

## **OIL ANALYSIS REPORT**

### Area (N4417F) [N4417F] DHC-8-402 PCE-FA1004

Left Jet Turbine

BP TURBO OIL 2380 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

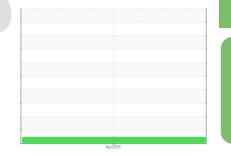
All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

#### Contaminants

The water content is negligible. There is no indication of any contamination in the oil.

#### **Oil Condition**

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



Sample Rating Trend

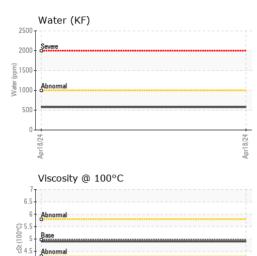


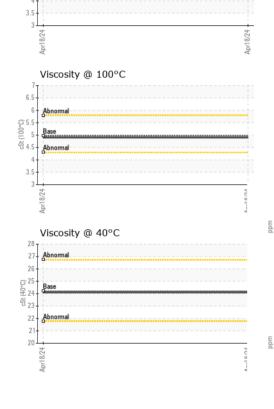
NORMAL

SAMPLE INFORM	<i>I</i> ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0909611		
Sample Date		Client Info		18 Apr 2024		
TSN	hrs	Client Info		0		
TSO	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>8	0		
Chromium	ppm	ASTM D5185(m)	>2	0		
Nickel	ppm	ASTM D5185(m)	>2	0		
Titanium	ppm	ASTM D5185(m)	>2	0		
Silver	ppm	ASTM D5185(m)	>2	0		
Aluminum	ppm	ASTM D5185(m)	>2	0		
Lead	ppm	ASTM D5185(m)	>3	0		
Copper	ppm	ASTM D5185(m)	>3	0		
Tin	ppm	ASTM D5185(m)	>2	0		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	<1		
Barium	ppm	ASTM D5185(m)	0	0		
Molybdenum	ppm	ASTM D5185(m)	0	0		
Manganese	ppm	ASTM D5185(m)		0		
Magnesium	ppm	ASTM D5185(m)	0	0		
Calcium	ppm	ASTM D5185(m)	0	0		
Phosphorus	ppm	ASTM D5185(m)	2500	2686		
Zinc	ppm	ASTM D5185(m)	0	1		
Sulfur	ppm	ASTM D5185(m)	0	4		
Lithium	ppm	ASTM D5185(m)		<1		
CONTAMINANTS	;	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>8	0		
Sodium	ppm	ASTM D5185(m)		0		
Potassium	ppm	ASTM D5185(m)	>20	<1		
Water	%	ASTM D6304*	>0.1	0.057		
ppm Water	ppm	ASTM D6304*	>1000	577		
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.43	0.37		



