

## CERTIFICATE OF ANALYSIS

SAMPLE	Tea Tree Oil
CUSTOMER	Projects Etc Pty
CERTIFICATION DATE	10 February 2015
CUSTOMER LOT/BATCH No.	JF 011114
LABORATORY REFERENCE	ARL150517
JOB No.	A150183

TEST	ISO 4730 SPECIFICATION	RESULTS	TEST METHOD
	Area %		
$\alpha$ -pinene	1.0 – 6.0	2.53	ARL-TM101-3*
sabinene	tr – 3.5	0.19	
$\alpha$ -terpinene	5.0 – 13.0	8.02	
limonene	0.5 – 1.5	0.94	
p-cymene	0.5 – 8.0	4.36	
1,8-cineole	tr – 15.0	2.32	
$\gamma$ -terpinene	10.0 – 28.0	19.29	
$\alpha$ -terpinolene	1.5 – 5.0	3.05	
terpinen-4-ol	30.0 – 48.0	39.62	
$\alpha$ -terpineol	1.5 – 8.0	2.93	
aromadendrene	tr – 3.0	2.05	
ledene	tr – 3.0	1.37	
$\delta$ -cadinene	tr – 3.0	1.36	
globulol	tr – 1.0	0.36	
viridiflorol	tr – 1.0	0.28	

\* Assay by GC (FID detection)

tr - denotes trace



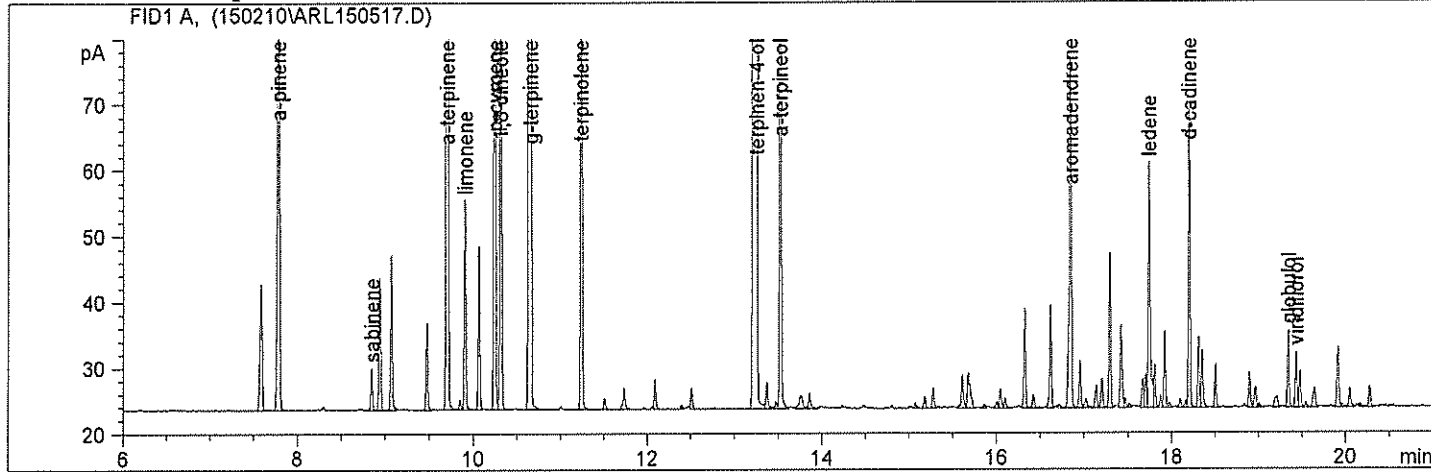
.....  
MR MICHAEL RUSSELL  
SENIOR ANALYTICAL OFFICER



.....  
MR ASHLEY DOWELL  
MANAGER - ARL

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Injection Date   : 10/02/2015 2:13:59 PM           Seq. Line :    7
Sample Name     : TTO JF011114                   Location  : Vial 7
Acq. Operator   : Mike Russell GC-3              Inj       :    1
Acq. Instrument : GC-3                          Inj Volume: 1 µl
Method         : D:\GC-3_DATA\METHODS\TTO.M
Last changed    : 7/01/2015 1:19:57 PM by Mike Russell GC-3
Method to analyse essential oils
  
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 Area Percent Report  
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Sorted By      : Signal
Calib. Data Modified : 7/01/2015 10:56:31 AM
Multiplier     : 1.0000
Dilution       : 1.0000
Use Multiplier & Dilution Factor with ISTDs
  
