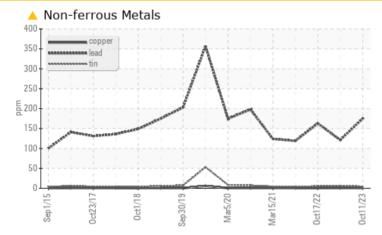
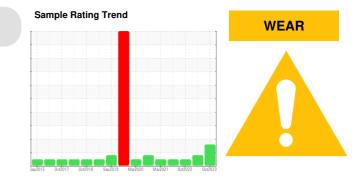


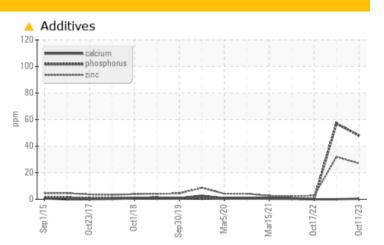
FPD G THBR 02 Component

Bearing Fluid ESSO TERESSO ISO 68 (5 LTR)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	ATTENTION	NORMAL		
Lead	ppm	ASTM D5185(m)	>161	🔺 175	121	163		
Phosphorus	ppm	ASTM D5185(m)	0.7	<u> </u>	5 7	0		
Zinc	ppm	ASTM D5185(m)	0	<u> </u>	A 32	3		

Customer Id: NEWSTJ Sample No.: WC0328082 Lab Number: 02592414 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Kevin Marson +1 (289)291-4644 x4644 Kevin.Marson@wearcheck.com

To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 <u>gloria.gonzalez@wearcheck.com</u>

RECOMMENDED A	CTIONS			
Action	Status	Date	Done By	Description
Change Fluid			?	We recommend that you drain the oil from the component if this has not already been done.
Resample			?	We recommend an early resample to monitor this condition.
Check Fluid Source			?	Confirm the source of the lubricant being utilized for top-up/fill.

HISTORICAL DIAGNOSIS



20 Mar 2023 Diag: Bill Quesnel

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



17 Oct 2022 Diag: Kevin Marson

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



20 Oct 2021 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

FPD G THBR 02

Bearing Fluid ESSO TERESSO ISO 68 (5 LTR)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

🔺 Wear

Lead ppm levels are abnormal. Bearing wear is indicated.

Contamination

There is no indication of any contamination in the oil.

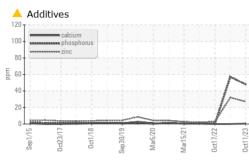
Fluid Condition

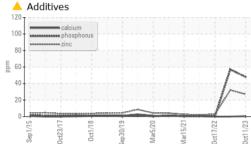
Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

