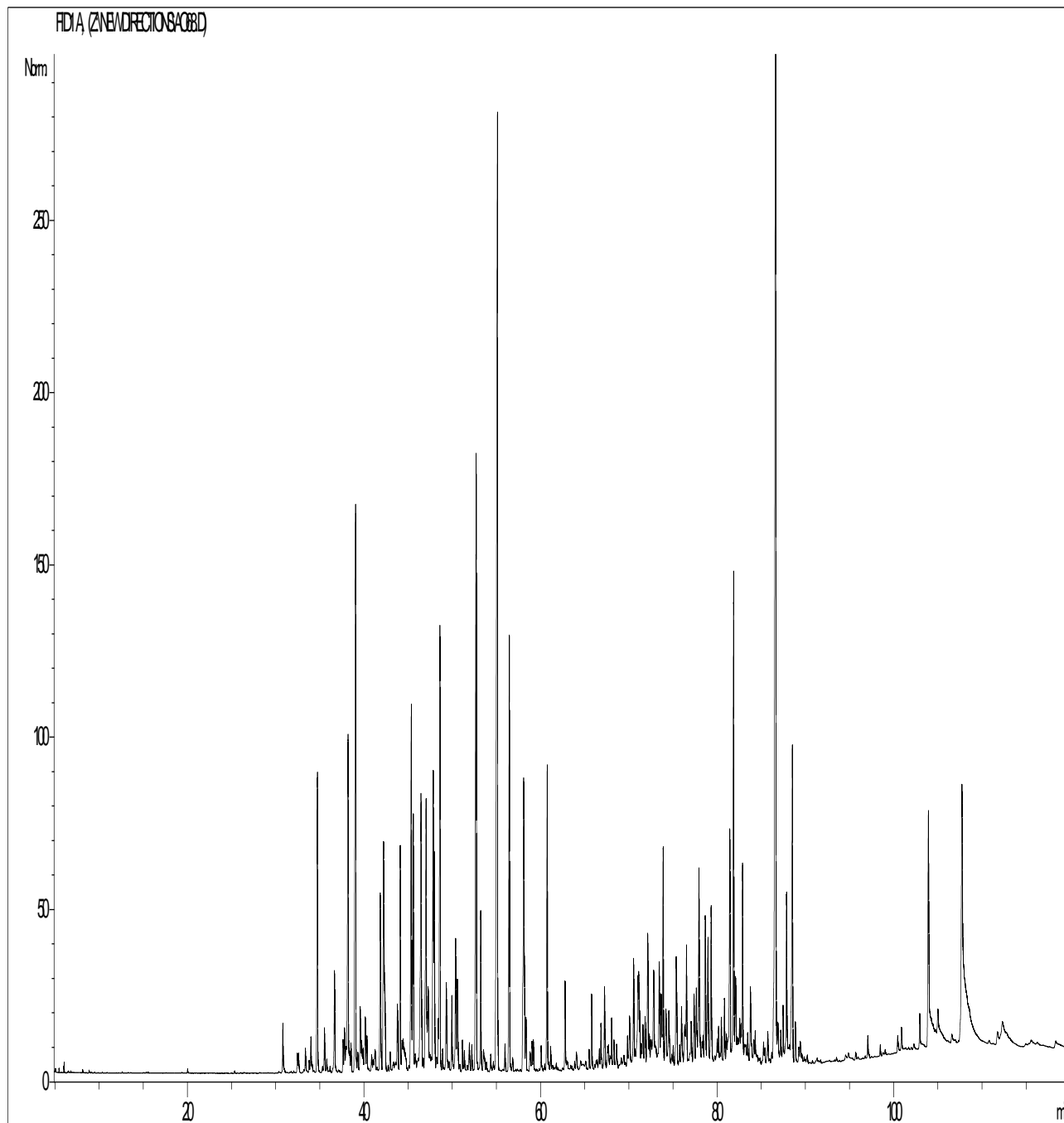


GCMS ANALYSIS

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

DATE: December 24, 2019



Due to volume turnover, this report is not lot specific. It is representative of the quality of this oil produced by the manufacturer of this product. Specific lots may vary slightly as is the case in natural products.

GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

Peak	RT (min)	Compound name	%
1	6,05	ISOVALERALDEHYDE	0,03
2	30,82	FURFURALDEHYDE	0,23
3	32,46	CYCLOSATIVENE	0,09
4	32,61	YLANGENE	0,10
5	33,38	AROMATIC COMPOUND	0,11
6	33,79	SESQUITERPENE	0,05
7	33,99	LONGIPINENE ISOMER	0,19
8	34,73	ALKYL BENZENE Mw=190	1,36
9	35,28	CYPERENE	0,03
10	35,52	ALKYL BENZENE Mw=190	0,21
11	35,77	ALKYL BENZENE Mw=190	0,08
12	36,65	ALKYL BENZENE Mw=190	0,54
13	37,62	CHAMIGRENE ISOMER	0,15
14	37,79	SESQUITERPENE	0,22
15	38,19	AROMATIC COMPOUND	2,06
16	38,36	SESQUITERPENE	0,11
17	38,52	beta-ELEMENE	0,14
18	39,04	ALKYL BENZENE Mw=190	3,11
19	39,29	SESQUITERPENE	0,11
20	39,56	AROMATIC COMPOUND	0,31
21	39,73	COMPOUND Mw=220	0,20
22	39,90	SESQUITERPENE	0,11
23	40,14	TERPENIC ALCOHOL	0,33
24	40,33	SESQUITERPENE Mw=204	0,19
25	40,86	SESQUITERPENE Mw=204	0,10
26	41,04	AROMATIC COMPOUND	0,07
27	41,24	COMPOUND Mw=202	0,17
28	41,84	PREZIZA-7-ENE	1,00
29	42,21	KHUSIMENE	1,46
30	42,33	SESQUITERPENE	0,41

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

Peak	RT (min)	Compound name	%
31	42,73	COMPOUND Mw=202	0,04
32	42,96	ALKYL BENZENE Mw=190	0,12
33	43,78	COMPOUND Mw=192	0,38
34	44,10	ALKYL BENZENE Mw=190	1,05
35	44,31	SESQUITERPENE	0,18
36	44,43	AROMATIC COMPOUND	0,16
37	44,54	SESQUITERPENE	0,13
38	44,66	SESQUITERPENE	0,16
39	45,35	gamma-MUUROLENE	2,07
40	45,58	CALARENE	1,32
41	45,79	AROMATIC COMPOUND	0,14
42	46,15	SESQUITERPENE	0,12
43	46,38	alpha-VETISPIRENE	0,47
44	46,45	COPACAMPHENE + COMPONENT Mw=220	1,46
45	46,71	SESQUITERPENE	0,07
46	46,95	gamma-CADINENE	0,42
47	47,03	delta-CADINENE	1,42
48	47,26	VALENCENE ISOMER	0,55
49	47,83	AROMATIC COMPOUND	1,51
50	47,95	SESQUITERPENE Mw=202	1,08
51	48,22	SESQUITERPENE Mw=204	0,10
52	48,41	SESQUITERPENE Mw=204	0,21
53	48,60	ISOLONGIFOLENE, 9,10-DEHYDRO	2,17
54	48,89	SESQUITERPENE Mw=204	0,11
55	49,31	SESQUITERPENE Mw=204	0,55
56	49,94	SELINENE ISOMER	0,39
57	50,37	AROMADENDRENE DEHYDRO	0,67
58	50,56	CEDRENE ISOMER	0,57
59	51,14	EUDESMATRIENE ISOMER	0,15
60	51,36	AROMATIC COMPOUND	0,13

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

Peak	RT (min)	Compound name	%
61	51,93	NEOISOLONGIFOLENE DEHYDRO	0,18
62	52,21	NAPHTHALENONE DIHYDROTRIMETHYL ISOM,	0,13
63	52,71	alpha-VETIVENENE	3,65
64	52,84	SESQUITERPENE Mw=202	0,04
65	53,21	SESQUITERPENE Mw=204	0,76
66	53,54	AROMATIC COMPOUND Mw=202	0,11
67	53,65	AROMATIC COMPOUND Mw=202	0,07
68	53,85	COMPOUND Mw=202	0,06
69	54,34	AROMATIC COMPOUND Mw=202	0,09
70	54,65	PHENOLIC COMPOUND	0,06
71	55,11	beta-VETIVENENE	6,41
72	55,96	SESQUITERPENE Mw=202	0,12
73	56,46	gamma-VETIVENENE	2,03
74	56,83	AROMATIC COMPOUND	0,07
75	58,08	VETIVENENE ISOMER	1,60
76	58,13	alpha-CALACORENE	0,38
77	58,35	COMPOUND Mw=200	0,26
78	58,80	SESQUITERPENE Mw=202	0,12
79	59,03	SESQUITERPENE Mw=202	0,13
80	59,18	SESQUITERPENOL	0,14
81	60,05	COMPOUND Mw=200	0,12
82	60,75	CADINATRIENE ISOMER Mw=202	1,46
83	61,13	METHYLENE CYCLOPENTENYL Mw=200	0,12
84	62,77	BENZOCYCLOHEPTENONE Mw=178	0,45
85	64,05	OCTAHYDRO-METHYLPHENANTHRENE Mw=200	0,12
86	65,48	SESQUITERPENOL Mw=222	0,10
87	65,78	LEVOJUNENOL	0,38
88	66,28	SESQUITERPENOL	0,05
89	66,41	AROMATIC COMPOUND	0,05
90	66,65	SESQUITERPENOL	0,13

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

Peak	RT (min)	Compound name	%
91	66,83	ELEMOL + GLOBULOL	0,24
92	67,24	SESQUITERPENOL Mw=220	0,46
93	67,58	AROMATIC COMPOUND	0,11
94	67,69	SESQUITERPENOL Mw=220	0,13
95	68,04	10-épi-gamma-EUDESOL	0,24
96	68,29	SESQUITERPENOL Mw=220	0,18
97	68,60	SESQUITERPENOL Mw=220	0,19
98	69,83	SESQUITERPENOL Mw=220	0,17
99	70,08	SESQUITERPENOL Mw=220	0,37
100	70,53	CADINOL ISOMER	0,60
101	70,71	SESQUITERPENOL	0,10
102	71,02	SESQUITERPENOL Mw=222	0,58
103	71,11	SESQUITERPENOL Mw=222	0,43
104	71,23	gamma-EUDESOL	0,25
105	71,41	T-CADINOL	0,15
106	71,58	SESQUITERPENOL	0,26
107	71,83	alpha-MUUROLOL	0,32
108	72,13	SESQUITERPENONE Mw=218	0,78
109	72,31	4-VINYL QUAJACOL	0,19
110	72,51	SESQUITERPENONE Mw=218	0,20
111	72,80	SESQUITERPENOL Mw=220	0,76
112	73,43	VALERIANOL	0,71
113	73,65	alpha-EUDESOL	0,44
114	73,88	AROMATIC COMPOUND	1,08
115	74,19	beta-EUDESOL	0,43
116	74,51	SESQUITERPENONE Mw=218	0,51
117	74,85	SESQUITERPENIC EPOXIDE	0,08
118	75,02	SESQUITERPENONE Mw=218	0,11
119	75,35	AROMATIC COMPOUND	0,88
120	75,74	SESQUITERPENOL	0,13

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

Peak	RT (min)	Compound name	%
121	75,96	AROMATIC COMPOUND	0,38
122	76,34	SESQUITERPENONE Mw=218	0,33
123	76,52	SESQUITERPENOL Mw=222	0,65
124	77,04	SESQUITERPENOL Mw=220	0,33
125	77,38	SESQUITERPENOL Mw=222	0,47
126	77,63	SESQUITERPENOL Mw=220	0,48
127	77,93	BICYCLOVETIVENOL	1,27
128	78,40	SESQUITERPENOL Mw=220	0,27
129	78,64	SESQUITERPENOL Mw=220	1,06
130	78,95	SESQUITERPENOL Mw=220	0,93
131	79,31	ISOEUGENOL	0,96
132	79,74	SESQUITERPENONE Mw=218	0,08
133	79,99	SESQUITERPENOL Mw=220	0,19
134	80,15	SESQUITERPENOL Mw=220	0,21
135	80,46	SESQUITERPENOL Mw=220	0,28
136	80,82	SESQUITERPENOL Mw=220	0,40
137	81,05	SESQUITERPENOL Mw=220	0,15
138	81,43	ZIZANOL	1,54
139	81,86	VETIVENOL	2,70
140	82,09	SESQUITERPENOL Mw=220	0,57
141	82,55	SESQUITERPENONE Mw=218	0,28
142	82,70	SESQUITERPENOL Mw=220	0,21
143	82,87	VETISELINENOL Mw=220	1,08
144	83,44	AROMATIC SESQUITERPENOL Mw=220	0,22
145	83,77	AROMATIC SESQUITERPENOL Mw=220	0,50
146	84,15	SESQUITERPENOL Mw=220	0,14
147	84,30	SESQUITERPENONE Mw=218	0,17
148	85,25	SESQUITERPENOL Mw=220	0,14
149	85,40	SESQUITERPENONE Mw=218	0,09
150	85,73	AROMATIC COMPOUND	0,21

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ESSENTIAL OIL - 11151

Peak	RT (min)	Compound name	%
151	86,60	beta-VETIVONE	2,00
152	86,62	KHUSIMOL	6,13
153	86,87	SESQUITERPENOL	0,30
154	87,19	NOOTKATOL	0,23
155	87,46	AROMATIC COMPOUND	0,37
156	87,85	ISOVALENCENOL	1,03
157	88,43	SESQUITERPENOL	0,21
158	88,52	alpha-VETIVONE	1,75
159	88,85	SESQUITERPENONE Mw=218	0,25
160	89,25	SESQUITERPENOL	0,09
161	89,41	SESQUITERPENONE Mw=218	0,13
162	89,58	SESQUITERPENONE Mw=218	0,07
163	97,05	AROMATIC COMPOUND	0,12
164	100,44	AROMATIC COMPOUND	0,11
165	100,87	AROMATIC COMPOUND	0,16
166	102,94	PALMITIC ACID	0,18
167	103,93	ISOKHUSENIC ACID	2,34
168	104,99	AROMATIC ACID Mw=234	0,71
169	106,58	AROMATIC ACID Mw=234	0,15
170	107,72	KHUSENIC ACID	4,80
171	111,75	DIMETHYLPHENYLACETIC ACID Mw=164	0,13
172	112,32	AROMATIC ACID Mw=234	0,69
		TOTAL	99,88

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