

COOLANT REPORT

Area Cranes Machine Id

Crane - Mid Ship Engine Coolant (62 L Tank) (S/N Sample Tag: MA-04002)

Fluid DETROIT DIESEL POWER COOL PLUS (62 LTR)

DIAGNOSIS

Recommendation

The fluid is suitable for further service. Resample at the next service interval to monitor.

Corrosion

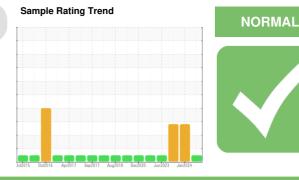
All metal levels are normal indicating no corrosion in the cooling system.

Contaminants

There is no indication of any contamination in the coolant.

Coolant Condition

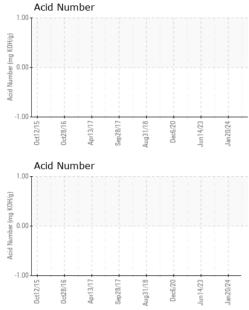
The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable.

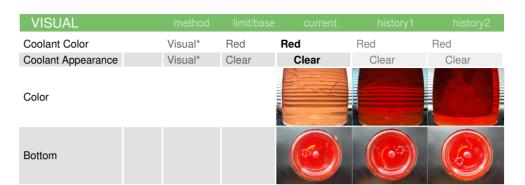


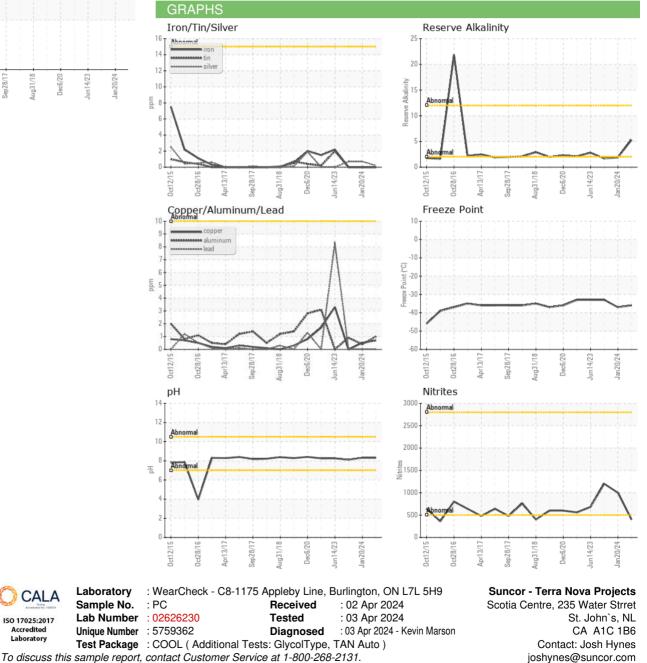
Sample Number Client Info PC PC0080321 PC Sample Date Client Info 20 Mar 2024 20 Jan 2024 04 Oct 2023 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A Sample Status Imit/base current history history PHYSICAL TEST RESULTS method imit/base current history history Glycol Type FT-IR UNK Specific Gravity ASTM D128* 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1.200 Reserve Alkalinity Scale 0-20 ASTM D321* 5.0 49.7 5.0.2 49.6 Freezing Point °C ASTM D321* 4.0 -36 -37 -33 Carboxylate imit/base <th>SAMPLE INFORM</th> <th>MATION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A Sample Status Imit/base current history1 history2 PHYSICAL TEST RESULTS method imit/base current history1 history2 Glycol Type FT-IR UNK Specific Gravity ASTM D1287 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit 0 400 1000 1200 Reserve Alkalinity Scale 0-20 ASTM D1221* 5.3 1.9 1.7 Percentage Glycol % ASTM D3221* 50 49.6 CORROSION INHIBITORS method imit/base current history1 history2 Silicon ppm ASTM D5185(m) 12 13 10 Phosphorus	Sample Number		Client Info		PC	PC0080321	PC
Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A Sample Status Imit/base RORMAL ABNORMAL ABNORMAL PHYSICAL TEST RESULTS method Imit/base current history1 history2 Glycol Type FT-IR UNK Specific Gravity ASTM D1287 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1200 Reserve Alkalinity Scale 0-20 ASTM D1287* 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1200 Reserve Alkalinity Scale 0-20 ASTM D1321* 50 49.7 50.2 49.6 Freezing Point C ASTM D13321* 50 49.7 50.2 20 Silicon ppm ASTM D5185(m) 12 13 10 <tr< th=""><th>Sample Date</th><th></th><th>Client Info</th><th></th><th>20 Mar 2024</th><th>20 Jan 2024</th><th>04 Oct 2023</th></tr<>	Sample Date		Client Info		20 Mar 2024	20 Jan 2024	04 Oct 2023
Oil Changed Client Info N/A N/A N/A N/A Sample Status Image Status Image Status ABNORMAL ABNORMAL ABNORMAL PHYSICAL TEST RESULTS method Iimit/base current history1 history2 Glycol Type FT-IR UNK Specific Gravity ASTM D1298" 1.067 1.068 1.067 pH Scale 0:14 ASTM D1287" 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit" 0 400 1000 1200 Reserve Alkalinity Scale 0:20 ASTM D12321" 5.3 1.9 1.7 Percentage Glycol % ASTM D3321" 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321" 60 CORROSION INHIBITORS method Imit/base current history1 history2 Silicon ppm ASTM D5185(m) 12 13<	Machine Age	hrs	Client Info		0	0	0
Sample Status NORMAL ABNORMAL ABNORMAL PHYSICAL TEST RESULTS method limit/base current history1 history2 Glycol Type FT-IR UNK Specific Gravity ASTM D1298* 1.067 1.068 1.067 pH Scale 014 ASTM D1297* 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 ▲ 1000 ▲ 1200 Reserve Alkalinity Scale 040 ASTM D1221* 5.3 ▲ 1.9 ▲ 1.7 Percentage Glycol % ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3221* 60 49.7 50.2 49.6 Freezing Point °C ASTM D3221* 60 49.7 50.2 49.6 Silicon ppm ASTM D5185(m) 12 13 10 Phosphorus ppm ASTM D5185(m) 12 13 10 No	Oil Age	hrs	Client Info		0	0	
PHYSICAL TEST RESULTS method limit/base current history1 history2 Glycol Type FT-IR UNK Specific Gravity ASTM D1298* 1.067 1.068 1.067 pH Scale 0-14 ASTM D1298* 9.0 8.31 8.32 8.11 Nitrites ppm Acan Test Kit* 0 4000 1000 1200 Reserve Alkalinity Scale 0-20 ASTM D129* 5.3 1.9 1.7 Percentage Glycol % ASTM D321* -40 -36 -37 -33 Carboxylate CORROSION INHIBITORS method imit/base current history1 history2 Silicon ppm ASTM D5185(m) 12 13 10 Phosphorus ppm ASTM D5185(m) 154 159 160 CORROSION ppm ASTM D5185(m) >10 1 <1 1 </th <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>N/A</th> <th>N/A</th> <th>N/A</th>	Oil Changed		Client Info		N/A	N/A	N/A
Glycol Type FT-IR UNK Specific Gravity ASTM D1298* 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1200 Reserve Alkalinity Scale 0.20 ASTM D1287* 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1200 Reserve Alkalinity Scale 0.20 ASTM D1287* 5.0 49.7 50.2 49.6 Freezing Point °C ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate - - - - - - - Silicon ppm ASTM D5185(m) 12 13 10 10 Phosphorus ppm ASTM D5185(m) 15 0 0 0 Boron ppm ASTM D51	Sample Status				NORMAL	ABNORMAL	ABNORMAL
Specific Gravity ASTM D1298* 1.067 1.068 1.067 pH Scale 0:14 ASTM D1287* 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1200 Reserve Alkalinity Scale 0:20 ASTM D1121* 5.3 1.9 1.7 Percentage Glycol % ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate CORROSION INHIBITORS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) 0 30 25 20 Boron ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m) 10 <t< th=""><th>PHYSICAL TEST P</th><th>ESULTS</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<>	PHYSICAL TEST P	ESULTS	method	limit/base	current	history1	history2
pH Scale 0-14 ASTM D1287 9.0 8.31 8.32 8.11 Nitrites ppm Alcan Test Kit* 0 400 1000 1200 Reserve Alkalinity Scale 0-20 ASTM D1121* 5.3 1.9 1.7 Percentage Glycol % ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate - - CORROSION INHIBITORS method limit/base current history1 history2 Silicon ppm ASTM D5185(m 0 30 25 20 Boron ppm ASTM D5185(m 62 27 18 Molybdenum ppm ASTM D5185(m >15 0 0 0 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m >10 0 0 0 Aluminum ppm ASTM D5185(m >10	Glycol Type		FT-IR		UNK		
Nitrites ppm Alcan Test Kit* 0 400 ▲ 1000 ▲ 1000 ▲ 1000 Reserve Alkalinity Scale 0-20 ASTM D1121* 5.3 ▲ 1.9 ▲ 1.7 Percentage Glycol % ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate - - CORROSION INHIBITORS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) 12 13 10 Phosphorus ppm ASTM D5185(m) 622 27 18 Molybdenum ppm ASTM D5185(m) 15 0 0 0 Copper ppm ASTM D5185(m) >10 1 <1 <1 Copper ppm ASTM D5185(m) >10 0 0 0 Lead ppm ASTM D5185(m)	Specific Gravity		ASTM D1298*		1.067	1.068	1.067
Reserve Alkalinity Scale 0-20 ASTM D1121* 5.3 1.9 1.7 Percentage Glycol % ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate CORROSION INHIBITORS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) 0 30 25 20 Boron ppm ASTM D5185(m) 62 27 18 Molybdenum ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m) >10 1 <1 <1 Copper ppm ASTM D5185(m) >10 0 0 0 Lead ppm ASTM D5185(m) >10 0 <t< th=""><th>pН</th><th>Scale 0-14</th><th>ASTM D1287*</th><th>9.0</th><th>8.31</th><th>8.32</th><th>8.11</th></t<>	pН	Scale 0-14	ASTM D1287*	9.0	8.31	8.32	8.11
Percentage Glycol % ASTM D3321* 50 49.7 50.2 49.6 Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate CORROSION INH/IBITORS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) 12 13 10 Phosphorus ppm ASTM D5185(m) 62 27 18 Molybdenum ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m)<>15 0 0 0 Aluminum ppm ASTM D5185(m)<>10 1 <1 <1 Copper ppm ASTM D5185(m)<>10 0 0 0 Lead ppm ASTM D5185(m) >10 0 0 0	Nitrites	ppm	Alcan Test Kit*	0	400	1 000	1 200
Freezing Point °C ASTM D3321* -40 -36 -37 -33 Carboxylate Image: Correct cor		Scale 0-20	ASTM D1121*		5.3	1 .9	1 .7
CarboxylateCORROSION INHIBITORSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)121310PhosphorusppmASTM D5185(m)0302520BoronppmASTM D5185(m)622718MolybdenumppmASTM D5185(m)154159160CORROSIONmethodlimit/basecurrenthistory1history2IronppmASTM D5185(m) >15000AluminumppmASTM D5185(m) >101<1<1CopperppmASTM D5185(m) >101<10LeadppmASTM D5185(m) >10000SilverppmASTM D5185(m) >10<1<1<1ZincppmASTM D5185(m) >10<1<1<1ZincppmASTM D5185(m) >10<1<1<1ZincppmASTM D5185(m) >10<100CARRIER SALTSmethodlimit/basecurrenthistory1history2SodiumppmASTM D5185(m)1000PpmASTM D5185(m)1000SodiumppmASTM D5185(m)100SodiumppmASTM D5185(m)100PpmASTM D5185(m)1000SodiumppmASTM D5185(m)1<	Percentage Glycol	%	ASTM D3321*	50	49.7	50.2	49.6
CORROSION INHIBITORSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)121310PhosphorusppmASTM D5185(m)0302520BoronppmASTM D5185(m)622718MolybdenumppmASTM D5185(m)154159160CORROSIONmethodlimit/basecurrenthistory1history2IronppmASTM D5185(m)>15000AluminumppmASTM D5185(m)>101<1<1CopperppmASTM D5185(m)>101<10LeadppmASTM D5185(m)>10000SilverppmASTM D5185(m)>10<1<1<1ZincppmASTM D5185(m)10<1<1<1ZincppmASTM D5185(m)>10<1<1<1ZincppmASTM D5185(m)1000CARRIER SALTSmethodlimit/basecurrenthistory1history2SodiumppmASTM D5185(m)434853615037	Freezing Point	°C	ASTM D3321*	-40	-36	-37	-33
Silicon ppm ASTM D5185(m) 12 13 10 Phosphorus ppm ASTM D5185(m) 0 30 25 20 Boron ppm ASTM D5185(m) 62 27 18 Molybdenum ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m)<>15 0 0 0 Aluminum ppm ASTM D5185(m)<>10 1 <1 <1 Copper ppm ASTM D5185(m)<>10 0 0 0 Lead ppm ASTM D5185(m)<>10 0 0 0 Silver ppm ASTM D5185(m)<>10 0 0 0 Silver ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m)	Carboxylate						
Phosphorus ppm ASTM D5185(m) 0 30 25 20 Boron ppm ASTM D5185(m) 62 27 18 Molybdenum ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m) >15 0 0 0 Aluminum ppm ASTM D5185(m) >15 0 0 0 Aluminum ppm ASTM D5185(m) >10 1 <1 <1 Copper ppm ASTM D5185(m) >10 0 0 0 Lead ppm ASTM D5185(m) >10 0 0 0 Silver ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m) 10 <1 <1 <1<	CORROSION INH	IBITORS	method	limit/base	current	history1	history2
Boron ppm ASTM D5185(m) 62 27 18 Molybdenum ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m) >15 0 0 0 Aluminum ppm ASTM D5185(m) >10 1 <1	Silicon	ppm	ASTM D5185(m)		12	13	10
Molybdenum ppm ASTM D5185(m) 154 159 160 CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m) >15 0 0 0 Aluminum ppm ASTM D5185(m) >10 1 <1	Phosphorus	ppm	ASTM D5185(m)	0	30	25	20
CORROSION method limit/base current history1 history2 Iron ppm ASTM D5185(m) >15 0 0 0 Aluminum ppm ASTM D5185(m) >10 1 <1 <1 Copper ppm ASTM D5185(m) >10 <1 <1 0 Lead ppm ASTM D5185(m) >10 0 0 0 Tin ppm ASTM D5185(m) >10 0 0 0 Silver ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m) >10 <1 <1 <1 Sodium ppm ASTM D5185(m) >10 <1 <1 <1	Boron	ppm	ASTM D5185(m)		62	27	18
Iron ppm ASTM D5185(m) >15 0 0 0 Aluminum ppm ASTM D5185(m) >10 1 <1 <1 <1 Copper ppm ASTM D5185(m) >10 <1 <1 0 Lead ppm ASTM D5185(m) >10 <1 <1 0 Tin ppm ASTM D5185(m) >10 0 0 0 Silver ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m) >10 <1 <1 <1 <1 Sodium ppm ASTM D5185(m) >10 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Molybdenum	ppm	ASTM D5185(m)		154	159	160
Aluminum ppm ASTM D5185(m) >10 1 <1	CORROSION		method	limit/base	current	history1	history2
Copper ppm ASTM D5185(m) >10 <1	Iron	ppm	ASTM D5185(m)	>15	0	0	0
Lead ppm ASTM D5185(m) >10 0 0 0 Tin ppm ASTM D5185(m) >10 0 0 0 Silver ppm ASTM D5185(m) >10 <1 <1 <1 Zinc ppm ASTM D5185(m) 10 <1 0 0 CARRIER SALTS method limit/base current history1 history2 Sodium ppm ASTM D5185(m) 4348 5361 5037	Aluminum	ppm	ASTM D5185(m)	>10	1	<1	<1
Tin ppm ASTM D5185(m) >10 0 0 0 Silver ppm ASTM D5185(m) >10 <1	Copper	ppm	ASTM D5185(m)	>10	<1	<1	0
Silver ppm ASTM D5185(m) >10 <1	Lead	ppm	ASTM D5185(m)	>10	-	0	0
ZincppmASTM D5185(m)100CARRIER SALTSmethodlimit/basecurrenthistory1history2SodiumppmASTM D5185(m)434853615037	Tin	ppm	ASTM D5185(m)	>10	0	0	0
CARRIER SALTS method limit/base current history1 history2 Sodium ppm ASTM D5185(m) 4348 5361 5037	Silver	ppm	ASTM D5185(m)	>10	<1	<1	<1
Sodium ppm ASTM D5185(m) 4348 5361 5037	Zinc	ppm	ASTM D5185(m)		1	0	0
	CARRIER SAL	TS	method	limit/base	current	history1	history2
	Sodium	ppm	ASTM D5185(m)		4348	5361	5037
Potassium ppm ASTM D5185(m) 4044 7527 7368	Potassium	ppm	ASTM D5185(m)		4044	7527	7368
SCALE POTENTIAL method limit/base current history1 history2	SCALE POTEN	ITIAL	method	limit/base	current	history1	history2
Calcium ppm ASTM D5185(m) >100 6 6 4	Calcium	ppm	ASTM D5185(m)	>100	6	6	4
Magnesium ppm ASTM D5185(m) >40 4 3 2	Magnesium	ppm	ASTM D5185(m)	>40	4	3	2
Hardness mgLCaCO3 In-house* <75 29 25 18							



COOLANT REPORT







ISO 17025:2017 Accredited Laboratory Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

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CALA

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