

OIL ANALYSIS REPORT

Sample Rating Trend



ALSTOM PC2021

Component Front Left Gearbox Fluid TOTAL CARTER SH 220 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

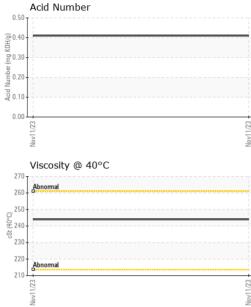
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORM		method	limit/base		biotom/1	bistory 0
	ATION		iiiiii/base		history1	history2
Sample Number		Client Info		WC0798720		
Sample Date		Client Info		11 Nov 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	141		
Chromium	ppm	ASTM D5185m	>10	1		
Nickel	ppm	ASTM D5185m	>10	<1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>25	4		
Lead	ppm	ASTM D5185m	>50	5		
Copper	ppm	ASTM D5185m	>200	57		
Tin	ppm	ASTM D5185m	>10	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		<1		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<1		
Barium	ppm	ASTM D5185m		0		
Molybdenum	ppm	ASTM D5185m		<1		
Manganese	ppm	ASTM D5185m		2		
Magnesium	ppm	ASTM D5185m		0		
Calcium	ppm	ASTM D5185m		0		
Phosphorus	ppm	ASTM D5185m		254		
Zinc	ppm	ASTM D5185m		78		
Sulfur	ppm	ASTM D5185m		3309		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	18		
Sodium	ppm	ASTM D5185m		31		
Potassium	ppm	ASTM D5185m	>20	2		
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.41		



OIL ANALYSIS REPORT

VISUAL



	VISUAL		method			,	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
/23							
lov11,							
2							
				>0.2			
1	FIEE Walei	Scalal	VISUAI		NEG		
	FLUID PROPERT	TIES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D445		244		
	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
11/23	Color				no image	no image	no image
Nov							
	Bottom				no image	no image	no image
	GRAPHS						
	Iron (ppm)				Lead (ppm)		
	600 Severe			20	Severe		
шd	400 demo			<u>ة</u> 10	0		
					0		
							50
	Nov11			Nov11	Nov11		201 Luch
	Aluminum (ppm)					pm)	
	100			3			
E				E 2			
d	Abnormal				1		
	2						ŝ
	0v11/			ov11/	ov11//		
	—			ž			2
	600 T			15			
F	Severe				0.000		
Jd d	200 Abnormal			đ 5	0 - Abnormal		
				13			0
	v11/2			v11/2	w11/2		2011/00
							1
				(B)HO	Acid Number		
				Ĕ 0.4	0		
cSt (4	Abnormal				0-		
	200			0.0 g	0 L.		
	v11/2			v11/2 Ac	v11/2		co.thurs
	No			No	No		Mov
aboratory	: WearCheck USA - 5	501 Madis	son Ave., Ca	ry, NC 2751	3		AMTRAI
		Received	d :17	Nov 2023		REET NE, HIGH SPE	ED RAIL 2ND FLOO
Sample No.	: WC0798720					14/4 0	
_ab Number	: 06011597	Diagnos		Nov 2023		WAS	HINGTON, DO
Lab Number Jnique Number	: <mark>06011597</mark> : 10750741	Diagnos Diagnosi		Nov 2023 s Davis			US 2001
Lab Number Jnique Number Fest Package	: 06011597	Diagnost	tician : We	s Davis		Contact: MICI	US 2001
	mun	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT Visc @ 40°C SAMPLE IMAGES Color Bottom GRAPHS Iron (ppm) Generation Copper (ppm) Generation Copper (ppm) Generation Copper (ppm) Generation Copper (ppm) Generation Copper (ppm) Copper (pp	White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Visc @ 40°C cSt SAMPLE IMAGES Color Color Bottom GRAPHS Iron (ppm) Generation Copper (ppm) Generation C	White Metal scalar *Visual Yellow Metal scalar *Visual Precipitate scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual Color Color Bottom GRAPHS Tron (ppm)	White Metal scalar *Visual NONE Precipitate scalar *Visual NONE Silt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Odor scalar *Visual NORML Odor scalar *Visual NORML Odor scalar *Visual NORML Color scalar *Visual >0.2 Free Water scalar *Visual >0.2 Fore Water scalar *Visual >0.2 Free Water scalar *Visual >0.2 Golor Color Imit/base Color GRAPHS Iron (ppm) gange gange gange Momma gange gange gange gange Momma gange gange gange gange Greand <	White Metal scalar Visual NONE NONE Yellow Metal scalar Visual NONE NONE Precipitate scalar Visual NONE NONE Silit scalar Visual NONE NONE Sand/Dirt scalar Visual NORM NORM Appearance scalar Visual NORM NORM Codor scalar Visual NORM NORM Pree Water scalar Visual NORM NORM Free Water scalar Visual NORM NORM Visual NORM NORM NORM SAMPLE IMAGES method imit/base current Visual SAMPLE IMAGES method imit/base current Color no image GRAPHS Torn (ppm) Gramming of the scalar Visual Norm Muminum (ppm) Gramming of the scalar Visual NORM NORM Samming of the scalar Visual NORM NORM Samming of the scalar Visual NORM NOR	White Metal scalar *Visual NONE NONE Yelow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Band/Diri scalar *Visual NONE NONE Sand/Diri scalar *Visual NORML NORML Odor scalar *Visual NORML NORML NORML Codor scalar *Visual NORML NORML NORML Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual NORML NORML NORML SAMPLE IMAGES method limit/base current history1 Visc @ 40°C cst ASTM D445 244 SAMPLE IMAGES method limit/base current history1 Color no image no image no image no image 0 image no image no image 0 image no image no image 0 image no image no image no image 0 image no image no image no image no i

Contact/Location: MICHAEL PORTER - AMTRAK