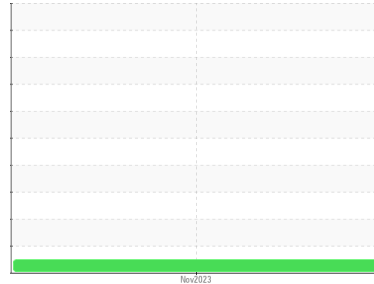




OIL ANALYSIS REPORT

Area
GRADER
Machine Id
GRDG105
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 15W40. Please confirm.

Wear
All component wear rates are normal.

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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PC0075014	---	---
Sample Date	Client Info		13 Nov 2023	---	---
Machine Age	hrs Client Info		3423	---	---
Oil Age	hrs Client Info		0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			NORMAL	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	---	---
Water	WC Method	>0.2	NEG	---	---
Glycol	WC Method		NEG	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m)	>100	27	---	---
Chromium	ppm ASTM D5185(m)	>20	<1	---	---
Nickel	ppm ASTM D5185(m)	>2	<1	---	---
Titanium	ppm ASTM D5185(m)	>2	0	---	---
Silver	ppm ASTM D5185(m)	>2	<1	---	---
Aluminum	ppm ASTM D5185(m)	>25	4	---	---
Lead	ppm ASTM D5185(m)	>40	0	---	---
Copper	ppm ASTM D5185(m)	>330	3	---	---
Tin	ppm ASTM D5185(m)	>15	0	---	---
Antimony	ppm ASTM D5185(m)		0	---	---
Vanadium	ppm ASTM D5185(m)		0	---	---
Beryllium	ppm ASTM D5185(m)		0	---	---
Cadmium	ppm ASTM D5185(m)		0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)	250	1	---	---
Barium	ppm ASTM D5185(m)	10	<1	---	---
Molybdenum	ppm ASTM D5185(m)	100	62	---	---
Manganese	ppm ASTM D5185(m)		0	---	---
Magnesium	ppm ASTM D5185(m)	450	1022	---	---
Calcium	ppm ASTM D5185(m)	3000	1099	---	---
Phosphorus	ppm ASTM D5185(m)	1150	1042	---	---
Zinc	ppm ASTM D5185(m)	1350	1294	---	---
Sulfur	ppm ASTM D5185(m)	4250	2599	---	---
Lithium	ppm ASTM D5185(m)		<1	---	---

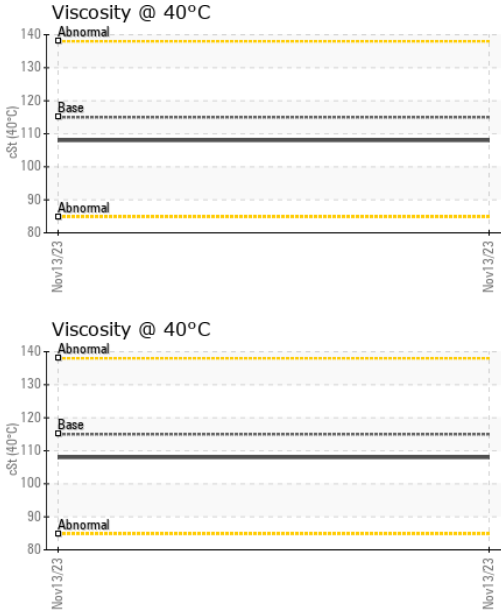
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m)	>25	4	---	---
Sodium	ppm ASTM D5185(m)	>158	4	---	---
Potassium	ppm ASTM D5185(m)	>20	1	---	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	% ASTM D7844*	>3	0.3	---	---
Nitration	Abs/cm ASTM D7624*	>20	12.6	---	---
Sulfation	Abs./1mm ASTM D7415*	>30	22.6	---	---

OIL ANALYSIS REPORT

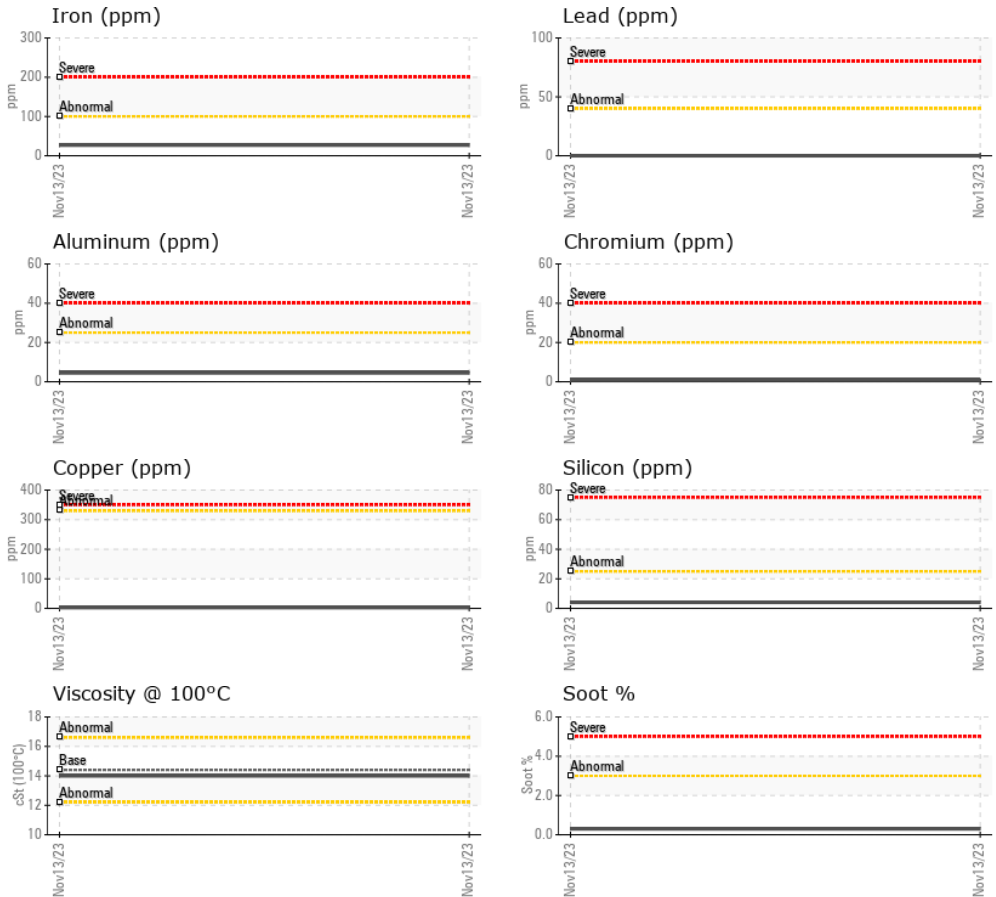


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	23.0	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.2	NEG	---	---
Free Water	scalar	Visual*		NEG	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	115	108	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	14.0	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	126	130	---	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0075014
Lab Number : 02601099
Unique Number : 5694184
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual)

Lakeshore Gold Timmins West

Received : 06 Dec 2023
Diagnosed : 06 Dec 2023
Diagnostician : Wes Davis

Timmins, ON
CA

Contact: Dale Arseneau
darseneau@ca.panamericansilver.com

T: (705)269-4344

F:

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.