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Signal 1: FID1 A,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	7.592	BB	0.0275	32.77767	0.77043	?
2	7.789	BB	0.0279	107.42957	2.52511	alpha-pinene
3	8.848	BV	0.0201	8.28246	0.19468	sabinene
4	8.943	VB	0.0214	27.38801	0.64375	?
5	9.073	BB	0.0199	29.95444	0.70407	?
6	9.474	BV	0.0204	16.77431	0.39428	?
7	9.713	BV	0.0195	341.10745	8.01767	alpha-terpinene
8	9.858	VV	0.0208	2.01382	0.04733	?
9	9.914	VV	0.0197	40.07709	0.94201	limonene
10	10.072	VV	0.0197	30.97849	0.72814	?
11	10.252	VV	0.0201	185.45813	4.35916	p-cymene
12	10.321	VV	0.0206	98.88383	2.32425	1,8 cineole
13	10.661	VB	0.0217	820.71985	19.29088	gamma-terpinene
14	11.247	BB	0.0192	129.62718	3.04686	terpinolene
15	11.512	BB	0.0221	2.42570	0.05702	?
16	11.738	BB	0.0250	5.77357	0.13571	?
17	12.093	VB	0.0213	6.27251	0.14743	?
18	12.398	BV	0.0214	9.55548e-1	0.02246	?
19	12.514	VB	0.0217	4.34918	0.10223	?
20	13.258	VV	0.0285	1685.59229	39.61956	terpinen-4-ol
21	13.376	VV	0.0251	7.02362	0.16509	?
22	13.482	VV	0.0233	1.61023	0.03785	?
23	13.534	VB	0.0193	124.55863	2.92773	alpha-terpineol

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
24	13.760	VV	0.0424	6.31446	0.14842	?
25	13.868	VV	0.0263	4.39990	0.10342	?
26	15.072	VV	0.0284	1.58150	0.03717	?
27	15.186	VV	0.0242	2.81044	0.06606	?
28	15.280	VV	0.0218	4.38140	0.10298	?
29	15.613	VV	0.0248	8.27108	0.19441	?
30	15.681	VV	0.0330	13.01129	0.30583	?
31	15.866	VV	0.0286	1.10518	0.02598	?
32	16.008	VV	0.0239	1.50650	0.03541	?
33	16.048	VV	0.0232	4.46631	0.10498	?
34	16.102	VV	0.0271	2.73883	0.06438	?
35	16.328	VV	0.0211	20.20572	0.47493	?
36	16.426	VV	0.0275	3.72377	0.08753	?
37	16.622	VV	0.0214	21.27867	0.50015	?
38	16.720	VV	0.0343	1.17645	0.02765	?
39	16.852	VV	0.0241	87.28771	2.05168	aromadendrene
40	16.956	VV	0.0216	10.15779	0.23876	?
41	17.026	VV	0.0306	3.11593	0.07324	?
42	17.143	VV	0.0244	5.45903	0.12831	?
43	17.206	VV	0.0239	6.89774	0.16213	?
44	17.298	VV	0.0201	29.28271	0.68829	?
45	17.424	VV	0.0239	19.76522	0.46458	?
46	17.470	VV	0.0219	2.21985	0.05218	?
47	17.519	VV	0.0222	9.35735e-1	0.02199	?
48	17.673	VV	0.0221	6.20103	0.14575	?
49	17.706	VV	0.0196	6.75030	0.15866	?
50	17.747	VV	0.0233	58.24775	1.36910	ledene
51	17.811	VV	0.0203	8.86281	0.20832	?
52	17.878	VV	0.0211	2.58105	0.06067	?
53	17.926	VV	0.0213	15.76266	0.37050	?
54	17.984	VV	0.0233	1.24798	0.02933	?
55	18.107	VV	0.0259	2.16101	0.05079	?
56	18.167	VV	0.0193	1.35049	0.03174	?
57	18.210	VV	0.0203	57.70109	1.35625	d-cadinene
58	18.316	VV	0.0205	13.65812	0.32103	?
59	18.357	VV	0.0212	12.15332	0.28566	?
60	18.510	VV	0.0203	8.60987	0.20237	?
61	18.899	VV	0.0229	7.78878	0.18307	?
62	18.967	VV	0.0268	5.45120	0.12813	?
63	19.012	VV	0.0255	9.73638e-1	0.02289	?
64	19.215	VV	0.0352	4.25413	0.09999	?
65	19.346	VV	0.0209	15.35541	0.36093	globulol
66	19.436	VV	0.0219	11.93084	0.28043	viridiflorol
67	19.480	VV	0.0210	7.65852	0.18001	?
68	19.548	VV	0.0244	1.37241	0.03226	?
69	19.645	VV	0.0292	6.05976	0.14243	?
70	19.916	VV	0.0256	14.74674	0.34662	?
71	19.963	VV	0.0226	8.09536e-1	0.01903	?
72	20.052	VV	0.0231	4.58057	0.10767	?
73	20.168	VV	0.0257	1.11093	0.02611	?
74	20.281	VV	0.0232	4.93785	0.11606	?

Totals : 4254.44459

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\*\*\* End of Report \*\*\*