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MULTICHANNEL SEISMIC-REFLECTION DATA COLLECTED IN 1980 IN NORTON SOUND, ALASKA

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In early September 1980, the U.S. Geological Survey (USGS) conducted a reconnaissance geophysical survey south of the Seward Peninsula in Norton Sound (fig. 1). Approximately 725 km of multichannel seismic-reflection data were recorded along twelve tracklines. The profiles were collected on the USGS Research Vessel *Samuel P. Lee*, (USGS survey identifier L9-80-NS).

Seismic energy was provided by a tuned array of five airguns with a total volume of 1745 cubic inches of air at a manifold pressure of approximately 1900 psi. The recording system consisted of a 24-channel, 2400 meter long streamer with a group interval of 100 m, and a GUS (Global Universal Science) model 4200 digital recording instrument. A shooting geometry of 50-m shotpoint intervals with 100-m group intervals resulted in 24-fold data collection. Navigational control for the survey was provided by a Magnavox integrated navigation system using transit satellites fixes, and doppler-sonar speed log augmented by Loran-C (Rho-Rho). A 2-millisecond sampling rate was used in the field; the data were later desampled to 4-milliseconds during the demultiplexing process. Record length of 7 seconds was used. Processing was done at the USGS processing center in Menlo Park, California, in the sequence editing-demultiplexing, velocity analysis, CDP stacking, deconvolution-filtering, and plotting on an electrostatic plotter (Table 1). Plate 1 is a trackline chart showing detailed shotpoint navigation.

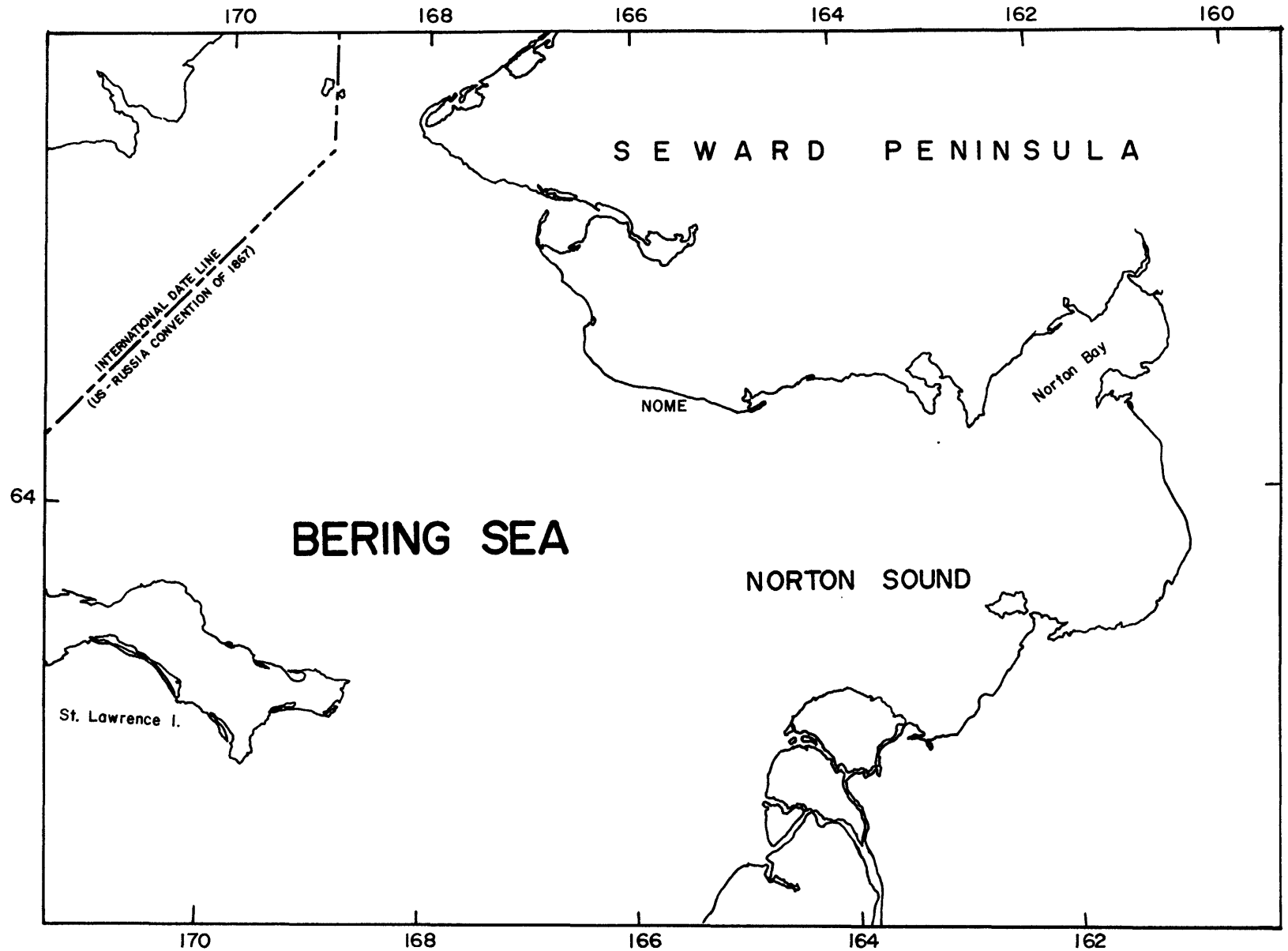
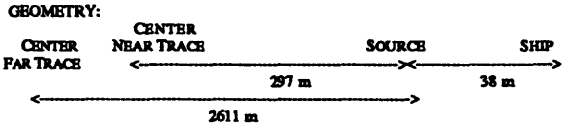


