

Area Locomotives Machine Id 2008 Component Railway diesel Fluid RAILWAY ENGINE OIL SAE 40 (243 GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. this testkit includes BN to determine the suitability of the oil for continued use.

WEAR

Component wear rates appear to be normal (unconfirmed).

CONTAMINATION

There is no indication of any contamination in the oil.

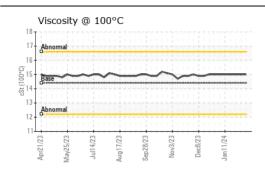
FLUID CONDITION

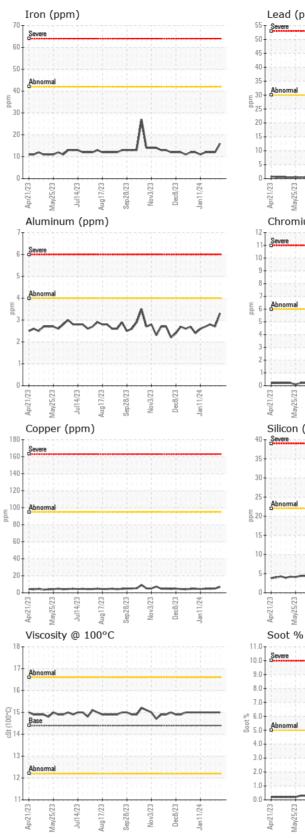
The condition of the oil is acceptable for the time in service (unconfirmed).

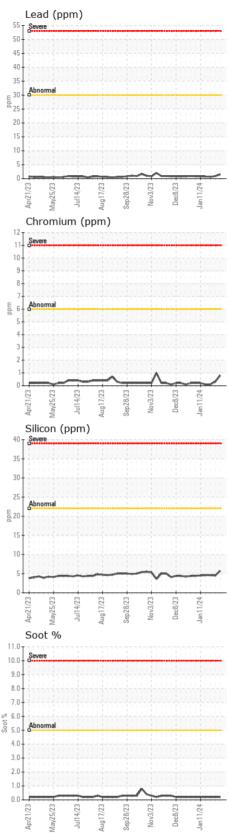
Sample DateClient Info05 Feb 202401 Feb 202425 Jan 2024Machine AgehrsClient Info000Oil AgehrsClient Info000Filter AgehrsClient Info000Oil ChangedClient InfoNot ChangdNot ChangdNot Changd							
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Potassium ppm ASTM D5185(m) >20 2 2 1 Fuel WC Method >4.0 <1.0 <1.0 <1.0 Water VC Method >0.1 NEG NEG NEG Glycol WC Method >0.1 NEG NEG NEG Soot % % ASTM D7844' 0.2 0.2 0.2 Nitration Abs/cm ASTM D7624' >20 12.3 12.5 12.1 Sulfation Abs/.1mm ASTM D7415' >30 15.4 15.2 14.9 Emulsified Water scalar Visual* >0.1 NEG NEG NEG Sodium ppm ASTM D5185(m) 10 3 <1 <1 Barium ppm ASTM D5185(m) 10 0 0 0 Magnesium ppm ASTM D5185(m) 25 0 0 0 Manganese ppm ASTM D5185(m) 4500 4712 4688 4	vanaulum	ppin					0
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Emulsified Water scalar Visual* >0.1 NEG NEG NEG Sodium ppm $ASTM D5185(m)$ 10 15 4 4 Boron ppm $ASTM D5185(m)$ 10 3 <1 <1 Barium ppm $ASTM D5185(m)$ 10 0 0 0 Molybdenum ppm $ASTM D5185(m)$ 10 0 0 0 Manganese ppm $ASTM D5185(m)$ 25 0 0 0 Magnesium ppm $ASTM D5185(m)$ 20 16 16 16 Calcium ppm $ASTM D5185(m)$ 4500 4712 4688 4679 Phosphorus ppm $ASTM D5185(m)$ 10 1 2 2 Zinc ppm $ASTM D5185(m)$ 10 3 3 3 Sulfur ppm $ASTM D5185(m)$ 10 3 3207 3287 Oxidation Abs/.1mm $ASTM D$	Nitration	Abs/cm	ASTM D7624*	>20	12.3	12.5	12.1
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Magnesium ppm ASTM D5185(m) 20 16 16 16 Calcium ppm ASTM D5185(m) 4500 4712 4688 4679 Phosphorus ppm ASTM D5185(m) 10 1 2 2 Zinc ppm ASTM D5185(m) 10 3 3 3 Sulfur ppm ASTM D5185(m) 5000 3193 3207 3287 Oxidation Abs/.1mm ASTM D7414* >25 9.8 10.2 9.9	Molybdenum	ppm	ASTM D5185(m)	25	0	0	0
Calcium ppm ASTM D5185(m) 4500 4712 4688 4679 Phosphorus ppm ASTM D5185(m) 10 1 2 2 Zinc ppm ASTM D5185(m) 10 3 3 3 Sulfur ppm ASTM D5185(m) 5000 3193 3207 3287 Oxidation Abs/.1mm ASTM D7414* >25 9.8 10.2 9.9	Manganese	ppm	ASTM D5185(m)		0	0	0
Phosphorus ppm ASTM D5185(m) 10 1 2 2 Zinc ppm ASTM D5185(m) 10 3 3 3 Sulfur ppm ASTM D5185(m) 5000 3193 3207 3287 Oxidation Abs/.1mm ASTM D7414* >25 9.8 10.2 9.9	Magnesium	ppm	ASTM D5185(m)	20	16	16	16
Zinc ppm ASTM D5185(m) 10 3 3 Sulfur ppm ASTM D5185(m) 5000 3193 3207 3287 Oxidation Abs/.1mm ASTM D7414* >25 9.8 10.2 9.9	Calcium	ppm	ASTM D5185(m)	4500	4712	4688	4679
Sulfur ppm ASTM D5185(m) 5000 3193 3207 3287 Oxidation Abs/.1mm ASTM D7414* >25 9.8 10.2 9.9	Phosphorus	ppm	ASTM D5185(m)	10	1	2	2
Oxidation Abs/.1mm ASTM D7414* >25 9.8 10.2 9.9	Zinc	ppm	ASTM D5185(m)	10	3	3	3
	Sulfur	ppm	ASTM D5185(m)	5000	3193	3207	3287
Visc@100°C cSt ASTM D7279(m) 14.4 15.0 15.0 15.0	Oxidation	Abs/.1mm	ASTM D7414*	>25	9.8	10.2	9.9
	Visc @ 100°C	cSt	ASTM D7279(m)	14.4	15.0	15.0	15.0

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Contact/Location: Richard Rochon - VALCOPTR







Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Vale - Transportation (Mobile Equipment) CALA Sample No. Received : 16 Feb 2024 : WC0874991 Transportation Department, (Services - Mobile Equipment) Lab Number : 02616193 COPPER CLIFF, ON Tested : 16 Feb 2024 ISO 17025:2017 Accredited Laboratory Unique Number : 5733303 : 16 Feb 2024 - Wes Davis CA POM 1N0 Diagnosed Test Package : MOB 1 Contact: Richard Rochon To discuss this sample report, contact Customer Service at 1-800-268-2131. richard.rochon@vale.com Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (705)682-6014 Validity of results and interpretation are based on the sample and information as supplied.

Report Id: VALCOPTR [WCAMIS] 02616193 (Generated: 02/16/2024 13:52:41) Rev: 1

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Contact/Location: Richard Rochon - VALCOPTR Page 2 of 2

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