

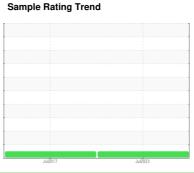
# **OIL ANALYSIS REPORT**

# Area [603530494 SDR]

L-1 1ST LEG CONV (S/N 20048851)

Gearbox

GEAR OIL ISO 680 (--- GAL)





## DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil

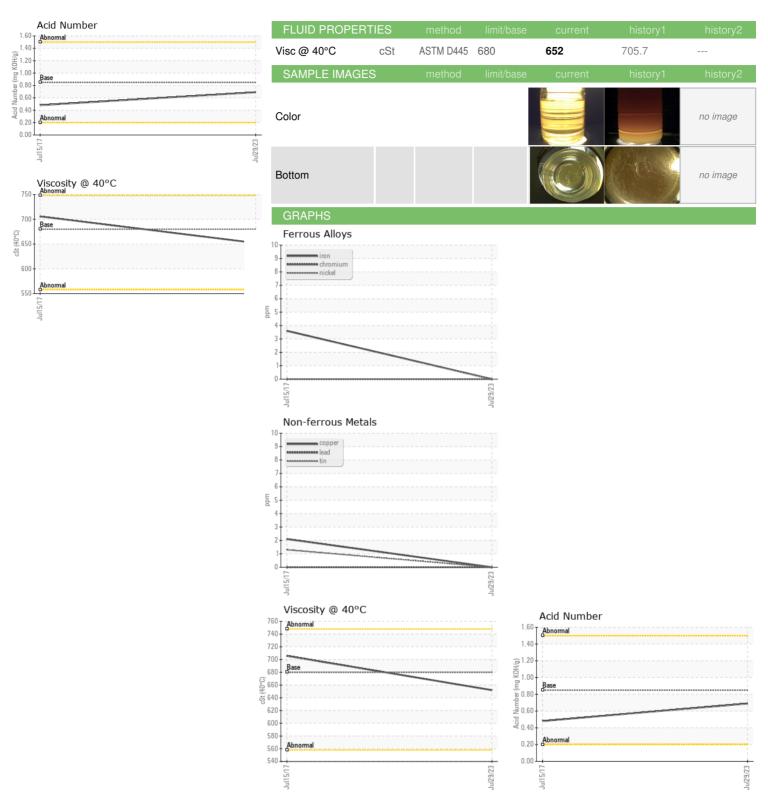
## **Fluid Condition**

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

Sample Number					00.000		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         0         0            Oil Age         hirs         Client Info         0         0            Oil Changed         Client Info         Changed         Changed            Sample Status         Image         NORMAL         NORMAL            WEAR METALS         method         limit/bass         current         history1         history2           Iron         ppm         ASTM D5185m         >200         0         4            Nickel         ppm         ASTM D5185m         >15         0         0            Nickel         ppm         ASTM D5185m         >10         0             Silver         ppm         ASTM D5185m         >0         0             Lead         ppm         ASTM D5185m         >20         0         2            Copper         ppm         ASTM D5185m         >20         0         1            Antimony         ppm         ASTM D5185m         0         0            Antimonium         ppm	Sample Number		Client Info		WC0605528	WCI2285501	
Oil Age         hrs         Client Info         Changed Changed         Changed Changed	Sample Date		Client Info		29 Jul 2023	15 Jul 2017	
Oil Changed Sample Status         Client Info         Changed NORMAL         Changed NORMAL	Machine Age	hrs	Client Info		0	0	
NORMAL   N	Oil Age	hrs	Client Info		0	0	
WEAR METALS	Oil Changed		Client Info		Changed	Changed	
Iron	Sample Status				NORMAL	NORMAL	
Chromium         ppm         ASTM D5185m         >15         0         0            Nickel         ppm         ASTM D5185m         0         0            Silver         ppm         ASTM D5185m         0         -1            Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >20         0         0            Aluminum         ppm         ASTM D5185m         >20         0         0            Copper         ppm         ASTM D5185m         >20         0         2            Tin         ppm         ASTM D5185m         >5          0            Antimony         ppm         ASTM D5185m         >5          0            Vanadium         ppm         ASTM D5185m         >5          0            Adminory         ppm         ASTM D5185m         50         0         4            Adminory         ppm         ASTM D5185m         50         0         4	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >15         0         0            Nickel         ppm         ASTM D5185m         0         0            Silver         ppm         ASTM D5185m         0         -1            Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >20         0         0            Aluminum         ppm         ASTM D5185m         >20         0         0            Copper         ppm         ASTM D5185m         >20         0         2            Tin         ppm         ASTM D5185m         >5          0            Antimony         ppm         ASTM D5185m         0         0         0            Vanadium         ppm         ASTM D5185m         >5          0            Antimony         ppm         ASTM D5185m         50         0         4            Antimony         ppm         ASTM D5185m         50         0         4 <td< th=""><th>Iron</th><th>maa</th><th>ASTM D5185m</th><th>&gt;200</th><th>0</th><th>4</th><th></th></td<>	Iron	maa	ASTM D5185m	>200	0	4	
Nickel	Chromium		ASTM D5185m	>15	0	0	
Titanium         ppm         ASTM D5185m         0         <1	Nickel			>15		0	
Silver         ppm         ASTM D5185m         Q         0            Aluminum         ppm         ASTM D5185m         >25         <1	Titanium		ASTM D5185m		0	<1	
Aluminum					0		
Lead         ppm         ASTM D5185m         >100         0         0            Copper         ppm         ASTM D5185m         >200         0         2            Tin         ppm         ASTM D5185m         >25         0         1            Antimony         ppm         ASTM D5185m         0         0            Vanadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         0         4            Barium         ppm         ASTM D5185m         15         0         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Magnesium         ppm         ASTM D5185m         15         0         0            Magnesium         ppm         ASTM D5185m         50         0         292 <td< th=""><th>Aluminum</th><th></th><th>ASTM D5185m</th><th>&gt;25</th><th></th><th>&lt;1</th><th></th></td<>	Aluminum		ASTM D5185m	>25		<1	
Copper         ppm         ASTM D5185m         >200         0         2            Tin         ppm         ASTM D5185m         >25         0         1            Antimony         ppm         ASTM D5185m         >5          0            Vanadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            Boron         ppm         ASTM D5185m         50         0         4            Boron         ppm         ASTM D5185m         15         0         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         15         0         0            Manganesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         12500         1695         513					0		
Tin							
Antimony         ppm         ASTM D5185m         >5          0            Vanadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         0         4            Barium         ppm         ASTM D5185m         15         0         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         15         0         0            Manganesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         100         0         80            Zinc         ppm         ASTM D5185m         100         0         80					-		
Vanadium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         0         4            Barium         ppm         ASTM D5185m         15         0         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         50         0         1            Magnesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1 </th <th>Antimony</th> <th></th> <th>ASTM D5185m</th> <th>&gt;5</th> <th></th> <th>0</th> <th></th>	Antimony		ASTM D5185m	>5		0	
Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         0         4            Barium         ppm         ASTM D5185m         15         0         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Magnese         ppm         ASTM D5185m         0         0            Magnesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1 <t< th=""><th>Vanadium</th><th></th><th></th><th></th><th>0</th><th>0</th><th></th></t<>	Vanadium				0	0	
ADDITIVES	Cadmium		ASTM D5185m		0	0	
Boron	ADDITIVES		method	limit/hase	current	history1	history2
Barium         ppm         ASTM D5185m         15         0         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         0         0         1            Magnesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3         <1            Potassium         ppm         ASTM D5185m						· · · · · · · · · · · · · · · · · · ·	1113101 y2
Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         0         0            Magnesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         2992            Phosphorus         ppm         ASTM D5185m         50         0         2994            Zinc         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3							
Manganese         ppm         ASTM D5185m         0         0            Magnesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3         <1            Potassium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg K0Hg         ASTM D8045         0.85					-		
Magnesium         ppm         ASTM D5185m         50         0         1            Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3         <1            Potassium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHig         ASTM D8045         0.85         0.69         0.481            VISUAL         method         limit/base<				15			
Calcium         ppm         ASTM D5185m         50         0         292            Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3         <1            Potassium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.85         0.69         0.481            VISUAL         method         limit/base         current         history1         history2           Wh	•			50			
Phosphorus         ppm         ASTM D5185m         350         204         294            Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >50         3         2            Potassium         ppm         ASTM D5185m         >20         3         <1            Potassium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg K0Hg         ASTM D8045         0.85         0.69         0.481            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar							
Zinc         ppm         ASTM D5185m         100         0         80            Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg K0Hg         ASTM D8045         0.85         0.69         0.481            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Visual NONE         NONE         NONE         NONE         NONE           Visual NONE         NONE							
Sulfur         ppm         ASTM D5185m         12500         1695         513            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         >20         3         <1            Potassium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.85         0.69         0.481            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE					-		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         0         <1            Potassium         ppm         ASTM D5185m         >20         3         <1            FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.85         0.69         0.481            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE         NONE            Precipitate         scalar         *Visual         NONE         NONE         NONE            Silt         scalar         *Visual         NONE         NONE         NONE            D					-		
Silicon         ppm         ASTM D5185m         >50         3         2            Sodium         ppm         ASTM D5185m         0         <1		• •			1695		
Sodium         ppm         ASTM D5185m         0         <1	CONTAMINANTS	5	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 <1  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.85 0.69 0.481  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  Silt scalar *Visual NONE NONE NONE  Silt scalar *Visual NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML  Codor scalar *Visual NORML NORML NORML  Emulsified Water scalar *Visual >0.2 NEG NEG	Silicon	ppm	ASTM D5185m	>50	3	2	
FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.85 0.69 0.481  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  Silt scalar *Visual NONE NONE NONE  Silt scalar *Visual NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE LIGHT  Sand/Dirt scalar *Visual NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML  Appearance scalar *Visual NORML NORML NORML  Berulsified Water scalar *Visual NORML NORML NORML  Emulsified Water scalar *Visual >0.2 NEG NEG	Sodium	ppm	ASTM D5185m		0	<1	
Acid Number (AN) mg KOHg ASTM D8045 0.85 0.69 0.481  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  Debris scalar *Visual NONE NONE LIGHT  Sand/Dirt scalar *Visual NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML  Appearance scalar *Visual NORML NORML NORML  Codor scalar *Visual NORML NORML NORML  Emulsified Water scalar *Visual >0.2 NEG NEG	Potassium	ppm	ASTM D5185m	>20	3	<1	
VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONEPrecipitatescalar*VisualNONENONENONESiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONELIGHTSand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	FLUID DEGRADA	NOITA	method	limit/base	current	history1	history2
White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG	Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	0.69	0.481	
Yellow Metalscalar*VisualNONENONENONEPrecipitatescalar*VisualNONENONENONESiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONELIGHTSand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	VISUAL		method	limit/base	current	history1	history2
Yellow Metalscalar*VisualNONENONENONEPrecipitatescalar*VisualNONENONENONESiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONELIGHTSand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	White Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG	Yellow Metal		*Visual	NONE		NONE	
Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG				NONE			
Debrisscalar*VisualNONENONELIGHTSand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG							
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG							
Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG							
Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG							
Emulsified Water scalar *Visual >0.2 NEG NEG		scalar	*Visual	NORML		NORML	
	Emulsified Water						
	Free Water	scalar	*Visual		NEG	ationNEONY FIO	RE -MARSCHI



# **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10604919

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0605528 Received : 15 Aug 2023 : 05924972 Diagnosed : 16 Aug 2023 Diagnostician : Don Baldridge

Test Package : IND 2

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

MARS CHOCOLATE

2019 NORTH OAK PARK CHICAGO, IL US 60707

Contact: TONY FIORE tony.fiore@effem.com T: (773)745-2279