MISSISSIPPI STATE UNIVERSITY

FOREST AND WILDLIFE RESEARCH CENTER

Department of Sustainable Bioproducts

(Formerly Department of Forest Products)

Sixth Annual Evaluation of MSU/RTA Alternative Preservative Study

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This report covers the sixth annual evaluation of the full length crossties exposed as part of the MSU/RTA alternative preservative study. A visual evaluation of the exposed top surface was conducted for all ties at both exposure sites. One tie from each treatment group, at both sites, was selected at random to be examined on all four surfaces and to be cross-cut near the inner spike holes for interior evaluation.

General Observations:

No unexpected results were found. Checks and/or splits were noted to be worse at Site 2 probably due to more direct sunlight exposure. Termite activity was not intensive as expected at this site which again may be due to the sunlight exposure. However, the decay at this site was active. Ties at Site 1 were more moist/wet due to the increased rain fall, shade and leaf litter as well as the clay soil at this site and these ties showed an increased amount of decay in the controls and more vigorous termite (*Reticulitermes flavipes)* activity due to these conditions. General photographs documenting the condition of the sites and some of the noted deterioration can be seen below (Figures 1 - 6). The tie number denotes the position of exposure as recorded on the plot-maps. Copies of the inspection forms as well as photographs of the segmented ties can be found in the appendix.

Figure 1 - An overall view of exposure Site 2 illustrating the conditions at the time of inspection.

Figure 2 - A general photograph of Site 1 at the time of inspection.

Site 1 - Dorman Lake Test Site

Figure 3 - Tie #318 (red oak/control) showing severe decay damage.

Figure 4 - Tie #226 (red oak/control) with heavy decay.

Site 2 – Formosan Termite Research Facility

Figure 5 - Tie #126 with decay on bottom surface.

Figure 6 - Tie #334 with checking, decay and "iron sickness".

APPENDIX:

Site 1 - Dorman Lake Test Site (bottom/cross-section)

Figure 1 - Tie #3 (Cedarcide/white oak).

Figure 2 – Tie #3 (Cedarcide/white oak).

Figure 3 - Tie #22 (Cedarcide/red oak) with decay and beetle damage.

Figure 4- Tie #22 (Cedarcide/red oak) showing areas of decay.

Figure 5 - Tie #27 (Turada) with trace decay.

Figure 6 - Tie #27 (Turada).

Figure 7 - Tie #39 (Boatright/red oak/borate/creosote 7pcf).

Figure 8 - Tie #39 (Boatright/red oak/borate/creosote 7pcf).

Figure 9 - Tie #50 (Boatright/white oak/creosote to refusal).

Figure 10 - Tie #50 (Boatright/white oak/creosote to refusal).

Figure 11 - Tie #55 (Boatright/white oak/borate/creosote to refusal).

Figure 12 - Tie #55 (Boatright/white oak/borate/creosote to refusal).

Figure 13- Tie#70 (Boatright/red oak/creosote 5pcf).

Figure 14 - Tie#70 (Boatright/red oak/creosote 5pcf).

Figure 15 - Tie #84 (Boatright/red oak/borate/creosote 5pcf).

Figure 16 - Tie #84 (Boatright/red oak/borate/creosote 5pcf).

Figure 17- Tie #87 (Lonza/white oak).

Figure 18 - Tie #87 (Lonza/white oak).

Figure 19- Tie#97 (Lonza/red oak).

Figure 20 - Tie#97 (Lonza/red oak).

Figure 21- Tie #113 (Lonza/white oak) with trace decay mycelium growing.

Figure 22 - Tie #113 (Lonza/white oak).

Figure 23- Tie #126 (Lonza/red oak).

Figure 24 - Tie #126 (Lonza/red oak).

Figure 25- Tie #134 (KMG/red oak).

Figure 26 - Tie #134 (KMG/red oak).

Figure 27- Tie #139 (KMG/white oak).

Figure 28 - Tie #139 (KMG/White oak).

Figure 29 - Tie #149 (Nisus/white oak/borate/oil B).

Figure 30 - Tie #149 (Nisus/white oak/borate/oil B).

Figure 31- Tie #157 (Nisus/white oak/borate/oil A).

Figure 32 - Tie #157 (Nisus/white oak/borate/oil A).

Figure 33 – Tie #169 (white oak/control) with light decay and fruiting bodies.

Figure 34 – Tie #169 (white oak/control).

Figure 35 - Tie #172 (red oak/control) with heavy decay on bottom.

Figure 36 - Tie #172 (red oak/control) with decay visible in cross-section.

Figure 37 - Tie #173 (Nisus/red oak/borate/oil B).

Figure 38 - Tie #173 (Nisus/red oak/borate/oil B).

Figure 39 - Tie #183 (Nisus/red oak/borate/oil A).

