

OIL ANALYSIS REPORT

Sample Rating Trend







NRL-401-2
Component
Hoisting Gearbox

{not provided} (--- GAL)

DIAGNOSIS

Machine Id

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.

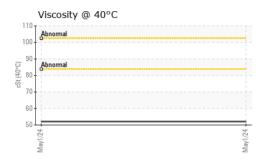
Fluid Condition

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

SAMPLE INFORMATION method limit/base current history1 history2					May2024		
Sample Date	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		DC0036877		
Machine Age hrs Client Info 0							
Oil Changed		hrs			-		
Oil Changed Client Info Not Changed Sample Status NORMAL Sample Status NORMAL Sample Status NORMAL Sample Status NORMAL Sample Status Sample Status					_		
Sample Status	-	0			· ·		
Water WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 21 Chromium ppm ASTM D5185m >10 0 Nickel ppm ASTM D5185m >10 0 Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 2 Aluminum ppm ASTM D5185m 0 Copper ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 ADDITIVES method limit/base ourrent history1 <t< th=""><th>-</th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	-						
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 21 Chromium ppm ASTM D5185m >10 0 Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m >1 Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 2 Lead ppm ASTM D5185m 0 Copper ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0	CONTAMINATION	J	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.2	NEG		
Chromium ppm ASTM D5185m >10 0 Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>200	21		
Titanium	Chromium		ASTM D5185m	>10	0		
Titanium	Nickel	ppm	ASTM D5185m	>10	0		
Silver	Titanium		ASTM D5185m		<1		
Aluminum	Silver		ASTM D5185m		0		
Lead ppm ASTM D5185m 2 Copper ppm ASTM D5185m 46 Tin ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 0 Mangaesium ppm ASTM D5185m 0 Mangaesium ppm ASTM D5185m 0 Phosphorus ppm ASTM D5185m 3579 Phosphorus ppm ASTM D5185m 1623 Zinc ppm ASTM D5185m 5869	Aluminum		ASTM D5185m		<1		
Tin ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 Manades ppm ASTM D5185m 0 Managese ppm ASTM D5185m 0 Magnesium ppm ASTM D5185m 0 Calcium ppm ASTM D5185m 3579 Phosphorus ppm ASTM D5185m 1185 Zinc ppm ASTM D5185m 1623 Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 h	Lead	ppm	ASTM D5185m		2		
Tin ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m 0 Manganesium ppm ASTM D5185m 3579 Manganesium ppm ASTM D5185m 3579 Calcium ppm ASTM D5185m 1185 Phosphorus ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1	Copper		ASTM D5185m		46		
Vanadium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 104 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m 0 Magnesium ppm ASTM D5185m 0 Calcium ppm ASTM D5185m 3579 Phosphorus ppm ASTM D5185m 1185 Zinc ppm ASTM D5185m 1623 Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2	Tin		ASTM D5185m		0		
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Boron	Cadmium		ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		104		
Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 0 Calcium ppm ASTM D5185m 3579 Phosphorus ppm ASTM D5185m 1185 Zinc ppm ASTM D5185m 1623 Sulfur ppm ASTM D5185m 5869 Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 6 Sodium ppm ASTM D5185m >20 2 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual </td <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td></td> <td></td>	Barium	ppm	ASTM D5185m		0		
Magnesium ppm ASTM D5185m 0 Calcium ppm ASTM D5185m 3579 Phosphorus ppm ASTM D5185m 1185 Zinc ppm ASTM D5185m 1623 Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 6 Sodium ppm ASTM D5185m >20 2 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate sc	Molybdenum	ppm	ASTM D5185m		0		
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Phosphorus ppm ASTM D5185m 1185 Zinc ppm ASTM D5185m 1623 Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 6 Sodium ppm ASTM D5185m >20 2 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td></td> <td></td>	Magnesium	ppm	ASTM D5185m		0		
Zinc ppm ASTM D5185m 1623 Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 6 Sodium ppm ASTM D5185m >20 2 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE	Calcium	ppm	ASTM D5185m		3579		
Sulfur ppm ASTM D5185m 5869 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 11 Sodium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORML NORML	Phosphorus	ppm	ASTM D5185m		1185		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 11 Sodium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORML NORML Appearance scalar *Visual NORML NORML Godor scalar *Visual	Zinc	ppm	ASTM D5185m		1623		
Silicon ppm ASTM D5185m 11 Sodium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Godor scalar *Visual NORML <th< td=""><td>Sulfur</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>5869</th><td></td><td></td></th<>	Sulfur	ppm	ASTM D5185m		5869		
Sodium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Free Water scalar *Visual NORML NEG	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual NO.2 NEG Free Water scalar	Silicon	ppm	ASTM D5185m		11		
VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORML NORML Appearance scalar *Visual NORML NORML Codor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Sodium	ppm	ASTM D5185m		6		
White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Potassium	ppm	ASTM D5185m	>20	2		
Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORML NORML Appearance scalar *Visual NORML NORML Codor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	White Metal	scalar	*Visual	NONE	NONE		
Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Yellow Metal	scalar	*Visual	NONE	NONE		
Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Precipitate	scalar	*Visual	NONE	NONE		
Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Silt	scalar	*Visual	NONE	NONE		
Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Debris	scalar	*Visual	NONE	NONE		
Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG	Appearance	scalar	*Visual	NORML	NORML		
Free Water scalar *Visual NEG	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
		scalar	*Visual				



OIL ANALYSIS REPORT





Additives

3500 3000

E 2500

1000





Certificate 12367

Laboratory Sample No.

: DC0036877 Lab Number : 06176328 Unique Number : 11022381

Test Package : MOB 1

100

St (40°C)

70

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 10 May 2024

: 13 May 2024 **Tested** Diagnosed : 14 May 2024 - Sean Felton

CRANEWORKS INC - MID-ATLANTIC

11089 LEADBETTER ROAD ASHLAND, VA

US 23005 Contact: JASON WILDE jcwilde@vacraneworks.com

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.

Viscosity @ 40°C

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: CRAASHMA [WUSCAR] 06176328 (Generated: 05/30/2024 08:29:01) Rev: 1

Contact/Location: JASON WILDE - CRAASHMA

T:

F: