

## WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL



Machine Id LIEBHERR LH40C 155775-1527

Right Final Drive GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL SAE 80W90. Please confirm.

**WEAR** 

All component wear rates are normal.

## CONTAMINATION

There is no indication of any contamination in the oil.

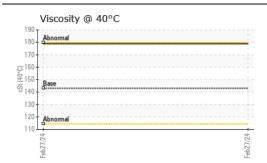
## FLUID CONDITION

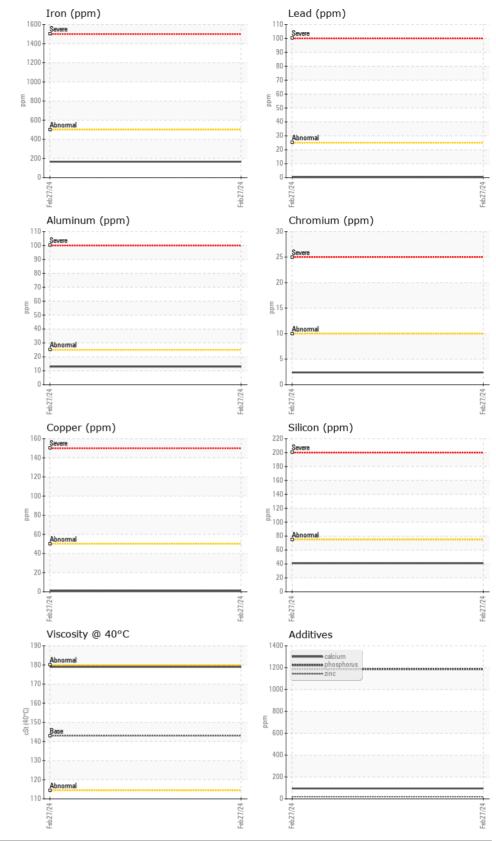
The condition of the oil is acceptable for the time in service.

Test         UOM         Method         Limit/Am         Current         History1         History1         History1           Sample Date         Client Info         27 Feb 2024             Machine Age         hrs         Client Info         447             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A             Filter Changed         Client Info         N/A             Sample Status         Vision         Solo         166             Iron         pp         ASTMD5185(m)         >10         2          1           Nickel         pp         ASTMD5185(m)         >10         <1          1           Aluminum         pp         ASTMD5185(m)         >25         13          1           Aluminum         pp         ASTMD5185(m)         >50         <1          1           Yanadium         pp							
Sample DateClient Info27 Feb 2024Machine AgehrsClient Info447Oil AgehrsClient Info0Filter AgehrsClient InfoChangedOil ChangedClient InfoN/AFilter ChangedClient InfoN/ASample StatusVClient InfoN/AIronppmASTMD5185(m)>102NickelppmASTMD5185(m)>10<1NickelppmASTMD5185(m)>10<1AluminumppmASTMD5185(m)>2513AluminumppmASTMD5185(m)>50<1VanadiumppmASTMD5185(m)>50<1VanadiumppmASTMD5185(m)>10<1VanadiumppmASTMD5185(m)>10<1VanadiumppmASTMD5185(m)>206SiliconppmASTMD5185(m)>206SiliconppmASTMD5185(m)>206SiliconppmASTMD5185(m)>206SiliconppmASTMD5185(m)>206Appearance <td< th=""><th>est U</th><th>JOM</th><th>Method</th><th>Limit/Abn</th><th>Current</th><th>History1</th><th>History2</th></td<>	est U	JOM	Method	Limit/Abn	Current	History1	History2
Machine Age         hrs         Client Info         447             Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Changed             Filter Changed         Client Info         N/A             Sample Status         Viral              Iron         ppm         ASTM D5/85(m)         >500         166            Nickel         ppm         ASTM D5/85(m)         >10             Nickel         ppm         ASTM D5/85(m)         >10             Aluminum         ppm         ASTM D5/85(m)         >2         13             Aluminum         ppm         ASTM D5/85(m)         >50         <1             Yanadium         ppm         ASTM D5/85(m)         >50         <1             Yellow Metal         scalar         Yisual*         NONE	mple Number		Client Info		LH0270546		
Oil AgehrsClient Info0Filter AgehrsClient Info0Oil ChangedClient InfoChangedFilter ChangedClient InfoN/ASample StatusN/AIronppmASTM D5185(m)>500166ChromiumppmASTM D5185(m)>102NickelppmASTM D5185(m)>10<1AluminumppmASTM D5185(m)>2513AluminumppmASTM D5185(m)>25<1LeadppmASTM D5185(m)>500<1VanadiumppmASTM D5185(m)>50<1VanadiumppmASTM D5185(m)>50<1VanadiumppmASTM D5185(m)>10<1Yellow MetalscalarVisual*NONEVLITESiliconppmASTM D5185(m)>206SuitscalarVisual*NONENONESuitscalarVisual*NONENONESodiumppmASTM D5185(m)>206SiliconppmASTM D5185(m)>206SuitscalarVisual*NONENONEDebrisscalarVisual*NORENORE<	imple Date		Client Info		27 Feb 2024		
Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Changed             Filter Changed         Client Info         N/A             Sample Status         NORMAL              Iron         ppm         ASTM D5185(m)         >500         166             Chromium         ppm         ASTM D5185(m)         >10         2          I           Nickel         ppm         ASTM D5185(m)         >10         <1          I           Silver         ppm         ASTM D5185(m)         >25         13          I           Lead         ppm         ASTM D5185(m)         >50         <1          I           Vanadium         ppm         ASTM D5185(m)         >50         <1          I           Vanadium         ppm         ASTM D5185(m)         >50         <1          I           Vanadium         ppm         ASTM D5185(m)         >50         <1          I           Vana	achine Age h	nrs	Client Info		447		
Oil Changed         Client Info         Changed             Filter Changed         Client Info         N/A             Sample Status         NORMAL              Iron         ppm         ASTM D5185(m)         >500         166             Iron         ppm         ASTM D5185(m)         >10         2          Integration         Integrat	l Age h	nrs	Client Info		0		
Filter Changed         Client Info         N/A             Filter Changed         Client Info         N/A              Sample Status         NORMAL               Iron         ppm         ASTM D5185(m)         >500         166             Chromium         ppm         ASTM D5185(m)         >10         <1          I           Nickel         ppm         ASTM D5185(m)         >10         <1          I           Silver         ppm         ASTM D5185(m)         >10         <1          I           Aluminum         ppm         ASTM D5185(m)         >25         <1          I           Aluminum         ppm         ASTM D5185(m)         >25         <1          I           Aluminum         ppm         ASTM D5185(m)         >50         <1          I           Aluminum         ppm         ASTM D5185(m)         >50         <1          I           Lead         ppm         ASTM D5185(m)         >10         <1	ter Age h	nrs	Client Info		0		
Sample Status         NORMAL             Iron         ppm         ASTM D5185(m)         >500         166            Chromium         ppm         ASTM D5185(m)         >10         2          I           Nickel         ppm         ASTM D5185(m)         >10         <1          I           Titanium         ppm         ASTM D5185(m)         >0          I         I           Silver         ppm         ASTM D5185(m)         >25         13          I           Aluminum         ppm         ASTM D5185(m)         >25         <1          I           Lead         ppm         ASTM D5185(m)         >25         <1          I           Copper         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vatar         visual*         NONE         NONE         I          I	l Changed		Client Info		Changed		
Iron         ppm         ASTM D5185(m)         >500         166            Chromium         ppm         ASTM D5185(m)         >10         2          0           Nickel         ppm         ASTM D5185(m)         >10         <1          0           Titanium         ppm         ASTM D5185(m)         >10         <1          0           Silver         ppm         ASTM D5185(m)         >25         13          0           Aluminum         ppm         ASTM D5185(m)         >25         <1          0           Lead         ppm         ASTM D5185(m)         >50         <1          0         0           Copper         ppm         ASTM D5185(m)         >50         <1          0         0           Vanadium         ppm         ASTM D5185(m)         >10         <1          0         0           Vhite Metal         scalar         Visual*         NONE         VLITE          0           Yellow Metal         scalar         Visual*         NONE         NORE          0           Silicon	ter Changed		Client Info		N/A		
Chromium         ppm         ASTM D5185(m)         >10         2          1           Nickel         ppm         ASTM D5185(m)         >10         <1          I           Titanium         ppm         ASTM D5185(m)         0          I         I           Silver         ppm         ASTM D5185(m)         25         13          I           Aluminum         ppm         ASTM D5185(m)         >25         <1          I           Lead         ppm         ASTM D5185(m)         >25         <1          I           Copper         ppm         ASTM D5185(m)         >50         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vellow Metal         scalar         Visual*         NONE          I         I           Yellow Metal         scalar         Visual*	Imple Status				NORMAL		
Chromium         ppm         ASTM D5185(m)         >10         2          1           Nickel         ppm         ASTM D5185(m)         >10         <1          I           Titanium         ppm         ASTM D5185(m)         0          I         I           Silver         ppm         ASTM D5185(m)         25         13          I           Aluminum         ppm         ASTM D5185(m)         >25         <1          I           Lead         ppm         ASTM D5185(m)         >25         <1          I           Copper         ppm         ASTM D5185(m)         >50         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vellow Metal         scalar         Visual*         NONE          I         I           Yellow Metal         scalar         Visual*	,						
Nickel         ppm         ASTM D5185(m)         >10         <1			( )				
Titanium         ppm         ASTM D5185(m)         <1	11		. ,		_		
Silver         ppm         ASTM D5185(m)         0            Aluminum         ppm         ASTM D5185(m)         >25         13            Lead         ppm         ASTM D5185(m)         >25         <1            Copper         ppm         ASTM D5185(m)         >50         <1            Tin         ppm         ASTM D5185(m)         >10         <1            Vanadium         ppm         ASTM D5185(m)         >75         41            Yellow Metal         scalar         Visual*         NONE         NONE            Silicon         ppm         ASTM D5185(m)         >20         6            Silit         scalar         Visual*         NONE         NONE            Debris         scalar         Visual*         NORM         NORML				>10			
Aluminum         ppm         ASTM D5185(m)         >25         13          I           Lead         ppm         ASTM D5185(m)         >25         <1          I           Copper         ppm         ASTM D5185(m)         >50         <1          I           Tin         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vanadium         ppm         ASTM D5185(m)         >10         <1          I           Vellow Metal         scalar         Visual*         NONE         VLITE          I           Yellow Metal         scalar         Visual*         NONE         MONE          I           Silicon         ppm         ASTM D5185(m)         >20         6          I           Water         wC Method         >0.2         NEG          I         I           Debris         scalar         Visual*	1.1		( )				
Lead         ppm         ASTM D5185(m)         >25         <1	- 11		. ,		-		
CopperppmASTM D5185(m)>50<1	1-1		( /		-		
TinppmASTM D5185(m)>10<1					<1		
VanadiumppmASTM D5185(m)0White MetalscalarVisual*NONEVLITEYellow MetalscalarVisual*NONENONESiliconppmASTM D5185(m)>7541PotassiumppmASTM D5185(m)>206WaterWC Method>0.2NEGSilitscalarVisual*NONENONESiltscalarVisual*NONENONESand/DirtscalarVisual*NONEVLITEAppearancescalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLSodiumppmASTM D5185(m)>1706BoronppmASTM D5185(m)20017BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)120		pm	ASTM D5185(m)	>50			
White MetalscalarVisual*NONEVLITEYellow MetalscalarVisual*NONENONEISiliconppmASTM D5185(m)>7541IPotassiumppmASTM D5185(m)>206IWaterWC Method>0.2NEGISilitscalarVisual*NONENONEDebrisscalarVisual*NONENONESand/DirtscalarVisual*NOREVLITEAppearancescalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLSodiumppmASTM D5185(m)>1706BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122	1-1		( )	>10			
