

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id FSP141752 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0883234	WC0796063	WC0795905
Sample Date		Client Info		18 Mar 2024	20 Jul 2023	23 Mar 2023
Machine Age	mls	Client Info		0	167289	151554
Oil Age	mls	Client Info		10000	10000	10000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	1.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	20	21
Chromium	ppm	ASTM D5185m	>20	2	<1	<1
Nickel	ppm	ASTM D5185m	>4	1	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	5	4
Lead	ppm	ASTM D5185m	>40	6	6	5
Copper	ppm	ASTM D5185m	>330	1	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		•	0	0
oddinidini	ppm	ASTIVI DOTODITI		0	0	0
ADDITIVES	ppin	method	limit/base	current	0 history1	history2
	ppm		limit/base 250	-	-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	250	current	history1 3	history2 4
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	250 10	current 58 0	history1 3 <1	history2 4 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	250 10	current 58 0 72	history1 3 <1 71	history2 4 0 68
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	current 58 0 72 <1	history1 3 <1 71 <1	history2 4 0 68 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	current 58 0 72 <1 782	history1 3 <1 71 <1 1020	history2 4 0 68 1 1021
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	current 58 0 72 <1 782 1342	history1 3 <1 71 <1 1020 1266	history2 4 0 68 1 1021 1237
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	Current 58 0 72 <1 782 1342 969	history1 3 <1 71 <1 1020 1266 1108	history2 4 0 68 1 1021 1237 1088
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	current 58 0 72 <1 782 1342 969 1302	history1 3 <1 71 <1 1020 1266 1108 1347	history2 4 0 68 1 1021 1237 1088 1313
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	Current 58 0 72 <1 782 1342 969 1302 3620	history1 3 <1 71 <1 1020 1266 1108 1347 3516	history2 4 0 68 1 1021 1237 1088 1313 4007
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	current 58 0 72 <1 782 1342 969 1302 3620 current	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1	history2 4 0 68 1 1021 1237 1088 1313 4007 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	current 58 0 72 <1 782 1342 969 1302 3620 current 5	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216	current 58 0 72 <1 782 1342 969 1302 3620 current 5 4	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5 4	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20	current 58 0 72 <1 782 1342 969 1302 3620 current 5 4 2	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5 4 8	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >216 >216 >20 Imit/base >3	current 58 0 72 <1 782 1342 969 1302 3620 current 5 4 2 current	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5 4 8 history1	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6 3 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >216 >216 >20 Imit/base >3	current 58 0 72 <1 782 1342 969 1302 3620 current 5 4 2 current 1.7	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5 4 8 history1 1.6	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6 3 history2 1.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >216 >20 imit/base >3 >20	current 58 0 72 <1 782 1342 969 1302 3620 current 5 4 2 current 1.7 12.9	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5 4 8 history1 1.6 12.8	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6 3 history2 1.6 12.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >216 >216 >20 imit/base >3 >20 >30	current 58 0 72 <1 782 1342 969 1302 3620 current 5 4 2 current 1.7 12.9 25.2	history1 3 <1 71 <1 1020 1266 1108 1347 3516 history1 5 4 8 history1 1.6 12.8 24.1	history2 4 0 68 1 1021 1237 1088 1313 4007 history2 6 3 history2 1.6 12.5 23.6



OIL ANALYSIS REPORT

Oxidation		VISUAL		method			history1
- Researchese Nitration		White Metal	scalar	*Visual	NONE	NONE	NONE
- Sulfation		Yellow Metal	scalar	*Visual	NONE	NONE	NONE
- Abnormal		Precipitate	scalar	*Visual	NONE	NONE	NONE
		Silt	scalar	*Visual	NONE	NONE	NONE
		Debris	scalar	*Visual	NONE	NONE	NONE
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Jul20/23	8/24	Appearance	scalar	*Visual	NORML	NORML	NORML
Jul2	Mar18/24	Odor	scalar	*Visual	NORML	NORML	NORML
se Number		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG
nal		FLUID PROPER	TIFS	method	limit/base	current	history1
		Visc @ 100°C	cSt	ASTM D445	14.4	12.7	13.2
		GRAPHS	COL	AOTIN D443	14.4	12.7	10.2
		Ferrous Alloys					
- 1/23	S.	iron					
Jul20/23	1 m	20- nickel					
		15					
cosity @ 100°C		E d					
mal		10-					
· · · · · · · · · · · · · · · · · · ·		5					
		5					
				and the district subtant to a second s	enterent		
al		Mar23/23	Jul20/23		Mar18/24		
			-		Mar		
	~	Non-ferrous Meta	als				
Jul20/23	C, OI	10 copper					
Ju	h.f.	8 - Reserves lead					
			and a state of the		-		
		4					
		2			_		
		0					
		ar23/23	Jul20/23		lar18/24		
		W	-		Ma		
		Viscosity @ 100°	C			Base Number	
		17 - Abnormal			14.0	Abnormal	
		16				T	1
		Base			5 10.0 S	Base	
		215 Base 14 ³³ 13 Abnormal			.0.1 8.0 9.8 Winnber 9.8 8 Base 8 4.0)+	
		Abnormal			4mn 6.0	Abnormal	
		12-			88 4.0)+	
		11-			2.0		
		10					
		Mar23/23	Jul20/23		Mar18/24	Mar23/23	Jul20/23 .

FRESHPOINT

Mar18/24 -

8801 EXCHANGE DRVIE ORLANDO, FL US 32809 Contact: CRAIG EVANS evans_craig@sbcglobal.net T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: FREORL [WUSCAR] 06139189 (Generated: 04/05/2024 14:40:15) Rev: 1

Certificate 12367

Lab Number : 06139189

Unique Number : 10963997

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.

Test Package : FLEET

Tested

Diagnosed

: 05 Apr 2024

: 05 Apr 2024 - Wes Davis

Contact/Location: CRAIG EVANS - FREORL

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

NEG

NEG

11.9