



NATIONAL TRANSPORTATION SAFETY BOARD  
**Investigative Hearing**

Norfolk Southern Railway general merchandise freight train 32N  
derailment with subsequent hazardous material release and fires,  
in East Palestine, Ohio, on February 3, 2023

<b>GROUP</b>	<b>E</b>
<b>EXHIBIT</b>	
18	

Agency / Organization

**Norfolk Southern**

Title

**Exhibit 18- Salem-1 32N.01  
Train Log 2-3-23**

Salem, OH, Track One MP:69.1

Display > dd9900

Site Name : Salem, OH

Seq Number : 25668

Milepost : 69.1

DB Index # : 90

Direction : East

Arrival : 20:13 02-03-2023

Speed In/Out: 25/23 MPH

Departure : 20:17:49

Slow Speed : 22 MPH

Maximum Speed : 25 MPH

Average Speed : 23 MPH

Amb Temp : 11 F

Battery Voltage: 13.16

Axles : 614

Train Length : 9448.1 Feet

Alarms : 0

Cars : 152

Integ Fails : 0

Gate A Cnt : 614

System Warn : 0

Gate B Cnt : 614

Ch1 Atypical: 0

Ch1 Atyp Alm: 0

Ch2 Atypical: 0

Ch2 Atyp Alm: 0

Sunshot Fltr: Inactive

Radio : On

DED Alarms : On

HBD Scanners: On

AUX Alarms : Off

Announce ABS: On

Announce WRM: On

Announce DIF: Off

Announce CSA: On

Announce DED: On

Announce HI : Off

Announce WD1: Off

Announce WD2: Off

Announce HWD: Off

Efficy. Test: Off

Integ Ch1 : 253 F

Avg Ch1 : 27 F

Integ Ch2 : 253 F

Avg Ch2 : 24 F

ABS High : 200 F

Lowest Ch1 : 0 F

Diff Limit : 115 F

Lowest Ch2 : 0 F

Diff Low Lim: 0 F

Highest Ch1 : 56 F

CSA Slope : 1.60

Highest Ch2 : 103 F

CSA Limit : 255 F

Warm High : 170 F

HBD Filter : 13 Point Median Filter

Car Axle Spacing Ch1 Ch2

Num Num (Feet) (F) (F) Alarms

----- Heat Units = F

1	1	0.0	10	4
	2	6.7	0	0
	3	6.7	0	0
	4	34.0	0	0
	5	6.7	0	0
	6	6.7	2	2
2	7	14.3	6	8
	8	6.7	6	4
	9	6.7	2	0
	10	34.0	0	0
	11	6.7	0	2

	12	6.7	0	2
3	13	11.6	41	34
	14	5.9	27	29
	15	49.7	31	21
	16	5.9	12	10
4	17	8.4	24	20
	18	5.9	24	21
	19	48.2	16	24
	20	6.0	12	14
5	21	14.1	38	20
	22	6.0	27	30
	23	43.8	12	10
	24	6.0	10	10
6	25	20.3	27	30
	26	6.0	34	30
	27	43.9	34	37
	28	6.0	31	29
7	29	20.3	31	30
	30	5.9	10	10
	31	44.0	38	33
	32	5.8	6	8
8	33	19.1	16	16
	34	6.0	41	30
	35	43.3	20	29
	36	5.8	29	24
9	37	16.3	29	10
	38	5.8	27	30
	39	54.4	20	21
	40	5.8	21	24
10	41	11.1	21	16
	42	5.8	29	29
	43	46.5	24	20
	44	5.8	31	30
11	45	8.4	21	20
	46	5.8	24	20
	47	32.4	21	29
	48	5.8	31	10
12	49	12.3	24	14
	50	5.8	16	24
	51	41.0	16	21
	52	5.8	21	21
13	53	12.7	29	4
	54	5.8	16	16

	55	39.3	12	26
	56	5.8	16	26
14	57	8.7	31	14
	58	5.8	31	26
	59	46.3	16	8
	60	5.8	20	20
15	61	8.3	29	26
	62	5.8	29	26
	63	49.1	29	29
	64	5.8	31	24
16	65	8.3	29	26
	66	5.8	31	30
	67	49.1	27	21
	68	5.8	34	38
17	69	8.4	16	14
	70	5.8	38	29
	71	46.2	24	29
	72	5.9	38	24
18	73	8.3	34	29
	74	5.9	29	29
	75	46.3	27	29
	76	5.9	27	21
19	77	8.3	36	33
	78	5.9	34	30
	79	46.3	44	37
	80	5.9	31	30
20	81	8.0	31	14
	82	5.9	34	29
	83	50.5	20	26
	84	5.9	34	30
21	85	8.0	20	16
	86	5.9	24	29
	87	49.7	29	26
	88	5.9	31	26
22	89	7.9	20	26
	90	5.9	34	29
	91	50.6	34	21
	92	5.9	27	33
23	93	8.0	27	30
	94	5.9	36	26
	95	49.8	27	14
	96	5.9	20	26
24	97	8.0	34	30

	98	5.9	36	33
	99	50.7	34	29
	100	5.9	21	20
25	101*	8.1	20	103
	102	5.9	34	24
	103	46.7	38	33
	104	6.0	31	29
26	105	8.1	36	26
	106	6.0	44	38
	107	46.8	29	29
	108	6.0	21	21
27	109	7.9	6	4
	110	5.9	20	10
	111	40.6	10	10
	112	6.0	10	8
28	113	8.0	20	14
	114	6.0	16	26
	115	35.0	12	10
	116	6.0	29	21
29	117	8.2	10	16
	118	6.0	31	26
	119	32.5	36	30
	120	6.0	38	34
30	121	8.1	24	24
	122	5.9	31	29
	123	32.5	31	33
	124	6.0	27	20
31	125	8.2	34	26
	126	6.0	24	21
	127	36.5	29	16
	128	6.0	36	29
32	129	8.0	27	30
	130	6.0	34	14
	131	37.5	29	26
	132	5.8	36	21
33	133	7.8	27	29
	134	5.8	16	29
	135	39.9	29	30
	136	5.8	31	14
34	137	7.7	29	37
	138	5.7	41	24
	139	36.1	44	26
	140	5.8	36	41

35	141	7.8	21	16
	142	5.8	21	26
	143	36.2	34	33
	144	5.8	21	10
36	145	7.7	31	26
	146	5.8	31	30
	147	41.1	31	30
	148	5.9	31	30
37	149	7.9	38	30
	150	5.9	36	30
	151	47.3	31	29
	152	5.9	27	29
38	153	8.0	29	26
	154	5.9	31	30
	155	40.0	29	21
	156	5.9	34	34
39	157	7.5	31	29
	158	5.9	34	30
	159	46.6	34	30
	160	5.9	38	29
40	161	7.8	21	24
	162	5.9	29	20
	163	49.3	27	30
	164	5.9	29	33
41	165	7.9	36	34
	166	5.9	31	37
	167	38.5	36	33
	168	5.9	44	41
42	169	7.7	21	8
	170	5.9	12	21
	171	40.9	16	20
	172	5.9	27	21
43	173	7.7	34	29
	174	5.9	31	26
	175	40.0	20	21
	176	5.9	34	29
44	177	7.7	27	20
	178	5.9	31	30
	179	41.7	27	30
	180	5.9	36	30
45	181	7.6	29	29
	182	5.9	31	33
	183	41.7	31	21
	184	5.9	31	33

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	186	5.9	34	29
	187	41.3	27	24
	188	5.9	36	29
47	189	7.6	34	30
	190	5.9	21	21
	191	36.8	27	20
	192	5.9	27	26
48	193	7.7	12	10
	194	5.9	44	38
	195	36.9	16	14
	196	5.9	16	16
49	197	7.6	36	29
	198	5.9	27	34
	199	50.8	34	29
	200	5.9	31	37
50	201	7.7	27	29
	202	5.9	29	26
	203	41.0	31	26
	204	5.9	27	24
51	205	7.7	31	30
	206	6.0	41	37
	207	42.0	41	46
	208	5.9	31	24
52	209	7.7	29	24
	210	5.9	31	21
	211	37.1	34	33
	212	6.0	29	29
53	213	7.6	20	21
	214	6.0	16	26
	215	47.0	27	21
	216	6.0	31	30
54	217	7.6	29	26
	218	5.9	34	33
	219	47.2	36	26
	220	6.0	36	33
55	221	8.1	27	34
	222	6.0	31	30
	223	33.8	38	34
	224	5.9	34	29
56	225	12.3	20	24
	226	6.0	24	24
	227	42.0	27	29

228	6.0	27	26
57 229	13.8	34	29
230	5.8	34	33
231	36.6	38	29
232	5.8	21	24
58 233	18.6	29	26
234	5.7	31	21
235	47.7	27	21
236	5.7	31	29
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247	39.3	34	34
248	5.7	38	30
62 249	8.3	31	21
250	6.0	24	24
251	48.3	41	37
252	5.8	24	20
63 253	7.7	29	24
254	5.8	38	34
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256	5.8	27	24
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262	5.6	20	16
263	60.5	27	21
264	5.6	36	26
66 265	19.1	34	33
266	5.8	36	30
267	40.6	34	34
268	5.8	44	21
67 269	15.8	36	37
270	5.8	31	37



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	274	5.8	41	20
	275	40.6	41	34
	276	5.8	36	33
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	279	40.6	10	8
	280	5.7	20	20
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	283	40.5	31	20
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	286	5.7	27	34
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	288	5.8	29	26
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	294	5.7	16	14
	295	40.4	24	14
	296	5.8	24	29
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	300	5.7	36	29
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	307	42.3	27	20
	308	6.0	24	24
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	310	5.8	53	51
	311	40.4	34	30
	312	5.7	34	29
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	316	5.8	29	38
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	318	6.0	31	29
	319	42.1	12	14
	320	6.0	36	33
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	323	42.0	29	26
	324	6.0	29	14
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	326	6.0	27	29
	327	56.2	29	24
	328	6.0	16	16
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	332	6.0	29	14
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	336	5.3	36	30
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85	341	24.2	21	10
	342	5.8	24	26
	343	62.3	24	21
	344	5.8	36	30
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	351	41.7	36	24
	352	5.9	29	37
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	354	5.9	21	20
	355	41.5	20	16
	356	5.9	24	20

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	359	41.6	6	4
	360	5.9	10	20
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	362	5.9	36	30
	363	35.9	34	33
	364	6.0	31	33
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	366	5.9	12	14
	367	41.5	12	8
	368	5.9	12	10
92	369	13.4	10	8
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96	385	8.1	36	34
	386	5.9	41	37
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	406	5.8	20	20
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	415	45.5	20	20
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	418	5.8	31	21
	419	37.8	31	29
	420	5.8	31	29
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	423	49.2	38	30
	424	5.8	31	37
106	425	7.9	21	14
	426	5.8	21	21
	427	48.3	27	26
	428	5.8	24	20
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	430	5.8	41	29
	431	45.5	29	30
	432	6.0	44	20
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	434	6.0	29	29
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	436	5.7	36	30
109	437	8.3	34	34
	438	6.0	31	37
	439	46.9	27	26
	440	6.0	31	30
110	441	8.6	21	20
	442	6.0	27	29
	443	46.9	34	30

