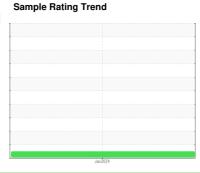


# **OIL ANALYSIS REPORT**

# SOUTH HOLLAND TADANO GR160XL-3 RT4183 (S/N FD4183)

**Diesel Engine** 

**DIESEL ENGINE OIL 10W40 (--- GAL)** 





Recommendation Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

### **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method   Imit/base   current   history1   history2					Jan 2024		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		HPL0004171		
Oil Age         hrs         Client Info         N/A	Sample Date		Client Info		30 Jan 2024		
Oil Changed Sample Status         Client Info         N/A             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0	Machine Age	hrs	Client Info		1791		
Sample Status	Oil Age	hrs	Client Info		0		
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0	Oil Changed		Client Info		N/A		
Fuel	Sample Status				NORMAL		
Water         WC Method         >0.2         NEG             Glycol         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         17             Chromium         ppm         ASTM D5185m         >20         <1	CONTAMINATION	٧	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         17             Chromium         ppm         ASTM D5185m         >20         <1	Water		WC Method	>0.2	NEG		
Iron	Glycol		WC Method		NEG		
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	17		
Nickel	Chromium		ASTM D5185m	>20	<1		
Titanium	Nickel				<1		
Silver	Titanium		ASTM D5185m		<1		
Aluminum				>3	0		
Lead	Aluminum		ASTM D5185m	>20	6		
Tin         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         3             Molybdenum         ppm         ASTM D5185m         100         604             Magnesium         ppm         ASTM D5185m         100         604             Magnesium         ppm         ASTM D5185m         450         906             Calcium         ppm         ASTM D5185m         1150         931             Phosphorus         ppm         ASTM D5185m         1250         8066             Sulfur         ppm         ASTM D5185m         25         13	Lead	ppm	ASTM D5185m	>40	<1		
Tin	Copper		ASTM D5185m	>330	63		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         3             Molybdenum         ppm         ASTM D5185m         100         604             Magnesium         ppm         ASTM D5185m         100         604             Magnesium         ppm         ASTM D5185m         450         906             Calcium         ppm         ASTM D5185m         3000         2501             Phosphorus         ppm         ASTM D5185m         1350         1219             Zinc         ppm         ASTM D5185m         4250         8066             Sulfur         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20	• •		ASTM D5185m	>15	0		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         3             Molybdenum         ppm         ASTM D5185m         100         604             Manganese         ppm         ASTM D5185m         1             Magnesium         ppm         ASTM D5185m         3000         2501             Calcium         ppm         ASTM D5185m         3000         2501             Phosphorus         ppm         ASTM D5185m         1150         931             Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         2             Sodium         ppm         ASTM D5185m         >20	Cadmium	ppm	ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         100         604             Manganese         ppm         ASTM D5185m         1             Magnesium         ppm         ASTM D5185m         450         906             Calcium         ppm         ASTM D5185m         3000         2501             Phosphorus         ppm         ASTM D5185m         1150         931             Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20         2             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base	Boron	ppm	ASTM D5185m	250	2		
Manganese         ppm         ASTM D5185m         1             Magnesium         ppm         ASTM D5185m         450         906             Calcium         ppm         ASTM D5185m         3000         2501             Phosphorus         ppm         ASTM D5185m         1150         931             Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20         2             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20	Barium	ppm	ASTM D5185m	10	3		
Magnesium         ppm         ASTM D5185m         450         906             Calcium         ppm         ASTM D5185m         3000         2501             Phosphorus         ppm         ASTM D5185m         1150         931             Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20         2             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7414 </td <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>100</td> <td>604</td> <td></td> <td></td>	Molybdenum	ppm	ASTM D5185m	100	604		
Calcium         ppm         ASTM D5185m         3000         2501             Phosphorus         ppm         ASTM D5185m         1150         931             Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20         2             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION	Manganese	ppm	ASTM D5185m		1		
Phosphorus         ppm         ASTM D5185m         1150         931             Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         14.6             Nitration         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 </td <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>450</td> <td>906</td> <td></td> <td></td>	Magnesium	ppm	ASTM D5185m	450	906		
Zinc         ppm         ASTM D5185m         1350         1219             Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20         2             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/.1mm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *A	Calcium	ppm	ASTM D5185m	3000	2501		
Sulfur         ppm         ASTM D5185m         4250         8066             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         >20         2             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	Phosphorus	ppm	ASTM D5185m	1150	931		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         13             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	Zinc	ppm	ASTM D5185m	1350	1219		
Silicon         ppm         ASTM D5185m         >25         13	Sulfur	ppm	ASTM D5185m	4250	8066		
Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	Silicon	ppm	ASTM D5185m	>25	13		
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	Sodium	ppm	ASTM D5185m		0		
Soot %         %         *ASTM D7844         >3         0.3             Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	Potassium	ppm	ASTM D5185m	>20	2		
Nitration         Abs/cm         *ASTM D7624         >20         14.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         38.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         42.8	Soot %	%	*ASTM D7844	>3	0.3		
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     42.8	Nitration	Abs/cm	*ASTM D7624	>20	14.6		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	38.1		
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	42.8		
	Base Number (BN)			8.5			



## **OIL ANALYSIS REPORT**







Laboratory Sample No. Lab Number

**Unique Number** 

: 06077808 : 10859899 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 01 Feb 2024 : HPL0004171 Recieved Diagnosed : 04 Feb 2024 : Don Baldridge

Diagnostician

US 60440 Contact: DAVE KOEHNE davidk@stevensoncrane.com T: (630)972-9199

STEVENSON CRANE

410 STEVENSON DR

BOLINGBROOK, IL

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)

F: