

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

MANITOWOC MLC 300 015-0067

Component Diesel Engine Fluid

SCHAEFFER SUPREME 7000 (9 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Hours: 8379)

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

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 INFORM	/IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0904106	WC0698014	WC0815147
Sample Date		Client Info		19 Apr 2024	26 May 2023	05 May 2023
Machine Age	hrs	Client Info		8379	7944	7883
Oil Age	hrs	Client Info		7944	0	42
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	SEVERE	SEVERE
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	4	<1	<1
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	2	0
Lead	ppm	ASTM D5185m	>40	0	0	1
Copper	ppm	ASTM D5185m	>330	2	0	0
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 66	history1 77	history2 78
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 66 0	history1 77 0	history2 78 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 66 0 78	history1 77 0 56	history2 78 0 57
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 66 0 78 <1	history1 77 0 56 <1	history2 78 0 57 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 50 1000	Current 66 0 78 <1 32	history1 77 0 56 <1 17	history2 78 0 57 <1 18
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 50 1000 1400	Current 66 0 78 <1 32 2320	history1 77 0 56 <1 17 17 1811	history2 78 0 57 <1 18 18 1880
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 50 1000 1400 985	Current 66 0 78 <1 32 2320 1039	history1 77 0 56 <1 17 1811 857	history2 78 0 57 <1 18 1880 916
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 50 1000 1400 985 1060	Current 66 0 78 <1 32 2320 1039 1039	history1 77 0 56 <1 17 1811 857 1031	history2 78 0 57 <1 18 1880 916 1105
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000	Current 66 0 78 <1 32 2320 1039 1259 5468	history1 77 0 56 <1 17 1811 857 1031 5067	history2 78 0 57 <1 18 1880 916 1105 5371
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 50 1000 1400 985 1060 4000	Current 66 0 78 <1 32 2320 1039 1259 5468 Current	history1 77 0 56 <1 17 1811 857 1031 5067 history1	history2 78 0 57 <1 18 1880 916 1105 5371 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25	current 66 0 78 <1 32 2320 1039 1259 5468 current 3	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 <1	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25 >20 >20	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 5 <1 <1 <1 <1 <1	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2 12.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25 >20 >3.0 limit/base	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 <1 <1 <1 <1 <1 <19.3 history1	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2 12.5 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 20 >25 >20 >20 >3.0 limit/base >6	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6 current 0.1	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 <1 19.3 0.1	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2 12.5 history2 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25 >20 >3.0 limit/base >6 >20	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6 current 0.1 9.6	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 19.3 history1 0.1 8.0	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2 12.5 history2 0 6.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 50 1000 1400 985 1060 4000 20 25 25 20 >20 >3.0 1 imit/base >6 >20 >30	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6 current 0.1 9.6 19.6	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 19.3 history1 0.1 8.0 16.6	history2 78 0 57 <1 1880 916 1105 5371 history2 5 <1 2 12.5 history2 0 6.9 15.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 50 1000 1400 985 1060 4000 limit/base >25 >20 >3.0 limit/base >6 >20 >30 limit/base	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6 current 0.1 9.6 19.6 19.6 19.6 current	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 19.3 history1 0.1 8.0 16.6 history1	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2 12.5 history2 0 6.9 15.8 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7624 *ASTM D7415 method *ASTM D7414	limit/base 50 1000 1400 985 1060 4000 255 >20 >3.0 limit/base >6 >20 >3.0 limit/base >25	current 66 0 78 <1 32 2320 1039 1259 5468 current 3 <1 0 0.6 current 9.6 19.6 19.6 16.2	history1 77 0 56 <1 17 1811 857 1031 5067 history1 5 <1 19.3 history1 0.1 8.0 16.6 history1 12.3	history2 78 0 57 <1 18 1880 916 1105 5371 history2 5 <1 2 12.5 history2 0 6.9 15.8 history2 13.0



OIL ANALYSIS REPORT







Jan7/22

May24/21

en2/20

Jan21/19

Inv5/19

Oct11/22

Mav5/23

VISUAL		method				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	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15	14.4	▲ 9.4	▲ 11.2
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 SHIMMICK CONSTRUCTION : WC0904106 Sample No. Received : 24 Apr 2024 5535 TRAILHEAD DRIVE Lab Number : 06158869 Tested : 25 Apr 2024 CHATTANOOGA, TN Unique Number : 10994292 Diagnosed : 26 Apr 2024 - Jonathan Hester US 37415 Test Package : CONST (Additional Tests: PercentFuel, TBN) Contact: DANIEL LISELLA Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. daniel.lisella@shimmick.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Submitted By: TECH TECHNICIAN Page 2 of 2