

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Machine Id CR1211 - OUTER Component Front Left Planetary Fluid GEAR OIL ISO 220 (--- GAL)

RECOMMENDATION

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

WEAR

All component wear rates are normal.

CONTAMINATION

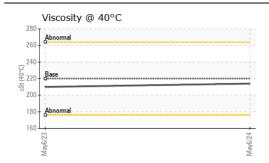
There is no indication of any contamination in the oil.

FLUID CONDITION

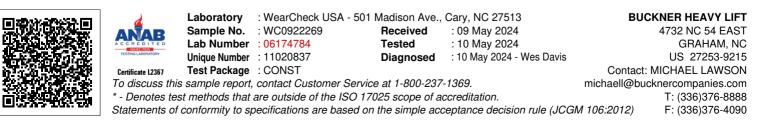
The condition of the oil is acceptable for the time in service.

TestUOMMethodLimit/MCurrentHistory1History2Sample NumberCClient InfoMC0922268WC0809331Sample DatClient Info06 May 2023Graduelli MC0092268MC0809331Machine AgehrsClient InfoB6560GOil AgehrsClient Info10000Oil ChangedClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedDClient InfoKnoreChangedSample StatusStoreAndIronpmASTM D5185>100C1NickelpmASTM D5185>100SilverpmASTM D5185>200SilverpmASTM D5185>200QanadiumpmASTM D5185>200VanadiumpmASTM D5185>200Yellow Metalscala"VisualNONENONENONEYellow Metalscala"VisualNONENONENONENONESiliconpmASTM D5185>2002Yellow Metalscala"VisualNONENONENONESi							
Sample DateClient Info66 May 20236.4 May 2023Machine AgehrsClient Info86560Oil AgehrsClient Info00Filter AgehrsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusClient InfoChangedChangedIronppmASTM 05185m>50036ChromiumppmASTM 05185m>10<1<1NickelppmASTM 05185m>100<1SilverppmASTM 05185m>2500<AluminumppmASTM 05185m>250<1VanadiumppmASTM 05185m>7500VanadiumppmASTM 05185m>7500Vellow Metalscalar'VisualNONENONENONESiliconppmASTM 05185m>75<1<1ValadiumppmASTM 05185m>250<Vellow Metalscalar'VisualNONENONENONESiliconppmASTM 05185m>75<1<1SiliconppmASTM 05185m>20NONENONE	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient InfoB6560Oil AgehrsClient Info10000Filter AgehrsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedQClient InfoChangedChangedSample StatusVChangedNORMALIronppmASTM D5185m>50036ChromiumppmASTM D5185m>10Q<NickelppmASTM D5185m>10Q<SilverppmASTM D5185m>25Q0<AluminumppmASTM D5185m>25Q<QanadiumppmASTM D5185m>75QQVanadiumppmASTM D5185m>75QQVellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>75C<1<SiliconppmASTM D5185m>20Q2SiliconppmASTM D5185m>75C<1<SiliconppmASTM D5185m>75C<1<SiliconppmASTM D5185m>20Q2SiliconppmASTM D5185m>20NONENONE	Sample Number		Client Info		WC0922269	WC0809331	
Cili Age Filter Age Filter Age MrsCilent Info Cilent Info10000Gil Changed Filter ChangedCilent Info Cilent InfoChangedChangedFilter Changed Sample StatusCilent InfoChangedChangedIronppmASTM D5185m50036ChromiumppmASTM D5185m50036NickelppmASTM D5185m100<1NickelppmASTM D5185m00AluminumppmASTM D5185m2500AluminumppmASTM D5185m>250LeadppmASTM D5185m>2500CopperppmASTM D5185m>7500VanduimppmASTM D5185m>7500Vellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>75<1<1SiliconppmASTM D5185m>75<1<1SiliconppmASTM D5185m>2002SiliconppmASTM D5185m>75<1<1SiliconppmASTM D5185m>2002SiliconppmASTM D5185m>20NONENONESiliconppm	Sample Date		Client Info		06 May 2024	06 May 2023	
Filter Age Oli ChangedhrsClient Info00Cill ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusVNORMALNORMALIronppmASTM D5185m>50036NickelppmASTM D5185m>10<	Machine Age	hrs	Client Info		8656	0	
OIClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusVINORMALNORMALIronpmASTM D5185>10<1<1NickelpmASTM D5185>10<1<1NickelpmASTM D5185>10O<1TitaniumpmASTM D5185>10O<1SilverpmASTM D5185>25O0AluminumpmASTM D5185>25O<1LeadpmASTM D5185>25O<1YanadiumpmASTM D5185>75O0YanadiumpmASTM D5185>75O0YanadiumpmASTM D5185>75O0YanadiumpmASTM D5185>75O0YanadiumpmASTM D5185>20O2Yalow Metascalar*VisualNONENONENONESiliconpmASTM D5185>20O2SiliconpmASTM D5185>20O2SiliconpmASTM D5185>20NONENONESiliconpmASTM D5185>20NONESodumpmASTM D5185>20 <t< th=""><th>Oil Age</th><th>hrs</th><th>Client Info</th><th></th><th>1000</th><th>0</th><th></th></t<>	Oil Age	hrs	Client Info		1000	0	
Filter ChangedClient InfoChangedChangedSample StatusNORMALNORMALNORMALIronppmASTM D5185>50036ChromiumppmASTM D5185>10<1<1NickelppmASTM D5185>10O<1TitaniumppmASTM D5185>10O0SilverppmASTM D5185>25O0AluminumppmASTM D5185>25O0LeadppmASTM D5185>75O0YanadiumppmASTM D5185>75O0YanadiumppmASTM D5185>75O0YanadiumppmASTM D5185>75O0YanadiumppmASTM D5185>75O0Yellow Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185>20O2SiliconppmASTM D5185>20O2SiliconppmASTM D5185>20NONENONESiliconppmASTM D5185>20NONESiliconppmASTM D5185NONENONE	Filter Age	hrs	Client Info		0	0	
Sample StatusNORMALNORMALIronppmASTM D5185m>50036ChromiumppmASTM D5185m>10<1<1NickelppmASTM D5185m>100<1TitaniumppmASTM D5185m>1000SilverppmASTM D5185m>2500AluminumppmASTM D5185m>250<1LeadppmASTM D5185m>250<1CopperppmASTM D5185m>10<10VanadiumppmASTM D5185m>10<10VanadiumppmASTM D5185m>10<10Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2002Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2002Solitscalar*VisualNONENONENONESolitscalar*VisualNONENONENONESolitscalar*VisualNORMNORMLSolitscalar*VisualNORMNORESolitscalar*VisualNORMNORML	Oil Changed		Client Info		Changed	Changed	
IronppmASTM D5185m>50036ChromiumppmASTM D5185m>10<1<1<NickelppmASTM D5185m>100<1<TitaniumppmASTM D5185m000<SilverppmASTM D5185m>2500<AluminumppmASTM D5185m>250<1<LeadppmASTM D5185m>250<1<CopperppmASTM D5185m>7500<TinppmASTM D5185m>10<10<VanadiumppmASTM D5185m>10<10<Yellow Metalscalar"VisualNONENONENONE<SiliconppmASTM D5185m>75<1<1<SiliconppmASTM D5185m>2002<SiliconppmASTM D5185m>2002<SiliconppmASTM D5185m>2002<Solitscalar"VisualNONENONENONE<Solitscalar"VisualNONENONENONE<SoldumppmASTM D5185m>0<1<Appearancescalar"VisualNONENORENORE<SodiumppmASTM D5185m5032 <t< th=""><th>Filter Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th></th></t<>	Filter Changed		Client Info		Changed	Changed	
Chromium ppm ASTM D5185m >10 <1	Sample Status				NORMAL	NORMAL	
Chromium ppm ASTM D5185m >10 <1				500	•		
NickelppmASTM D5185m>100<1					-		
Titanium ppm ASTM D5185m 0 0 Silver ppm ASTM D5185m >25 0 0 Aluminum ppm ASTM D5185m >25 0 0 Lead ppm ASTM D5185m >25 0 <1 Copper ppm ASTM D5185m >75 0 0 Tin ppm ASTM D5185m >75 0 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >75 0 0 0 Vanadium ppm ASTM D5185m >75 <1 <1 Vanadium ppm ASTM D5185m >75 <1 <1 Vellow Metal scalar 'Visual NONE NONE NONE Silicon ppm ASTM D5185m NOR							