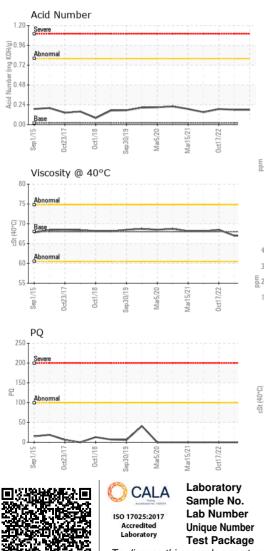
SAMPLE INFORMATIONmethodlimit/basecurrenthistory1history2Sample NumberClient InfoWC0328082WC0328082WC0445249Sample DateClient Info000Machine AgehrsClient Info000Oil AgehrsClient InfoNot ChangdNot ChangdNot ChangdSample StatusaClient InfoNot ChangdNot ChangdNot ChangdSample StatusamethodfullABNORMALATTENTIONNoRMALWEAR METALSmethodfullfullaaaaPQASTM 05185(m)s200000IronppmASTM 05185(m)s200aaNickelppmASTM 05185(m)s200aaSilverppmASTM 05185(m)s21aaaCopperppmASTM 05185(m)s21aaaCopperppmASTM 05185(m)s21aaaAstm 05185(m)s21aaaaaSilverppmASTM 05185(m)s21aaaAstm 05185(m)s21aaaaaCopperppmASTM 05185(m)s21aaaAstm 05185(m)s21aaaaaAstm 05185(m)s21aaaaaAstm 0518		34p-2015 Oct2017 Oct2018 Sep-2019 Mar2020 Mar2021 Oct2022 Oct2023						
Sample Date Client Info 11 Oct 2023 20 Mar 2023 17 Oct 2022 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info Not Changd Not Changd Not Changd Not Changd Sample Status rethod limit/base current history1 nistory2 PQ ASTM D5185(m) >63 3 2 2 2 Chromium ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 <11	SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2	
Machine Age hrs Client Info 0 0 0 0 Oil Age hrs Client Info Not Changd Not Changd Not Changd Sample Status Imathematical Client Info Not Changd Not Changd Not Changd WEAR METALS method Imit/base current history1 history2 PQ ASTM D8184* 0 0 0 0 Iron ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 0 0 Aluminum ppm ASTM D5185(m) >20 0 -1 1 Lead ppm ASTM D5185(m) >27 0 -1 1 Lead ppm ASTM D5185(m) >27 5 6 5 Antimony ppm ASTM D5185(m) 0 0 0 0 Quadium pm ASTM D5185(m) 27 5 6 5 </td <td>Sample Number</td> <td></td> <td>Client Info</td> <td></td> <th>WC0328082</th> <td>WC0328080</td> <td>WC0445249</td>	Sample Number		Client Info		WC0328082	WC0328080	WC0445249	
Oil Age hrs Client Info 0 0 0 Oil Changed Client Info Not Changd Not Changd Not Changd Sample Status Client Info Not Changd ATTENTION Not Changd WEAR METALS method limit/base current history1 history2 PQ ASTM D6165(m) >63 3 2 2 2 Chromium ppm ASTM D6165(m) >20 0 0 0 Nickel ppm ASTM D6165(m) >20 0 0 0 Silver ppm ASTM D6165(m) >20 0 <1	Sample Date		Client Info		11 Oct 2023	20 Mar 2023	17 Oct 2022	
Oil Changed Sample Status Client Info Not Changd ABNORMAL Not Changd ATTENTION Not Changd NORMAL WEAR METALS method limit/base current history1 history2 PQ ASTM D8184' 0 0 0 Iron ppm ASTM D5185(m) >63 3 2 2 Chromium ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 0 0 Silver ppm ASTM D5185(m) >20 0 0 0 Aluminum ppm ASTM D5185(m) >20 0 -1 0 Aluminum ppm ASTM D5185(m) >20 0 -1 -1 Lead ppm ASTM D5185(m) >27 5 6 5 Antimony ppm ASTM D5185(m) >13 <1	Machine Age	hrs	Client Info		0	0	0	
Sample Status Image Status Image Status ABNORMAL ATTENTION NORMAL WEAR METALS method limit/base current history1 history2 PQ ASTM 05186/m >63 3 2 2 Chromium ppm ASTM 05186/m >20 0 0 0 Nickel ppm ASTM 05186/m >20 0 <1	Oil Age	hrs	Client Info		0	0	0	
WEAR METALS method imit/base current history1 history2 PQ ASTM D8184* 0 0 0 0 Iron ppm ASTM D5185m >63 3 2 2 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 <1	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd	
PQ ASTM D8184* 0 0 0 Iron ppm ASTM D8184 0 0 0 Nickel ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 -1 0 Silver ppm ASTM D5185(m) >20 0 -1 1 Lead ppm ASTM D5185(m) >2 0 -1 -1 Lead ppm ASTM D5185(m) >2 0 -1 -1 Lead ppm ASTM D5185(m) >27 5 6 5 Antimony ppm ASTM D5185(m) 27 5 6 5 Antimony ppm ASTM D5185(m) 20 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 Barium ppm ASTM D5185(m) 0.4 <1 0 -1 Molybdenum	Sample Status				ABNORMAL	ATTENTION	NORMAL	
tron ppm ASTM D5188(m) >63 3 2 2 Chromium ppm ASTM D5188(m) >20 0 0 0 Nickel ppm ASTM D5188(m) >20 0 <1	WEAR METALS		method	limit/base	current	history1	history2	
Chromium ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 <1	PQ		ASTM D8184*		0	0	0	
Nickel ppm ASTM D5185(m) >20 0 <1 0 Titanium ppm ASTM D5185(m) 0 0 0 Silver ppm ASTM D5185(m) >2 0 <1	Iron	ppm	ASTM D5185(m)	>63	3	2	2	
Titanium ppm ASTM D5185(m) 0 0 0 Silver ppm ASTM D5185(m) <1	Chromium	ppm	ASTM D5185(m)	>20	0	0	0	
Silver ppm ASTM D5185(m) <1 0 0 Aluminum ppm ASTM D5185(m) >2 0 <1	Nickel	ppm	ASTM D5185(m)	>20	0	<1	0	
Aluminum ppm ASTM D5185(m) >2 0 <1 <1 Lead ppm ASTM D5185(m) >161 ▲ 175 121 163 Copper ppm ASTM D5185(m) >13 <1	Titanium	ppm	ASTM D5185(m)		0	0	0	
Lead ppm ASTM D5185(m) >161 ▲ 175 121 163 Copper ppm ASTM D5185(m) >13 <1	Silver	ppm	ASTM D5185(m)		<1	0	0	
Copper ppm ASTM D5185(m) >13 <1 <1 <1 <1 Tin ppm ASTM D5185(m) >227 5 6 5 Antimony ppm ASTM D5185(m) 227 5 6 4 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) -<1	Aluminum	ppm	ASTM D5185(m)	>2	0	<1	<1	
Tin ppm ASTM D5185(m) >27 5 6 5 Antimony ppm ASTM D5185(m) 4 6 4 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0.4 <1	Lead	ppm	ASTM D5185(m)	>161	<u> </u>	121	163	
Antimony ppm ASTM D5188(m) 4 6 4 Vanadium ppm ASTM D5188(m) 0 0 0 Beryllium ppm ASTM D5188(m) 0 0 0 0 Cadmium ppm ASTM D5188(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0.4 <1 0 <1 Molybdenum ppm ASTM D5185(m) 0.4 <1 0 <1 Molybdenum ppm ASTM D5185(m) 0.4 <1 0 <1 Magnesium ppm ASTM D5185(m) 0.4 <1 0 <0 Magnesium ppm ASTM D5185(m) 0.4 <1 0 <0 Calcium ppm ASTM D5185(m) 0 <1 0 <0 Sulfur ppm ASTM D5185(m) 0.7 48 2307	Copper	ppm	ASTM D5185(m)	>13	<1	<1	<1	
Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 1 <1 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 4.5 <1	Tin	ppm	ASTM D5185(m)	>27	5	6	5	
Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) <1 <1 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 4.5 <1 <1 <1 Barium ppm ASTM D5185(m) 0.4 <1 0 <1 Molybdenum ppm ASTM D5185(m) 0.4 <1 0 <1 Maganese ppm ASTM D5185(m) 0 0 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 0 0 Calcium ppm ASTM D5185(m) 0 <1 0 0 Phosphorus ppm ASTM D5185(m) 0.7 488 57 0 Zinc ppm ASTM D5185(m) 0.7 488 57 0 Sulfur ppm ASTM D5185(m) 1315 <	Antimony	ppm	ASTM D5185(m)		4	6	4	
CadmiumppmASTM D5185(m)<1<1<1ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185(m)4.5<1	Vanadium	ppm	ASTM D5185(m)		0	0	0	
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185(m)4.5<1	Beryllium	ppm	ASTM D5185(m)		0	0	0	
Boron ppm ASTM D5185(m) 4.5 <1	Cadmium	ppm	ASTM D5185(m)		<1	<1	<1	
Barium ppm ASTM D5185(m) 0.4 <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185(m) 0 0 0 0 0 Manganese ppm ASTM D5185(m) 0 0 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 <1 0 Calcium ppm ASTM D5185(m) 0 <1 0 0 Phosphorus ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0.17 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 1.315 Z307 2330 2275 Lithium ppm ASTM D5185(m) >12 <1 <1 <1 Sodium	Boron	ppm	ASTM D5185(m)	4.5	<1	<1	<1	
Manganese ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 <1 0 Calcium ppm ASTM D5185(m) 0 <1 0 0 Calcium ppm ASTM D5185(m) 0 <1 0 0 Phosphorus ppm ASTM D5185(m) 0.7 48 57 0 Zinc ppm ASTM D5185(m) 0.7 48 57 0 Zinc ppm ASTM D5185(m) 0 27 32 3 Sulfur ppm ASTM D5185(m) 1315 2307 2330 2275 Lithium ppm ASTM D5185(m) 12 <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >12 <1 <1 <1 Sodium ppm ASTM D5185(m) >20 0 0 <1 FLUID DEGRADATION method li	Barium	ppm	ASTM D5185(m)	0.4	<1	0	<1	
Magnesium ppm ASTM D5185(m) 0 Calcium ppm ASTM D5185(m) 0 <1 0 0 Phosphorus ppm ASTM D5185(m) 0.7 48 57 0 Zinc ppm ASTM D5185(m) 0 27 32 3 Sulfur ppm ASTM D5185(m) 1315 2307 2330 2275 Lithium ppm ASTM D5185(m) 1315 current history1 history2 Silicon ppm ASTM D5185(m) >12 <1 <1 0 Sodium ppm ASTM D5185(m) >20 0 0 <1 <1 FLUID DEGRADATION method limit/base current history1 history2	Molybdenum	ppm	ASTM D5185(m)	0	0	0	0	
Calcium ppm ASTM D5185(m) 0 <1 0 0 Phosphorus ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0 ▲ 27 ▲ 32 3 Sulfur ppm ASTM D5185(m) 1315 2307 2330 2275 Lithium ppm ASTM D5185(m) 1315 current history1 history2 Silicon ppm ASTM D5185(m) >12 <1 <1 0 Sodium ppm ASTM D5185(m) >20 0 0 <1 FLUID DEGRADATION method limit/base current history1 history2	Manganese	ppm	ASTM D5185(m)		0	0	0	
Phosphorus ppm ASTM D5185(m) 0.7 ▲ 48 ▲ 57 0 Zinc ppm ASTM D5185(m) 0 ▲ 27 ▲ 32 3 Sulfur ppm ASTM D5185(m) 0 ▲ 27 ▲ 32 3 Lithium ppm ASTM D5185(m) 1315 2307 2330 2275 Lithium ppm ASTM D5185(m) Imit/base current history1 history2 Silicon ppm ASTM D5185(m) >12 <1 <1 0 Sodium ppm ASTM D5185(m) >20 Q 0 <1 <1 FLUID DEGRADATION method limit/base current history1 history2	Magnesium	ppm	ASTM D5185(m)	0	0	<1	0	
Zinc ppm ASTM D5185(m) 0 ▲ 27 ▲ 32 3 Sulfur ppm ASTM D5185(m) 1315 2307 2330 2275 Lithium ppm ASTM D5185(m) 1315 2307 <1	Calcium	ppm	ASTM D5185(m)	0	<1	0	0	
Sulfur ppm ASTM D5185(m) 1315 2307 2330 2275 Lithium ppm ASTM D5185(m) 1315 c1 c1 c1 c1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >12 c1 c1 0 Sodium ppm ASTM D5185(m) >20 c1 c1 c1 Potassium ppm ASTM D5185(m) >20 0 0 c1 FLUID DEGRADATION method limit/base current history1 history2	Phosphorus	ppm	ASTM D5185(m)	0.7	48	5 7	0	
LithiumppmASTM D5185(m)<1<1<1CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)>12<1	Zinc	ppm	ASTM D5185(m)	0	<u> </u>	▲ 32	3	
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)>12<1	Sulfur	ppm	ASTM D5185(m)	1315	2307		2275	
Silicon ppm ASTM D5185(m) >12 <1 <1 0 Sodium ppm ASTM D5185(m) <1 <1 <1 <1 Potassium ppm ASTM D5185(m) >20 0 0 <1 FLUID DEGRADATION method limit/base current history1 history2	Lithium	ppm	ASTM D5185(m)		<1	<1	<1	
SodiumppmASTM D5185(m)<1	CONTAMINANTS	;	method	limit/base	current	history1	history2	
SodiumppmASTM D5185(m)<1<1<1PotassiumppmASTM D5185(m)>2000<1FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Silicon	ppm	ASTM D5185(m)	>12	<1	<1	0	
PotassiumppmASTM D5185(m)>200<1FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Sodium		ASTM D5185(m)		<1	<1	<1	
	Potassium		ASTM D5185(m)	>20	0	0	<1	
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
	Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	0.18	0.18	0.19	