Figure 40 - Tie #183 (Nisus/red oak/borate/oil A).

Figure 41 - Tie #195 (Nisus/red oak/borate).

Figure 42 - Tie #195 (Nisus/red oak/borate).

Figure 43 - Tie #205 (Nisus/white oak/borate).

Figure 44 - Tie #205 (Nisus/white oak/borate).

Figure 45 Tie #214 (red oak/CuNap).

Figure 46 - Tie #214 (red oak/CuNap).

Figure 47 Tie #222 (red oak/borate/CuNap).

Figure 48 - Tie #222 (red oak/borate/CuNap).

Figure 49 - Tie #236 (white oak/borate/CuNap).

Figure 50 - Tie #236 (white oak/borate/CuNap).

Figure 51 Tie #246 (Koppers/white oak/creosote).

Figure 52 - Tie #246 (Koppers/white oak/creosote).

Figure 53 Tie #249 (Koppers/white oak/creosote petroleum).

Figure 54 - Tie #249 (Koppers/white oak/creosote petroleum).

Figure 55 - Tie #258 (Koppers/red oak/creosote).

Figure 56 - Tie #258 (Koppers/red oak/creosote).

Figure 57 - Tie #260 (Koppers/red oak/creosote petroleum).

Figure 58 - Tie #260 (Koppers/red oak/creosote petroleum).

Figure 59 - Tie #290 (Envirosafe/red oak) termite surface etching and trace decay.

Figure 60 - Tie #290 (Envirosafe/red oak).

Figure 61 - Tie #322 (Envirosafe/white oak) with termite grazing and trace decay.

Figure 62 - Tie #322 (Envirosafe/white oak).

Figure 63 - Tie #340 (white oak/CuNap).

Figure 64 - Tie #340 (white oak/CuNap).

Site 2 – Formosan Termite Research Facility

Figure 1 - Tie #8 (Turada) with light decay.

Figure 2 - Tie #8 (Turada).

Figure 3 – Tie #19 (Envirosafe/red oak) with light decay.

Figure 4 – Tie #19 (Envirosafe/red oak) with decay around check.

Figure 5 – Tie #22 (Envirosafe/white oak) with light decay on bottom.

Figure 6 – Tie #22 (Envirosafe/white oak).

Figure 7 – Tie #32 (Boartright/red oak/creosote 5pcf).

Figure 8 – Tie #32 (Boatright/red oak/creosote 5pcf).

Figure 9 - Tie #42 (Boatright/red oak/borate/creosote 5pcf).

Figure 10 - Tie #42 (Boatright/red oak/borate/creosote 5pcf).

Figure 11 - Tie #52 (Boatright/white oak/creosote to refusal) light decay on bottom.

Figure 12 - Tie #52 (Boatright/white oak/creosote to refusal) decay around check.

Figure 13 - Tie #62 (Boatright/white oak/borate/creosote to refusal).

Figure 14 - Tie #62 (Boatright/white oak/borate/creosote to refusal).

Figure 15 - Tie #72 (Boatright/red oak/borate/creosote 7pcf).

Figure 16 - Tie #72 (Boatright/red oak/borate/creosote 7pcf) knot hole/pocket on bottom.

Figure 17 - Tie #87 (Lonza/red oak) decay and trace termite damage.

Figure 18 - Tie #87 (Lonza/red oak) decay evident in cross-section.

Figure 19 - Tie #96 (Nisus/red oak/borate/oil A).

Figure 20 – Tie #96 (Nisus/red oak/borate/oil A).

Figure 21 – Tie #106 (Nisus/red oak/borate/oil B).

Figure 22 - Tie #106 (Nisus/red oak/borate/oil B) with knots in cross-section.

Figure 23 - Tie #123 (Nisus/white oak/borate/oil B).

Figure 24 - Tie #123 (Nisus/white oak/borate/oil B).

Figure 25 - Tie #126 (Nisus/red oak/borate) with decay on bottom.

Figure 26 - Tie #126 (Nisus/red oak/borate).

Figure 27 - Tie #136 (Nisus/white oak/borate/oil A).

Figure 28 - Tie #136 (Nisus/white oak/borate/oil A).

Figure 29 - Tie #145 (Lonza/White oak) with decay on bottom.

Figure 30 - Tie #145 (Lonza/white oak) with decayed area marked.

Figure 31 - Tie #155 (Nisus/white oak/borate) with light decay on bottom.

Figure 32 - Tie #155 (Nisus/white oak/borate) with decay on bottom.

Figure 33 - Tie #167 (white oak control) with decay evident on all surfaces.

Figure 34 - Tie #167 (white oak control) with decay evident on all surfaces.

Figure 35 Tie #169 (red oak control) decayed to the point of failure.

