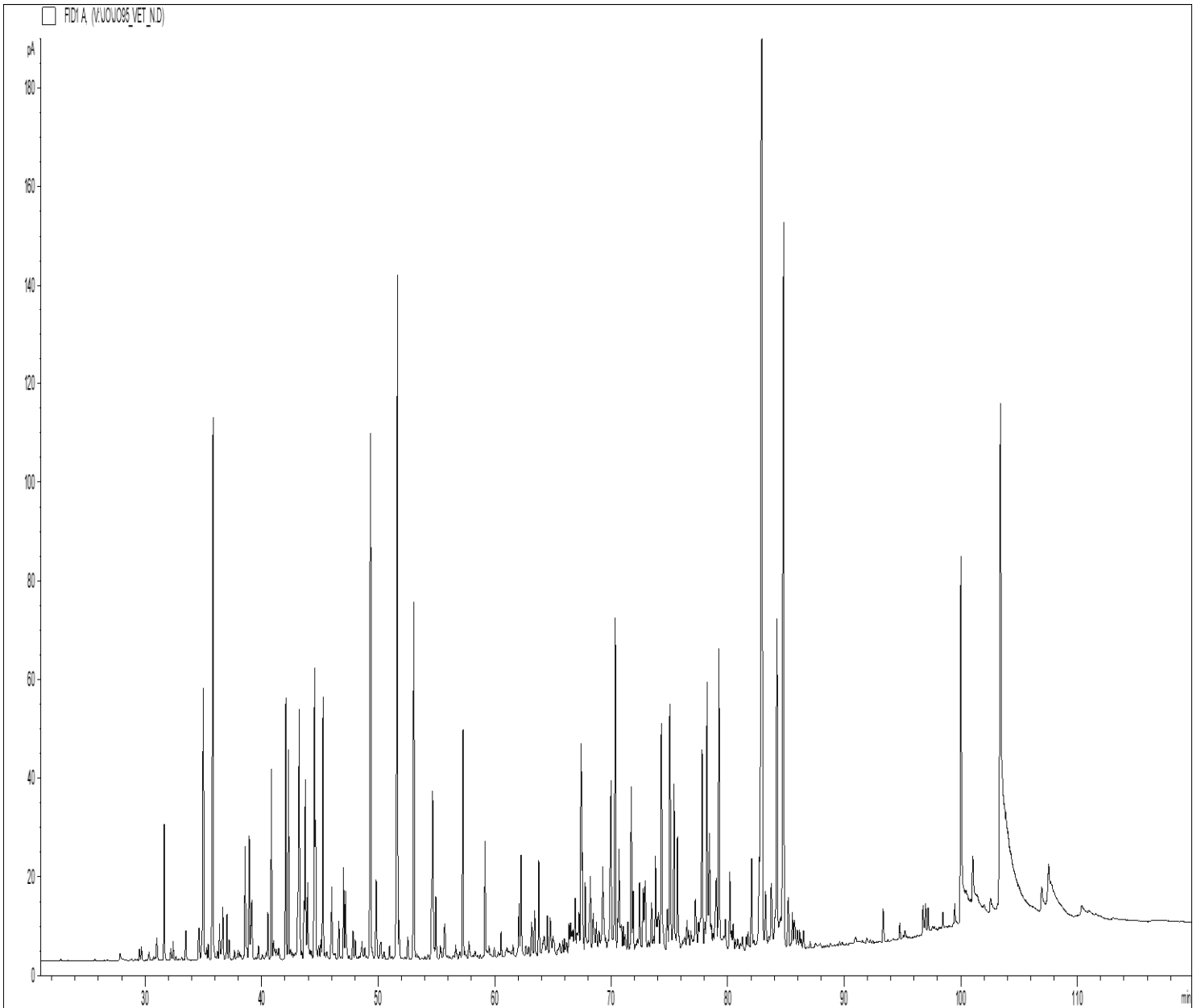


**GCMS ANALYSIS**

**PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024**

**DATE: March 15, 2023**



*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 ORGANIC ESSENTIAL OIL – 50024

