

OIL ANALYSIS REPORT

Sample Rating Trend



ALSTOM R160

Component Gearbox Fluid TOTAL CARTER SH 220 (3 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

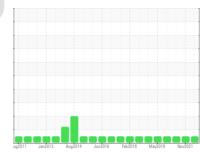
All component wear rates are normal.

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.

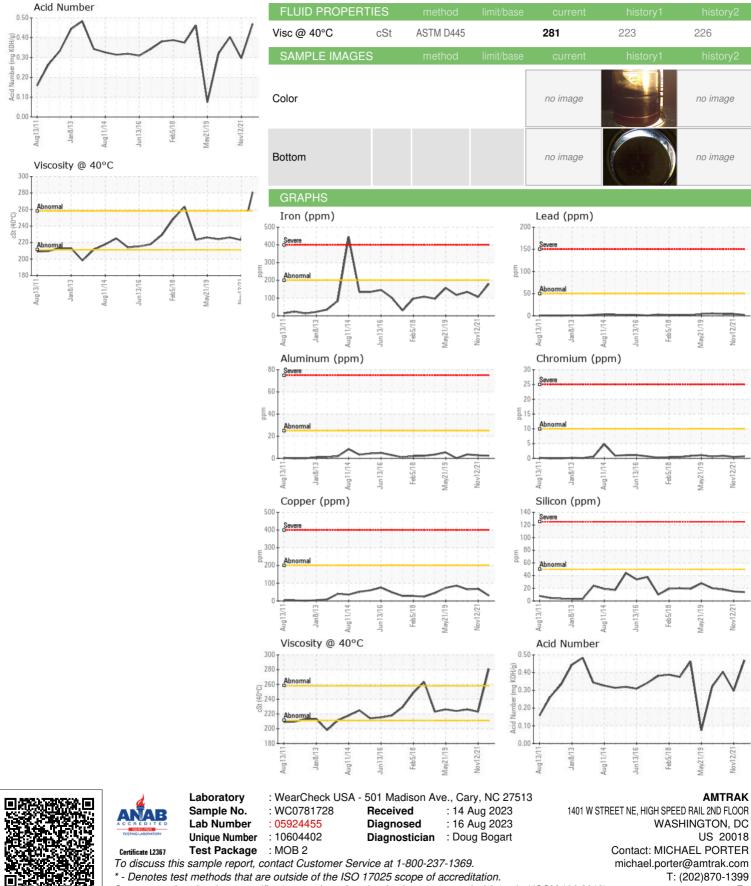




Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info Not Changd N/A N/A Sample Status Info Not Changd N/A N/A WEAR METALS Interhol Interhol Not Changd NORMAL NORMAL WEAR METALS Interhol Interhol Interhol Interhol Interhol Tron ppm ASTM 05185m >10 -1 <1 <1 Nickel ppm ASTM 05185m 0 0 0 <1 Silver ppm ASTM 05185m >50 2 3 4 Copper ppm ASTM 05185m >50 2 4 4 Copper ppm ASTM 05185m >50 2 4 4 Copper ppm ASTM 05185m 0 0 0 0 Antimomy ppm ASTM 05185m 0 <1 1 1 Dottoristisi	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
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Oil Changed Client Info Not Changd N/A N/A Sample Status Image of the status Image of the status Image of the status Nor RMAL NOR MAL NOR MAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D518m >200 180 106 135 Chromium ppm ASTM D518m >10 0 0 <1 Nickel ppm ASTM D518m >10 0 <1 <1 Nickel ppm ASTM D518m >25 2 3 4 Lead ppm ASTM D518m >10 0 <1 <1 Antimony ppm ASTM D518m >10 0 <1 <1 Antimony ppm ASTM D518m >0 0 0 0 Antimony ppm ASTM D518m 0 0 0 0 Antimony ppm ASTM D518m 0	Machine Age	hrs	Client Info		0	0	0
Sample Status method Imm/base current NORMAL NORMAL NORMAL WEAR METALS method imm/base current history1 history2 Iron ppm ASTM D5185m >200 180 106 135 Chromium ppm ASTM D5185m >10 0 0 <1 Nickel ppm ASTM D5185m >10 0 0 <1 Silver ppm ASTM D5185m >25 2 3 4 Lead ppm ASTM D5185m >50 2 4 4 Copper ppm ASTM D5185m >50 2 4 4 Vanadium ppm ASTM D5185m >50 2 4 4 Vanadium ppm ASTM D5185m >10 0 <1 1 Vanadium ppm ASTM D5185m 0 <1 <1 2 Managanese ppm ASTM D5185m 0 1	Oil Age	hrs	Client Info		0	0	0
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Nickel ppm ASTM D5185m >10 0 0 <1	Iron	ppm	ASTM D5185m	>200	180	106	135
Titanium ppm ASTM D5185m 0 0 0 <1	Chromium	ppm	ASTM D5185m	>10	<1	<1	<1
Titanium ppm ASTM D5185m 0 0 0 <1	Nickel	ppm	ASTM D5185m	>10	0	0	<1
SilverppmASTM D5185m0000AluminumppmASTM D5185m>25234LeadppmASTM D5185m>50244CopperppmASTM D5185m>50244CopperppmASTM D5185m>50244AntimonyppmASTM D5185m>5000VanadiumppmASTM D5185m0000CadmiumppmASTM D5185m0000CadmiumppmASTM D5185m0611ADDITIVESmethodimil/basecurrenthistory1history2BoronppmASTM D5185m0<1<11ManganeseppmASTM D5185m0<112MagnesiumppmASTM D5185m<1011CalciumppmASTM D5185m<372338307ZincppmASTM D5185m372338307ZincppmASTM D5185m<273531SoliconppmASTM D5185m20141518SodiumppmASTM D5185m>203<11PotassiumppmASTM D5185m>203<11PotassiumppmASTM D5185m>203<11PotassiumppmASTM D5185m>203 </th <th>Titanium</th> <th></th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th></th>	Titanium		ASTM D5185m		0	0	
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Copper ppm ASTM D5185m >200 30 68 65 Tin ppm ASTM D5185m >10 0 <1 <1 Antimony ppm ASTM D5185m >5 0 0 Vanadium ppm ASTM D5185m 0 0 0 21 ADDITVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <11 <1 2 Magnesium ppm ASTM D5185m 0 <11 <1 2 Magnesium ppm ASTM D5185m 372 338 307 2 Sulfur ppm ASTM D5185m 372 338 307 Sulfur ppm ASTM D5185m >50 14 15 18 Sodium ppm ASTM D5185m >20 3 <1	Lead		ASTM D5185m	>50	2	4	4
Tin ppm ASTM D5185m >10 0 <1						68	65
Antimony ppm ASTM D5185m >5 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 <1 <1 ADDITVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 6 1 Barium ppm ASTM D5185m 0 <1 <1 Magnese ppm ASTM D5185m 2 1 2 Magnesium ppm ASTM D5185m <1 0 1 Calcium ppm ASTM D5185m <1 8 2 Phosphorus ppm ASTM D5185m <372 338 307 Sulfur ppm ASTM D5185m <4322 2342 2683 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m							
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PotassiumppmASTM D5185m>203<1	Silicon	ppm	ASTM D5185m	>50	14	15	18
PotassiumppmASTM D5185m>203<1	Sodium		ASTM D5185m		27	35	31
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Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	VISUAL		method	limit/base	current	history1	history2
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Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >0.2 NEG NEG NEG	Appearance	scalar		NORML	NORML	NORML	NORML
Emulsified Water scalar *Visual >0.2 NEG NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar			NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG		TERNECONTRAK



OIL ANALYSIS REPORT



Contact/Location: MICHAEL PORTER - AMTRAK

F:

Nov12/21.