GR-GROUNDHOG 73(10)A D. McCartney

Groundhog Coalfield (near latitude 57°, longitude 128°)

Major rail traffic of well over one million, probably three million or more tons per year might be generated in no less than 12 to 15 years if a stable, profitable market could be found for the coking, anthracite and semi-anthracite of the Groundhog Coalfield. Some field work on coal licences continued in 1971 by a Placer Development Ltd. subsiduary, Canex Aerial Exploration Ltd., both of 700, 1030 West Georgia Street, Vancouver 5, The B.C. Department of Mines and Petroleum Resources report for 1971[1] (released February 9th, 1973, p.504) states: "recent mapping and drilling (done in 1970) seems to indicate a more encouraging outlook from an economic point of view". Previous discouraging reports[2] were in part based on a search for coking coal and relatively shallow and uncontorted seams. The surface observations of Black and Best were undoubtedly thorough, and their conclusion that "the Groundhog area and the area adjoining to the southwest do not contain mineable coal seams" is generally known and has discouraged serous consideration of the potential. However, in conversation with Professor Best, February 9th, 1973, it seemed clear that part of their search was for unfolded,

1. Geology, Exploration and Mining in British Columbia, 1971, p. 504
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   J.M. Black and R.A. Best, Groundhog Coal Survey, 1968.
   J.T. Boyd, Groundhog Coalfield, 1967.
   Buckham, A.F. and Latour, B.A., Geological Survey, Canada, Bulletin 16, 1950.

reasonably thick seams of coking coal (which is not characteristic of the area) with a relatively shallow rock cover.

In the following remarks, there is no intention to convey an over-optimistic report on the Groundhog potential. However, some factors affecting the long-term prospects deserve mention, and a thorough appraisal of markets, mining and total transportation costs will probably be justified within 7 to 10 years.[1]

Marketing: Unlike the coking coals, such as those of the Sukunka River area of northeastern British Columbia, semi-anthracite or anthracite markets appear to be dependant in part on increasing use as a so-called "smokeless fuel" for low-pollutant, domestic consumption in countries such as Britain, France and probably Russia. Increasing consumption of low-pollutant anthracite coal is marked in the United Kingdom, for example, where consumption in the last few years has increased by almost one million tons per year (G. Bell, personal communication). Petrochemical markets may also increase. In a long-term view, the "energy crisis" with respect to fossil fuels suggests that this coal will eventually be used if present trends continue. How soon

1. Some of these points were raised during informal conversations February 9th, with Executive Vice-President J.D. Little and J. Butterfield of Placer Development Ltd.

increasing real prices or other factors would create such a demand is, however, highly conjectural.

A potential market of roughly 1.5 million tons per year was indicated in a study of Placer Development Ltd. about two years ago at a price of 17 to 18 dollars/ton F.O.B. Vancouver.

Reserves:

Only limited amounts of drilling have been done and the results of the 1970 drilling programme are not known to the writers. An impression has been gained that some thicker and less disturbed seams are now known. Several hundred million tons (possibly one billion tons) are probably present (J. Butterfield, personal communication).

National Coal Corporation Limited holds 65 licences in good standing as of December 31, 1972.

E. K. DEBECK
CLERK OF THE HOUSE

LEGISLATIVE ASSEMBLY
PROVINCE OF BRITISH COLUMBIA

PARLIAMENT BUILDINGS,
VICTORIA, BRITISH COLUMBIA

April 28, 1972.

The Honourable F. X. Richter,
Minister of Mines and Petroleum Resources,
Parliament Buildings.

Dear Sir:

This is to advise you that the following Motion was agreed to in the Legislature on March 30th:

> "That all correspondence and communications between all departments of the Provincial Government, any official of the National Coal Corporation Limited (NPL), any official of any world government, and any person with respect to coal explorations, potential markets for all types of coal, and possible British Columbia coastal export outlets, resulting from work done on the Groundhog coalfields since 1970, be filed with this House."

Would you kindly let me have, at your early convenience, a copy of any material referred to in the above Order, for our documents file.

Yours very truly,

E. K. DeBeck

Clerk of the House.

Conclusions: Major factors affecting selection of rail routes.

1. Selection from a mineral potential standpoint hinges on Liard Copper, Stikine Copper and Groundhog coal being able to attain production.

   a) In the case of Stikine, shipping by rail on western route (total $17.16 to Prince Rupert) rather than road to Stewart ($18.56) (or via Babler Point, Alaska ($9.44)).

   b) We consider that there is a 50% chance that Groundhog coal may produce 1 million tons per year if markets can be established by 1982. A spur line, e.g. Panorama Lake route to Terrace line or extension of present B.C.R. would be needed IF markets at a profit could be found. (Possibly 4 million tons/year could be mined by 1992 but this is highly speculative and far more drilling is needed).

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2. A major factor is mileage to ports, rail markets or smelter by rail for internal B.C. traffic and eventual through traffic (Table I, ton/mile distances in Table III).

3. If a firm copper smelter site were known, either southern B.C. (e.g. Clinton, Trail) or northwestern B.C. (e.g. Kitimat, Prince Rupert, Babine Lake, Iskut River), the rail route choice with respect to metals would be considerably clarified. Analysis of the most attractive of several feasible smelter sites is not attempted in this report.

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P.O. Box 1388
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February 14th, 1973.

