

# **OIL ANALYSIS REPORT**

## Sample Rating Trend



Machine Id

# **TRIOLIET BV 11732972/ING05**

Gearbox

SHELL OMALA S4 GX 220 (--- GAL)

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

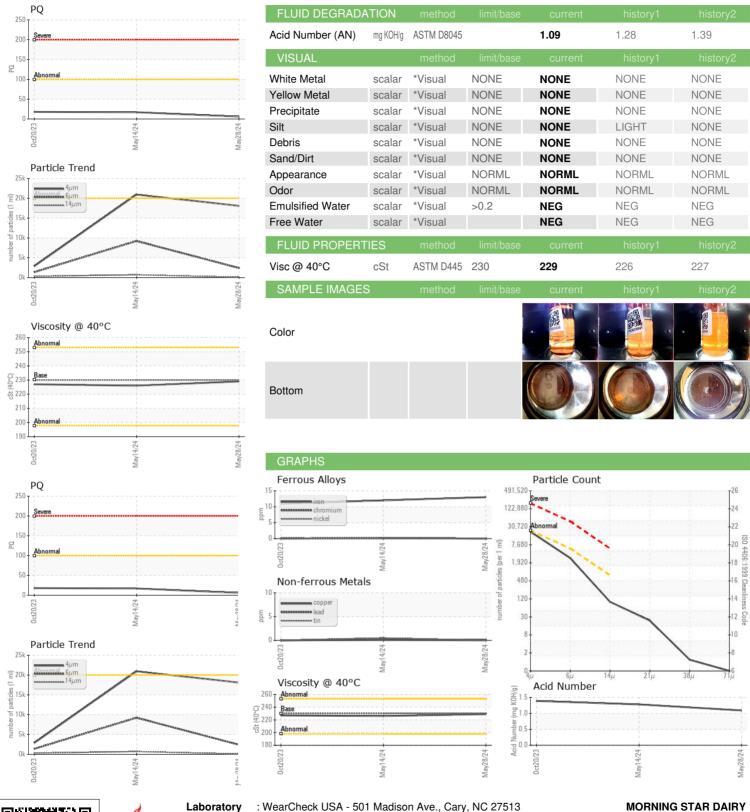
## **Fluid Condition**

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

Sample Number   Client Info   PE0002535   PE0003841   PE0002509   Sample Date   Client Info   28 May 2024   14 May 2024   20 Oct 2023   20 O			Oc	2023	May2024 May20	124	
Sample Date   Client Info   28 May 2024   14 May 2024   20 Oct 2025	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date   Client Info   28 May 2024   14 May 2024   20 Oct 2025	Sample Number		Client Info		PE0002535	PE0003841	PE0002509
Machine Age         hrs         Client Info         0         0         0           Dil Age         hrs         Client Info         0         0         0           Dil Changed         Client Info         N/A         N/A         N/A           Sample Status         NORMAL         ATTENTION         NORMAL           CONTAMINATION         method         Imit/base         current         history1         history2           WEAR         MEG         NEG         NEG         NEG           WEAR         MEG         NEG         NEG         NEG           VEAR         METALS         method         Imit/base         current         history1         history2           POQ         ASTM D5185m         >200         13         12         11         1           Chromium         ppm         ASTM D5185m         >15         0         <1							20 Oct 2023
Dil Age	•	hrs			-		
Dil Changed Sample Status							
NORMAL   ATTENTION   NORMAL	•		Client Info		-		N/A
Water         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D8184         6         17         18           ron         ppm         ASTM D8185m         >200         13         12         11           Chromium         ppm         ASTM D8185m         >15         0         <1         0           Nickel         ppm         ASTM D8185m         >15         0         <1         0           Siliver         ppm         ASTM D8185m         0         <1         0         <1         0           Aluminum         ppm         ASTM D8185m         >25         <1         <1         1         0           Aluminum         ppm         ASTM D8185m         >20         0         <1         0         0           Aluminum         ppm         ASTM D8185m         >20         0         <1         0         0           Copper         ppm         ASTM D8185m         >20         0         <1         0         0           Copper         ppm         ASTM D8185m         0	Sample Status				NORMAL	ATTENTION	NORMAL
WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D8184         6         17         18           ron         ppm         ASTM D8185m         >200         13         12         11           Chromium         ppm         ASTM D8185m         >15         0         <1	CONTAMINATIO	N	method	limit/base	current	history1	history2
PQ         ASTM D8184         6         17         18           cron         ppm         ASTM D5185m         >200         13         12         11           Chromium         ppm         ASTM D5185m         >15         0         <1         0           Nickel         ppm         ASTM D5185m         15         0         <1         0           Silver         ppm         ASTM D5185m         15         0         <1         0           ASIM D5185m         25         -1         <1         1         0           ALuminum         ppm         ASTM D5185m         >20         0         <1         0           ALuminum         ppm         ASTM D5185m         >20         0         <1         0           Lead         ppm         ASTM D5185m         >20         0         <1         0           Copper         ppm         ASTM D5185m         >20         0         <1         0           Vanadium         ppm         ASTM D5185m         <0         <1         0         0           Cadmium         ppm         ASTM D5185m         <0         <1         0         0           Barium         pp	Water		WC Method	>0.2	NEG	NEG	NEG
Particles > 14   Particles > 21   Par	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >15         0         <1         0           Nickel         ppm         ASTM D5185m         >15         0         0         <1           Titanium         ppm         ASTM D5185m         0         <1         0           Siliver         ppm         ASTM D5185m         0         <1         0           Aluminum         ppm         ASTM D5185m         225         <1         <1         1           Lead         ppm         ASTM D5185m         >200         0         <1         0           Copper         ppm         ASTM D5185m         >200         0         <1         0           Copper         ppm         ASTM D5185m         >200         0         <1         0           Vanadium         ppm         ASTM D5185m         <21         0         <1         0           Cadmium         ppm         ASTM D5185m         <1         0         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         <1         <1	PQ		ASTM D8184		6	17	18