Yellow MetalscalarVisual*NONENONESiliconppmASTM D5185(m)>7541PotassiumppmASTM D5185(m)>206WaterWC Method>0.2NEGSiltscalarVisual*NONENONEDebrisscalarVisual*NONENONESand/DirtscalarVisual*NONEVLITEAppearancescalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLSodiumppmASTM D5185(m)>1706BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122		pm	ASTM D5185(m)		0		
SiliconppmASTM D5185(m)>7541PotassiumppmASTM D5185(m)>206WaterWC Method>0.2NEGSiltscalarVisual*NONENONEDebrisscalarVisual*NONENONESand/DirtscalarVisual*NONEVLITEAppearancescalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLSodiumppmASTM D5185(m)>1706BoronppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122				-			
PotassiumppmASTM D5185(m)>2061WaterWC Method>0.2NEG1SiltscalarVisual*NONENONE1DebrisscalarVisual*NONENONE1Sand/DirtscalarVisual*NONEVLITE1AppearancescalarVisual*NORMLNORML1OdorscalarVisual*NORMLNORML1Emulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122	llow Metal so	calar	Visual*	NONE	NONE		
PotassiumppmASTM D5185(m)>2061WaterWC Method>0.2NEG1SiltscalarVisual*NONENONE1DebrisscalarVisual*NONENONE1Sand/DirtscalarVisual*NONEVLITE1AppearancescalarVisual*NORMLNORML1OdorscalarVisual*NORMLNORML1Emulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122	icon p	mag	ASTM D5185(m)	>75	41		
WaterWC Method>0.2NEGSiltscalarVisual*NONENONEDebrisscalarVisual*NONENONESand/DirtscalarVisual*NONEVLITEAppearancescalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLEmulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122							
SiltscalarVisual*NONENONEIDebrisscalarVisual*NONENONEISand/DirtscalarVisual*NONEVLITEIAppearancescalarVisual*NORMLNORMLIOdorscalarVisual*NORMLNORMLIEmulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BoronppmASTM D5185(m)20017BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)122			( )				
DebrisscalarVisual*NONENONESand/DirtscalarVisual*NORVLITEAppearancescalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLOdorscalarVisual*NORMLNORMLEmulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BoronppmASTM D5185(m)20017BariumppmASTM D5185(m)120MolybdenumppmASTM D5185(m)122	t so	calar	Visual*	NONE			
Appearance         scalar         Visual*         NORML         NORML            Odor         scalar         Visual*         NORML         NORML          Image: Comparison of the com			Visual*	NONE	NONE		
OdorscalarVisual*NORMLNORMLEmulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BoronppmASTM D5185(m)40015BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)22	nd/Dirt so	calar	Visual*	NONE	VLITE		
OdorscalarVisual*NORMLNORMLEmulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)>1706BoronppmASTM D5185(m)40015BariumppmASTM D5185(m)20017MolybdenumppmASTM D5185(m)120ManganeseppmASTM D5185(m)22	pearance so	calar	Visual*	NORML	NORML		
Sodium         ppm         ASTM D5185(m)         >170         6            Boron         ppm         ASTM D5185(m)         400         15            Barium         ppm         ASTM D5185(m)         200         17            Molybdenum         ppm         ASTM D5185(m)         12         0            Manganese         ppm         ASTM D5185(m)         2		calar	Visual*	NORML	NORML		
Boron         ppm         ASTM D5185(m)         400         15            Barium         ppm         ASTM D5185(m)         200         17            Molybdenum         ppm         ASTM D5185(m)         12         0            Manganese         ppm         ASTM D5185(m)         2          2	ulsified Water so	calar	Visual*	>0.2	NEG		
Boron         ppm         ASTM D5185(m)         400         15            Barium         ppm         ASTM D5185(m)         200         17            Molybdenum         ppm         ASTM D5185(m)         12         0            Manganese         ppm         ASTM D5185(m)         2          2							
Barium         ppm         ASTM D5185(m)         200         17            Molybdenum         ppm         ASTM D5185(m)         12         0            Manganese         ppm         ASTM D5185(m)         12         2	p <b>dium</b> pj	pm	ASTM D5185(m)	>170	6		
Molybdenum         ppm         ASTM D5185(m)         12         0            Manganese         ppm         ASTM D5185(m)         2	pron p	pm	ASTM D5185(m)	400	15		
Manganese ppm ASTM D5185(m) 2	ı <b>rium</b> pı	pm	ASTM D5185(m)	200	17		
	plybdenum p	pm	ASTM D5185(m)	12	0		
Magnesium         ppm         ASTM D5185(m)         12         22	anganese p	pm	ASTM D5185(m)		2		
	agnesium p	pm	ASTM D5185(m)	12	22		
Calcium ppm ASTM D5185(m) 150 95	alcium p			150	95		
Phosphorus         ppm         ASTM D5185(m)         1650         1187	iosphorus p	pm	ASTM D5185(m)	1650	1187		
Zinc ppm ASTM D5185(m) 125 20	nc p	pm	ASTM D5185(m)	125	20		
Sulfur ppm ASTM D5185(m) 22500 22987	l <b>fur</b> pj	pm	ASTM D5185(m)	22500	22987		
	sc @ 40°C c	St	ASTM D7279(m)	143	179		

Report Id: BENGUE [WCAMIS] 02618759 (Generated: 02/28/2024 15:36:58) Rev: 1

Submitted By: ?







Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA Sample No. Received : 28 Feb 2024 : LH0270546 Lab Number : 02618759 Tested : 28 Feb 2024 ISO 17025:2017 Accredited Laboratory Diagnosed Unique Number : 5735869 : 28 Feb 2024 - Wes Davis Test Package : MOB 1 To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

Report Id: BENGUE [WCAMIS] 02618759 (Generated: 02/28/2024 15:37:00) Rev: 1

**BEN-MET STEEL & METAL INC.** 

415 ELIZABETH STREET GUELPH, ON CA N1E 2Y2 Contact: Andy Sakool asakool@benmetsteel.com T: (519)763-1209 F: (519)763-9174

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