA/ YUKON).....	6
MINOR MAINTENANCE ACTIVITIES 2014	7
COMMISSIONERS' ACTIVITIES.....	8
FIELD INSPECTIONS.....	8
COMMISSIONER MEETINGS	8
LIAISON AND COMMUNICATION	9
MODERNIZATION OF THE WEBSITE	9
LANDOWNER CONSULTATIONS.....	9
BORDER AGENCIES RELATIONS	9
REGULATORY ITEMS	10
PLANNING FOR 2015	11
UNITED STATES SECTION	11
CANADIAN SECTION	11
ACCOMPLISHMENTS AGAINST THE 15 YEAR PLAN.....	12
REPORT ON COMPARABLE EXPENDITURES	13
CERTIFICATION.....	15
APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK	17
APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK.....	35
APPENDIX C – 15 YEAR PLAN	39
APPENDIX D – PLANS OF MONUMENTS INSTALLED.....	44

EXECUTIVE SUMMARY

The Commission

The International Boundary Commission (IBC) is a joint organization composed of two Commissioners duly appointed by the United States and Canada to maintain an effective boundary between the two countries, as per the provisions of the Treaty of 1925. The IBC ensures the maintenance and integrity of a peaceful, well-defined boundary between Canada and the United States, contributing to the mutual safety and prosperity of the citizens of both countries.

What we do

To fulfill its mandate, the Commission carries out routine inspections, repairs or replaces damaged boundary monuments, maintains vistas open through woods and forests, and keeps boundary coordinates up to date by carrying out additional surveys as required.

Structure

The Commission is organized in two sections under the leadership of the Canadian and United States Commissioners. The maintenance work is shared equally between the two sections, based on a 15 year long-term plan developed by the Commission.

Accomplishments

Efforts were focused on vista clearing and inspection of the Alaska/Yukon boundary, vista clearing and surveys along the 49th parallel, inspections along the St. Lawrence River and the Great Lakes, monument maintenance of the Vermont-New York/ Quebec boundary and inspection, surveys and vista clearing of the Maine/ Quebec boundary.

Measuring success

The Commission is now in-line with its 15 year maintenance plan, except regarding the update of the official maps that suffers from a backlog of processing the recent survey data. The long-term plan is being re-designed to accommodate changes in the business processes as a result of the implementation of the GIS, and to address the mapping project.

The Commissioners

The United States Commissioner is Kyle K. Hipsley, who has long served the United States section, most recently as Deputy Commissioner. Peter Sullivan is the Surveyor General of Canada Lands and therefore, pursuant to the International Boundary Commission Act (Canada), is also Canada's International Boundary Commissioner.



Kyle K. Hipsley
Commissioner, United States



Peter Sullivan
Commissioner, Canada

INTRODUCTION

This is the 90th Annual Report on the maintenance of the International Boundary between the United States and Canada as set forth by the Treaty of 1925. This report sets out how the boundary between Canada and the United States – from Atlantic to Pacific Oceans, and from Pacific Ocean to Beaufort Sea – was maintained in 2014. It is a compilation of activities, and correlates maintenance activities with short, and long-term maintenance plans.

The boundary between the United States and Canada came into being as a result of some 26 Treaties, Conventions, Protocols, Decisions and Awards between the 1783 *Treaty of Peace* (between Great Britain and the United States) and the 1925 *International Boundary Treaty* (between Canada and the United States). Although there were ad hoc boundary commissions over the years, the IBC dates to the *Treaty of 1908* which appointed two Commissioners to locate and mark the boundary between the two countries. The International Boundary Commission (IBC) was established on a permanent basis by the *Treaty of 1925*, with a mandate to maintain the boundary under the direction of the two Commissioners.

The IBC's mandate is thus found in the 1908 and 1925 treaties, and for the Canadian section, in the *International Boundary Commission Act, 1960*. The mandate states "*The Commissioners appointed under the provisions of the Treaty of April 11, 1908, are hereby jointly empowered and directed: to inspect the various sections of the boundary line between the Dominion of Canada and the United States and between the Dominion of Canada and Alaska at such times as they shall deem necessary; to repair all damaged monuments and buoys; to relocate and rebuild monuments which have been destroyed; to keep the boundary vistas open; to move boundary monuments to new sites and establish such additional monuments and buoys as they shall deem desirable; to maintain at all times an effective boundary line between the Dominion of Canada and the United States and between the Dominion of Canada and Alaska*" (*International Boundary Treaty 1925*)¹

The IBC consists of a United States and a Canadian section, each of which reports to its respective governments. Appointed in the fall of 2014 by President Obama, the United States Commissioner is Kyle Hipsley; he has served the United States section for more than 30 years, most recently as Deputy Commissioner. The Canadian Commissioner is Peter Sullivan, who was appointed by Order in Council by virtue of being the Surveyor General for Canada Lands in 2007. Technical, administrative and policy personnel within each section are supplemented by seasonal employees.

¹ *Treaty regarding the Demarcation of the Boundary between the United States and Canada*. Signed February 24, 1925. Ratifications exchanged at Washington on July 17, 1925.

MAJOR MAINTENANCE ACTIVITIES 2014

The 2014 field season began in May and ended in November. Major efforts were focused along Passamaquoddy Bay, the North Line, the Saint Francis River, the Highlands, the West Line, the 49th parallel, and the 141st meridian. The narrative section below provides an overview of the work, while the technical appendices provide more detailed numerical information.



Passamaquoddy Bay Range Mark Repairs (Maine / New Brunswick)



*Refurbished Range Mark #47 along
Passamaquoddy Bay (ME/NB)*

The 25 miles (40 kilometers) of international boundary, passing between the islands of Passamaquoddy Bay, is made up of 14 straight-line courses. The turning points between boundary courses are ranged by on-shore range marks. Range marks are set in pairs and the lines between pairs of marks must be re-cleared frequently to be visible from the offshore turning points. To keep the range marks in acceptable condition requires maintenance on a 3-year cycle and accordingly, a contract was issued by the U.S. section to perform the necessary repairs to range marks.

North Line Vista Clearing (Maine/New Brunswick)

The North Line separates Maine and New Brunswick, extending northerly from the source of the St. Croix River to its intersection with the St. John River. Approximately 78 miles (125 Kilometres) in length, this boundary line crosses farms and coniferous forests. The rapid growth of vegetation requires frequent maintenance, and two contracts were awarded to specialized firms by the U.S. section to carry out thinning and clearing work. One contract covered a distance of 35 miles (56.3 kilometers) between boundary monuments 1 and 49 and the other contract covered a distance of 46.6 miles (68.5 kilometers) between boundary monuments 49 and 117-73. All overhanging trees, shrubs and branches were recleared so that no obstacles block the line of sight to the horizon and across a width of 20 feet (6 meters), 10 feet (3 metres) on either side of the boundary line. The clearing for this section began in 2013, but was not completed until 2014 due to near record amounts of rainfall.

Demarcation and clearing of the St. Francis River (Maine/Quebec)

The St. Francis River forms the boundary between Canada and the U.S. over a distance of approximately 43 miles (70 kilometers). The source of this river is Quebec's Lake Pohenegamook and it empties into the St. John River. On the Canadian side, it crosses farms and private forests whereas on the U.S. side, it crosses areas that are heavily wooded and sparsely populated. This waterway winds through flood plains and has a tendency to expand in the spring which can change its course. Consequently, long segments of the boundary are now on dry land and need to be located and marked. A U.S. team continues to maintain this section this season inspected 51 Reference Monuments of which 28 needed major repairs and 7 were completely renewed in their original locations. In addition, three new Reference Monuments were installed to help in the location of boundary turning points along the river. During the maintenance operations along the St. Francis River, IBC was contacted by Indigo Films on behalf of the Travel Channel. They were producing a new series for The Travel Channel called World Access and filmed the crew over a two day period rebuilding a reference mark.



Paddling down the St. Francis River (ME/QC)

Maintenance of the West Line (New York/Quebec)



Renewed monument along the New York/Quebec border

The West Line, which separates the province of Quebec and the state of New York, crosses farms and private forests, and is a sensitive area because of the heavy traffic at the numerous border crossings that punctuate it. The maintenance of this segment continues at an intense rate as monuments were rebuilt at Ports of Entry and along some of the more remote segments of the boundary. A total of 151 monuments were inspected, revealing many boundary monuments in disrepair. Most of these monuments were installed nearly a century ago and are deteriorating. There are also insufficient boundary markers at key locations. During this field operation, 27 monuments were renewed, 100 monuments were painted and 7 new monuments were added to better demarcate these very

active areas. The intensive maintenance work began four years ago, and continued this year under the supervision of the Canadian section.

West Line Vista Clearing (Vermont/Quebec)

The West Line segment which separates the province of Quebec and the State of Vermont was the subject of line clearing this season from Halls Stream to Lac Memphremagog. The markers installed in 2013 served well to help the contractor locate and clear the 20 foot vista along a distance of 32.7 miles (52.4 kilometers).



Original monument still marking the 45th parallel (VT/QC)

Highlands Control Survey (Maine/Quebec)

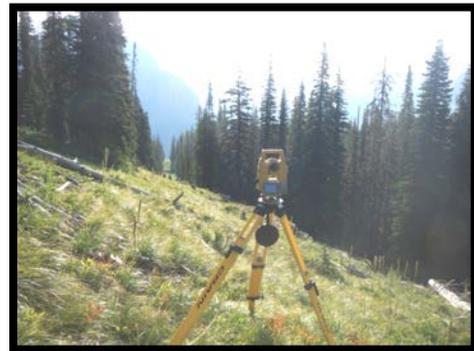


Performing GPS survey in the Highlands

The Highlands Section of the International Boundary is one of the most difficult and demanding sections of the boundary to maintain. It is located between the Southwest Branch of the St. John River and the Halls Stream sections and has a length of about 175 miles (280 kilometers) which is marked by a series of nearly 3400 monuments. The GPS control survey was conducted from beginning to end (Monument 314 to Monument 507) to improve the positional accuracy of the boundary coordinates. The data collected will serve to recompile the conventional survey data collected during the resurvey in the 1990's. This control survey included the positioning of 97 boundary monuments, spaced out along the entire section which was then tied to modern coordinate control stations in Canada and the U.S.

