OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION

Machine Id
98124
Component
Diesel Engine
Fluid
{not provided} (--- GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition
The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**SBP0006575**	---	---
Sample Date		Client Info		**29 Mar 2024**	---	---
Machine Age	mls	Client Info		**89437**	---	---
Oil Age	mls	Client Info		**89437**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**ABNORMAL**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**78**	---	---
Chromium	ppm	ASTM D5185m	>20	**2**	---	---
Nickel	ppm	ASTM D5185m	>4	**0**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m	>3	**0**	---	---
Aluminum	ppm	ASTM D5185m	>20	**19**	---	---
Lead	ppm	ASTM D5185m	>40	**6**	---	---
Copper	ppm	ASTM D5185m	>330	**0**	---	---
Tin	ppm	ASTM D5185m	>15	**<1**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**29**	---	---
Barium	ppm	ASTM D5185m		**0**	---	---
Molybdenum	ppm	ASTM D5185m		**36**	---	---
Manganese	ppm	ASTM D5185m		**<1**	---	---
Magnesium	ppm	ASTM D5185m		**422**	---	---
Calcium	ppm	ASTM D5185m		**1321**	---	---
Phosphorus	ppm	ASTM D5185m		**614**	---	---
Zinc	ppm	ASTM D5185m		**724**	---	---
Sulfur	ppm	ASTM D5185m		**2133**	---	---

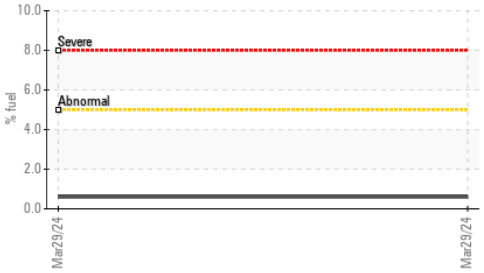
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**12**	---	---
Sodium	ppm	ASTM D5185m		**1**	---	---
Potassium	ppm	ASTM D5185m	>20	**5**	---	---
Fuel	%	ASTM D3524	>5	**0.6**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.6**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**14.3**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**38.0**	---	---

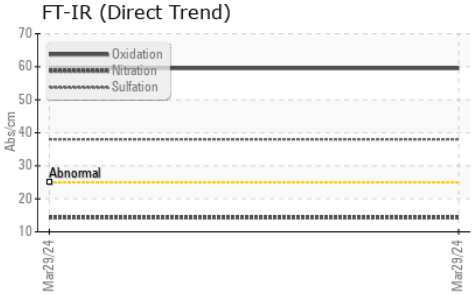
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**59.5**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		**0.1**	---	---

OIL ANALYSIS REPORT

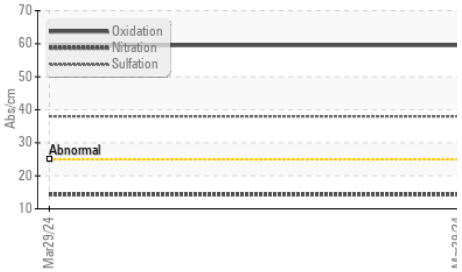
Fuel Dilution



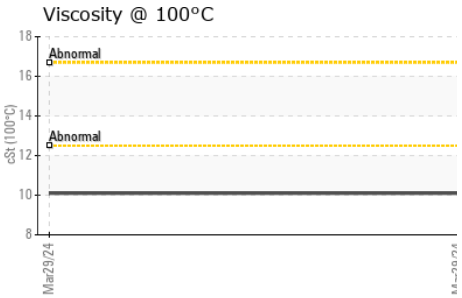
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Viscosity @ 100°C

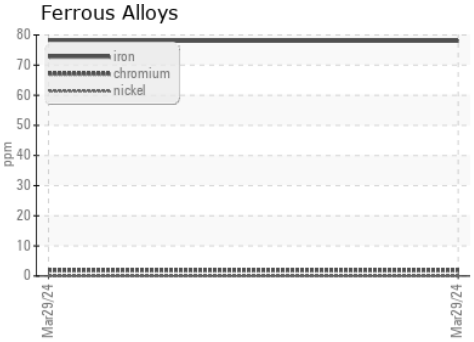


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*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**	---	---

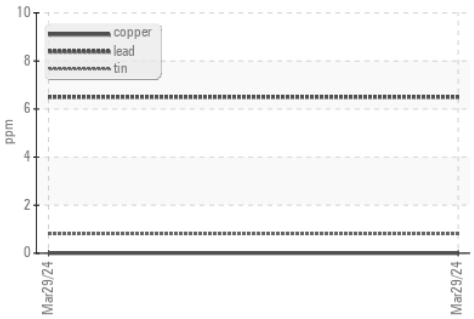
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**10.1**	---	---

GRAPHS

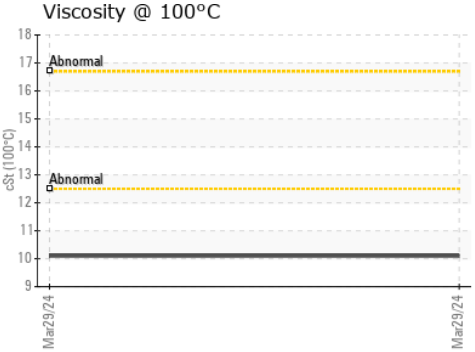
Ferrous Alloys



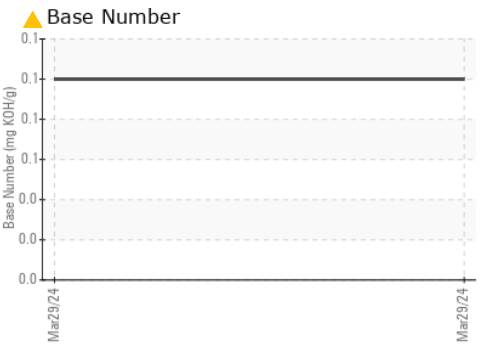
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0006575 **Received** : 17 Apr 2024
Lab Number : 06151481 **Tested** : 22 Apr 2024
Unique Number : 10981559 **Diagnosed** : 22 Apr 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Sapp Bros. Fleet - Omaha Petroleum Location
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OMAHA, NE
US 68138
Contact: Stephanie Kelly
skelly@sappbros.net
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Report Id: SBTOMA [WUSCAR] 06151481 (Generated: 04/23/2024 09:24:26) Rev: 1

Submitted By: Joshua Kenney