Figure 36 - Tie #169 (red oak control) failed due to decay.

Figure 37 - Tie #171 (Lonza/red oak) light decay on bottom and side.

Figure 38 - Tie #171 (Lonza/red oak).

Figure 39 - Tie #188 (Lonza/white oak).

Figure 40 - Tie #188 (Lonza/white oak).

Figure 41 - Tie #191 (Cedarcide/white oak) with light decay and termite activity.

Figure 42 - Tie #191 (Cedarcide/white oak) with decay.

Figure 43 - Tie #203 (Cedarcide/red oak) with decay.

Figure 44 - Tie #203 (Cedarcide/red oak) with decay in cross-section.

Figure 45 - Tie #213 (white oak/borate/CuNap).

Figure 46 - Tie #213 (white oak/borate/CuNap).

Figure 47 - Tie #221 (red oak/CuNap).

Figure 48 - Tie #221 (red oak/CuNap).

Figure 49 - Tie #233 (white oak/CuNap).

Figure 50 - Tie #233 (white oak/CuNap).

Figure 51 - Tie #242 (red oak/borate/CuNap).

Figure 52 - Tie #242 (red oak/borate/CuNap).

Figure 53 - Tie #271 (KMG/white oak).

Figure 54 - Tie #271 (KMG/white oak).

Figure 55 - Tie #279 (KMG/red oak).

Figure 56 - Tie #279 (KMG/red oak).

Figure 57 - Tie #297 (Koppers/white oak/creosote).

Figure 58 - Tie #297 (Koppers/white oak/creosote).

Figure 59 - Tie #301 (Koppers/red oak/creosote petroleum).

Figure 60 - Tie #301 (Koppers/red oak/creosote petroleum) with decay in cross-section.

Figure 61 - Tie #311 (Koppers/white oak/creosote petroleum).

Figure 62 - Tie # 311 (Koppers/white oak/creosote petroleum).

Figure 63 - Tie # 320 (Koppers/red oak/creosote).

Figure 64 - Tie #320 (Koppers/red oak/creosote).

Plot Map RTA Ties (Dorman - installed 4-08)

Position Row 1 runs North - South (Eastern most row)

			May-14				
			Decay	Termite	Decay	Termite	Comments
1	wo-2	Cedar	x	x	x	x	Cut 5/10
2	wo-3		x	x	x	x	Cut 5/12
3	wo-4		8	8	x	x	Cut 5/14
4	wo-5		10	10			split
5	wo-7		10	10			check
6	wo-6		10	10			
7	wo-1		9	10			
8	wo-10		9	10			check
9	wo-8		10	10			
10	wo-9		8	10			
11	wo-21		8	9			live termites/DK top&bottom
12	ro-18		x	x	x	x	Cut 5/10
13	ro-19		x	x	x	x	Cut 5/12
14	ro-20		10	10			
15	ro-7		10	10			
16	ro-6		10	10			check
17	ro-5		10	10			alligator
18	ro-21		10	10			
19	ro-4		10	10			check
20	ro-3		10	10			check
21	ro-2		9	10			check
22	ro-1		7	8	x	x	Cut 5/14
23	5	Turada	x	x	x	x	Cut 5/10
24	6		10	10			
25	7		10	10			
26	4		10	10			
27	2		9.5	10	x	x	Cut 5/14
28	9		10	10			
29	8		10	10			
30	10		10	10			
31	1		10	10			
32	3		x	x	x	x	Cut 5/12
33	SROBC-7	Seaman	x	x	x	x	Cut 5/10
34	SROBC-7		x	x	x	x	Cut 5/12
35	SROBC-7		10	10			
36	SROBC-7		10	10			
37	SROBC-7		10	10			
38	SROBC-7		10	10			check
39	SROBC-7		10	10	x	x	Cut 5/14
40	SROBC-5		x	x	x	x	Cut 5/10
41	SROBC-7		10	10			
42	SWOCEF		x	x	x	x	Cut 5/10
43	SWOCEF		x	x	x	x	Cut 5/12
44	SWOCEF		10	10			
45	SWOCEF		10	10			

46	SWOCEF		10	10			
47	SWOCEF		10	10			
48	SWOCEF		10	10			
49	SWOCEF		10	10			
50	SWOCEF		10	10	x	x	Cut 5/14
51	SROC-7		x	x	x	x	Cut 5/10
52	SWOC-5		x	x	x	x	Cut 5/10
53	SROBC-5		7	9			
54	SWOBCREF		x	x	x	x	Cut 5/10
55	SWOBCREF		10	10	x	x	Cut 5/14
56	SWOBCREF		10	10			
57	SWOBCREF		10	10			check
58	SWOBCREF		10	10			
59	SWOBCREF		10	10			
60	SWOBCREF		10	10			
61	SWOBCREF		x	x	x	x	Cut 5/12
62	SROC5		x	x	x	x	Cut 5/10
63	SROC5		x	x	x	x	Cut 5/12
64	SROC5		10	10			
65	SROC5		10	10			
66	SROC5		10	10			
67	SROC5		10	10			
68	SROC5		10	10			
69	SROC5		10	10			
70	SROC5		10	10	x	x	Cut 5/14
71	SROBC5		x	x	x	x	Cut 5/12
72	SROBC5		10	10			
73	SROBC5		10	10			
74	SROBC5		10	10			
75	SWOBCREF		10	10			
76	SWOCREF		10	10			
77	SROC5		10	10			
78	SROBC5		10	10			check
79	SROBC5		10	10			
80	SROBC5		10	10			check
81	SROBC5		10	10			
82	SWOBCREF		10	10			
83	SROBC5		10	10			
84	SROBC5		10	10	x	x	Cut 5/14
85	wo-136	Lonza	x	x	x	x	Cut 5/10
86	wo-130		x	x	x	x	Cut 5/12
87	wo-129		10	10	x	x	Cut 5/14
88	wo-121		10	10			
89	wo-127		10	10			
90	wo-124		10	10			
91	wo-128		10	10			
92	wo-122		10	10			
93	wo-123		10	10			
94	wo-125		10	10			

95	ro-105		x	x	x	x	Cut 5/10
96	ro-104		x	x	x	x	Cut 5/12
97	ro-103		10	10	x	x	Cut 5/14
98	ro-102		10	10			
99	ro-110		10	10			
100	ro-107		10	10			
101	ro-106		10	10			
102	ro-109		10	10			
103	ro-101		10	10			
104	ro-108		10	10			
105	wo-135		x	x	x	x	Cut 5/10
106	wo-134		x	x	x	x	Cut 5/12
107	wo-138		10	10			
108	wo-139		10	10			
109	wo-137		10	10			
110	wo-132		10	10			
111	wo-136		9	10			
112	wo-140		10	10			
113	wo-133		10	10	x	x	Cut 5/14
114	wo-131		9	10			
115	ro-182		0	8	0	0	FAILED
116	wo-181		8	10			
117	ro-114		x	x	x	x	Cut 5/10
118	ro-120		10	10			
119	ro-117		x	x	x	x	Cut 5/12
120	ro-112		10	10			
121	ro-113		10	10			
122	ro-115		10	10			check
123	ro-119		10	10			
124	ro-116		10	10			
125	ro-111		10	10			
126	ro-118		10	10	x	x	Cut 5/14
127	P3RO7-39	KMG	10	10			
128	P3RO7-36		10	10			
129	P3RO7-37		10	10			
130	P3RO7-38		10	10			
131	P3RO7-23		10	10			
132	P3RO7-40		10	10			
133	P3RO7-26		10	10			
134	P3RO7-42		10	10	x	x	Cut 5/14
135	P3RO7-35		x	x	x	x	Cut 5/12
136	P3RO7-41		x	x	x	x	Cut 5/10
137	P3WO7-5		x	x	x	x	Cut 5/10
138	P3WO7-4		x	x	x	x	Cut 5/12
139	P3WO7-6		10	10	x	x	Cut 5/14
140	P3WO7-7		10	10			
141	P3WO7-11		10	10			
142	P3WO7-17		10	10			
143	P3WO7-20		10	10			

144	P3WO7-2		10	10			
145	P3WO7-8		10	10			
146	P3WO7-3		10	10			
147	Woctrl-21		8	9			live termites/check
148	Roctrl-43		9	9			check
149	WO122	Nisus	10	10	x	x	Cut 5/14
150	WO14		10	10			
151	WO128		10	10			check
152	WO61		10	10			check
153	WO5		10	10			
154	WO1		10	10			check
155	WO71		10	10			check
156	WO98		10	10			
157	WO139		10	10	x	x	Cut 5/14
158	WO135		10	10			check
159	WO144		10	10			
160	WO126		10	10			check
161	WO131		10	10			check
162	WO138		10	10			split
163	WO130		10	10			check
164	WO125		x	x	x	x	Cut 5/12
165	WO29		x	x	x	x	Cut 5/12
166	WO52		x	x	x	x	Cut 5/10
167	WO137		10	10			
168	WO134		x	x	x	x	Cut 5/10
169	WO44ctrl		8	8	x	x	Cut 5/14
170	WO94ctrl		x	x	x	x	Cut 5/12
171	RO6ctrl		x	x	x	x	Cut 5/12