49th Parallel (Washington, Idaho, Montana/British Columbia)

Surveying continued along the 49th parallel under the direction of a U.S. team. A total of 80 monuments were surveyed, in sometimes challenging conditions. This section of the boundary, which cuts through the Rocky Mountains, is known to be one of the most difficult with some summits reaching as high as 3,000 metres, or 10,000 feet. The section is accessible by helicopter and a few barely passable forestry roads. The data collected this year will be combined with earlier surveys to produce up-to-date coordinates. Along with the surveying, vista clearing was also completed along the northern limit of Glacier National Park.



Marking the boundary line for vista clearing (WA/BC)

Clearing and inspection along the 141st meridian (Alaska/ Yukon)



*Clearly defined boundary of the 141st
Meridian (AK/YK)*

Separating Alaska and Yukon, the 141st meridian stretches from Mount St. Elias to the Arctic Ocean. At a length of 650 miles (1,045 kilometers), this line reaches across regions having unpredictable topography and varying forms of vegetation. Clearing work on this section is in its fourth year and is progressing well. The 2014 operations were jointly undertaken by the Canadian and US sections. The Canadian section issued a contract to clear all overhanging trees, shrubs and branches over a distance of 32.8 miles (52.7 kilometers) between boundary monuments 174 and 187A. The work was carried out by a specialized company, under contract to the Canadian section, who was also responsible for inspecting the boundary monuments along the line.

The United States section deployed one of its field crews to clear the vista between boundary monuments 50 and 25. The crew camped on location throughout the summer months and managed to clear the vista over a distance of 44.5 miles (71.6 kilometers) from Monument 37 to Monument 51



Camping on the Porcupine River (AK/YK)

MINOR MAINTENANCE ACTIVITIES 2014

The Department of Homeland Security (DHS) asked IBC to re-clear 3 segments of the West Line at the following Ports-of-entry: Morse's Line, Herdman and Hemmingford. The work was carried out by an IBC crew and extended from Monument 619 to Monument 684.

A contract was issued to Atlantic Testing Laboratories to undertake subsurface soil testing in Missisquoi Bay in Lake Champlain. (NY/QC). This preliminary work will support a feasibility study for the possible installation of a range tower in the lake bed to enhance demarcation of the boundary over this body of water.

At the request of US Border Patrol, a new boundary monument was installed just west of the Sweetgrass port of entry. Nearby monuments east and west of the port were also restored and additional carsonite markers were installed.



Mast base on right installed by IBC ME/QC, NB

In preparation for the upcoming 2014 World Acadian Congress, the IBC was contacted in regards to erecting a mast near the intersection of the three borders of Quebec, New Brunswick and Maine. With plans already in place to renew Reference Monument C-125, the IBC easily constructed a base for the organizers to erect their mast.

An IBC crew was deployed to the Boundary Waters region near Lake of the Woods to clear as many of the three portages that time would permit, prior to the end of the field season. They managed to clear two - the Swamp Portage and the Height of Land Portage. Watap Portage will be cleared next season.

COMMISSIONERS' ACTIVITIES

Field inspections

The inspections carried out by the Commissioners and their assistants ensure that the work performed in the field, under their direction, meets the standards of the Commission and that it was done in accordance with the Treaty. Throughout the year, the commissioners inspected the following areas:

Passamaquoddy Bay (Maine/New Brunswick)

In May 2014, Canadian Commissioner, Peter Sullivan, along with Daniel Fortin, Jean Gagnon and Kevin Bagwell inspected Passamaquoddy Bay.

West Line (New York/Quebec)

In June 2014, Daniel Fortin and JT Moore inspected a Canadian field crew working on the West Line (NY/QC). They found that the work performed by the Canadian crew was fully satisfactory. During the inspection, Messer's Fortin and Moore found that fences were erected contrary to International Boundary Commission Act.

141st Meridian (Alaska/Yukon)

In July 2014, Canadian Commissioner Peter Sullivan, along with Daniel Fortin, Jean Gagnon and JT Moore inspected the clearing contracts and visited the American field crew working on the 141st Meridian (AK/YK). The clearing contract work was found to be satisfactory. The visit to the American field crew provided a firsthand glimpse of the excellent work being carried out despite the difficult working conditions at this northern latitude.

Commissioner Meetings

The Canadian and U.S. commissioners met twice during the year: to review the status of projects, to approve upcoming projects, to discuss and approve comparable expenditures, and to debate the various issues brought to their attention. The spring meeting was held on April 23 and 24, 2014, in Washington, D.C., and the fall meeting was held on November 18 and 19, 2014, in Calgary, Alberta. Most of the topics discussed during the meetings are included in this report.

LIAISON AND COMMUNICATION

The Commission strives to remain in constant contact with the various stakeholders through a variety of communication activities. The following is a list of the main communication activities carried out during this period.

Modernization of the website

The Commission has committed to modernizing its website to make it its primary means of disseminating information and to promote communication with citizens and government agencies. The website design has been completed and the site is now being populated and assessed for quality control before release. This process has taken longer than expected, but should be completed by fall of 2015.

Landowner Consultations

IBC personnel visited local landowners along the St. Francis River to explain upcoming field operations and to answer questions concerning this work. They also consulted with landowners and border officials at the Champlain border crossing between New York and Quebec to address encroachment violations on the Canadian side of the vista.

Border Agencies Relations

Both US and Canadian border officials were contacted and/or visited during the winter months to notify them of upcoming projects. In turn, the Commission gets feedback on where we may need to focus some of our resources to better serve them.

REGULATORY ITEMS

The Commission monitors the construction of all works within 10 feet (3 meters) of the boundary. Thus, all construction—whether a ditch, a building, a surface or underground structure (telephone, cable, electrical line or gas pipeline), line of communication, or other—must first have authorization by the Commissioners to proceed. In 2014, the commissioners processed the following applications:

- Permission was granted to install a power line across the border to bring power to two sugar camps and a pumping station. The power line will cross the Southwest Branch of the St. John River just to the northeast of Turning Point 233.
- Permission was granted to undertake construction activities along the 49th parallel between Monument 817 and Monument 818 to replace a segment of existing pipeline for maintenance reasons.
- Permission was granted to install a gas gathering pipeline across the boundary line west of Monument 609 in the vicinity of Rural Municipality of Cambria No. 6, Saskatchewan, and Divide County, North Dakota.
- The municipality of Stanstead, Quebec requested to build a retaining wall encroaching the 10 foot / 3 meter vista on the Canadian side at Monument 553A. This request was denied.
- The municipality of St-Zacharie, Quebec requested to build a small fixed customs building adjacent to the boundary encroaching the 10 foot / 3 meter vista on the Canadian side at Monument 318A. This request was denied.
- Notification of demolition and new construction was received from The Corporation of Delta in the vicinity of Monument 4 in Delta, BC. A reply was sent from the Canadian section outlining the regulations and processes required for construction along the boundary. No regulatory item was processed.

PLANNING FOR 2015

The Commission plans to undertake the following activities in 2015:

United States section

The U.S. section will be responsible for the following projects:

- Vista Clearing Contract along the 49th Parallel totaling 63.4 mi / 102.0 km from Mon 72 (East side of Ross Lake) to Mon 111A at the Nighthawk/Chopaka Port of Entry (WA/BC).
- St. Francis River - Reference Monuments will be repaired or renewed from Turning Point 231 heading north to Turning Point 344 (ME/QC).
- Vista clearing in-house project: 141st Meridian Monument 37 heading north to Monument 25 for a total of 44.5 mi / 71.6 km (AK/YK) and between Monument 156 to Monument 157 for a total of 2.9 mi / 4.5 km (AK/YK).
- Surveys along the 49th Parallel at various locations to pick up missing vectors and gaps needed to complete boundary sections (WA, ID, MT/BC).
- Monument renewal and Surveys along the 141st Meridian from Mon 111 to Mon 1-83 (AK/YK).
- Vista clearing – Glacier National Park MOU: Section #6 located near the west Shore of Waterton Lake – from 0.1 mi east of Monument 276 to 0.6 miles west of Monument 274, total of 3.1 mi / 5.0 km (MT/BC).
- Vista clearing in-house project: Watap Portage between TP's 1161, 1162 and 1163 (MN/ON).
- Install new monument in Hyder, AK / Stewart, B.C. (AK/BC)

Canadian section

The Canadian section's maintenance activities will focus on the following sections of the boundary:

- Vista clearing contract along the 141st Meridian from Monument 70 to Monument 76 between for a total of 20.7 mi / 33.3 km (YK/AK)
- Vista clearing contract along the West line from Monument 572 to Monument 631 for a total of 40.4 mi / 65.0 km (NY, VT/QC).
- Vista clearing contract along the 49th Parallel from Monument 5 to Monument 26 for a total of 18.6 mi / 29.9 km (WA/BC).
- 45th Parallel - West Line monument inspection and repairs (NY/QC).
- 49th Fraser Valley Survey. Complete survey control from 2009 and determine monumentation requirements at Linden/Sumas Port of Entry (WA/BC).
- South, Southwest Line to complete 2013 survey (ME/QC).
- 49th Cascade Segment - Preliminary Survey Work (WA/BC).

