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Dr. J.N. VanElsberg,

FROM  
DE

P. R. Gunther.

SUBJECT  
OBJET

Organic maturity in the area of the Pacific *et al.* Roland Bay  
YT, L-41 borehole.

SECURITY - CLASSIFICATION - DE SECURITE
OUR FILE - N/REFERENCE
YOUR FILE - V/REFERENCE
DATE November 16, 1976

The above well and any other available, relevant data was requested for the purpose of evaluating the organic maturation of the area sediments. The area in question is specifically the northwest Yukon Territory adjacent to the Canada - U. S. border.

Figure 1 locates the Roland Bay well and 6 outcrop samples. The vitrinite reflectance values of the outcrop samples are listed with the figure, and show a wide range of Ro. For clarification purposes:

- 0.0 - 0.5% Ro = Immature
- 0.5 - 1.2% Ro = Mature
- 1.2 - 3.0% Ro = Overmature

The two groups of Ro values suggested by the outcrop data probably indicate coals of substantially different age, but this is not known specifically at the moment. It would appear there are two main packages of sediments, depending on their degree of metamorphism. The shallower one is just reaching maturity on land, while the deeper one is well into the overmature zone. Offshore, the shallower, younger package of sediments could possibly be more prospective if a greater thickness has accumulated.

The well itself contained no coals at the positions where the samples were selected. Pollen and spore colouration was used to evaluate the sediments as fairly as possible. Table 1 contains this information which shows mature and overmature organic material. The younger, shallower package of sediments mentioned in the previous paragraph would probably equate to the thickness between surface and 2226' or slightly deeper in the well. The kerogen type seen in the sample at 2226' can be considered a fairly rich source. It in fact, appears quite similar, although substantially more thermally altered, to the kerogen seen in the Parsons F-09 borehole, which taps a potential gas field.

In concluding, one could probably extrapolate to the offshore areas and suggest potential gas resources, but from onshore evidence, it does not appear likely that a Prudhoe Bay equivalent lies in wait.

A handwritten signature in cursive script, appearing to read "Paul Gunther". The signature is written in dark ink and is positioned above the typed name.

