



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

GROUP	E
EXHIBIT	
12	

Agency / Organization

Norfolk Southern

Title

**Exhibit 12- East
Palatine-1 32N.01 Train
Log 2-3-23**

Site Name : East Palestine, OH Seq Number : 20249
Milepost : 49.80 DB Index # : 65

Direction : East Arrival : 20:52 02-03-2023
Speed In/Out: 44/3 MPH Departure : 04:58:49
Slow Speed : 0 MPH Maximum Speed : 47 MPH
Average Speed : 32 MPH

Amb Temp : Not Installed Battery Voltage: 13.86

Axles : 678 Train Length : 9303.0 Feet
Alarms : 1 Cars : 170
Integ Fails : 0 Gate A Cnt : 650
System Warn : 2 Gate B Cnt : 687
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
Whl Scanners: On HWD Warn : 0
HWD Alarms : On CWD 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: On
Efficy. Test: Off

Integ Ch1 : 253 F Avg Ch1 : 23 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 : 75 F
CSA Slope : 1.60 Highest Ch2 : 253 F
CSA Limit : 255 F Warm High : 170 F

HWD Axles : 673 HWD A Cnt : 648
HWD Profiles: 0 HWD B Cnt : 681

ABS Hot Whl : 700 F Warm Whl Lim: 300 F
Cold Whl Lim: 100 F
Avg Ch3 : 4 F Avg Ch4 : 48 F
Lowest Ch3 : 0 F Lowest Ch4 : 0 F
Highest Ch3 : 166 F Highest Ch4 : 184 F
Integ Ch3 : 588 F Integ Ch4 : 706 F

HBD Filter : 13 Point Median Filter
HWD Filter : Peak Filter
1 Alarms

1 - ABS Hot Journal. Axle 101. South Ch1 = 20. Ch2 = 253. Ch3 = 0. Ch4 = 97

2 System Warnings

- 1 - Slow Train.
- 2 - HWD Slow Train.

Car Num	Axle Num	Spacing (Feet)	Ch1 (F)	Ch2 (F)	Ch3 (F)	Ch4 (F)	Alarms
----- Heat Units = F							
1	1	0.0	27	27	0	30	
	2	6.5	12	12	0	0	
	3	6.4	2	4	0	0	
	4	33.8	0	0	0	0	
	5	6.5	0	0	0	50	
	6	6.4	0	0	0	0	
2	7	13.4	0	2	0	15	
	8	6.5	0	0	0	15	
	9	6.5	0	0	0	15	
	10	32.9	0	0	0	30	
	11	6.4	0	0	0	38	
	12	6.5	0	0	0	30	
3	13	10.9	44	36	30	75	
	14	5.8	24	36	0	15	
	15	49.0	31	24	0	81	
	16	5.8	18	27	0	105	
4	17	7.8	31	36	0	50	
	18	5.8	34	24	0	30	
	19	47.3	23	34	0	30	
	20	5.8	18	30	0	15	
5	21	12.1	44	20	0	50	
	22	5.8	29	40	0	38	
	23	42.7	14	18	0	62	
	24	5.8	14	18	0	105	
6	25	17.8	27	33	0	38	
	26	5.7	36	38	0	62	
	27	42.7	43	61	0	75	
	28	5.8	29	44	0	97	
7	29	17.8	38	46	0	30	
	30	5.8	12	10	0	105	
	31	42.7	47	46	0	50	
	32	5.8	14	12	0	38	
8	33	18.0	14	18	0	89	
	34	5.8	47	38	0	38	
	35	43.6	23	33	0	30	
	36	5.7	36	27	0	30	

