

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Wayne unit 2

Component Landfill Biogas Engine Fluid

D-A Lubricant Blue Flame HB-8 40W (180 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

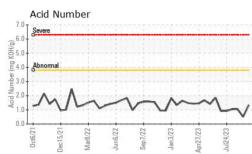
Fluid Condition

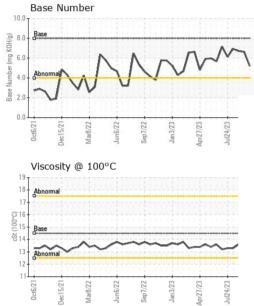
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

AL)						
SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0831451	WC0831454	WC0831448
Sample Date		Client Info		05 Dec 2023	14 Nov 2023	08 Sep 2023
Aachine Age	hrs	Client Info		109989	109495	108285
Dil Age	hrs	Client Info		1048	554	1953
Dil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
uel		WC Method	>4.0	<1.0	<1.0	<1.0
Vater		WC Method	>.2	NEG	NEG	NEG
Alycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
ron	ppm	ASTM D5185m	>20	1	3	5
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
lickel	ppm	ASTM D5185m	>2	0	0	0
itanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Numinum	ppm	ASTM D5185m	>15	5	4	3
ead	ppm	ASTM D5185m	>20	0	<1	<1
Copper	ppm	ASTM D5185m	>15	1	<1	2
ïn	ppm	ASTM D5185m	>5	<1	<1	1
/anadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		2	3	<1
Barium	ppm	ASTM D5185m		0	0	0
	ppm ppm	ASTM D5185m ASTM D5185m		0 3	0 6	0 6
lolybdenum				-	÷	÷
Nolybdenum Nanganese	ppm	ASTM D5185m		3	6	6
Aolybdenum Aanganese Aagnesium	ppm ppm	ASTM D5185m ASTM D5185m		3 <1	6 <1	6 <1
Aolybdenum Aanganese Aagnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		3 <1 24	6 <1 12	6 <1 29
Aolybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		3 <1 24 2217	6 <1 12 2166	6 <1 29 2488
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		3 <1 24 2217 312	6 <1 12 2166 323	6 <1 29 2488 350
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 <1 24 2217 312 391 3100	6 <1 12 2166 323 410	6 <1 29 2488 350 444
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Cinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base	3 <1 24 2217 312 391 3100	6 <1 12 2166 323 410 3057	6 <1 29 2488 350 444 4277
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Cinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		3 <1 24 2217 312 391 3100 current	6 <1 12 2166 323 410 3057 history1	6 <1 29 2488 350 444 4277 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Cinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	>200 >20	3 <1 24 2217 312 391 3100 current 70	6 <1 12 2166 323 410 3057 history1 44	6 <1 29 2488 350 444 4277 history2 122
Molybdenum Manganese Magnesium Calcium Phosphorus Cinc Gulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	>200 >20	3 <1 24 2217 312 391 3100 current 70 2	6 <1 12 2166 323 410 3057 history1 44 <1	6 <1 29 2488 350 444 4277 history2 122 1
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>200 >20 >20	3 <1 24 2217 312 391 3100 current 70 2 0	6 <1 12 2166 323 410 3057 history1 44 <1 0 history1 0	6 <1 29 2488 350 444 4277 history2 122 1 0 history2 0
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>200 >20 >20 limit/base	3 <1 24 2217 312 391 3100 current 70 2 0 0 current	6 <1 12 2166 323 410 3057 history1 44 <1 0 history1	6 <1 29 2488 350 444 4277 history2 122 122 1 0 history2 0 6.5
Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>200 >20 >20 limit/base >2	3 <1 24 2217 312 391 3100 current 70 2 0 current 0	6 <1 12 2166 323 410 3057 history1 44 <1 0 history1 0	6 <1 29 2488 350 444 4277 history2 122 1 0 history2 0
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Cinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Vitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D7844	>200 >20 >20 limit/base >2 >20	3 <1 24 2217 312 391 3100 current 70 2 0 0 current 0 6.2	6 <1 12 2166 323 410 3057 history1 44 <1 0 history1 0 5.7	6 <1 29 2488 350 444 4277 history2 122 1 0 history2 0 6.5
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Cinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Jitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>200 >20 >20 limit/base >2 >20 >30	3 <1 24 2217 312 391 3100 current 70 2 0 current 0 6.2 16.3	6 <1 12 2166 323 410 3057 history1 44 <1 0 history1 0 5.7 15.9	6 <1 29 2488 350 444 4277 history2 122 1 2 1 0 <i>history2</i> 0 6.5 20.2
Aolybdenum Aanganese Aagnesium Calcium Phosphorus Cinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Sitration Sulfation	ppm ppm 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 *ASTM D7844 *ASTM D7624 *ASTM D7415	>200 >20 >20 limit/base >2 >20 >30 limit/base	3 <1 24 2217 312 391 3100 current 70 2 0 current 0 6.2 16.3 current	6 <1 12 2166 323 410 3057 history1 44 <1 0 history1 0 5.7 15.9 history1	6 < 1 29 2488 350 444 4277 history2 122 122 122 10 history2 0 6.5 20.2 history2



OIL ANALYSIS REPORT





			V	ISUAL				r	netho	d lin	nit/base	cu	rrent	ł	nistory	/1	hi	story2
			Wh	nite Meta	al		scala	r *V	'isual	NO	NE	NON	IE	N	ONE		NO	NE
			Yel	llow Me	tal		scala	r *V	'isual	NO	NE	NON	IE	N	ONE		NO	NE
			Pre	ecipitate	;		scala	r *V	'isual	NO	NE	NON	IE	N	ONE		NO	NE
			Silt				scala	r *V	'isual	NO	NE	NON	IE	N	ONE		NO	NE
W	\sim	11	De	bris			scala	r *V	'isual	NO	NE	NON	IE	N	ONE		NO	NE
	11111	- v	Sai	nd/Dirt			scala	r *V	'isual	NO	NE	NON	IE	N	ONE		NO	NE
Sep7/22	Jan3/23 Apr27/23	Jul24/23	Ap	pearanc	e		scala	r *V	'isual	NO	RML	NOF	ML	N	ORML		NO	RML
Sel	Apri	Jul	Od	or			scala	r *V	'isual	NO	RML	NOF	ML	N	ORML		NO	RML
			Em	nulsified	Wate	r	scala	r *V	'isual	>.2		NEG	ì	N	EG		NE	G
			Fre	e Wate	r		scala	r *V	'isual			NEG	ì	N	EG		NE	G
			F	LUID P	PROP	ERT	IES	r	netho	d lin	nit/base	cu	rrent	ł	nistory	/1	hi	story2
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Laboratory Sample No.					01 Madison Ave., Cary, NC 27513 Received : 07 Dec 2023					3	3 TERREVA WAYNE COUNT 460 SOUTH LANDFILL RI							
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