



LIEBHERR R934 025778-918

Splitter Box

GEAR OIL LS 80W90 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

W	٧E	Α	R

The aluminum level is abnormal. All other component wear rates are normal.

CONTAMINATION

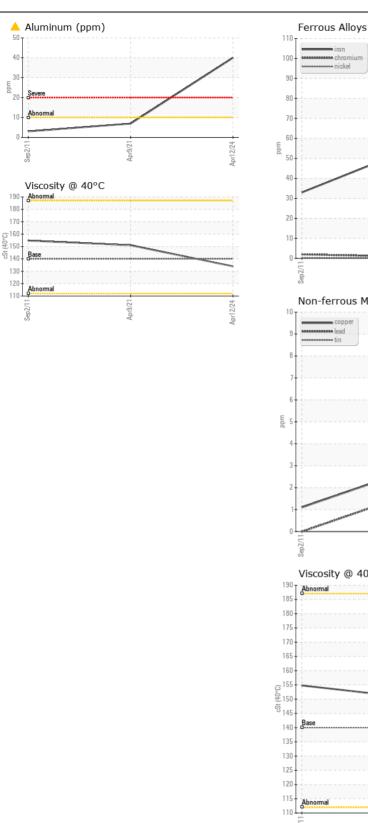
There is no indication of any contamination in the oil.

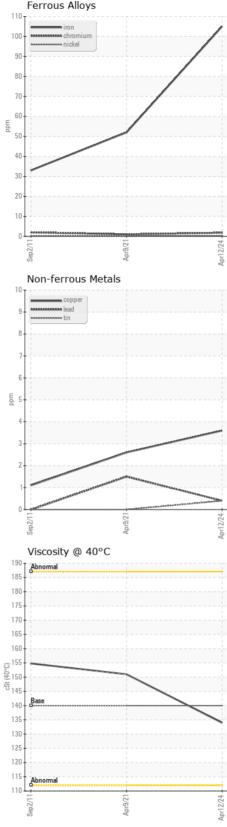
FLUID CONDITION

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

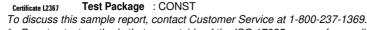
Sample DateClient Into12 Apr 20209 Apr 20202 Sep 2011Machine AgehrsClient Into45943853572Oil AgehrsClient Into00572Filter AgehrsClient IntoCChangedChangedChangedFilter ChangedIClient IntoIVAN/AN/ASample StatusClient IntoIVAN/ANORMALIronpmASTM D5185>33010552233ChromiumpmASTM D5185>24<1<12NickelpmASTM D5185>24<100SilverpmASTM D5185<4<100AluminumpmASTM D5185<4<100AluminumpmASTM D5185>30430101CopperpmASTM D5185>30<100VanadiumpmASTM D5185>50<100VanadiumpmASTM D5185>50<100VanadiumpmASTM D5185>50<100VanadiumpmASTM D5185>50<100VanadiumpmASTM D5185>50<100VanadiumpmASTM D5185>50<100VanadiumpmASTM D5185>30IstNONENONESiliconpmASTM							
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Machine AgeInsClient InfoIsp45943853572Oil AgehrsClient Info00572Filter AgehrsClient InfoChangedChangedChangedFilter ChangedIspClient InfoN/AN/AN/ASample StatusClient InfoN/AN/AN/ASample StatusIspASTM 518s33010552233ChromiumppmASTM 518s5301055233ChromiumppmASTM 518s52<1<1<1TitaniumppmASTM 518s52<100SilverppmASTM 518s54<100AluminumppmASTM 518s54<100AgandappmASTM 518s54<100AluminumppmASTM 518s54<100AgandappmASTM 518s54<100VanadappmASTM 518s54<100VanadappmASTM 518s54<100VanadappmASTM 518s54<100VanadappmASTM 518s54<100VanadappmASTM 518s52<100VanadappmASTM 518s52<100VanadappmASTM 518s52<1	Sample Number		Client Info		LH0273807	LH0190479	LHMC34847
Oil Age Oil Age Filter Age IrsClient Info00572Filter Anaged Filter ChangedClient Info000Oil ChangedClient InfoN/AN/AN/ASample StatusClient InfoN/AN/AN/ASample StatusSite Site Site Site Site Site Site Site	Sample Date		Client Info		12 Apr 2024	09 Apr 2021	02 Sep 2011
Filter AgehrsClient Info000Oil ChangedClient InfoChangedChangedChangedChangedFilter ChangedClient InfoN/AN/AN/ASample StatusSitueABNORMALNORMALNORMALIronppmASTM D5185n>3301055233ChromiumppmASTM D5185n>202121NickelppmASTM D5185n>20<13121NickelppmASTM D5185n>20<100AluminumppmASTM D5185n>4<100AluminumppmASTM D5185n>4<120CopperppmASTM D5185n>5<100VanadiumppmASTM D5185n <t< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>4594</th><th>3853</th><th>572</th></t<>	Machine Age	hrs	Client Info		4594	3853	572
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Filter Changel Client Info NA N/A N/A Sample Status Client Info NA N/A N/A Iron ppm ASTM D5185 >330 105 52 33 Chromium ppm ASTM D5185 >10 2 1 2 Nickel ppm ASTM D5185 >2 <1 <1 <1 Titanium ppm ASTM D5185 >2 <1 0 0 Silver ppm ASTM D5185 >2 <1 0 0 Aluminum ppm ASTM D5185 >10 40 7 3 Lead ppm ASTM D5185 >10 40 3 1 Vanadium ppm ASTM D5185 >3 <1 0 0 Vanadium ppm ASTM D5185 >30 4 3 1 1 Vanadium ppm ASTM D5185 >35 <15 <5 4 Velow Metal scalar 'Visual NONE NONE NONE NONE	Filter Age	hrs	Client Info		0	0	0
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IronppmASTM D5185m>33010552233ChromiumppmASTM D5185m>10212NickelppmASTM D5185m>2<1<1<1TitaniumppmASTM D5185m>2<100SilverppmASTM D5185m>4<100AluminumppmASTM D5185m>10▲ 4073LeadppmASTM D5185m>4<120CopperppmASTM D5185m>4<100VanadiumppmASTM D5185m>30431TinppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<15NONENONEVallow Metalscalar*VisualNONENONENONENONEVallow Metalscalar*VisualNORNORENORENORESiliconppmASTM D5185m>2015S<11Otascalar*VisualNORNORENORENORE <th>Filter Changed</th> <th></th> <th>Client Info</th> <th></th> <th>N/A</th> <th>N/A</th> <th>N/A</th>	Filter Changed		Client Info		N/A	N/A	N/A
ChromiumppmASTM D5185m>C0212NickelppmASTM D5185m>2<1<1<1<1TitaniumppmASTM D5185m>2<100SilverppmASTM D5185m>1 A 40773LeadppmASTM D5185m>4<1220CopperppmASTM D5185m>30 4 331TinppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<15S<1Yellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>20191119WaterWC Method>0.1NEGNONENONENONESolitscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONEAppearancescalar*VisualNORHNORHLNORHLNORHLAppearancescalar*VisualNORHNORHLNORHLNORHLCodorscalar*VisualNORHNORHLNORHLNORHLAppearancescalar*Visual	Sample Status				ABNORMAL	NORMAL	NORMAL
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NickelppmASTM D5185m>2<1	-						
TitaniumppmASTM D5185m>4<1					_		
SilverppmASTM D5185m<1							
AluminumppmASTM D5185m>10A 073LeadppmASTM D5185m>4<120CopperppmASTM D5185m>30431TinppmASTM D5185m>5<100VanadiumppmASTM D5185m>5<100White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>351554PotassiumppmASTM D5185m>201911119WaterWC Method0.1NEGNONENONESolitscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLCdorscalar*VisualNORMNORMLNORMLNORMLDebrisscalar*VisualNORMNORMLNORMLNORMLAppearancescalar*VisualNORMNORMLNORMLNORMLGdorscalar*VisualNORMNORMLNORMLNORMLMappearancescalar*VisualNORMLNORMLNORMLNORMLAppearancescalar*VisualNORMLNORMLNORMLNORMLMolybdenump				>4			
LeadppmASTM D5185m>4<1	••			10			-
Copper ppm ASTM D5185m >30 4 3 1 Tin ppm ASTM D5185m >5 <1 0 0 Vanadium ppm ASTM D5185m >5 <1 0 0 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Silicon ppm ASTM D5185m >35 15 5 4 Potassium ppm ASTM D5185m >20 19 11 19 Water WC Method >0.1 NEG NONE NONE NORE Debris scalar *Visual NONE NONE NONE NORML NORML Appearance scalar *Visual NORML NORML NORML NORML NORML Godr scalar *Visual NORML NORML NORML NORML NORML					-		
TinppmASTM D5185m>5<1							
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SiliconppmASTM D5185m>351554PotassiumppmASTM D5185m>20191119WaterWC Method>0.1NEGNEGNEGSiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLCodorscalar*VisualNORMLNORMLNORMLNORMLBoronppmASTM D5185m>25<112BariumppmASTM D5185m15032215BariumppmASTM D5185m1503376138MolybdenumppmASTM D5185m701141114PhosphorusppmASTM D5185m701141114PhosphorusppmASTM D5185m5021010562SulfurppmASTM D5185m501133107562	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Potassium ppm ASTM D5185m >20 19 11 19 Water WC Method >0.1 NEG NEG NEG 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 NORM NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Sodium ppm ASTM D5185m >25 <1 1 2 Boron ppm ASTM D5185m >25 <1 1 2 Molybdenum ppm ASTM D5185m 150 32 21 5 Barium ppm ASTM D5185m 10 11 14 Magnesium ppm ASTM D5185m 70	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
WaterWC Method>0.1NEGNEGNEGSiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m>25<112BariumppmASTM D5185m150322115BariumppmASTM D5185m1503376138MolybdenumppmASTM D5185m701141114PhosphorusppmASTM D5185m701141114PhosphorusppmASTM D5185m2009369781008ZincppmASTM D5185m50210105562SulfurppmASTM D5185m2000193911871922267	Silicon	ppm	ASTM D5185m	>35	15	5	4
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Normal Solution Nocal in Normal	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m>25<112BoronppmASTM D5185m15032215BariumppmASTM D5185m1503376138MolybdenumppmASTM D5185m120<1ManganeseppmASTM D5185m101734CalciumppmASTM D5185m701141114PhosphorusppmASTM D5185m20009369781008ZincppmASTM D5185m5021010562SulfurppmASTM D5185m2000193911871922267	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Sodium ppm ASTM D5185m >25 <1	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Boron ppm ASTM D5185m 150 32 21 5 Barium ppm ASTM D5185m 533 76 138 Molybdenum ppm ASTM D5185m 2 0 <1 Manganese ppm ASTM D5185m 10 2 2 2 Magnesium ppm ASTM D5185m 10 177 3 4 Calcium ppm ASTM D5185m 70 114 11 14 Phosphorus ppm ASTM D5185m 2000 936 978 1008 Zinc ppm ASTM D5185m 50 210 105 62 Sulfur ppm ASTM D5185m 2000 19391 18719 22267	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Barium ppm ASTM D5185m 33 76 138 Molybdenum ppm ASTM D5185m 2 0 <10	Sodium	ppm	ASTM D5185m	>25	<1	1	2
Barium ppm ASTM D5185m 33 76 138 Molybdenum ppm ASTM D5185m 2 0 <10	Boron		ASTM D5185m	150	32	21	5
Molybdenum ppm ASTM D5185m 2 0 <1							
Manganese ppm ASTM D5185m 2 2 2 Magnesium ppm ASTM D5185m 10 17 3 4 Calcium ppm ASTM D5185m 70 114 11 14 Phosphorus ppm ASTM D5185m 2000 936 978 1008 Zinc ppm ASTM D5185m 50 210 105 62 Sulfur ppm ASTM D5185m 2000 19391 18719 22267	Molybdenum		ASTM D5185m		2	0	<1
Magnesium ppm ASTM D5185m 10 17 3 4 Calcium ppm ASTM D5185m 70 114 11 14 Phosphorus ppm ASTM D5185m 2000 936 978 1008 Zinc ppm ASTM D5185m 50 210 105 62 Sulfur ppm ASTM D5185m 2000 19391 18719 22267			ASTM D5185m				2
Calcium ppm ASTM D5185m 70 114 11 14 Phosphorus ppm ASTM D5185m 2000 936 978 1008 Zinc ppm ASTM D5185m 50 210 105 62 Sulfur ppm ASTM D5185m 20000 19391 18719 22267	Magnesium		ASTM D5185m	10			
Phosphorus ppm ASTM D5185m 2000 936 978 1008 Zinc ppm ASTM D5185m 50 210 105 62 Sulfur ppm ASTM D5185m 2000 19391 18719 22267	•						
Zinc ppm ASTM D5185m 50 210 105 62 Sulfur ppm ASTM D5185m 20000 19391 18719 22267							
Sulfur ppm ASTM D5185m 20000 19391 18719 22267							
	Visc @ 40°C	cSt	ASTM D445	140	134	151	154.8

Contact/Location: CHRIS BARTNIK - LEC0008





AMERICAN STATE EQUIPMENT CO. : WearCheck USA - 501 Madison Ave., Cary, NC 27513 2400 NORTH 14TH AVENUE : 18 Apr 2024 : 24 Apr 2024 WAUSAU, WI : 24 Apr 2024 - Jonathan Hester US 54401 Contact: CHRIS BARTNIK cbartnik@amstate.com T: (715)675-6900 F: (715)675-9748



Lab Number : 06153847

Unique Number : 10989270

: LH0273807

Laboratory

Sample No.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Received

Diagnosed

Tested

Contact/Location: CHRIS BARTNIK - LEC0008 Page 2 of 2