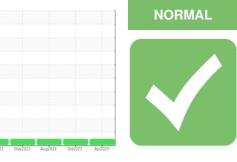


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

28 Component Diesel Engine Fluid PURUS SYNTHETIC BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

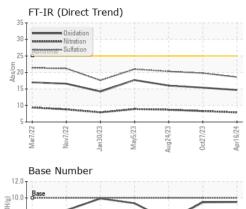
Fluid Condition

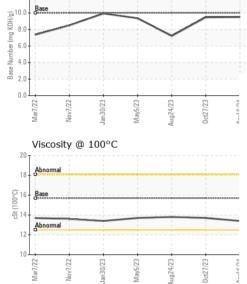
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RW0005298	RW0004561	RW0004555
Sample Date		Client Info		16 Apr 2024	27 Oct 2023	24 Aug 2023
Machine Age	mls	Client Info		616735	586331	561062
Oil Age	mls	Client Info		24000	24000	24000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
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	9	8	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	5	3
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 3	history2 3
	ppm ppm		limit/base			-
Boron		ASTM D5185m	limit/base	2	3	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	2 0	3 7	3 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68	3 7 65	3 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1	3 7 65 0	3 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1 1027	3 7 65 0 888	3 0 60 <1 842
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1 1027 1212	3 7 65 0 888 1118	3 0 60 <1 842 1075
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1 1027 1212 1077	3 7 65 0 888 1118 1060	3 0 60 <1 842 1075 930
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1 1027 1212 1077 1351	3 7 65 0 888 1118 1060 1217	3 0 60 <1 842 1075 930 1133
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		2 0 68 <1 1027 1212 1077 1351 3763	3 7 65 0 888 1118 1060 1217 3221	3 0 60 <1 842 1075 930 1133 2808
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1 1027 1212 1077 1351 3763 current	3 7 65 0 888 1118 1060 1217 3221 history1	3 0 60 <1 842 1075 930 1133 2808
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base	2 0 68 <1 1027 1212 1077 1351 3763 current 5	3 7 65 0 888 1118 1060 1217 3221 history1 6	3 0 60 <1 842 1075 930 1133 2808 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 68 <1 1027 1212 1077 1351 3763 <u>current</u> 5 <	3 7 65 0 888 1118 1060 1217 3221 history1 6 <	3 0 60 <1 842 1075 930 1133 2808 history2 7 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	2 0 68 <1 1027 1212 1077 1351 3763 current 5 <1 1	3 7 65 0 888 1118 1060 1217 3221 history1 6 < 2 3	3 0 60 <1 842 1075 930 1133 2808 history2 7 0 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	2 0 68 <1 1027 1212 1077 1351 3763 current 5 <1 1 x	3 7 65 0 888 1118 1060 1217 3221 history1 6 < 1 3 <i>history1</i>	3 0 60 <1 842 1075 930 1133 2808 history2 7 0 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	2 0 68 <1 1027 1212 1077 1351 3763 <i>current</i> 5 <1 1 <i>current</i> 0.3	3 7 65 0 888 1118 1060 1217 3221 history1 6 <1 3 <u>history1</u> 0.4	3 0 60 <1 842 1075 930 1133 2808 history2 7 0 2 2 history2 0.4
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	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	2 0 68 <1 1027 1212 1077 1351 3763 <i>current</i> 5 <1 1 <i>current</i> 0.3 7.9	3 7 65 0 888 1118 1060 1217 3221 history1 6 <1 3 history1 0.4 8.3	3 0 60 <1 842 1075 930 1133 2808 history2 7 0 2 history2 0.4 8.7
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	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >3 >20 >30	2 0 68 <1 1027 1212 1077 1351 3763 current 5 <1 1 1 current 0.3 7.9 18.6	3 7 65 0 888 1118 1060 1217 3221 history1 6 <1 3 <u>history1</u> 0.4 8.3 19.8	3 0 60 <1 842 1075 930 1133 2808 history2 7 0 2 history2 0.4 8.7 20.3
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	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >25 >20 limit/base >3 >20 >30 >30 limit/base	2 0 68 <1 1027 1212 1077 1351 3763 <i>current</i> 5 <1 1 <i>current</i> 0.3 7.9 18.6 <i>current</i>	3 7 65 0 888 1118 1060 1217 3221 history1 6 < 4 3 history1 0.4 8.3 19.8 history1	3 0 60 <1 842 1075 930 1133 2808 history2 7 0 2 history2 0.4 8.7 20.3 history2



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	e current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
And and the state of the state	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
1/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
0ct27/23 Apr16/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual	2 U.L	NEG	NEG	NEG
	FLUID PROPERT		method	limit/base			
	Visc @ 100°C	cSt	ASTM D445		e current	history1 13.7	history2 13.8
	GRAPHS	001	Norm Diric	, 10.,		10.7	10.0
	Iron (ppm)				Lead (ppm)		
	250 T				100		
0ct27/23	200 - Severe				80 - Severe		
0 oct	Abnormal			mqq	60-		
	and the second s	1		d	40 - Abnormal		
	50 -				20-		
		23	23	24		53	23
	Mar7/22 Nov7/22 Jan30/23	May5/23 -	Aug24/23 0ct27/23	Apr16/24	Mar7/22 Nov7/22	Jan30/23 May5/23	Aug24/23 0ct27/23
	7	2	Au	Ä		-	Au 0 v
	Aluminum (ppm)				Chromium (p	opm)	
, 	40 - Severe	1			40 Severe		
					20		
1/23	E 30 20 - Abnormal	1		E C C C C C C C C C C C C C C C C C C C	20 Abnormal		
0ct27/23	10				10-		
					0		
	Mar7/22 Nov7/22	May5/23 -	Aug24/23 0ct27/23	Apr16/24 -	Mar7/22 -	Jan 30/23 May5/23	Aug24/23 0ct27/23
	Ma Nov Jan3	May	Aug2 Oct2	Apr1	Ma	Jan3 May	Aug2 Oct2
	Copper (ppm)				Silicon (ppm))	
	400 Severe	+			80 Severe		1
	300				60 -		
	틆 200			E C C C C C C C C C C C C C C C C C C C	40 -		
	100-				Abnormal	1 1	
	0				0		
		5/23 -	4/23 -	5/24		5/23 -	4/23 - 1/23 -
	Mar7/22 Nov7/22 Jan30/23	May5/23 -	Aug24/23 - 0ct27/23 -	Apr16/24	Mar7/22 Nov7/22	Jan 30/23 May 5/23	Aug24/23 - 0ct27/23 -
	Viscosity @ 100°C				Base Numbe	r	
	²⁰ 18 Abnormal			(B)	2.0 Base		
		1	1 I	a Kol	8.0		
	001 16 Base 3 16 Anormal			Der (m	6.0-		`
	Abholmai			Base Number (mg KOH/g)	4.0 -		
	12-			Base	2.0-		
		723 -	23-	24+	52 0.0	23+	23+
	Mar7/22 Nov7/22 Jan30/23	May5/23 -	Aug24/23 . Oct27/23 .	Apr16/24	Mar7/22 Nov7/22	Jan30/23 May5/23	Aug24/23 - 0ct27/23 -
	,		-				
Laboratory	: WearCheck USA - 50				3	BURNET	TTE FOODS INC
Sample No.	: RW0005298	Recei		7 Jun 2024			701 US 31 N
Lab Number Unique Number		Teste		1 Jun 2024 1 Jun 2024 -	Was Davis	I	ELK RAPIDS, N US 4962
Test Package		Diagr	iosed 1	i Juli 2024 -	WES DAVIS	Cantas	US 4962 t: roger WII SON



Test Package : MOB 2 Certificate 12367 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)

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F: Contact/Location: roger WILSON - BURELKMI

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