172	RO-51ctrl		7	9	x	x	Cut 5/14
173	RO21		10	10	x	x	Cut 5/14
174	RO22		10	10			
175	RO15		10	10			check
176	RO62		10	10			
177	RO46		10	10			
178	RO2		10	10			
179	RO24		x	x	x	x	Cut 5/12
180	RO20		x	x	x	x	Cut 5/10
181	RO37		x	x	x	x	Cut 5/10
182	RO31		10	10			
183	RO59		10	10	x	x	Cut 5/14
184	RO89		10	10			
185	RO13		10	10			
186	RO58		10	10			
187	RO57		10	10			
188	RO12		10	10			check
189	RO56		10	10			
190	RO25		10	10			
191	RO43		10	10			check
192	RO10		x	x	x	x	Cut 5/12
193	RO54		x	x	x	x	Cut 5/10
194	RO38		x	x	x	x	Cut 5/12
195	RO45		10	9.5	x	x	Cut 5/14
196	RO16		10	10			
197	RO72		10	10			
198	RO77		10	10			
199	RO40		10	10			
200	RO55		10	10			
201	RO18		10	10			
202	RO3		10	10			
203	WO49		x	x	x	x	Cut 5/10
204	WO121		x	x	x	x	Cut 5/12
205	WO68		9	9	x	x	Cut 5/14
206	WO11		10	10			
207	WO65		10	10			
208	WO92		10	10			
209	WO60		9	10			
210	WO47		10	10			
211	WO90		10	10			
212	WO69		10	10			
213	MRO8	Merichem	x	x	x	x	Cut 5/10
214	MRO8		10	10	x	x	Cut 5/14
215	MROB8		x	x	x	x	Cut 5/10
216	MROB8		10	10			
217	MROB8		10	10			
218	MROB8		10	10			
219	MROB8		10	10			check
220	MROB8		10	10			

221	MROB8	9	10			
222	MROB8	10	10	x	x	Cut 5/14
223	MROB8	x	x	x	x	Cut 5/12
224	MWO8ctrl	7	10			
225	MWO8ctrl	8	10			
226	MRO8ctrl	0	7	0	0	FAILED
227	MRO8	x	x	x	x	Cut 5/12
228	MRO8	10	10			
229	MRO8	10	10			
230	MRO8	10	10			
231	MRO8	10	10			
232	MRO8	10	10			
233	MRO8	10	10			
234	MRO8	10	10			
235	MWOB8	x	x	x	x	Cut 5/10
236	MWOB8	10	10	x	x	Cut 5/14
237	MWOB8	10	10			
238	MWOB8	10	10			
239	MWOB8	10	10			
240	MWOB8	10	10			
241	MWOB8	10	10			
242	MWOB8	10	10			
243	MWOB8	10	10			
244	MWOB8	x	x	x	x	Cut 5/12

Row 2 runs North - South (May-14

		Decay	Termite	Decay	Termite	Comments
245	6	x	x	x	x	Cut 5/10
246	14	10	10	x	x	Cut 5/14
247	79	10	10			
248	73	x	x	x	x	Cut 5/12
249	75	10	10	x	x	Cut 5/14
250	?	10	10			
251	80	10	10			
252	?	10	10			
253	62	10	10			
254	82	10	10			
255	68	10	10			
256	74	10	10			
257	37	x	x	x	x	Cut 5/10
258	26	10	10	x	x	Cut 5/14
259	53	x	x	x	x	Cut 5/10
260	59	10	10	x	x	Cut 5/14
261	52	10	10			
262	48	10	10			
263	45	10	10			
264	67	x	x	x	x	Cut 5/10
265	51?	10	10			

266	?		10	10			
267	88		10	10			
268	46		x	x	x	x	Cut 5/12
269	12		10	10			check
270	20		x	x	x	x	Cut 5/12
271	31		x	x	x	x	Cut 5/12
272	17		10	10			
273	4		10	10			
274	10?		10	10			
275	16		10	10			
276	5		10	10			
277	27		10	10			
278	36		10	10			
279	24		10	10			
280	?		10	10			
281	22		10	10			
282	39		10	10			
283	25		10	10			
284	?		10	10			
285	WO30	Enviro	x	x	x	x	Cut 5/10
286	RO6		x	x	x	x	Cut 5/10
287	RO7		10	10			
288	RO8		10	10			
289	RO9		10	10			
290	RO1		9.5	9.5	x	x	Cut 5/14
291	RO2		10	10			
292	RO3		10	10			check
293	RO4		10	10			
294	RO5		10	10			
295	RO10		x	x	x	x	Cut 5/12
296	6	BioP					
297	1						
298	7						
299	8						
300	9						
301	10						
302	2						
303	3						
304	4						
305	5						
306	12						control?
307	9469						
308	9459						
309	9460						
310	9471						
311	9472						
312	9470						
313	9464						
314	11						control?

315	9468						
316	9466						
317	9467						
318	roctrl	Enviro	0	7	0	0	FAILED
319	roctrl		6	9			
320	woctrl		7	10			
321	woctrl		6	9			fruiting body
322	WO22		9.5	9.5	x	x	Cut 5/14
323	WO23		10	10			
324	WO24		10	10			
325	W025		10	10			
326	WO27		10	10			
327	WO28		10	10			
328	WO29		10	10			
329	WO21		9.5	10			
330	WO26		x	x	x	x	Cut 5/12
331	MWO8	Meri	x	x	x	x	Cut 5/12
332	MWO8		10	10			
333	MWO8		10	10			check
334	MWO8		10	10			
335	MWO8		10	10			
336	MWO8		10	10			
337	MWO8		10	10			
338	MWO8		10	10			
339	MWO8		10	10			
340	MWO8		10	10	x	x	Cut 5/14
341	MWO8		x	x	x	x	Cut 5/10/heart rot

Plot Map RTA Ties (McNeill)

Position Row 1 runs East - West (Northern most row)

April-14

			Decay		Termite		Decay	Termite	Comments
Turada	1	1	x		x		x	x	cut 4/10
	2	2		10		10			
	3	3		10		10			
	4	4		10		10			large check
	5	5		10		10			
	6	6		10		10			
	7	7		10		10			
	8	8		9		10	x	x	cut 4/14
	9	9		8		10			
	10	10	x		x		x	x	cut 5/12
Envirosafe	11	11RO	x		x		x	x	cut 5/12
	12	15RO		10		10			large check
	13	14RO		10		10			large check
	14	13RO		10		10			large check
	15	12RO		10		10			large check
	16	20RO		10		10			
	17	19RO		10		10			large check
	18	18RO		10		10			large check
	19	17RO		9		10	x	x	cut 4/14
	20	16RO	x		x		x	x	large check/cut 4/10
	21	35WO	x		x		x	x	cut 4/10
	22	34WO		9		10	x	x	cut 4/14
	23	33WO		10		10			large check
	24	32WO		10		10			large check
	25	31WO		10		10			large check
	26	40WO		10		10			large check
	27	39WO		10		10			large check
	28	38WO		10		10			
	29	37WO		10		10			large check
	30	36WO	x		x		x	x	cut 5/12
Seaman	31	SROC5	x		x		x	x	cut 4/10
	32	SROC5		10		10	x	x	cut 4/14
	33	SROC5		10		10			large check
	34	SROC5		10		10			pic 09/large check
	35	SROC5		10		10			large check
	36	SROC5		10		10			
	37	SROC5		10		10			
	38	SROC5		10		10			
	39	SROC5		10		10			large check
	40	SROC5	x		x		x	x	cut 5/12
	41	SROBC5	x		x		x	x	split/cut 4/10
	42	SROBC5		10		10	x	x	cut 4/14
	43	SROBC5		10		10			
	44	SROBC5		10		10			
	45	SROBC5		10		10			large check
	46	SROBC5		10		10			
	47	SROBC5		10		10			
	48	SROBC5		10		10			

	49	SROBC5		10		10			
	50	SROBC5	x		x		x	x	cut 5/12
	51	SWOCREF	x		x		x	x	cut 4/10
	52	SWOCREF		9		10	x	x	cut 4/14
	53	SWOCREF		10		10			
	54	SWOCREF		10		10			large check
	55	SWOCREF		10		10			
	56	SWOCREF		10		10			
	57	SWOCREF		10		10			
	58	SWOCREF		10		10			
	59	SWOCREF		10		10			large check
	60	SWOCREF	x		x		x	x	cut 5/12
	61	SWOBCREF	x		x		x	x	cut 4/10
	62	SWOBCREF		10		10	x	x	cut 4/14
	63	SWOBCREF		10		10			large check
	64	SWOBCREF		10		10			
	65	SWOBCREF		10		10			large check
	66	SWOBCREF		10		10			
	67	SWOBCREF		10		10			large check
	68	SWOBCREF		10		10			large check
	69	SWOBCREF		10		10			large check
	70	SWOBCREF	x		x		x	x	cut 5/12
	71	SROBC7	x		x		x	x	cut 4/10
	72	SROBC7		10		10	x	x	cut 4/14
	73	SROBC7		10		10			
	74	SROBC7		10		10			
	75	SROBC7		10		10			large check
	76	SROBC7		10		10			
	77	SROBC7		10		10			large check
	78	SROBC7		10		10			
	79	SROBC7		10		10			large check
	80	SROBC7	x		x		x	x	cut 5/12
	81	ctrlSROC7	x		x		x	x	cut 4/10
	82	ctrlSWOC5	x		x		x	x	cut 4/10
	83	ctrlSWOC5		8		10			pic 09/active DK/FB
Lonza	84	209	x		x		x	x	cut 4/10
	85	206		10		10			large check
	86	204		10		10			large check
	87	201		7		9	x	x	cut 4/14
	88	208		10		10			large check
	89	203		10		10			
	90	205		10		10			large check
	91	207		10		10			
	92	210		8		10			large check
	93	202	x		x		x	x	cut 5/12
Nisus	94	240	x		x		x	x	cut 4/10
	95	237	x		x		x	x	cut 5/12
	96	243		10		10	x	x	cut 4/14
	97	238		10		10			large check
	98	245		10		10			large check
	99	239		10		10			large check
	100	247		10		10			large check

	101	241		10		10			
	102	233		10		10			large check
	103	242		10		10			large check
	104	203	x		x		x	x	cut 4/10
	105	227	x		x		x	x	cut 5/12
	106	207		10		10	x	x	cut 4/14
	107	200		10		10			large check
	108	229		10		10			
	109	206		10		10			large check
	110	216		10		10			large check
	111	220		10		10			
	112	212		10		10			large check
	113	222		10		10			
	114	217	x		x		x	x	cut 4/10
	115	264		10		10			large check
	116	287		10		10			large check
	117	253		10		10			large check
	118	283		10		10			large check
	119	219	x		x		x	x	cut 5/12
	120	276		10		10			large check
	121	292		10		10			
	122	269		10		10			large check
	123	289		10		10	x	x	cut 4/14
	124	225	x		x		x	x	cut 4/10
	125	204	x		x		x	x	cut 5/12
	126	234		9		10	x	x	cut 4/14
	127	215		10		10			large check
	128	231		10		10			large check
	129	213		10		10			
	130	205		10		10			large check
	131	208		10		10			large check
	132	210		9		10			split
	133	226		10		10			
	134	305	x		x		x	x	cut 4/10
	135	201		10		10			large check
	136	313		10		10	x	x	cut 4/14
	137	294		10		10			
	138	308		10		10			large check
	139	301		10		10			
	140	291		10		10			large check
	141	309		10		10			large check
	142	296		10		10			
	143	314		10		10			
Lonza	144	236	x		x		x	x	cut 5/12
	145	232		8		10	x	x	cut 4/14
	146	238		10		10			
	147	234		10		10			
	148	231		10		10			large check
	149	233		10		10			large check
	150	235		10		10			large check
	151	239		10		10			
	152	240		10		10			

	153	237	x		x		x	x	cut 4/10
Nisus	154	272	x		x		x	x	cut 4/10
	155	223		9		10	x	x	cut 4/14
	156	256	x		x		x	x	cut 5/12
	157	297		10		10			
	158	295		10		10			split
	159	267		10		10			split
	160	299		10		10			
	161	261		10		10			
	162	214		10		10			
	163	275		10		10			
Lonza	164	281		8		10			fruiting body
	165	282		6		10			fruiting body/loose plate
Nisus	166	315		10		10			large check
	167	316		7		10	x	x	cut 4/14
	168	249		4		10			
	169	248		0		9	x	x	cut 4/14

Row 2 runs East - West (middle row)

April-14

			Decay		Termite		Decay	Termite	Comments
Lonza	170	220	x		x		x	x	cut 4/10
	171	218		9		10	x	x	cut 4/14
	172	214		10		10			large check
	173	219		10		10			
	174	212		10		10			
	175	217		10		10			large check
	176	216		10		10			large check
	177	211		10		10			
	178	213		10		10			large check
	179	215	x		x		x	x	cut 5/12
	180	224	x		x		x	x	cut 4/10
	181	228		10		10			large check
	182	221		10		10			large check
	183	222		10		10			
	184	230		10		10			large check
	185	225		10		10			large check
	186	226		10		10			large check
	187	229		10		10			large check
	188	223		10		10	x	x	cut 4/14
	189	227	x		x		x	x	cut 5/12
Cedarcide	190	19W	x		x		x	x	cut 4/10
	191	20W		9		10	x	x	cut 4/14
	192	15W		10		10			split
	193	16WC		10		10			large check
	194	18W		10		10			split
	195	17W		10		10			shake
	196	10R	x		x		x	x	cut 4/10
	197	9RC		10		10			large check
	198	8R	x		x		x	x	cut 5/12
	199	11W	x		x		x	x	cut 5/12
	200	12W		10		10			split
	201	13W		10		10			split
	202	14W		10		10			split
	203	11R		7		10	x	x	cut 4/14
	204	12R		10		10			split
	205	13R		10		10			split
	206	14R		10		10			
	207	15R		10		10			split
	208	16R		9		10			alligator
	209	17R		8		10			alligator
	210	22R		10		10			large check
	211	22W		10		10			split
Merichem	212	MWOB8	x		x		x	x	cut 4/10
	213	MWOB8		10		10	x	x	cut 4/14
	214	MWOB8		10		10			large check
	215	MWOB8		10		10			
	216	MWOB8		10		10			large check
	217	MWOB8		10		10			large check

	218	MWOB8	x		x		x	x	cut 5/12
	219	MRO8	x		x		x	x	cut 5/12
	220	MRO8	x		x		x	x	cut 4/10
	221	MRO8		10		10	x	x	cut 4/14
	222	MRO8		10		10			pic 09
	223	MRO8		9.5		10			large check
	224	MRO8		10		10			
	225	MRO8		10		10			large check
	226	MRO8		10		10			split
	227	MWOB8		10		10			
	228	MWOB8		10		10			large check
	229	MRO8		10		10			
	230	MRO8		10		10			large check
	231	MRO8		10		10			
	232	MWO8	x		x		x	x	cut 4/10
	233	MWO8		10		10	x	x	cut 4/14
	234	MWO8		10		10			large check
	235	MWO8		10		10			
	236	MWO8		10		10			
	237	MWO8		10		10			
	238	MWO8		10		10			large check
	239	MWO8		10		10			large check
	240	MWO8		10		10			
	241	MROB8	x		x		x	x	cut 4/10
	242	MROB8		10		10	x	x	cut 4/14
	243	MROB8	x		x		x	x	cut 5/12
	244	MWO8	x		x		x	x	cut 5/12
	245	MROB8		10		10			large check
	246	MROB8		10		10			
	247	MROB8		10		10			large check
	248	MROB8		10		10			large check
	249	MROB8		10		10			large check
	250	MROB8		10		9			spike kill
	251	MROB8		10		9			pic 09/DK
	252	MROCONT		10		10			
BioPres	253	MWOCONT		10		10			pic 09/DK top side
	254	MWOCONT		10		10			
	255	75							
	256	67							
	257	68							DK top side
	258	69							DK top side
	259	71							
	260	74							DK top side
	261	82							
	262	77							
	263	93							
	264	?							DK top side
	265	66							
	266	65							
	267	73							
KMG	270	1	x		x		x	x	cut 5/12
	271	14		10		10	x	x	cut 4/14

	272	12		10		10			large check
	273	16		10		10			
	274	15		10		10			large check
	275	18		10		10			
	276	19		10		10			
	277	10	x		x		x	x	cut 4/10
	278	30	x		x		x	x	cut 4/10
	279	33		10		10	x	x	cut 4/14
	280	34		10		10			
	281	24		10		10			
	282	27		10		10			large check
	283	28		10		10			
	284	29		10		10			large check
	285	32		10		10			large check
	286	13		10		10			large check
	287	31	x		x		x	x	cut 5/12
	288	9		10		10			large check
	289	25		10		10			
	290	22		9		10			
	291	44		10		10			large check
Koppers	292	11	x		x		x	x	cut 5/12
	293	?		10		10			
	294	?		10		10			
	295	?		10		10			
	296	19	x		x		x	x	cut 4/10
	297	15		10		10	x	x	cut 4/14
	298	?		10		10			
	299	?		10		10			large check
	300	47	x		x		x	x	cut 4/10
	301	44		9		10	x	x	cut 4/14
	302	41		10		10			
	303	55		10		10			large check
	304	60		10		10			
	305	43	x		x		x	x	cut 5/12
	306	51		10		10			
	307	?		10		10			
	308	76		10		10			large check
	309	65		10		10			
	310	61	x		x		x	x	cut 4/10
	311	70		10		10	x	x	cut 4/14
	312	72		10		10			
	313	71		10		10			
	314	64		10		10			
	315	2?		10		10			large check
	316	?		10		10			
	317	34	x		x		x	x	cut 4/10
	318	38	x		x		x	x	cut 5/12
	319	?		10		10			
	320	29		10		10	x	x	cut 4/14
	321	?		10		10			
	322	21?		10		10			
	323	31		10		10			

	324	35		10		10		
	325	23		10		10		large check
	326	66	x		x		x	x	cut 5/12
	327	67		10		10		
	328	42		10		10		
	329	49		10		10		
	330	7		10		10		
	331	8		10		10		
	332	WO	x		x		x	x	cut 5/12
	333	RO	x		x		x	x	FST Alate wings found/cut 5/12
	334	RO		4		9.5			pic 09/DK/large check
Enviro	335	ctrl		4		10			large check
	336	ctrl		9		10			large check
	337	ctrl		9		10			

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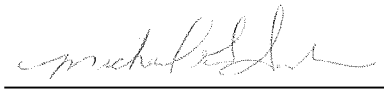

Date: 6/4/14

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Applicable Standards:
None: