



CONSTRUCTION EQUIPMENT

SWA032978-10 VOLVO EC700C 110759 - COOLANT



Sample No: VCP376002
Oil Type: VOLVO COOLANT VCS (YELLOW)
Job No: SWA032978-10



SAMPLE INFORMATION

Sample Number	VCP376002	VCP330034	VCP336132	VCP336110
Sample Date	12 Aug 2022	22 Mar 2022	30 Dec 2021	27 Sep 2021
Machine Hours	12003	11462	11000	10500
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



COOLANT CONDITION

pH	Scale 0-14	8.15	8.52	8.26	7.19
Reserve Alkalinity	Scale 0-20	---	---	---	---
Nitrites	ppm	0	0	0	0
Percentage Glycol	%	48.2	50.8	51	51
Freezing Point	°C	-31	-35	-40	-42



CONTAMINATION

Coolant Appearance	normal	normal	normal	normal
Coolant Color	Yllow	Yllow	Yllow	Yllow

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Diagnosis

The fluid is suitable for further service. There is no indication of any contamination in the coolant. The carboxylate level of this fluid is acceptable. The glycol level is acceptable. The pH level of this fluid is within the acceptable limits.

Depot: THAFIS
Unique No: 10110562
Signed: Doug Bogart
Report Date: 27 Aug 2022

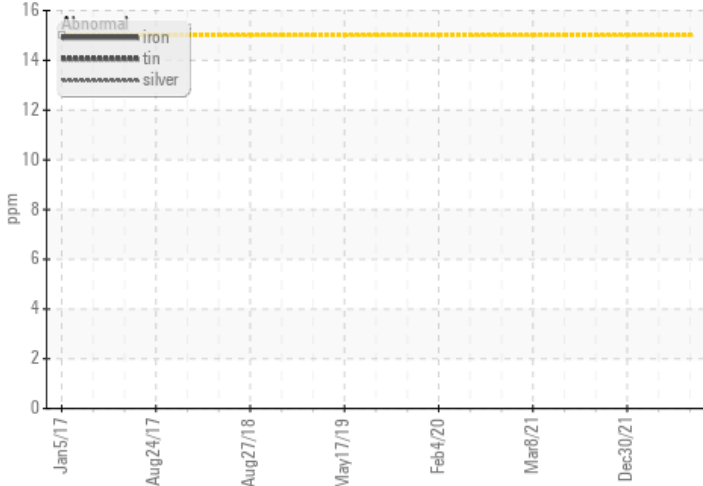


CONSTRUCTION EQUIPMENT

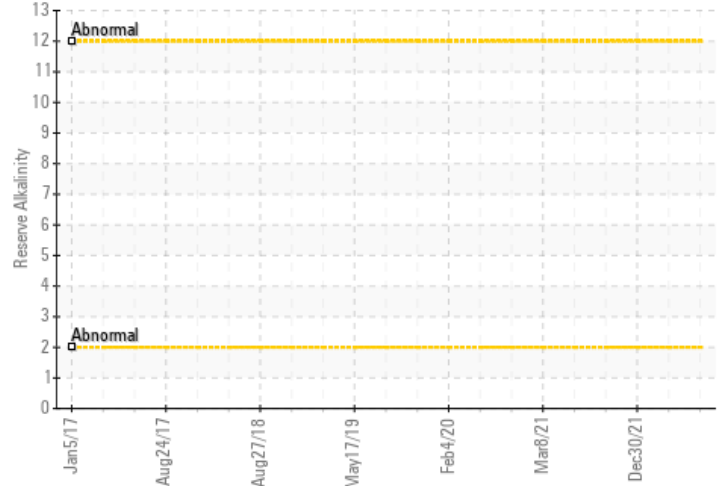


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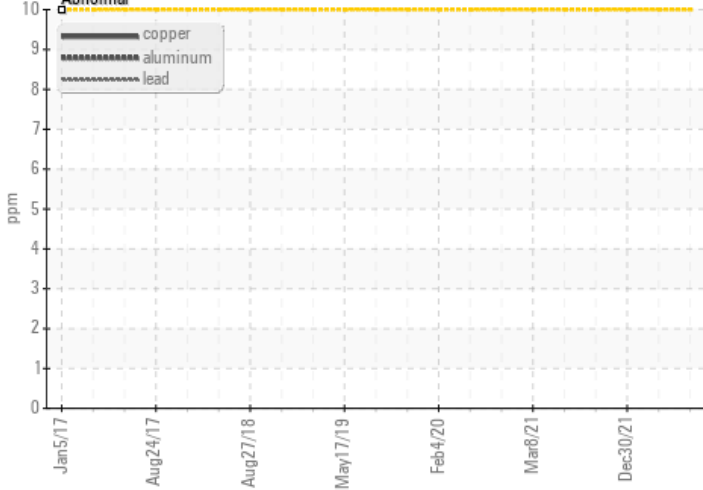
Iron/Tin/Silver