Peak	RT (min)	Compound	%
1	27.86	FURFURAL	0.04
2	29.53	SESQUITERPENE	0.04
3	29.70	YLANGENE	0.05
4	30.35	ALKYL BENZENE Mw=188	0.04
5	31.02	CEDRENE ISOMER	0.10
6	31.65	ALKYL BENZENE Mw=190	0.51
7	32.22	CYPERENE	0.05
8	32.42	ALKYL BENZENE Mw=190	0.08
9	33.50	ALKYL BENZENE Mw=190	0.13
10	34.64	SESQUITERPENE	0.11
11	34.75	SESQUITERPENE	0.10
12	34.88	CEDRENE ISOMER	0.08
13	34.99	ALKYL BENZENE Mw=190	1.19
14	35.27	SESQUITERPENE	0.05
15	35.42	DAUCENE ISOMER	0.06
16	35.82	<b>ALKYL BENZENE Mw=190</b>	<b>2.55</b>
17	36.20	SESQUITERPENE	0.04
18	36.39	ALKYL BENZENE Mw=190	0.15
19	36.61	beta-CEDRENE	0.08
20	36.67	ALKYL BENZENE Mw=188	0.20
21	37.02	CADINADIENE ISOMER	0.19
22	37.20	6,9-GUAIADIENE	0.08
23	37.66	SESQUITERPENE	0.04
24	37.98	ALKYL BENZENE Mw=188	0.05
25	38.58	PREZIZA-7-ENE	0.49
26	38.72	SESQUITERPENE	0.04
27	38.92	KHUSIMENE	0.50
28	39.09	SESQUITERPENE	0.12
29	39.15	SESQUITERPENE	0.26
30	39.72	ALKYL BENZENE Mw=190	0.07

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**GCMS ANALYSIS (cont'd,)**

**PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024**

Peak	RT (min)	Compound	%
31	40.38	ZONARENE	0.04
32	40.53	COMPOUND Mw=192	0.20
33	40.84	ALKYL BENZENE Mw=190	0.72
34	41.02	ALKYL BENZENE Mw=190	0.10
35	41.14	SESQUITERPENE Mw=202	0.05
36	41.28	gamma-SELINENE	0.06
37	41.46	gamma-CURCUMENE	0.07
38	42.07	gamma-MUJROLENE	1.10
39	42.30	CALARENE ISOMER	0.82
40	42.47	ALKYL BENZENE Mw=190	0.07
41	42.90	SESQUITERPENE	0.04
42	43.08	COMPOUND Mw=222	0.17
43	43.22	SESQUITERPENE	1.36
44	43.44	SESQUITERPENE	0.04
45	43.63	ALKYL BENZENE Mw=190	0.20
46	43.74	CADINENE ISOMER	0.81
47	43.94	ALKYL BENZENE Mw=190	0.37
48	44.17	SESQUITERPENE	0.04
49	44.54	SESQUITERPENE Mw=202	1.25
50	44.62	SESQUITERPENE	0.52
51	44.89	COMPOUND Mw=220	0.08
52	45.08	COMPOUND Mw=220	0.08
53	45.26	SESQUITERPENE Mw=202	1.08
54	45.57	SESQUITERPENE	0.06
55	46.02	delta-CADINENE	0.39
56	46.62	delta-SELINENE	0.15
57	47.03	SESQUITERPENE Mw=202	0.37
58	47.19	CADINA-1,4-DIENE	0.35
59	47.82	SESQUITERPENE Mw=202	0.12
60	48.03	AROMATIC COMPOUND Mw=200	0.09

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024

Peak	RT (min)	Compound	%
61	48.60	SESQUITERPENE	0.12
62	48.84	ALKYL BENZENE Mw=188	0.06
63	49.34	beta-VETISPIRENE	2.42
64		SESQUITERPENE Mw=202	
65	49.82	CYPERENE ISOMER	0.40
66	50.23	CALAMENENE	0.15
67	50.50	SESQUITERPENE Mw=202	0.04
68	50.97	SESQUITERPENE Mw=202	0.06
69	51.65	<b>beta-VETIVENENE</b>	<b>3.50</b>
70	51.78	SESQUITERPENE Mw=202	0.17
71	52.53	ALKYL BENZENE Mw=188	0.10
72	53.06	gamma-VETIVENENE	1.48
73	54.57	alpha-CALACORENE	0.22
74	54.67	VETIVENENE ISOMER	0.99
75	54.95	COMPOUND Mw=200	0.26
76	55.33	SESQUITERPENE Mw=202	0.06
77	55.69	TERPENIC COMPOUND	0.13
78	55.72	TERPENIC COMPOUND	0.14
79	56.65	COMPOUND Mw=200	0.06
80	57.01	beta-CALACORENE	0.05
81	57.27	CADINATRIENE ISOMER	0.97
82	57.43	COMPOUND Mw=200	0.04
83	57.77	COMPOUND Mw=200	0.11
84	58.33	AROMATIC COMPOUND Mw=200	0.05
85	59.17	BENZOCYCLOHEPTENONE Mw=178	0.50
86	59.34	AROMATIC COMPOUND	0.04
87	59.51	TERPENIC COMPOUND	0.07
88	59.96	TERPENIC COMPOUND	0.06
89	60.54	AROMATIC COMPOUND	0.12
90	61.04	COMPOUND Mw=220	0.09