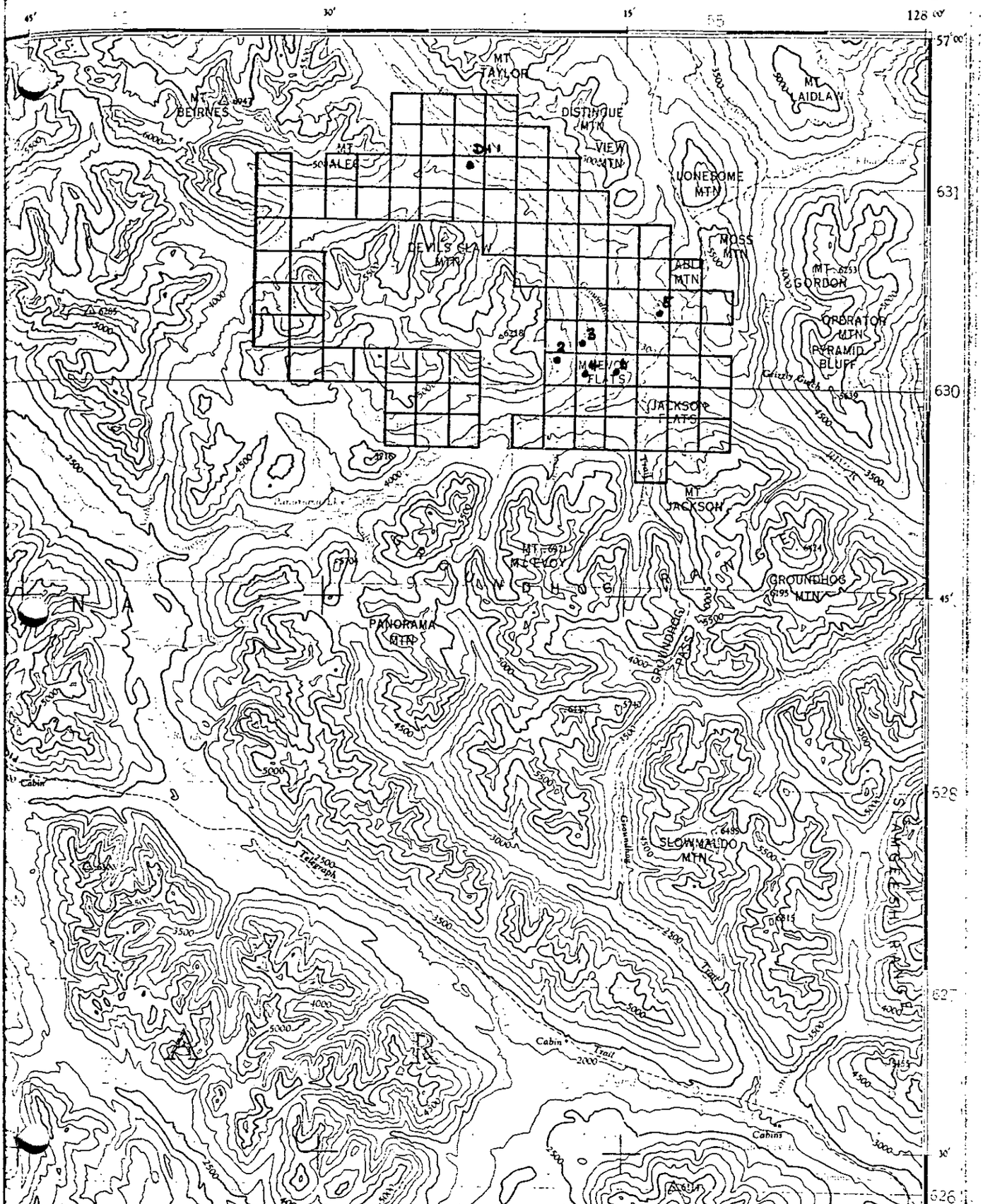
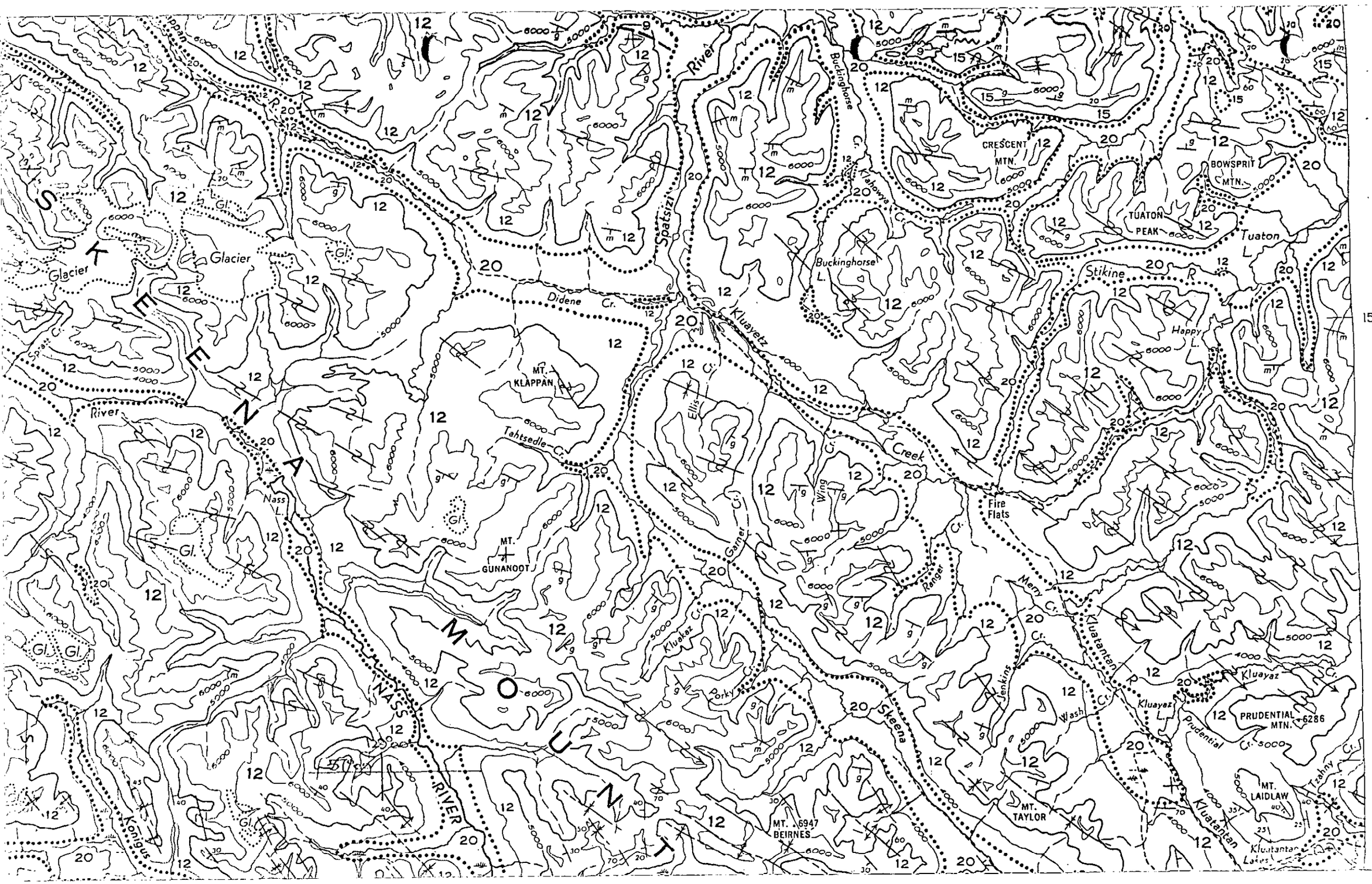
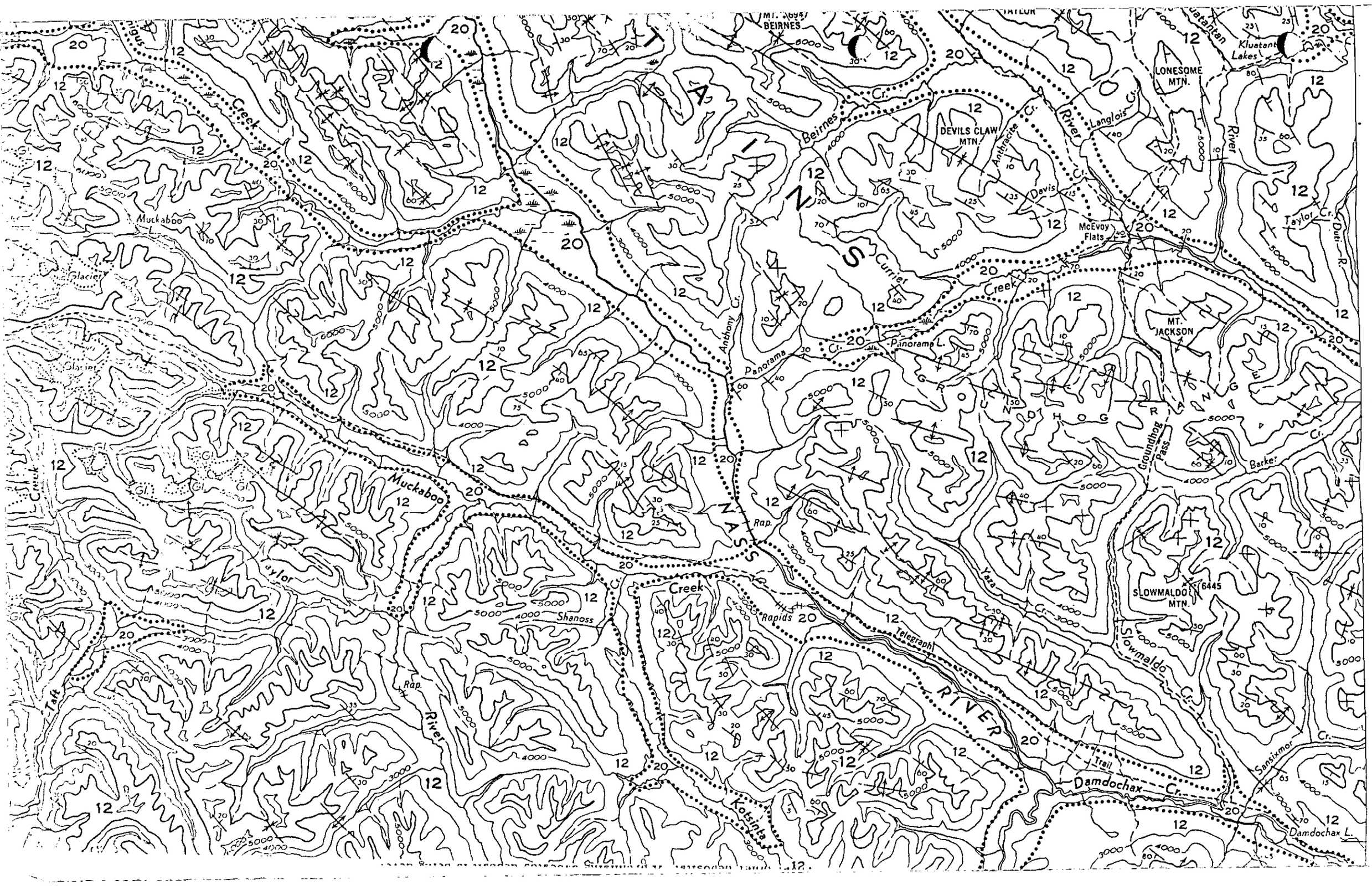