Nickel   ppm	Iron	ppm	ASTM D5185m	>200	13	12	11
Titanium	Chromium	ppm	ASTM D5185m	>15	0	<1	0
Silver	Nickel	ppm	ASTM D5185m	>15	0	0	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0
Lead         ppm         ASTM D5185m         >100         <1         <1         0           Copper         ppm         ASTM D5185m         >200         0         <1         0           Vanadium         ppm         ASTM D5185m         >25         0         <1         0           Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         0         <1         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         0         <1         <1         1           Calcium         ppm         ASTM D5185m         7         2         22         22           Phosphorus         ppm         ASTM D5185m         389         393         404           Zinc <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td>&lt;1</td> <td>0</td>	Silver	ppm	ASTM D5185m		0	<1	0
Copper	Aluminum	ppm	ASTM D5185m	>25	<1	<1	1
Tin	Lead	ppm	ASTM D5185m	>100	<1	<1	0
Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         0         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         3         11         5           Barium         ppm         ASTM D5185m         0         0         0           Wolybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         7         2         22         22           Phosphorus         ppm         ASTM D5185m         389         393         404           Zinc         ppm         ASTM D5185m         281         264         306           Sulfur         ppm         ASTM D5185m         5994         6606         5872           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         4	Copper	ppm	ASTM D5185m	>200	0	<1	0
ADDITIVES	Tin	ppm	ASTM D5185m	>25	0	<1	0
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         3         11         5           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         0         <1	Vanadium	ppm	ASTM D5185m		<1	0	0
Serium	Cadmium	ppm	ASTM D5185m		0	<1	0
Sarium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         0         <1	Boron	ppm	ASTM D5185m		3	11	5
Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium         ppm         ASTM D5185m         <1         0         5           Calcium         ppm         ASTM D5185m         7         2         22           Phosphorus         ppm         ASTM D5185m         389         393         404           Zinc         ppm         ASTM D5185m         281         264         306           Sulfur         ppm         ASTM D5185m         5994         6606         5872           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         4         5         8           Sodium         ppm         ASTM D5185m         >20         <1         <1         <1           Potassium         ppm         ASTM D5185m         >20         <1         <1         <1           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >20000         18088         20933         2852           Particles >6μm         ASTM D7647         >5000         2404         9218         1362           Particles >21μm <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td>0</td> <td>0</td>	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium         ppm         ASTM D5185m         7         2         22           Phosphorus         ppm         ASTM D5185m         389         393         404           Zinc         ppm         ASTM D5185m         281         264         306           Sulfur         ppm         ASTM D5185m         5994         6606         5872           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         4         5         8           Sodium         ppm         ASTM D5185m         3         2         0           Potassium         ppm         ASTM D5185m         >20         <1	Manganese	ppm	ASTM D5185m		0	<1	<1
Phosphorus         ppm         ASTM D5185m         389         393         404           Zinc         ppm         ASTM D5185m         281         264         306           Sulfur         ppm         ASTM D5185m         5994         6606         5872           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         4         5         8           Sodium         ppm         ASTM D5185m         3         2         0           Potassium         ppm         ASTM D5185m         >20         <1	Magnesium	ppm	ASTM D5185m		<1	0	5
Zinc   ppm   ASTM D5185m   281   264   306   5872	Calcium	ppm	ASTM D5185m		7	2	22
Sulfur         ppm         ASTM D5185m         5994         6606         5872           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         4         5         8           Sodium         ppm         ASTM D5185m         3         2         0           Potassium         ppm         ASTM D5185m         >20         <1	Phosphorus	ppm	ASTM D5185m		389	393	404
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >50         4         5         8           Sodium         ppm         ASTM D5185m         3         2         0           Potassium         ppm         ASTM D5185m         >20         <1	Zinc	ppm	ASTM D5185m		281	264	306
Silicon         ppm         ASTM D5185m         >50         4         5         8           Sodium         ppm         ASTM D5185m         3         2         0           Potassium         ppm         ASTM D5185m         >20         <1         <1         <1           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >20000         18088         20933         2852           Particles >6μm         ASTM D7647         >5000         2404         9218         1362           Particles >14μm         ASTM D7647         >640         84         695         297           Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1	Sulfur				5994		
Sodium         ppm         ASTM D5185m         3         2         0           Potassium         ppm         ASTM D5185m         >20         <1         <1         <1           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >20000         18088         20933         2852           Particles >6μm         ASTM D7647         >5000         2404         9218         1362           Particles >14μm         ASTM D7647         >640         84         695         297           Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         <1         <1         <1           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >20000         18088         20933         2852           Particles >6μm         ASTM D7647         >5000         2404         9218         1362           Particles >14μm         ASTM D7647         >640         84         695         297           Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1	Silicon			>50			
FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >20000         18088         20933         2852           Particles >6μm         ASTM D7647         >5000         2404         9218         1362           Particles >14μm         ASTM D7647         >640         84         695         297           Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1		ppm			3		
Particles >4μm         ASTM D7647         >20000         18088         20933         2852           Particles >6μm         ASTM D7647         >5000         2404         9218         1362           Particles >14μm         ASTM D7647         >640         84         695         297           Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         1	Potassium		ASTM D5185m	>20	<1	<1	<1
Particles >6μm       ASTM D7647       >5000       2404       9218       1362         Particles >14μm       ASTM D7647       >640       84       695       297         Particles >21μm       ASTM D7647       >160       20       103       97         Particles >38μm       ASTM D7647       >40       1       6       6         Particles >71μm       ASTM D7647       >10       0       0       1	FLUID CLEANLIN	IESS	method		current	history1	history2
Particles >14μm         ASTM D7647         >640         84         695         297           Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1	Particles >4μm						
Particles >21μm         ASTM D7647         >160         20         103         97           Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1	Particles >6µm				2404		
Particles >38μm         ASTM D7647         >40         1         6         6           Particles >71μm         ASTM D7647         >10         0         0         1	Particles >14μm		ASTM D7647	>640			297
Particles >71μm ASTM D7647 >10 <b>0</b> 1	Particles >21µm			>160	20	103	97
	Particles >38μm		ASTM D7647	>40	1	6	6
Oil Cleanliness         ISO 4406 (c)         >21/19/16         21/18/14         = 22/20/17         19/18/15	Particles >71µm				0		
	Oil Cleanliness		ISO 4406 (c)	>21/19/16	21/18/14	22/20/17	19/18/15



## OIL ANALYSIS REPORT







Certificate 12367

Sample No.

: PE0002535 Lab Number : 06196544 Unique Number : 11058667

Received : 31 May 2024 **Tested** : 03 Jun 2024

Diagnosed : 03 Jun 2024 - Don Baldridge

Test Package : CONST ( Additional Tests: ICP, KV40, PQ, PrtCount, SCREEN ) 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)

Submitted By: ROCHELLE MENDOZA

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