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**GCMS ANALYSIS (cont'd,)**

**PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024**

Peak	RT (min)	Compound	%
91	61.56	AROMATIC COMPOUND	0.08
92	62.08	EUDESMOL ISOMER	0.27
93	62.25	JUNEOL	0.52
94	62.69	COMPOUND Mw=220	0.08
95	62.91	COMPOUND Mw=220	0.05
96	63.16	AROMATIC COMPOUND	0.17
97	63.42	ELEMOL	0.22
98	63.78	COMPOUND Mw=220	0.45
99	64.09	AROMATIC COMPOUND	0.06
100	64.23	COMPOUND Mw=218	0.17
101	64.51	10-epi-gamma-EUDESMOL	0.21
102	64.76	COMPOUND Mw=220	0.26
103	64.99	COMPOUND Mw=220	0.10
104	65.09	COMPOUND Mw=220	0.08
105	65.55	COMPOUND Mw=200	0.09
106	65.81	COMPOUND Mw=220	0.08
107	65.97	COMPOUND Mw=220	0.08
108	66.16	COMPOUND Mw=220	0.08
109	66.37	TERPENIC COMPOUND	0.15
110	66.50	COMPOUND Mw=218	0.15
111	66.60	SESQUITERPENOL	0.09
112	66.69	SESQUITERPENOL	0.12
113	66.89	COMPOUND Mw=220	0.34
114	67.05	COMPOUND Mw=218	0.09
115	67.11	COMPOUND Mw=218	0.06
116	67.23	COMPOUND Mw=220	0.23
117	67.41	SESQUITERPENOL Mw=222	1.02
118		beta-COPAEN-4-alpha-OL	
119	67.51	gamma-EUDESMOL	0.43
120	67.75	SESQUITERPENOL	0.39

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**GCMS ANALYSIS (cont'd,)**

**PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024**

Peak	RT (min)	Compound	%
121	68.16	SESQUITERPENOL	0.20
122	68.20	COMPOUND Mw=218	0.33
123	68.45	4-VINYL-GUAIACOL	0.32
124	68.72	SESQUITERPENIC COMPOUND Mw=218	0.20
125	68.94	SESQUITERPENIC COMPOUND Mw=218	0.17
126	69.26	SESQUITERPENOL	0.51
127	69.32	SESQUITERPENIC COMPOUND Mw=218	0.20
128	69.53	SESQUITERPENOL	0.08
129	69.75	SESQUITERPENIC COMPOUND Mw=218	0.10
130	69.98	VALERIANOL	1.19
131		COMPOUND Mw=218	
132	70.34	COMPOUND Mw=220	1.52
133	70.56	SESQUITERPENOL	0.14
134	70.66	beta-EUDESOL	0.48
135	70.82	COMPOUND Mw=218	0.13
136	70.86	COMPOUND Mw=218	0.11
137	71.03	COMPOUND Mw=218	0.13
138	71.17	SESQUITERPENIC COMPOUND	0.14
139	71.42	COMPOUND Mw=220	0.15
140	71.71	SESQUITERPENONE	0.86
141	71.88	SESQUITERPENIC COMPOUND	0.28
142	72.25	SESQUITERPENIC COMPOUND	0.08
143	72.42	beta-BISABOLENAL	0.40
144	72.74	SESQUITERPENONE	0.38
145	72.90	COMPOUND Mw=222	0.50
146	73.19	COMPOUND Mw=220	0.09
147	73.46	SESQUITERPENOL	0.33
148	73.64	SESQUITERPENOL	0.09
149	73.80	COMPOUND Mw=222	0.43
150	73.92	SESQUITERPENOL	0.14