Figure 1.- Topographic map showing location of Coal Licences in Groundhog coalfield.


SKEENA MOUNTAINS
Spatsizi River
Buckinghorse Cr.
Klahowya Cr.
Buckinghorse L.
CRESCENT MTN.
BOWSPRIT MTN.
TUATON PEAK
Tuaton L.
Stikine R.
Happy L.
Didene Cr.
Kluayetz Creek
MT. KLAPPAN
Tahtsedle Cr.
Ellis Cr.
Wing Cr.
Garner Cr.
Fire Flats
Ranger Cr.
Merry Cr.
Kluatantan R.
Kluayaz Cr.
Kluayaz L.
PRUDENTIAL MTN. 6286
Prudential Cr.
Izahny Cr.
MT. LAIDLAW
Kluatantan Lakes
Jenkins Cr.
Wash Cr.
MT. TAYLOR
MT. BEIRNES 6947
Skeena R.
Klukaz Cr.
Porky Cr.
NASS RIVER
Nass L.
MT. GUNANOOT
Konigus Cr.
Glacier
Gl.
River
15'
57° 0


Muckaboo Creek
Glacier
Muckaboo
Taylor
Taft
Rap.
River
Shanoss
Creek
Rapids
Kotsinta
Anthony Cr.
Panorama
Beirnes
Cr.
Beirnes
Anthracite
Davis
Cr.
Langlois
River
DEVILS CLAW MTN.
LONESOME MTN.
Kluetantan Lakes
McEvoy Flats
Taylor
Cr.
Dutch R.
Currie
Creek
Panorama L.
MT. JACKSON
GROUNDHOG RANGE
Groundhog Pass
Barker
SLOWMALDO MTN.
6445
Yaza
Cr.
Slowmaldo
Cr.
Sansixmor
Cr.
Damdochax
Cr.
Damdochax L.
Trail
TELEGRAPH RIVER
45'
30'