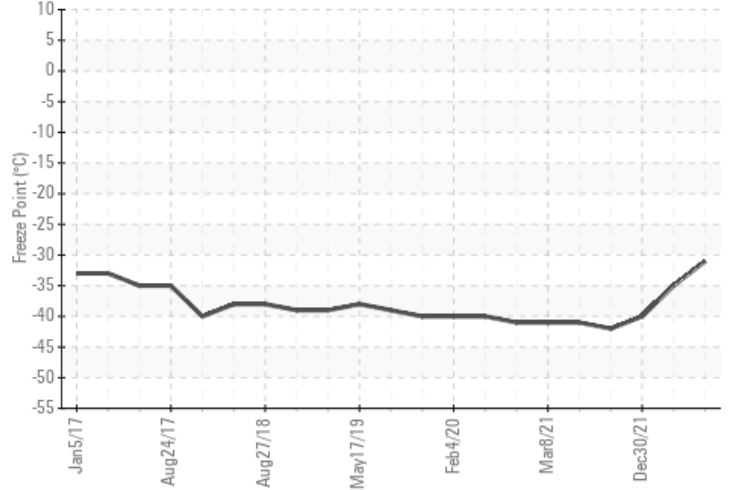
Reserve Alkalinity



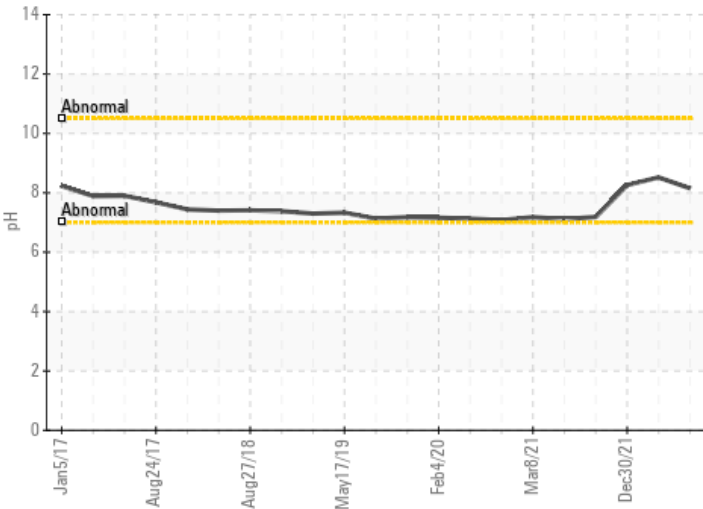
Copper/Aluminum/Lead



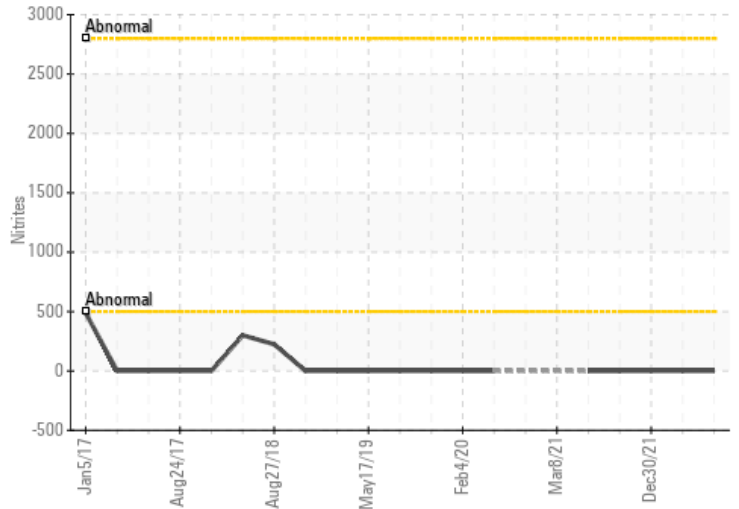
Freeze Point



pH



Nitrites





CONSTRUCTION EQUIPMENT

SWA547843-10 VOLVO EC700C 110759 - DIESEL ENGINE



Sample No: VCP430327
Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40
Job No: SWA547843-10



SAMPLE INFORMATION

Sample Number	VCP430327	VCP363204	VCP373360	VCP332157
Sample Date	01 May 2024	12 Aug 2022	22 Mar 2022	30 Dec 2021
Machine Hours	0	12003	11462	11000
Oil Hours	60	500	500	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL

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OIL CONDITION

Visc @ 100°C	cSt	▲ 12.2	■ 14.6	■ 13.9	■ 14.2
Base Number (BN)	mg KOH/g	■ 8.3	■ 8.2	■ 8.3	■ 7.9
Oxidation (PA)	%	79	118	105	113

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. All other component wear rates are normal. Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	■ 0.3	■ 0.4	■ 0.2	■ 0.3
Nitration (PA)	%	63	108	99	95
Sulfation (PA)	%	60	83	76	82
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	■ 0.6	<1.0	<1.0	<1.0
Silicon	ppm	▲ 25	■ 8	■ 10	■ 14
Sodium	ppm	■ 8	■ 0	■ 3	■ 2
Potassium	ppm	■ 11	■ 2	■ 3	■ <1



WEAR METALS

Iron	ppm	■ 7	■ 19	■ 13	■ 16
Copper	ppm	▲ 21	■ 1	■ <1	■ <1
Lead	ppm	■ 1	■ 6	■ 3	■ 5
Tin	ppm	■ 1	■ <1	■ <1	■ 1
Aluminum	ppm	■ 2	■ 2	■ 3	■ 2
Chromium	ppm	■ <1	■ <1	■ <1	■ <1
Molybdenum	ppm	■ 40	■ 83	■ 79	■ 86
Nickel	ppm	■ <1	■ 0	■ 1	■ 0
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	■ 0	0	<1	0
Manganese	ppm	■ 2	■ <1	■ <1	■ <1
Vanadium	ppm	0	0	<1	0



ADDITIVES

Calcium	ppm	■ 1607	■ 1512	■ 1717	■ 1555
Magnesium	ppm	472	746	494	449
Zinc	ppm	■ 1066	■ 1401	■ 1384	■ 1317
Phosphorus	ppm	■ 946	■ 1133	■ 1100	■ 1031
Barium	ppm	■ 0	■ 0	■ 0	■ 0
Boron	ppm	■ 70	■ 98	■ 264	■ 274

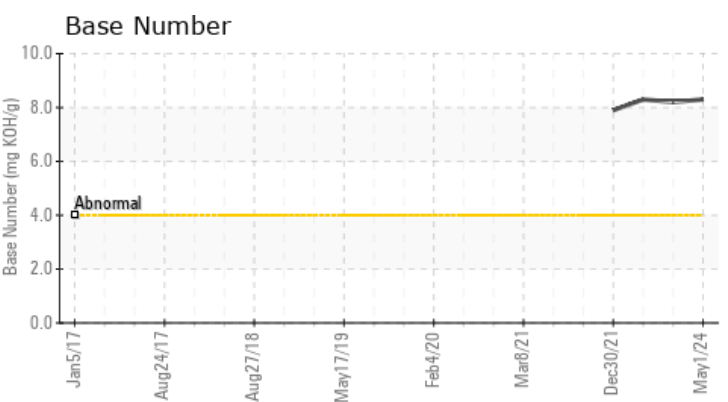
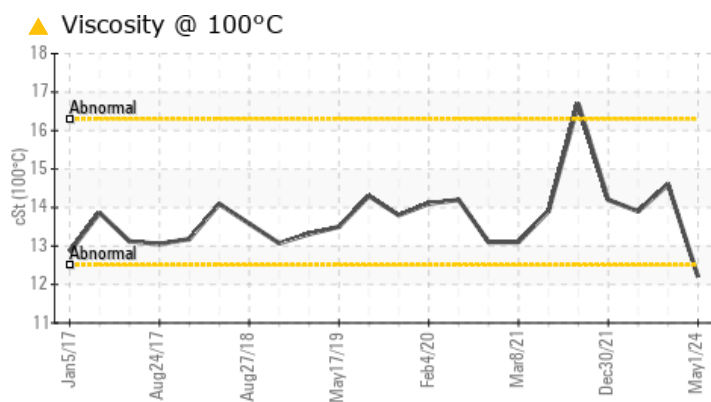
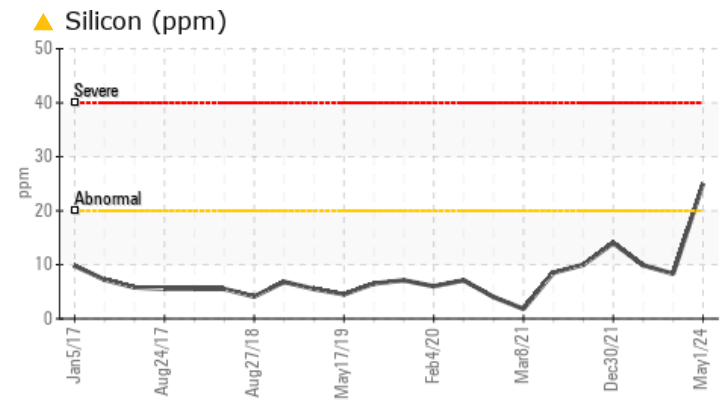
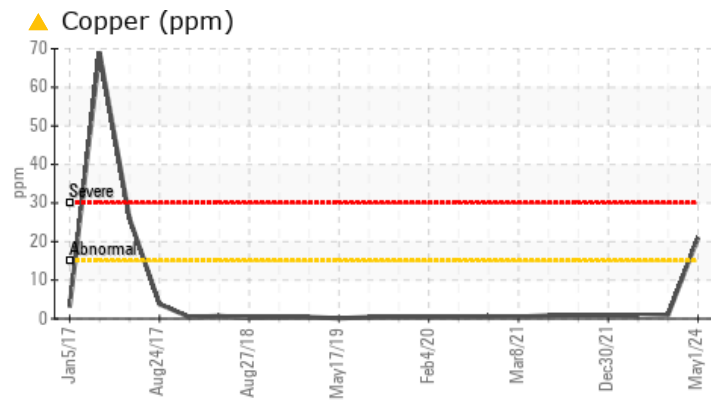
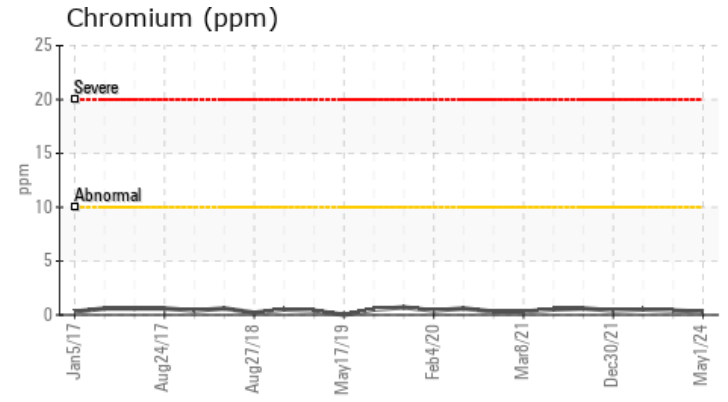
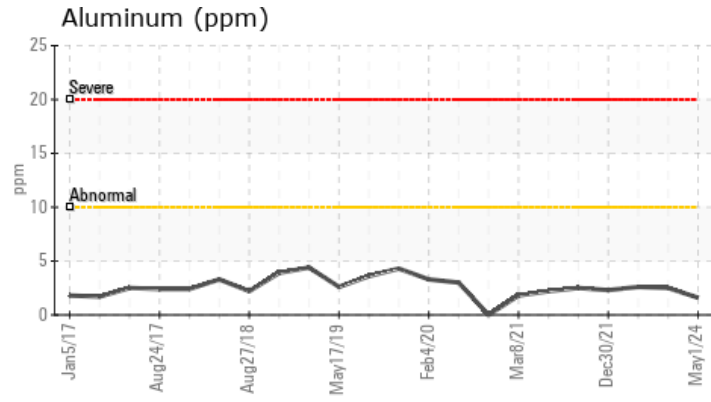
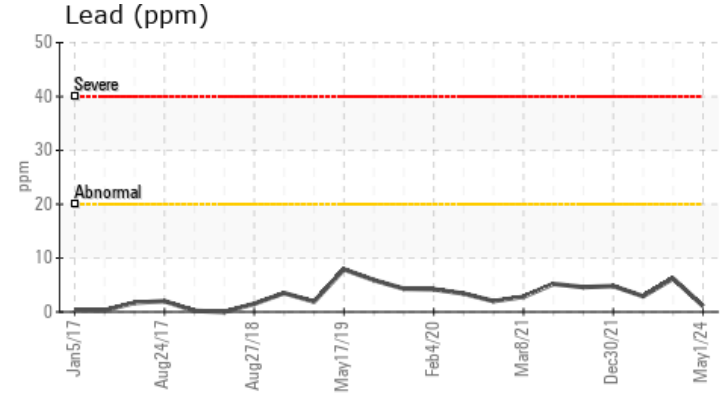
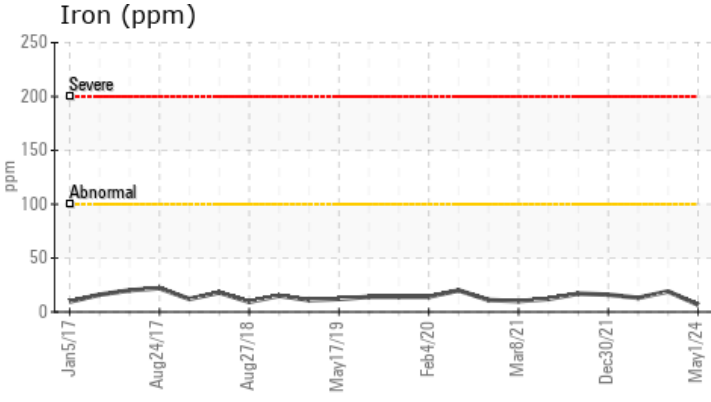
Depot: THAFIS
Unique No: 11015858
Signed: Jonathan Hester
Report Date: 10 May 2024



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

SWA032978-10 VOLVO EC700C 110759 - HYDRAULIC SYSTEM



Sample No: VCP376021
Oil Type: VOLVO SUPER HYDRAULIC OIL 46
Job No: SWA032978-10



SAMPLE INFORMATION

Sample Number	VCP376021	VCP328317	VCP321287	VCP336119
Sample Date	12 Aug 2022	22 Mar 2022	30 Dec 2021	27 Sep 2021
Machine Hours	12003	11462	11000	10500
Oil Hours	0	0	1000	0
Oil Changed	Changed	Not Changd	Not Changd	Not Changd
Sample Status	ABNORMAL	ABNORMAL	ABNORMAL	ABNORMAL

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OIL CONDITION

Visc @ 40°C	cSt	41.6	41.3	41.5	40.9
Acid Number (AN)	mg KOH/g	0.34	0.33	0.30	0.463



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		---	▲ 80235	▲ 102504	---
Particles >6µm		---	■ 2946	■ 3416	---
Particles >14µm		---	■ 85	■ 113	---
ISO 4406:1999 (c)		---	24/19/14	24/19/14	---
Silicon	ppm	■ 9	■ 7	■ 10	■ 8
Sodium	ppm	■ 2	■ 2	■ 2	■ <1
Potassium	ppm	■ 1	■ 0	■ 2	■ 1

Diagnosis

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	■ 31	■ 28	■ 27	■ 23
Copper	ppm	■ 11	■ 10	■ 10	■ 10
Lead	ppm	■ <1	■ <1	■ <1	■ <1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	■ 3	■ 2	■ 6	■ 7
Chromium	ppm	■ 1	■ 1	■ 2	■ 1
Molybdenum	ppm	■ 2	■ 2	■ 2	■ 2
Nickel	ppm	■ 0	■ 0	■ 0	■ 0
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	<1	<1	<1	0
Manganese	ppm	■ <1	■ <1	■ <1	■ <1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	■ 180	■ 185	■ 235	■ 246
Magnesium	ppm	■ 10	■ 7	■ 10	■ 9
Zinc	ppm	■ 380	■ 402	■ 433	■ 489
Phosphorus	ppm	■ 344	■ 358	■ 365	■ 376
Barium	ppm	■ 0	■ 0	■ 0	■ 0
Boron	ppm	■ 7	■ 7	■ 8	■ 8

Depot: THAFIS
Unique No: 10105130
Signed: Don Baldrige
Report Date: 26 Aug 2022

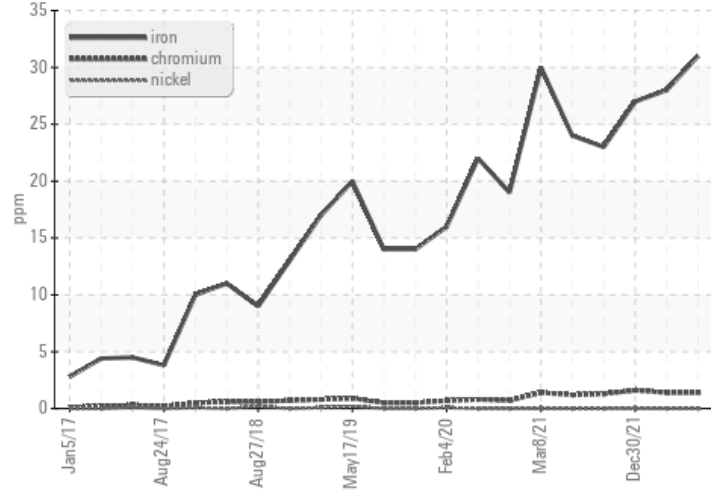


CONSTRUCTION EQUIPMENT

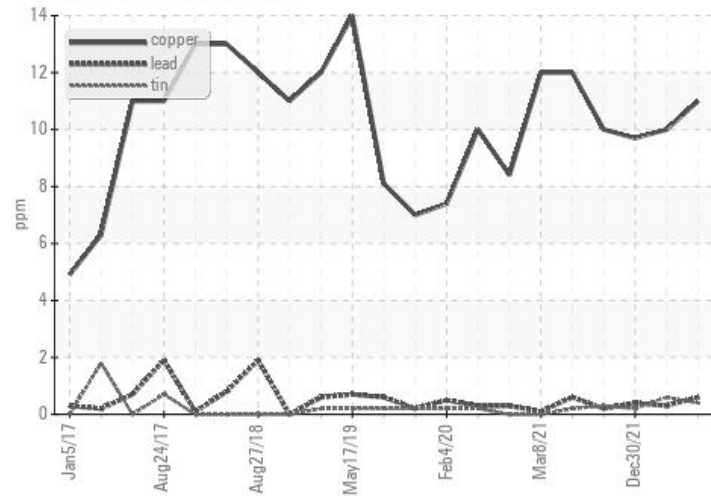


GRAPHS

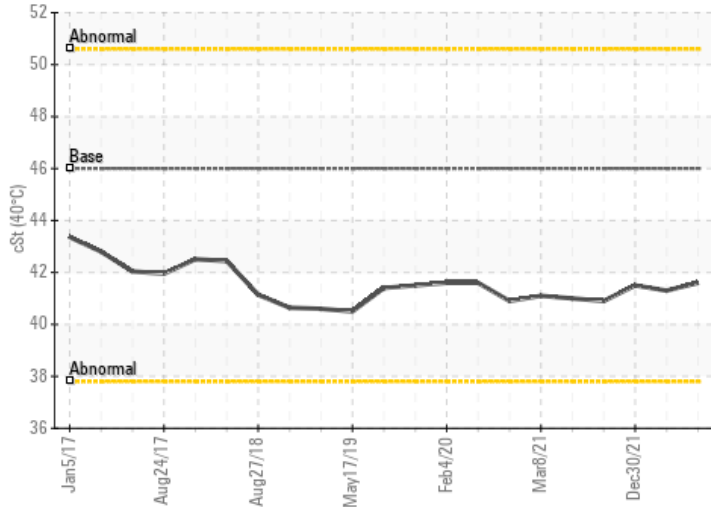
Ferrous Alloys



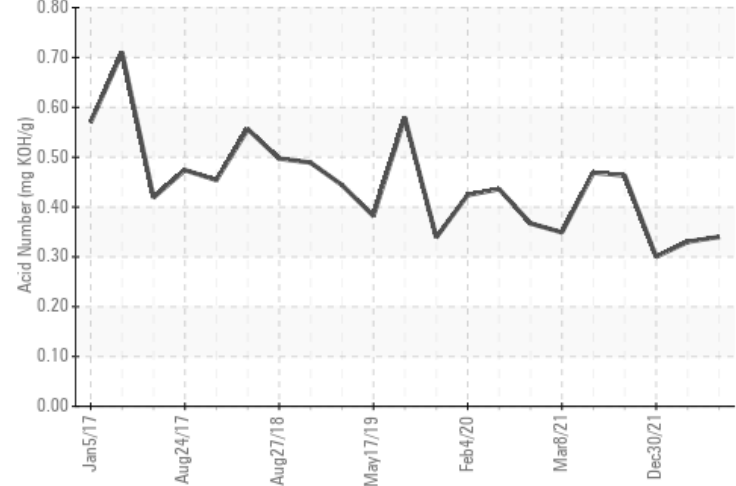
Non-ferrous Metals



Viscosity @ 40°C



Acid Number





CONSTRUCTION EQUIPMENT

SWA032978-10 VOLVO EC700C 110759 - REAR LEFT FINAL DRIVE



Sample No: VCP376008
Oil Type: VOLVO PREMIUM GEAR OIL 85W-140 GL-5
Job No: SWA032978-10



SAMPLE INFORMATION

Sample Number	VCP376008	VCP373357	VCP342760	VCP336112
Sample Date	12 Aug 2022	22 Mar 2022	30 Dec 2021	27 Sep 2021
Machine Hours	12003	11462	11000	10500
Oil Hours	1000	500	0	500
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

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OIL CONDITION

Visc @ 40°C	cSt	321	323	324	324
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	42	35	48	7
Sodium	ppm	4	<1	0	0
Potassium	ppm	6	2	2	0

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	324	244	337	163
Copper	ppm	<1	<1	<1	<1
Lead	ppm	<1	<1	<1	0
Tin	ppm	<1	0	0	0
Aluminum	ppm	10	8	11	1
Chromium	ppm	2	2	2	1
Molybdenum	ppm	1	<1	<1	<1
Nickel	ppm	<1	<1	0	0
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	2	2	2	1
Vanadium	ppm	<1	0	<1	0



ADDITIVES

Calcium	ppm	57	15	109	22
Magnesium	ppm	4	2	2	<1
Zinc	ppm	31	9	31	12
Phosphorus	ppm	281	296	311	326
Barium	ppm	<1	0	0	0
Boron	ppm	3	0	5	2

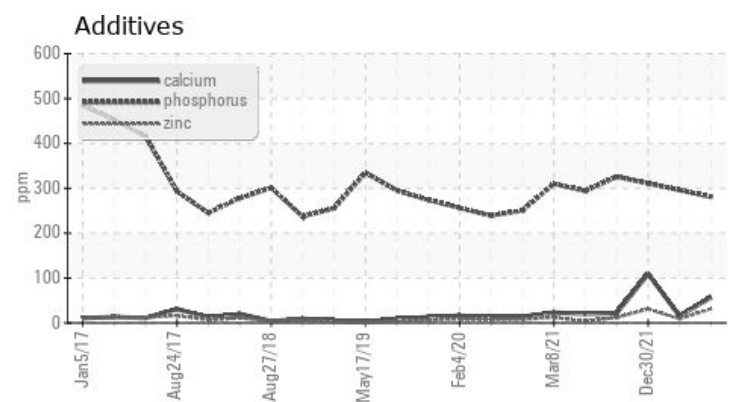
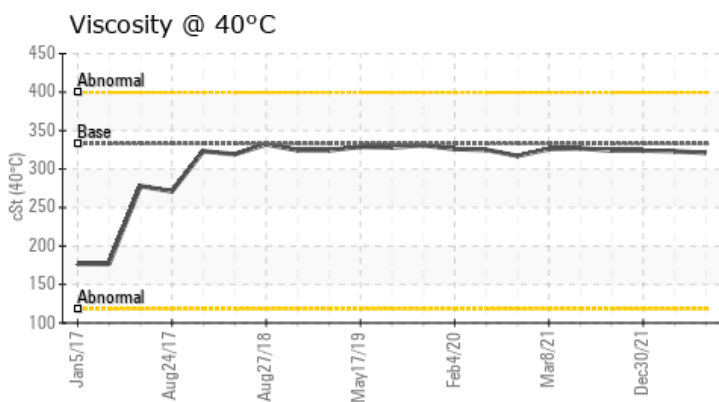
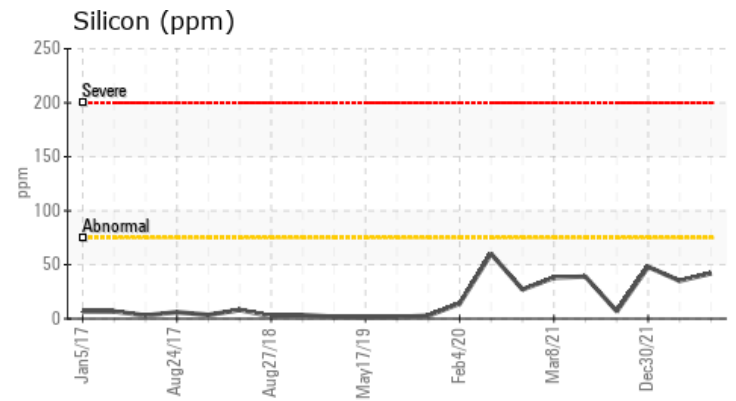
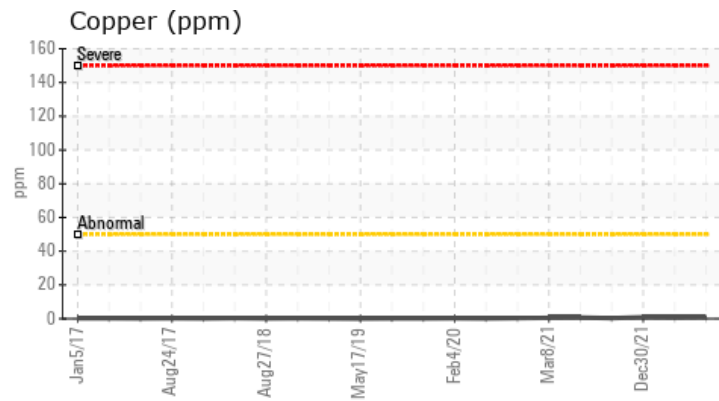
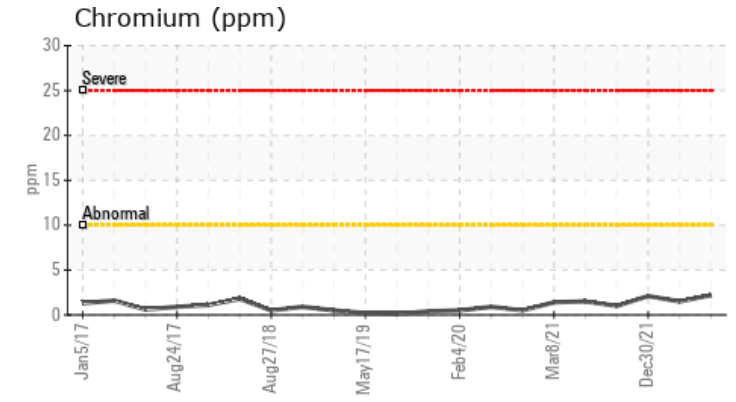
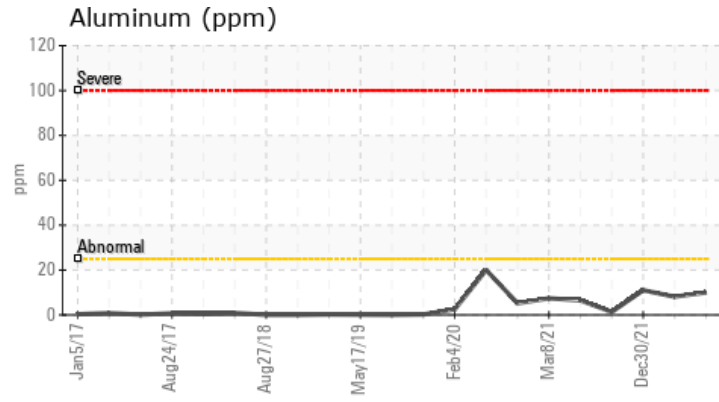
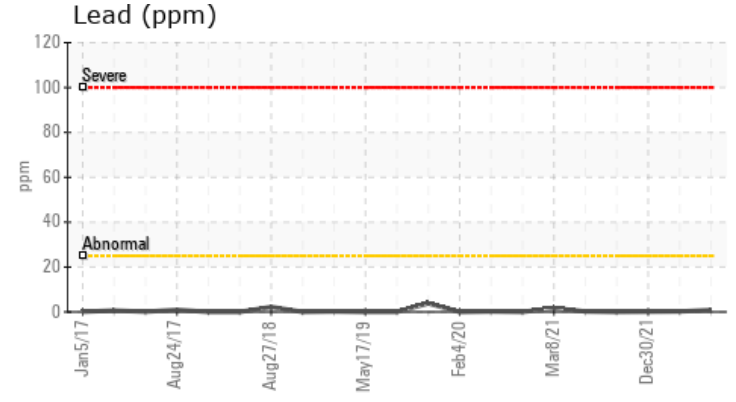
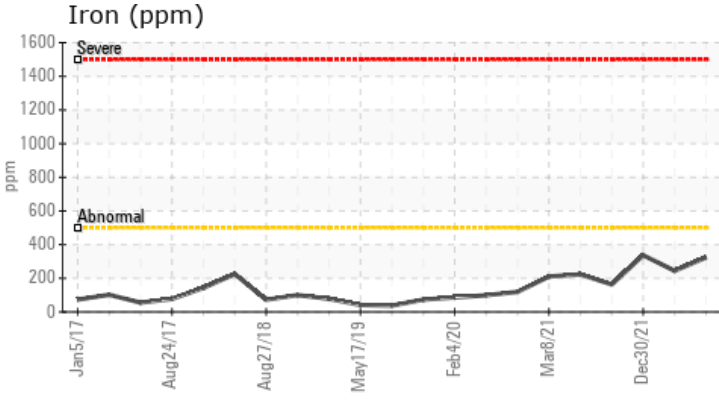
Depot: THAFIS
Unique No: 10110470
Signed: Don Baldrige
Report Date: 26 Aug 2022



CONSTRUCTION EQUIPMENT



VOLVO GRAPHS





CONSTRUCTION EQUIPMENT

SWA032978-10 VOLVO EC700C 110759 - REAR RIGHT FINAL DRIVE



Sample No: VCP376003
Oil Type: VOLVO PREMIUM GEAR OIL 85W-140 GL-5
Job No: SWA032978-10



SAMPLE INFORMATION

Sample Number	VCP376003	VCP343210	VCP342757	VCP336111
Sample Date	12 Aug 2022	22 Mar 2022	30 Dec 2021	27 Sep 2021
Machine Hours	12003	11462	11000	10500
Oil Hours	1000	500	1000	500
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

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OIL CONDITION

Visc @ 40°C	cSt	323	326.3	325	323
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	13	36	52	7
Sodium	ppm	3	1	0	0
Potassium	ppm	5	2	2	0

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	255	260	361	167
Copper	ppm	<1	<1	1	<1
Lead	ppm	<1	0	<1	0
Tin	ppm	<1	0	0	<1
Aluminum	ppm	4	8	11	1
Chromium	ppm	2	2	2	1
Molybdenum	ppm	<1	<1	<1	<1
Nickel	ppm	<1	0	<1	0
Titanium	ppm	<1	<1	1	<1
Silver	ppm	0	0	<1	0
Manganese	ppm	2	2	2	1
Vanadium	ppm	<1	0	<1	0



ADDITIVES

Calcium	ppm	21	15	28	11
Magnesium	ppm	3	2	2	<1
Zinc	ppm	16	9	1	8
Phosphorus	ppm	296	302	314	330
Barium	ppm	<1	0	0	0
Boron	ppm	2	0	2	5

Depot: THAFIS
Unique No: 10110471
Signed: Don Baldrige
Report Date: 26 Aug 2022



CONSTRUCTION EQUIPMENT



VOLVO GRAPHS