Accomplishments against the 15 year plan

For administrative and planning purposes, the entire length of the boundary has been subdivided into 28 subsections and the Commission attempts to maintain each subsection on a cyclical basis. Currently, the shortest maintenance cycle is 4 years (in the Fraser Valley between BC and WA) while a longer 15 year cycle is used in the north. (hence the 15 year plan). The long range forecast (15 year plan) is entering into its 12th year in 2015 and is due for a major revision, including a revision of the current maintenance cycles. Appendix D provides an approximate assessment of the status of each subsection but doesn't accurately portray the present state of boundary maintenance, for instance:

- Vista clearing and monumentation of the West Line section (NY/QC) was originally planned for 2012 and 2013 but was deferred to 2014, due to funding constraints.
- Although not part of the 15 year plan, a GPS survey of the entire Highlands section (ME/QC) was undertaken, covering 174.6 mi (281 km). A total of 97 boundary monuments were surveyed as part of the network.
- Two crews (one from each section) were deployed along the West Line (NY/QC) to undertake priority vista clearing over a 14 mi (22 km) distance. The work was performed at the request of the Department of Homeland Security.

Commissioners Hipsley and Sullivan intend on updating the 15 year plan in the spring of 2015 which will reflect additional required maintenance efforts and shorter vista clearing cycles for some sections of the boundary.

REPORT ON COMPARABLE EXPENDITURES

This report shows the total amount spent by both sections of the Commission as of March 31, 2014, for maintenance of the boundary line under section IV of the *Treaty of Washington 1925*.

The cumulative total represents the total spending of each section, since 1925, on expenditures deemed comparable. Comparable expenditures are the subject of an agreement by both Commissioners as to the interpretation of section IV of the *Treaty of 1925*, and is revised regularly. The current agreement has been in effect since April 1, 1999. Under the agreement, and according to the Treaty, the expenditures do not include salary of or expenditures by the Commissioner and the Commissioner's assistants, including administrative staff, i.e. the permanent staff of each section. Therefore, this expenditure report is not a financial report, as it does not include all of the expenditures incurred by each section.

The purpose of compiling cumulative expenditures since the Commission's origins is to demonstrate that the efforts by both governments are shared equally. Although the cumulative total shows a lag in terms of the expenditures of the U.S. section, this gap is not a concern, as the U.S. section budget is currently exceeding the Canadian budget. This is expected to continue, so that the U.S. section should catch up and close the gap within four or five years.

Given that each country's fiscal year spans into two calendar years, the divisible expenditure report does not always reflect all costs associated to current year projects and shows some costs associated with the previous year projects. Expenditures are shown in each country's respective currency.

*Excerpt of certified Comparable Expenditures to March 31, 2014
 Approved by the Canadian Commissioner on January 16, 2015
 Approved by the U.S. Commissioner on March 3, 2015*

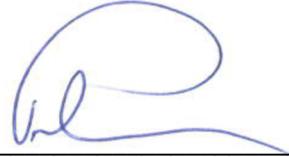
	Expended By United States Section (USD)	Expended By Canadian Section (CAD)
Total to March 31, 2013	18,922,544.08 \$	21,931,386.69 \$
 <u>From April 1, 2013 to March 31, 2014</u>		
141st Meridian (AK/YK) clearing contract (86 km/53 miles)		449,549.56 \$
West Line (QC/NY) monument maintenance		230,911.99 \$
South-Southwest Line (QC/ME) survey and inspection		83,985.71 \$
St. Marys River Inspection		24,222.65 \$
St-Lawrence river and the Great Lakes inspection		18,714.86 \$
West Line (QC/VT) carsonite marking		62,756.53 \$
St. Francis River (ME/QC) monument maintenance	169,660.90 \$	
North Line (ME/NB) Vista clearing (78 miles/125 km)	159,127.77 \$	
49th Parallel (ND,MN/MB) Monument maintenance	161,412.42 \$	
49th Parallel (ND,MN/MB) clearing contract (36 mi/57 km)	89,374.65 \$	
Glacier Park (MA/MB) clearing contract (3.1 mi./4,9 km)	45,654.56 \$	
Juan de Fuca (WA/NB) monument replacement	48,106.08 \$	
49th Parallel (WA,ID/BC) Survey and inspection	291,914.47 \$	
141st Meridian (AK/YK) Inspection	24,379.52 \$	
Halls Stream (NH/QC) Site visit	300.00 \$	
<u>Other Expenditures</u>		
Door hangers		1,195.00 \$
Vehicle Purchase	36,659.89 \$	42,727.54 \$
Vehicle Maintenance		10,653.62 \$
Property Title Search Services		12,076.11 \$
Acquisition of GPS receivers	50,031.02 \$	
Printing and advertisement	9,192.70 \$	991.18 \$
Boundary marker posts	16,899.00 \$	
	<hr/>	<hr/>
Sub-total for 2013-14	<u>1,102,712.98 \$</u>	<u>937,784.75 \$</u>
Total to date	<u>20,025,257.06 \$</u>	<u>22,869,171.44 \$</u>

CERTIFICATION

We certify that the foregoing is a true record of the work done by the Commissioners during the year ending December 31, 2014 on the maintenance of the International Boundary Line between Canada and the United States of America, and that the plats and tables submitted herein show the true location and geodetic position of all monuments moved and all additional monuments and marks established within the year, in accordance with the provisions of Article IV of the Treaty between the United States of America and His Britannic Majesty in respect of Canada signed at Washington, February 24, 1925.



Kyle K. Hipsley
United States Commissioner



Peter Sullivan
Canadian Commissioner

COMMISSIONERS OF THE IBC

UNITED STATES		CANADA	
Otto H. Tittmann	1904 – 1915	William F. King	1904 – 1916
Edward C. Barnard	1915 – 1921	James J. McArthur	1917 – 1924
E. Lester Jones	1921 – 1929	John D. Craig	1925 – 1931
James H. Van Wagenen	1929 – 1935	Noel J. Ogilvie	1931 – 1947
Thomas Riggs	1935 – 1945	James M. Wardle	1947 – 1950
John A. Ulinski	1945 – 1953	J. Leslie Rannie	1950 – 1951
Samuel L. Golan	1953 – 1961	J. Earl R. Ross	1951 – 1957
Edward J. King	1961 – 1969	A. Frederick Lambert	1957 – 1976
Richard L. Herman	1969 – 1977	Alec C. McEwen	1976 – 1991
William M. Schreiber	1977 – 1981	Suzanne Jacques	1991 – 1996
Frank R. Whetstone	1981 – 1985	Michael O’Sullivan	1996 – 2005
David C. Fischer	1985 – 1991	Peter J. Sullivan	2005 –
Allen C. Kolstad	1991 – 1993		
Clyde Moore (Acting)	1993 – 1996		
Thomas L. Baldini	1996 – 2002		
Dennis L. Schornack	2002 – 2007		
David L. Bernhardt	2007 – 2008		
Kyle K. Hipsley (Acting)	2008 – 2014		
Kyle K. Hipsley	2014 –		

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

Legend

Boundary Monument Type:	MON	Boundary Monument or Boundary Turning Point
	RM	Reference Monument or Marker
Reconnaissance:	G	Recovered In Good Condition
	F	Recovered in Fair condition (requires minor repair)
	PO	Recovered in Poor condition (requires major repair)
	D	Destroyed (evidence found but Monument not in place)
	NR	Not Recovered (no evidence found or inadequate search)
Established:	NM	New Monument constructed (in new location)
	R	Renewed (in same location)
Repairs:	MI	Minor repairs to base (cracks patched, plumbed, dirt packed at base, etc.
	MA	Major repairs (new marker installed, base partially replaced or recapped)
Painted:	MP	Monument Painted
Description:	DU	Description Updated
	ND	New Description (newly established monuments only)
Photo:	P	Photographed
	NP	Not Photographed
Monument Surveyed:	S	Survey performed to position the monument

Passamaquoddy Bay (Maine / New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 47	G		MA	MP		P	
RM 48	G			MP		P	
RM 42	G			MP		P	
RM 41	G			MP		P	
RM 43	G			MP		P	
RM 44	G			MP		P	
RM 45	G			MP		P	
RM 39	G			MP		P	
RM 40	G			MP		P	
RM 46	G			MP		P	
RM 38	G			MP		P	
RM 37	G			MP		P	
RM 35	G			MP		P	
RM 34	G			MP		P	
RM 34	G			MP		P	
RM 33	G			MP		P	
RM 36	G			MP		P	
RM 27	G			MP		P	
RM 28	G			MP		P	
RM 26	G			MP		P	
RM 25	G			MP		P	
RM 23	G			MP		P	
RM 24	G			MP		P	
RM 31	G			MP		P	
RM 32	G			MP		P	
RM 21	G			MP		P	
RM 22	G			MP		P	
RM 29	G			MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

Passamaquoddy Bay (Maine / New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 20	G			MP		P	
RM 19	G			MP		P	
RM 30	G			MP		P	
RM 16	G			MP		P	
RM 12	G			MP		P	
RM 15	G			MP		P	
RM 8	G			MP		P	
RM 14	G			MP		P	
RM 13	G			MP		P	
RM 17	G			MP		P	
RM 7	G			MP		P	
RM 10	G			MP		P	
RM 9	G			MP		P	
RM 18	G			MP		P	
RM 11	G			MP		P	
RM 6	G			MP		P	
RM 5	G			MP		P	
RM 3	G			MP		P	
RM 4	G			MP		P	
RM 1	G			MP		P	
RM 2	G			MP		P	

