

OIL ANALYSIS REPORT

Sample Rating Trend









DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Total oil added 37 gal)

Wear

All component wear rates are normal.

Contamination

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

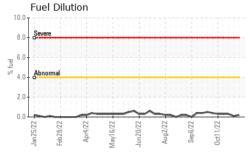
Fluid Condition

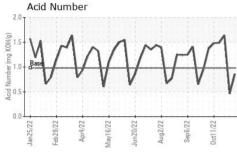
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

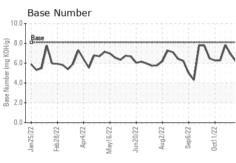
IRON CG 40 (145	GAL)	12022 Feb202	22 Apr2022 May2022	Jun2022 Aug2022 Sep2022	Dct2022	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0699060	WC0699065	WC0699058
Sample Date		Client Info		08 Nov 2022	31 Oct 2022	24 Oct 2022
Machine Age	hrs	Client Info		118546	118357	118190
Oil Age	hrs	Client Info		285	96	924
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>45	3	2	7
Chromium	ppm	ASTM D5185m	>2	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	5
Lead	ppm	ASTM D5185m	>5	<1	<1	2
Copper	ppm	ASTM D5185m	>14	2	<1	3
Tin	ppm	ASTM D5185m	>13	3	1	7
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 0	history2 0
	ppm					
Boron		ASTM D5185m	0	0	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0	0 <1	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2	0 0 <1	0 <1 <1	0 0 2
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1	0 0 <1 <1	0 <1 <1 <1	0 0 2 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9	0 0 <1 <1 14 2943 278	0 <1 <1 <1 <1 13	0 0 2 <1 20
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712	0 0 <1 <1 14 2943	0 <1 <1 <1 <1 13 2829	0 0 2 <1 20 3309
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712 292	0 0 <1 <1 14 2943 278	0 <1 <1 <1 <1 13 2829 266	0 0 2 <1 20 3309 307
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base	0 0 <1 <1 14 2943 278 330 3920 current	0 <1 <1 <1 <2 <1 <1 <2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575	0 0 <1 <1 14 2943 278 330 3920 current	0 <1 <1 <1 <1 13 2829 266 326 3685 history1 79	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base	0 0 <1 <1 14 2943 278 330 3920 current 188	0 <1 <1 <1 <1 13 2829 266 326 3685 history1 79 0	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200	0 0 <1 <1 14 2943 278 330 3920 current 188 0	0 <1 <1 <1 <1 13 2829 266 326 3685 history1 79 0 0	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base	0 0 <1 <1 14 2943 278 330 3920 current 188	0 <1 <1 <1 <1 13 2829 266 326 3685 history1 79 0	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200	0 0 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0	0 0 <1 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2 current	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0	0 0 <1 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2 current 0.1 5.6	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0	0 0 <1 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2 current	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base	0 0 <1 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2 current 0.1 5.6	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0 0.3 history2 0.1 7.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base >20 >30	0 0 <1 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2 current 0.1 5.6 19.6	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0 0.3 history2 0.1 7.5 26.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D76185m TMETHOD	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base >20 >30 limit/base	0 0 <1 <1 <1 14 2943 278 330 3920 current 188 0 0 0.2 current 0.1 5.6 19.6 current	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 2 <1 20 3309 307 379 4184 history2 ▲ 390 0 0 0.3 history2 0.1 7.5 26.1 history2

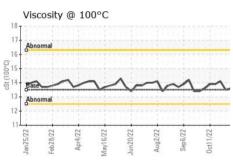


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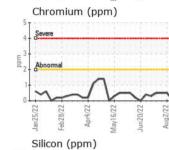


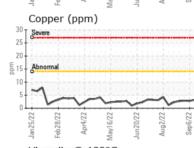


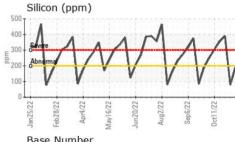
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

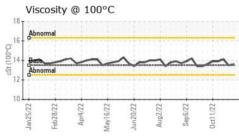
FLUID PROPER	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	13.5	13.6	13.5	14 1

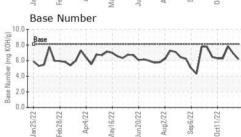
Severe						20-	
Abnormal						15-	1
						5-	Abnormal
22/5	Apr4/22	22/0	Aug2/22	Sep6/22	722/1	_ 0-	5/22
Jan25/22 Feb28/22	Σ	Jun20/22	Aug	Sep	Oct11/22		Jan25/22
Aluminu	m (ppm)					- 5-	Chrom
Severe						4.	Severe













Laboratory Sample No.

: WC0699060 Lab Number : 05691499 Unique Number : 10216072

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 11 Nov 2022 **Tested**

: 15 Nov 2022 Diagnosed

: 15 Nov 2022 - Don Baldridge

Test Package : MOB 2 (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.

FINLEY BIOENERGY

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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)