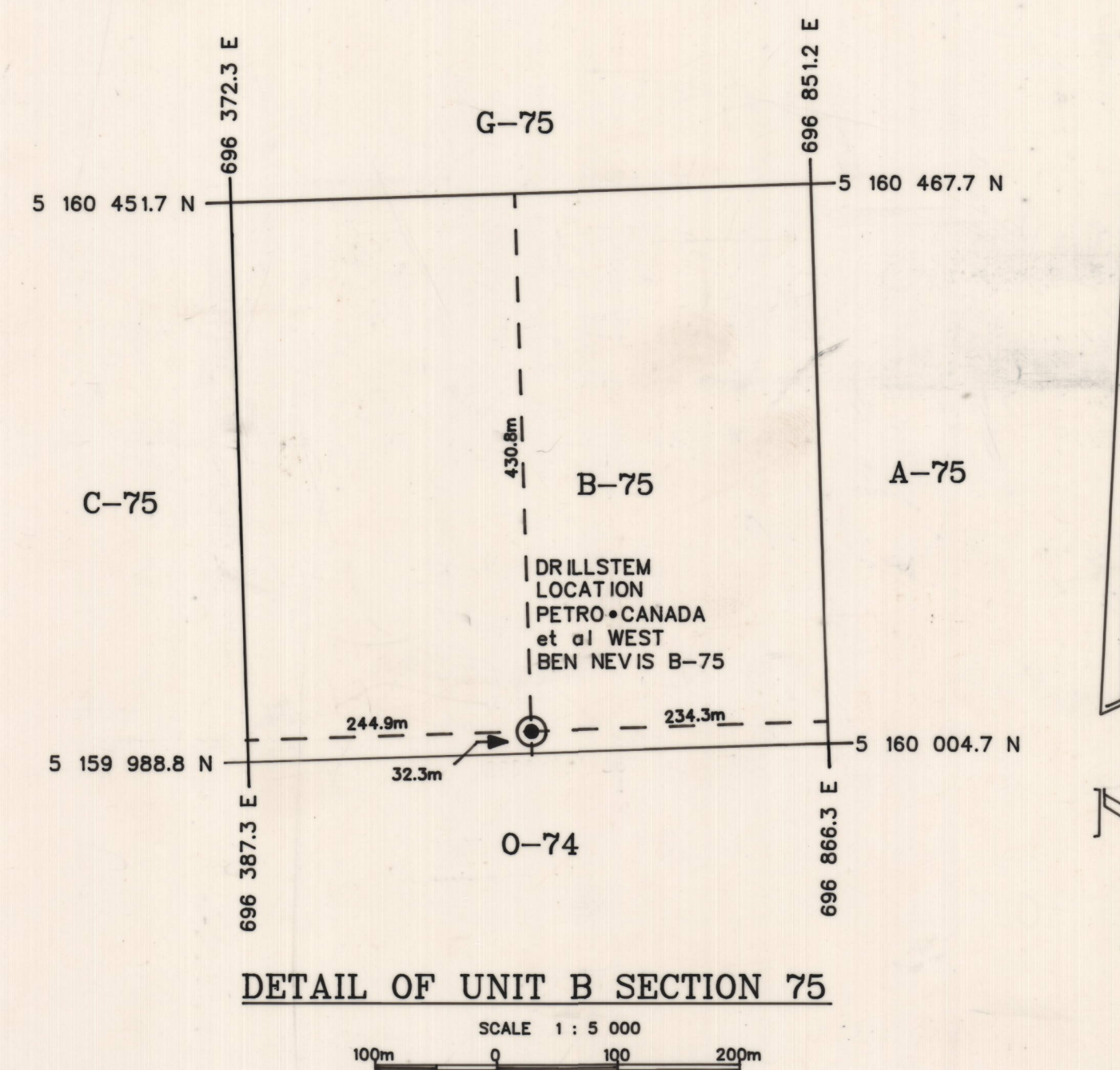
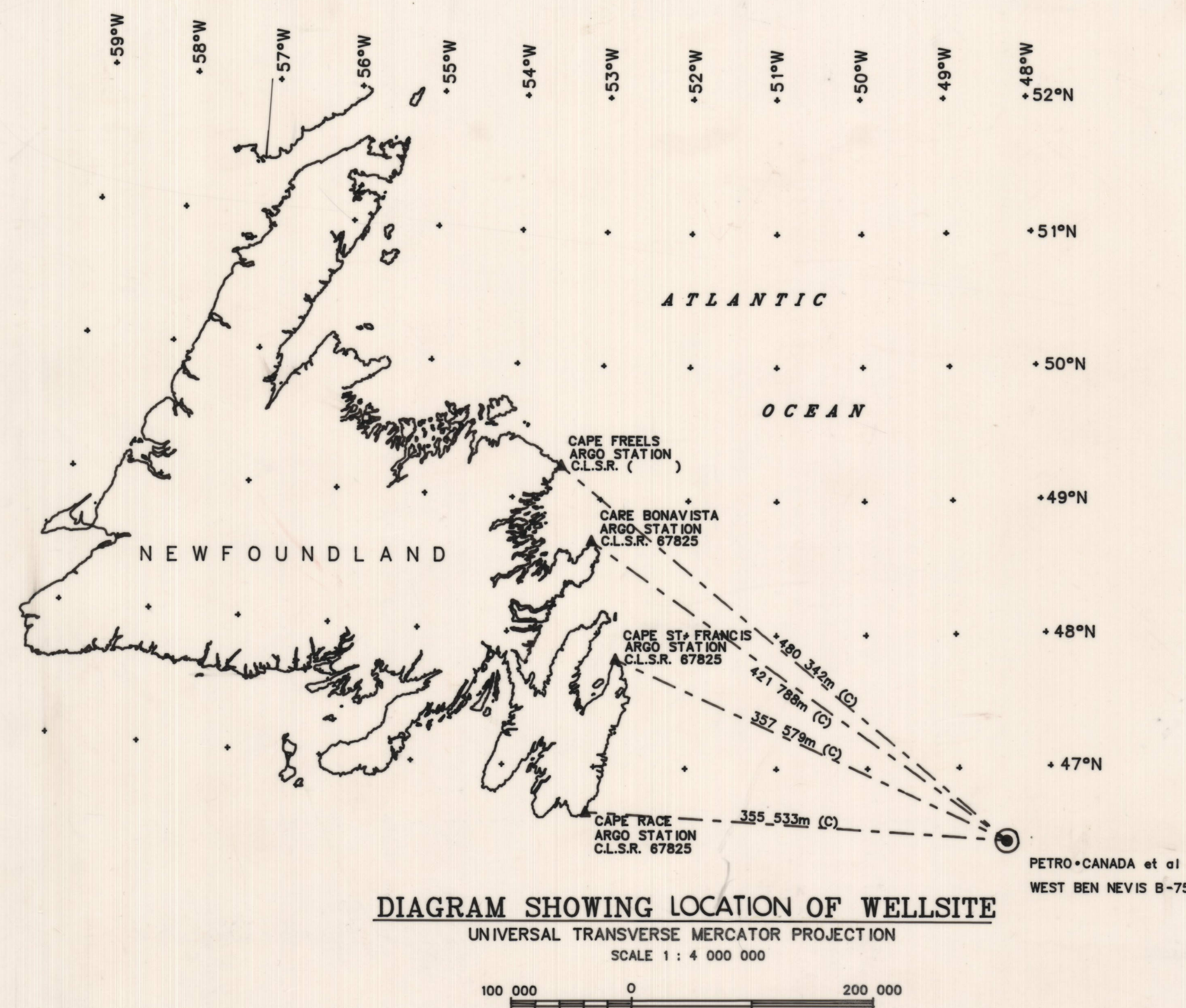




CANADA LANDS SURVEYS RECORDS
6 9 8 8 0
DATE 18 JUNE 1985

PLAN AND FIELD NOTES
OF SURVEY OF OFFSHORE
EXPLORATORY WELL LOCATION

PETRO • CANADA et al
WEST BEN NEVIS B-75

LATITUDE 46° 34' 01.24" N
LONGITUDE 48° 26' 03.50" W
GRID AREA 46° 40' N, 48° 15' W
SURVEYED : JULY 12-25, 1984

BY McELHANNEY OFFSHORE SURVEYS LTD.
FOR PETRO • CANADA

CANADA OIL AND GAS LAND REGULATIONS
EXPLORATION AGREEMENT No. 196

LEGEND
Positioning was done by the survey vessel Balder Challenger using an Argo DM-54 positioning system with shore stations in Newfoundland (see report FB 67818 CLSR). Information about the Argo DM-54 can be obtained from Cubic Corporation, San Diego, California. The post-processing of the Argo DM-54 ranges was carried out using the program GEOPAN, documentation for which is available from GEODETIC SURVEYS OF CANADA. Monuments at Cape Race, Cape St. Francis, and Cape Bonavista are shown on Survey Control Plan (67818 CLSR). Monument at Cape Freels is awaiting final registration. The ties to the Argo stations are shown on Plan of Survey of Offshore Exploratory Well Location Mobil et al Sheridan J-87 (67825 CLSR).

The final position was confirmed by a Magnavox MX-1107RS satellite positioning system (Three dimensional solution with 32 acceptable passes). Documentation for its program can be obtained from Magnavox of Torrance, California. The values used for the local datum shift from broadcast ephemeris datum to NAD27 were $x=-44m$ $y=+151m$ $z=+177m$ and were obtained from the Geodetic Survey of Canada.

Coordinates and distances shown on the Unit Details are UTM plane referred to Zone 22, Central Meridian 51° W, using a false easting of 500 000 m.

(c) indicates calculated distances.

All other distances are ellipsoidal distances (in metres) and are not reduced to the UTM plane unless indicated.

All geographic coordinates are referred to 1927 North American Datum (1927 NAD), Clarke 1866 ellipsoid.

Water depth at the location is approximately 98.0 metres.

I HEREBY CERTIFY THAT THE SURVEY REPRESENTED ON THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

C.L.S. *A. Andrew Powell*
Witness *Robert Clarke*
DATE *October 9, 1984*

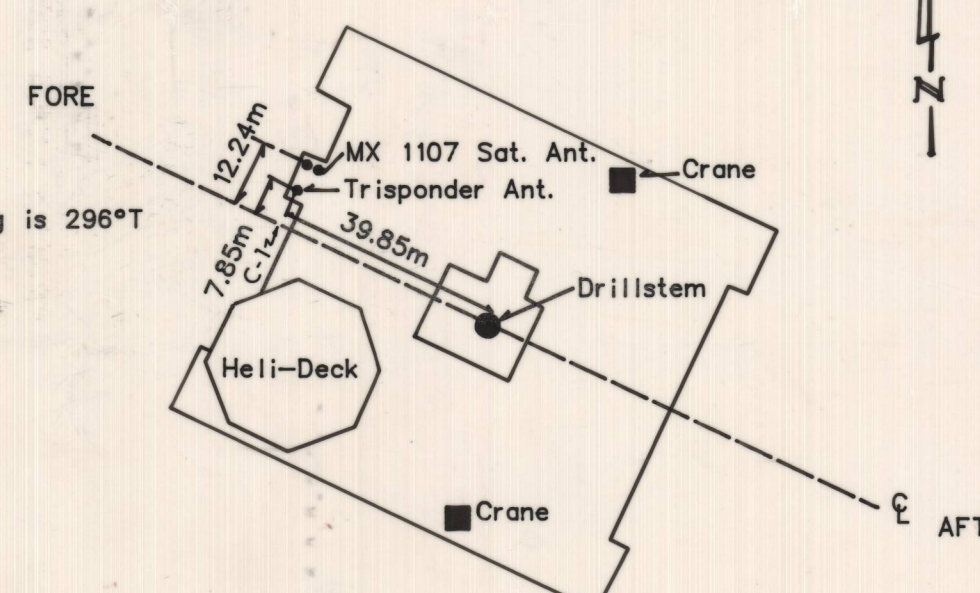
PETRO • CANADA

J.S. Bright
DATE *84-10-03*

OIL AND GAS GRID COORDINATES, NAD 27					
	CORNER	GEOGRAPHIC		UTM (ZONE 22, C.M. 51°W)	
		LATITUDE, N	LONGITUDE, W	NORTHING (m)	EASTING (m)
GRID AREA	NE	46° 40' 0.0"	48° 15' 0.0"	5 171 578.2	710 368.9
	NW	46° 40' 0.0"	48° 30' 0.0"	5 170 940.5	691 245.2
	SE	46° 30' 0.0"	48° 15' 0.0"	5 153 059.8	711 015.0
	SW	46° 30' 0.0"	48° 30' 0.0"	5 152 421.8	691 832.5
UNIT B SECTION 75	NE			5 160 467.7	696 851.2
	NW			5 160 451.7	696 372.3
	SE			5 160 004.7	696 866.3
	SW			5 159 988.8	696 387.3

FINAL WELL SITE COORDINATES, NAD 27				
	GEOGRAPHIC		UTM ZONE 22, C.M. 51°W	
	LATITUDE, N	LONGITUDE, W	NORTHING (m)	EASTING (m)
TRISPOUNDER ANTENNA	46° 34' 02.03"	48° 26' 05.02"	5 160 052.6	696 597.9
TRAVERSE POINT C-1	46° 34' 01.80"	48° 26' 05.18"	5 160 045.3	696 594.7
BOW DRILL 1 DRILL STEM AS DETERMINED BY ARGO AND TRISPOUNDER RANGES	46° 34' 01.24"	48° 26' 03.50"	5 160 029.2	696 631.1

Note:
Final Rig Heading is 296°T



TRISPOUNDER & SATELLITE ANTENNA OFFSETS DRILLSTEM ON BOW DRILL 1

NOT TO SCALE
NOTE : ALL OFFSETS WERE CHECK CHAINED

CONFIRMATION SURVEY SUMMARY OF DOPPLER SATELLITE POINT SURVEY			
	PUBLISHED DATUM SHIFTS ②	ANTENNA POSITION BOW DRILL 1 OBSERVED GEOCENTRIC COORDINATES ① (broadcast ephemeris datum)	ANTENNA POSITION BOW DRILL 1 DERIVED 1927 NAD COORDINATES (Geocentric minus Datum shift)
cartesian coordinates { x y z Latitude Longitude Ht. above sea level H Geoid ht.(GEM 10B) ② N Ht. above ellipsoid h Number of accepted passes	-44.0 +151.0 +177	2 914 550.0 -3 286 635.9 4 608 846.8 46° 34' 02.10" N 48° 26' 04.72" W 24.7 45.1 69.8	2 914 594.0 -3 286 786.9 4 608 669.8 46° 34' 02.10" N 48° 26' 04.72" W 24.7 45.1 69.8
① Coordinates are on the geocentric World Geodetic System (WGS 72) as provided by the satellite's broadcast ephemeris.			
② GEM 10B is the Geoid Earth Model of the geoid for which the given heights are computed relative to an eccentric 1927 NAD ellipsoid. The eccentricity used was the published datum shift at station SATANT $x_0 = -44$, $y_0 = +151$, $z_0 = +177$ (in Surveying Offshore Canada Lands for Mineral Resource Development, Second Edition, 1975).			
DRILLSTEM POSITION BY SATELLITE 3-D POSITIONING (CONFIRMATION)	46° 34' 01.18" N	48° 26' 03.29" W	5 160 027.5 N 696 635.6 E

PRIMARY SURVEY ARGO SHORE STATION COORDINATES, NAD 27			
STATION	GEOGRAPHICS	UTM ZONE 22 C.M. 51° W	ELLIPSOIDAL DISTANCE TO DRILLSTEM (COMPUTED)
CAPE RACE ARGO STATION C.L.S.R. PLAN 67825	46° 39' 34.353" N 53° 04' 26.883" W	5 169 202.51 N 341 311.02 E	355 533 m
CAPE ST. FRANCIS ARGO STATION C.L.S.R. PLAN 67825	47° 48' 23.049" N 52° 47' 19.563" W	5 296 113.41 N 366 065.44 E	357 579 m
CAPE BONAVISTA ARGO STATION C.L.S.R. PLAN 67825	48° 41' 08.709" N 53° 05' 28.650" W	5 394 444.44 N 346 118.84 E	421 788 m
CAPE FREELS ARGO STATION	49° 15' 02.671" N 53° 28' 20.518" W	5 458 052.87 N 320 076.83 E	480 342 m
ARGO DM - 54 INFORMATION			
RANGE FREQUENCY LANE IDENTIFICATION FREQUENCY PROPAGATION VELOCITY (ASSUMED) LANE WIDTH (COMPUTED)		1 759.0 kHz 1 934.9 kHz 299 650 km/sec 85.176 237 m	
DRILL STEM POSITION BY ARGO RESECTION	46° 34' 01.24" N 48° 26' 03.50" W	5 160 029.2 N	696 631.1 E