

#### Machine Id LIEBHERR 1400 CR4405 - 4.1 (S/N 0015-108) Component Winch Fluid GEAR OIL ISO 220 (--- GAL)

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

## **WEAR**

All component wear rates are normal.

## CONTAMINATION

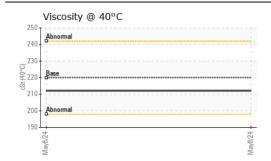
There is no indication of any contamination in the oil.

# **FLUID CONDITION**

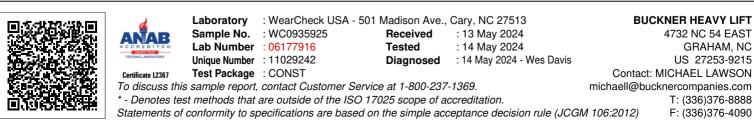
The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0935925		
Sample Date		Client Info		08 May 2024		
Machine Age	hrs	Client Info		9661		
Oil Age	hrs	Client Info		252		
Filter Age	hrs	Client Info		0		
Oil Changed		Client Info		Changed		
Filter Changed		Client Info		Not Changd		
Sample Status				NORMAL		
			450	40		
Iron	ppm	ASTM D5185m	>150	49		
Chromium	ppm	ASTM D5185m	>10	<1		
Nickel	ppm	ASTM D5185m	>10	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	_	0		
Aluminum	ppm	ASTM D5185m	>5	0		
Lead	ppm	ASTM D5185m	>15	0		
Copper	ppm	ASTM D5185m	>80	0		
Tin	ppm	ASTM D5185m		<1		
Vanadium	ppm	ASTM D5185m		0		
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Silicon	ppm	ASTM D5185m	>25	2		
Silicon Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>25 >20	2 1		
				_		
Potassium		ASTM D5185m	>20	1		
Potassium Water	ppm	ASTM D5185m WC Method	>20 >0.2	1 NEG		
Potassium Water Silt	ppm scalar	ASTM D5185m WC Method *Visual	>20 >0.2 NONE	1 NEG MODER		
Potassium Water Silt Debris	ppm scalar scalar	ASTM D5185m WC Method *Visual *Visual	>20 >0.2 NONE NONE	1 NEG MODER NONE		  
Potassium Water Silt Debris Sand/Dirt	ppm scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual	>20 >0.2 NONE NONE NONE	1 NEG MODER NONE NONE	  	  
Potassium Water Silt Debris Sand/Dirt Appearance	ppm scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NONE NORML	1 NEG MODER NONE NONE NORML	  	   
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NORML NORML	1 NEG MODER NONE NONE NORML NORML NEG	  	   
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.2 NONE NONE NORML NORML >0.2	1 NEG MODER NONE NORE NORML NEG 0	  	   
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1	  	   
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 1		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> <li>15</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 1 0 <1		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORM</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> <li>50</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 0 <1 6		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> <li>15</li> <li>50</li> <li>50</li> <li>50</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 0 15 1 0 <1 6 34		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Malybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> <li>15</li> <li>50</li> <li>50</li> <li>50</li> <li>350</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 0 <1 6 34 379		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Boron Barium Malybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> <li>15</li> <li>50</li> <li>50</li> <li>50</li> <li>350</li> <li>100</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 0 <15 1 0 <1 6 34 379 30		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Malybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>50</li> <li>15</li> <li>15</li> <li>50</li> <li>50</li> <li>50</li> <li>350</li> </ul>	1 NEG MODER NONE NORML NORML NEG 0 15 1 0 <1 6 34 379		

Contact/Location: MICHAEL LAWSON - BUCGRA



Ferrous Alloys 50 45 40 35 30 u 25 15 10 0 lively Non-ferrous Metals 10 lead maa Viscosity @ 40°C 24 240 235 230 22! C20 (40°C) 21 210 205 20 Abnorma 195 May8/24 Sure IV



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