9	37	15.1	34	12	0	50
	38	5.7	27	43	0	75
	39	54.5	20	24	0	38
	40	5.8	24	33	0	38
10	41	10.3	20	20	0	30
	42	5.7	29	36	0	38
	43	46.3	23	27	81	75
	44	5.7	38	36	0	172
11	45	8.0	18	24	0	89
	46	5.8	23	24	0	15
	47	32.8	14	36	0	30
	48	5.8	34	16	0	50
12	49	11.5	23	18	0	109
	50	5.8	24	30	75	105
	51	40.5	18	30	0	89
	52	5.7	23	30	0	116
13	53	12.0	34	8	0	30
	54	5.8	20	16	0	38
	55	39.7	14	36	0	38
	56	5.7	18	36	0	62
14	57	8.3	40	16	0	38
	58	5.6	31	29	0	62
	59	46.5	18	12	0	38
	60	5.8	34	29	0	30
15	61	7.7	27	23	0	50
	62	5.6	31	33	0	62
	63	49.3	31	29	0	38
	64	5.8	34	29	0	50
16	65	8.0	24	34	0	38
	66	5.8	31	33	0	62
	67	47.9	27	27	0	30
	68	5.8	36	56	0	178
17	69	8.1	18	18	0	89
	70	5.8	38	34	0	89
	71	46.0	24	34	0	15
	72	5.7	40	36	0	50
18	73	7.8	40	46	0	89
	74	5.8	38	43	0	62
	75	45.9	34	38	0	38
	76	5.8	29	29	0	166
19	77	7.8	40	46	0	81
	78	5.8	44	50	0	75
	79	45.7	40	43	0	89

	80	5.8	34	44	0	50	
20	81	7.6	38	18	0	50	
	82	5.8	40	38	89	109	
	83	49.8	27	30	0	50	
	84	5.7	38	43	0	50	
21	85	7.5	20	18	0	30	
	86	5.8	20	30	0	30	
	87	48.8	34	24	0	30	
	88	5.8	34	29	0	62	
22	89	7.5	23	27	0	30	
	90	5.7	40	43	0	75	
	91	49.6	38	27	0	75	
	92	5.7	27	36	0	38	
23	93	7.5	36	44	0	81	
	94	5.7	40	29	0	62	
	95	48.7	24	16	0	30	
	96	5.7	24	40	0	81	
24	97	7.5	36	44	0	81	
	98	5.7	47	48	0	145	
	99	49.5	43	46	0	89	
	100	5.8	23	27	0	97	
25	101^	7.5	20	253	0	97	ABS2
	102	5.8	43	0	0	81	
	103	45.5	38	54	0	30	
	104	5.7	31	51	0	30	
26	105	7.5	47	48	15	97	
	106	5.7	60	67	15	116	
	107	45.4	27	38	0	38	
	108	5.7	23	33	0	62	
27	109	7.3	6	10	0	75	
	110	5.7	23	16	0	75	
	111	39.4	8	16	0	50	
	112	5.7	12	12	0	62	
28	113	7.3	29	16	0	75	
	114	5.7	20	23	0	89	
	115	33.8	18	18	0	38	
	116	5.7	31	24	0	50	
29	117	7.4	14	29	0	38	
	118	5.6	40	38	0	89	
	119	32.1	31	43	0	38	
	120	5.7	47	51	0	50	
30	121	7.4	36	36	0	62	
	122	5.8	36	30	0	38	

	123	32.1	38	48	0	30
	124	5.8	40	36	0	30
31	125	7.6	40	36	0	75
	126	5.6	29	24	0	50
	127	35.8	38	23	0	30
	128	5.7	47	50	0	38
32	129	7.4	24	36	0	15
	130	5.7	31	18	0	30
	131	35.9	29	48	0	15
	132	5.8	47	23	0	50
33	133	7.5	27	33	0	38
	134	5.6	20	34	0	15
	135	39.7	31	36	0	15
	136	5.8	38	18	0	15
34	137	7.5	31	56	0	75
	138	5.8	51	40	0	62
	139	35.9	47	27	0	38
	140	5.6	48	60	0	38
35	141	7.5	24	20	0	50
	142	5.8	23	36	0	38
	143	37.5	38	43	0	109
	144	5.8	27	18	0	38
36	145	7.5	34	36	0	30
	146	5.8	36	36	0	38
	147	41.2	34	36	0	62
	148	5.8	38	38	0	89
37	149	7.8	43	38	0	50
	150	5.7	44	44	0	15
	151	47.0	31	36	0	75
	152	5.8	31	38	0	30
38	153	7.8	31	34	0	62
	154	5.8	38	36	0	30
	155	39.7	23	20	0	89
	156	5.8	36	36	0	50
39	157	7.4	36	30	0	38
	158	5.8	31	48	0	38
	159	46.3	43	38	0	30
	160	5.8	60	46	0	38
40	161	7.7	31	36	0	30
	162	5.8	38	23	0	15
	163	48.9	38	46	0	75
	164	5.7	38	48	0	109
41	165	7.8	43	43	0	62

	166	5.6	34	48	0	62
	167	38.3	40	40	0	62
	168	5.8	48	54	0	116
42	169	7.5	27	10	0	30
	170	5.8	8	29	0	15
	171	40.6	20	34	0	0
	172	5.8	31	27	0	30
43	173	7.5	36	33	0	50
	174	5.8	34	33	0	62
	175	39.8	23	24	0	30
	176	5.8	38	34	0	75
44	177	7.5	34	23	0	97
	178	5.8	36	40	0	105
	179	41.5	34	40	0	38
	180	5.8	40	36	0	109
45	181	7.5	31	34	0	38
	182	5.8	36	38	0	62
	183	41.4	27	20	0	38
	184	5.8	38	40	0	30
46	185	7.4	34	29	0	62
	186	5.7	40	36	0	109
	187	41.0	27	29	0	30
	188	5.8	44	43	0	30
47	189	7.5	43	44	0	89
	190	5.8	24	30	0	75
	191	36.4	24	23	0	75
	192	5.7	29	34	0	97
48	193	7.5	14	16	0	97
	194	5.8	44	50	0	75
	195	36.4	20	16	30	62
	196	5.8	20	20	0	62
49	197	7.4	44	46	0	15
	198	5.7	29	40	0	30
	199	50.1	44	38	0	38
	200	5.8	34	44	0	50
50	201	7.5	24	33	0	0
	202	5.8	31	33	0	0
	203	40.4	43	33	0	0
	204	5.8	38	34	0	38
51	205	7.5	24	44	0	89
	206	5.8	51	46	0	75
	207	41.2	44	61	0	62
	208	5.7	40	46	0	75

52	209	7.4	31	24	0	0
	210	5.8	40	23	0	38
	211	36.3	31	46	0	89
	212	5.8	40	33	0	38
53	213	7.4	23	27	0	81
	214	5.8	18	38	0	81
	215	46.0	29	27	0	50
	216	5.8	51	48	0	75
54	217	7.3	36	36	0	75
	218	5.8	34	46	0	38
	219	46.1	43	29	0	105
	220	5.8	36	40	0	50
55	221	7.5	34	56	0	38
	222	5.8	40	48	0	75
	223	33.0	43	48	0	38
	224	5.8	43	30	0	38
56	225	11.1	18	20	0	62
	226	5.7	27	34	0	62
	227	40.0	29	38	0	138
	228	5.7	31	36	0	15
57	229	11.5	31	38	0	38
	230	5.5	40	34	0	38
	231	35.6	36	44	0	30
	232	5.6	23	33	0	30
58	233	16.7	29	27	0	50
	234	5.7	31	30	0	38
	235	46.4	24	23	0	50
	236	5.7	34	27	0	62
59	237	15.8	8	23	0	15
	238	5.7	20	12	0	30
	239	40.3	18	12	0	38
	240	5.8	31	20	0	15
60	241	7.5	12	23	0	15
	242	5.8	23	18	0	62
	243	40.4	23	16	0	15
	244	5.7	34	27	0	38
61	245	7.5	40	34	0	75
	246	5.8	43	44	0	38
	247	40.0	38	48	0	89
	248	5.8	43	38	0	50
62	249	7.5	34	33	0	50
	250	5.8	27	36	0	15
	251	48.9	44	46	0	62
	252	5.7	31	33	0	62

63	253	7.4	29	36	0	62
	254	5.8	38	46	0	15
	255	46.1	47	48	0	62
	256	5.8	24	27	0	75
64	257	7.6	31	24	0	81
	258	5.8	12	40	0	81
	259	26.1	36	20	0	15
	260	5.8	20	44	0	81
65	261	14.2	31	12	0	30
	262	5.5	23	30	0	30
	263	61.3	29	30	0	38
	264	5.5	40	33	0	89
66	265	17.4	40	40	0	50
	266	5.8	36	46	0	15
	267	41.0	38	43	0	30
	268	5.8	60	36	15	105
67	269	13.8	36	46	0	131
	270	5.7	29	50	0	75
	271	41.1	64	61	0	30
	272	5.8	64	57	0	131
68	273	14.0	53	36	0	38
	274	5.8	38	29	0	81
	275	41.0	44	50	0	105
	276	5.8	43	44	0	124
69	277	13.9	14	10	0	62
	278	5.8	20	10	0	38
	279	41.1	12	16	0	30
	280	5.8	23	23	0	50
70	281	14.7	23	36	0	62
	282	5.8	47	46	0	62
	283	41.2	29	34	0	62
	284	5.8	29	29	0	38
71	285	15.0	34	34	15	124
	286	5.8	27	48	0	30
	287	41.3	29	36	0	105
	288	5.8	40	36	0	124
72	289	13.2	36	30	0	30
	290	5.8	34	34	0	15
	291	41.3	40	40	0	75
	292	5.8	40	44	0	50
73	293	12.8	14	12	0	38
	294	5.8	18	18	0	97
	295	41.2	29	20	0	62

296	5.7	31	43	0	38	
74	297	13.7	29	36	0	62
	298	5.7	38	38	0	38
	299	41.3	34	36	0	38
	300	5.8	40	38	0	38
75	301	14.9	8	10	50	81
	302	5.8	43	33	0	81
	303	41.4	14	16	0	75
	304	5.8	14	18	0	30
76	305	15.2	31	33	0	38
	306	5.7	40	44	0	62
	307	41.4	29	18	89	145
	308	5.7	29	38	0	81
77	309	6.5	0	0	0	145
	310	8.6	31	30	124	184
	311	5.7	75	65	0	50
	312	34.6	2	0	0	81
	313	5.8	36	30	0	159
	314	5.7	40	38	0	89
78	315	12.2	27	33	0	30
	316	5.5	14	27	0	0
	317	35.3	24	24	0	30
	318	5.6	31	67	0	50
79	319	11.9	36	54	0	15
	320	5.7	40	38	0	50
	321	41.6	14	18	0	109
	322	5.7	44	46	0	75
80	323	14.3	36	16	0	131
	324	5.7	38	40	30	97
	325	40.7	27	27	0	38
	326	5.7	29	20	0	30
81	327	13.0	24	16	0	50
	328	5.7	29	33	0	81
	329	54.7	40	36	0	15
	330	5.8	18	27	0	30
82	331	9.9	23	30	0	81
	332	5.7	18	27	0	30
	333	46.6	24	18	0	75
	334	5.7	36	20	0	81
83	335	14.4	56	48	50	50
	336	5.1	68	50	0	97
	337	61.8	31	44	0	62
	338	5.1	53	44	0	97

84	339	22.0	31	36	0	30
	340	5.2	20	16	0	15
	341	60.0	40	34	0	15
	342	5.2	34	43	0	15
85	343	21.8	20	12	0	30
	344	5.6	27	27	0	15
	345	61.7	24	33	0	15
	346	5.6	47	43	0	15
86	347	17.2	27	20	0	89
	348	5.7	34	34	0	89
	349	40.5	29	20	0	97
	350	5.7	34	30	0	116
87	351	14.3	34	38	0	50
	352	5.8	31	38	0	75
	353	41.5	40	40	0	62
	354	5.7	38	48	0	105
88	355	14.0	23	18	0	38
	356	5.7	27	23	0	97
	357	40.7	20	24	0	30
	358	5.8	27	27	0	38
89	359	14.2	29	30	0	30
	360	5.8	8	8	0	109
	361	40.7	8	10	0	89
	362	5.7	12	23	0	97
90	363	12.3	51	50	0	81
	364	5.8	38	33	0	30
	365	35.3	44	36	0	62
	366	5.8	53	48	0	62
91	367	13.4	6	20	0	38
	368	5.8	14	16	0	81
	369	41.0	20	12	0	62
	370	5.8	14	16	0	62
92	371	11.4	8	10	0	38
	372	5.6	38	50	0	89
	373	35.8	51	48	0	38
	374	5.5	56	44	0	81
93	375	7.7	20	10	0	50
	376	5.8	34	10	0	15
	377	40.6	31	33	0	50
	378	5.8	40	30	0	81
94	379	7.5	31	18	0	50
	380	5.8	31	33	0	38
	381	40.3	27	23	0	62
	382	5.6	36	29	0	30

95	383	7.4	18	23	0	75
	384	5.7	47	34	0	38
	385	40.9	31	29	0	116
	386	5.7	38	34	30	81
96	387	7.6	38	46	0	38
	388	5.8	40	46	0	50
	389	49.6	44	46	0	116
	390	5.8	40	50	0	81
97	391	12.8	36	50	0	38
	392	5.8	24	20	0	81
	393	42.6	24	30	0	15
	394	5.8	23	23	0	50
98	395	12.1	29	24	0	30
	396	5.8	23	34	0	38
	397	41.5	24	40	0	124
	398	5.8	36	34	0	145
99	399	7.4	34	36	0	62
	400	5.8	12	33	15	81
	401	42.5	36	27	0	38
	402	5.8	20	36	0	38
100	403	10.8	8	18	0	97
	404	5.8	40	48	0	89
	405	40.3	36	43	0	89
	406	5.8	38	50	0	131
101	407	13.6	47	38	0	38
	408	5.8	23	24	0	30
	409	40.5	31	29	0	105
	410	5.7	40	36	0	75
102	411	10.6	40	40	0	30
	412	5.8	36	44	0	50
	413	42.0	18	51	0	89
	414	5.7	14	43	0	15
103	415	7.3	48	30	0	75
	416	5.7	29	34	0	62
	417	45.5	23	29	0	38
	418	5.7	24	23	0	38
104	419	6.8	31	16	0	50
	420	5.7	34	27	0	97
	421	38.1	38	36	0	62
	422	5.7	40	43	0	50
105	423	6.8	38	43	0	75
	424	5.8	43	38	0	116
	425	48.9	44	40	0	81

	426	5.7	40	54	0	97
106	427	7.5	24	23	0	62
	428	5.6	23	29	0	75
	429	48.1	29	34	0	50
	430	5.8	27	24	0	50
107	431	7.3	47	36	0	30
	432	5.8	47	34	15	50
	433	45.9	34	46	0	50
	434	5.8	53	29	0	89
108	435	7.0	31	40	0	50
	436	5.8	29	48	0	109
	437	48.1	48	46	0	75
	438	5.6	51	46	0	62
109	439	7.4	40	50	0	105
	440	5.8	31	51	0	105
	441	44.9	27	33	0	30
	442	5.8	38	40	30	30
110	443	8.0	23	23	0	38
	444	5.9	38	44	0	89
	445	44.8	36	40	15	50
	446	5.7	29	30	0	38
111	447	7.9	27	12	30	50
	448	5.7	36	36	75	116
	449	46.5	38	30	0	50
	450	5.9	31	38	15	75
112	451	10.5	6	4	105	81
	452	6.5	2	2	81	109
	453	6.5	2	0	75	50
	454	33.5	0	0	89	97
	455	6.4	0	0	166	116
	456	6.4	2	2	15	62
113	457	10.4	14	61	15	38
	458	5.8	40	18	89	172
	459	36.8	51	54	38	62
	460	5.8	23	20	81	50
114	461	7.4	31	4	0	138
	462	5.8	44	54	62	105
	463	36.9	40	51	0	15
	464	5.7	34	33	0	75
115	465	7.6	20	36	30	105
	466	5.8	36	44	97	81
	467	37.6	14	30	30	62
	468	5.8	44	46	50	152

116	469	8.3	36	43	0	30
	470	5.8	29	46	0	81
	471	34.0	36	46	15	50
	472	5.7	51	50	30	81
117	473	8.9	43	36	0	38
	474	5.6	48	30	15	50
	475	24.1	48	30	0	15
	476	5.7	38	33	15	38
118	477	8.9	29	12	0	62
	478	5.7	34	27	15	50
	479	24.9	24	16	0	30
	480	5.6	38	33	15	50
119	481	8.1	29	30	50	109
	482	5.8	34	33	15	105
	483	23.8	27	29	30	97
	484	5.8	34	36	75	109
120	485	7.4	31	33	30	38
	486	5.6	34	36	15	97
	487	23.7	24	38	38	50
	488	5.6	29	40	0	75
121	489	7.2	31	24	50	38
	490	5.8	29	30	0	75
	491	22.8	27	23	30	75
	492	5.8	29	23	50	172
122	493	7.4	31	36	38	62
	494	5.6	40	34	38	62
	495	22.7	38	29	97	30
	496	5.8	34	33	50	62
123	497	7.3	34	33	38	81
	498	5.5	38	36	97	38
	499	22.4	36	38	50	38
	500	5.7	40	33	30	50
124	501	6.9	44	33	15	30
	502	5.6	60	43	38	38
	503	21.8	38	29	50	38
	504	5.4	48	46	50	38
125	505	7.3	38	34	30	50
	506	5.5	20	23	30	30
	507	20.2	34	57	0	38
	508	5.4	24	36	15	62
126	509	6.5	44	33	15	30
	510	6.0	40	33	15	89
127	511	259.1	0	0	0	15

512	186.4	0	0	0	0
128 513	0.0	14	12	0	0
514	0.0	0	0	0	0
515	0.0	0	0	0	62
516	0.0	0	0	0	0
129 517	0.0	2	2	0	15
518	0.0	0	0	0	0
519	0.0	0	0	0	15
520	0.0	0	0	0	15
130 521	0.0	2	2	0	15
522	0.0	0	0	0	0
523	0.0	0	0	0	15
524	0.0	0	0	0	0
131 525	3.0	2	2	0	0
526	1.8	0	0	0	0
527	11.6	0	0	0	15
528	1.7	0	0	0	0
132 529	0.0	2	2	0	30
530	0.0	0	0	0	15
531	0.0	0	0	0	15
532	0.0	0	0	0	0
133 533	0.0	0	0	0	15
534	3.4	0	0	0	15
134 535	26.7	0	2	0	15
536	0.0	0	0	0	15
537	0.0	2	2	0	0
538	0.0	8	4	0	15
135 539	0.0	6	2	0	0
540	0.0	2	0	0	0
541	4.6	0	0	0	0
542	2.5	0	0	0	15
136 543	20.3	2	0	0	15
544	2.3	0	0	0	0
545	3.3	0	2	0	0
546	18.0	0	0	0	15
547	2.3	2	0	0	30
548	2.3	0	2	0	15
137 549	3.3	2	0	0	15
550	2.3	2	0	0	15
551	18.1	0	2	0	15
552	2.3	0	0	0	0
138 553	3.1	0	0	0	15
554	2.3	0	0	0	0

	555	19.9	0	0	0	15
	556	2.3	0	2	0	15
139	557	3.0	2	0	0	15
	558	2.3	0	0	0	0
	559	18.2	2	2	0	0
	560	2.3	0	0	0	15
140	561	4.0	2	0	0	30
	562	3.0	0	0	0	0
	563	19.2	0	0	0	15
	564	2.3	0	0	0	15
141	565	3.0	2	2	0	15
	566	2.3	0	0	0	15
	567	19.6	2	0	0	15
	568	2.3	2	0	0	15
142	569	2.7	0	0	0	0
	570	2.3	2	0	0	15
	571	15.1	2	0	0	0
	572	2.3	0	0	0	30
143	573	2.7	0	0	0	38
	574	2.3	0	0	0	38
	575	18.1	0	0	0	30
	576	2.3	6	2	0	15
144	577	2.9	0	0	0	15
	578	2.3	2	2	0	30
	579	16.9	2	0	0	30
	580	2.3	0	0	0	0
145	581	4.4	0	0	0	30
	582	2.3	0	0	0	0
	583	16.5	0	0	0	30
	584	2.3	0	0	0	15
146	585	6.1	0	0	0	15
	586	2.3	0	2	0	0
	587	16.6	0	0	0	15
	588	2.4	2	0	0	15
147	589	4.6	0	0	0	38
	590	2.4	6	2	0	15
	591	17.4	0	0	0	15
	592	2.4	2	0	0	15
148	593	3.1	2	0	0	0
	594	2.4	0	0	0	0
	595	17.3	2	0	0	15
	596	5.1	2	0	0	15
149	597	2.4	0	0	0	15

598	10.1	0	0	0	15
150 599	18.1	0	0	0	0
600	2.5	0	0	0	38
601	5.5	0	0	0	15
602	2.5	0	0	0	15
151 603	20.9	0	0	0	15
604	3.3	0	0	0	0
605	2.5	0	2	0	0
606	2.5	0	0	0	0
152 607	0.0	0	0	0	15
608	3.2	0	0	0	15
609	2.4	0	0	0	15
610	16.4	0	0	0	15
611	2.3	0	0	0	15
612	3.1	0	0	0	0
153 613	16.6	2	0	0	15
614	2.3	0	0	0	30
615	2.3	0	0	0	30
616	4.7	0	0	0	15
154 617	3.0	2	2	0	15
618	19.1	0	0	0	0
155 619	3.0	0	0	0	15
620	5.3	0	0	0	15
621	2.3	2	2	0	15
622	16.6	0	0	0	15
623	2.3	0	0	0	38
624	5.7	0	0	0	15
156 625	2.3	2	0	0	15
626	14.3	0	0	0	0
157 627	2.4	0	0	0	15
628	5.5	0	0	0	15
629	2.3	0	0	0	15
630	16.6	0	0	0	15
631	2.4	0	0	0	0
632	5.9	0	0	0	30
158 633	2.4	0	0	0	50
634	16.9	0	0	0	15
159 635	2.4	0	0	0	15
636	9.5	0	0	0	15
160 637	6.7	0	0	0	0
638	2.5	2	2	0	15
639	17.6	0	0	0	0
640	2.5	0	0	0	15

161	641	8.2	0	0	0	0
	642	2.5	0	0	0	15
	643	26.8	0	0	0	0
	644	2.5	0	0	0	15
162	645	13.7	0	0	0	30
	646	3.1	0	0	0	0
	647	34.4	0	0	0	0
	648	3.0	0	0	0	15
163	649	13.7	0	0	0	0
	650	3.0	0	0	0	0
	651	36.0	0	0	0	15
	652	3.1	0	0	0	0
164	653	6.8	0	0	0	0
	654	2.6	0	0	0	0
	655	0.0	0	0	0	15
	656	0.0	0	0	0	0
165	657	0.0	0	0	0	0
	658	10.0	0	0	0	0
166	659	2.1	0	0	0	0
	660	0.9	0	0	0	15
	661	0.0	2	0	0	15
	662	0.0	0	0	0	30
167	663	0.0	0	0	0	15
	664	0.0	0	0	0	30
	665	17.0	2	0	0	30
	666	2.5	0	0	0	38
168	667	5.9	0	0	0	50
	668	2.5	2	0	0	15
	669	17.7	0	0	0	0
	670	2.4	0	0	0	0
169	671	6.7	0	0	0	15
	672	2.4	0	0	0	15
	673	17.0	0	0	0	15
	674	2.4	0	0	X	X
170	675	6.5	0	0	X	X
	676	2.3	0	0	X	X
	677	16.6	0	0	X	X
	678	2.3	0	0	X	X