



CONSTRUCTION EQUIPMENT

8-375953 16-8114 - COOLANT



Sample No: VCP394506
Oil Type: VOLVO COOLANT VCS (YELLOW)
Job No: 8-375953



SAMPLE INFORMATION

Sample Number	VCP394506	---	---	---
Sample Date	23 Aug 2023	---	---	---
Machine Hours	2952	---	---	---
Sample Status	NORMAL	---	---	---

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 CA L4K 1B6
 Contact: Dan Brown
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COOLANT CONDITION

Boron	ppm	62	---	---	---
Phosphorus	ppm	1	---	---	---
Sodium	ppm	2811	---	---	---
Potassium	ppm	2644	---	---	---
Silicon	ppm	2	---	---	---
pH	Scale 0-14	7.62	---	---	---
Reserve Alkalinity	Scale 0-20	3.1	---	---	---
Molybdenum	ppm	182	---	---	---
Nitrites	ppm	760	---	---	---
Percentage Glycol	%	49.4	---	---	---
Freezing Point	°C	-33	---	---	---

T:
F:

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the coolant. The condition of the coolant is acceptable for the time in service.



CONTAMINATION

Magnesium	ppm	1	---	---	---
Calcium	ppm	3	---	---	---
Coolant Appearance		Clear	---	---	---
Coolant Color		Red	---	---	---
Sand/Dirt	scalar	NONE	---	---	---
Debris	scalar	NONE	---	---	---
Precipitate	scalar	NONE	---	---	---
Silt	scalar	NONE	---	---	---



CORROSION

Iron	ppm	0	---	---	---
Aluminum	ppm	0	---	---	---
Copper	ppm	<1	---	---	---
Lead	ppm	0	---	---	---
Tin	ppm	0	---	---	---