FIGURE 1. AREA OF STUDY. PLATE 1 SHOWS DETAILED LOCATION OF TRACKLINES AND SHOTPOINTS

RECORDING PARAMETERS

DATE RECORDED:	9/80
SOURCE:	BOLT AIR GUNS
Airguns in Array:	5
Net Volume:	1900 cu. in.
Manifold Pressure:	2000 psi
Gun Depth:	8.5 m
Shot Spacing:	50 m
STREAMER:	SEI MULTIDYNE, CHARGE COUPLED
GEOMETRY:	



Group Interval:	100 m
Average Depth:	12 m
Group Length:	100 m
Phones/Group:	60
Depth Controllers:	SEI Variable Wing Birds
RECORDING:	GUS HDDR 4200, Binary Gain
Sample Interval:	2 ms
Record Length:	10 s
GUS Recording Filter:	5-110 Hz
Number of Channels:	24
NAVIGATION:	Magnavox Integrated System
Shot On:	Distance
Primary Navigation:	Satellite Doppler Sonar
Direction Recorded:	NW

PROCESSING SEQUENCE

DATE PROCESSED:	8/86
1. DEMULTIPLEX:	
Desample:	4 ms
Gain Recovery:	
Reformat:	Phoenix I
2. TRACE SHOT EDIT:	
3. STATIC CORRECTIONS:	
Recording Statics:	156 ms
Datum:	Sea Level
4. CDP SORT:	
5. VELOCITY ANALYSIS:	
Window Length:	100 ms
Window Interval:	4 ms
Band Pass Filter:	3-6-40-50 Hz
Velocity Range:	1400-4000 ms
6. NMO CORRECTION:	
7. 24-FOLD TAPER STACK:	Weighted
8. BANDPASS FILTER:	Cosine
Filter Points:	101
Time Window:	0.0 - 8.0 s
Frequency:	4-8-35-45 Hz
9. PREDICTIVE DECONVOLUTION:	
Design Window:	2000 ms
Operator:	200 ms
Gap:	32 ms
10 AGC WINDOW:	500 ms

PLOT PARAMETERS

MODE:	Variable Area/Wiggle Trace
HORIZONTAL SCALE:	20 Traces/in.
VERTICAL SCALE:	1.75 in/s
CLIP:	1.75 Trace Widths
GAIN:	1.0 (Scalar)

Table 1. Recording parameters, processing sequence and plot parameters for stacked multichannel seismic-reflection data collected on USGS cruise L9-80-NS.