444	6.0	27	24
111 445	8.5	27	10
446	6.0	31	26
447	50.2	34	14
448	6.0	24	30
112 449	11.4	2	4
450	6.7	0	0
451	6.7	0	0
452	34.4	0	0
453	6.5	2	0
454	6.7	6	2
113 455	11.0	16	38
456	5.8	29	16
457	39.2	41	33
458	6.0	24	16
114 459	7.9	31	4
460	5.7	34	38
461	39.3	29	37
462	6.0	29	26
115 463	8.2	21	24
464	6.0	36	29
465	39.3	16	16
466	6.0	31	30
116 467	10.0	34	29
468	6.0	34	26
469	36.0	31	30
470	5.9	41	37
117 471	11.5	41	29
472	5.9	44	29
473	25.5	38	24
474	6.0	34	26
118 475	10.3	29	10
476	5.9	29	24
477	26.1	24	10
478	5.9	34	30
119 479	9.4	31	30
480	5.9	34	30
481	24.8	29	30
482	5.9	31	33
120 483	7.7	31	26
484	5.9	31	29
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	490	5.9	29	24
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	493	24.6	34	26
	494	5.9	29	29
123	495	7.7	31	26
	496	5.9	34	29
	497	24.6	31	29
	498	5.9	34	29
124	499	7.7	34	24
	500	5.9	48	30
	501	24.0	36	24
	502	5.9	44	37
125	503	7.7	27	21
	504	6.0	20	16
	505	24.3	27	38
	506	5.9	27	26
126	507	7.7	41	24
	508	5.9	36	29
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127	511	7.7	29	24
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	517	24.5	27	16
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	520	6.0	29	29
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	524	6.0	34	38
	525	24.5	38	33
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	529	24.4	31	30
	530	6.0	29	33

132 531 7.8 31 37  
532 6.0 34 21  
533 24.5 16 16  
534 6.0 12 16

133 535 7.4 29 30  
536 6.0 36 10  
537 24.5 36 33  
538 6.0 34 37

134 539 7.7 34 30  
540 6.0 21 21  
541 24.6 21 20  
542 5.8 24 14

135 543 7.7 34 30  
544 6.0 29 26  
545 24.6 20 24  
546 6.0 27 26

136 547 7.8 31 26  
548 6.0 31 30  
549 23.6 24 21  
550 5.7 34 30

137 551 7.8 20 10  
552 5.8 38 38  
553 24.7 27 24  
554 6.0 44 37

138 555 7.8 31 26  
556 6.0 27 8  
557 24.6 21 14  
558 5.8 20 14

139 559 7.8 27 10  
560 5.8 20 21  
561 24.6 20 14  
562 5.8 12 21

140 563 7.4 44 30  
564 5.7 27 10  
565 23.6 20 14  
566 5.8 36 30

141 567 7.5 46 37  
568 5.8 24 26  
569 23.6 44 38  
570 5.8 34 20

142 571 7.5 31 16  
572 6.0 34 33  
573 38.7 20 20

574	5.8	29	37
143 575	7.4	12	14
576	5.7	34	29
577	35.4	36	29
578	5.7	31	30
144 579	8.9	20	14
580	5.8	29	24
581	21.8	21	16
582	5.8	29	26
145 583	10.4	10	8
584	5.8	20	21
585	21.8	10	14
586	5.8	38	30
146 587	9.4	12	8
588	5.8	29	20
589	50.0	16	10
590	5.8	24	16
147 591	8.8	27	10
592	5.8	31	29
593	25.4	24	21
594	5.7	20	20
148 595	9.4	20	26
596	5.8	36	21
597	41.3	31	24
598	5.8	31	30
149 599	7.9	12	21
600	5.8	36	30
601	50.1	31	20
602	5.8	29	26
150 603	8.3	31	26
604	6.0	21	29
605	50.1	34	30
606	5.7	20	10
151 607	8.2	36	26
608	5.8	44	38
609	50.0	16	26
610	5.8	41	33
152 611	8.3	21	24
612	5.8	29	41
613	50.0	31	14
614	5.8	21	20