Depot: HOLCON
Unique No: 5631621
Signed: Wes Davis
Report Date: 25 Aug 2023

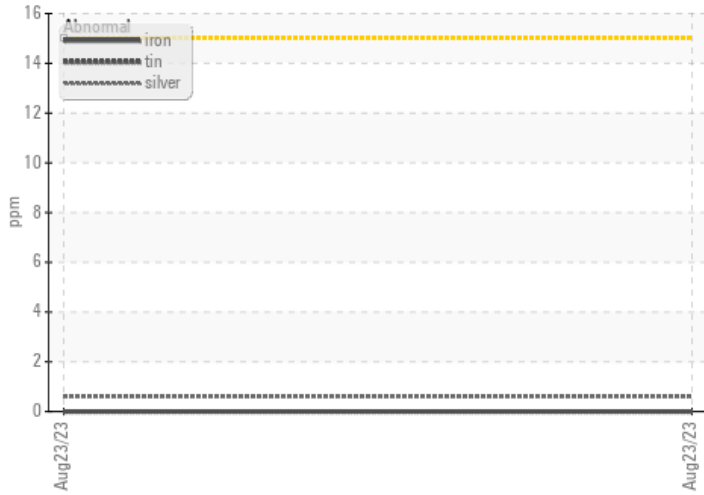


CONSTRUCTION EQUIPMENT

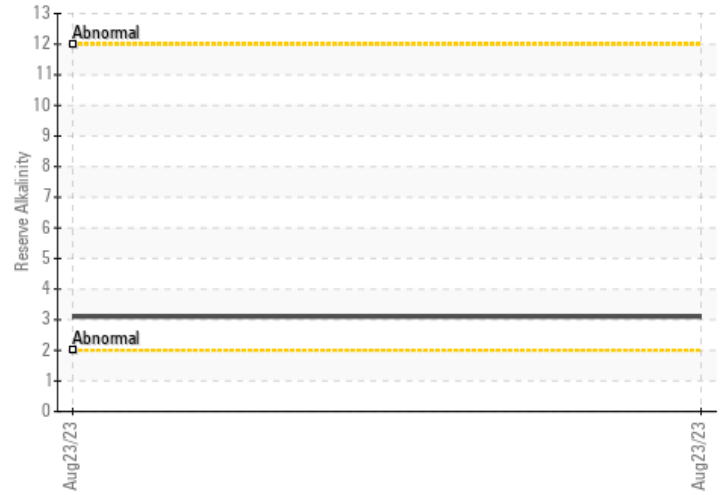


GRAPHS

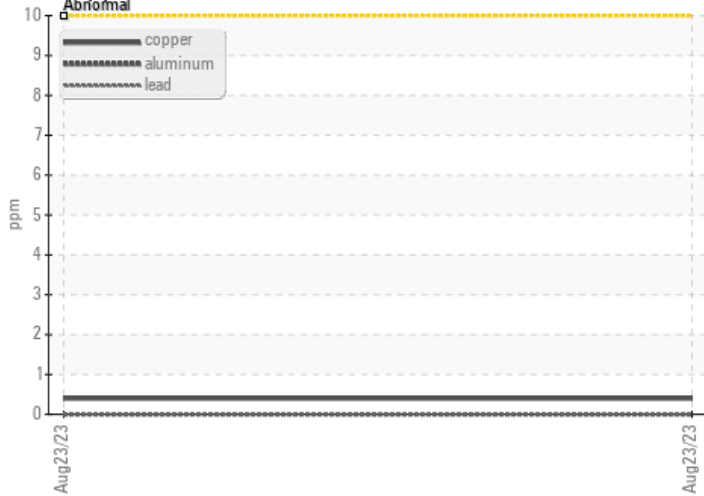
Iron/Tin/Silver



Reserve Alkalinity



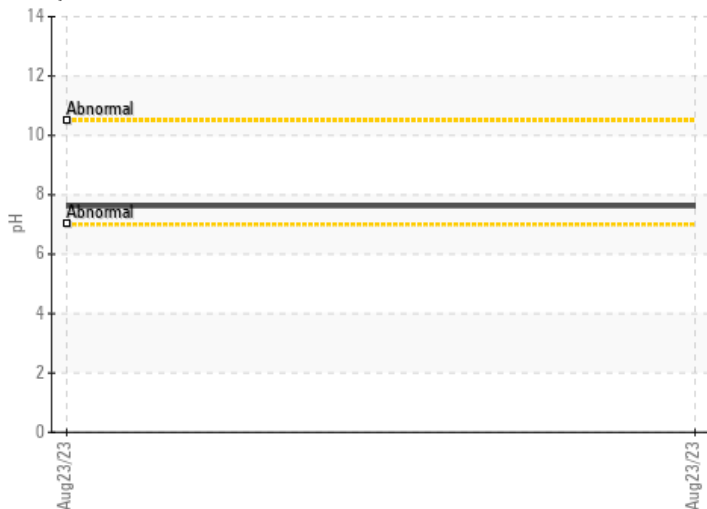
Copper/Aluminum/Lead



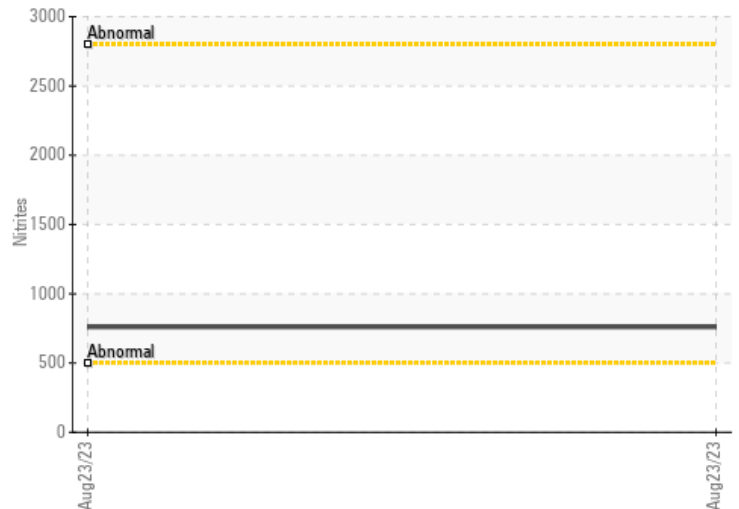
Freeze Point



pH



Nitrites





CONSTRUCTION EQUIPMENT

8-399074 16-8114 - DIESEL ENGINE



Sample No: VCP393038
Oil Type: DIESEL ENGINE OIL SAE 40
Job No: 8-399074



SAMPLE INFORMATION

Sample Number	VCP393038	VCP394501	VCP392347	VCP352431
Sample Date	26 Mar 2024	23 Aug 2023	15 Mar 2023	06 Sep 2022
Machine Hours	3435	2952	2536	2012
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

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OIL CONDITION

Visc @ 100°C	cSt	13.0	12.7	13.0	13.3
Oxidation (PA)	%	84	84	84	84



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0	0
Nitration (PA)	%	68	63	72	65
Sulfation (PA)	%	61	65	69	65
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	6	7	10	7
Sodium	ppm	3	3	3	3
Potassium	ppm	<1	<1	<1	<1

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	14	11	16	12
Copper	ppm	1	1	2	1
Lead	ppm	0	0	<1	0
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	5	3	6	4
Chromium	ppm	<1	<1	1	<1
Molybdenum	ppm	41	40	44	39
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	0	0	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1734	1700	1844	1650
Magnesium	ppm	517	517	522	495
Zinc	ppm	1110	1093	1125	1065
Phosphorus	ppm	939	986	1050	988
Barium	ppm	0	0	0	0
Boron	ppm	39	41	39	36

Depot: HOLCON
Unique No: 5760975
Signed: Wes Davis
Report Date: 10 Apr 2024

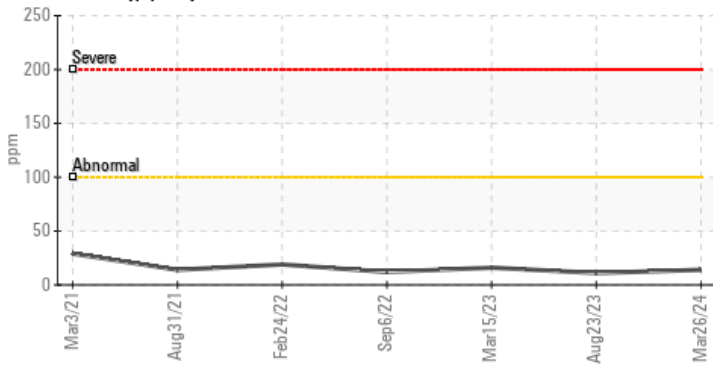


CONSTRUCTION EQUIPMENT

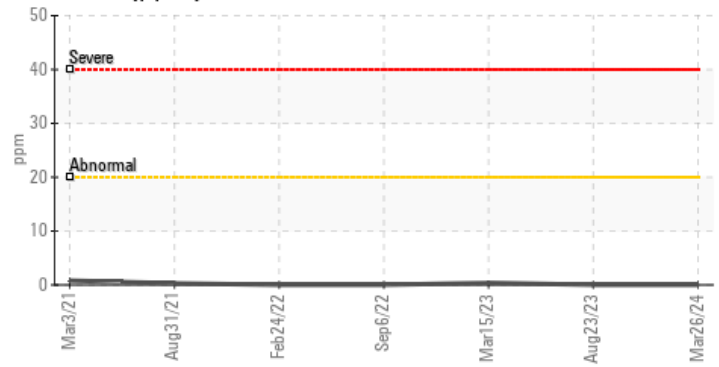


GRAPHS

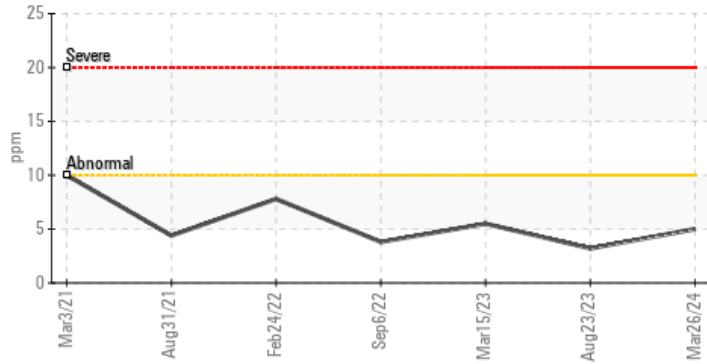
Iron (ppm)



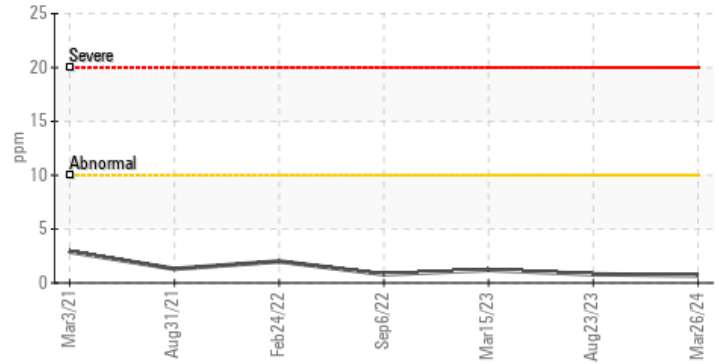
Lead (ppm)



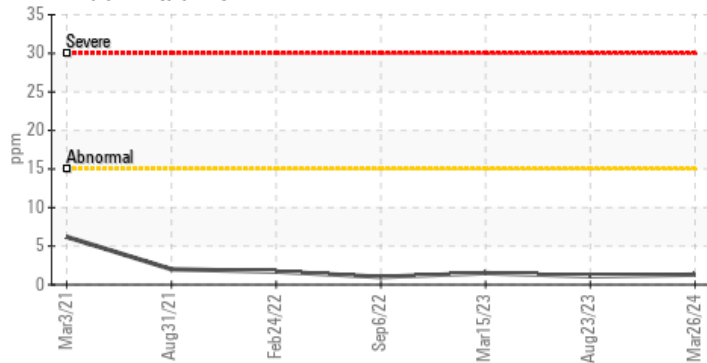
Aluminum (ppm)



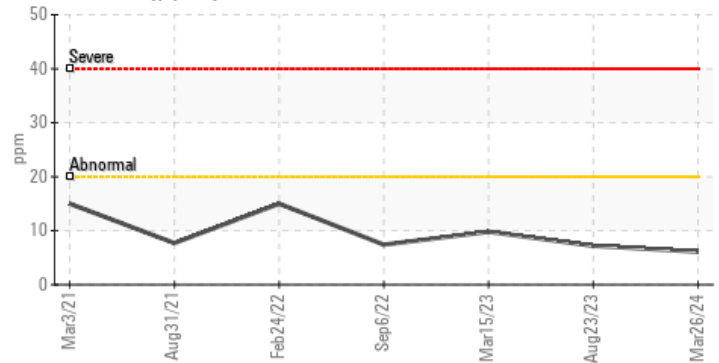
Chromium (ppm)



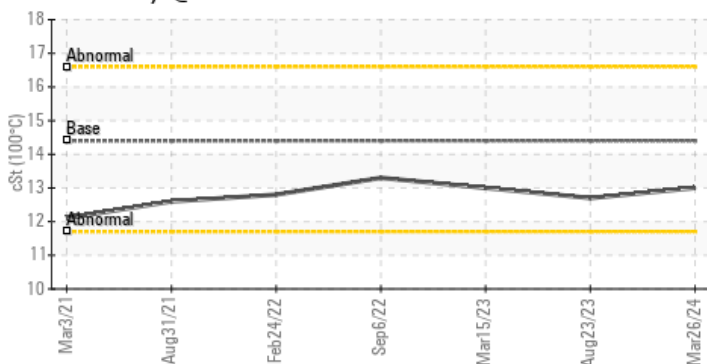
Copper (ppm)



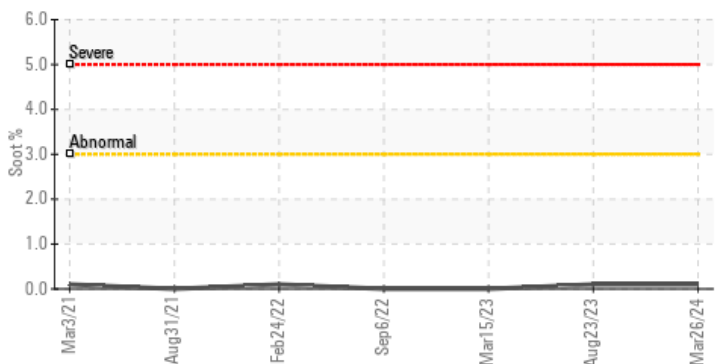
Silicon (ppm)



Viscosity @ 100°C



Soot %





CONSTRUCTION EQUIPMENT

3498 16-8114 - TRANSMISSION (AUTO)