P. Gunther.

PG/mw

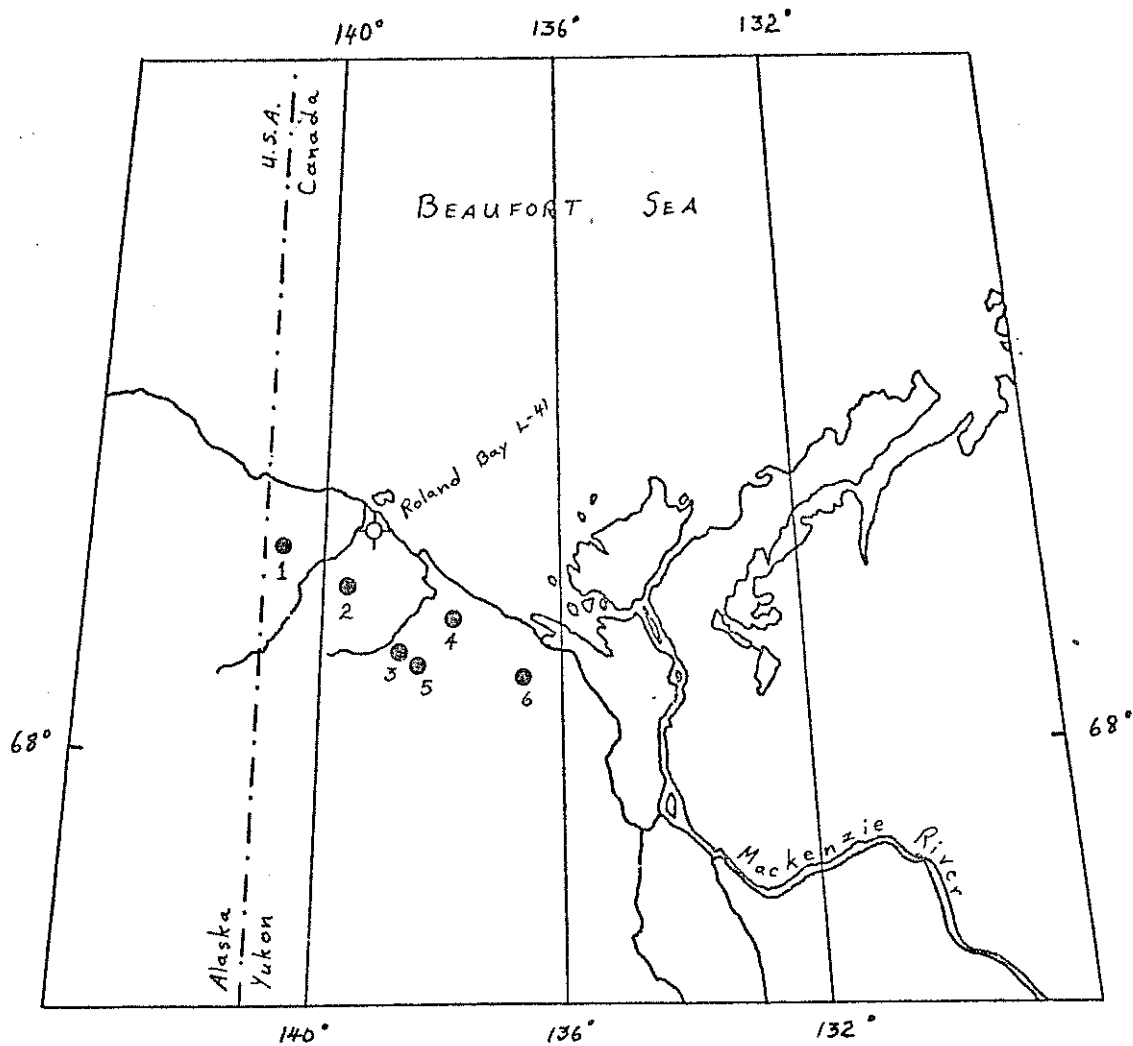


Figure 1. Location map for the Pacific et al Roland Bay L-41 borehole, accompanied by designated outcrops of coal.

Regardless of the age, the reflectance values of the coal samples are as follows;

1	-	2.88%	Ro	(873-NC-4)
2	-	0.62%	Ro	(180-YA-4)
3	-	3.40%	Ro	(70-2-2-YA)
4	-	0.65%	Ro	(921-NC-4)
5	-	2.57%	Ro	(38-NC-D-7)
6	-	0.71%	Ro	(33a-YA-b-2)

Well Name & Footage	Amount & Colour of the various Types of Visual Kerogen														Maturity with Comments	Potential Hydrocarbon Types & Amounts	
	Woody		Herbaceous				Sapropelic				FLUFFY						
	%	Colour	SPORES		COARSE		FINE		LUMPY		FINE		FLUFFY				
			Pres. Abund	Colour	%	Colour	%	Colour	%	Colour	%	Colour	%	Colour			
2210'	40	Blk	1%	D.Br	30	Blk	20	D.Br								Mature	Gas?
2216'	20	Blk	<1%	D.Br	50	Blk	30	Br								Mature	Gas?
2226'	10	Blk	<1%	D.Br	25	D.Br	15	Br	35	D.Br	15	Br				Mature	Gas
3210'	40	Blk	2%	D.Br	30	Blk	24	D.Br								Mature +	Gas?
3232'	60	Blk	1%	D.Br	14	Blk	25	D.Br								Mature +	Gas???
4224'	40	Blk	1%	D.Br	35	Blk	24	D.Br								Mature +	Gas?
5226'	75	Blk	/	/	/	/	25	Blk								Mature-over	/
6210'	50	Blk	/	/	25	Blk	25	Blk								Mature-over	/
7225'	40	Blk	/	/	/	/	60	Blk								Mature-over	Gas???
8450'	50	Blk	/	/	/	/	50	Blk								Mature-over	Gas???

There was no coal, as such, for pellets.  
 T.D. - 9030'  
 Lat. 69° 20' 30" N., Long. 138° 56' 55" W.  
 C-41965 (122-131)

Q-400 Recent  
 400-3310 L.Cret.  
 3310-4290 L.Cret. (Husky)  
 4290-6900 U.Jur. (Husky)  
 6900-9030 L.Jur. (Eur Cr.)

Table 1.