G E O L O G E D I T L I S T I N G

SYSTEMS ENGINEERING BY
INTERNATIONAL GEOSYSTEMS CORP.

PAN OCEAN OIL LTD.
JASON PR-76-AG-BA STF DEPOSIT YUKON

FORMAT VERSION : 6802

DRILLHOLE/TRAVERSE :	78-DH030	COLLAR ELEVATION:	1261.76	AZIMUTH(DEG) :	177.00	GEOLOGGED BY :	PCH +
TOTAL DEPTH/LENGTH :	257.56	NORTHING(+ IF S):	7002417.00	VERTICAL ANGLE :	-51.00	DATE (YY/MM/DD):	811031
CORE/HOLE DIAMETER :	AQ	EASTING (+ IF W):	436480.56	CO-ORD SYSTEM :	UTM	PROJECT NUMBER :	J-S1

SEQ. NO OF SURVEY DATA	LENGTH FROM COLLAR TO SURVEY POINT	AZIMUTH (DEG)	VERT. ANGLE (DEG)
1	15.24	166.00	-50.00
2	30.48	166.00	-49.50
3	60.96	169.00	-48.50
4	91.44	168.00	-48.00
5	121.92	166.50	-47.00
6	152.40	170.00	-44.17
7	192.88	172.00	-42.75
8	213.36	169.00	-41.17
9	257.56	170.00	-40.00

R HED ORIGINALLY LOGGED BY DR K.L.LU - J.D ROWE IN JUNE 1978

R HED 78-DH030 SOUTH ZONE DISCOVERY HOLE!

R HED

R HED TARGET: THE TARGET WAS SELECTED ON THE BASIS OF GEOLOGICAL AND

R HED GEOCHEMICAL INTERPRETATION. EVIDENCE OF MULTIPLE

R HED SULPHIDE DEPOSITIONAL EVENTS WAS OBSERVED IN 77-DH020

R HED GALENA FRG'S WERE NOTED IN SLUMP BRECCIAS. ANOMALOUS BA/

R HED PB GEOCHEM VALUES FROM BECKER OVERBURDEN PROFILES ALSO

R HED INDICATED A SECOND SOURCE OTHER THAN THE MAIN ZONE

R HED HORIZON. THESE RESULTS INFLUENCED THE PLANNING OF THE

R HED 1978 EXPLORATORY DRILLING PROGRAM, SUCCESSFULLY PROVING

R HED THE EXISTENCE OF A NEW ZONE(COMMUNICATIONS WITH DR.K.LU)

R HED RESULTS: THE MINERALIZED ZONE WAS ENCOUNTERED FROM 183.93 M TO
R HED 186.05M

R HED TRUE THICKNESS: 1.8M

R HED WEIGHTED AVERAGES: 3.75% PB

R HED 21.26% ZN

R HED 1.70 OZ/T AG

R HED AVERAGE CORE RECOVERY- 94.6%

R HED

R HED MINERALIZATION:

R HED

R HED THE ORE ZONE CONSISTS OF MASSIVE SPHALERITE, PYRITE + GALENA

R HED WITH RICHEST CONCENTRATIONS IN THE UPPER PART OF THE ZONE. THE

R HED LOWER PART OF THE ZONE IS MORE LAMINATED WITH A HIGHER CHERT,

R HED ARGILLITE CONTENT. THE ENTIRE ZONE IS CHARACTERIZED BY SOFT

R HED SEDIMENT DEFORMATION FEATURES

R HED

R HED GEOLOGICAL CORRELATIONS:

R HED

R HED A DEBRIS FLOW MEGASEQUENCE (DF) HAS BEEN IDENTIFIED FROM 57.25

R HED TO 132.36M THESE MASS FAILURE DEPOSITS APPEAR TO BE THE RESULT

R HED OF EPISODIC SEISMIC SHOCKS REACTIVATING THE SCARP MARGIN, IN

R HED CONTRAST TO THE QUIESCENT SULFIDE POOLING ENVIRONMENT IN PLACE

R HED BEFORE DISTURBANCE

R HED

R HED THE FOLLOWING CORRELATIONS IN FOOTWALL ALTERATION STRATIGRAPHY

R HED BETWEEN DDH 30 & 41 ARE OVSERVED

R HED

R HED — DDH 30 — DDH 41

R HED — 195.90-199.35M — 123.30-126.40M

R HED — 199.35-203.50M — 118.87-123.30M

R HED

R HED — 203.50-224.90M — 82.30-118.87M

K E Y	F L G	- I N T E R V A L - (UNITS = . DEC.PLACE) (MT=METRIC FT=FOOTMIC) FROM - TO - INT (.)	CORE RECOV- ERY	T- % B M O I	ROCK	TYPI- FYING IM 1	IM 2	GAL MIN MAT	TEX- TURES TX 1	TX 2	GRAIN CHARACS F	C	%	M	ARG	PGI /RI	T	ID	STRUCTUR-1 STK	DIP	ALTERATION MINS H A	H A	H A	H A	H A	ANY MIN	ORE-TYPE MINS H A	H A	H A	ANY MIN	SUMMARY ALT -	ORE -
																	1		AZM	RT	QZ	FL	CY	CA	BA	XX	PY	CP	GL	YY	A	1	A	2
K E Y	F L G		ROCK DUAL DESIG	FM AGE	RT EB= 3 VIN	LC= 3 COL		QM2	TX 3	TX 4	S 0 R	C	0	0 / C	CHT		T 2	ID	STK STRUCTUR-2	DIP	MG H A	MU H A	CL H A	SD H A	QS H A	HA H A	PR H A	MT H A	SL H A	HA H A	1		1	2

R SVY 0.00 0.00 ALL SPERRY SUN SURVEY DATA.

/ OVB 0.00 16.50 16.50 OVER — P
L

/ 16.50 24.38 7.88 BRHT — NSB P
L — SA — C M01

/ FRG 20.50 25.40 2.90 X ARSI SM2 — R 1 LM, 4 BD
L

/ 24.38 28.35 3.97 BRHM — MQ9 P
L — SA — 2 — LN=

/ 28.35 39.60 11.25 ARSI SI1 LM — P 1 LM
L

/ 30.00 30.00 0.00 X ARSI SI1 LM — R 1 BD 37

/ 30.40 33.25 2.85 X BRHM — MN9 R — N)
L — C LM+

/ SHR 33.25 33.50 0.25 X ARSI GG1 LM — R 1 LM <. D.
L — SH

/ 34.60 34.60 0.00 X ARSI SI1 LM — R 1 BD U32

/ 37.90 37.90 0.00 X ARSI SI1 LM — R 1 BD 38

/ 39.60 50.90 11.30 BRHM — MQ9 P
L — SA — C LL+

R 39.60 50.90 STRONG CLEAVAGE; HIGHLY SHEARED

/ CON 50.90 57.25 6.35 ARSI SS1 LM — P 1 LM 47 LI D+, D+
L

R 50.90 57.25 LOCAL DISTURBED BEDDING FEATURES

/ 52.60 52.60 0.00 X ARSI SS1 LM — R 1 BD 38 LI D+

/ 54.50 54.90 0.40 X ARSI SS1 LM — R 1 BD 42 LI D+

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G E O L O G                                    JASON PB-ZN-AG-BA STF DEPOSIT YUKON                                          PAGE -  4
                                           DRILLHOLE/TRAVERSE --- 78-DH030 --- (CONTINUED)

K  F   F R O M - T O -  I N T RECOV  RQ % ROCK TP TM QM1 TX TX F C % M ARG   RI 1 ID AZM DIP QZ FL CY CA BA XX PY CP GL YY  A 1 A 2
E -L- ----.-- ----.-- ---.-- ---.-- -- - ---- -- -- --- -- -- - - - - ---- --- - -- --- --- -- -- -- -- -- -- -- -- -- --  - - - -
Y  G                              R Q D  AGE EV RO LC TM QM2 TX TX S C O O CHT       2 ID AZM DIP MG MU CL SD QS HA PR MT SL HA

/       56.40   56.40   0.00           X ARSI      SS1 LM                  R  1 BD      40                LI D+

K UDF   57.25   57.25   0.00
-----------------------------------------------------------------------------------------------------------------------------------
/       57.25   62.75   5.50             BRBT      *S+               OP8   P
L                                                              +     LN2

/       62.75   67.75   5.00             BRBM                        NS9   P
L                                                                      0
-----------------------------------------------------------------------------------------------------------------------------------
/ SHR   64.70   66.00   1.30           X BRBT      GG3               MO8   R
L                                             3A                     LN2

/       67.50   67.75   0.25           X VEIN      GG2                     R              V8
L
-----------------------------------------------------------------------------------------------------------------------------------
/       67.75   70.00   2.25             CGSN PY   SN3 FU BS H L 6 0       P                 C+
L                                                      OR // 6     C   8
R       67.75   70.00              COMPLETE BOUMA SEQUENCE TAE FU CYCLE SHOWING DISORGANIZED
R       67.75   70.00              BEDDING TO COARSE PEBBLES AT BASE TO PLANAR LAM SANDS NEAR TOP

/       70.00   73.65   3.65             CGSN      SN2 MX    H L 8 N       P
-----------------------------------------------------------------------------------------------------------------------------------
L                                                            5     C   9
R       70.00   73.65              BOUMA SEQUENCE TAB CYCLE

/       73.65   76.60   2.95             CGPS      SN6 RU G; H L 3 0       P
L                                                      M:    5     C
R HLT   73.65   76.60              CHARACTERIZED BY WELL ROUNDED ARG CLASTS + WISPY IRREGULAR RIPUP
-----------------------------------------------------------------------------------------------------------------------------------
R       73.65   76.60              CLASTS COARSENING UPWARD NEAR UPPER PART OF CYCLE

/       76.60   86.20   9.60             BRBT      *S1               OS7   P              <+
L                                                              1 1   MO3

/ FRG   79.35   80.10   0.75           X CGXX      SN3       H L 6 M       R
-----------------------------------------------------------------------------------------------------------------------------------
L                                                            6     O

/       86.20   98.20  12.00             BRB4                        PT9   P
L                                             5N             2     C MM)

/ FRG   90.70   92.20   1.50           X ARSI                              R
-----------------------------------------------------------------------------------------------------------------------------------
L

/ FRG   94.40   95.50   1.10           X ARSI                              R
L

/       98.20  106.10   7.90             BRBM                        OP9   P                 L*
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L                                                            2       LN=

/      106.10  110.20   4.10             BRPM                        OQ6   P
L                                             7N             3     O LN3
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KEY	F -L-	FROM ----.--	TO ----.--	INT ---.--	RECOV ---.--	MD	%	ROCK	TM	TM	QM1	TX	TX	F	C	%	M	ARG	RI	1	ID	AZM	DIP	QZ	FL	CY	CA	BA	XX	PY	CP	GL	YY	A 1	A 2
	G					R	Q	D	AGE	EV	RQ	LC	TM	QM2	TX	TX	S	C	O	O	CHT		2	ID	AZM	DIP	MG	MU	CL	SD	QS	HA	PR	MT	SL	HA		
/		110.00	110.20	0.20				X VEIN				ST						0Q6	R		CN		68	>9													
L									7E						3		O	LN3																			
/		110.20	124.20	14.00				BRHT			*S1							NS7	P															#)		
L									4B								C	MN2													<)				
/		118.65	118.95	0.30				X VEIN			*S1							NS7	R															D)		
L									4B								C	MN2													K3				
/		124.20	126.30	2.10				CGPS			SN3	G:		H	L	6	N		P														D=		
L														6			O														<)				
/	CON	126.30	128.50	2.20				BRBM										PR9	P		BD		35													
L															+			NQ=																	
/		128.50	132.36	3.86				CGCP			SN3			L	M	4	O		P														D+		
L														4			O														B1				
R		128.50	132.36		SAND GRIT MATRIX WITH ABUNDANT SIDERITE MTX FILLING																																
/	CON	132.36	140.95	8.59				ARSI			SN1								P		BD		50												L=		
L									5A												2	LM															
/		140.95	143.13	2.18				BRBM										OP9	P															D(		
L									5A									LN+																		
/		143.13	164.75	21.62				ARSI			SI1	LC							P		2	LM													<)		
L									5A		PY+																					<(				
/		150.00	150.00	0.00				X ARSI			SI1	LC							R		2	BD		U51											<)		
/		154.50	154.50	0.00				X ARSI			SI1	LC							R		2	BD		54											<)		
/		160.00	160.00	0.00				X ARSI			SI1	LC							R		2	BD		54											<)		
/	CON	164.75	179.20	14.45				ARSI	PY		SN2								P			BD		52													
L									5A												2	LM															
/		171.55	172.12	0.57				X BRHT			*S=							NO4	R																	
L													=	=				LM3														<)				
/		173.00	173.20	0.20				X VEIN	PY		SN2								R			BD		52											D.		
L									5A												2	LM										>9			D.		
/		179.20	181.93	2.73				BRHT			*S+							OQ7	P																	
L															+			MN2														<=				
/	FLT	181.50	181.93	0.43				X BRHT			GG3							OQ7	R				V1														
L															+			MN2														<=				
R		181.50	181.93		BADLY BROKEN AT LOWER PART OF INTERVAL																																
K	US1	181.93	181.93	0.00																																

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K  F   F R O M - T O -  T N T RECOV  MO % ROCK TX TM QM1 TX TX F C % M ARG   RI 1 ID AZM DIP QZ FL CY CA BA XX PY CP GL YY   A 1 A 2
E -L- ----.-- ----.-- ---.-- ---.-- -- - ---- -- -- --- -- -- - - - - ---- --- - -- --- --- -- -- -- -- -- -- -- -- -- --   - - - -
Y  G                          R Q D  AGE EV RG LC TM QM2 TX TX S C O O CHT      2 ID AZM DIP MG MU CL SD QS HA PR MT SL HA

/       181.93  185.32   3.39          MSSX         LM SS             P                                       M3   M1
L                                                                                                                  M4
R       181.93  185.32     FINELY LAM CL RICHER IN UPPER PART, THIN LAM'S IN LOWER PART
R       181.93  185.32     TWO 5 CM ARCL BANDS SLIGHTLY CONTORTED

/       185.32  185.81   0.49          LMSX     CH3 LC BN             P                                       L2   L1
L                                                                                                                  L3
R       185.32  185.81     HIGHLY CONTORTED, INTERLAMINATED SL-PY-CL CHERT-PY BANDS

/       185.81  186.05   0.24          BNSX SF  CH7     BN            P                                       L1   L+
L                                                                                                                  L1

K LS1   186.05  186.05   0.00

/       186.05  188.00   1.95          BRBM SF PY               NO9   P           <=                          L+
L                                                               MN+

K FLT   188.00  188.00   0.00

/       188.00  191.80   3.80          ARSI SF  SD=       2 2 - 2     P           <)                          D) B-
L                                                                                       <=

/       191.80  195.90   4.10          BRBM SF                  NPX   P
L                                                               ---                       <+
R       191.80  195.90     CHARACTERIZED BY SILIC. ARGL FRG'S IN CARB MUD MTX

/       193.85  195.00   1.15        4 VEIN SF                  NPX   R           V7                            D(
L                                   4 V                                                  C) V3 <2
R       193.85  195.00     MASSIVE QZ VEIN WITH CROSSCUTTING VEINLETS OF QZ/SD

/ CON   195.90  199.35   3.45          ARGL SF     ST GR              P   SH    63                            D* D* D*
L                                         6A    SD) BR                                  <=                         D*
R       195.90  199.35     HIGHLY FRACTURED - CORRELATES WITH 78-41 INTERVAL 123.30-126.40M

/       199.35  203.50   4.15          SAND SD     //                 P   BD    52                            B* B* B*
L                                         6A                                       <*                              B*
R       199.35  203.50     STRONGLY ALTERED AT BASE-QZ/SD/MU MICRO-VEINS TEXTURES DESTROYED
R       199.35  203.50     CORRELATES WITH 78-41 INTERVAL 118.87-123.30M

/       203.50  224.90  21.40          ARGL SF     ST GR              P           <)                          D* D*
L                                         5A       BR                                   <= <)
R       203.50  224.90     CORRELATES WITH 78-41 INTERVAL 82.30-118.87M
R       203.50  224.90     STRONGLY FRACTURED, LOCALLY BRECCIATED

/       212.00  212.00   0.00        X ARGL SF     ST GR              R 2 BD    67 <)                         D* D*

/       215.00  215.00   0.00        X ARGL SF     ST GR              R 2 BD    58 <)                         D* D*

/       216.00  224.90   8.90        X ARGL SF     ST GR              R           <+                          B* B*
L                                                                                                                  D.
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PAN OCEAN OIL LTD.

GEOLOG

JASON PB-ZN-AG-BA STF DEPOSIT YUKON

DRILLHOLE/TRAVERSE --- 78-DH030 --- (CONTINUED)


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K  F  F R O M - T O -  I N T RECOV  MD % ROCK TM TM QM1 TX TX F C % M ARG   RI 1 ID AZM DIP QZ FL CY CA BA XX PY CP GL YY  A 1 A 2
F -I- ----.-- ----.-- ---.-- ---.-- -- - ---- -- -- --- -- -- - - - - ---- --- - -- --- --- -- -- -- -- -- -- -- -- -- --  - - - -
Y  G                          R Q D  AGE EV RN LC TM QM2 TX TX S C O O CHT       2 ID AZM DIP MG MU CL SD QS HA PR MT SL HA

R      216.00  224.90      MODERATELY FRACTURED-LOCAL CONCENTRATIONS OF DISS PY(10%)+CP(2-3
R      216.00  224.90      %) FROM 221.50-223.00

/      217.60  217.60   0.00          X ARGL SF         ST GR               R  2 BD      59 <)                D* D*

/      221.00  221.00   0.00          X ARGL SF         ST GR               R  2 BD      68 <)                D* D*

/      224.90  228.40   3.50            MISS                                P
R EDT  224.90  228.40      DISCONTINUOUS PGI -- ENTERED AS MISSING (22490-22840)

/      228.40  237.10   8.70            SILT CR SF           2 2 - 2        P                                 D)
L                                            4A PY
R      228.40  237.10      DISTURBED BEDDING

/      231.65  234.40   2.75          X BRAM       *S+               NP9    R                     C*
L                                                                    MN=
R      231.65  234.40      FINE NETWORK OF QZ + SO FT WHITE MINERAL (CLAY-SERICITE?)

/      237.10  240.90   3.80            BRHT SF    S*1               OS7    P
L                                                                2   MO1
R      237.10  240.90      CHAOTIC ASSORTMENT OF CARB SLST & SIF ARGL CLASTS

/      240.90  252.65  11.75            SILT SD SF           2 2 - 2        P    BD      45 <)                D(
L                                               BR                                             <)

/ FLT  246.60  246.70   0.10          X FAUL       GG3                      R               <=
L                                                  *S2

/      252.65  255.10   2.45            BRHT CR SF *S2               OS7    P               <(
L                                                                    MO1
R      252.65  255.10      LARGEST CLASTS CONSIST OF CARB ARGL(STRONGLY SIF)

/ CON  255.10  257.56   2.46            SAND // SF GG=       4 4 - 4        P    SH         <)                D=
L                                                                              4 BD     U30
R      255.10  257.56      A FEW BANDS OF NON-SIF ARGL CLASTS, UP TO 10CM TH WITH INTERLAM
R      255.10  257.56      PY 3 TO 5% RD CLASTS IN SS
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A UMM A LAB A TYP A MTH				SAMPLE SERIAL	% PB B.CLG H-CORE WA	% ZN B.CLG H-CORE WA	% BA B.CLG H-CORE WA	OZ AG B.CLG H-CORE WA	% CU B.CLG H-CORE WA	% FE B.CLG H-CORE WA	OZ AU B.CLG H-CORE WA	% CD B.CLG H-CORE WA	HASH
R ASY	0.00	0.00	B.CLG = BONDAR CLEGG, VANCOUVER; H-CORE = HALF CORE.										
R ASY	0.00	0.00	WA = WET ANALYSIS.										
R ASY	0.00	0.00	-0.1 ASSAY INFORMATION ENTERED AS -0.1										
A 001	181.50	183.93	111	12332	0.30	0.31	-0.1	0.14	-0.1	-0.1	-0.1	-0.1	0.25
A 001	183.93	185.32	125	12333	3.80	26.05	-0.1	1.88	-0.1	-0.1	-0.1	-0.1	31.23
A 001	185.32	185.81	049	12334	4.30	15.20	-0.1	1.69	-0.1	-0.1	-0.1	-0.1	21.19
A 001	185.81	186.05	024	12335	1.29	5.93	-0.1	0.72	-0.1	-0.1	-0.1	-0.1	7.44
A 001	186.05	187.91	165	12336	0.05	0.06	-0.1	0.07	-0.1	-0.1	-0.1	-0.1	-0.31
A MAX	181.50	187.91	474		4.80	26.05	-0.1	1.88	-0.1	-0.1	-0.1	-0.1	32.13

A MIN				0.06	0.06	-0.1	0.07	-0.1	-0.1	-0.1	-0.1	-0.21
A CMP	185.93	186.05	198	3.75	21.26	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	24.41