Sample No: VCP393039

Oil Type: {unknown}

Job No: 3498



SAMPLE INFORMATION

Sample Number	VCP393039	VCP394182	VCP394505	VCP392339
Sample Date	01 May 2024	26 Mar 2024	23 Aug 2023	15 Mar 2023
Machine Hours	3498	3435	2952	2536
Oil Hours	0	500	0	0
Oil Changed	Not Chngd	Not Chngd	Not Chngd	Not Chngd
Sample Status	ABNORMAL	ABNORMAL	ABNORMAL	NORMAL

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OIL CONDITION

Visc @ 40°C	cSt	25.8	25.8	25.7	26.0
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	10	10	10	10
Sodium	ppm	7	7	7	7
Potassium	ppm	2	2	2	2



WEAR METALS

PQ		2	3	1	3
Iron	ppm	206	205	192	178
Copper	ppm	9	9	8	8
Lead	ppm	0	0	0	<1
Tin	ppm	0	0	0	0
Aluminum	ppm	3	3	2	2
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	0	0	<1	<1
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	0	0	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	11	11	11	10
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	87	86	86	88
Magnesium	ppm	2	3	2	2
Zinc	ppm	52	52	51	46
Phosphorus	ppm	154	154	162	166
Barium	ppm	2	2	2	2
Boron	ppm	42	43	43	44

Diagnosis

We recommend that you drain the fluid from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample. Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. There is no indication of any contamination in the fluid. The fluid is no longer serviceable as a result of the abnormal and/or severe wear.

Depot: HOLCON

Unique No: 5776127

Signed: Kevin Marson

Report Date: 14 May 2024

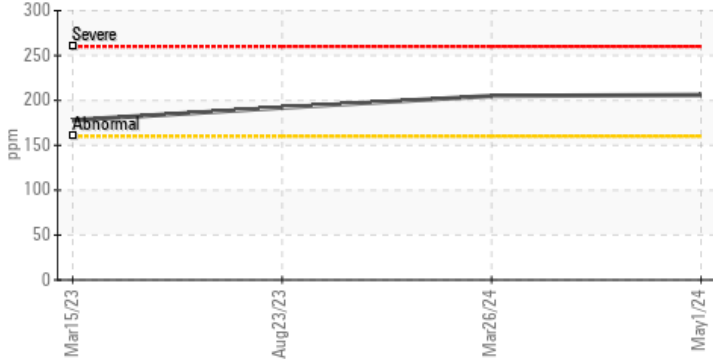


CONSTRUCTION EQUIPMENT

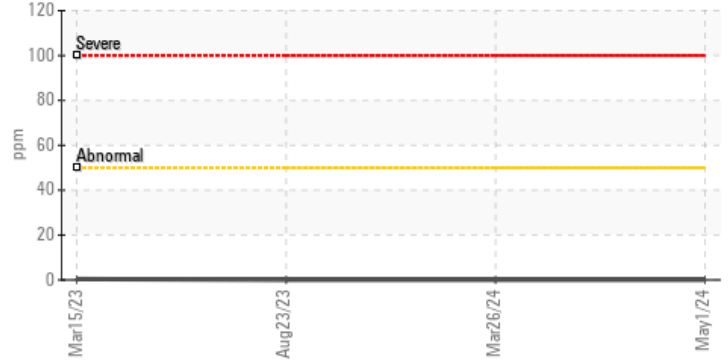


GRAPHS

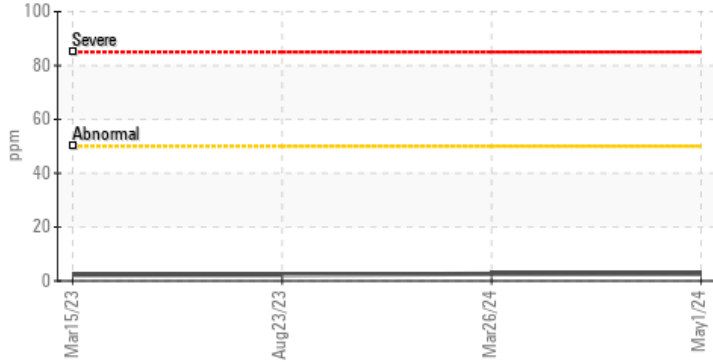
▲ Iron (ppm)



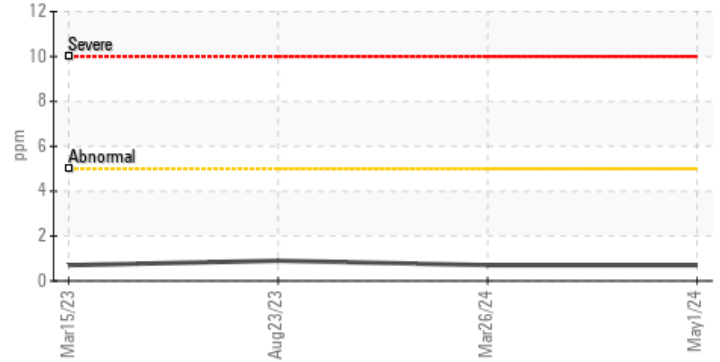
Lead (ppm)



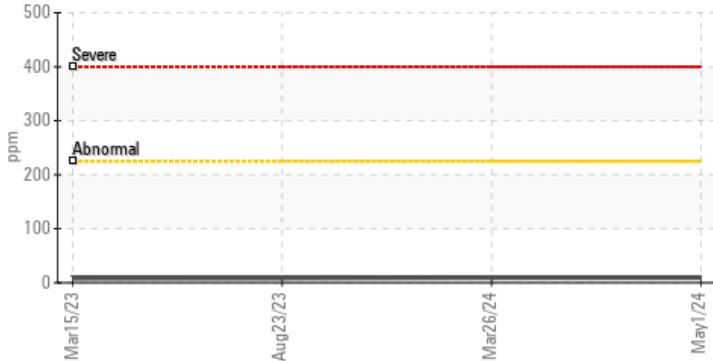
Aluminum (ppm)



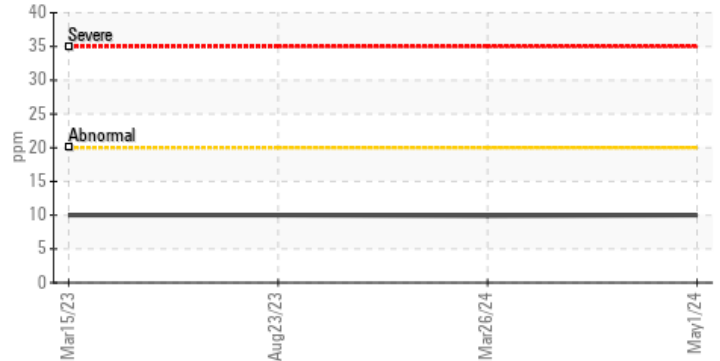
Chromium (ppm)



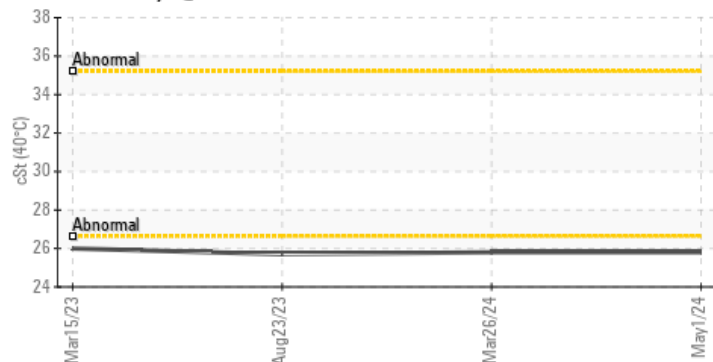
Copper (ppm)



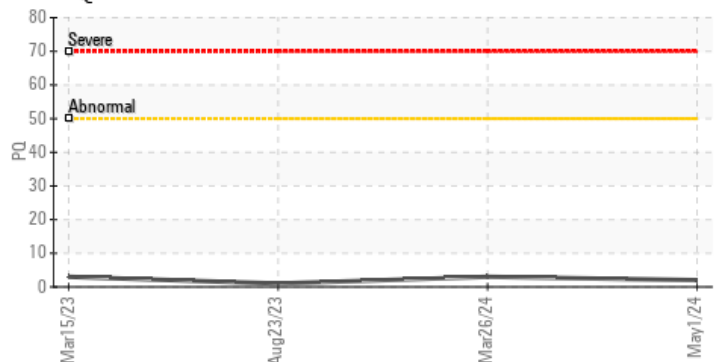
Silicon (ppm)



Viscosity @ 40°C



PQ





CONSTRUCTION EQUIPMENT

8-375953 16-8114 - HYDRAULIC SYSTEM



Sample No: VCP394502

Oil Type: {unknown}

Job No: 8-375953



SAMPLE INFORMATION

Sample Number	VCP394502	---	---	---
Sample Date	23 Aug 2023	---	---	---
Machine Hours	2952	---	---	---
Oil Hours	0	---	---	---
Oil Changed	Not Chngd	---	---	---
Sample Status	NORMAL	---	---	---

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OIL CONDITION

Visc @ 40°C	cSt	51.9	---	---	---
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CONTAMINATION

Water	%	NEG	---	---	---
Particles >4µm		2473	---	---	---
Particles >6µm		298	---	---	---
Particles >14µm		15	---	---	---
ISO 4406:1999 (c)		18/15/11	---	---	---
Silicon	ppm	6	---	---	---
Sodium	ppm	3	---	---	---
Potassium	ppm	<1	---	---	---

Diagnosis

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is SAE 20 AW Hydraulic Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	7	---	---	---
Copper	ppm	4	---	---	---
Lead	ppm	1	---	---	---
Tin	ppm	0	---	---	---
Aluminum	ppm	2	---	---	---
Chromium	ppm	<1	---	---	---
Molybdenum	ppm	<1	---	---	---
Nickel	ppm	0	---	---	---
Titanium	ppm	0	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	0	---	---	---
Vanadium	ppm	0	---	---	---



ADDITIVES

Calcium	ppm	69	---	---	---
Magnesium	ppm	6	---	---	---
Zinc	ppm	368	---	---	---
Phosphorus	ppm	338	---	---	---
Barium	ppm	0	---	---	---
Boron	ppm	1	---	---	---

Depot: HOLCON

Unique No: 5631565

Signed: Kevin Marson

Report Date: 28 Aug 2023

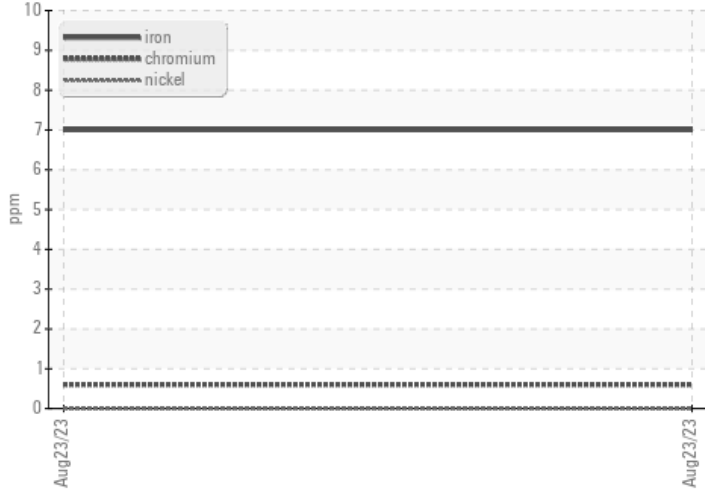


CONSTRUCTION EQUIPMENT

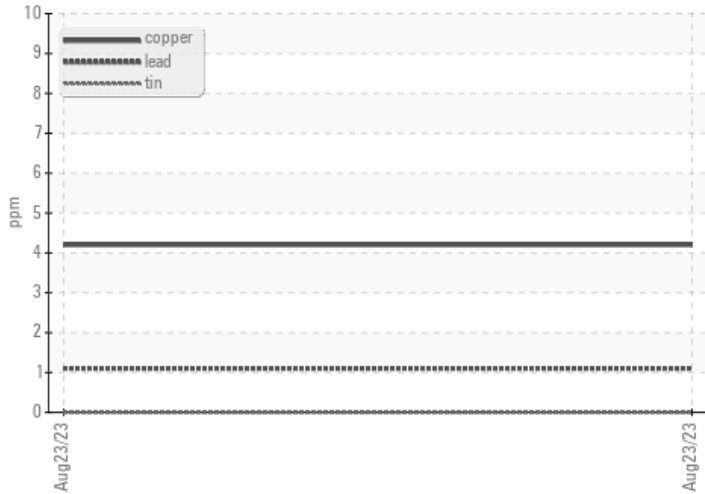


GRAPHS

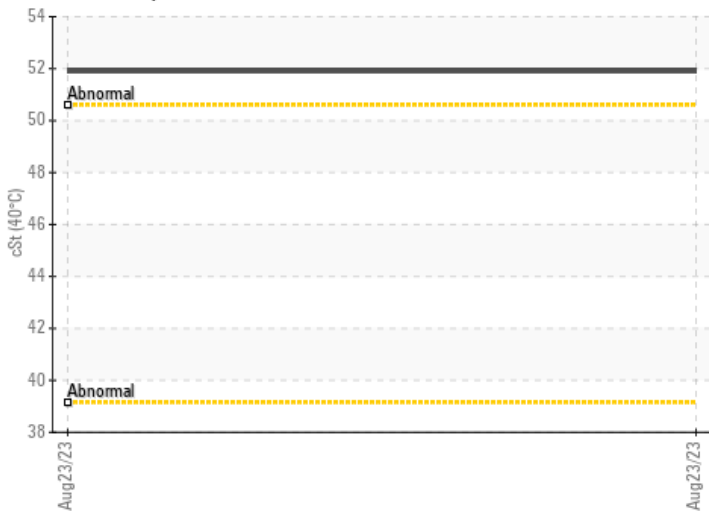
Ferrous Alloys



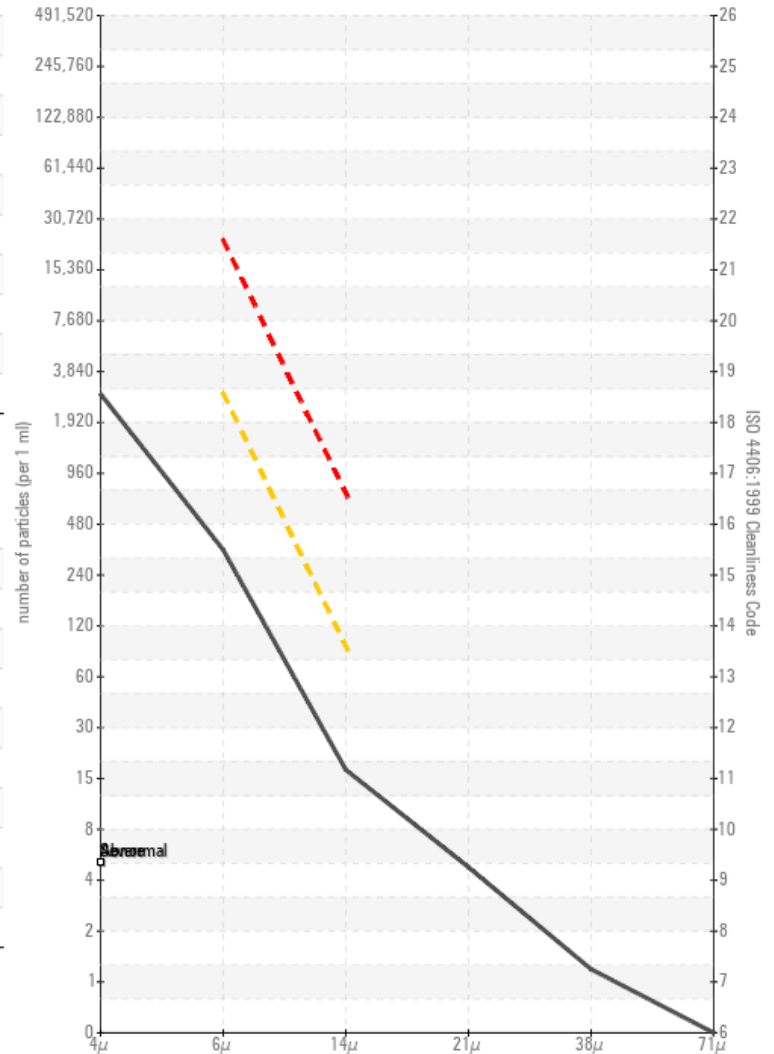
Non-ferrous Metals



Viscosity @ 40°C



Particle Count





CONSTRUCTION EQUIPMENT

8-375953 16-8114 - FRONT AXLE



Sample No: VCP394504

Oil Type: {unknown}

Job No: 8-375953



SAMPLE INFORMATION

Sample Number	VCP394504	VCP352423	VCP352422	VCP298473
Sample Date	23 Aug 2023	06 Sep 2022	06 Sep 2022	31 Aug 2021
Machine Hours	2952	2012	2012	1005
Oil Hours	0	0	0	0
Oil Changed	Not Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



