

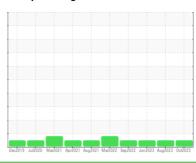
OIL ANALYSIS REPORT

Sample Rating Trend

COOLING TOWER PUMP MOTORS P-755-LOWER

Component Bearing

MOBIL SHC 626 (2 QTS)





Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Date Client Info 11 Oct 2023 04 Aug 2023 20 Jun 2023	บะเรีย19 Jui2020 Mar2021 Au _r 2021 Au _r 2021 Mar2022 Sm ₂ 2022 Jun2023 Au _{r2} 2023 Occ2023							
Sample Date Client Info 11 Oct 2023 04 Aug 2023 20 Jun 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age mths	Sample Number		Client Info		WC0866653	WC0844686	WC0830801	
Oil Age Oil Changed Sample Status mths Client Info 2 3 9 Oil Changed Sample Status Client Info Not Changd N/A NORMAL Not Changd NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 4 11 16 Chromium ppm ASTM D5185m >20 0 0 0 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Siliver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 Cadmium ppm ASTM D5185m 0 0 0	Sample Date		Client Info		11 Oct 2023	04 Aug 2023	20 Jun 2023	
Oil Changed Sample Status	Machine Age	mths	Client Info		12	12	11	
NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2	Oil Age	mths	Client Info		2	3	9	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 4 11 16 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >20 0 <1 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m 0 0 0 0 Cadamium ppm ASTM D5185m 0 0 0 0	Oil Changed		Client Info		Not Changd	N/A	Not Changd	
Irron	Sample Status				NORMAL	NORMAL	NORMAL	
Chromium ppm ASTM D5185m ≥20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Siliver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >20 0 <1 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0	WEAR METALS		method	limit/base	current	history1	history2	
Nickel	Iron	ppm	ASTM D5185m	>20	4	11	16	
Titanium	Chromium	ppm	ASTM D5185m	>20	0	0	0	
Silver	Nickel	ppm	ASTM D5185m	>20	0	0	0	
Aluminum	Titanium	ppm	ASTM D5185m		0	0	0	
Lead	Silver	ppm	ASTM D5185m		0	0	0	
Copper ppm ASTM D5185m >20 <1 2 4 Tin ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 <1	Aluminum	ppm	ASTM D5185m	>20	0	<1	0	
Tin ppm ASTM D5185m >20 0 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 1 0 0 Magnesium ppm ASTM D5185m 0 1 0 0 0 0 Calcium ppm ASTM D5185m 0 0 1 0 0 Calcium ppm ASTM D5185m 0 0 1 0 0 Calcium ppm ASTM D5185m 0 0 1 0 0 Calcium ppm ASTM D5185m 0 0 1 0 0 Calcium ppm ASTM D5185m 124 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 1 127 434 405 CONTAMINANTS method limit/base current history1 history2 Particles >4μm ASTM D5185m >20 0 0 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >6μm ASTM D7647 >10000 6775 7275 28455 Particles >6μm ASTM D7647 >10000 6775 7275 28455 Particles >21μm ASTM D7647 >1000 101 25 362 Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Lead	ppm	ASTM D5185m	>20	0	0	0	
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganesium ppm ASTM D5185m 0 1 0 0 Magnesium ppm ASTM D5185m 0 1 0 0 Calcium ppm ASTM D5185m 495 552 546 128 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>20</td> <th><1</th> <td>2</td> <td>4</td>	Copper	ppm	ASTM D5185m	>20	<1	2	4	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 -1 0 Magnesium ppm ASTM D5185m 0 1 0 Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 20 0 <1	Tin	ppm	ASTM D5185m	>20	0	0	0	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 -1 0 Magnesium ppm ASTM D5185m 0 1 0 Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Vanadium	ppm	ASTM D5185m		0	<1	0	
Boron	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 -1 0 Magnesium ppm ASTM D5185m 0 1 0 Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1 <1 Sodium ppm ASTM D5185m 4 10 14 Potassium ppm ASTM D5185m 20 0 0 0 FLUID CLEANLINESS method limit/base current hi	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 1 0 Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1 <1 Sodium ppm ASTM D5185m >15 0 <1 <1 Sodium ppm ASTM D5185m >20 0 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles > 4µm ASTM D7647	Boron	ppm	ASTM D5185m		0	0	0	
Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 1 0 Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium ppm ASTM D5185m 0 1 0 Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1 <1 Sodium ppm ASTM D5185m >15 0 <1 <1 Sodium ppm ASTM D5185m >20 0 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 6775 7275 28455 Particles >21µm ASTM D7647 >160 101 25 362	Molybdenum	ppm	ASTM D5185m		0	0	0	
Calcium ppm ASTM D5185m 0 2 1 Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Manganese	ppm	ASTM D5185m		0	<1	0	
Phosphorus ppm ASTM D5185m 495 552 546 Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Magnesium	ppm	ASTM D5185m		0	1	0	
Zinc ppm ASTM D5185m 24 128 135 Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Calcium	ppm	ASTM D5185m		0	2	1	
Sulfur ppm ASTM D5185m 127 434 405 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Phosphorus	ppm	ASTM D5185m		495	552	546	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 0 <1	Zinc	ppm	ASTM D5185m		24	128	135	
Silicon ppm ASTM D5185m >15 0 <1	Sulfur	ppm	ASTM D5185m		127	434	405	
Sodium ppm ASTM D5185m 4 10 14 Potassium ppm ASTM D5185m >20 0 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >10000 6775 7275 28455 Particles >6μm ASTM D7647 >2500 1585 1089 4454 Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >3 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	CONTAMINANTS	3	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 0 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >10000 6775 7275 28455 Particles >6μm ASTM D7647 >2500 1585 1089 4454 Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>15	0	<1	<1	
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >10000 6775 7275 28455 Particles >6μm ASTM D7647 >2500 1585 1089 4454 Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		4	10	14	
Particles >4μm ASTM D7647 >10000 6775 7275 28455 Particles >6μm ASTM D7647 >2500 1585 1089 4454 Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	0	0	0	
Particles >6μm ASTM D7647 >2500 1585 1089 4454 Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2	
Particles >14μm ASTM D7647 >160 101 25 362 Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm			>10000	6775	7275	28455	
Particles >21μm ASTM D7647 >40 17 4 72 Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>2500	1585	1089	4454	
Particles >38μm ASTM D7647 >10 1 1 1 Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>160	101	25	362	
Particles >71μm ASTM D7647 >3 1 1 0 Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>40	17	4	72	
Oil Cleanliness ISO 4406 (c) >20/18/14 20/18/14 20/17/12 22/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>10	1	1	1	
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	1	1	0	
	Oil Cleanliness		ISO 4406 (c)	>20/18/14	20/18/14	20/17/12	22/19/16	
Acid Number (AN) mg KOH/g ASTM D8045 0.38 0.28 0.31	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2	
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.38	0.28	0.31	



OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No.

Unique Number

Lab Number

: WC0866653 : 05978883 : 10696178

Diagnosed Test Package : IND 2 (Additional Tests: PrtCount)

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

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.

: 19 Oct 2023 Diagnostician : Jonathan Hester

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

: 13 Oct 2023

POET BIOREFINING - Groton

40425 133RD STREET GROTON, SD US 57445-6400 Contact: GAVIN KRUEGER

Gavin.Krueger@POET.COM T: 6(05)846-6863

F: (605)397-2754