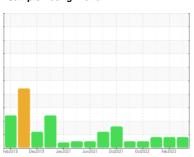


## **OIL ANALYSIS REPORT**

**Sample Rating Trend** 







BFP-1B

Component **Inboard Bearing** 

**ROYAL PURPLE SYNFILM GT 68 (--- GAL)** 

### DIAGNOSIS

#### Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Moderate concentration of visible dirt/debris present in the oil. The water content is negligible.

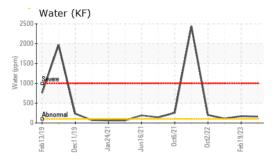
#### ▲ Fluid Condition

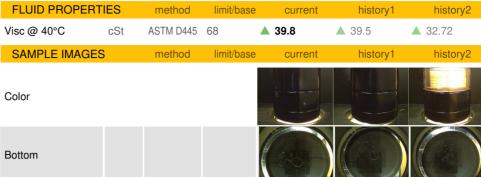
The oil viscosity is lower than normal. Confirm oil type. The AN level is acceptable for this fluid.

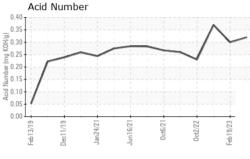
Sample Date	Feb 2019 Dec2019 Jan 2021 Jun 2021 Oct2022 Feb 2023							
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age         hrs         Client Info         0         0         0           Oil Age         hrs         Client Info         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Client Info         N/A         ANA         ABNORMAL         <	Sample Number		Client Info		RP0031550	RP0031559	RP0031528	
Oil Age         hrs         Client Info         N/A	Sample Date		Client Info		11 Jun 2023	19 Feb 2023	17 Jan 2023	
Oil Changed   Client Info   N/A   ABNORMAL   ABNORMA	Machine Age	hrs	Client Info		0	0	0	
Mathematical Status	Oil Age	hrs	Client Info		0	0	0	
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         <1	Oil Changed		Client Info		N/A	N/A	N/A	
Iron	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL	
Chromium         ppm         ASTM D5185m         >20         0         0         0           Nickel         ppm         ASTM D5185m         >20         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         0         0         0         0           Aluminum         ppm         ASTM D5185m         >20         -1         -1         0           Lead         ppm         ASTM D5185m         >20         12         14         10           Copper         ppm         ASTM D5185m         >20         -1         1         3         10           Tin         ppm         ASTM D5185m         >20         -1         1         3         10         10           Vanadium         ppm         ASTM D5185m         0         0         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0<	WEAR METALS		method	limit/base	current	history1	history2	
Nickel	Iron	ppm	ASTM D5185m	>20	<1	<1	2	
Titanium         ppm         ASTM D5185m         0         0         0           Silver         ppm         ASTM D5185m         0         0         0           Aluminum         ppm         ASTM D5185m         >20         <1	Chromium	ppm	ASTM D5185m	>20	0	0	0	
Silver	Nickel	ppm	ASTM D5185m	>20	0	0	0	
Silver         ppm         ASTM D5185m         ≥20         <1         <1         0           Aluminum         ppm         ASTM D5185m         >20         <1	Titanium	ppm	ASTM D5185m		0	0	0	
Aluminum	Silver		ASTM D5185m		0	0	0	
Lead         ppm         ASTM D5185m         >20         12         14         10           Copper         ppm         ASTM D5185m         >20         21         13         10           Tin         ppm         ASTM D5185m         >20         <1	Aluminum		ASTM D5185m	>20	<1	<1	0	
Copper         ppm         ASTM D5185m         >20         21         13         10           Tin         ppm         ASTM D5185m         >20         <1				>20	12	14	10	
Tin								
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         90         60         53         71           Calcium         ppm         ASTM D5185m         0         2         5           Phosphorus         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         0         10         17           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         <1         2         2           Sodium         ppm <td>• •</td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td>	• •							
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         <1	Vanadium		ASTM D5185m			0		
Boron					-			
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1         <1         <1           Magnesium         ppm         ASTM D5185m         0         2         5           Calcium         ppm         ASTM D5185m         0         10         17           Phosphorus         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         3         2         2         2           Potassium         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1           Water         %         ASTM D5185m         >20	ADDITIVES		method	limit/base	current	history1	history2	
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1         <1         <1           Magnesium         ppm         ASTM D5185m         0         2         5           Calcium         ppm         ASTM D5185m         0         10         17           Phosphorus         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         3         2         2         2           Potassium         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1           Water         %         ASTM D5185m         >20	Boron	mag	ASTM D5185m		0	0	<1	
Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1         <1         <1           Magnesium         ppm         ASTM D5185m         90         60         53         71           Calcium         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         >20         0         <1         1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1         2           Potassium         ppm         ASTM D5185m         >20         0         0         <1         1 </td <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td>								
Manganese         ppm         ASTM D5185m         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21         <21					-			
Magnesium         ppm         ASTM D5185m         90         60         53         71           Calcium         ppm         ASTM D5185m         0         2         5           Phosphorus         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1         0         1           Water         %         ASTM D5185m         >20         0         0         <1         0         1           Water         %         ASTM D5185m         >20         0         0         <1         0         1           Water         %         ASTM D51	•				-			
Calcium         ppm         ASTM D5185m         0         2         5           Phosphorus         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1	-			90				
Phosphorus         ppm         ASTM D5185m         0         10         17           Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         3         2         2         2           Potassium         ppm         ASTM D5185m         >20         0         0         <1         2           Water         %         ASTM D6304         >2         0.016         0.017         0.011         0.011           ppm Water         ppm         ASTM D6304         >2         0.016         0.017         0.011           ppm Water         ppm         ASTM D6304         160.6         172.5         111.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.32         0.30         0.37           VISUAL         method         limit/base         current	•							
Zinc         ppm         ASTM D5185m         4         10         7           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1								
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1								
Silicon         ppm         ASTM D5185m         >15         <1         <1         2           Sodium         ppm         ASTM D5185m         >20         0         0         <1           Potassium         ppm         ASTM D6304         >20         0         0         <1           Water         %         ASTM D6304         >2         0.016         0.017         0.011           ppm Water         ppm         ASTM D6304         160.6         172.5         111.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.32         0.30         0.37           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE <td></td> <td></td> <td></td> <td>lii+/ </td> <th>-</th> <td></td> <td></td>				lii+/	-			
Sodium         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         >20         0         0         <1           Water         %         ASTM D6304         >2         0.016         0.017         0.011           ppm Water         ppm         ASTM D6304         160.6         172.5         111.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.32         0.30         0.37           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         N								
Potassium         ppm         ASTM D5185m         >20         0         0         <1           Water         %         ASTM D6304         >2         0.016         0.017         0.011           ppm Water         ppm         ASTM D6304         160.6         172.5         111.0           FLUID DEGRADATION method limit/base current history1         history2           Acid Number (AN)         mg KOH/g ASTM D8045         0.32         0.30         0.37           VISUAL         method limit/base current history1         history2           White Metal         scalar *Visual NONE LIGHT NONE NONE NONE NONE NONE NONE NONE NON				>15				
Water		ppm			-		_	
ppm Water ppm ASTM D6304 160.6 172.5 111.0  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.32 0.30 0.37  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Debris scalar *Visual NONE NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Amoder Amoder None NONE  Amoder None None  Amoder None None  Moder None  M								
FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.32 0.30 0.37  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Debris scalar *Visual NONE NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML  Emulsified Water scalar *Visual >2 NEG NEG NEG		%		>2				
Acid Number (AN) mg KOH/g ASTM D8045 0.32 0.30 0.37  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE LIGHT NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >2 NEG NEG NEG	ppm Water	ppm	ASTM D6304		160.6	172.5	111.0	
VISUAL       method       limit/base       current       history1       history2         White Metal       scalar       *Visual       NONE       LIGHT       NONE       NONE         Yellow Metal       scalar       *Visual       NONE       NONE       NONE       NONE         Precipitate       scalar       *Visual       NONE       NONE       NONE       NONE         Silt       scalar       *Visual       NONE       NONE       NONE       NONE         Debris       scalar       *Visual       NONE       MODER       MODER       MODER         Sand/Dirt       scalar       *Visual       NONE       NONE       NONE       NONE         Appearance       scalar       *Visual       NORML       NORML       NORML       NORML       NORML         Odor       scalar       *Visual       >2       NEG       NEG       NEG	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
White Metal scalar *Visual NONE LIGHT NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >2 NEG NEG NEG	Acid Number (AN)	mg KOH/g	ASTM D8045		0.32	0.30	0.37	
Yellow Metal       scalar       *Visual       NONE       NONE       NONE       NONE       NONE         Precipitate       scalar       *Visual       NONE       MODER       MODER       MODER       MODER       MODER       MODER       NONE       NONE       NONE       NONE       NONE       NONE       NONE       NONE       NONE       NORML       NORML <th>VISUAL</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	VISUAL		method	limit/base	current	history1	history2	
Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE  Debris scalar *Visual NONE MODER MODER MODER  Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML  Emulsified Water scalar *Visual >2 NEG NEG NEG	White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE	
Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     MODER     MODER     MODER       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Emulsified Water     scalar     *Visual     >2     NEG     NEG     NEG	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Debris     scalar     *Visual     NONE     MODER     MODER     MODER       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML       Emulsified Water     scalar     *Visual     >2     NEG     NEG     NEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>2NEGNEGNEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>2NEGNEGNEG	Debris	scalar	*Visual	NONE	▲ MODER	▲ MODER	▲ MODER	
Odor scalar *Visual NORML NORML NORML NORML NORML  Emulsified Water scalar *Visual >2 NEG NEG NEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
Emulsified Water scalar *Visual >2 NEG NEG NEG	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Emulsified Water scalar *Visual >2 NEG NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
	Free Water	scalar	*Visual					