North Line (Maine / New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 1	G			MP		P	
MON 2A	PO			MP		P	
MON 10A-59	PO			MP		P	
MON 10B	PO			MP		NP	
MON 10C	PO			MP		NP	
MON 10D	PO			MP		NP	
MON 15	PO			MP		P	
MON 15A	PO			MP		P	
MON 18	PO			MP		P	
MON 18A-66	G			MP		P	
MON 19A	G			MP		P	
MON 19A1	G			MP		P	
MON 19A2	G			MP		P	
MON 19A3	G			MP		P	
MON19A4	G			MP		P	
MON 19B	G			MP		NP	
MON 20	G			MP		P	
MON 20A	G			MP		P	
MON 21	PO			MP		P	
MON 21A	G			MP		P	
MON 21B	G			MP		P	
MON 21C	G			MP		P	
MON 21D	G			MP		P	
MON 22	PO			MP		P	
MON 23A	PO			MP		P	
MON 24	F			MP		P	
MON 24A	G			MP		P	
MON 24B	G			MP		P	
MON 25	G			MP		P	
MON 25B	F			MP		P	
MON 26	G			MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

North Line (Maine / New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 26A	G			MP		P	

St. John and St. Francis Rivers (Maine / Quebec, New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM S-153	PO		MA	MP	DU	P	
RM C-145	NR					NP	
RM C-133	PO	R		MP	DU	P	
RM C-142	PO					NP	
RM S-151	PO		MA	MP	DU	P	
RM C-158	F				DU	P	
RM S-160-A	G			MP	DU	P	
RM C161	PO		MA	MP	DU	P	
RM C-135	PO	R		MP	DU	P	
RM C-156	F				DU	P	
RM S-145	PO		MA	MP	DU	P	
RM C132	PO	R		MP	DU	P	
RM C-172	PO		MA	MP	DU	P	
RM S-162	PO		MA	MP	DU	P	
RM C-168-A	G			MP	DU	P	
RM C-166	PO		MA	MP	DU	P	
RM C-160	PO		MA	MP	DU	P	
RM C-141	PO		MA	MP	DU	P	
RM C148	PO		MA	MP	DU	P	
RM S-147	PO		MA	MP	DU	P	
RM C-154-A	G				DU	NP	
RM C139	PO		MA	MP	DU	P	
RM S-142	PO		MA	MP	DU	P	
RM S-159-A	G			MP	DU	P	
RM S-164	G			MP	DU	P	
RM C-176	D				DU	NP	
RM C-147	PO		MA	MP	DU	P	
RM C-163	PO		MA	MP	DU	P	
RM C-170	PO		MA	MP	DU	P	
RM S-163	G			MP	DU	P	
RM C-157	F				DU	P	
RM C-144-A	G				DU	NP	
RM S-138-A	G			MP	DU	P	
RM C136	PO	R		MP	DU	P	
RM S-144	D				DU	NP	
RM S166	PO		MA	MP	DU	P	
RM C131A	PO	R		MP	DU	P	
RM C-169-A	PO		MA	MP	DU	P	
RM S-158	F			MP	DU	P	
RM S149	PO		MA	MP	DU	P	
RM S-161-A	G			MP	DU	P	
RM C-143	PO		MA	MP	DU	P	
RM S-152	PO		MA	MP	DU	P	
RM C-149	D				DU	NP	
RM C-137	PO		MA	MP	DU	P	
RM S-146	PO		MA	MP	DU	P	
RM S-154	PO		MA	MP	DU	P	
RM C-130	PO	R		MP	DU	P	
RM C125	PO		MA	MP	DU	P	
RM C-159	PO		MA	MP	DU	P	
RM S-165	PO		MA	MP	DU	P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

St. John and St. Francis Rivers (Maine / Quebec, New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C-146	PO	R		MP	DU	P	
RM S-131	PO		MA	MP	DU	P	
Tab NE		NM			ND	NP	
Tab SW	G	NM			ND	P	
NE TABLET	PO					NP	
SW TAB	PO					NP	
RM C-150A	UK	NM		MP	ND	P	
RM C-152A	UK	NM		MP	ND	P	
RM S-155B	UK	NM		MP	ND	P	

Southwest Branch of the St. John River (Maine / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C81	F					P	S

Highlands (Maine / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 314	G					P	S
MON 318A	G					P	S
MON 319.21	PO					P	S
MON 320.15	G					P	S
MON 321.5	G					P	S
MON 322.4	G					P	S
MON 323.4	G					P	S
MON 324.7	G					P	S
MON 325.3	F					P	S
MON 326.7	NR					NP	
MON 326.8	F					P	S
MON 326.18	G					P	
MON 327.30	NR					NP	
MON 328	G					P	S
MON 328.28	G					P	S
MON 329.22	G					P	S
MON 330	G					P	S
MON 330.1	NR					NP	
MON 330.21	G					P	S
MON 331.18	G					P	S
MON 332.13	G					P	S
MON 333.6	G					P	S
MON 333.29	G					P	S
MON 335.1	G					P	S
MON 335.19	G					P	S
MON 338.2	NR					NP	
MON 338.5	F					P	
MON 338.8	G					P	S
MON 340.5	G					P	S
MON 341.12	NR					NP	
MON 341.13	G					P	S
MON 342.5	G					P	S
MON 343.5	NR					NP	
MON 343.6	G					P	S
MON 345.3	D					NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

Highlands (Maine / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 345.5	G					P	S
MON 346.2	G					P	S
MON 347.22	F					P	S
MON 348.12	G					P	S
MON 348.30	G					P	
MON 349.6	NR					NP	
MON 349.7	G					P	S
MON 351A	D					P	
MON 351B	F					P	S
MON 353.1	G					P	
MON 353AA	G					P	S
MON 353B	G					P	
MON 353.2	G					P	
MON 356.5	G					P	S
MON 359.5	G					P	S
MON 364	G					P	S
MON 368.1	G					P	S
MON 369.1	G					P	S
MON 373.7	G					P	S
MON 376.7	F					P	S
MON 380.12	F					P	S
MON 383.29	G					P	S
MON 385.2	G					P	S
MON 385.25	G					P	S
MON 387.25	G					P	S
MON 389.12	G					P	S
MON 391	G					P	S
MON 394	G					P	S
MON 396.15	G					P	S
MON 399	G					P	S
MON 400.13	G					P	S
MON 402.1	G					P	S
MON 404	F					P	S
MON 405.13	G					P	S
MON 409.8	F					P	S
MON 410.4	G					P	
MON 412.21	G					P	S
MON 414.24	G					P	S
MON 416	G					P	S
MON 418.9	G					P	S
MON 419.12	G					P	S
MON 423.12	G					P	S
MON 425.19	G					P	S
MON 427.2	G					P	S
MON 429.7	G					P	S
MON 431.7	G					P	S
MON 434.1	G					P	S
MON 437.4	G					P	S
MON 440.8	G					P	S
MON 445.3	G					P	S
MON 447	D					NP	
MON 447.1	G					P	S
MON 452	F					P	S
MON 453.6	G					P	S
MON 457	D					P	
MON 457.1	G					P	S
MON 459.8	G					P	S
MON 462	G					P	S

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

Highlands (Maine / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 465	G					P	S
MON 466.1	G					P	S
MON 467.16A	G					P	S
MON 470.1	G					P	S
MON 472	G					P	S
MON 473.24	G					P	S
MON 475	G					NP	
MON 475.1	NR					NP	
MON 475.2	G					P	S
MON 476.34	G					P	S
MON 478.8	G					P	S
MON 480.4	G					P	S
MON 481.19	G					P	S
MON 482.34	G					P	S
MON 483.24	NR					NP	
MON 484A	F					P	S
MON 484.58	G					P	S
MON 486.21	G					P	S
MON 487.10	G					P	S
MON 490.10	G					P	S
MON 492.10	G					P	S
MON 492.11	D					NP	
MON 495	G					P	S
MON 500	F					P	S
MON 501	F					P	S
MON 502.10	G					P	S
MON 507	G					P	S

Halls Stream (New Hampshire / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 509	G					P	S
RM 510	F					P	S

45th Parallel (West Line) (New York, Vermont / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 522A1	G					NP	
MON 522A2	G					NP	
MON 525	G					NP	
MON 525A	G					NP	
MON 535AAA	G					NP	
MON 535A	G					NP	
MON 535AA	G					NP	
MON 535AB	G					NP	
MON 535C1	G					NP	
MON 535D	G					P	
MON 535E	G					NP	
MON 536	G					NP	
MON 537	G					NP	
MON 538	G					NP	
MON 549	G					NP	
MON 549A	F					NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

45th Parallel (West Line) (New York, Vermont / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 551	PO					NP	
MON 562	G					NP	
MON 563	G					NP	
MON 563A	G					NP	
MON 564	G					NP	
MON 613	G			MP		P	
MON 621	G			MP		P	
MON 622	G			MP		P	
MON 622A	G			MP		P	
MON 623	G			MP		P	
MON 624	G			MP		P	
MON 625	G			MP		P	
MON 627	G			MP		P	
MON 627A	G					NP	
MON 628	G			MP		P	
MON 629C	G			MP		P	
MON 629D	G			MP		P	
MON 629E	G			MP		P	
MON 629E1	G			MP		P	
MON 629F	G			MP		P	
SITE MON 629F	D					NP	
SITE MON 630	D					NP	
MON 630AA	G			MP		P	
MON 630B	G			MP		P	
MON 631	G					NP	
MON 632 & 633	G			MP		P	
MON 634A	G			MP		P	
MON 635	G			MP		P	
MON 635A	G			MP		P	
MON 635B	G			MP		P	
MON 637A	G			MP		P	
MON 637B	G			MP		P	
MON 638	G			MP		P	
MON 639	G			MP		P	
MON 640	G			MP		P	
MON 644	G			MP		P	
MON 644A		NM				P	
SITE MON 645	D					NP	
MON 645A	G	R		MP		P	
MON 646A	G			MP		P	
MON 646B	G			MP		P	
MON 646C	G			MP		P	
MON 647	G			MP		P	
MON 648	G			MP		P	
MON 649	F			MP		P	
MON 649A	G		MI	MP		P	
MON 649B	G		MA	MP		P	
MON 650	G			MP		P	
MON 650A	G		MI	MP		P	
MON 651	G		MI	MP		P	
MON 651A	G			MP		P	
MON 652	G			MP		P	
MON 652A	G			MP		P	
MON 653	G		MI	MP		P	
MON 653A	G			MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

45th Parallel (West Line) (New York, Vermont / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 653B	G			MP		P	
MON 654	G			MP		P	
MON 654A		NM				P	
MON 654B		NM				P	
MON 655	F	R		MP		P	
MON 656	G			MP		P	
MON 657	PO		MA			P	
MON 657A	G			MP		P	
MON 658	F		MI			P	
MON 659	G			MP		P	
MON 660	G			MP		P	
MON 661	G			MP		P	
MON 662	G			MP		P	
MON 663	G			MP		P	
MON 664	G			MP		P	
MON 665	G			MP		P	
MON 666	G			MP		P	
MON 667	G			MP		P	
MON 667A	G			MP		P	
MON 668	G			MP		P	
MON 669	G			MP		P	
MON 669A	G			MP		P	
MON 670	G			MP		P	
MON 671	G			MP		P	
MON 672	G			MP		P	
MON 673	G			MP		P	
MON 674	G			MP		P	
MON 674A	G			MP		P	
MON 675	G			MP		P	
MON 676	G			MP		P	
MON 676A	G			MP		P	
MON 677	G			MP		P	
MON 678	G			MP		P	
MON 679	G			MP		P	
MON 680	G			MP		P	
MON 681	G			MP		P	
MON 681A	G			MP		P	
MON 681B	G			MP		P	
MON 682	G			MP		P	
MON 682A	G			MP		P	
MON 683	G			MP		P	
MON 686	G		MI	MP		P	
MON 687	F		MI	MP		P	
MON 688	PO			MP		P	
MON 688A		NM				P	
MON 689	F	R		MP		P	
MON 689A		NM				P	
MON 690	G		MI	MP		P	
MON 691	PO	R		MP		P	
MON 691A		NM				P	
MON 692	G			MP		P	
MON 693	PO	R		MP		P	
MON 694	PO	R		MP		P	
MON 695	G	R		MP		P	
MON 695A	D	R		MP		P	
MON 696	G					NP	
MON 697	G		MI	MP		P	
MON 698	PO	R		MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

45th Parallel (West Line) (New York, Vermont / Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 699	PO	R		MP		P	
MON 699A	F	R		MP		P	
MON 699AA		NM				P	
MON 700	G		MI	MP		P	
MON 701	G		MI	MP		P	
MON 702	G					NP	
MON 703	G			MP		P	
MON 704 AND 705	G					NP	
MON 706	F			MP		P	
MON 706A	F	R				NP	
MON 707	F	R				NP	
MON 708	G					NP	
MON 709	PO					NP	
MON 710	G					NP	
MON 711	G					P	
MON 712	G					NP	
MON 713	G					NP	
MON 715	PO					NP	
MON 716	G					NP	
MON 717	F					NP	
MON 718	F					NP	
MON 719	NR					NP	
MON 720	F					NP	
MON 721	F					NP	
MON 722	G					NP	
MON 722A	D	R			DU	NP	
MON 723	PO					NP	
MON 726A	G					NP	
MON 727	F					NP	
MON 727A	G					NP	
MON 732	F					P	
MON 733A	G					NP	
MON 734-76	F					P	
MON 735	F					P	
MON 754A	F					NP	

***Northwesternmost Point of Lake of the Woods to Lake Superior
(Minnesota / Ontario)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 6 (TP 984)	G				DU	NP	
MON 5 (TP 983)	G				DU	NP	
MON 4 (TP 982)	G				DU	NP	
MON 3 (TP 768)	G				DU	NP	
MON 2 (TP 767)	G				DU	NP	
MON 1 (TP 766)	G				DU	NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Montana, Idaho, Washington / Alberta, British Columbia)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 216C	G			MP	DU	NP	S
MON 218	G			MP	DU	P	S
MON 219	G			MP	DU	P	S
MON 220	G			MP	DU	P	S
MON 221	G			MP	DU	P	S
MON 222	G			MP	DU	P	S
MON 223	G			MP	DU	P	S
MON 224	G			MP	DU	P	S
MON 225	G			MP	DU	P	S
MON 226	G			MP	DU	P	S
MON 227	G			MP	DU	P	S
MON 228	G			MP	DU	P	S
MON 229	G		MI	MP	DU	P	S
MON 230	G			MP	DU	P	S
MON 231	G			MP	DU	P	S
MON 232	G		MI	MP	DU	P	S
MON 233	G			MP	DU	P	S
MON 234	G			MP	DU	P	S
MON 235	G		MA	MP	DU	P	S
MON 236	G		MI	MP	DU	P	S
MON 237	G		MI	MP	DU	P	S
MON 238	G			MP	DU	P	S
MON 239	G		MI	MP	DU	P	S
MON 240	G			MP	DU	P	S
MON 241	G			MP	DU	P	S
MON 242	G			MP	DU	P	S
MON 242A	G			MP	DU	P	S
MON 243-88	G			MP	DU	P	S
MON 244-11	G			MP	DU	P	S
MON 245	G			MP	DU	P	S
MON 246	G			MP	DU	P	S
MON 246AA	G			MP	DU	P	S
MON 246AB	G			MP	DU	P	S
MON 246AC	G			MP	DU	P	S
MON 247	G			MP	DU	P	S
MON 248	G			MP	DU	P	S
MON 249	G			MP	DU	P	S
MON 250	G			MP	DU	P	S
MON 251	G		MI	MP	DU	P	S
MON 252	G		MI	MP	DU	P	S
MON 253	G			MP	DU	P	S
MON 254	G			MP	DU	P	S
MON 255	G		MI	MP	DU	P	S
MON 256	G			MP	DU	P	S
MON 257	G		MA	MP	DU	P	S
MON 258	G		MA	MP	DU	P	S
MON 259	G		MA	MP	DU	P	S
MON 260	G			MP	DU	P	S
MON 261	G			MP	DU	P	S
MON 270	G				DU	P	S
MON 271	G				DU	NP	
MON 272	G				DU	P	S
MON 330	G			MP		P	
MON 331	G			MP		P	
MON 332	G			MP		P	S
MON 333	G			MP		P	S

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Montana, Idaho, Washington / Alberta, British Columbia)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 333AAA		NM		MP	ND	P	S
MON 333AA	G			MP		P	S
MON 334	G			MP		P	S
MON 335	G			MP		P	S
MON 336	G			MP		P	
MON 337	G			MP		P	
MON 338	G			MP		P	
MON 338A	G			MP		P	
MON 339	G			MP		P	
MON 340	G			MP		P	
MON 341	G			MP		P	
MON 342	G			MP		P	
MON 342A	G			MP		P	
MON 343	G			MP		P	
MON 344	G			MP		P	
MON 345	G			MP		P	
MON 346	G			MP		P	
MON 347	G			MP		P	
MON 356	G			MP		P	
MON 356A	G			MP		P	
MON 356AA	G			MP		P	
MON 356B	G			MP		P	
MON 356C	G			MP		P	

***Arctic Ocean to Mount St. Elias (141st Meridian)
(Alaska / Yukon)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 37	G					P	
MON 38	PO					P	
MON 38A	PO					P	
MON 39-84	PO					P	
MON 40	G					P	
MON 41	G					P	
MON 42	G					P	
MON 43	G					P	
MON 44	G					P	
MON 45	G					P	
MON 46	G					P	
MON 46A	G					P	
MON 47	G					P	
MON 47A	G					P	
MON 48	G					P	
MON 48A	G					P	
MON 49	G			MP	DU	P	
MON 49A	G			MP	DU	P	
MON 50	G			MP	DU	P	
MON 51	G			MP	DU	P	
MON 174	G			MP	DU	P	
MON 175	G			MP	DU	P	
MON 176	G			MP	DU	P	
MON 176A	G			MP	DU	P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

Arctic Ocean to Mount St. Elias (141st Meridian)
(Alaska / Yukon)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 177	G			MP	DU	P	
MON 178	G			MP	DU	P	
MON 179	F			MP	DU	P	
MON 180	F			MP	DU	P	
MON 181	G			MP	DU	P	
MON 182	G			MP	DU	P	
MON 183	G			MP	DU	P	
MON 184	G			MP	DU	P	
MON 185	D				DU	P	
MON 186	G				DU	P	
MON 187	G			MP	DU	P	
MON 187A	F			MP	DU	P	

MONUMENT MAINTENANCE TOTALS

***Passamaquoddy Bay
(Maine / New Brunswick)***

Range Marks recovered	49
Range Marks painted	49
Range Marks repaired	1
Range Marks photographed	49

***North Line
(Maine / New Brunswick)***

Monuments recovered	32
Monuments painted	32
Monuments photographed	28

***St. John and St. Francis Rivers
(Maine / Quebec, New Brunswick)***

Reference Monuments recovered	52
Reference Monuments repaired or re-established	35
Reference Monuments painted	46
Reference Monuments established	5

***Southwest Branch of the St. John River
(Maine / Quebec)***

Reference Monuments recovered	1
Reference Monuments painted	0
Reference Monuments repaired or re-established	0
Reference Monuments established	0
Reference Monument surveyed	1

***Highlands
(Maine / Quebec)***

Monuments recovered	108
Monuments not recovered	9
Monuments reported destroyed	5
Monuments photographed	107
Monuments painted	0
Monuments repaired or re-established	0
Monuments established	0
Monument surveyed	98

***Halls Stream
(New Hampshire / Quebec)***

Reference Monuments recovered	2
Monuments photographed	2
Reference Monuments surveyed	2

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

West Line

(New York, Vermont / Quebec)

Monuments recovered	151
Monuments not recovered	1
Monuments reported destroyed	5
Monuments Established	5
Monuments repaired or re-established	27
Monuments painted	100
Monuments photographed	112

Northwesternmost Point of Lake of the Woods to Lake Superior

(Minnesota / Ontario)

Monuments recovered	6
Monuments painted	0
Monuments repaired or re-established	0
Monuments established	0
Monument surveyed	0

49th Parallel

(Washington, Idaho, Montana, North Dakota, Minnesota / British Columbia, Alberta, Saskatchewan, Manitoba)

Monuments recovered	78
Monuments repaired or re-established	12
Monuments established	1
Monuments painted	76
Monuments photographed	77
Monument surveyed	57

Arctic Ocean to Mount St. Elias (141st Meridian)

(Alaska / Yukon)

Monuments recovered	35
Monuments repaired or re-established	0
Monuments established	0
Monuments reported destroyed	1
Monuments painted	18
Monuments photographed	36
Monuments surveyed	0

VISTA MAINTENANCE

Passamaquoddy Bay

(Maine / New Brunswick)

Vista Cleared between Range Mark Pairs 1-26

Total distance = **1.0 mi (1.6 km)**

St. John and St. Francis Rivers

(Maine / Quebec, New Brunswick)

Vista Cleared at various site along de St. Francis River

Total distance = **2.61 mi (4.2 km)**

West Line

(New York, Vermont / Quebec)

Vista Cleared between Monument 659 and Monument 683

Total distance = **12.3 mi (19.8 km)**

Vista Cleared between Monument 617 and Monument 626A

Total distance = **7.5 mi (12.1 km)**

49th Parallel

(Glacier National Park – Montana / Waterton Lakes National Park – Alberta)

Vista Cleared between Monuments 270 and 272

Total distance = **5.1 mi (8.2 km)**

49th Parallel

Vista Cleared between Monuments 260 and 261

Total distance = **3.9 mi (2.4 km)**

Arctic Ocean to Mount St. Elias - 141st Meridian

(Alaska / Yukon)

Vista Cleared between Monuments 37 and 50

Total distance = **43.7 mi (70.3 km)**

Vista Cleared between Monuments 51 and 58

Total distance = **18.9 mi (3.05 km)**

Vista Cleared between Monuments 174 and 187A

Total distance = **32.8 mi (52.7 km)**

APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK

APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK

Monuments recovered	410
Monuments searched for but not recovered	10
Monuments reported as destroyed	8
Monuments established	6
Monuments repaired / re-established	39
Monuments positioned	155

Reference Monuments recovered	55
Reference Monuments searched for but not recovered	0
Reference Monuments reported as destroyed	0
Reference Monuments established	5
Reference Monuments repaired/ re-established	35
Reference Monuments positioned	3

Range Marks recovered	49
Range Marks painted	49
Range Marks Repaired	1

Total Vista cleared	126.4 mi (203.4 km)

APPENDIX C – 15 YEAR PLAN

APPENDIX C - 15 YEAR PLAN

YEAR	PROJECT	COMPLETION
2012	<i>North Line vista & Monument Brook, vista clearing</i>	<i>Completed in 2014</i>
	<i>S.W. Branch of St. John River, insp. & monumentation</i>	<i>Future Work</i>
	<i>Halls Stream, vista clearing</i>	<i>Deferred</i>
	<i>West Line (VT- QC), vista clearing & monumentation</i>	<i>90% completed</i>
	<i>West Line (NY- QC), vista clearing & monumentation</i>	<i>50% completed</i>
	<i>Lake Sup. To Rainy River, inspection & monumentation</i>	<i>50% Completed</i>
	<i>141st Meridian, vista clearing (4 year project)</i>	<i>80% Completed</i>
	<i>49th Parallel (Pemb.- Turtle Mts.), vista clearing</i>	<i>Completed in 2010</i>
	<i>Pt. Roberts Range Towers, inspection & refurbish</i>	<i>Deferred</i>
	<i>St. Lawrence River, inspection & monumentation</i>	<i>Completed in 2013</i>
	<i>Niagara River, inspection & monumentation</i>	<i>Completed in 2013</i>
	<i>Demarcation of Transboundary Waters</i>	<i>35% completed</i>
	<i>GPS Survey 49th Parallel (ID-MT to Glacier NP)</i>	<i>90% completed</i>
	<i>GPS Survey 141st</i>	<i>Deferred to 2015</i>
	<i>Pt. Roberts vista maintenance</i>	<i>Deferred to 2014</i>
	<i>Glacier/Waterton Clearing</i>	<i>Completed in 2013</i>

2013	<i>S.W. Branch of St. John River, insp. & monumentation</i>	<i>Future Work</i>
	<i>Highlands (N.E. Section), vista clearing</i>	<i>Completed in 2010</i>
	<i>West Line (N.Y.- Que), vista clearing & monumentation</i>	<i>70% completed</i>
	<i>49th Parallel (Minn.- Man.), vista clearing.</i>	<i>100% completed</i>
	<i>49th Parallel (Fraser & Columbia V.), vista clearing</i>	<i>Deferred to 2015</i>
	<i>GPS Survey 49th Parallel (ID-MT to Glacier NP)</i>	<i>100% completed</i>
	<i>Boundary Mapping</i>	<i>Deferred</i>
	<i>Demarcation of Transboundary Waters</i>	<i>35% completed</i>
	<i>GPS Survey 141st</i>	<i>Deferred to 2015</i>

2014	<i>Passamaquoddy Bay, inspection & clearing</i>	<i>100% Completed</i>
	<i>Highlands (N.E. Section), vista clearing</i>	<i>Completed in 2010</i>
	<i>West Line (N.Y.- Que), vista clearing & monumentation</i>	<i>85% completed</i>
	<i>49th Parallel (Minn.- Man.), vista clearing</i>	<i>Completed in 2013</i>
	<i>141st Meridian Imagery</i>	<i>Deferred</i>
	<i>Glacier Waterton Clearing</i>	<i>80% completed</i>
	<i>Southwest & South Line, vista clearing</i>	<i>Deferred to 2016</i>

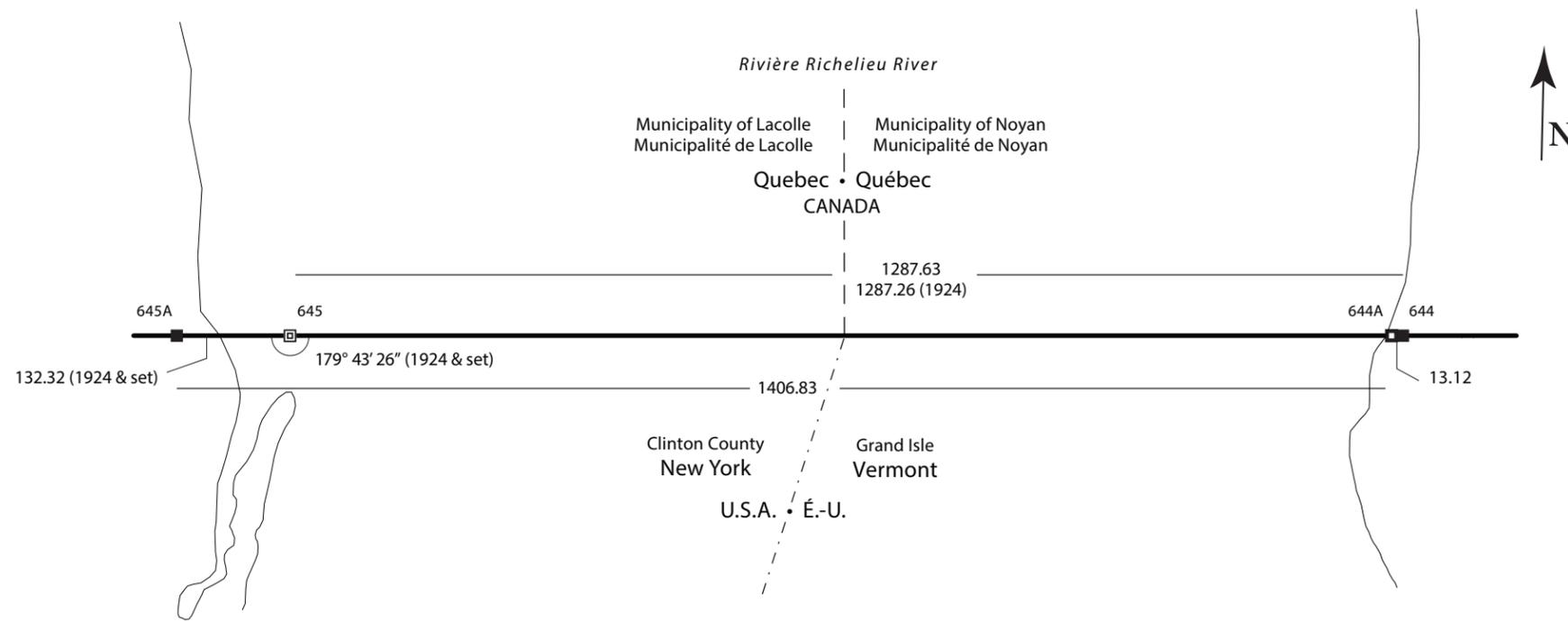
APPENDIX C - 15 YEAR PLAN

YEAR	PROJECT	COMPLETION
2015	<i>Highlands (N.E. Section), vista clearing (3 year project)</i>	<i>Deferred to 2016</i>
	<i>49th Parallel (Foothills to W. Koot.), vista clearing</i>	Completed in 2010
	<i>S.E. Alaska, vista clearing (3 year project)</i>	Future Work
	<i>Pt. Roberts Range Towers, inspection & refurbish</i>	
	<i>St. Clair River, inspection & monumentation</i>	
	<i>Mapping/GIS Updates</i>	
	<i>Glacier/Waterton Clearing</i>	

2016	<i>Southwest and South Line, vista clearing (3 year project)</i>	Future Work
	<i>Highlands (S.W. Section), vista clearing (3 year project)</i>	
	<i>West Line (Vt- Que), vista clearing & monumentation (3 year project)</i>	
	<i>St. Lawrence River, inspection & monumentation</i>	
	<i>Rainy River, inspection & monumentation (2 year project)</i>	
	<i>49th Parallel (Foothills to W. Koot.), vista clearing</i>	
	<i>49th Parallel (Fraser & Columbia V.), vista clearing</i>	
	<i>S.E. Alaska, vista clearing (3 year project)</i>	
	<i>Glacier/Waterton Clearing</i>	
	<i>Transboundary Waters Inspection and Clearing</i>	

2017	<i>Passamaquoddy Bay, inspection & clearing</i>	Future Work
	<i>North Line & Monument Brook, vista clearing</i>	
	<i>St. John River, inspection & monumentation</i>	
	<i>St. Francis River, vista clearing & mapping</i>	
	<i>Southwest and South Line, vista clearing</i>	
	<i>Highlands (S.W. Section), vista clearing</i>	
	<i>West Line (Vt- Que), vista clearing & monumentation</i>	
	<i>St. Mary's River, inspection & monumentation</i>	
	<i>Rainy River, inspection & monumentation</i>	
	<i>49th Parallel (Pemb.-Turtle Mts.), vista clearing</i>	
	<i>49th Parallel (Foothills to W. Koot.), vista clearing</i>	
	<i>S.E. Alaska, vista clearing</i>	
	<i>Glacier/Waterton Clearing</i>	

APPENDIX D – PLANS OF MONUMENTS INSTALLED

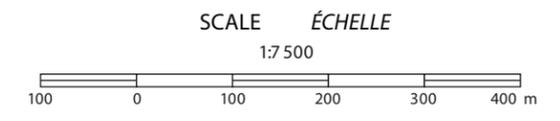


**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

644A

IBC SECTION SECTION CFI
45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
Richelieu River Rivière Richelieu
QC, NY, VT



LEGEND LÉGENDE

Newly established monument ■ Nouvelle borne posée
Existing monument ■ Borne existante
Site of monument □ Site de la borne

Distances shown are horizontal at general ground level and are expressed in metres and decimals thereof (except when shown otherwise).
Les distances apparaissant sur ce plan sont horizontales, établies au niveau moyen du terrain et sont exprimées en mètres et décimales du mètre (sauf si indiqué autrement).

NOTES NOTES

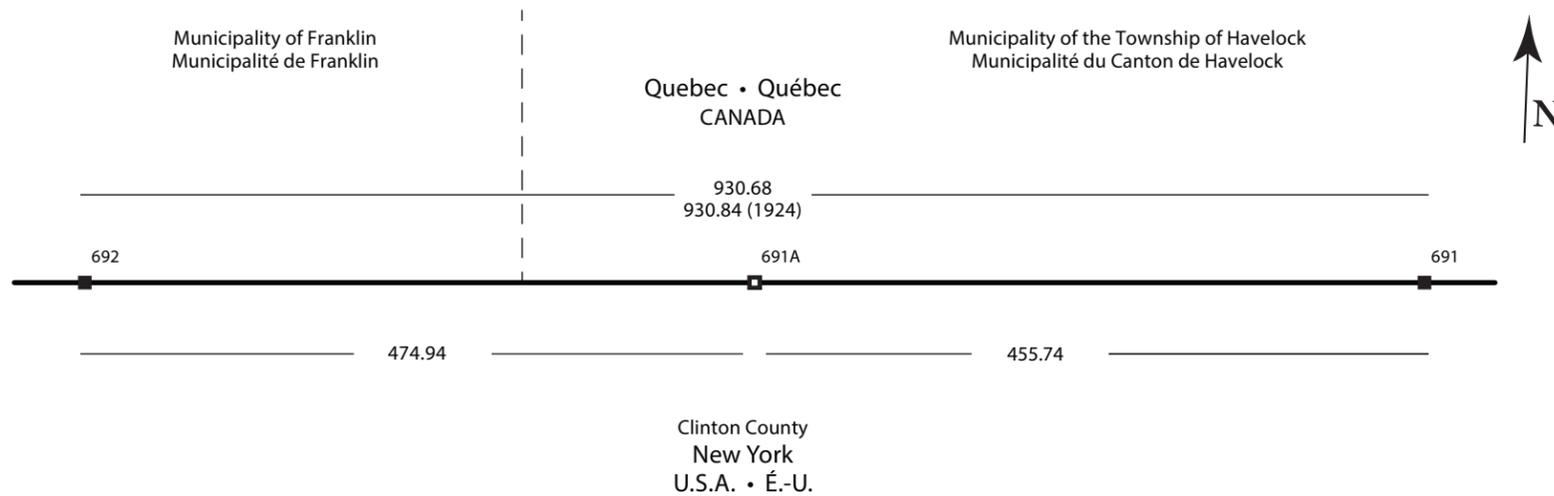
- MON 644 - special type cast iron monument; renewed, 2013.
- MON 644A - established IBC disk in concrete cylinder on-line on east shore of Richelieu River.
- MON 645A - found cast iron monument; replaced with New York style granite monument. Accepted position as found.
- Encroachment: line house is a two-storey, wood-framed seasonal dwelling between MON 644 and MON 644A.
- (1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.

MONUMENTED & ARPENTÉE ET
SURVEYED BY BORNÉE PAR
Joseph L. Harrietha, CLS
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENTAGE
August 2014 août 2014



**INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE**



**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

691A

IBC SECTION SECTION CFI
45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
Franklin, QC
Churubusco, NY

SCALE ÉCHELLE
1:5 000
50 00 50 100 150 200 250 m

LEGEND LÉGENDE
Newly established monument ■ Nouvelle borne posée
Existing monument ■ Borne existante

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NOTES NOTES

MON 691 - New York style granite monument.

MON 691A - standard granite monument established online between MON 691 and MON 692.

MON 692 - New York style granite monument.

(1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.

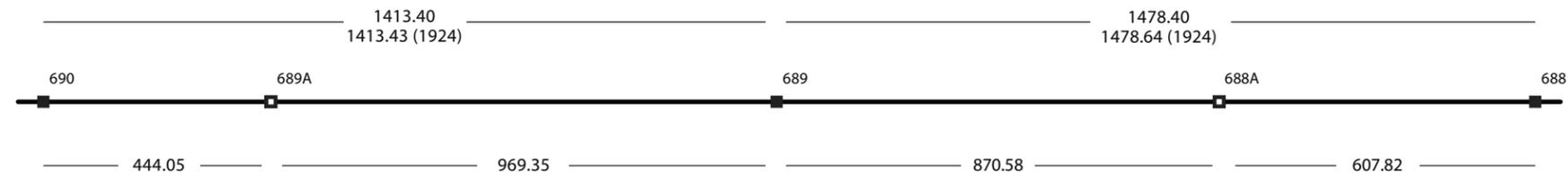
MONUMENTED & ARpentÉE ET
SURVEYED BY BORNÉE PAR
Joseph L. Harrietha, CLS
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENTAGE
August 2014 août 2014



INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE

Municipality of the Township of Havelock • Municipalité du Canton de Havelock
 Quebec • Québec
 CANADA



Clinton County
 New York
 U.S.A. • É.-U.



DETAIL DÉTAIL
 1:10 000

**BOUNDARY MONUMENT ESTABLISHED
 BORNE FRONTIÈRE POSÉE**

688A • 689A

IBC SECTION SECTION CFI
 45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
 Municipality of the Municipality du
 Township of Havelock, QC Canton de Havelock, QC
 Clinton County, NY



LEGEND LÉGENDE
 Newly established monument ■ Nouvelle borne posée
 Existing monument ■ Borne existante

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NOTES NOTES

MON 688 - New York style granite monument located west of The Gulf; renewed as found, 2014.

MON 688A - established standard granite monument on-line between MON 688 and MON 689.

MON 689 - New York style granite monument; renewed as found, 2014.

MON 689A - established standard granite monument on-line.

MON 690 - New York style granite monument.

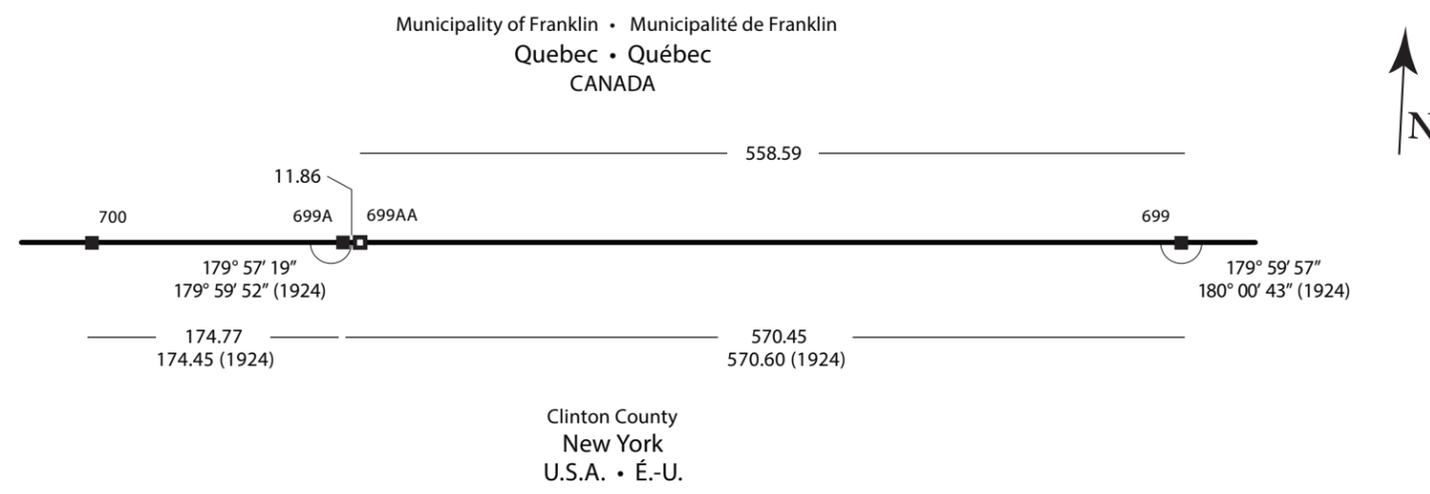
(1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.

MONUMENTED & ARPENTÉE ET
 SURVEYED BY BORNÉE PAR
 Joseph L. Harrietha, CLS
 Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENTAGE
 August 2014 août 2014



INTERNATIONAL BOUNDARY COMMISSION
 COMMISSION DE LA FRONTIÈRE INTERNATIONALE

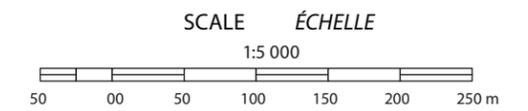


**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

699AA

IBC SECTION SECTION CFI
45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
Franklin, QC
Churubusco, NY



LEGEND LÉGENDE

Newly established monument ■ Nouvelle borne posée
Existing monument ■ Borne existante

Distances shown are horizontal at general ground level and are expressed in metres and decimals thereof (except when shown otherwise).
Les distances apparaissant sur ce plan sont horizontales, établies au niveau moyen du terrain et sont exprimées en mètres et décimales du mètre (sauf si indiqué autrement).

NOTES NOTES

MON 699 - New York style monument; renewed 2014.

MON 699AA - established decorative monument east side of Route 209, on-line between MON 699 and MON699A.

MON 699A - accept position as found, 0.13m North; replaced with decorative monument.

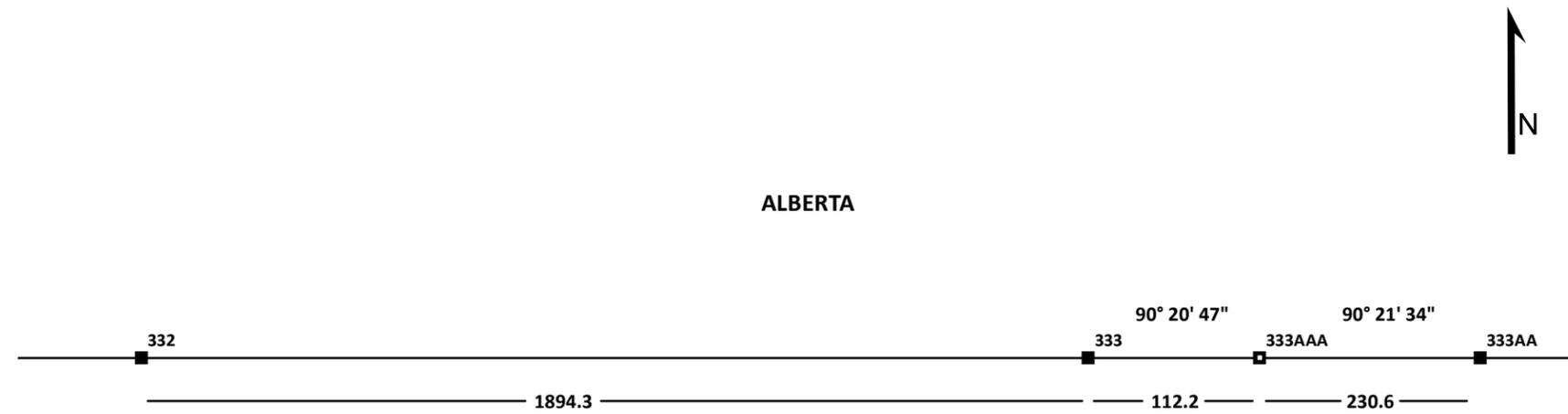
(1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.

MONUMENTED & ARPENTÉE ET
SURVEYED BY BORNÉE PAR
Joseph L. Harrietha, CLS
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENTAGE
August 2014 août 2014



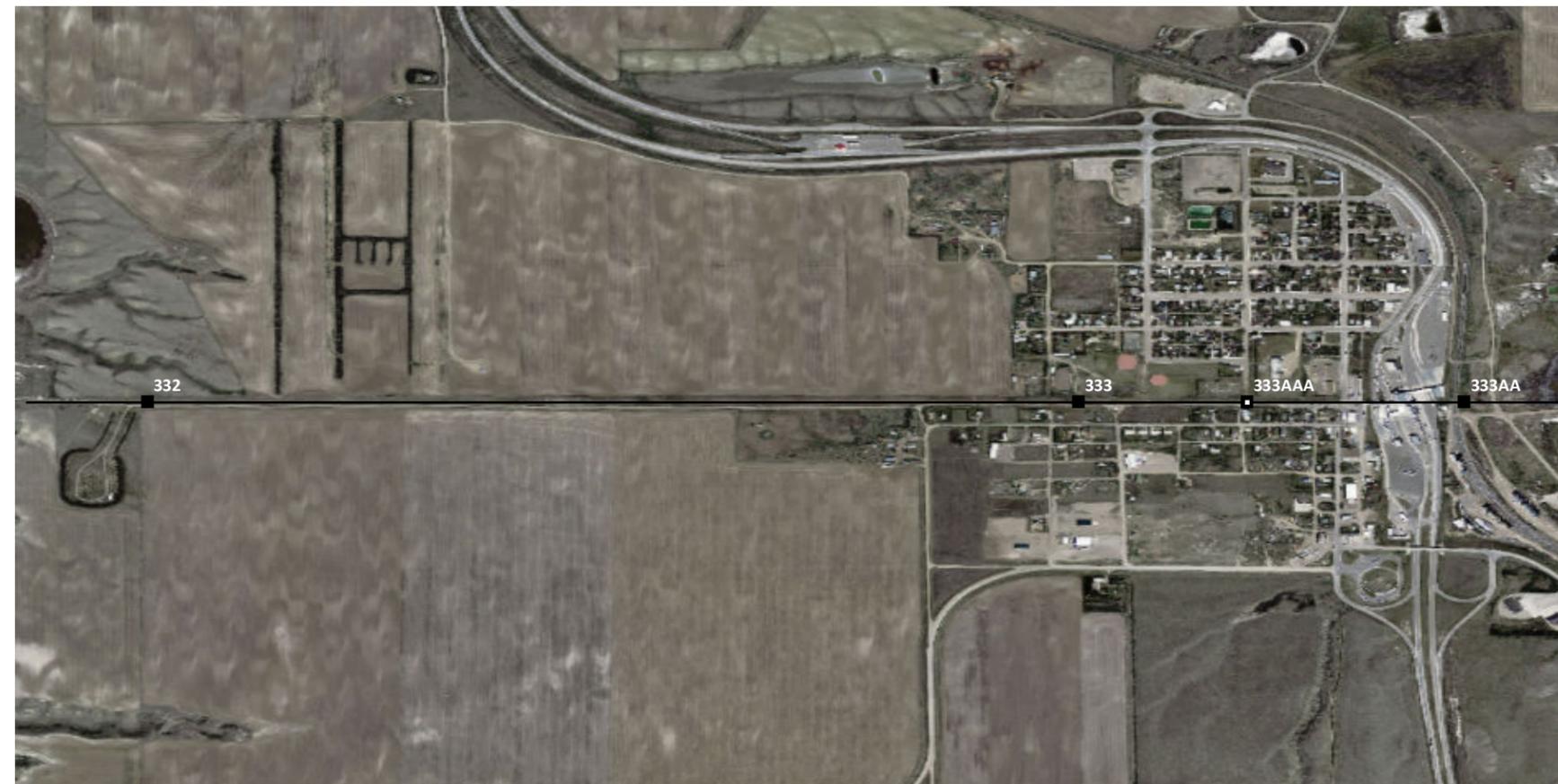
INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE



Geographic Coordinates
NAD83 epoch 2010

Monuments

Point	Latitude	Longitude
332	W111 59 43.371	N48 59 54.772
333	W111 58 10.145	N48 59 54.373
333AAA	W111 58 04.624	N48 59 54.351
333AA	W111 57 53.279	N48 59 54.304



ALBERTA

MONTANA



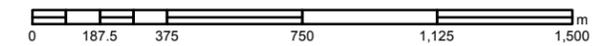
BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE

333AAA

IBC SECTION *SECTION CFI*
49th Parallel (AB-SK-MB/MT-ND) *49e parallèle (AB-SK-MB/MT-ND)*

LOCATION *LOCALISATION*
Sweetgrass, MT / Coutts, AB

SCALE *ÉCHELLE*
1:20 000



LEGEND *LÉGENDE*

Newly established monument ■ *Nouvelle borne posée*
Existing Monument ■ *Borne existante*

Distances shown are horizontal at general ground level and are expressed in meters and decimals thereof (except when shown otherwise).

Les distances apparaissant sur ce plan sont horizontales, établies au niveau moyen du terrain et sont exprimées en mètres et décimales du mètre (sauf si indiqué autrement).

NOTES *NOTES*

MON 333AAA - Stainless steel monument set in concrete base

MONUMENTED & *ARPENTÉE ET*
SURVEYED BY *BORNÉE PAR*
Phillip D Hargrove
American Section *Section américain*

DATE OF SURVEY *DATE DE L'ARPENATAGE*
August 2014?? *août 2014*



INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE