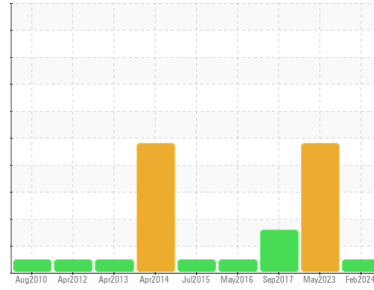


Machine Id
2009 SPARTAN 28015 (S313)

Component
Rear Diesel Engine

Fluid
CASTROL HYPURON 15W40 (36 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Test for glycol is negative. There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORMATION method limit/base current history1 history2

Sample Number	Client Info	PC0085024	PC0075263	AP107758
Sample Date	Client Info	05 Feb 2024	15 May 2023	01 Sep 2017
Machine Age	mths	Client Info	0	664490
Oil Age	mths	Client Info	2	0
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		NORMAL	ABNORMAL	ABNORMAL

CONTAMINATION method limit/base current history1 history2

Fuel	WC Method	>3.0	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS method limit/base current history1 history2

Iron	ppm	ASTM D5185(m)	>90	6	22	26
Chromium	ppm	ASTM D5185(m)	>4	0	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>15	2	2	2
Lead	ppm	ASTM D5185(m)	>50	2	5	6
Copper	ppm	ASTM D5185(m)	>55	<1	3	2
Tin	ppm	ASTM D5185(m)	>4	0	<1	<1
Antimony	ppm	ASTM D5185(m)		0	0	1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)		2	12	5
Barium	ppm	ASTM D5185(m)		0	<1	<1
Molybdenum	ppm	ASTM D5185(m)		58	68	57
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		961	1054	969
Calcium	ppm	ASTM D5185(m)		1032	1078	1270
Phosphorus	ppm	ASTM D5185(m)		1030	1089	1072
Zinc	ppm	ASTM D5185(m)		1154	1280	1314
Sulfur	ppm	ASTM D5185(m)		2794	2710	2780
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

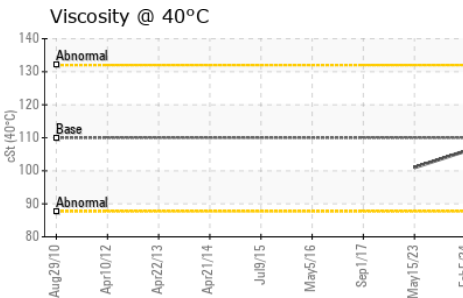
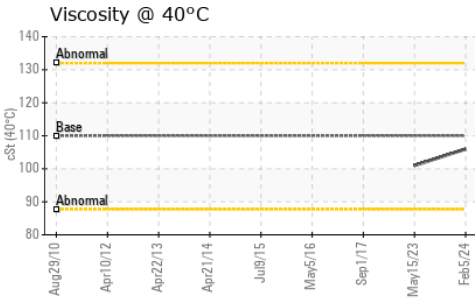
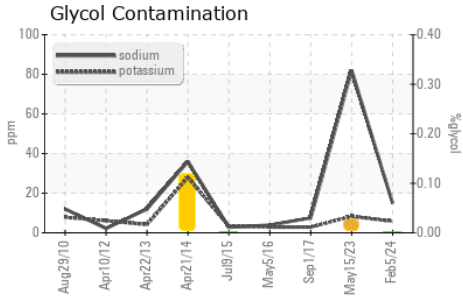
CONTAMINANTS method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m)	>15	2	9	▲ 16
Sodium	ppm	ASTM D5185(m)		15	● 82	8
Potassium	ppm	ASTM D5185(m)	>20	6	▲ 8	3
Glycol	%	ASTM D7922*		0.0	▲ 0.028	NEG

INFRA-RED method limit/base current history1 history2

Soot %	%	ASTM D7844*	>6	0.2	1.2	0.9
Nitration	Abs/cm	ASTM D7624*	>20	6.2	10.7	10.1
Sulfation	Abs./1mm	ASTM D7415*	>30	19.2	23.1	25.8

OIL ANALYSIS REPORT

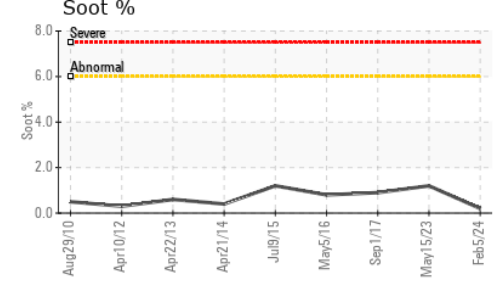
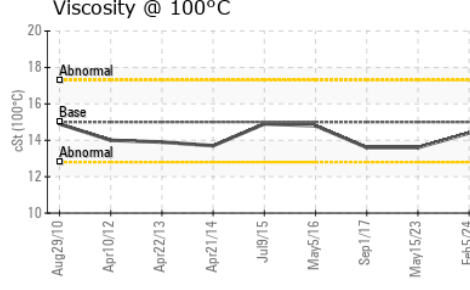
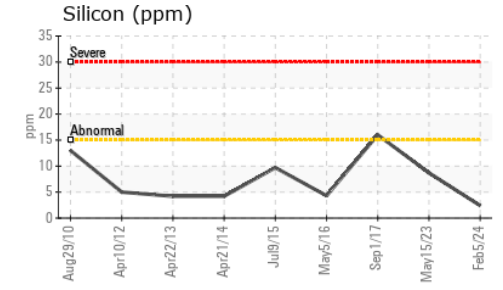
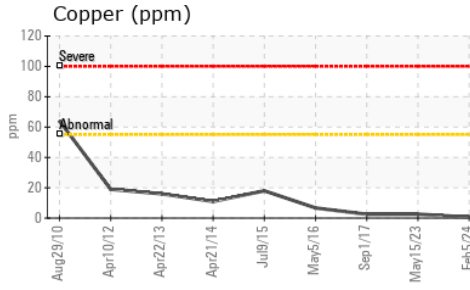
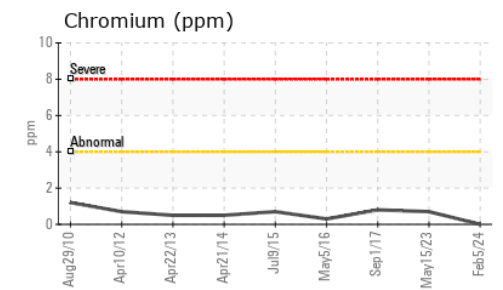
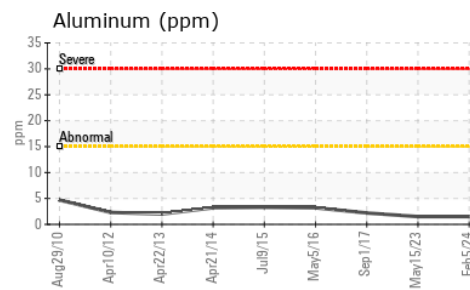
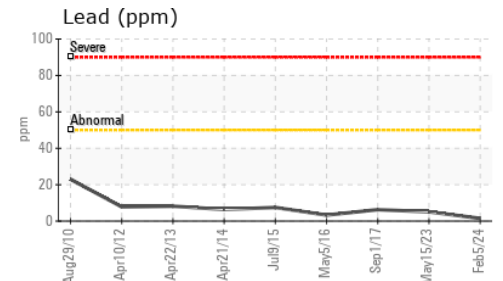
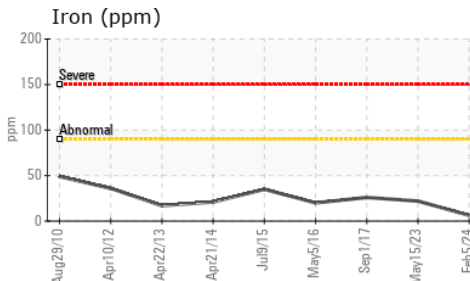


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	14.7	18.5	16.9

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	110	106	101	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.0	14.4	13.6	13.6
Viscosity Index (VI)	Scale	ASTM D2270*	140	139	134	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0085024
Lab Number : 02619175
Unique Number : 5736285
Test Package : MOB 1 (Additional Tests: Glycol, KV40, VI)
Received : 01 Mar 2024
Tested : 01 Mar 2024
Diagnosed : 01 Mar 2024 - Kevin Marson

TORONTO FIRE SERVICES
 40 TORYORK DRIVE
 TORONTO, ON
 CA M9L 1X6
 Contact: Antonio Rodrigues
 antonio.rodrigues@toronto.ca
 T:
 F: (416)338-9207

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.