SilverppmASTM D5185mO0AluminumppmASTM D5185m>2500LeadppmASTM D5185m>250<1CopperppmASTM D5185m>7500TinppmASTM D5185m>10<10VanadiumppmASTM D5185m>10<10White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>75<1<1PotassiumppmASTM D5185m>2002Silitscalar*VisualNONENONENONESolitscalar*VisualNONENONENONEAppearancescalar*VisualNORHNORMLNORMLAppearancescalar*VisualNORMLNORMLNORMLBoronppmASTM D5185m5032MagneseppmASTM D5185m500<MagnesiumppmASTM D5185m5022PosphorusppmASTM D5185m5022PosphorusppmASTM D5185m5000MagnesiumppmASTM D5185m <td< th=""><th></th><th></th><th></th><th>>10</th><th>-</th><th></th><th></th></td<>				>10	-		
Aluminum ppm ASTM D5185m >25 O O Lead ppm ASTM D5185m >25 O <1 Copper ppm ASTM D5185m >75 O O Tin ppm ASTM D5185m >10 <1 O Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >10 <1 <1 Vanadium ppm ASTM D5185m >75 <1 <1 Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >20 0 2 Water wC Method >0.2 NEG NORE Debris scalar *Visual NORE NORML<					-		
Lead ppm ASTM D5185m >25 0 <1				05	-		
Copper ppm ASTM D5185m >75 0 0 Tin ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >10 0 0 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >75 <1 <1 Potassium ppm ASTM D5185m >20 0 2 Water WC Method >0.2 NEG NONE Sadd/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORM NORML NORML Godr scalar *Visual NOR NORML NORML Appearance scalar *Visual						-	
TinppmASTM D5185m>10<1					-		
VanadiumppmASTM D5185mOOOWhite Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>75<1<1PotassiumppmASTM D5185m>20O2WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLBoronppmASTM D5185m5032BariumppmASTM D5185m150<1MolybdenumppmASTM D5185m5000MaganeseppmASTM D5185m5000PhosphorusppmASTM D5185m350406430ZincppmASTM D5185m1000					-		
White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>75<1<1PotassiumppmASTM D5185m>2002WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONEAstad/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLBoronppmASTM D5185m150<11BariumppmASTM D5185m150<11ManganeseppmASTM D5185m5000ManganeseppmASTM D5185m5022PhosphorusppmASTM D5185m350406430PhosphorusppmASTM D5185m1000				>10			
Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>75<1<1PotassiumppmASTM D5185m>2002WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m5032BoronppmASTM D5185m15<10MolybdenumppmASTM D5185m15<10ManganeseppmASTM D5185m5022ManganesiumppmASTM D5185m5022PhosphorusppmASTM D5185m5022PhosphorusppmASTM D5185m350406430ZincppmASTM D5185m1000				NONE			
SiliconppmASTM D5185m>75<1							
PotassiumppmASTM D5185m>2002WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m15<10MalganeseppmASTM D5185m150<1ManganeseppmASTM D5185m5000PhosphorusppmASTM D5185m5022ManganeseppmASTM D5185m5000PhosphorusppmASTM D5185m5022PhosphorusppmASTM D5185m3504064330ZincppmASTM D5185m10000	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m15<10MalganeseppmASTM D5185m15<10MagnesiumppmASTM D5185m5000PhosphorusppmASTM D5185m5022PhosphorusppmASTM D5185m1000ZincppmASTM D5185m10000	Silicon	ppm	ASTM D5185m	>75	<1	<1	
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m5032BariumppmASTM D5185m150<1ManganeseppmASTM D5185m5000MagnesiumppmASTM D5185m5022PhosphorusppmASTM D5185m5022PhosphorusppmASTM D5185m10000	Potassium	ppm	ASTM D5185m	>20	0	2	
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m15<10BariumppmASTM D5185m15<10ManganeseppmASTM D5185m5000MagnesiumppmASTM D5185m5022PhosphorusppmASTM D5185m3504064430ZincppmASTM D5185m10000	Water		WC Method	>0.2	NEG	NEG	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m5032BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m150<1ManganeseppmASTM D5185m5000MagnesiumppmASTM D5185m5022PhosphorusppmASTM D5185m350406430ZincppmASTM D5185m10000	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m5032BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m15<1<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m5022PhosphorusppmASTM D5185m350406430ZincppmASTM D5185m1000	Debris	scalar	*Visual	NONE	NONE	NONE	
Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5032BoronppmASTM D5185m5032BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m150<1ManganeseppmASTM D5185m5000MagnesiumppmASTM D5185m5022CalciumppmASTM D5185m5022PhosphorusppmASTM D5185m3504064430ZincppmASTM D5185m10000	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >0.2 NEG NEG Sodium ppm ASTM D5185m 0 <1 Boron ppm ASTM D5185m 50 3 2 Barium ppm ASTM D5185m 15 <1 0 Molybdenum ppm ASTM D5185m 15 <1 0 Manganese ppm ASTM D5185m 50 0 <1 Magnesium ppm ASTM D5185m 50 0 0 Calcium ppm ASTM D5185m 50 0 0 Phosphorus ppm ASTM D5185m 50 2 2 Zinc ppm ASTM D5185m 350 406 430	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium ppm ASTM D5185m 0 <1	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron ppm ASTM D5185m 50 3 2 Barium ppm ASTM D5185m 15 <1 0 Molybdenum ppm ASTM D5185m 15 0 <1 Manganese ppm ASTM D5185m 50 0 <1 Magnesium ppm ASTM D5185m 50 0 0 Calcium ppm ASTM D5185m 50 2 2 Phosphorus ppm ASTM D5185m 350 406 430 Zinc ppm ASTM D5185m 100 0 0	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron ppm ASTM D5185m 50 3 2 Barium ppm ASTM D5185m 15 <1 0 Molybdenum ppm ASTM D5185m 15 0 <1 Manganese ppm ASTM D5185m 50 0 <1 Magnesium ppm ASTM D5185m 50 0 0 Calcium ppm ASTM D5185m 50 2 2 Phosphorus ppm ASTM D5185m 350 406 430 Zinc ppm ASTM D5185m 100 0 0	Sodium	maa	ASTM D5185m		0	<1	
Barium ppm ASTM D5185m 15 <1				50			
Molybdenum ppm ASTM D5185m 15 O <1							
Manganese ppm ASTM D5185m <1							
Magnesium ppm ASTM D5185m 50 0 0 Calcium ppm ASTM D5185m 50 2 2 Phosphorus ppm ASTM D5185m 350 406 430 Zinc ppm ASTM D5185m 100 0 0							
Calcium ppm ASTM D5185m 50 2 2 Phosphorus ppm ASTM D5185m 350 406 430 Zinc ppm ASTM D5185m 100 0 0	0			50			
Phosphorus ppm ASTM D5185m 350 406 430 Zinc ppm ASTM D5185m 100 0 0	-						
Zinc ppm ASTM D5185m 100 0							
	200					-	
Visc @ 40°C cSt ASTM D445 220 214 210			ASTM D5185m	12500	6971	7468	

Contact/Location: MICHAEL LAWSON - BUCGRA



Ferrous Alloys 10 mdd 0 Non-ferrous Metals 10 lead maa Viscosity @ 40°C 270 260 250 240 230 C20 (40°C) 210 200 190 180 Abnorma 170 May6/24 SCI SWEIN



Contact/Location: MICHAEL LAWSON - BUCGRA Page 2 of 2