OIL ANALYSIS REPORT

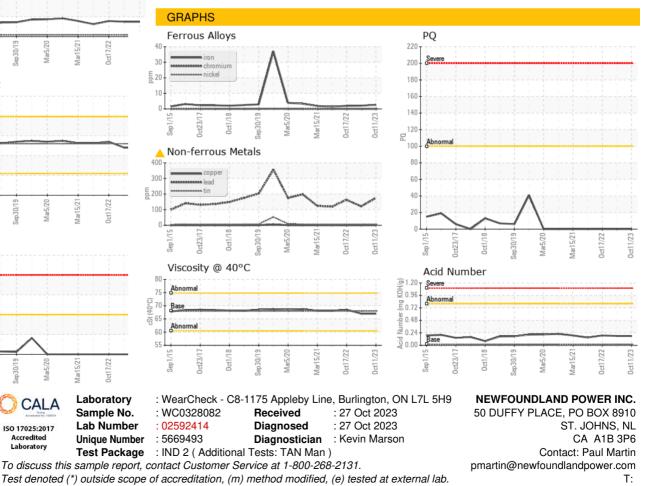






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	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
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68	67.0	67.0	68.5
SAMPLE IMAGES	S	method	limit/base	current	history1	history2
Color						

Bottom



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.

Submitted By: Terry Anstey Page 4 of 4

F: (709)737-2926