



CONSTRUCTION EQUIPMENT

68706 VOLVO L110H 631235 - COOLANT



Sample No: VCP313183
Oil Type: VOLVO COOLANT VCS (YELLOW)
Job No: 68706



SAMPLE INFORMATION

Sample Number	VCP313183	---	---	---
Sample Date	07 May 2021	---	---	---
Machine Hours	6168	---	---	---
Sample Status	NORMAL	---	---	---



COOLANT CONDITION

pH	Scale 0-14	■ 7.48	---	---	---
Reserve Alkalinity	Scale 0-20	---	---	---	---
Nitrites	ppm	■ 0	---	---	---
Percentage Glycol	%	■ 50	---	---	---
Freezing Point	°C	■ -39	---	---	---



CONTAMINATION

Coolant Appearance	normal	---	---	---
Coolant Color	Red	---	---	---



RIPA AND ASSOCIATES

10149 FISHER AVENUE
TAMPA, FL
US 33619

Contact: ROBERT TURNER
rtturner@ripatampa.com

T:
F:

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: RIPTAM
Unique No: 9555017
Signed: Doug Bogart
Report Date: 28 Jun 2021



CONSTRUCTION EQUIPMENT

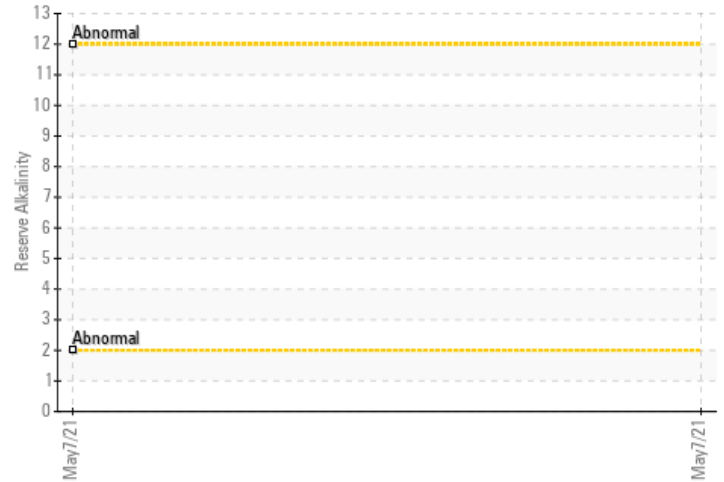


GRAPHS

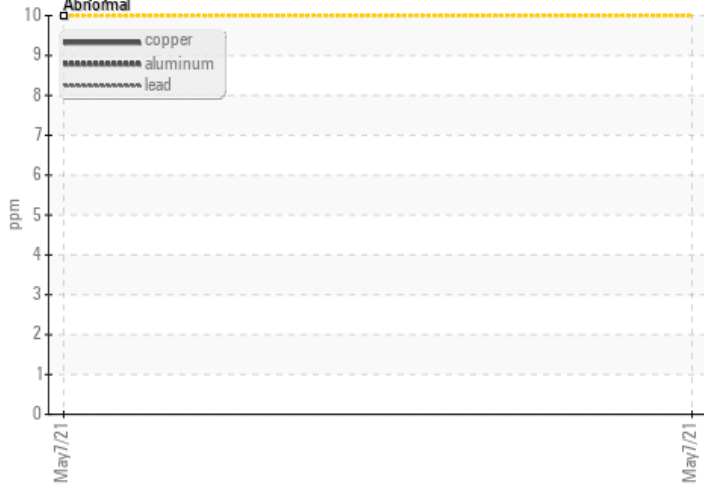
Iron/Tin/Silver



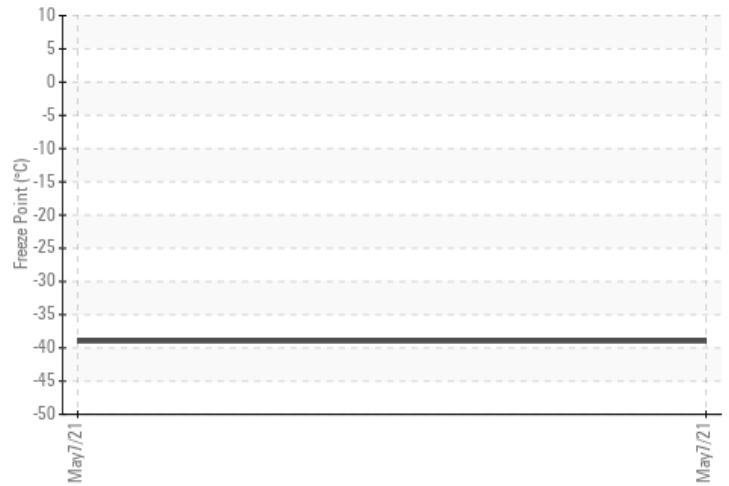
Reserve Alkalinity



Copper/Aluminum/Lead



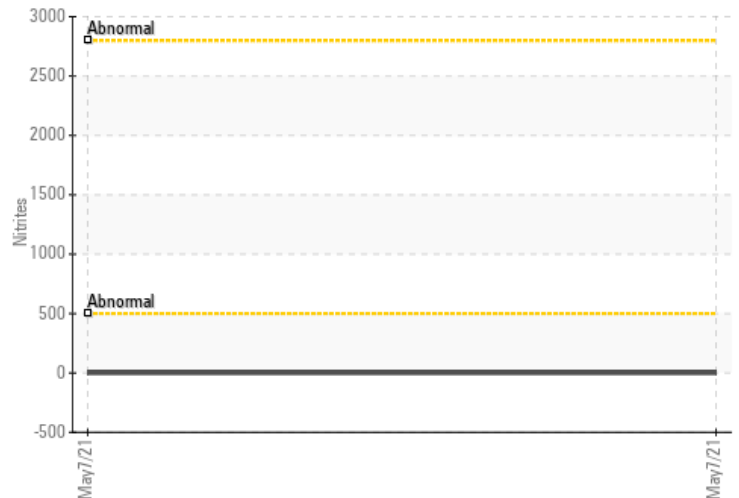
Freeze Point



pH



Nitrites





CONSTRUCTION EQUIPMENT

716513 VOLVO L110H 631235 - DIESEL ENGINE



Sample No: VCP439679
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 716513



SAMPLE INFORMATION

Sample Number	VCP439679	VCP429373D	VCP420252	VCP393538
Sample Date	21 May 2024	17 Jan 2024	05 May 2023	03 Jan 2023
Machine Hours	12318	11636	10451	9673
Oil Hours	500	0	500	500
Oil Changed	Changed	N/A	Changed	Changed
Sample Status	NORMAL	ABNORMAL	NORMAL	NORMAL

RIPA AND ASSOCIATES
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 Contact: PM Services
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OIL CONDITION

Visc @ 100°C	cSt	13.0	13.6	13.2	13.33
Base Number (BN)	mg KOH/g	9.9	7.2	10.0	8.0
Oxidation (PA)	%	81	69	86	58

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.4	0.5	0.5	0.2
Nitration (PA)	%	71	85	86	74
Sulfation (PA)	%	60	57	61	51
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	6	▲ 27	6	5
Sodium	ppm	2	0	3	2
Potassium	ppm	<1	3	2	<1

WEAR METALS

Iron	ppm	49	▲ 132	15	10
Copper	ppm	<1	6	<1	<1
Lead	ppm	0	0	<1	<1
Tin	ppm	0	<1	1	<1
Aluminum	ppm	2	● 6	5	3
Chromium	ppm	0	3	<1	<1
Molybdenum	ppm	42	63	49	79
Nickel	ppm	0	<1	<1	0
Titanium	ppm	0	<1	0	1
Silver	ppm	0	0	0	0
Manganese	ppm	0	0	<1	<1
Vanadium	ppm	0	0	<1	0

ADDITIVES

Calcium	ppm	1783	1929	1717	1935
Magnesium	ppm	410	234	582	281
Zinc	ppm	1039	1196	1255	1218
Phosphorus	ppm	897	949	998	1006
Barium	ppm	0	5	0	0
Boron	ppm	21	28	18	38

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

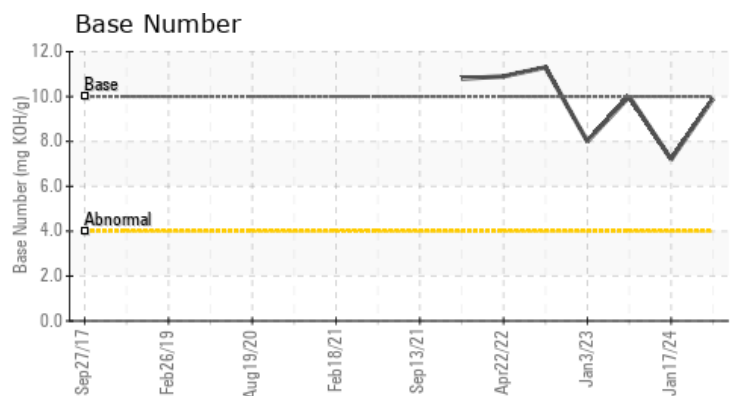
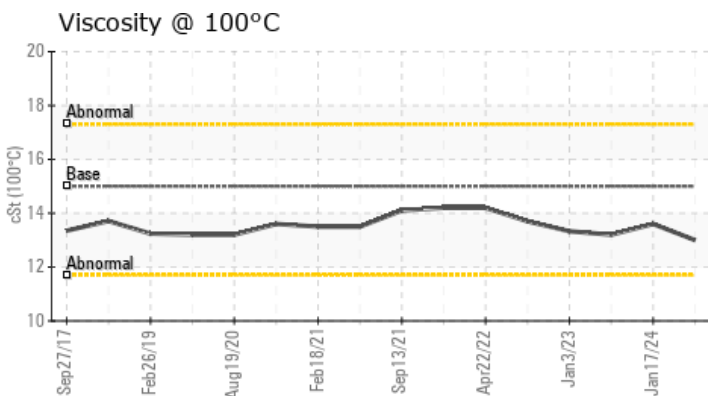
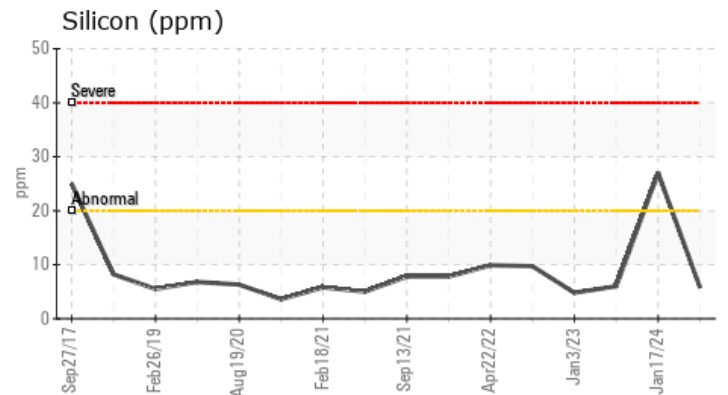
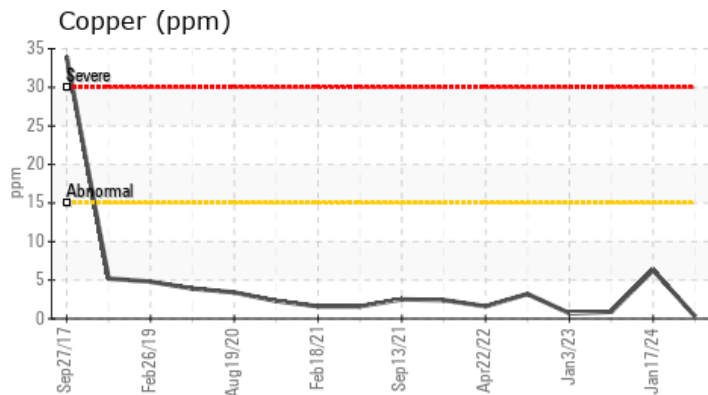
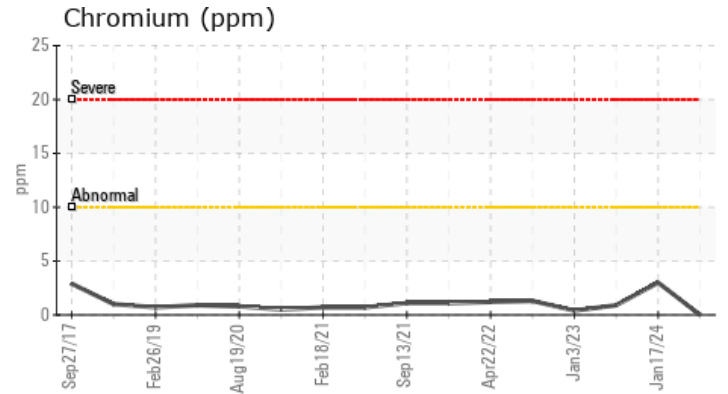
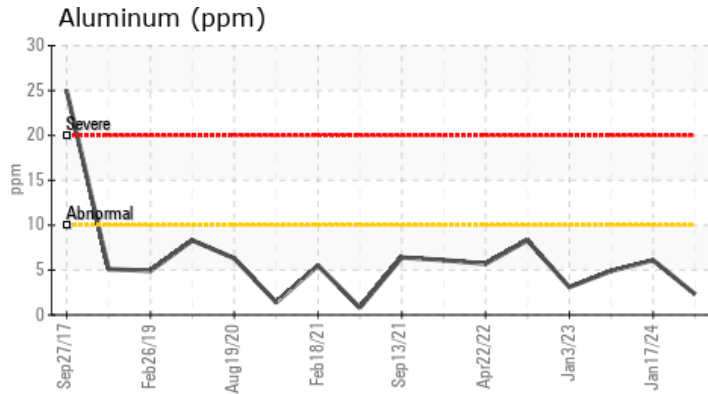
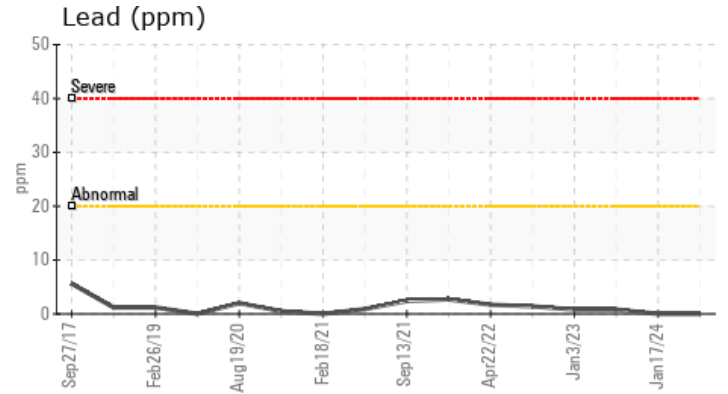
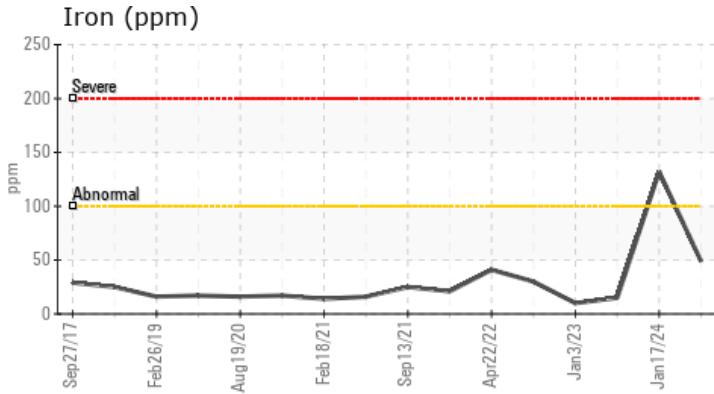
Depot: RIPTAM
Unique No: 11087185
Signed: Wes Davis
Report Date: 20 Jun 2024



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

540214 VOLVO L110H 631235 - TRANSMISSION (AUTO)



Sample No: VCP424477
Oil Type: VOLVO AT 102
Job No: 540214



SAMPLE INFORMATION

Sample Number	VCP424477	VCP399636	VCP386753	VCP359353
Sample Date	05 May 2023	03 Jan 2023	23 Sep 2022	22 Apr 2022
Machine Hours	10451	9673	9140	8372
Oil Hours	451	1500	1000	2000
Oil Changed	Not Chngd	Not Chngd	Not Chngd	Changed
Sample Status	NORMAL	NORMAL	ABNORMAL	NORMAL

RIPA AND ASSOCIATES

10149 FISHER AVENUE
TAMPA, FL
US 33619
Contact: ROBERT TURNER
rturner@ripatampa.com
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OIL CONDITION

Visc @ 40°C	cSt	28.5	27.1	27.6	29.4
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	3	10	4	4
Sodium	ppm	0	5	3	6
Potassium	ppm	1	1	0	<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 fluid. The condition of the fluid is acceptable for the time in service.



WEAR METALS

Iron	ppm	17	76	23	117
Copper	ppm	7	8	7	15
Lead	ppm	0	<1	0	0
Tin	ppm	0	<1	<1	0
Aluminum	ppm	2	4	2	5
Chromium	ppm	0	<1	<1	<1
Molybdenum	ppm	<1	<1	1	<1
Nickel	ppm	<1	<1	<1	<1
Titanium	ppm	0	0	<1	0
Silver	ppm	0	0	1	0
Manganese	ppm	<1	6	2	4
Vanadium	ppm	0	0	1	0



ADDITIVES

Calcium	ppm	79	77	65	88
Magnesium	ppm	2	1	0	<1
Zinc	ppm	8	29	<1	26
Phosphorus	ppm	191	178	197	201
Barium	ppm	0	3	0	0
Boron	ppm	94	53	78	42

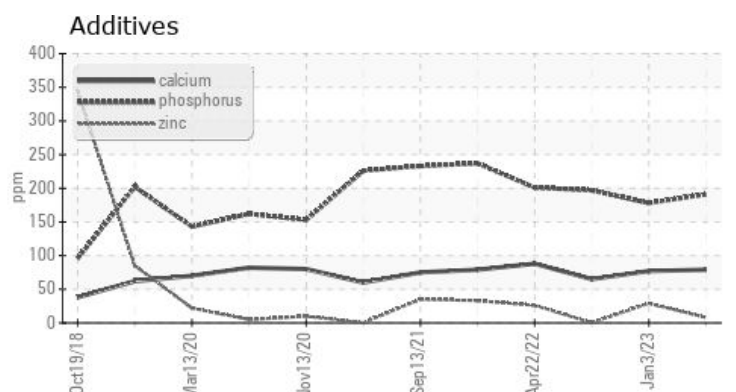
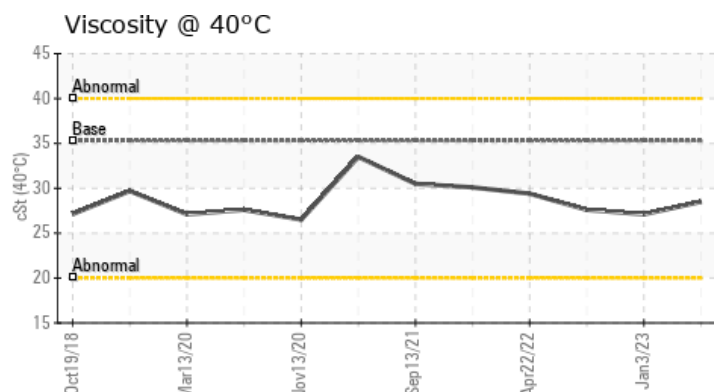
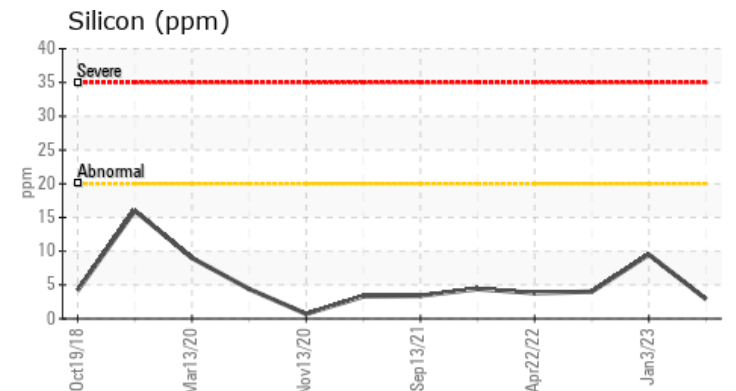
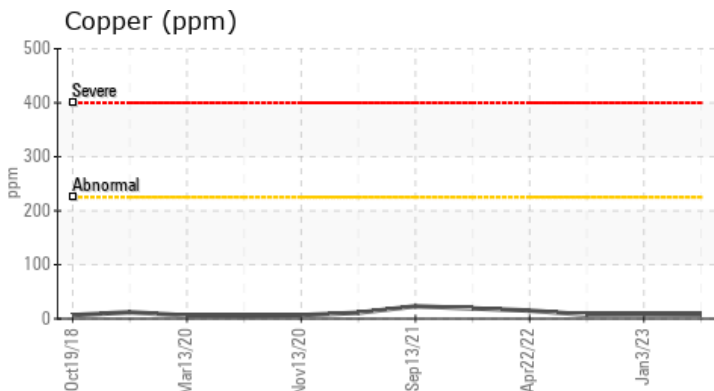
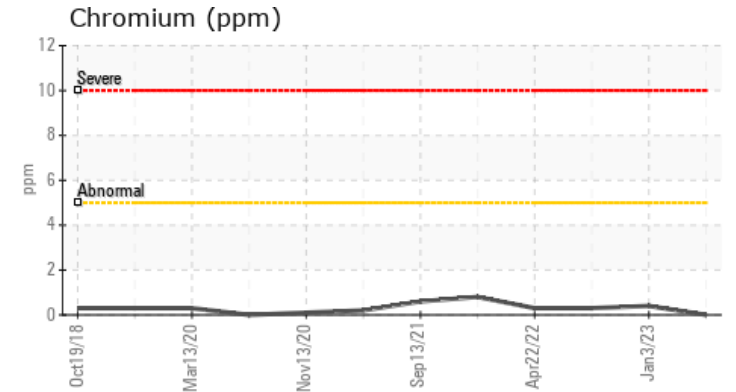
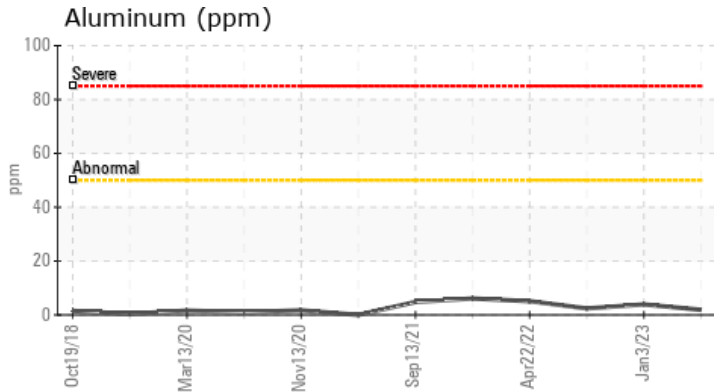
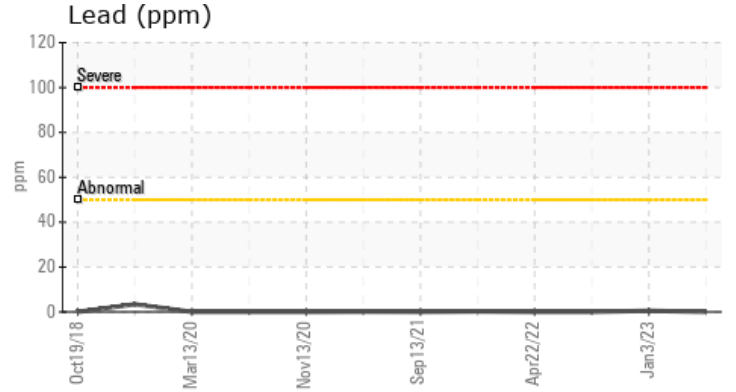
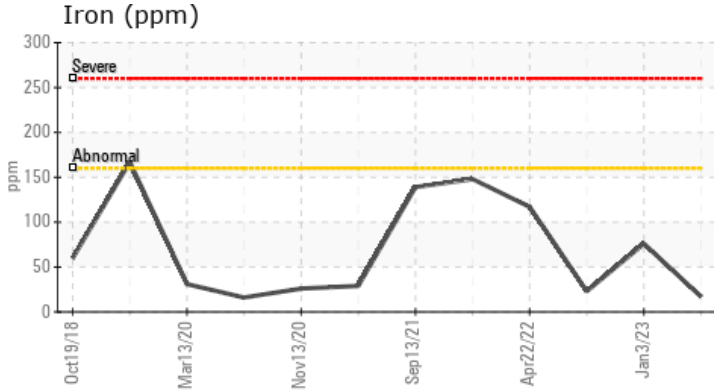
Depot: RIPTAM
Unique No: 10497868
Signed: Wes Davis
Report Date: 05 Jun 2023



CONSTRUCTION EQUIPMENT



VOLVO GRAPHS





CONSTRUCTION EQUIPMENT

VOLVO L110H 631235 - HYDRAULIC SYSTEM



Sample No: VCP399407
Oil Type: VOLVO SUPER HYDRAULIC OIL 46
Job No:



SAMPLE INFORMATION

Sample Number	VCP399407	VCP359356	VCP320497	VCP310728
Sample Date	03 Jan 2023	22 Apr 2022	13 Sep 2021	07 May 2021
Machine Hours	9673	8372	7033	6168
Oil Hours	1500	4000	1500	2000
Oil Changed	Not Changd	Changed	Not Changd	Not Changd
Sample Status	ABNORMAL	ATTENTION	ABNORMAL	ABNORMAL

RIPA AND ASSOCIATES

10149 FISHER AVENUE
TAMPA, FL
US 33619
Contact: ROBERT TURNER
rturner@ripatampa.com
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OIL CONDITION

Visc @ 40°C	cSt	54.1	59.3	54.8	50.3
Acid Number (AN)	mg KOH/g	0.42	0.35	0.529	0.359

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		35022	14466	---	48624
Particles >6µm		▲ 11594	2120	---	9797
Particles >14µm		▲ 1225	134	---	▲ 353
ISO 4406:1999 (c)		22/21/17	21/18/14	---	23/20/16
Silicon	ppm	2	2	3	2
Sodium	ppm	2	0	2	0
Potassium	ppm	0	1	2	0

Diagnosis

We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

WEAR METALS

Iron	ppm	5	2	5	4
Copper	ppm	14	1	1	1
Lead	ppm	1	<1	3	1
Tin	ppm	<1	0	0	0
Aluminum	ppm	0	1	1	0
Chromium	ppm	0	<1	<1	<1
Molybdenum	ppm	7	4	5	1
Nickel	ppm	0	0	<1	0
Titanium	ppm	0	0	0	0
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	0	0	0
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	1473	170	302	89
Magnesium	ppm	9	7	7	7
Zinc	ppm	522	491	511	429
Phosphorus	ppm	407	374	430	349
Barium	ppm	0	0	0	0
Boron	ppm	5	4	10	3

Depot: RIPTAM
Unique No: 10331619
Signed: Don Baldrige
Report Date: 09 Feb 2023

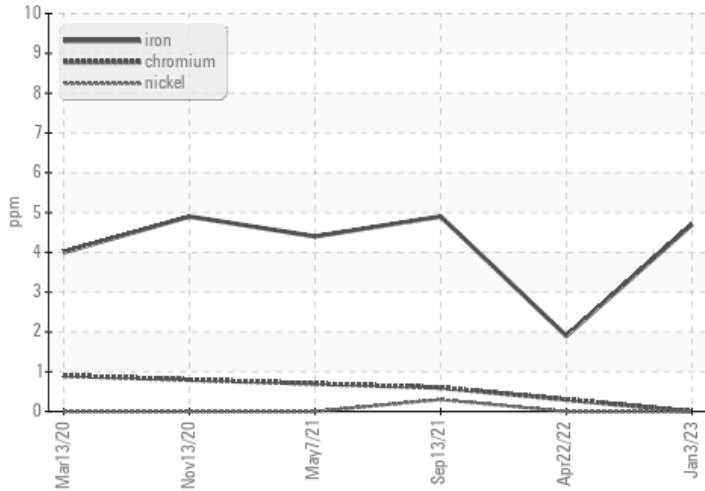


CONSTRUCTION EQUIPMENT

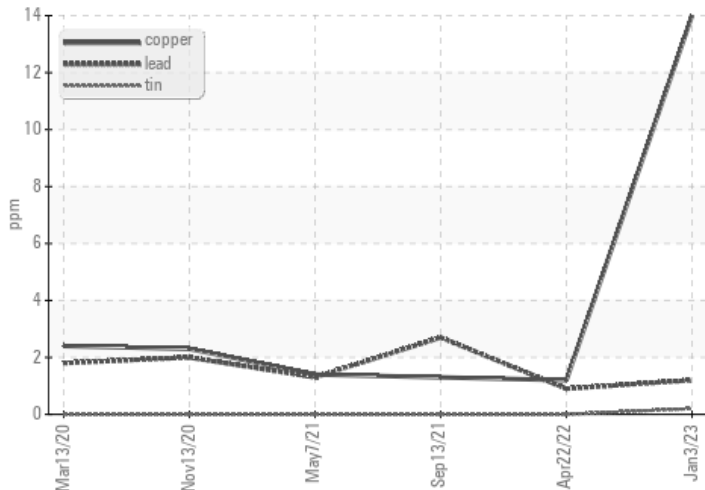


GRAPHS

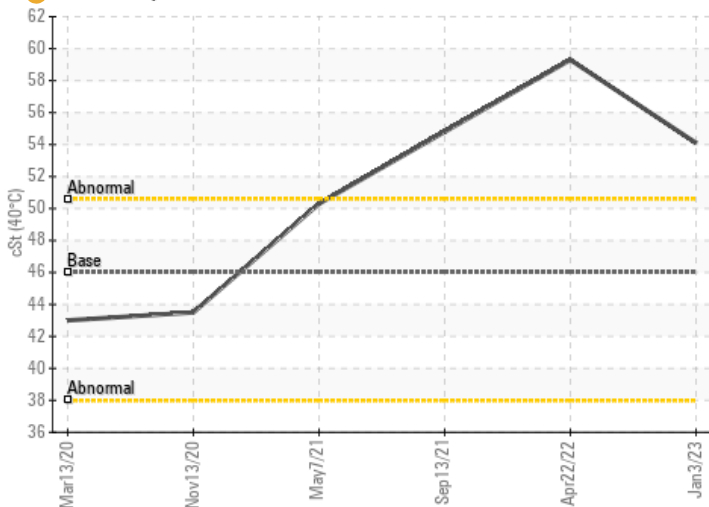
Ferrous Alloys



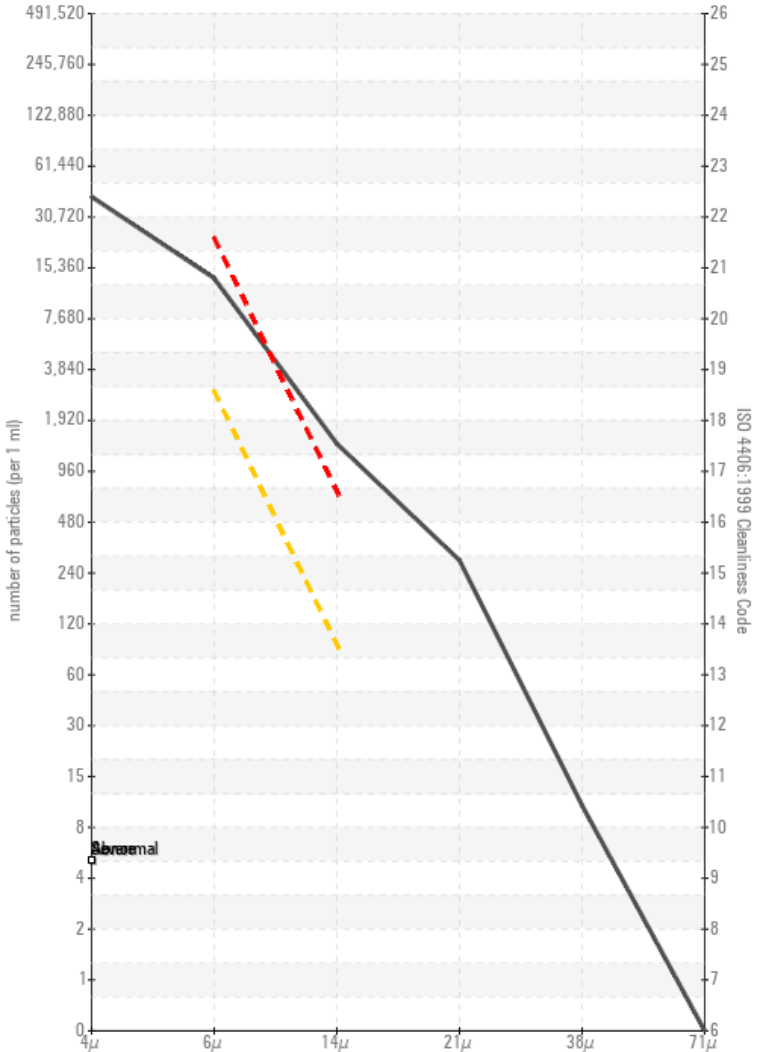
Non-ferrous Metals



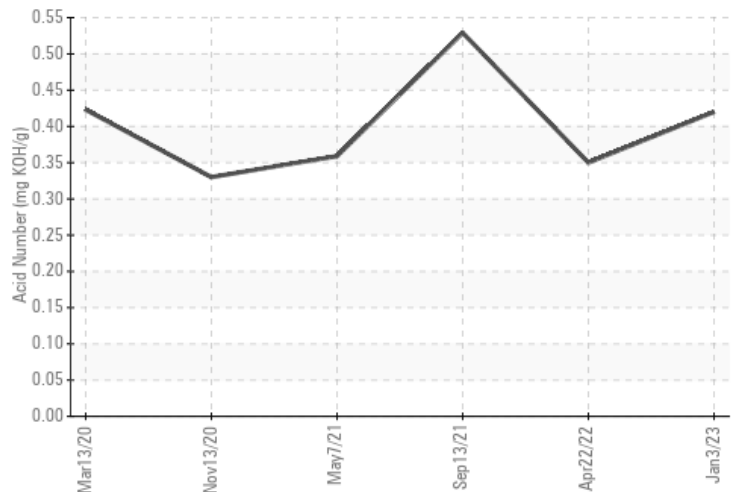
Viscosity @ 40°C



Particle Count



Acid Number





CONSTRUCTION EQUIPMENT

716513 VOLVO L110H 631235 - FRONT AXLE



Sample No: VCP439661
Oil Type: VOLVO WB 102
Job No: 716513



SAMPLE INFORMATION

Sample Number	VCP439661	VCP399679	VCP359412	VCP326064
Sample Date	21 May 2024	03 Jan 2023	22 Apr 2022	13 Sep 2021
Machine Hours	12318	9673	8372	7033
Oil Hours	2000	1500	2000	1500
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

RIPA AND ASSOCIATES
 10149 FISHER AVENUE
 TAMPA, FL
 US 33619
 Contact: PM Services
 PMServices@ripaconstruction.com
 T:
 F:



OIL CONDITION

Visc @ 40°C	cSt	48.5	40.1	41.2	41.9
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	16	13	13	11
Sodium	ppm	2	9	9	10
Potassium	ppm	2	0	0	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	101	223	90	48
Copper	ppm	<1	4	2	<1
Lead	ppm	<1	2	<1	<1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	2	<1	1	1
Chromium	ppm	2	4	2	<1
Molybdenum	ppm	2	8	7	7
Nickel	ppm	<1	2	<1	0
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	0	0	0	<1
Manganese	ppm	1	8	2	<1
Vanadium	ppm	0	0	0	<1



ADDITIVES

Calcium	ppm	3680	3725	3777	3837
Magnesium	ppm	20	15	44	43
Zinc	ppm	1442	1540	1405	1566
Phosphorus	ppm	1233	1227	1216	1269
Barium	ppm	<1	0	0	0
Boron	ppm	150	120	133	138

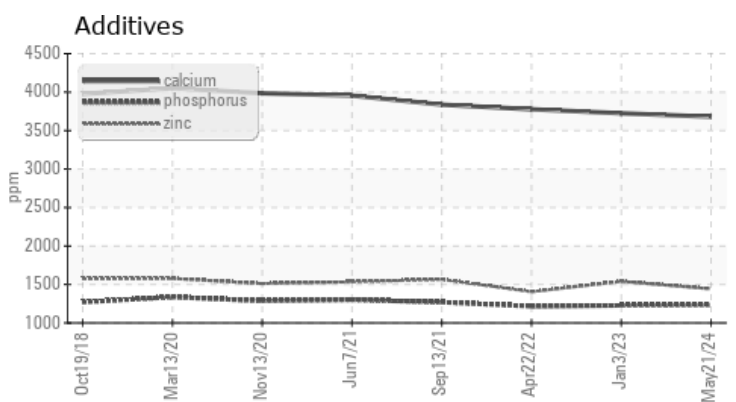
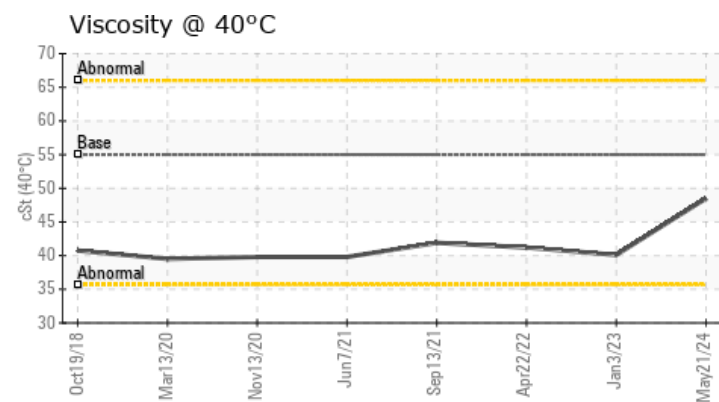
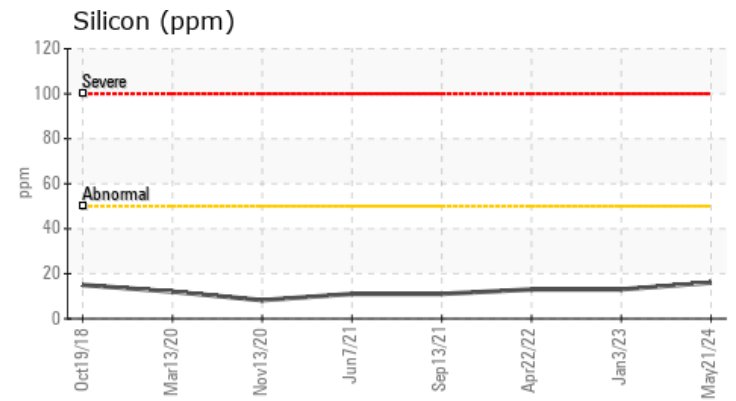
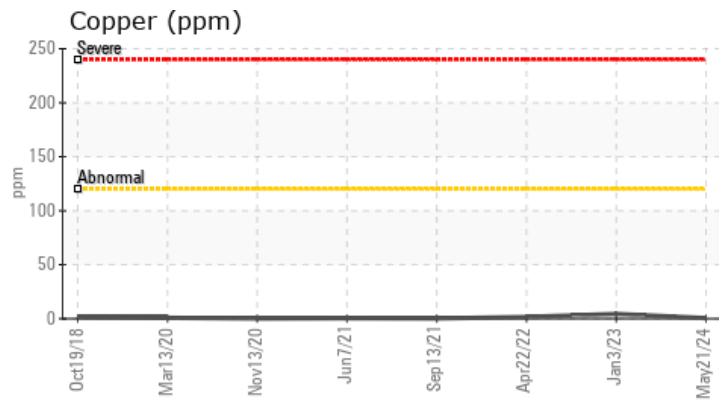
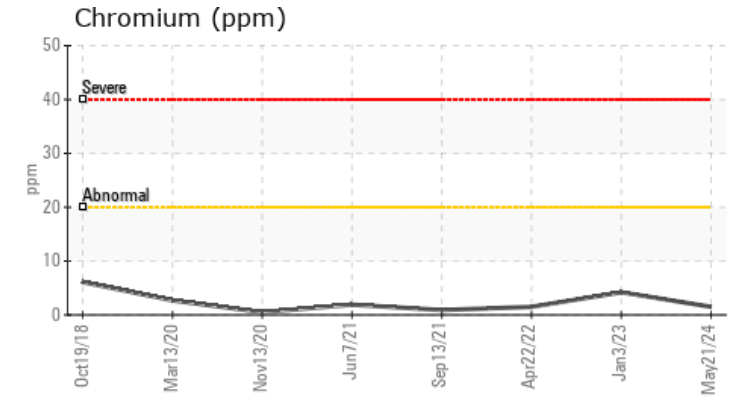
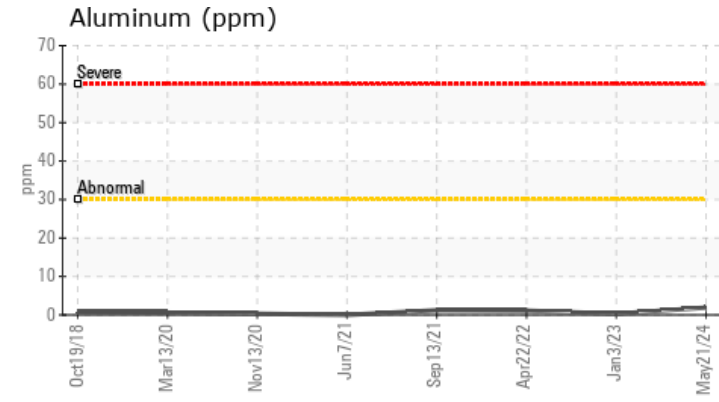
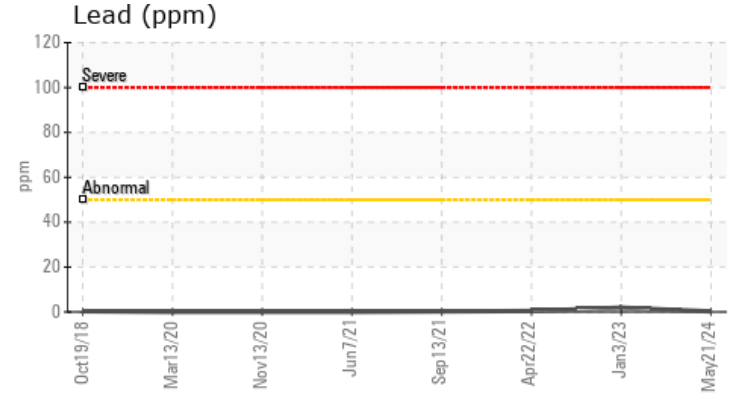
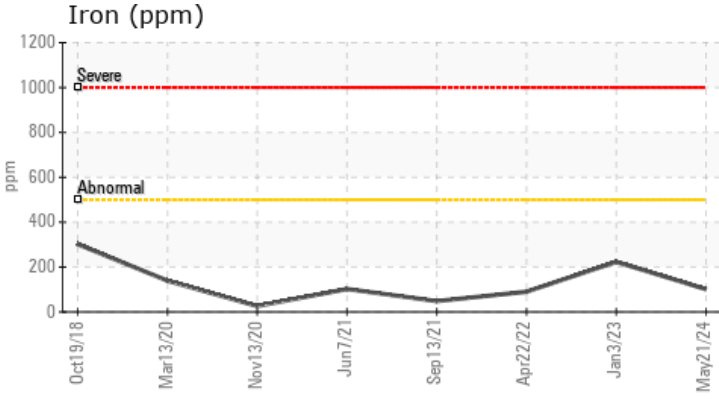
Depot: RIPTAM
Unique No: 11087984
Signed: Wes Davis
Report Date: 20 Jun 2024



CONSTRUCTION EQUIPMENT



VOLVO GRAPHS





CONSTRUCTION EQUIPMENT

716513 VOLVO L110H 631235 - REAR AXLE



Sample No: VCP443589
Oil Type: VOLVO WB 102
Job No: 716513



SAMPLE INFORMATION

Sample Number	VCP443589	VCP399409	VCP359351	VCP326029
Sample Date	21 May 2024	03 Jan 2023	22 Apr 2022	13 Sep 2021
Machine Hours	12318	9673	8372	7033
Oil Hours	2000	1500	2000	1500
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	MARGINAL

RIPA AND ASSOCIATES

10149 FISHER AVENUE
TAMPA, FL
US 33619
Contact: PM Services
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F:



OIL CONDITION

Visc @ 40°C	cSt	47.3	41.1	41.6	41.8
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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	15	12	19	15
Sodium	ppm	5	8	9	10
Potassium	ppm	0	0	0	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	45	124	53	31
Copper	ppm	<1	31	2	<1
Lead	ppm	0	1	<1	0
Tin	ppm	0	<1	<1	<1
Aluminum	ppm	<1	0	2	2
Chromium	ppm	<1	3	1	<1
Molybdenum	ppm	<1	4	8	8
Nickel	ppm	0	<1	<1	0
Titanium	ppm	<1	0	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	1	6	1	<1
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	3922	3711	3944	3756
Magnesium	ppm	20	14	48	45
Zinc	ppm	1466	1545	1472	1534
Phosphorus	ppm	1283	1203	1238	1244
Barium	ppm	0	0	0	0
Boron	ppm	133	119	131	139

Depot: RIPTAM
Unique No: 11087957
Signed: Wes Davis
Report Date: 20 Jun 2024



CONSTRUCTION EQUIPMENT



GRAPHS

