

OIL ANALYSIS REPORT

Sample Rating Trend WEAR

Oil Age Oil Changed Sample Status CONTAMINATION Glycol WEAR METALS	hrs hrs	Client Info Client Info Client Info Client Info Method	limit/base	WC0802325 09 May 2023 10991 500 Changed ABNORMAL	WC0721311 01 Dec 2022 10991 500 Changed NORMAL	WC0542521 01 Jun 2022 10991 500 Changed NORMAL
Machine Age Oil Age Oil Changed Sample Status CONTAMINATION Glycol WEAR METALS	hrs	Client Info Client Info Client Info method	limit/base	10991 500 Changed ABNORMAL	10991 500 Changed NORMAL	10991 500 Changed
Oil Age Oil Changed Sample Status CONTAMINATION Glycol WEAR METALS	hrs	Client Info Client Info method	limit/base	500 Changed ABNORMAL	500 Changed NORMAL	500 Changed
Oil Changed Sample Status CONTAMINATION Glycol WEAR METALS		Client Info method	limit/base	Changed ABNORMAL	Changed NORMAL	Changed
Sample Status CONTAMINATION Glycol WEAR METALS		method	limit/base	ABNORMAL	NORMAL	
Sample Status CONTAMINATION Glycol WEAR METALS			limit/base	ABNORMAL		
Glycol WEAR METALS			limit/base	current		
WEAR METALS		WC Method		ourront	history1	history2
				NEG	NEG	NEG
		method	limit/base	current	history1	history2
lron	ppm	ASTM D5185m	>100	41	39	23
Chromium	ppm	ASTM D5185m	>4	1	2	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
	ppm	ASTM D5185m	>2	0	0	0
	ppm	ASTM D5185m	>2	<1	0	0
	ppm	ASTM D5185m	>9	2	<1	<1
	ppm	ASTM D5185m		0	4	2
	ppm	ASTM D5185m		A 285	20	4
	ppm		>4	1	1	<1
	ppm	ASTM D5185m				
	ppm	ASTM D5185m		0	0	0
	ppm	ASTM D5185m		0	0	0
	ppm			-		
ADDITIVES		method	limit/base	current	history1	history2
	ppm	ASTM D5185m	250	15	10	14
	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	62	63	61
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	844	918	889
Calcium	ppm	ASTM D5185m	3000	1226	1147	1039
Phosphorus	ppm	ASTM D5185m	1150	1024	999	978
Zinc	ppm	ASTM D5185m	1350	1325	1245	1207
Sulfur	ppm	ASTM D5185m	4250	4040	3453	2982
		method	limit/base	current	history1	history2
CONTAMINANTS						
	ppm	ASTM D5185m	>25	4	2	2
Silicon	ppm ppm	ASTM D5185m ASTM D5185m		4 2	2	2 0
Silicon Sodium				•		
Silicon Sodium Potassium	ppm	ASTM D5185m	>158 >20	2	2	0
Silicon Sodium Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>158 >20	2 <1	2 0	0
Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm	ASTM D5185m ASTM D5185m ASTM D3524	>158 >20 >5	2 <1 ▲ 4.1	2 0 <1.0	0 0 <1.0
Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm %	ASTM D5185m ASTM D5185m ASTM D3524 method	>158 >20 >5 limit/base >3	2 <1 ▲ 4.1 current	2 0 <1.0 history1	0 0 <1.0 history2
Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm %	ASTM D5185m ASTM D5185m ASTM D3524 method *ASTM D7844	>158 >20 >5 limit/base >3 >20	2 <1 ▲ 4.1 current 0.2	2 0 <1.0 history1 0.4	0 0 <1.0 history2 0.2
Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm % % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7624	>158 >20 >5 limit/base >3 >20	2 <1 ▲ 4.1 <u>current</u> 0.2 9.0	2 0 <1.0 history1 0.4 10.1	0 0 <1.0 history2 0.2 8.3
Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADAT	ppm ppm % % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7844 *ASTM D7624	>158 >20 >5 limit/base >3 >20 >30	2 <1 ▲ 4.1 0.2 9.0 19.9	2 0 <1.0 history1 0.4 10.1 22.6	0 0 <1.0 history2 0.2 8.3 19.8

PHOENIX MIXER 259

Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

🔺 Wear

The copper level is abnormal. Elemental level of copper (Cu) probably due to leaching of copper from copper components (i.e. cooling core) by the oil additives. All other component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil.

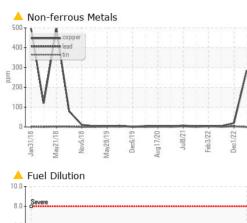
Fluid Condition

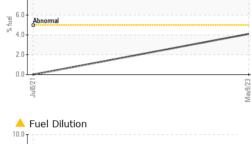
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

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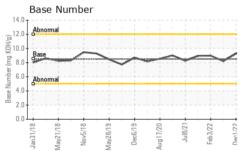


OIL ANALYSIS REPORT









tals				VISU	AL				me	thod	limit/b	oase		curre	ent		histo	ory1		hist	ory2
			V	Vhite N	/letal		SCa	alar	*Visu	ual	NONE		Ν	IONE		Ν	NONE			NON	Ξ
			Y	'ellow	Metal			alar	*Visu	ual	NONE		Ν	IONE		N	NONE	-		NON	Ξ
		1	F	recipit	ate		SCa	alar	*Visu	ual	NONE		N	IONE		Ν	NONE			NON	=
	Silt			scalar		*Visual		NONE		NONE			NONE			NONE		Ξ			
	Debris			SCa	alar	*Visu	ual	al NONE		N		IONE		NONE		NONE					
May20/13 Dec6/13 Aug17/20 Feb3/22 Dec1/22		S	Sand/Dirt		SCa	alar	*Visual		NONE		NONE			NONE			NONE		Ξ		
		Α	Appearance Odor			scalar		*Visual	NORML	1L	NORML			NORML			NORML		ИL		
		C				SCa	alar	*Visual	NORML	1L	NORML			NORML			NORML				
					ied Wa	ater	SCa	alar	*Visu		>0.2			IEG			NEG			NEG	
				ree Water		scalar		*Visual				NEG			NEG			NEG			
			FLUID PROPE		PER	TIES		method		limit/base		e current			history1		ory1	history2		ory2	
			V	Visc @ 100°C		cS	cSt		ASTM D445			12.3		13.4			13.4				
			GRAPHS																		
				Iron (ppm)							-		ad (p	pm)						
		~	200	Severe										vere					1		
		Mav9/23	150										0								
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				Jan31/18	Nov5/18	May28/19	Dec6/19	Aug17/20	Jul8/21	Feb3/22	Dec1/22		Jan31/18	May21/18	Nov5/18	May28/19	Dec6/19	Aug17/20	Jul	Feb3/22	Dec1/22
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			18.	Abnorm	al							(B)		normal							
			_16-	·								Base Number (mg KOH/g)	0	normal				I			
			(D=001) +So	Base	-	~	-	-	~			Der (m	Ba				~	-			
			충 12·	Abnorm	3	~						ImnN 5.	0 - Ab	normal							
			10.									Base 0.									
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Certificate L2367 To discuss this		Package									ercentF	uel)				f					ROSSI e.com
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* - 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)

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