# **OIL ANALYSIS REPORT**





VISUAL		method				history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	VLITE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
	scalar	Visual*	NORML	NORML		
Odor	scalar		NORML	NORML		
Emulsified Water		Visual*				
Free Water	scalar	Visual*		NEG		
		mothod	limit/baco		history1	history2
-		( )				
		. ,				
Viscosity Index (VI)	Scale	ASTM D2270*	134	129		
SAMPLE IMAGES	S .	method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image
GRAPHS						
<sup>10</sup>						
chromium						
a 4						
2						
			24			
pr18/			pr18/			
	le.		4			
	5					
8 - copper						
E 6						
2-						
0						
r18/2 <sup>4</sup>			r18/2 <sup>,</sup>			
			Ap			
			-	Acid Number		
Abnormal			1 <sup>B</sup> /HO.5	Base		
26			≥ U.4	~T		
Base			Ē03	0 -		
26 Base ± 24 Abacmal			ଁ 0.3 କ୍ସି 0.2	0		
224 - 0 <sup>3</sup> 22 - <mark>Abnormal</mark>			ی 0.3 مو 0.2 N 0.1	0		
20			(b) H0 0.5 H0 0.4 W DM bulk M DM bulk M DM bulk M DM			
22			8.0 (md) 2.0 ymper (md) 400 ymper (md) 900 ymper (m	Apr18/24		
20 + +		/ Line Burlin	Apr18/24	Apr18/24	SM	
20	5 Appleby Recei		gton, ON L7	Apr18/24		
20 + 5781104 : WearCheck - C8-1175		ived :19 ed :24	gton, ON L7 Apr 2024 Apr 2024	Pari 8/24	775 COL	JNTY ROAD
20 + 528 + 64 20 + 528 + 528 + 64 20 + 528 + 5	Recei Teste	ived :19 ed :24	gton, ON L7 Apr 2024	Pari 8/24	775 COL B	ART AVIATIC JNTY ROAD BRIGHTON, C CA K0K 11 ct: Mark Rina
	Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT Visc @ 40°C Visc @ 100°C Viscosity Index (VI) SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys 10 GRAPHS Ferrous Alloys 10 Color Mon-ferrous Metal	White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar FLUID PROPERTIES Visc @ 40°C cSt Visc @ 100°C cSt Visc @ 100°C cSt Viscosity Index (VI) Scale SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys 	White Metal scalar Visual* Yellow Metal scalar Visual* Precipitate scalar Visual* Silt scalar Visual* Debris scalar Visual* Sand/Dirt scalar Visual* Appearance scalar Visual* Odor scalar Visual* Emulsified Water scalar Visual* Free Water scalar Visual* Free Water scalar Visual* FLUID PROPERTIES method Visc @ 40°C cSt ASTM D7279(m) Visc @ 100°C cSt ASTM D7279(m) Viscosity Index (VI) Scale ASTM D7279(m) Viscosity Index (VI) Scale ASTM D7279(m) Color Bottom GRAPHS Ferrous Alloys Von-ferrous Metals Viscosity @ 40°C Viscosity @ 40°C 2 <sup>8</sup> Abnormal	White Metal scalar Visual* NONE Yellow Metal scalar Visual* NONE Precipitate scalar Visual* NONE Sitt scalar Visual* NONE Sand/Dirt scalar Visual* NONE Sand/Dirt scalar Visual* NONE Appearance scalar Visual* NORML Odor scalar Visual* NORML Emulsified Water scalar Visual* NORML Emulsified Water scalar Visual* O.1 Free Water Scalar Visual* O.1 Scale ASTM D2270* 134 SAMPLE IMAGES method Imit/base Color GRAPHS Ferrous Alloys On -ferrous Metals Out Scale Metal Out Scale Out Scalar Visual* Out Scale Out Scalar Visual* Out Scalar Visu	White Metal scalar Visual* NONE NONE Yellow Metal scalar Visual* NONE NONE Precipitate scalar Visual* NONE NONE Sitt scalar Visual* NONE NONE Debris scalar Visual* NONE NONE Appearance scalar Visual* NONE NORML Odor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Emulsified Water scalar Visual* NORML NORML Visce 40°C cSt ASTM D7279(m) 24.2 24.1 Visce 40°C cSt ASTM D7279(m) 4.97 4.9 Viscosity Index (VI) Scale ASTM D7270 134 129 SAMPLE IMAGES method imit/base current Color Bottom Mon-ferrous Metals Viscosity @ 40°C ACT ASTM D7279(m) 4.97 4.9 Viscosity @ 40°C ACT ASTM D7279(m) 4.97 4.9 Viscosity @ 40°C ACT ASTM D7279(m) 4.97 4.9 Viscosity Index (VI) Scale ASTM D7279(m) 4.97 4.9 Viscosity @ 40°C ACT ASTM D7279(m) 4.97 4.9 VISCOSITY ASTM D7279(m) 4.97 4.9 VISCOSITY ASTM D7279(m) 4.97 4.9 VISC	White Metal       scalar       Visual*       NONE          Yellow Metal       scalar       Visual*       NONE       NONE          Precipitate       scalar       Visual*       NONE       NONE          Sitt       scalar       Visual*       NONE       NONE          Debris       scalar       Visual*       NONE       NONE          Appearance       scalar       Visual*       NORML       NORML          Gdor       scalar       Visual*       NORML       NORML          Gdor       scalar       Visual*       NORML       NORML          Gdor       scalar       Visual*       NORML       NORML          Emulsified Water       scalar       Visual*       NORML       NORML          Emulsified Water       scalar       Visual*       NORML       NORML          Visc @ 40°C       cSt       ASTM D279(m)       24.2       24.1          Visc @ 40°C       cSt       ASTM D279(m)       4.97       4.9          SAMPLE IMAGES       method       imit/base       current

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

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Report Id: SMABRI [WCAMIS] 02630178 (Generated: 04/24/2024 12:08:02) Rev: 1

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Contact/Location: Mark Rinaldi - SMABRI Page 2 of 4

## FERROGRAPHY REPORT

## Area (N4417F) [N4417F] DHC-8-402 PCE-FA1004

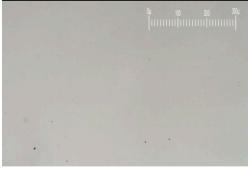
Left Jet Turbine Fluid BP TURBO OIL 2380 (--- GAL)

### Magn: 200x Illum: BC





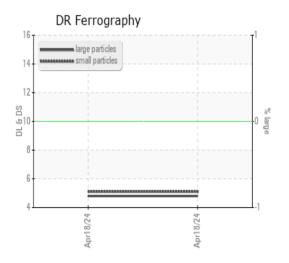
Magn: 100x Illum: RW



DR-FERROGRAP	PHY	method				history2
Large Particles		DR-Ferr*		4.8		
Small Particles		DR-Ferr*		5.1		
<b>Total Particles</b>		DR-Ferr*	>	9.9		
Large Particles Percentage	%	DR-Ferr*		0		
Severity Index		DR-Ferr*		1		
FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		1		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1		

#### WEA

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.



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