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OIL CONDITION

Visc @ 40°C	cSt	42.1	39.6	39.3	39.7
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	14	11	9	14
Sodium	ppm	2	10	10	10
Potassium	ppm	<1	1	1	3



WEAR METALS

Iron	ppm	33	68	46	86
Copper	ppm	<1	4	<1	2
Lead	ppm	0	0	<1	0
Tin	ppm	0	<1	0	0
Aluminum	ppm	2	1	1	1
Chromium	ppm	<1	2	2	4
Molybdenum	ppm	<1	1	1	6
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	0	<1	<1	0
Silver	ppm	0	0	0	0
Manganese	ppm	1	4	3	8
Vanadium	ppm	0	0	0	<1



ADDITIVES

Calcium	ppm	4259	4002	3876	4014
Magnesium	ppm	16	13	13	14
Zinc	ppm	1644	1531	1526	1672
Phosphorus	ppm	1406	1354	1349	1486
Barium	ppm	0	0	0	0
Boron	ppm	127	115	115	120

Diagnosis

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot: HOLCON

Unique No: 5631590

Signed: Wes Davis

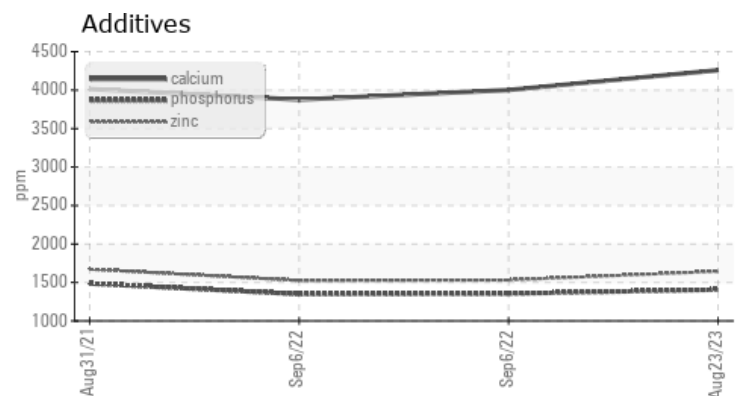
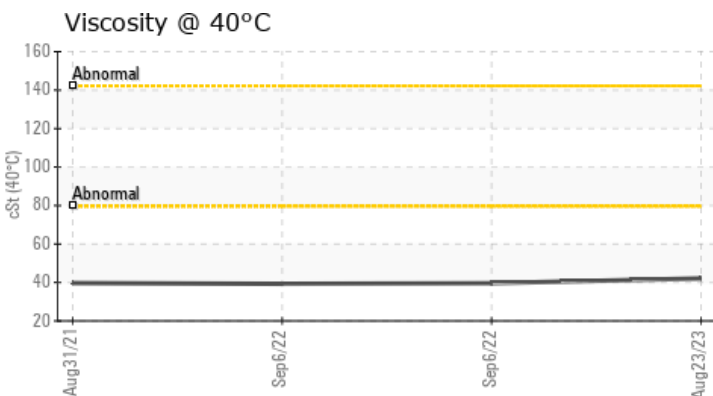
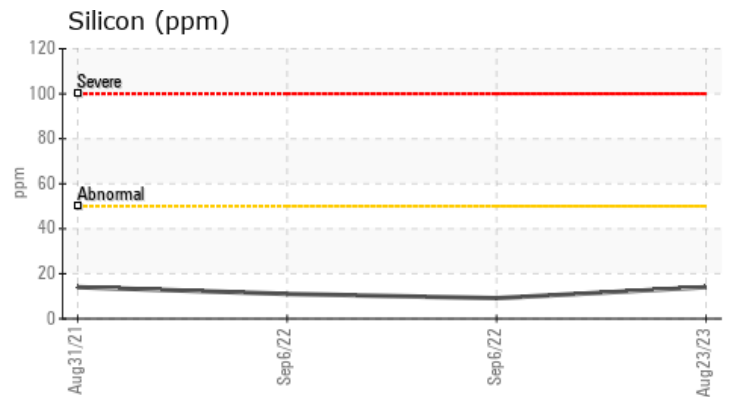
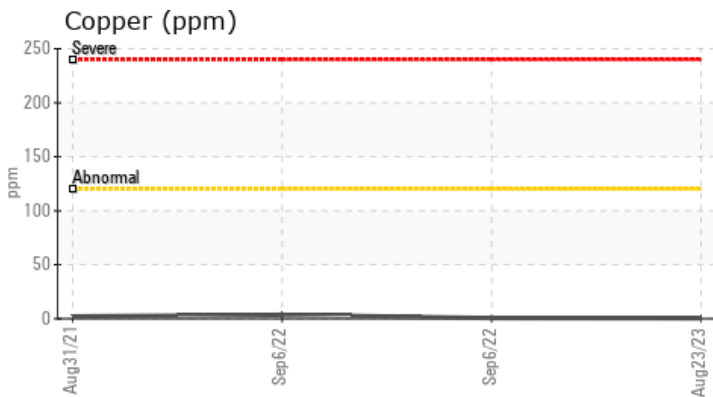
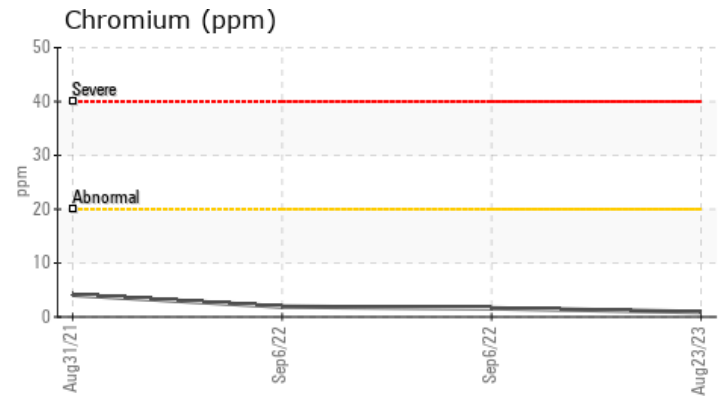
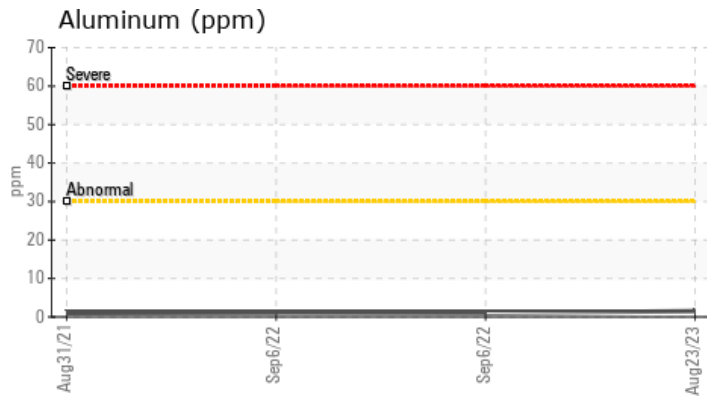
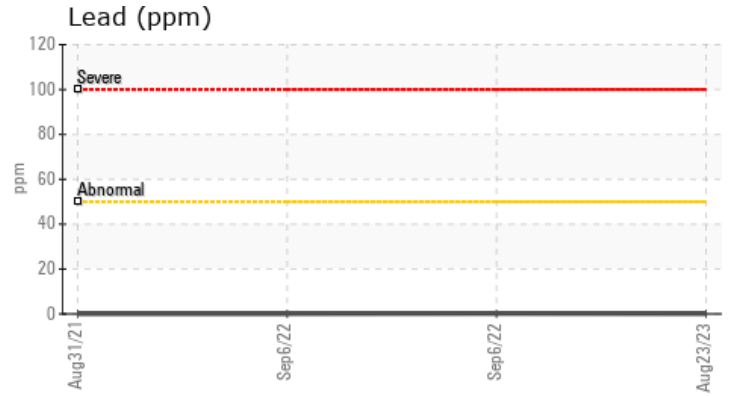
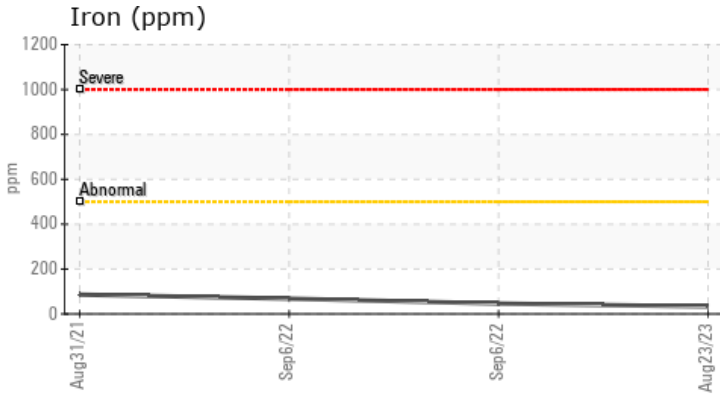
Report Date: 25 Aug 2023



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

8-375953 16-8114 - REAR AXLE



Sample No: VCP391576

Oil Type: {unknown}

Job No: 8-375953



SAMPLE INFORMATION

Sample Number	VCP391576	VCP298472	---	---
Sample Date	23 Aug 2023	31 Aug 2021	---	---
Machine Hours	2952	1005	---	---
Oil Hours	0	0	---	---
Oil Changed	Not Changed	Changed	---	---
Sample Status	NORMAL	NORMAL	---	---



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OIL CONDITION

Visc @ 40°C	cSt	42.6	39.7	---	---
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CONTAMINATION

Water	%	NEG	NEG	---	---
Silicon	ppm	16	14	---	---
Sodium	ppm	2	10	---	---
Potassium	ppm	<1	2	---	---



WEAR METALS

Iron	ppm	34	99	---	---
Copper	ppm	1	17	---	---
Lead	ppm	0	<1	---	---
Tin	ppm	0	1	---	---
Aluminum	ppm	1	1	---	---
Chromium	ppm	<1	4	---	---
Molybdenum	ppm	<1	5	---	---
Nickel	ppm	<1	<1	---	---
Titanium	ppm	0	<1	---	---
Silver	ppm	0	<1	---	---
Manganese	ppm	2	9	---	---
Vanadium	ppm	0	<1	---	---



ADDITIVES

Calcium	ppm	4238	4078	---	---
Magnesium	ppm	16	14	---	---
Zinc	ppm	1648	1701	---	---
Phosphorus	ppm	1408	1485	---	---
Barium	ppm	0	0	---	---
Boron	ppm	128	121	---	---

Diagnosis

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot: HOLCON

Unique No: 5631589

Signed: Wes Davis

Report Date: 25 Aug 2023



CONSTRUCTION EQUIPMENT



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