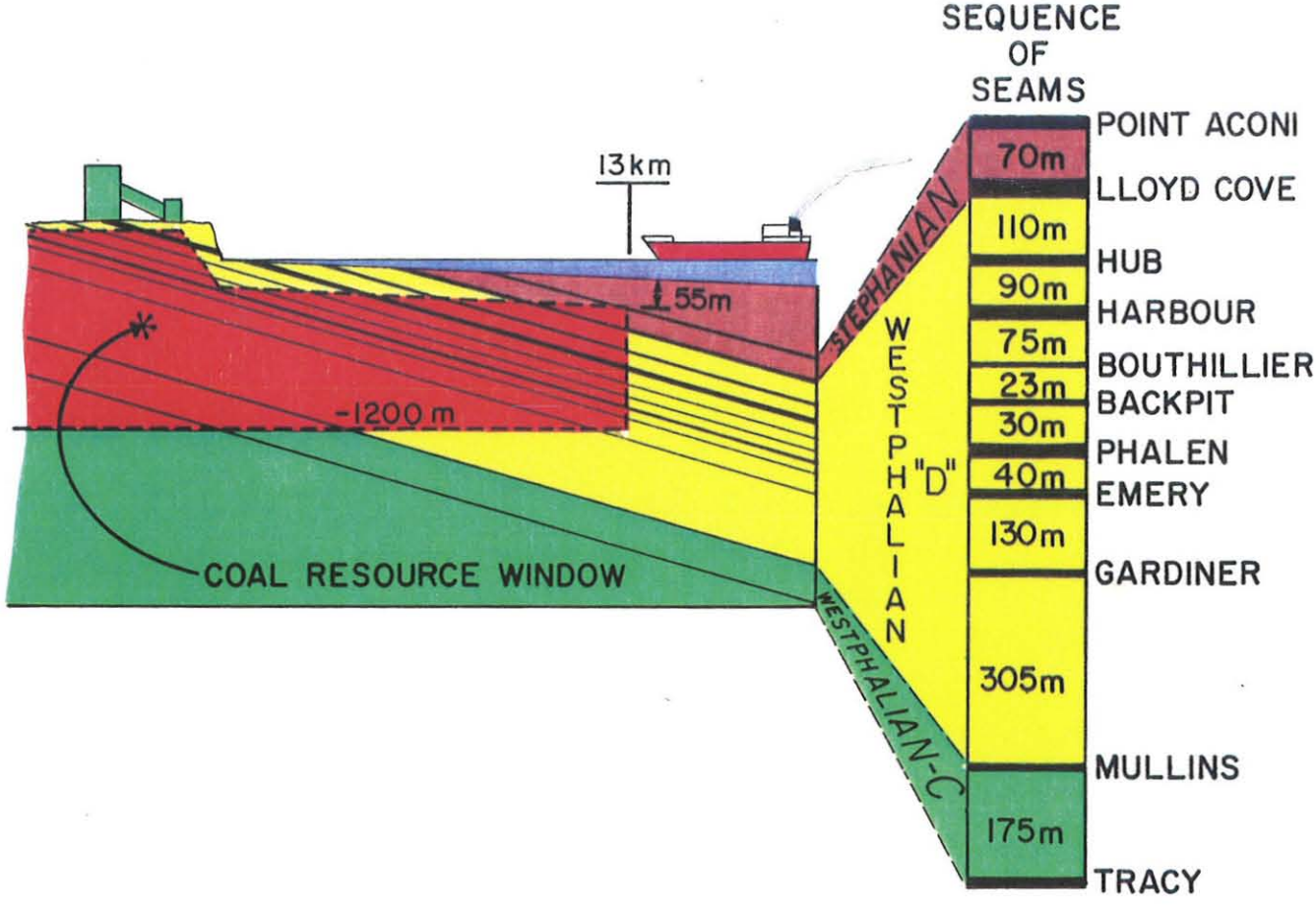
AN INTRODUCTION TO THE COAL RESOURCES OF THE SYDNEY COALFIELD



PREPARED BY:
GEOLOGICAL SECTION,
MINE ENGINEERING DEPARTMENT,
CAPE BRETON DEVELOPMENT CORPORATION.

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PART 1

INTRODUCTION

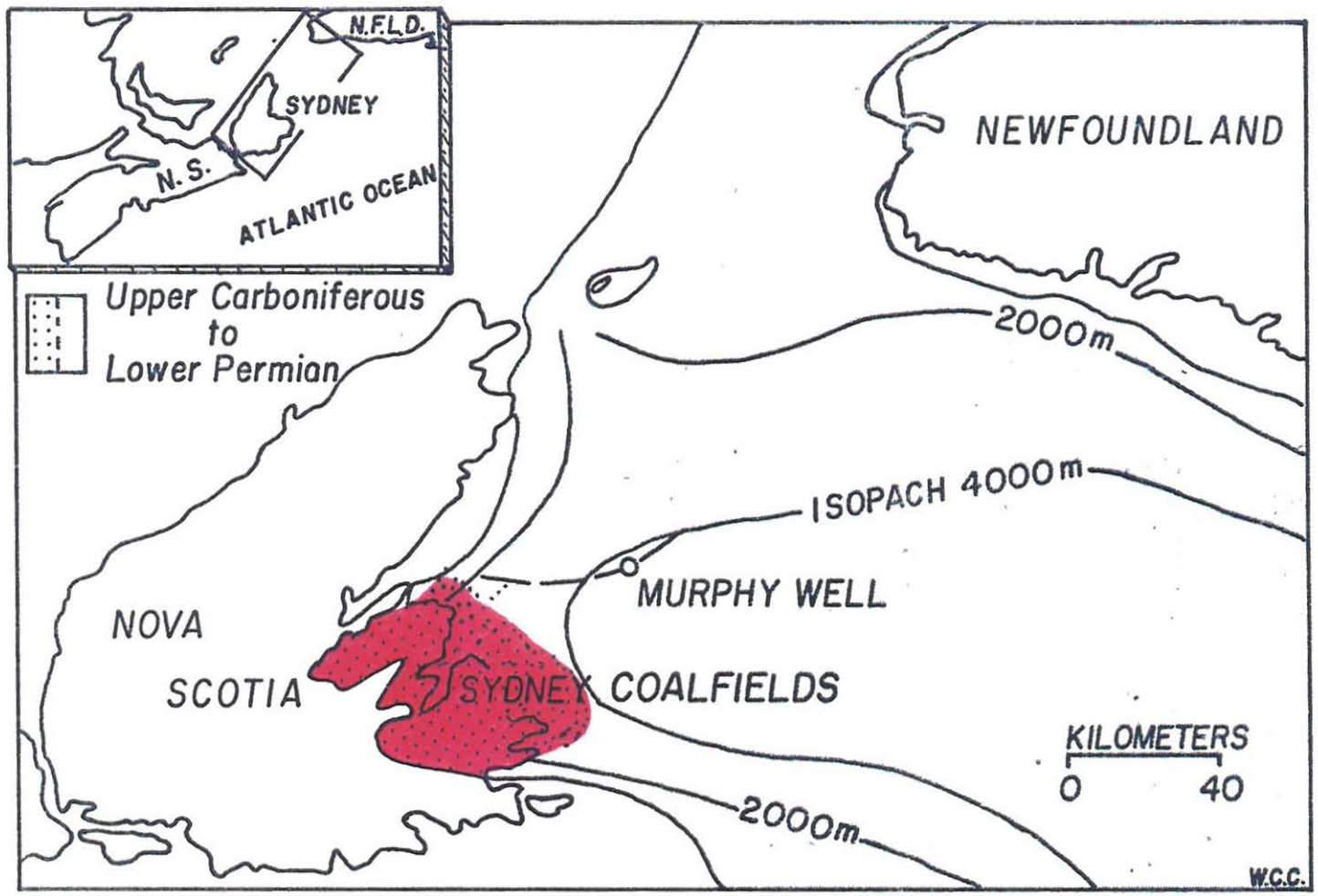
LOCATION AND DIMENSIONS OF THE SYDNEY COALFIELD

The Sydney Coalfield is located in Nova Scotia along the Northeastern Coastline of Cape Breton Island. The Coalfield is located on the edge of a Large Submarine Carboniferous Basin that extends far out under the Atlantic Ocean towards the Province of Newfoundland.

Although Definitions may vary the Sydney Coalfield is Defined here as:

> "That Onland and Near Shore Domain which is Underlain by Coal Bearing Rock Strata, and where Coal of Commercial Interest is present which can be Extracted with Current Mining Technology".

By this Definition the Coalfield Possesses an Area of about 2,300 Sq.Km. It is Shaded Red on the Next Page.



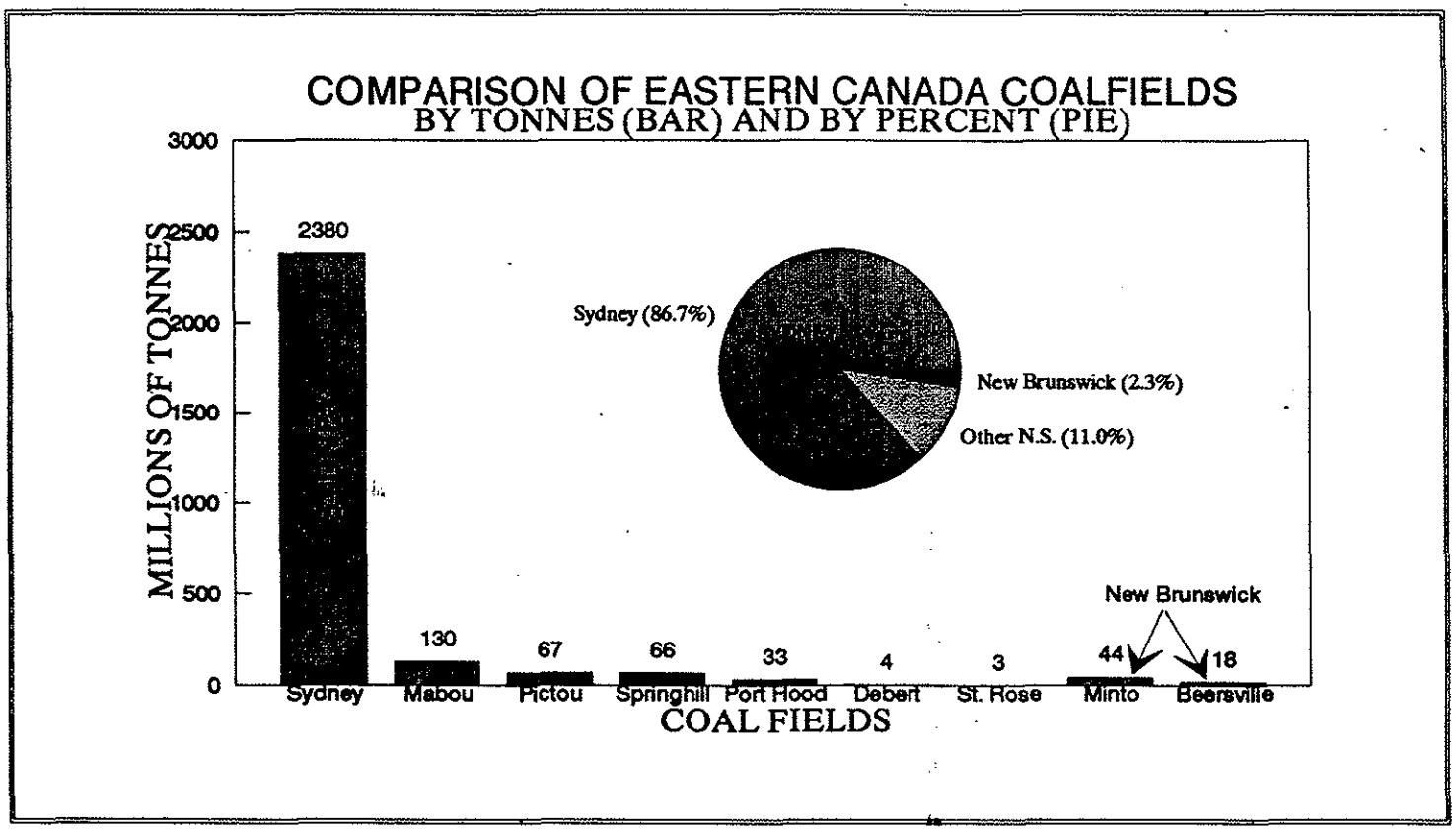
SYDNEY COALFIELD AND ADJACENT CARBONIFEROUS BASIN

SIZE OF THE SYDNEY COALFIELD

The Sydney Coalfield Contains the Largest and most Valuable, Known Coal Resource in Eastern Canada.

It's Coal Resources are now Estimated to be:
2.38 BILLION TONNES

The Predominance of the Sydney Coalfield is Clearly Demonstrated by the Chart on the Next Page.



PROVINCE	COALFIELD	COAL RESOURCES MILLION OF TONNES*	DATA SOURCE
NOVA SCOTIA	Sydney	2380	Forgeron 1987
	Mabou	130	Hacquebard 1979
	Pictou	67	N.S. Govt. 1979
	Springhill	66	N.S. Govt. 1979
	Port Hood	33	N.S. Govt. 1979
	Debert	4	Hacquebard 1979
	St. Rose	3	Smith 1979
	TOTAL	2683	
NEW BRUNSWICK	Minto	44	
	Beersville	18	
	TOTAL	2785	

NOTE: Prince Edward Island and Newfounland contain no known economic deposits of coal.

* Includes MEASURED, INDICATED and INFERRED resources.

S. FORGERON,AUGUST 1991

AGE AND VERTICAL SUCCESSION OF THE SEAMS

Sydney's Coal Resources are Contained in 11 Major Coal Seams. They Range from 0.8 m to 4.6m in Thickness and are Separated by Intervals of Rock 20m to 300m Thick. (See Next Page)

The Coal Seams were Formed about 280 Million Years ago During the Period of Earth's History Known as the Carboniferous. They Formed in Tropical to Subtropical Swamps Inland from the Coastline of an Ancient Sea.

AGE			STRATIGRAPHIC SEQUENCE OF SEAMS	GENERAL NAME OF SEAM (MOST COMMON ALTERNATE NAMES)	SEAM AVERAGE THICK m
ERA	PERIOD	STAGE			
PALEOZOIC	CARBONIEFROUS	STEPHANIAN		POINT ACONI -	1.95
			70 m	LLOYD COVE (Bonar , Point , Carr)	3.02
			110 m	HUB (Stubbert , Barasois)	2.23
			90 m	HARBOUR (Sydney Main , Victoria, Blockhouse)	2.47
		WESTPHALIAN D	76 m	BOUTHILLIER (Millpond, Edwards, Fairyhouse)	0.80
			23 m	BACKPIT (Indian Cove, North Head, Trunnelshed)	1.18
			32 m	PHALEN (Colline , Lingan , Gowrie, Four Foot)	1.82
			40m	EMERY (Spencer)	1.20
			130 m	GARDINER (Lorway , Long Beach)	1.22
			305m	MULLINS (Martin , Buchanan)	1.37
		WESTPHALIAN C	175m	TRACY (Moseley)	1.37

GLOSSARY OF SEAM NAMES

Because of the Large Size of the Sydney Coalfield and the Segregation of Past Mining Operations into several Mining Camps, The Coal Seams were Branded with a Variety of Names. A Glossary of these Names is shown on the Next Page.

SYDNEY COALFIELD
MAJOR COAL SEAMS
GENERAL AND LESS COMMON NAMES

GENERAL NAME	LESS COMMON NAME
Pt. Aconi	–
Lloyd Cove	Bonar, Paint, Carr
Hub	Stubbert, Chapell Point, Black Point, Crandall, Barasois
Harbour	Sydney Main, Victoria, Ross, David Head, Blockhouse, Crawley
Bouthillier	Boutilier, Millpond, Edwards, Franklin, Sullivan, Willy Fraser, Fairyhouse, Seam D
Backpit	Four Foot, Blackrock, Indian Cove, Greener, Upper Jubilee, No. 3, North head, Trunnelshed
Phalen	Lingan, Six Foot, Collins, Toronto, Last Chance, Stanley, Clay, Gowrie, McAuley, MacKay, Hugh MacGillivary
Emery	Spencer, South Head, Wilson, McPhail, Dan MacGillivary
McRury	–
Gardiner	Young, Lorway, Longbeach, O'Dell
Mullins	Gannon, Elkins, Ingraham, Fraser, Carrol, Martin, Buchanan, Fitzpatrick, LeCras, Wagner, Ormond, Coal Brook
Tracey	Moseley

S. FORGERON, AUGUST 1991

BRIEF HISTORY OF MINING

Coal Mining has been carried out in the Sydney Coalfield for more than 250 Years.

Since the Opening of the First Mine (of any significant size) at Morien in 1720 more than 100 Mines have Operated in the Sydney Coalfield Producing over 340 Million Tonnes of Coal.

The First Submarine Coal Mine was the Old Victoria Mine located beneath Sydney Harbour. It Opened in 1867. Princess Colliery was the First Major Submarine Colliery. It Opened in 1877.

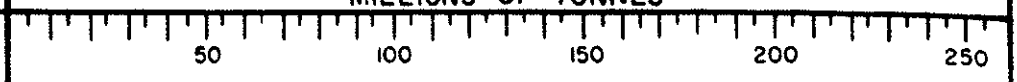
The Harbour and Phalen Seams have Historically been the most Productive. Almost 90% of the Past Production has come from these Two Seams.

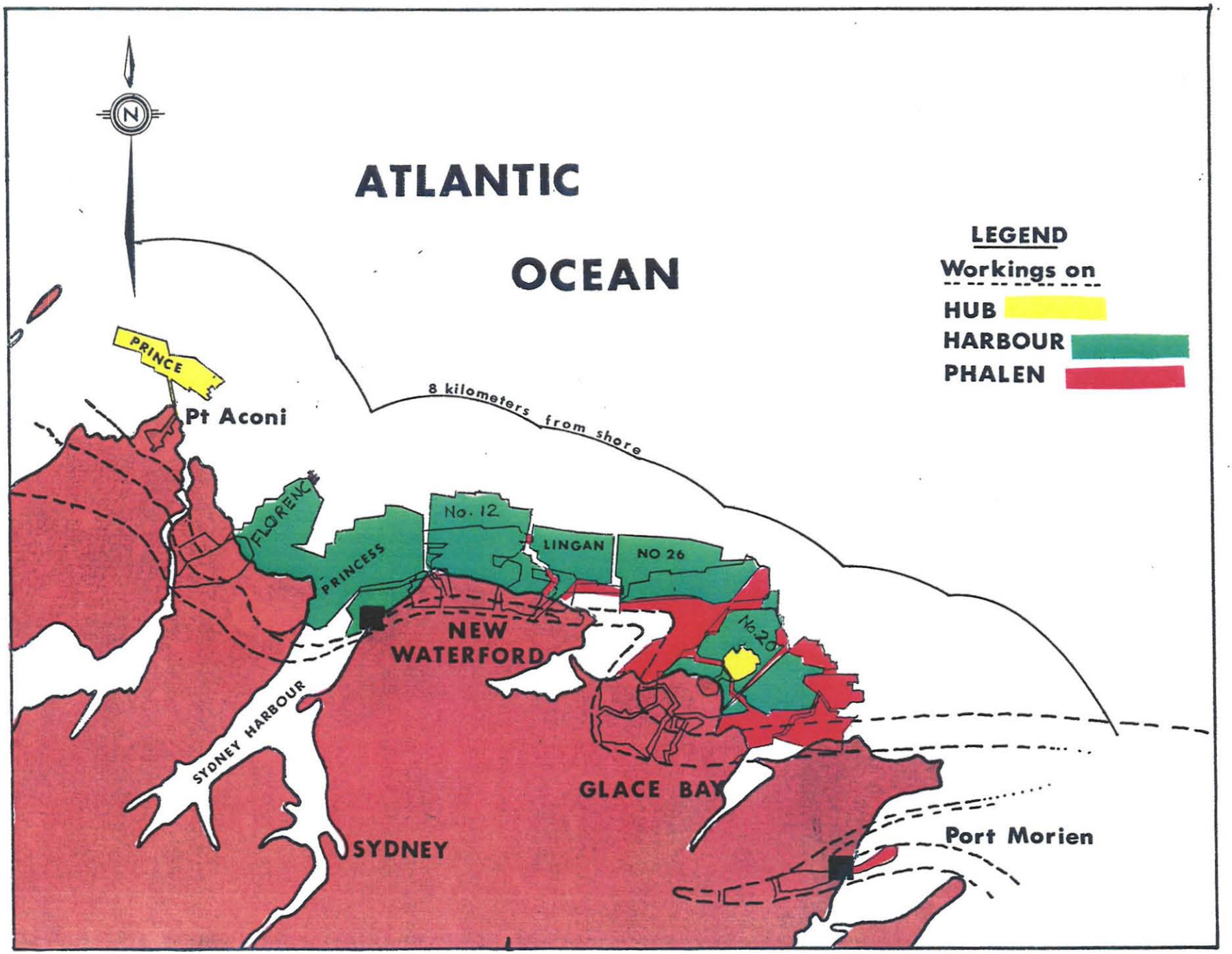
In 1912, the Sydney Coalfield Produced over 40% of the Total Coal Produced in Canada. This fell to 30% by 1947 and now Stands at Less than 5% of the Canadian Total.

On the Next Page the Past Production of Coal is Shown by Seam. It is Followed by a Map Showing the Extensive Distribution of Mine Workings in the Hub, Harbour, and Phalen Seams.

THE SYDNEY COALFIELD
PAST COAL PRODUCTION BY SEAM

SEAM NAME	NUMBER OF MINES	TOTAL PAST PRODUCTION MILLIONS OF TONNES
POINT ACONI	0	0
LLOYD COVE		1.2
HUB	4	6.6
HARBOUR	20	162.4
BOUTHILLIER	6	1.9
BACKPIT	16	2.0
PHALEN	34	143.1
EMERY	5	20.2
GARDINER	4	2.1
MULLINS	3	0.05
TRACY	10	1.8
TOTALS	107	341,400,000 TONNES




ATLANTIC
OCEAN
LEGEND
Workings on
HUB
HARBOUR
PHALEN
8 kilometers from shore
PRINCE
Pt Aconi
FLORENC
PRINCESS
No. 12
LINGAN
NO 26
No. 20
NEW
WATERFORD
SYDNEY HARBOUR
GLACE BAY
SYDNEY
Port Morien

PAST MINING OPERATIONS

The Names of Past Mining Operations, the Seams they Worked, their Duration of Activity and Total Production are shown on the Next 6 Pages.

SYDNEY COALFIELD

MINING OPERATIONS

(BY COAL SEAMS)

SEAM	MINE	LOCATION	DATES	PRODUCTION MILLIONS OF TONNES (actual tonnes)
POINT ACONI		NO MINING TO DATE		
LLOYD COVE	Scotia No. 2	Sydney Mines	1907–1916	0.5
	Lloyd Cove No. 7	Sydney Mines	1947–1956	0.3
	Point Aconi Strip	Point Aconi	1974–1975	0.2
	Alder Point Strip	Point Aconi	1974–	0.1
	Scotia No. 7/ Alexander	Sydney Mines	1921–1925	0.1
			TOTAL	1.2
HUB	Prince	Point Aconi	1975	4.4 to 1985
	No. 7	Glace Bay	1907–1918	2.2
	Coastal	Boularderie	1918–1922	0.02
	No. 6	Point Aconi	1910–	–
			TOTAL	6.62
HARBOUR	No.12	New Waterford	1908–1973	34.0
	Princess	New Waterford	1876–1975	30.9
	No. 26	Glace Bay	1943–1984	22.4
	No. 20	Glace Bay	1939–1971	16.1
	Lingan	New Waterford	1970–	14.9
	Florence	Sydney Mines	1902–1961	14.6
	No. 9	Glace Bay	1899–1924	6.5
	No. 14	New Waterford	1908–1932	6.0

HARBOUR (continued)	No. 18A	New Waterford	1950–1966	5.8
	No. 8 (International)	Glace Bay	1858–1896	5.3
	No. 17	New Waterford	1853–1921	1.9
	Blockhouse Mine	Port Morien	1859–1888	1.2
	Scotia No. 4	Sydney Mines	1908–1921	1.0
	Old Victoria	New Waterford	1865–1878	0.9
	Queen	Sydney Mines	1830–?	?
	Fly	Sydney Mines	1830–?	?
	Yard	Sydney Mines	1834–1854	?
	Harbour Mine	Glace Bay	1861–1893	?
	Sterling Mine	Glace Bay	1872–1896	?
			TOTAL	162.4
BOUTHILLIER	Franklin	Sydney Mines	1885–1957	1.4
	Colonial No. 4	Sydney Mines	1917–1924	0.4
	Sullivan	Sydney Mines	1933–1946	0.8
	Bras D'Or No. 5	Sydney Mines	1919–1920	0.01
	Blueberry	Sydney Mines	?	?
			TOTAL	1.91
BACKPIT	Tom Pit	Sydney Mines	1918–1942	0.8
	Greener (Indian Cove)	Sydney Mines	1892–1963	0.7
	Tomson	Sydney Mines	1940–1962	0.5
	MacDonald	Sydney Mines	1932–1934	0.02
	Barrington	Sydney Mines	1923–1925	0.01
	Prospect	Sydney Mines	1928–1931	(8433)
	Thompson	Sydney Mines	1938–1940	(7804)
	Jack Pit	Sydney Mines	1920–?	(3042)
	No. 3 Pit	Sydney Mines	?	?

BACKPIT (continued)	Hans Jubilee A	Sydney Mines	1897–1912	?
	Jubilee B	Sydney Mines	1913–1923	?
	Dead Rat	Sydney Mines	1928–1932	?
	No. 1 Mine	New Campbellton	1893–1904	?
	No. 2 Mine	New Campbellton	1922–1924	?
			TOTAL	2.04
PHALEN	No. 4 (Caledonia)	Glace Bay	1865–1961	29.0
	No. 2	Glace Bay	1899–1949	27.0
	No. 16	New Waterford	1911–1962	18.4
	No. 1B	Glace Bay	1924–1955	17.5
	No. 1A	Glace Bay	1893–1927	13.4
	No. 6	Glace Bay	1905–1925	4.4
	No. 3	Glace Bay	1900–1915	4.0
	No. 22	Port Morien	1912–1930	2.9
	Colonial No. 1 (Toronto)	Little Bras d'Or	1909–1958	2.5
	No. 15	New Waterford	1910–1925	1.9
	Gowrie	Port Morien	1862–1897	1.9
	No. 21	Port Morien	1910–1925	1.8
	No. 18	New Waterford	1929–1950	1.6
	Old Lingan	New Waterford	1855–1886	0.7
	North Atlantic	Port Morien	1899–1911	0.5
	Colonial No. 2 (MacKay)	Sydney Mines	1898–1918	0.3
	Clyde (Alex Campbell)	Donkin	1863–1890	0.2
	Anglo	New Campbellton	1867–1924	0.2
	Bridgeport	Glace Bay	1830–1898	0.09
	Collins	Little Bras d'Or	1833–1868	0.02
	MacDougall			

PHALEN (continued)	(Jessie's)	Sydney Mines	1935–1939	0.02
	Last Chance	Sydney Mines	1933–1939	(8816)
	Black Diamond (Astefen)	Sydney Mines	1938–1939	(3913)
	Matheson (Campbell)	Little Bras d'Or	1862–1868	(3803)
	Hartigan (Vaughan)	Sydney Mines	1925–?	(2219)
	Colonial No.3 (Last Chance)	Sydney Mines	1916–1918	(355)
	Mill Creek	Little Bras d'Or	1921–?	?
	Sun Beam	Sydney Mines	?	?
	Ingraham	Sydney Mines	1864–1869	?
	Stanley	Sydney Mines	1940–?	?
	Second Last Chance	Sydney Mines	?	?
	New Beaver Hat	Sydney Mines	1932–1933	?
	Paradise	Sydney Mines	?	?
			TOTAL	**143.1**
EMERY	No. 11	Glace Bay	1899–1949	7.7
	No. 10	Glace Bay	1905–1943	6.8
	No. 24	Glace Bay	1919–1953	5.7
	Schooner Pond (Acadia)	Glace Bay	1873–1893	0.02
	Old Emery Colliery	Glace Bay	1873–1893	?
			TOTAL	**20.2**
GARDINER	No. 25	Gardiner	1940–1959	2.1
	Gardiner	Gardiner	1870–1893	?
	East Lorway	Gardiner	?	?
	West Lorway	Gardiner	?	?
			TOTAL	**2.1**

MULLINS	Harbour Side (Candy Pit)	North Sydney	1928–1933	0.05
	Low Point	New Waterford	1925–?	(137)
			TOTAL	0.05
TRACEY	Four Star	Broughton	1949–1969	1.5
	Beaver	Broughton	1950–1961	0.2
	Broughton	Broughton	1904–1907	0.06
	Crystal	Broughton	1956–1962	0.02
	Hiawatha	Broughton	1920–1921	(5346)
	Silver Lake	Broughton	1933–1935	(2933)
	New Brought (Poliskie)	Broughton	1935–1937	(2604)
	Mira	Broughton	1863–1870	(555)
	Tracey's Colliery	Broughton	1864–1866	?
	Nicholson	Broughton	?	?
			TOTAL	1.8

PART 2

COAL RESOURCES

COAL RESOURCES AND RESERVES DEFINITIONS

How much Coal is Present in the Sydney Coalfield ?

Where is it Located ?

What is it's Quality ?

Answering these Vital Questions is the Main Function of Coal Resource Evaluations. As a Prelude to Examining these Questions some Basic Definitions are Required.

COAL RESOURCES are coal that is Contained in Seams within Specified Limits of Thickness, Depth from Surface, and Distance from the Seacoast.

COAL RESERVES are that Portion of the Coal Resources which has been Assessed with due Consideration of Mining Technology and Economics.

COAL RESOURCES

CONDITIONS TO QUALIFY AS A RESOURCE

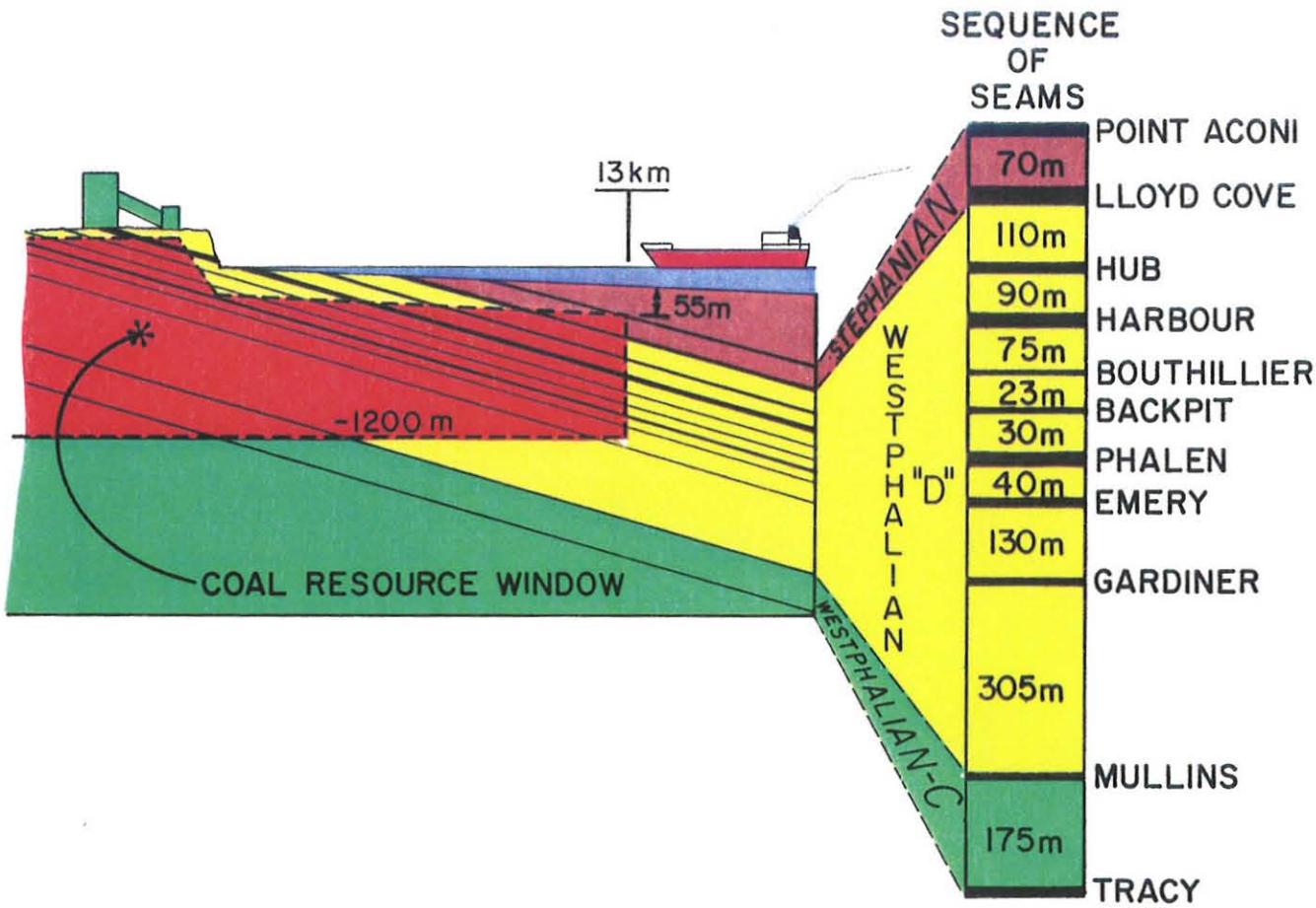
Not all the Coals of the Sydney Coalfield are included as Resources. To Qualify as a Coal Resource, Seams of Interest must meet the Following Criteria:

(a) Depth to the Coal must be less than 1200 meters.
(b) In the Submarine Area the Coal must occur within 13 km of the Coastline.
(c) The Seam must be greater than 1.2 meters in thickness, except where it is considered for open pit mining. In this case it's minimum thickness is fixed by the stripping ratio.
(d) For Submarmine Resources the the seam must be overlain by more than 55 meters of solid cover.
(e) The coal occurs in excess of 150 meters from abandoned mine workings.

These Criteria Describe the Coal Resource Window Shown in Red on the Next Page.

Using these criteria, the Coal Resources of the Sydney Coalfield are Estimated to be: **2,380,000,000**

AN INTRODUCTION TO THE COAL RESOURCES OF THE SYDNEY COALFIELD



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COAL RESOURCES

LEVEL OF ASSURANCE OF EXISTENCE

This Classification Parameter Deals with the Following Question ?

" How well is the Resource explored and what Assurance do we have that the Quantity of Coal stated, is indeed there".

We Answer the Question by Dividing our Resources into the Following Categories Based Primarily on the Distance Between Observation Points (Boreholes, Outcrops, Mine Workings, etc.).

INFERRED	INDICATED	MEASURED
> INCREASING LEVEL OF CONFIDENCE		

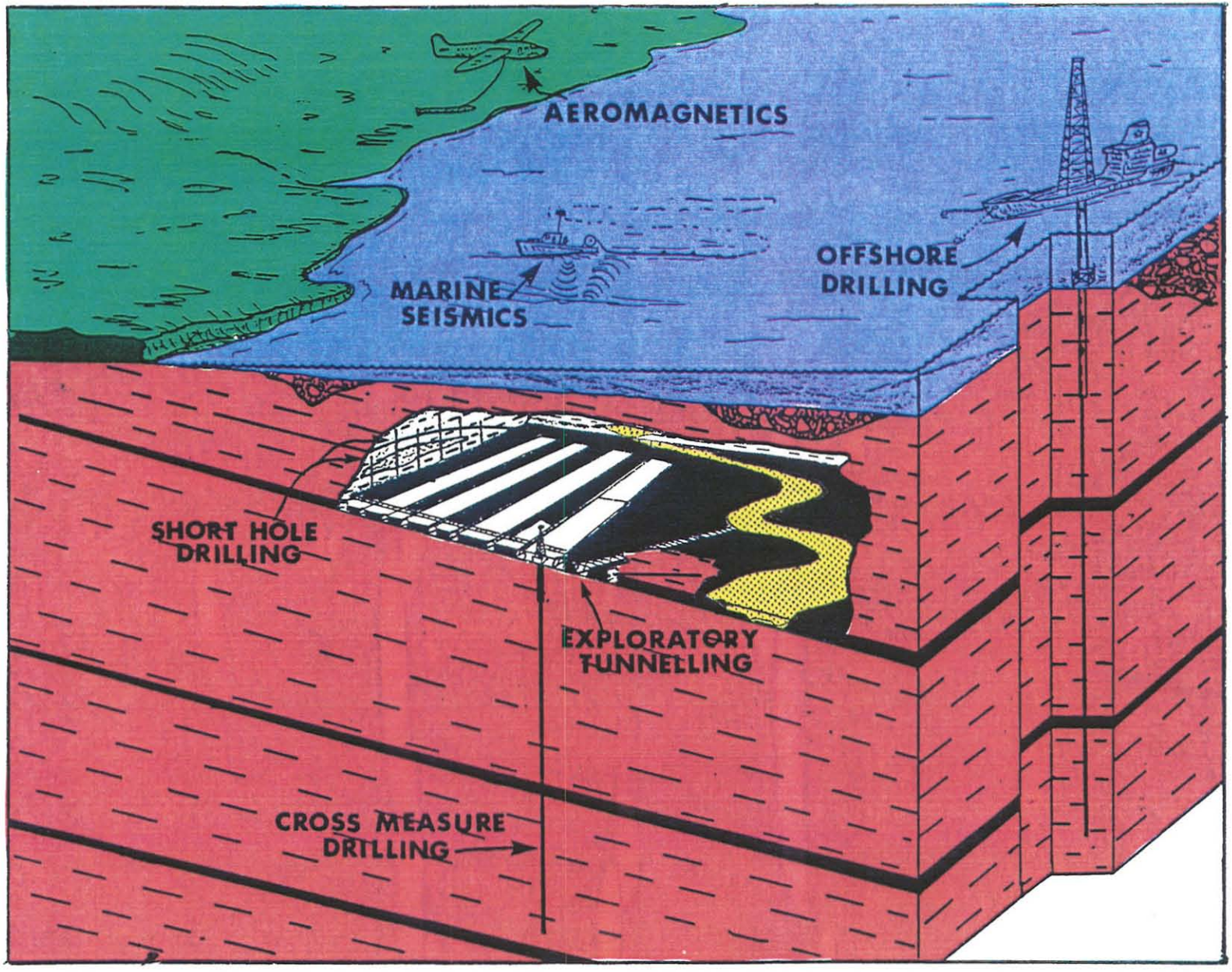
On the Following Page, These Resource Categories are described in terms of Spacing of Observations Points and the Level of Confidence we have that the Stated Quantities of Coal.

COAL RESOURCE CATEGORIES AND EXPLORATION

RESOURCE CATEGORY	INFLUENCE RADIUS OF OBSERVATION POINTS		CONFIDENCE LEVEL
	HARBOUR & PHALEN SEAMS	ALL OTHER SEAMS	
MEASURED	800m	400m	+/– 10%
INDICATED	2.5km	800m	+/– 20%
INFERRED	2.4km to –1200m depth	800m to 2.4km	+/– 50%

Our "Level of Confidence" is Established through Exploration Activity. The Primary Exploration Tools used in a Submarine Coalfield are listed below and are shown on the following Page.

(1) Offshore Drilling
(2) Cross Measure Drilling
(3) Short Hole Drilling
(4) Aeromagnetic Survey
(5) Marine Seismic Survey
(6) Exploration Tunnelling


AEROMAGNETICS
MARINE SEISMICS
OFFSHORE DRILLING
SHORT HOLE DRILLING
EXPLORATORY TUNNELLING
CROSS MEASURE DRILLING

COAL RESOURCES

DISTRIBUTION BY MINING BLOCK

On the Basis of Coal Seam Geology and the Location of Mined out Workings, the Coal Resources are Segregated into 27 Discrete Mining Blocks which can be Individually Assessed as Sites for Future Mining Operations. These Blocks are Listed in the Table on the Following Page. Also included in the Table is a Breakdown of Tonnes by Seam Name, Seam Thickness, Quality and Confidence Levels.

SYDNEY COALFIELD
IN SITU COAL RESOURCES

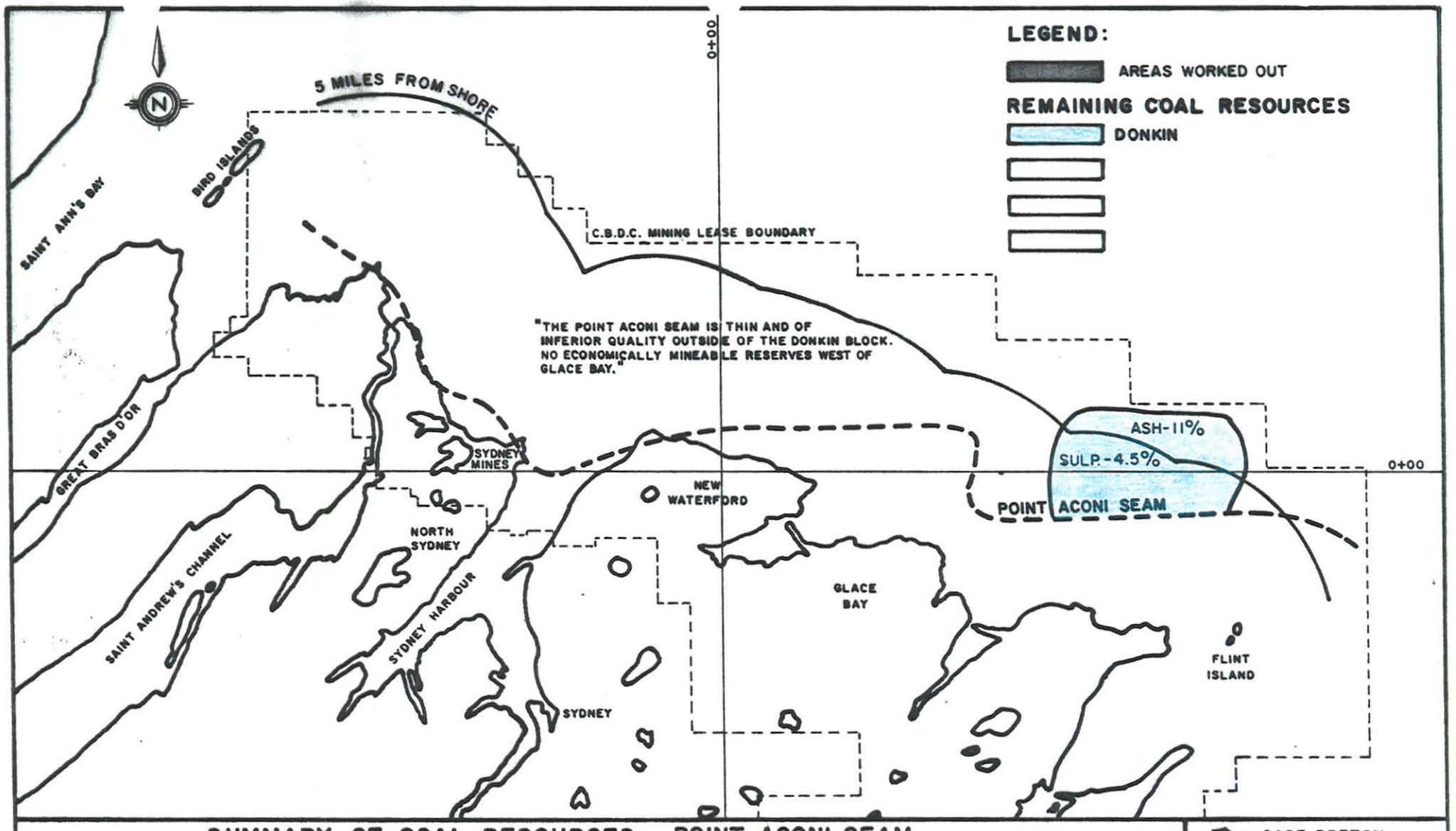
(ALL TONNAGE NUMBERS ARE IN MILLIONS OF TONNES)

SEAM	MINE BLOCK NAME	SEAM THICKNESS (METERS)	IN SITU QUALITY		LEVEL OF ASSURANCE OF EXISTENCE			SUB-TOTAL TONNES (MILLIONS)	GRAND TOTAL TONNES (MILLIONS)	MINING METHOD	
			ASH	SULPHUR	MEASURED (MILLIONS)	INDICATED (MILLIONS)	INFERRED (MILLIONS)			STRIP (MILLIONS)	UNDERGROUND (MILLIONS)
Pt. Aconi	Donkin	1.95	8.0	4.4	5.2	15.6	81.2	102.0	102.0	–	102.0
Lloyd Cove	Sydney Mines	1.83	13.0	5.6	2.9	7.4	44.5	54.8		0.4	54.4
	Donkin	3.4	13.1	4.4	13.6	41.0	268.5	323.1	377.5		323.1
Hub	Prince Colliery	2.3	12.0	4.2	33.6	24.9	41.6	100.1		–	100.1
	Low Point	1.83	14.0	3.2	7.2	19.8	66.5	93.5		–	93.5
	Donkin	2.96	14.0	5.4	22.4	61.4	265.9	349.7	543.3	–	349.7
Harbour	Sydney Mines	1.3	5–10	2–3	–	0.4	–	0.4		0.4	–
	No. 12	1.59	5.5	3.4	16.2	34.0	12.1	62.3		–	62.4
	Lingan	1.74	5.0	2.0	16.7	23.4	5.0	45.1		–	45.1
	No. 26	1.95	4.0	1.5	22.9	43.5	9.8	76.2		–	76.2
	Donkin	2.8	10.0	4.2	101.7	296.5	308.7	706.9	890.9	–	706.9
Backpit	Boularderie	1.1	22.0	7.0	–	0.7	–	0.7		0.7	–
	Sydney Mines	1.2	19.0	6.4	–	0.3	–	0.3		0.3	–
	Sydney Mines	1.2	12.0	6.5	12.9	–	–	12.9	13.9	–	12.9
Phalen	Boularderie	1.2	10.0	4.0	–	0.1	–	0.1		0.1	–
	No. 16	1.37	7.0	2.8	6.5	14.6	2.4	23.5		–	23.5
	Phalen Colliery	2.0	9.0	2.8	45.1	42.4	5.7	93.2		–	93.2
	No. 18	2.1	7.0	2.9	28.4	58.4	14.4	101.2		–	101.2
	Donkin	1.79	8.0	4+	24.3	34.1	5.4	63.8		–	63.8
	Morien	1.52	8.0	2.9	5.1	–	–	5.1	286.9	–	5.1
Emery	Morien	.91	9.0	3.0	1.0	–	–	1.0		1.0	–
	Donkin	1.22	15.0	4.8	–	–	0.6	0.6	1.6	0.6	–
McRury	Donkin	0.9	18.0	8.0	–	–	0.2	0.2	0.2	0.2	–
Gardiner	Reserve	0.8–1.37	19.0	5.3	2.4/2=1.2	–	–	1.2		1.2	–
	Gardiner	1.21	12.0	2.8	0.9	–	–	0.9	2.1	0.9	–
Mullins	New Waterford	1.37	10.0	5.2	15.7	21.6	46.9	84.2	84.2	2.0	82.2
Tracey	Broughton	1.37	17.2	5.7	17.1	17.0	42.6	76.7	76.7	3.1	73.6
TOTALS			10.8	4.2	400.6	757.1	1,222.0	2,379.7	2,379.7	10.9	2,368.8

S. FORGERON, AUGUST 1991

PART 3

GEOGRAPHICAL DISTRIBUTION OF COAL RESOURCE BLOCKS



SUMMARY OF COAL RESOURCES – POINT ACONI SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
DONKIN-MORIEN	DONKIN	41	2.0	5.2	15.6	81.2	102.0
			TOTALS	5.2	15.6	81.2	102.0

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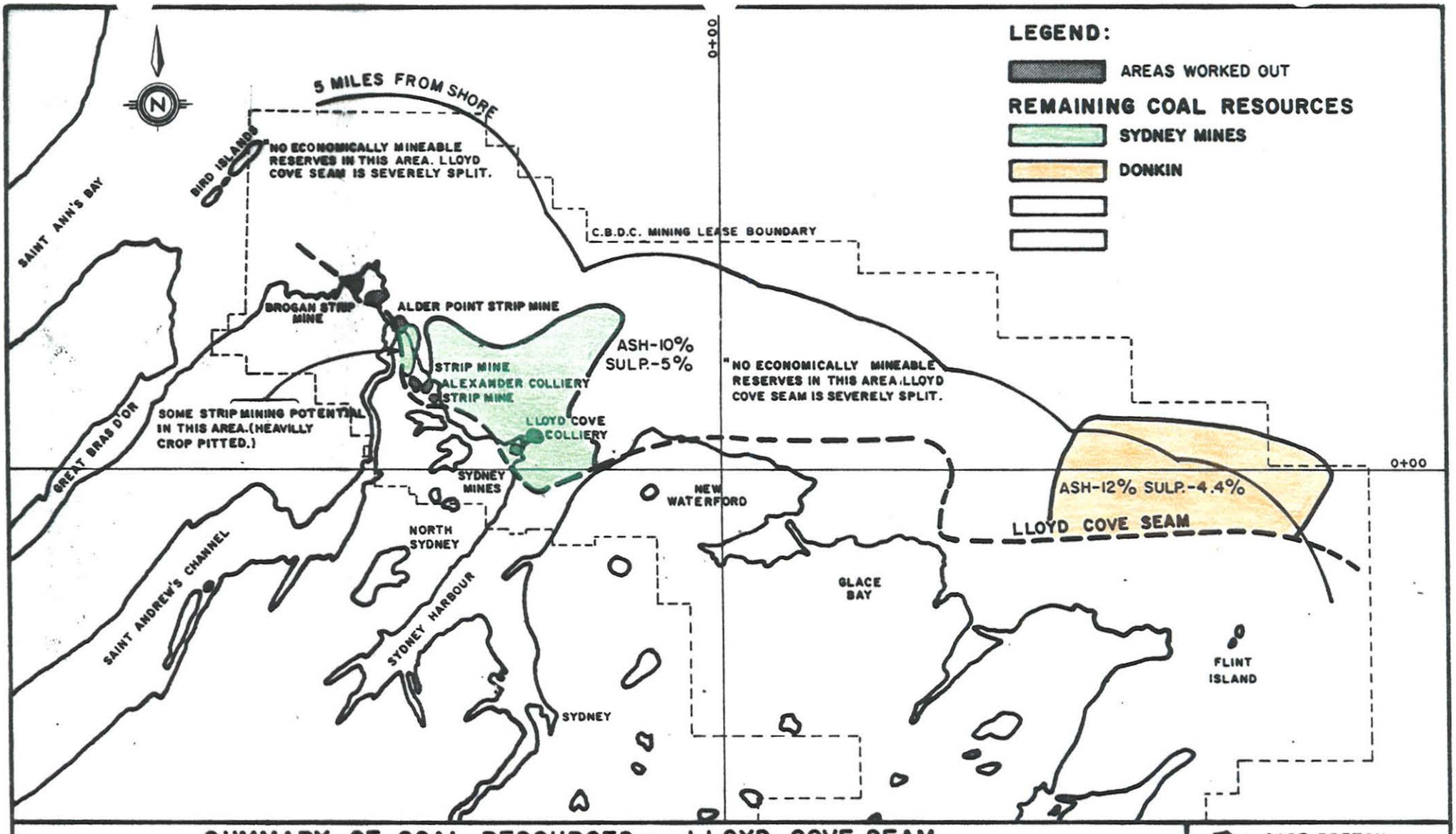
POINT ACONI SEAM

LOCATION OF COAL RESOURCE BLOCKS.



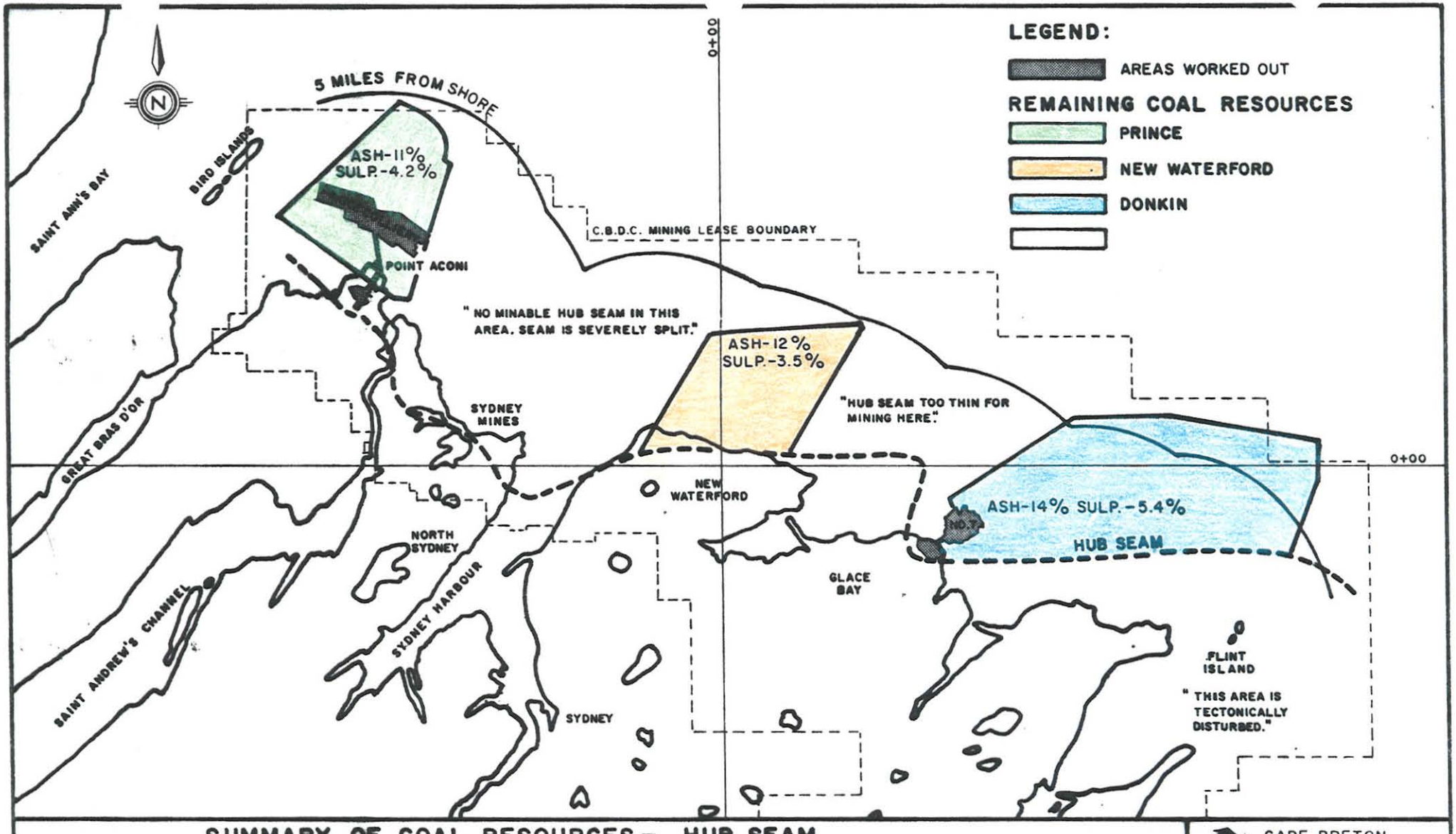
SUMMARY OF COAL RESOURCES- LLOYD COVE SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
SYDNEY MINES		22.3	1.8	2.5	7.4	44.5	54.4
DONKIN		72.3	3.4	13.7	41.0	268.5	323.2
			TOTALS	16.2	48.4	313.0	377.6

CAPE BRETON DEVELOPMENT CORPORATION

LLOYD COVE SEAM

LOCATION OF COAL RESOURCE BLOCKS.



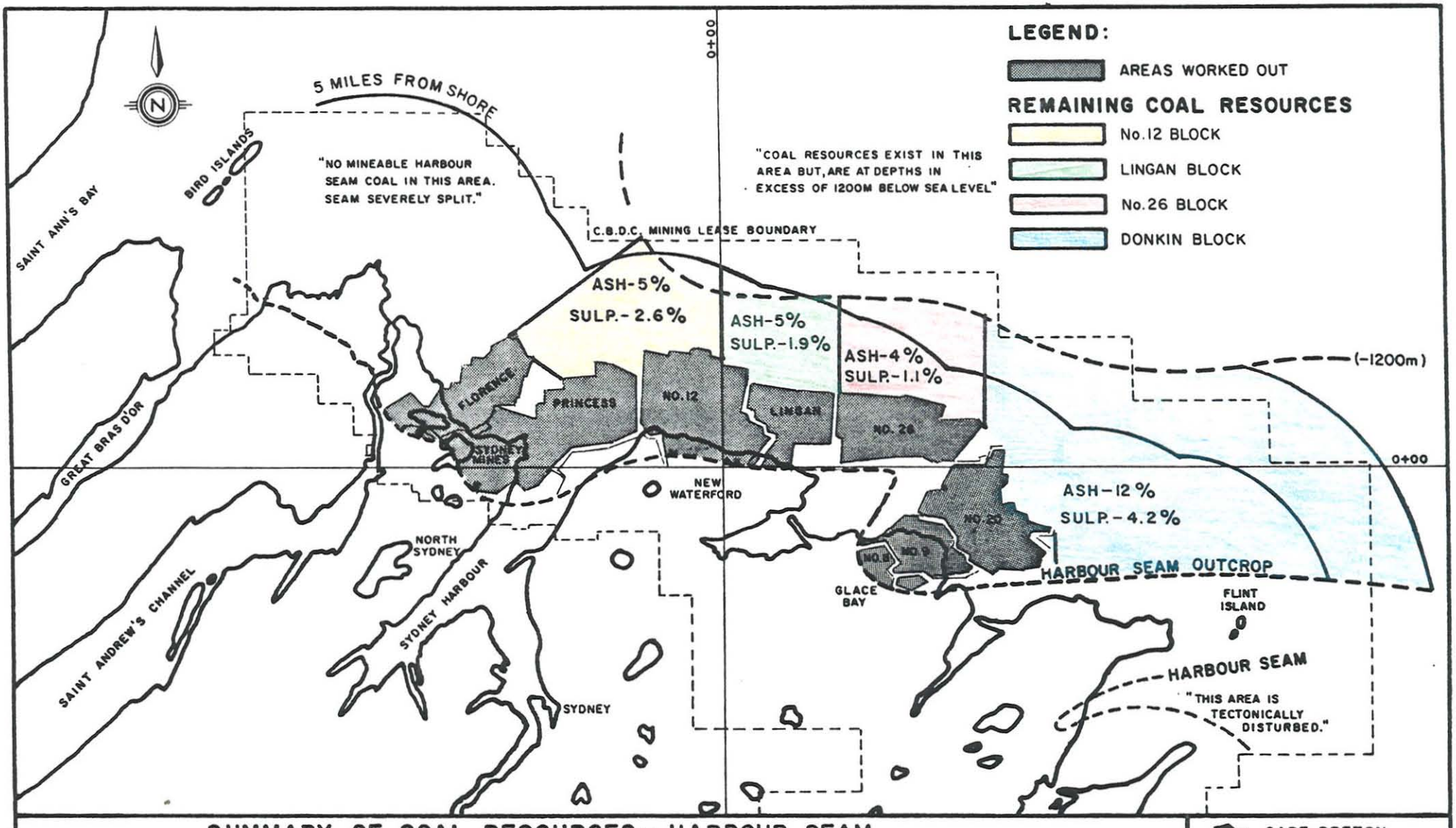
SUMMARY OF COAL RESOURCES - HUB SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
POINT ACONI	PRINCE	38	2.3	35.9	27.9	44.1	107.9
NEW WATERFORD	N. WATERFORD	40	1.8	7.2	19.7	66.5	93.4
DONKIN	DONKIN	92	3.0	22.4	61.4	265.9	349.7
			TOTALS	65.5	109.0	376.5	551.0

CAPE BRETON DEVELOPMENT CORPORATION

HUB SEAM

LOCATION OF COAL RESOURCE BLOCKS.



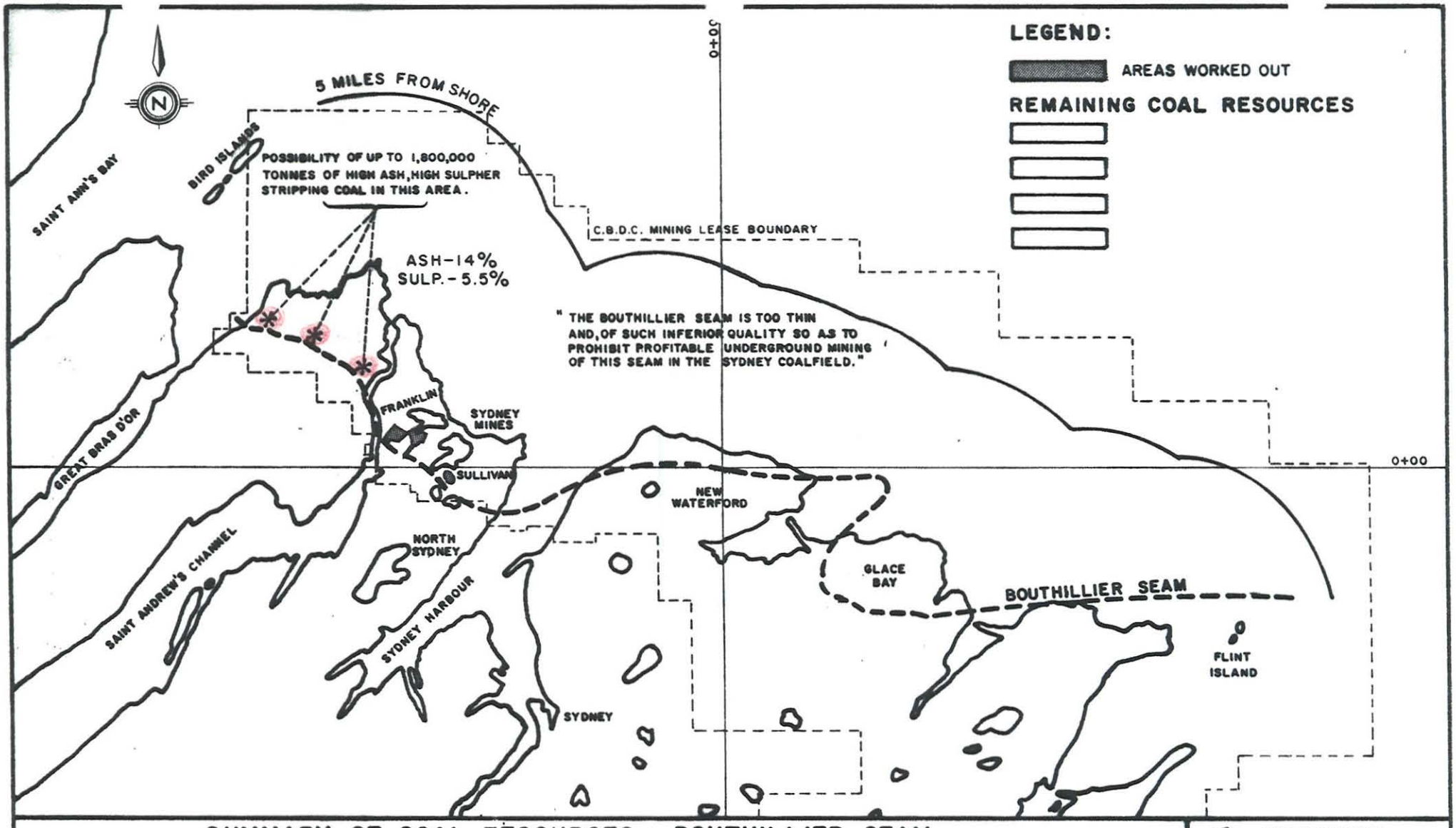
SUMMARY OF COAL RESOURCES – HARBOUR SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
NEW WATERFORD	No.12	29.5	1.59	16.2	34.0	12.2	62.4
LINGAN	LINGAN	25.6	1.80	19.9	29.5	7.4	56.8
GLACE BAY	No.26	29.8	1.95	22.9	43.4	9.8	76.1
DONKIN	DONKIN	172.2	2.80	101.7	296.5	308.7	706.9
			TOTALS	160.7	403.4	338.1	902.2

CAPE BRETON DEVELOPMENT CORPORATION

HARBOUR SEAM

LOCATION OF COAL RESOURCE BLOCKS.



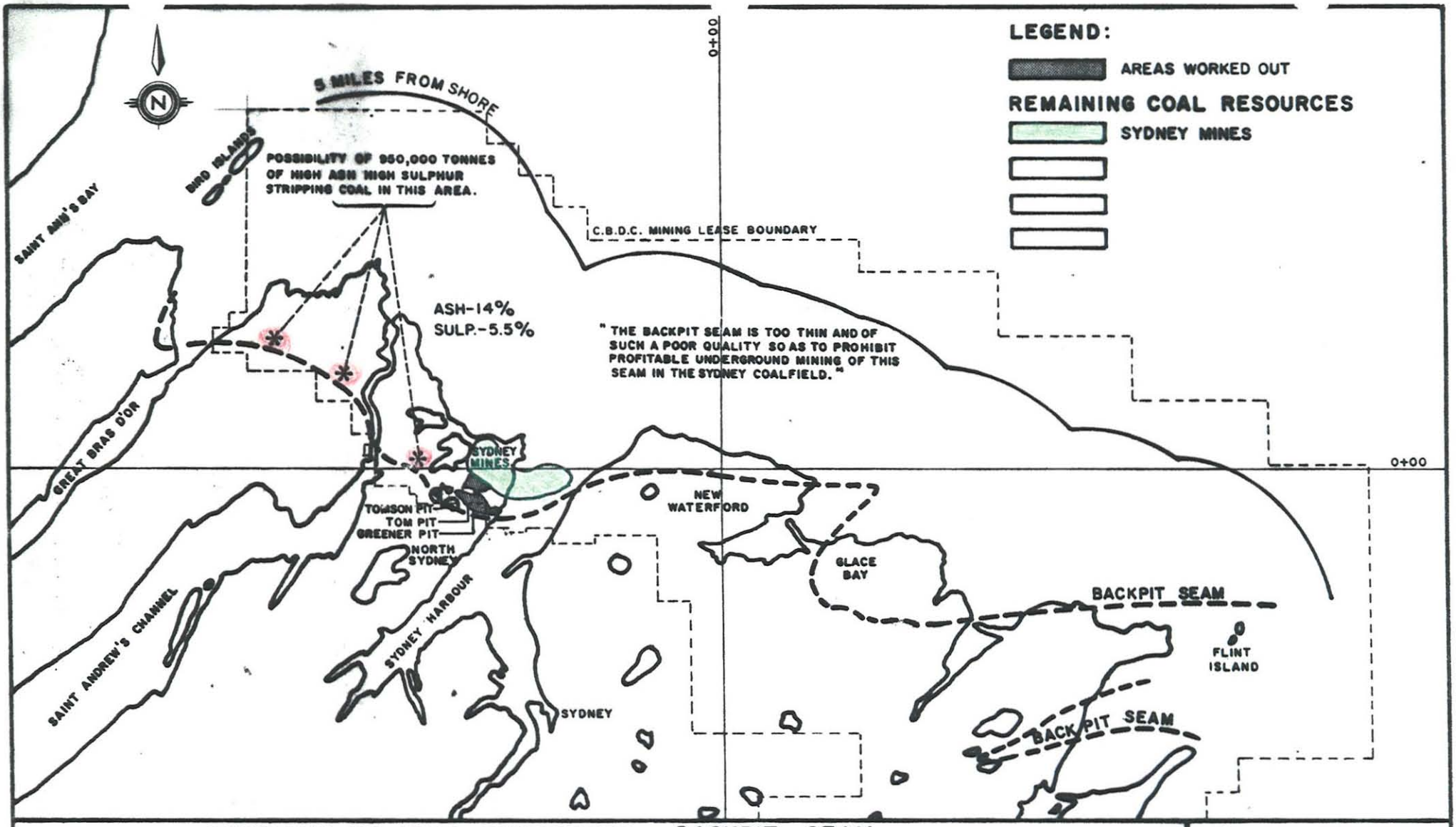
SUMMARY OF COAL RESOURCES - BOUTHILLIER SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES)			
				MEASURED	INDICATED	INFERRED	TOTALS
BRAS D'OR	OPEN PIT		0.8	1.8			1.8
			TOTALS	1.8			1.8

CAPE BRETON DEVELOPMENT CORPORATION

BOUTHILLIER SEAM

LOCATION OF COAL RESOURCE BLOCKS.



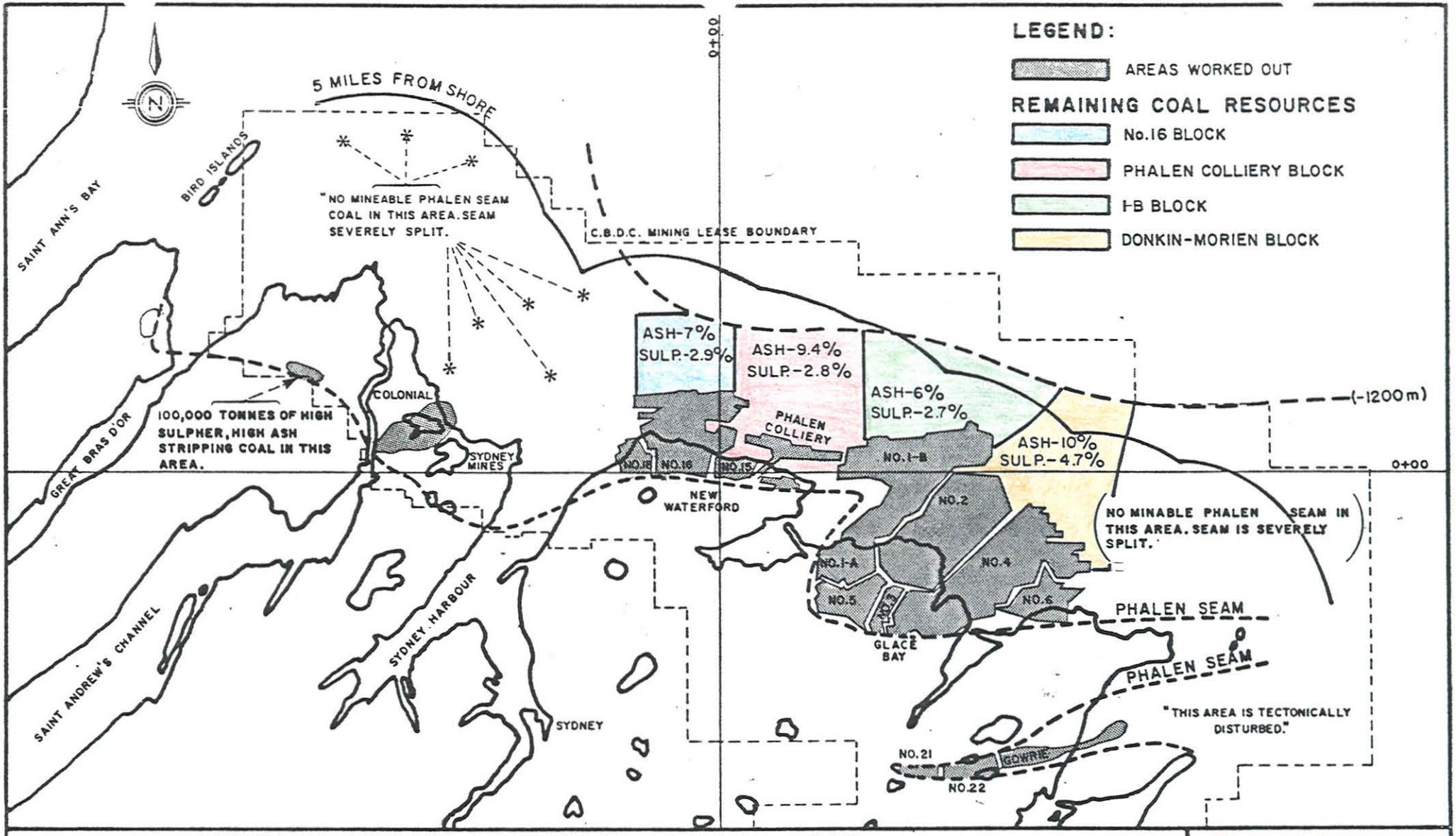
SUMMARY OF COAL RESOURCES - BACKPIT SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
SYDNEY MINES			1.2	12.9	—	—	12.9
BOLARDERIE	STRIP COAL		1.2	1.0	—	—	1.0
			TOTALS	13.9	—	—	13.9

CAPE BRETON DEVELOPMENT CORPORATION

BACKPIT SEAM

LOCATION OF COAL RESOURCE BLOCKS.



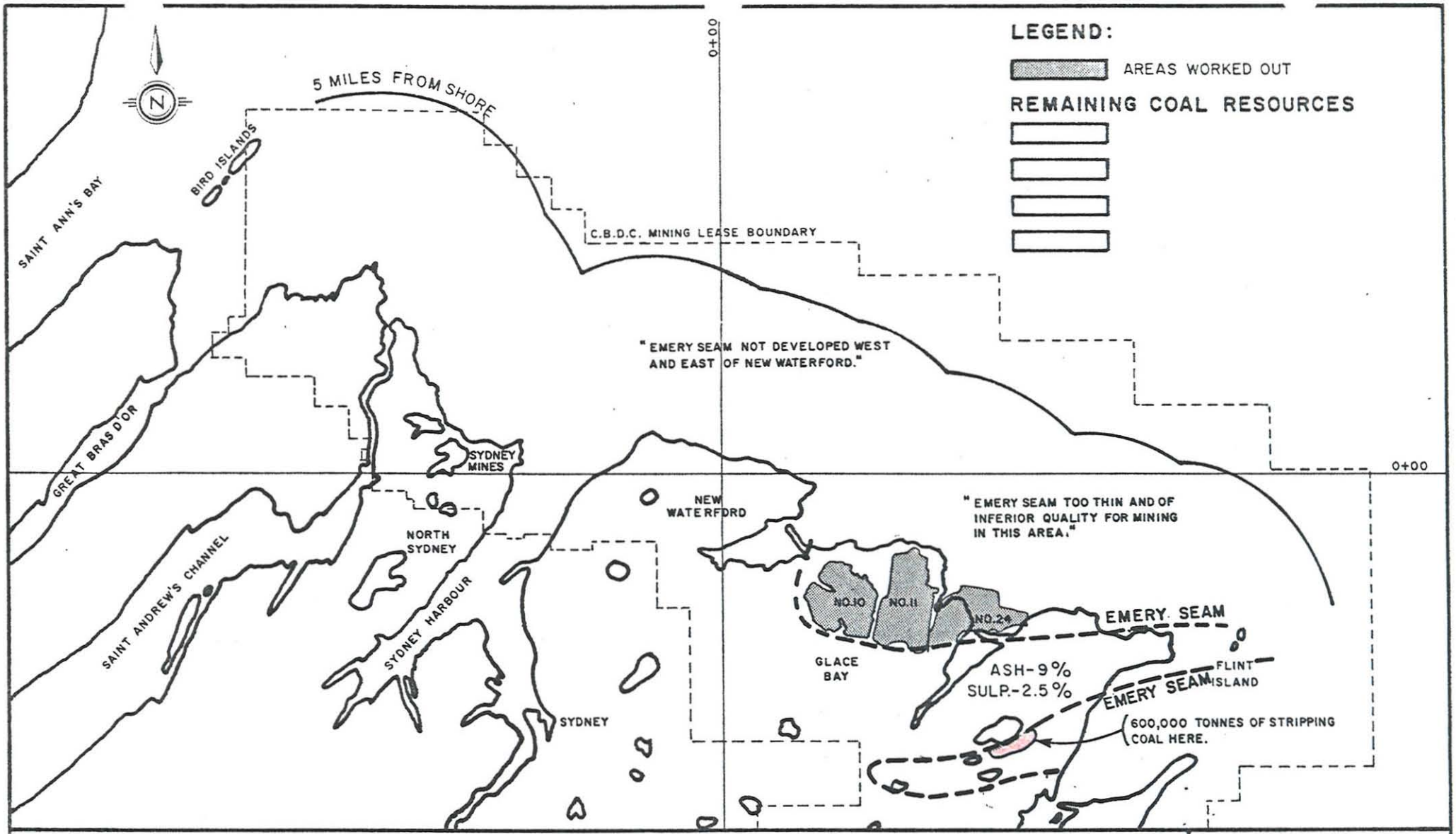
SUMMARY OF COAL RESOURCES – PHALEN SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
NEW WATERFORD	No. 16	13	1.4	6.5	14.6	2.4	23.5
NEW WATERFORD	PHALEN COL.	47	1.9	37.5	63.2	7.4	108.1
GLACE BAY	No.1-B		2.1	28.4	58.4	14.4	101.2
DONKIN-MORIEN	DON.-MOR.		1.8	28.9	34.1	5.4	68.4
			TOTALS	101.3	170.3	29.6	301.2

CAPE BRETON DEVELOPMENT CORPORATION

PHALEN SEAM

LOCATION OF COAL RESOURCE BLOCKS.



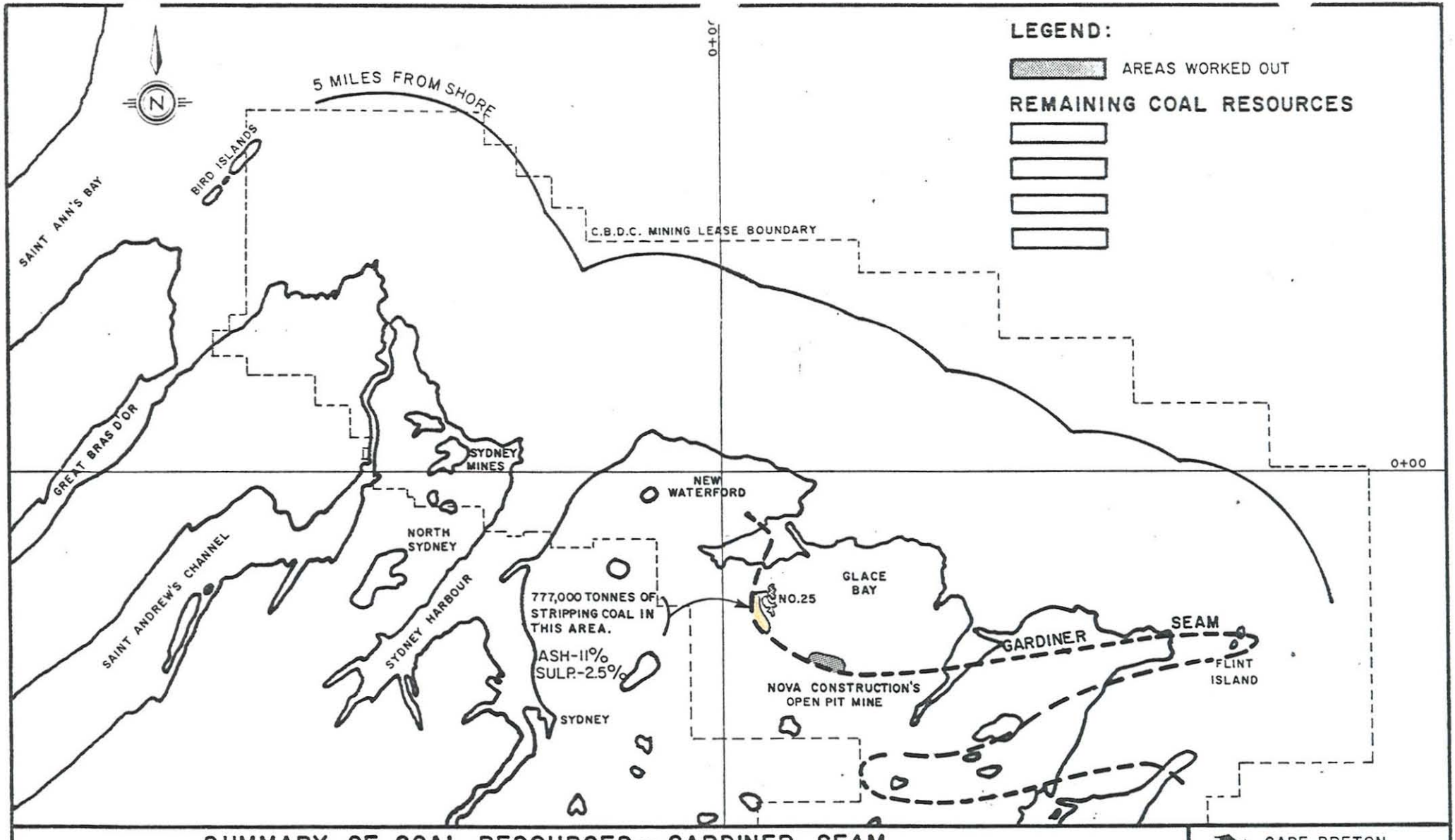
SUMMARY OF COAL RESOURCES – EMERY SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
PORT MORIEN		-	0.91	0.62	—	—	0.62
			TOTALS	0.62			0.62

CAPE BRETON DEVELOPMENT CORPORATION

EMERY SEAM

LOCATION OF COAL RESOURCE BLOCKS.



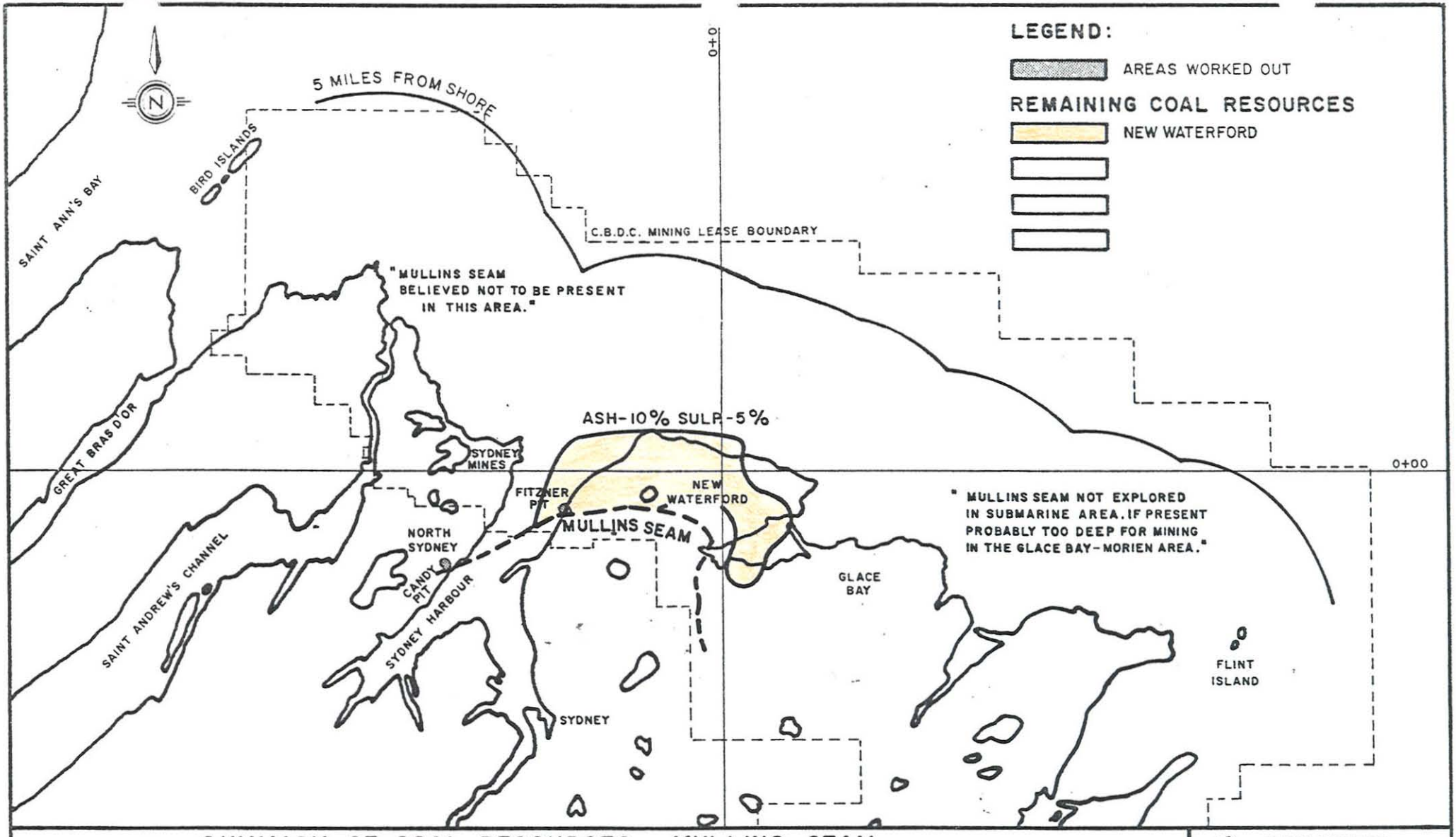
SUMMARY OF COAL RESOURCES – GARDINER SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
GARDINER			1.2	0.77	—	—	0.77
			TOTALS	0.77			0.77

CAPE BRETON DEVELOPMENT CORPORATION

GARDINER SEAM

LOCATION OF COAL RESOURCE BLOCKS.



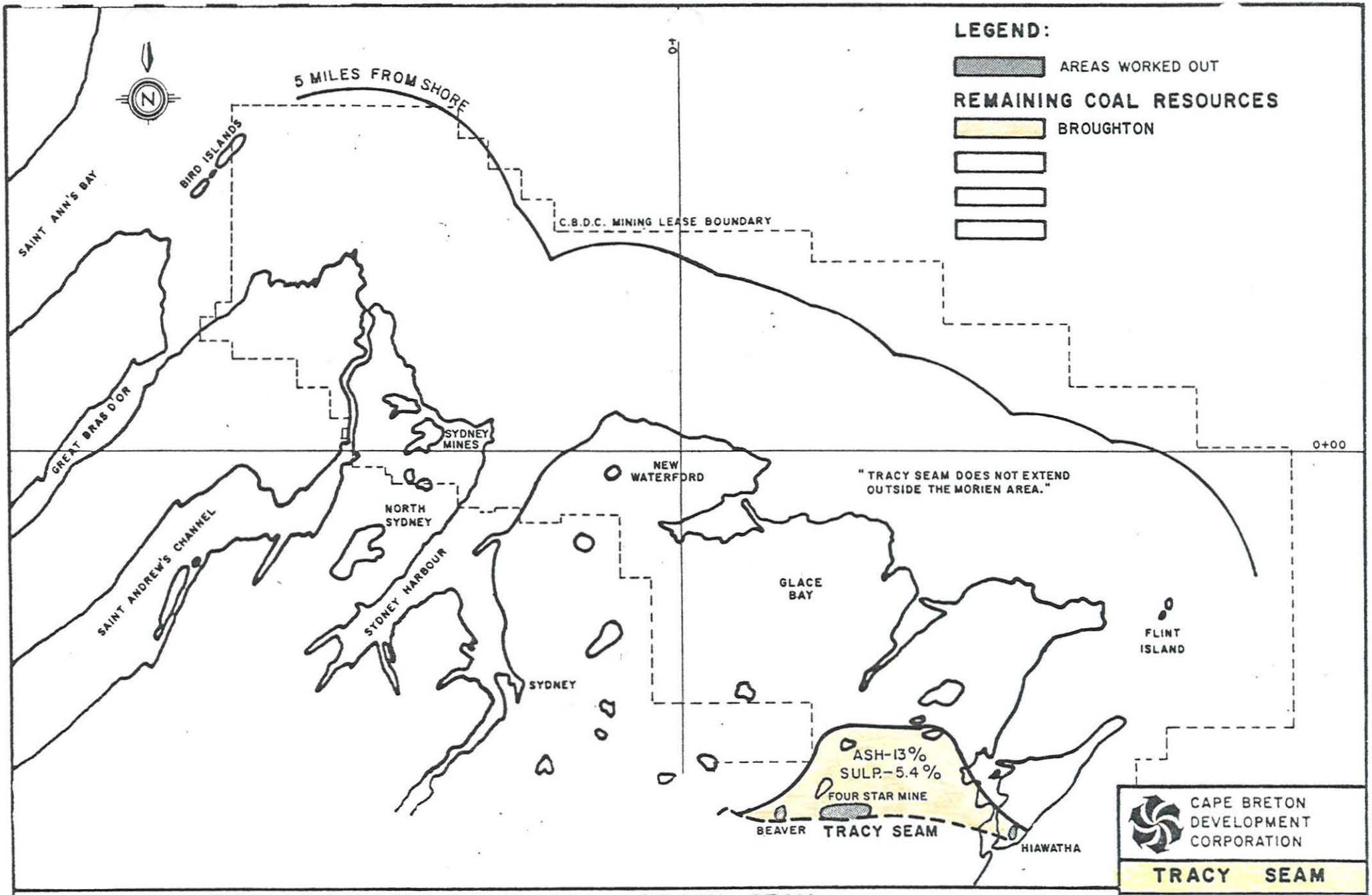
SUMMARY OF COAL RESOURCES – MULLINS SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES)			
				MEASURED	INDICATED	INFERRED	TOTALS
NEW WATERFORD	WATERFORD		1.37m	15.8	21.6	46.9	84.3
			TOTALS	15.8	21.6	46.9	84.3

CAPE BRETON DEVELOPMENT CORPORATION

MULLINS SEAM

LOCATION OF COAL RESOURCE BLOCKS.



SUMMARY OF COAL RESOURCES – TRACY SEAM

DISTRICT	RESOURCE BLOCK	SIZE Km²	SEAM THICKNESS AVERAGE (m)	COAL RESOURCES IN PLACE (MILLIONS OF TONNES) MEASURED	INDICATED	INFERRED	TOTALS
PORT MORIEN	BROUGHTON		1.4	17.1	17.0	42.6	76.7

PART 4

COAL RESERVES OF THE SYDNEY COALFIELD

COAL RESERVES
DEFINITIONS

As defined earlier, Coal Reserves are that PORTION OF THE COAL RESOURCE which has been Assessed with due Consideration of Mining Technology and Economics.

Coal Reserves Contain those Resource Blocks with the best Possibility of Sustaining Profitable Mining Operations taking into Account Today's Mining Technology and the Marketplace.

By this Definition the Sydney Coalfield's Coal Reserves are Estimated to be: **551,000,000 TONNES**

On the Next Two Pages the CRITERIA AND TERMINOLOGY used in Establishing and Describing Coal Reserves are Explained.

A Tabulation of our Coal Reserves is Presented on Following Page

COAL RESERVES

CRITERIA FOR COAL RESERVES

To qualify as a Coal Reserve in the Sydney Coalfield the Seam must meet the Folllowing Criteria.

(a) Feasibilty studies have been completed, specific plans for mining and processing have been adopted and the overall feasibilty for developing the coal deposit appears favorable.

(b) The necessary infrastructure is either in place or can be amortized through coal sales.

(c) The coal is legally accessible for exploitation.

(d) The coal is likely to be marketable at a minimun accepted profit level.

The Terminology used to Describe Reserves is Shown on the Following Page.

COAL RESERVES

(DESCRIPTIVE TERMINOLOGY)

MINEABLE COAL

That Part of the Coal Resource that can be Considered for Mining using Current Technology and Economics, before there is any Allowance for Mining Loss.

RECOVERABLE COAL

That Part of the Minable Coal that is Recoverable as Run–of–Mine Coal, making Allowance for Mining Losses.

RUN OF MINE COAL (R.O.M.)

That Coal Delivered to the Pithead from the Coal Mining Face which Contains Water and Rock added during the Mining Process.

SALEABLE COAL

That Coal which Meets Market Specification; it may be Raw Run–of–Mine or have been Upgraded by Preparation.

COAL RESOURCES OF IMMEDIATE INTEREST
SYDNEY COALFIELD
NOVA SCOTIA

(ALL TONNAGES ARE IN MILLIONS OF TONNES)

RESOURCE LOCATION	SEAM	RESOURCES	RESERVES ENGINEERING FEASIBILITY STUDY DONE			
		RESOURCES OF IMMEDIATE INTEREST (MEASURED & INDICATED)	MINEABLE COAL	RECOVERABLE COAL	R.O.M. COAL	SALEABLE COAL
DONKIN MORIEN	Harbour	425.1	166.0	131.0	139.0	139.0*
	Hub	115.9	28.0	20.6	21.0	21.0*
	Lloyd Cove	56.3	18.0	13.0	14.0	14.0*
GLACE BAY	Harbour (Downdip No. 26)	66.3	66.3	HIGH	OUTBURST	RISK
	Phalen (Downdip No.1B)	86.8	86.8	43.4	51.7	38.8
NEW WATERFORD	Harbour (Lingan Col.)	40.1	40.1	1.3	1.5	1.1**
	Phalen (Phalen Col.)	87.5	87.5	65.6	76.2	61.0
POINT ACONI	Hub (Prince Col.)	59.5	58.5	30.4	35.8	35.8*
	TOTALS	936.5	551.2	304.7	339.2	310.2

*Assumes Donkin & Prince coal is sold raw.
** Assumes Lingan closes following the extraction of No. 13 East Wall

S. FORGERON, AUGUST 1991

PART 5

COAL RESOURCE CHARACTERISTICS

COAL RESOURCES

SOME BASIC CHARACTERISTICS

The Basic Characteristics of our Coal Resources are Briefly Described in the Statements, Graphs, and Charts Shown on the Following Pages.

These Characteristics describe the Essential Nature of our Resources and as such Provide a Focus for the Action Required to Maximize the Economic Benefit they Represent.

Realizing this Some Comments are Made, where Appropriate, which Reflect a Response to the Challenge Posed by our Coal Resources.

SUBMARINE LOCATION

Over 93% of the Coal Resources of the Sydney Coalfield are Located Beneath the Floor of the Atlantic Ocean. About 30% of our Coal Lies 8 km or More from the Coastline.

POSSIBLE RESPONSE

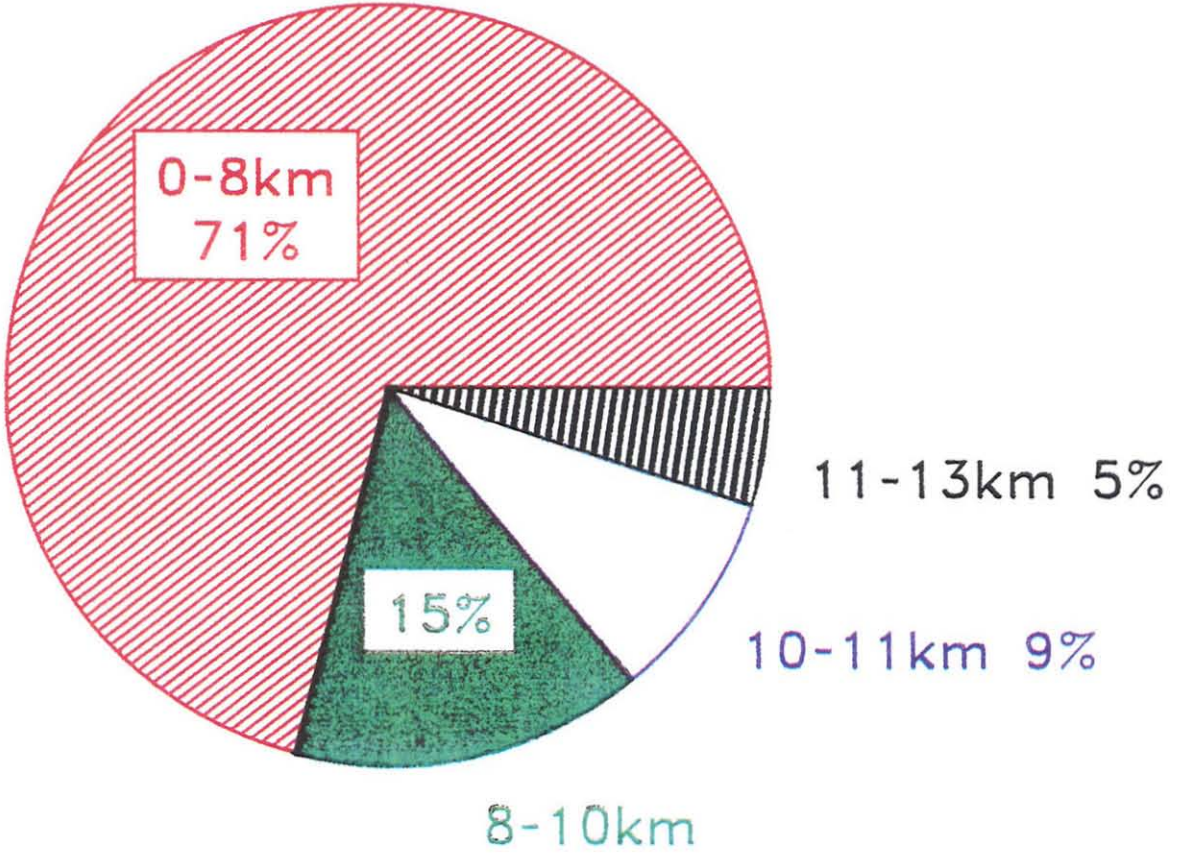
Encourage, Promote, and Sponsor Research and Development of Mining Methods and Techniques which allow Maximum Recovery of our Submarine Coal Resources, for example:

- use of pillarless mining
- continued research in mine subsidence as regards to multi-seam mining
- use of high speed transportation of men and material
- maintain state of the art, high productivity mining methods and equipment to offset long travel times to the face
- utilize highly productive development methods and machinery to support mining operations
- research into offshore islands and shaft sinking
- in situ gasification of coal

Developments in areas Such as these will Allow us to go Deeper and Further from the Coastline to recover our Coal Resources.

SYDNEY COALFIELD

DISTRIBUTION OF COAL RESOURCES BY **DISTANCE FROM COASTLINE**



HIGH SULPHUR CONTENT

When Compared to many other Coal Producing areas in the World , our Coal Resources are Relatively High in Sulphur. The Weighted Average Sulphur Content of the Coal Contained in our 27 Mining Blocks is 4.2%.(See graph on Next Page)

The Sulphur Occurs in 3 Forms and in the Average Proportions shown below.

SULPHUR FORMS	AVERAGE PROPORTION
Pyritic	72%
Organic	27%
Sulphate	1%

The Pyritic and Sulphate Forms can be Reduced by the Process of Coal Preparation. The Organic Form Cannot be Removed by Normal Mechanical Means.

POSSIBLE RESPONSE

Increase the Level of Support Into Research and Development of Methods to Reduce the Sulphur Content of our Coal, for example:

- selective mining avoiding high sulphur roof and bench coals
- removal of sulphur through coal preparation techniques
- efficient and cost effective methods of sulphur removal during burning

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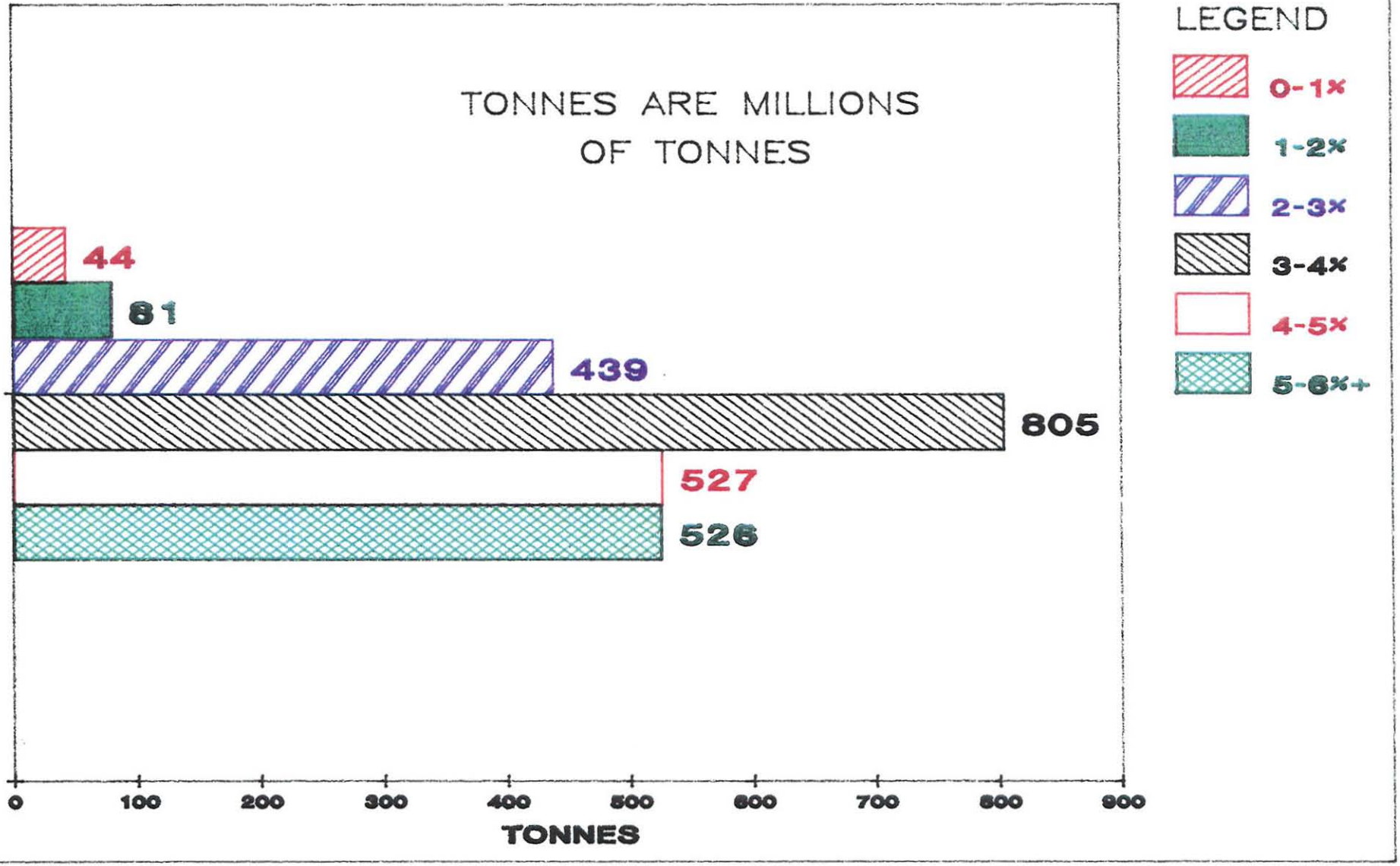
SYDNEY COALFIELD
QUALITY OF COAL IN TERMS OF
SULPHUR CONTENT



DEEP MINING

15% of Coal Resources Occur at Depths in Excess of 915m (3000') and Most of our Best Quality Lies at Depth.

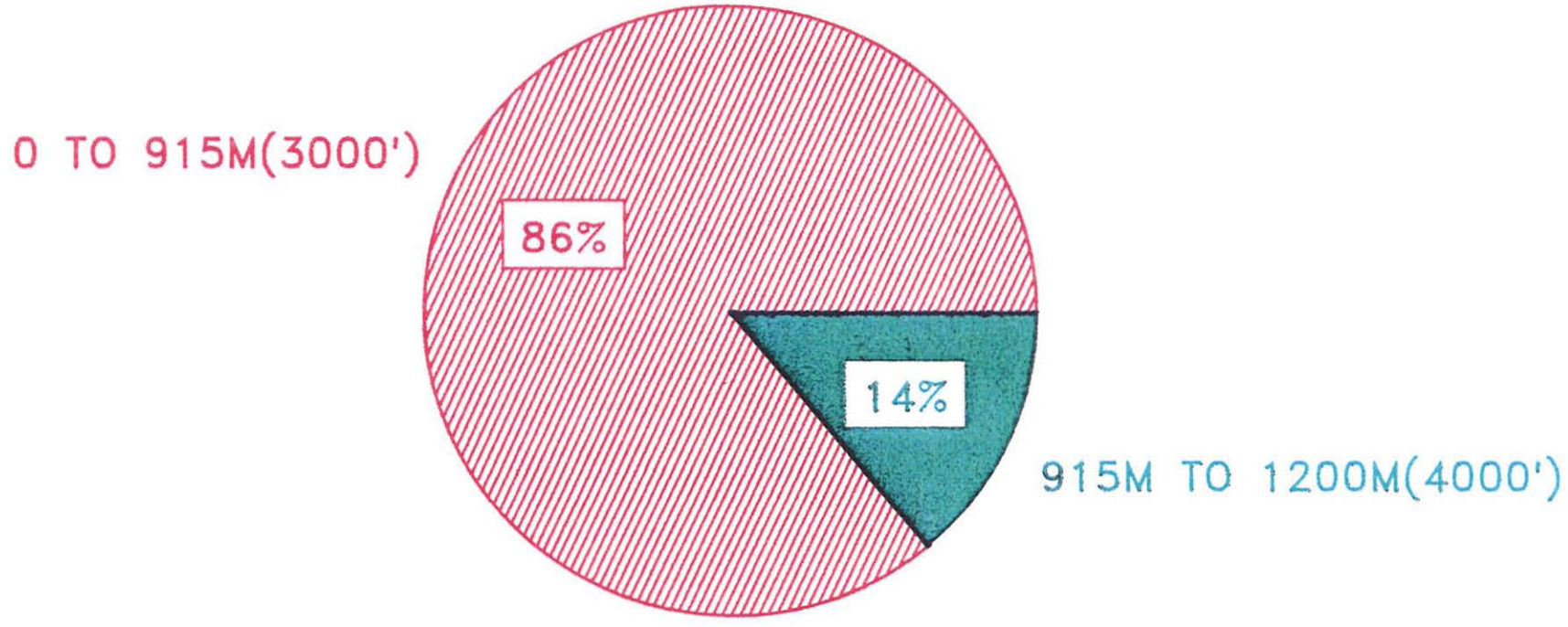
POSSIBLE RESPONSE

Encourage, Promote, and Sponsor Research and Development of Mining Methods and Techniques for the Deep Mining Environment, for example:

- research into predrainage of methane from coal seams
- development of roadways under high strata loads
- research into outburst prediction and prevention
- implement methods of thin seam mining at depth
- effects of increased rock temperatures, gas and dust levels at depth

SYDNEY COALFIELD

DISTRIBUTION OF COAL RESOURSES BY **DEPTH**



MODERATE ASH CONTENT

When Compared to Many Other Coal Producing areas of the World, our Coal Resources are Relatively Low in Ash. The Low Ash Content is a very Favorable Characteristic of our Coal. The Weighted Average Ash Content of the Coal Contained in our 27 Mining Blocks is 10.8%

Ash is that Part of the Coal that does not Burn. Ash occurs naturally in the Coal as a Product of Geological History. The Ash Content Rises during mining when Rock is added as Part of the Mining Process. Ash can be Removed by Coal Preparation Methods.

<u>POSSIBLE RESPONSE</u>

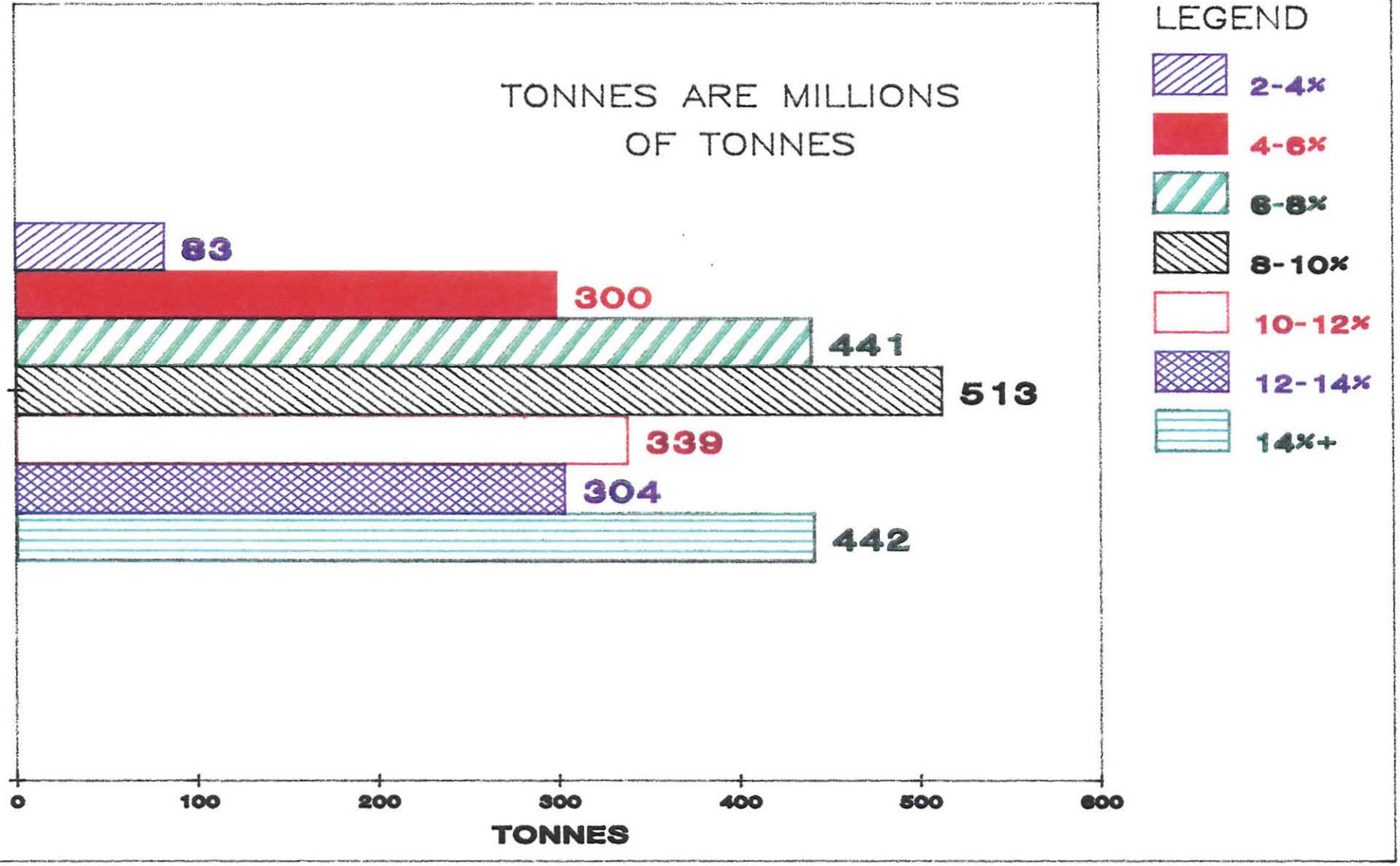
1. Promote Research and Development into Methods to Reduce Levels of Extraneous Ash Added During Mining:

   - roof control methods on longwalls
   - cutting profiles in development headings
   - sizing of crushers and breakers
   - selectively leaving high ash coals during mining

2. Develop Environmentally Acceptable ways of Disposing of Mine and Washplant Waste Rock.

D. Ferguson, 1 8

SYDNEY COALFIELD
QUALITY OF COAL IN TERMS OF
ASH CONTENT



EFFECTS OF RANK

Rank is a Measure of the Maturity of a Coal Seam. It Records the Maximum Temperature to which Coal was Subjected During Geological History. Rank is a Permanent Record of the Coal's "cooking" Time and Temperature in the Earth's Crust.

Most of our Coal Possess a High Volatile "A" Bituminous Rank. Rank Increases Both with Depth and from West to East in the Sydney Coalfield.

The Metallurgical or Coking Properties of Coal Become Better as the Rank Increases.

CONSIDERATIONS OF RANK

1. Coking properties become better with depth.

2. Increase of value of coal with depth may help reduce increased mining cost.

3. Gas content of coal increases with rank.

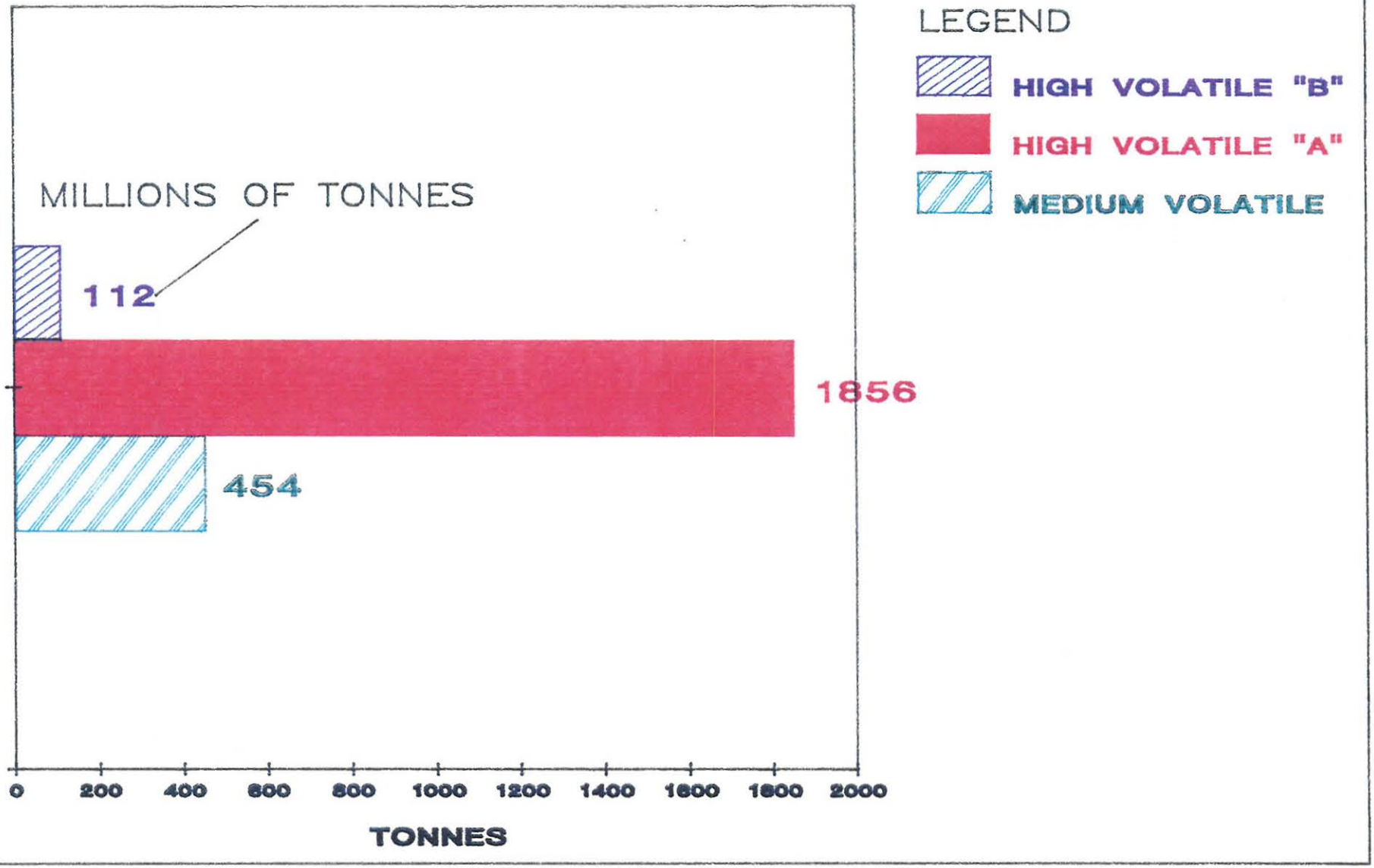
4. Coal dust generation increases with rank

5. The inherent moisture of coal decreases with increasing rank.

SYDNEY COALFIELD

QUALITY OF COAL IN TERMS OF

RANK



LARGE TONNAGE OF COAL IN THE INFERRED RESOURCE CATEGORY

More than 50% of the Coal Resources are Contained in the Inferred Category (highest level of Uncertainty)

POSSIBLE RESPONSE

Contemplate the Possibility of Exploration Drilling at the Following Sites:

1. Verify the existence and determine quality of coal on the LLoyd Cove seam offshore at Sydney Mines.

2. Verify the thickness and quality of the Harbour and Phalen seams offshore from New Waterford.

3. Verify the existence and quality of the Hub Seam offshore at Low Point.

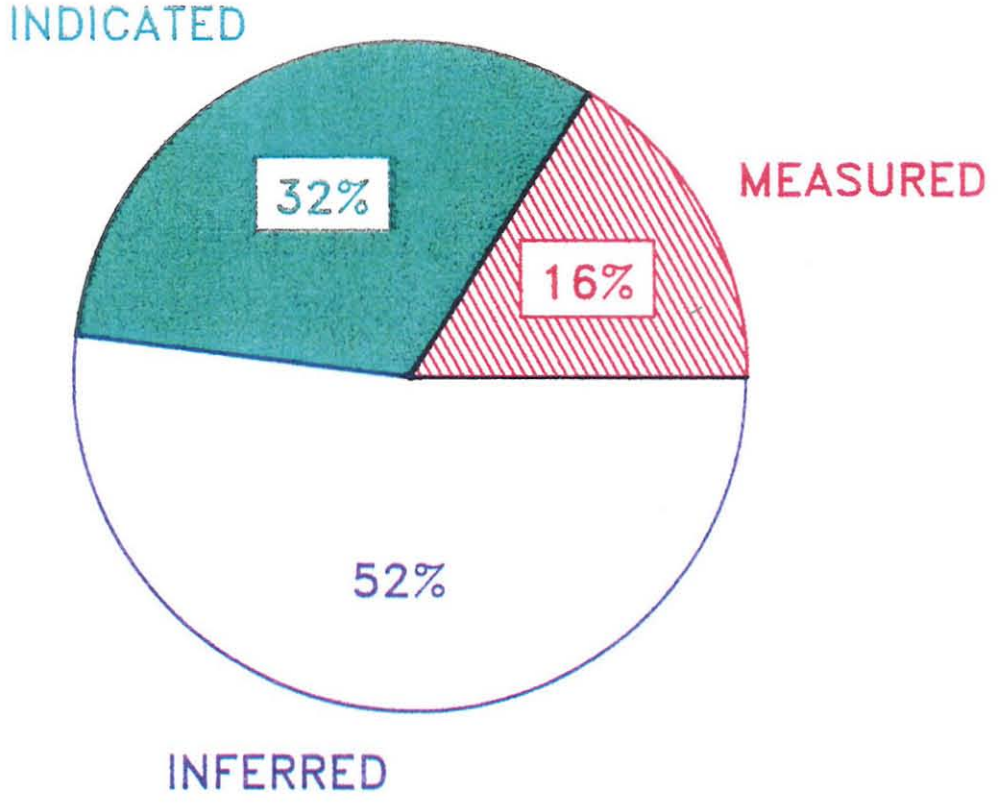
4. Verify the existence and quality coal on the Tracey seam at depth near Birch Grove.

5. Verify the existence of coal on the Mullins seam under Sydney Harbour.

SYDNEY COALFIELD

DISTRIBUTION OF COAL RESOURSES BY

LEVEL OF ASSURANCE OF EXISTENCE



OTHER CHARACTERISTICS

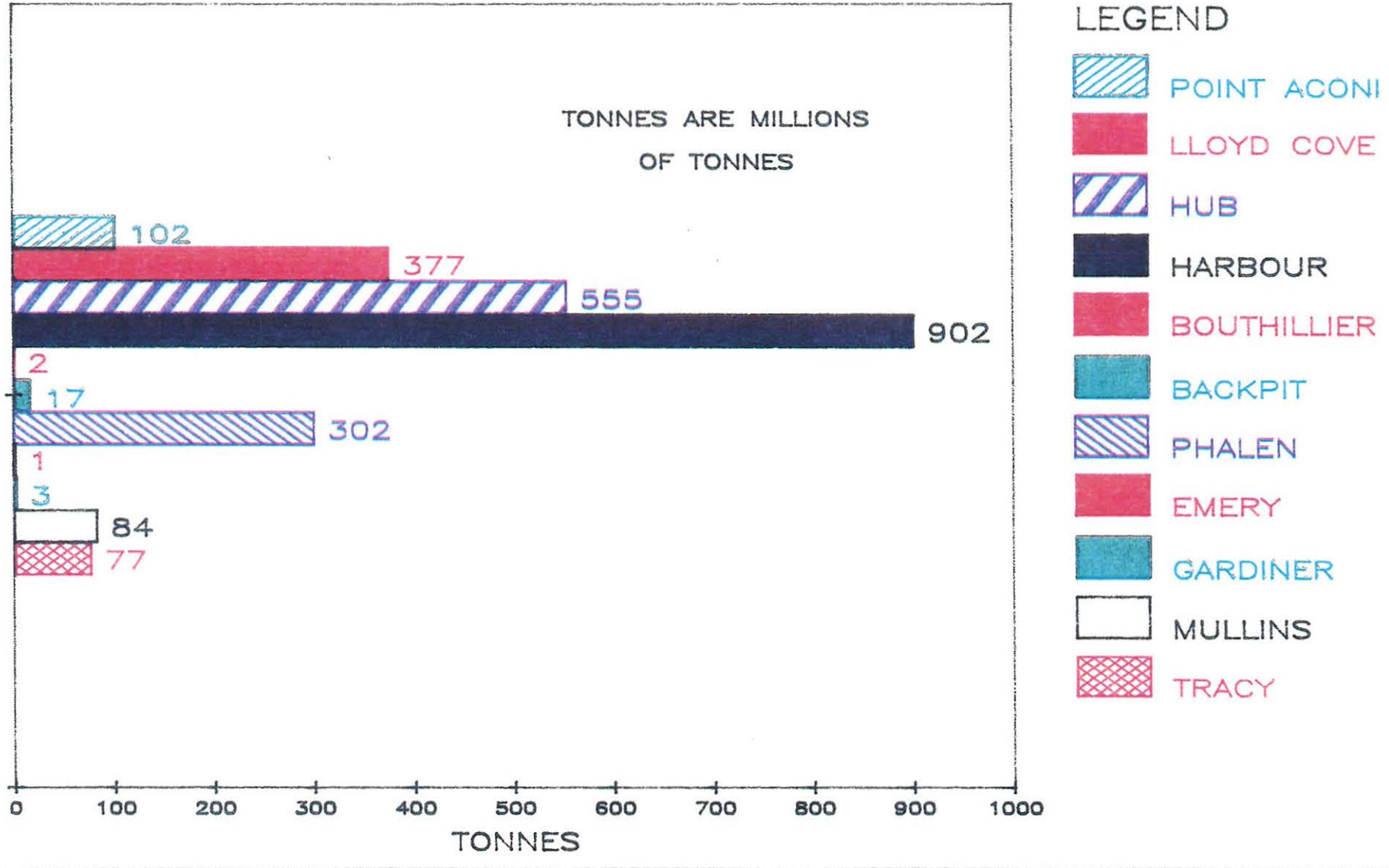
OF OUR COAL RESOURCES

1. The Harbour Seam Contains the highest Proportion of our Coal Resources (38%).

2. Almost 70% of our Coal Resources are Located in the Donkin–Morien Area.

SYDNEY COALFIELD

DISTRIBUTION OF COAL RESOURCES BY **SEAM**



SYDNEY COALFIELD

DISTRIBUTION OF COAL RESOURCES BY **DISTRICT**