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

QUATERNARY
RECENT

20 Unconsolidated glacial and fluvial clay, silt, sand, gravel; till; peat, muskeg

19 Tufa, hot spring deposits

18 Olivine basalt, ash, cinders

TERTIARY
PLEISTOCENE AND (?) EARLIER

17 Basalt, rhyolite, ash, tuff, agglomerate; locally may include 16; 17a, rhyolite, pisolitic siliceous tuff, chalcedonic rhyolite breccia

EOCENE

16 Basalt, rhyolite and associated volcanic rocks; minor conglomerate, sandstone, shale

CRETACEOUS AND TERTIARY
UPPER CRETACEOUS AND PALEOCENE

15 Conglomerate, sandstone, shale, minor coal

MESOZOIC

CRETACEOUS
POST LOWER CRETACEOUS

14 Volcanic rocks, breccia

CRETACEOUS AND /OR EARLIER
PRE UPPER CRETACEOUS

13 Mainly volcanic rocks; minor conglomerate, greywacke; chert, argillite

JURASSIC AND CRETACEOUS
UPPER JURASSIC AND LOWER CRETACEOUS

12 Argillite, greywacke, conglomerate, coal; 12a, andesite, chert, tuff, conglomerate, shale, greywacke

JURASSIC
LOWER AND MIDDLE JURASSIC

11 Conglomerate, greywacke, grit, siltstone, shale; 11a, may include younger rocks

JURASSIC AND /OR EARLIER
PRE UPPER JURASSIC

9 10 9. Mainly volcanic rocks; minor conglomerate; greywacke, argillite
10. Mainly sedimentary rocks

TRIASSIC

8 Tuff, siltstone, limestone, conglomerate, breccia

PERMIAN AND/OR TRIASSIC

7 7, Volcanic and sedimentary rocks undivided; 7a, mainly andesitic and basaltic volcanic rocks; flows, breccia, tuff breccia, tuff; 7b, mainly greywacke, siltstone, conglomerate; 7c, mainly limestone

PERMIAN AND (?) EARLIER

6 Limestone, greenstone, chert, argillite, phyllitic quartzite, greywacke; meta-andesite and meta-diorite locally abundant near ultramafic bodies. May include younger greenstone; 6a, Carboniferous or Permian, mainly andesitic flows, breccia, tuff; minor sedimentary rocks

DEVONIAN AND MISSISSIPPIAN
UPPER DEVONIAN AND MISSISSIPPIAN

5 Chert, argillaceous quartzite, argillite, greywacke, greenstone, conglomerate, limestone

PALEOZOIC

DEVONIAN
MIDDLE DEVONIAN

30'

15'

58°00'

LEGEND

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PALEOZOIC

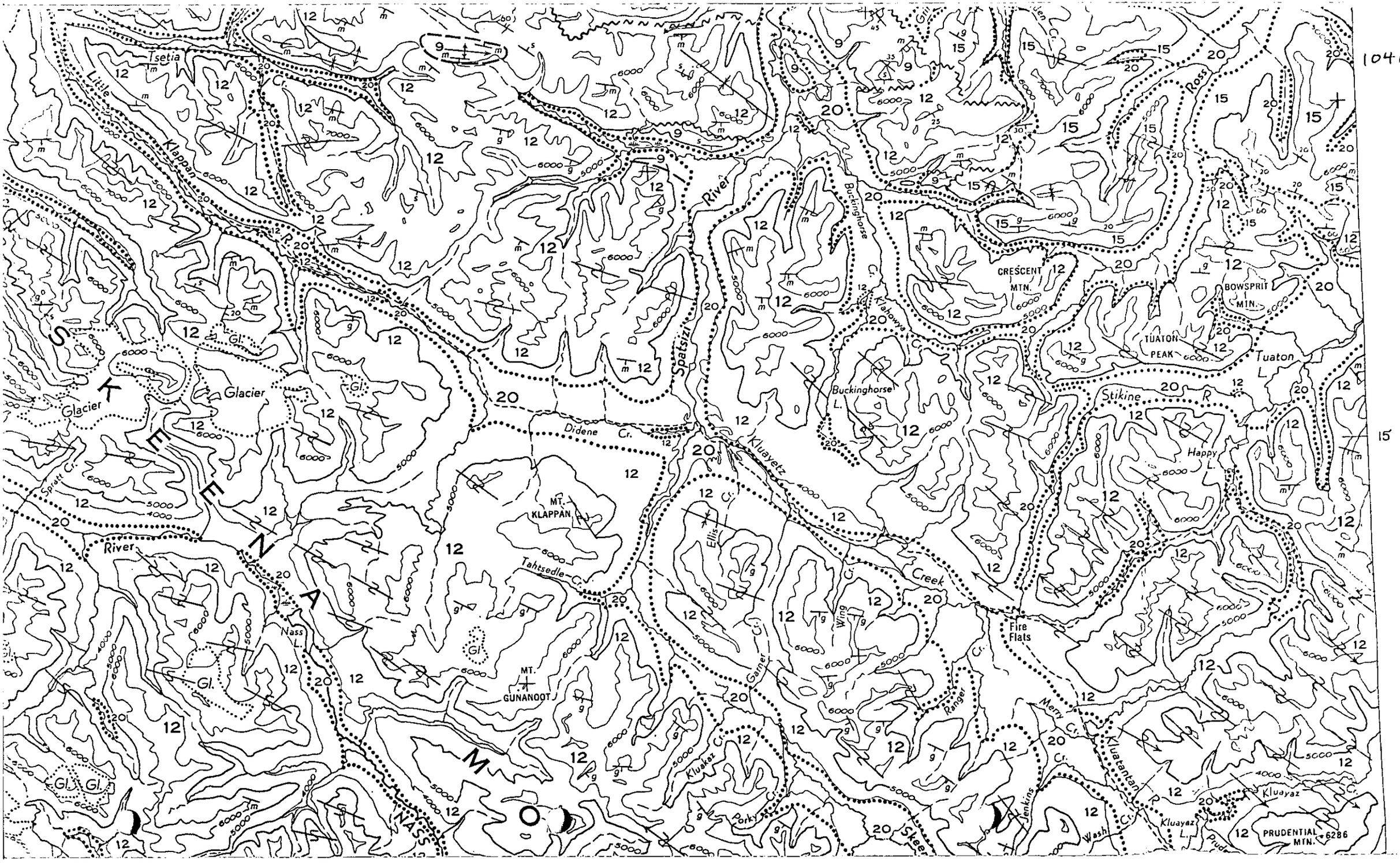
DEVONIAN
MIDDLE DEVONIAN

30'

15'

58°00'


104H
15'
SKEENA
MC
NASS
Tsetia
Little Klappan
Klappan River
Spatsizi River
Buckinghorse Cr.
Klaboya Cr.
Buckinghorse L.
CRESCENT MTN.
BOWSPRIT MTN.
TUATON PEAK
Tuaton L.
Ross R.
Stikine R.
Happy L.
Glacier
Glacier
Spratt Cr.
Didene Cr.
Kluayetz Cr.
MT. KLAPPAN
Ellis Cr.
Tahtsedle Cr.
River
Nass L.
Gl.
MT. GUNANOOT
Gainer Cr.
Wing Cr.
Creek
Fire Flats
Ranger Cr.
Merry Cr.
Kluayaz Cr.
Kluayaz L.
Kluayaz
Kluakaz Cr.
Porky Cr.
Jenkins Cr.
Wash Cr.
Skeena
PRUDENTIAL MTN. +6286


Tsetia
Little Klappan
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Ranger Cr.
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Kluatantan R.
Kluayaz Cr.
Kluayaz L.
Jenkins Cr.
Wash Cr.
Porky Cr.
PRUDENTIAL MTN. 6286
SKEENA MOUNTAINS
NASS
1041
15

Groundhog

1. Check X Sections & interpret'n
2. Check [illegible] literature
3. Check Blackeberg report.
4. Check Strat sequence.
5. Check coal analyses
6. Check poss. market
7. Coal Place - expl. plans 1973
   - reserves.
   - market.

Stratigraphy - coal appears to occur in Coal Measures 1800-2000' thick, sequence contains 5+ seams 4+ ft. thick.

Coal analyses.

FC	80.8% - 88.9%	
Vol.	5.8% - 9.1%	(by subtraction)
ash	4.9% - 19.1% @	1.75 SG.
Sulph.	0.43 - 0.97%	

Anthracite Use: U.S. 1970

Residential & comml. htg.	4.042 MMST	[illegible]
Coal fuel	.016	3.8
Elect. util.	1.897	
General		
Coke	.472	
Sintering	.46[illegible]	
Other	1.357	
	8,248 MM T.	

E. K. DEBECK
CLERK OF THE HOUSE

LEGISLATIVE ASSEMBLY
PROVINCE OF BRITISH COLUMBIA

00099(2)

PARLIAMENT BUILDINGS,
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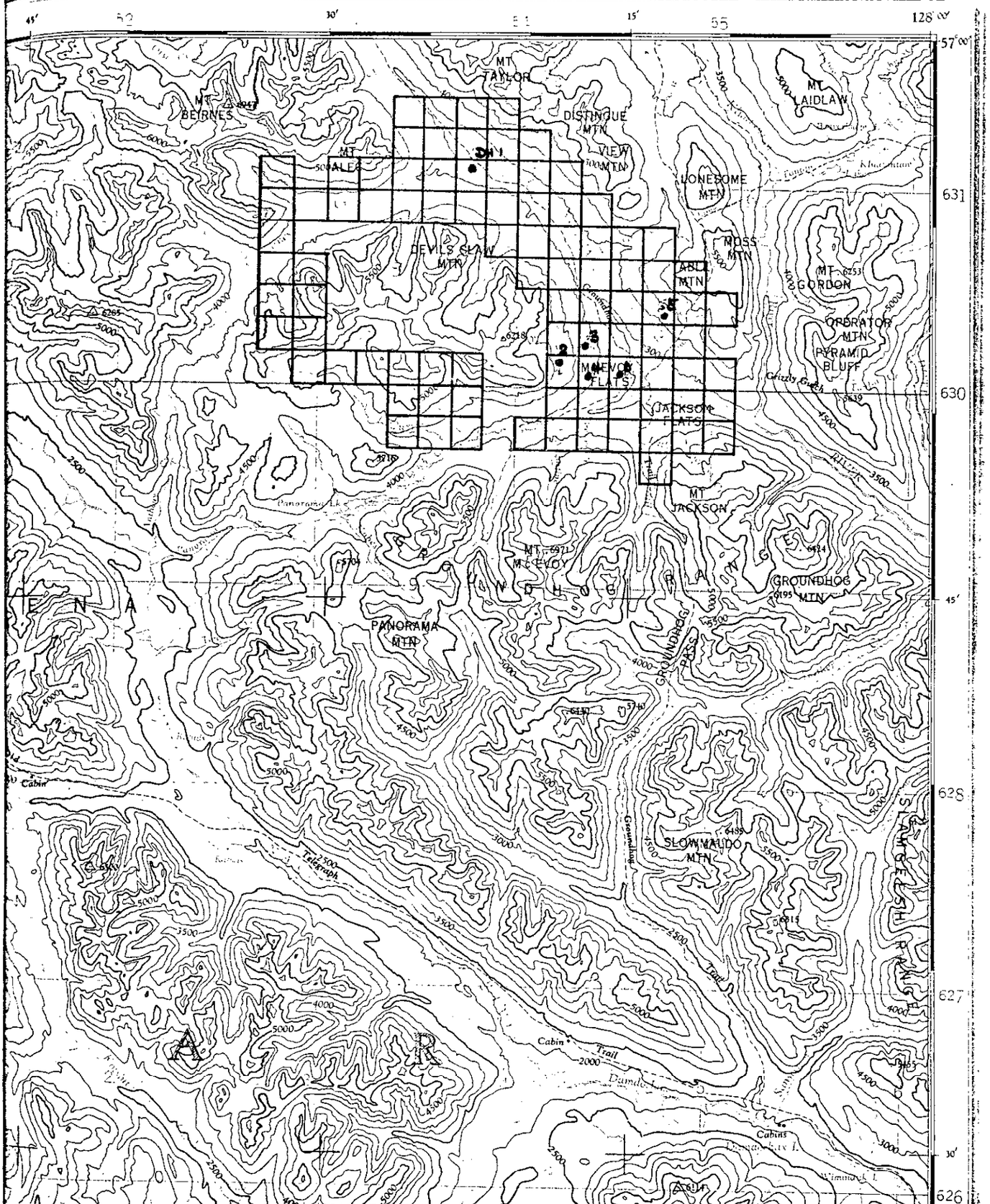

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99


SKEENA MOUNTAIN
Glacier
Gl.
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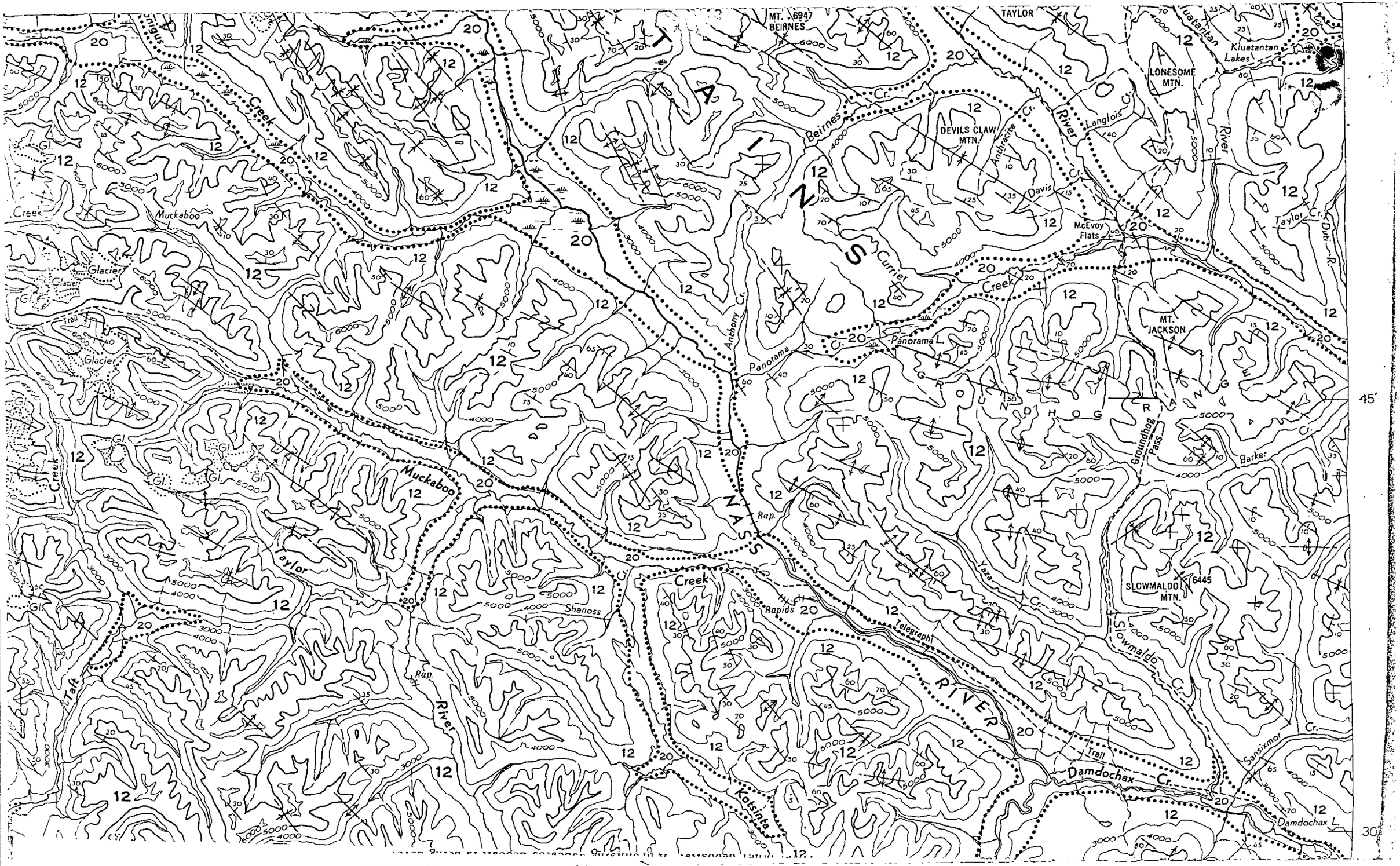
MT. 6947
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TAYLOR
Kluatantan
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Rap.
Rapids
Telegraph
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Slowmaldo Cr.
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PERMIAN AND (?) EARLIER

6 Limestone, greenstone, chert, argillite, phyllitic quartzite, greywacke; meta-andesite and meta-diorite locally abundant near ultramafic bodies. May include younger greenstone; 6a, Carboniferous or Permian, mainly andesitic flows, breccia, tuff; minor sedimentary rocks

DEVONIAN AND MISSISSIPPIAN
UPPER DEVONIAN AND MISSISSIPPIAN

5 Chert, argillaceous quartzite, argillite, greywacke, greenstone, conglomerate, limestone

PALEOZOIC

DEVONIAN
MIDDLE DEVONIAN

4 Limestone, dolomite, quartzite

30'

15'

58°00'

99

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

QUATERNARY
RECENT

20 Unconsolidated glacial and fluvial clay, silt, sand, gravel; till; peat, muskeg

19 Tufa, hot spring deposits

18 Olivine basalt, ash, cinders

TERTIARY
PLEISTOCENE AND (?) EARLIER

17 Basalt, rhyolite, ash, tuff, agglomerate; locally may include 16; 17a, rhyolite, pisolitic siliceous tuff, chalcedonic rhyolite breccia

EOCENE

16 Basalt, rhyolite and associated volcanic rocks; minor conglomerate, sandstone, shale

CRETACEOUS AND TERTIARY
UPPER CRETACEOUS AND PALEOCENE

15 Conglomerate, sandstone, shale, minor coal

MESOZOIC

CRETACEOUS
POST LOWER CRETACEOUS

14 Volcanic rocks, breccia

JURASSIC AND CRETACEOUS
UPPER JURASSIC AND LOWER CRETACEOUS

12 Argillite, greywacke, conglomerate, coal; 12a, andesite, chert, tuff, conglomerate, shale, greywacke

JURASSIC
LOWER AND MIDDLE JURASSIC

11 Conglomerate, greywacke, grit, siltstone, shale; 11a, may include younger rocks

TRIASSIC

8 Tuff, siltstone, limestone, conglomerate, breccia

PERMIAN AND/OR TRIASSIC

7 7, Volcanic and sedimentary rocks undivided; 7a, mainly andesitic and basaltic volcanic rocks; flows, breccia, tuff breccia, tuff; 7b, mainly greywacke, siltstone, conglomerate; 7c, mainly limestone

PERMIAN AND (?) EARLIER

6 Limestone, greenstone, chert, argillite, phyllitic quartzite, greywacke; meta-andesite and meta-diorite locally abundant near ultramafic bodies. May include younger greenstone; 6a, Carboniferous or Permian, mainly andesitic flows, breccia, tuff; minor sedimentary rocks

EOZOIC

DEVONIAN AND MISSISSIPPIAN
UPPER DEVONIAN AND MISSISSIPPIAN

5 Chert, argillaceous quartzite, argillite, greywacke, greenstone, conglomerate, limestone

DEVONIAN
MIDDLE DEVONIAN

4 Limestone, dolomite, quartzite

CRETACEOUS AND /OR EARLIER
PRE UPPER CRETACEOUS

13 Mainly volcanic rocks; minor conglomerate, greywacke; chert, argillite

JURASSIC AND /OR EARLIER
PRE UPPER JURASSIC

9 10 9. Mainly volcanic rocks; minor conglomerate; greywacke, argillite
10. Mainly sedimentary rocks

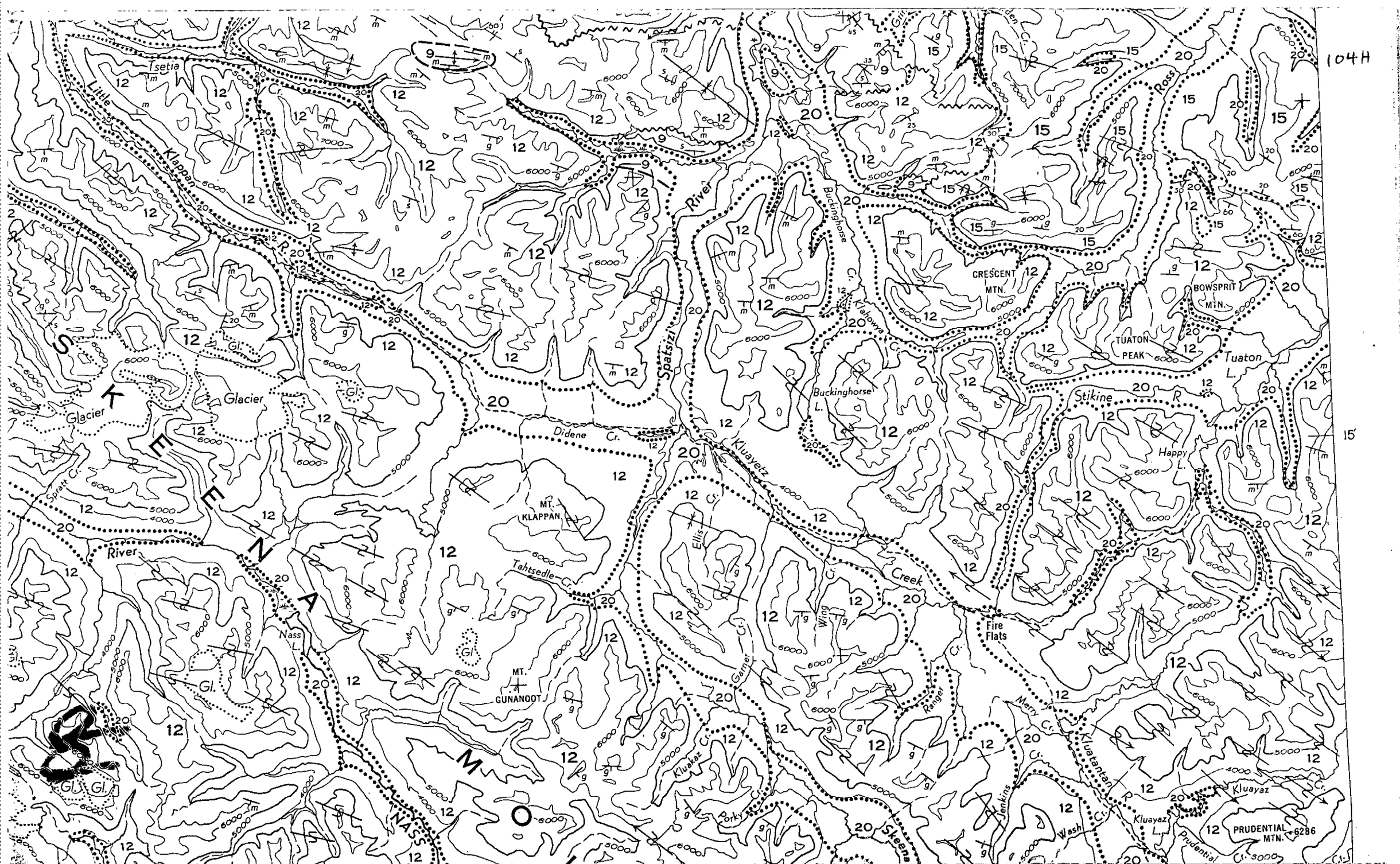
30'

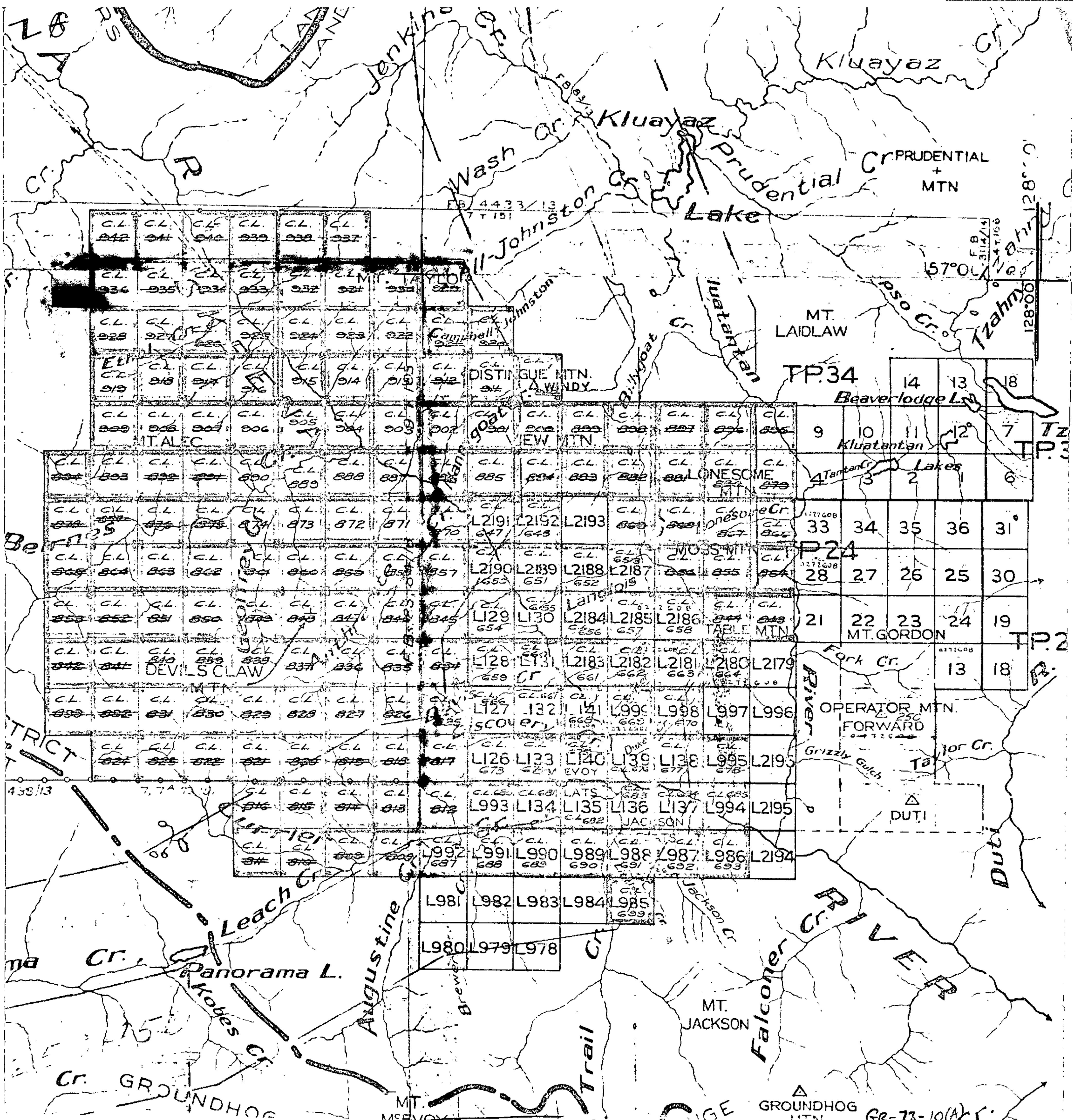
15'

58°00'

104H

Tsetia Cr.
Little Klappan R.
Spatsizi River
Buckinghorse Cr.
Klahowya Cr.
Buckinghorse L.
Ross R.
CRESCENT MTN.
BOWSPRIT MTN.
TUATON PEAK
Tuaton L.
Stikine R.
Happy L.
Glacier
Didene Cr.
Kluayetz Cr.
MT. KLAPPAN
Ellis Cr.
Spatsizi River
Tahtsedle Cr.
Wing Cr.
Fire Flats
Nass L.
MT. GUNANOOT
Garner Cr.
Ranger Creek
Merry Cr.
Kluatantan R.
Kluakaz Cr.
Porky Cr.
Jenkins Cr.
Kluayaz L.
Kluayaz Cr.
Wash
Prudential Cr.
PRUDENTIAL MTN. 6286
Skeena
NASS
KEENA MO


104H
15'
SKEENA MOUNTAINS
Tsetia
Little Klappan R.
Klappan River
Spatsizi River
Buckinghorse Cr.
Buckinghorse L.
Klahowya Cr.
CRESCENT MTN.
BOWSPRIT MTN.
TUATON PEAK
Tuaton L.
Stikine R.
Happy L.
Ross
Didene Cr.
Kluayetz Cr.
Spratt Cr.
Glacier
Gl.
MT. KLAPPAN
Ellis Cr.
Tahtsedle Cr.
Wing Cr.
Garner Cr.
Ranger Cr.
Fire Flats
Creek
Nass River
Nass L.
MT. GUNANOOT
Kluakaz Cr.
Porky Cr.
Skeena
Merry Cr.
Kluatantan R.
Jenkins Cr.
Wash
Kluayaz L.
Kluayaz Cr.
PRUDENTIAL MTN. 6286
Prudential Cr.



Kluayaz Cr.
Jenkins Cr.
Wash Cr.
Kluayaz Lake
Prudential Cr.
PRUDENTIAL MTN
MT. TAYLOR
MT. ALEC
DISTINGUE MTN.
WINDY
Campbell
Billygoat Cr.
Iuatantan
MT. LAIDLAW
Pso Cr.
Tzahny
57°00'
128°00'
TP.34
Beaverlodge L.
Kluatantan Lakes
LONESOME MTN
Lonesome Cr.
MOSS MTN
TP.24
TABLE MTN
MT. GORDON
DEVILS CLAW MTN
Fork Cr.
River
OPERATOR MTN.
FORWARD
Grizzly Gulch
Taylor Cr.
DUTI
Duti
JACKSON
Leach Cr.
Panorama L.
Kobes Cr.
Augustine Cr.
Brewer Cr.
Trail Cr.
Jackson Cr.
MT. JACKSON
Falconer Cr.
RIVER
GROUNDHOG
MT. McEVOY
GROUNDHOG MTN
GR-73-10(A)

Grounding

1. Check x Sections & interpret'n
2. Check reserve estimates
3. Check Black & Best report
4. Check Strat sequence
5. Check Coal analyses
6. Check Poss. market
7. Case Placer – expl. plans 1973
   – reserves
   – markets

Strategraphy – coal appears to occur in Coal Cliffs 800 – 2000' thick, sequence contains 5+ seams 4+ ft. thick

Coal analyses –

FC	70.8% – 88.9%	
Vol.	5.8% – 9.1%	(by satisfactory)
ash	4.9% – 19.7% @	1.75 SG.
Sulph.	0.43 – 0.97%	

Anthracite use: – U.S. 1970

Residential Comml. htg	4.042 MMST	70.8 / 19.7 = 90.5
Coke fuel	.016	3.8
Elect util	1.897	
Cement		
Iron Sintering	.472	
Others	.464	
	1.357	
	8.248 MM T.	