

RECOMMENDATION

Machine Id 145797-1218 LIEBHERR LH80M 145797-1218

Rear Right Wheel Hub

LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION	Test	UOIVI	Methou
Resample at the next service interval to monitor.	Sample Number		Client I
	Sample Date		Client li
	Machine Age	hrs	Client I
	Oil Age	hrs	Client li
	Filter Age	hrs	Client I
	Oil Changed		Client I
	Filter Changed		Client I
	Sample Status		
WEAR	Iron	ppm	ASTM D51
	Chromium	ppm	ASTM D51
All component wear rates are normal.	Nickel	ppm	ASTM D51
	Titanium	ppm	ASTM D51
	Silver	ppm	ASTM D51
	Aluminum	ppm	ASTM D51
	Lead	ppm	ASTM D51
	Copper	ppm	ASTM D51
	Tin	ppm	ASTM D51
	Vanadium	ppm	ASTM D51
	White Metal	scalar	*Visual
	Yellow Metal	scalar	*Visual
CONTAMINATION	Silicon	ppm	ASTM D51
There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D51
	Water		WC Met
	Silt	scalar	*Visual
	Debris	scalar	*Visual
	Sand/Dirt	scalar	*Visual
	Appearance	scalar	*Visual
	Odor	scalar	*Visual
	Emulsified Water	scalar	*Visual
FLUID CONDITION	Sodium	ppm	ASTM D51
The condition of the oil is acceptable for the time in service.	Boron	ppm	ASTM D51
·	Barium	ppm	ASTM D51
	Molybdenum	ppm	ASTM D51
	Manganese	ppm	ASTM D51
	Magnesium	ppm	ASTM D51
	Calcium	ppm	ASTM D51
	Phosphorus	ppm	ASTM D51
	Zinc	ppm	ASTM D51
	Sulfur	ppm	ASTM D51

Visc @ 40°C

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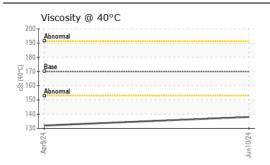
ASTM D445 170

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0257708	LH0257712	
Sample Date		Client Info		10 Jun 2024	09 Apr 2024	
Machine Age	hrs	Client Info		2017	1579	
Oil Age	hrs	Client Info		500	500	
Filter Age	hrs	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Filter Changed		Client Info		Changed	Changed	
Sample Status			NORMAL	NORMAL		
Iron	nnm	ASTM D5185m	>650	15	11	
Chromium	ppm	ASTM D5185m	>030	<1	<1	
Nickel	ppm	ASTM D5185m	>4	<1 <1	<1	
	ppm	ASTM D5185m				
Titanium	ppm	ASTM D5185m	>4	<1	<1 0	
Silver	ppm		5 DE	<1 2		
Aluminum	ppm	ASTM D5185m	>25	2	2	
Lead	ppm	ASTM D5185m	>4	<1 -	<1	
Copper	ppm	ASTM D5185m	>60	7	6	
Tin	ppm	ASTM D5185m	>4	<1	<1	
Vanadium	ppm	ASTM D5185m	NONE	<1	0	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Silicon	ppm	ASTM D5185m	>75	4	4	
Potassium	ppm	ASTM D5185m	>20	2	2	
Water		WC Method	>0.2			
Silt			, o.=	NEG	NEG	
	scalar	*Visual	NONE	NEG NONE	NONE	
Debris	scalar scalar	*Visual *Visual		-		
Debris Sand/Dirt			NONE	NONE	NONE	
	scalar	*Visual	NONE NONE	NONE	NONE	
Sand/Dirt	scalar scalar	*Visual *Visual	NONE NONE NONE	NONE NONE NONE	NONE NONE NONE	
Sand/Dirt Appearance	scalar scalar scalar	*Visual *Visual *Visual	NONE NONE NORML	NONE NONE NORML	NONE NONE NORML	
Sand/Dirt Appearance Odor Emulsified Water	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NORML NORML	NONE NONE NORML NORML NEG	NONE NONE NORML NORML 0.2%	
Sand/Dirt Appearance Odor Emulsified Water Sodium	scalar scalar scalar scalar scalar ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m	NONE NONE NORML NORML >0.2	NONE NONE NORML NORML NEG 3	NONE NONE NORML NORML 0.2% 2	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	scalar scalar scalar scalar scalar ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	NONE NONE NORML NORML >0.2	NONE NONE NORML NORML NEG 3 113	NONE NONE NORML 0.2% 2 144	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	scalar scalar scalar scalar scalar ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	NONE NONE NORML NORML >0.2	NONE NONE NORML NORML NEG 3 1113 2	NONE NONE NORML NORML 0.2% 2 144 <1	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	scalar scalar scalar scalar ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	NONE NONE NORML NORML >0.2 0 0	NONE NONE NORML NORML NEG 3 113 2 5	NONE NONE NORML NORML 0.2% 2 144 <1 6	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	scalar scalar scalar scalar ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORME NORML >0.2 0 0 0 0 0	NONE NONE NORML NORML NEG 3 1113 2 5 1	NONE NONE NORML 0.2% 2 144 <1 6 <1	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	scalar scalar scalar scalar ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NONE NORML NORML >0.2 0 0 0 0 0 0	NONE NONE NORML NORML NEG 3 113 2 5 1 1 29	NONE NONE NORML 0.2% 2 144 <1 6 <1 34	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 0 0 0 0 0 1 4 1	NONE NONE NORML NORML NEG 3 113 2 5 1 2 9 74	NONE NONE NORML NORML 0.2% 2 144 <1 6 <1 6 <1 34 85	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORME NORML >0.2 0 0 0 0 0 0 1 0 2 1 2143	NONE NONE NORML NORML NEG 3 1113 2 5 1 2 9 74 2418	NONE NONE NORML 0.2% 2 144 <1 6 <1 34 85 2336	
Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 0 0 0 0 0 1 4 1	NONE NONE NORML NORML NEG 3 113 2 5 1 2 9 74	NONE NONE NORML NORML 0.2% 2 144 <1 6 <1 6 <1 34 85	

Contact/Location: Dale Shaw - TEXHOUWC

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Ferrous Alloys 15 14 13 10 mdo 0 Non-ferrous Metals 10 mdo Viscosity @ 40°C 195 190 185 180 175 170 ပ္ပ္ဂ် 165 မ္ . 중 160 155 150 145 140 135 130 Jun10/24 0/9/D

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Diagnosed

Tested

: 27 Jun 2024

: 28 Jun 2024



TEXAS PORT RECYCLING - HOUSTON PORT 8945 MANCHESTER ST HOUSTON, TX : 29 Jun 2024 - Don Baldridge US 77012 Contact: Dale Shaw dale.shaw@tmrecycling.com T: F: (713)921-5545 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

Laboratory

Sample No.

Lab Number : 06222712

Unique Number : 11100909

Test Package : CONST

: LH0257708

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.

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