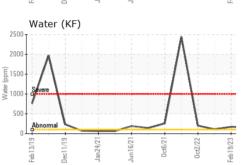


## **OIL ANALYSIS REPORT**

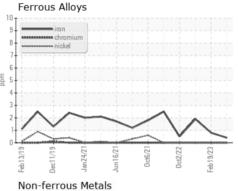


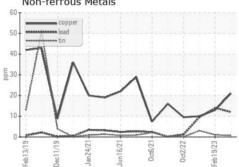


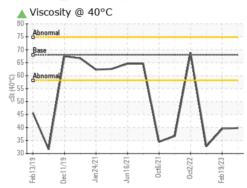


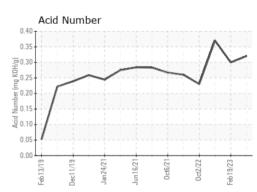


# **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : RP0031550 : 05871008

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: 10510792

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Recieved : 12 Jun 2023 Diagnosed Diagnostician : Don Baldridge

: 14 Jun 2023

**ENGIE-MATEP** 474 BROOKLINE AVE BOSTON, MA

US 02215 Contact: ROBERT ST SAUVEUR

robert.stsauveur@engie.com

T: (401)651-9381

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: ROBERT ST SAUVEUR - ENGBOS