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**GCMS ANALYSIS (cont'd,)**

**PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024**

Peak	RT (min)	Compound	%
151	74.04	COMPOUND Mw=220	0.23
152	74.30	BICYCLOVETIVENOL	1.24
153	74.41	AROMATIC COMPOUND	0.16
154	74.80	COMPOUND Mw=222	0.29
155	75.03	SESQUITERPENOL	1.33
156	75.39	SESQUITERPENOL	0.90
157	75.68	ISOEUGENOL	0.67
158	76.30	COMPOUND Mw=220	0.13
159	76.50	COMPOUND Mw=218	0.17
160	76.64	COMPOUND Mw=218	0.11
161	76.84	COMPOUND Mw=220	0.17
162	77.06	SESQUITERPENIC COMPOUND Mw=216	0.06
163	77.22	COMPOUND Mw=220	0.41
164	77.48	COMPOUND Mw=220	0.15
165	77.70	COMPOUND Mw=220	0.24
166	77.79	ZIZANOL	0.96
167	78.04	SESQUITERPENOL	0.17
168	78.22	VETIVENOL	1.30
169	78.43	COMPOUND Mw=220	0.67
170	78.58	COMPOUND Mw=220	0.14
171	78.74	SESQUITERPENIC COMPOUND Mw=218	0.09
172	79.01	COMPOUND Mw=220	0.56
173	79.25	VETISELINENOL	1.56
174	79.65	SESQUITERPENIC COMPOUND	0.17
175	79.79	SESQUITERPENIC COMPOUND	0.19
176	80.18	SESQUITERPENIC COMPOUND	0.38
177	80.32	COMPOUND Mw=220	0.09
178	80.46	COMPOUND Mw=220	0.14
179	80.68	SESQUITERPENIC COMPOUND	0.05
180	80.84	SESQUITERPENIC COMPOUND	0.07

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024

Peak	RT (min)	Compound	%
181	81.25	COMPOUND Mw=220	0.08
182	81.59	SESQUITERPENIC COMPOUND	0.07
183	81.74	SESQUITERPENIC COMPOUND	0.11
184	82.05	COMPOUND Mw=216	0.43
185	82.24	COMPOUND Mw=218	0.06
186	82.70	COMPOUND Mw=218	0.43
187	82.89	<b>beta-VETIVONE</b>	<b>3.56</b>
188	82.95	<b>KHUSIMOL</b>	<b>4.27</b>
189	83.23	SESQUITERPENIC COMPOUND	0.37
190	83.53	SESQUITERPENIC COMPOUND	0.10
191	83.73	SESQUITERPENIC COMPOUND	0.48
192	84.21	ISOVALENCENOL	1.84
193	84.52	SESQUITERPENIC COMPOUND	0.32
194	84.78	<b>alpha-VETIVONE</b>	<b>4.09</b>
195	85.20	CURCUMENOL ISOMER	0.32
196	85.55	SESQUITERPENIC COMPOUND	0.20
197	85.72	SESQUITERPENIC COMPOUND	0.21
198	85.95	SESQUITERPENIC COMPOUND	0.10
199	86.15	SESQUITERPENONE	0.09
200	86.28	SESQUITERPENIC COMPOUND	0.05
201	86.50	SESQUITERPENIC COMPOUND	0.09
202	87.52	SESQUITERPENIC COMPOUND	0.04
203	90.99	AROMATIC COMPOUND	0.06
204	91.93	AROMATIC COMPOUND	0.04
205	93.33	AROMATIC COMPOUND Mw=216	0.17
206	94.76	CALAMENENE, 5-HYDROXY-	0.08
207	95.22	SESQUITERPENIC COMPOUND	0.05
208	96.74	COMPOUND Mw=234	0.16
209	96.97	COMPOUND Mw=234	0.17
210	97.19	AROMATIC COMPOUND	0.15

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GCMS ANALYSIS (cont'd,)

PRODUCT NAME: VETIVER ORGANIC ESSENTIAL OIL – 50024

Peak	RT (min)	Compound	%
211	98.46	AROMATIC COMPOUND	0.09
212	99.48	PALMITIC ACID	0.18
213	100.01	<b>ISOKHUSENIC ACID</b>	<b>5.25</b>
214	101.03	AROMATIC ACID Mw=234	0.42
215	102.01	AROMATIC ACID Mw=234	0.07
216	102.55	AROMATIC ACID Mw=234	0.15
217	103.39	<b>KHUSENIC ACID</b>	<b>11.36</b>
218	106.94	AROMATIC ACID Mw=234	0.60
219	107.53	<b>AROMATIC ACID Mw=234</b>	<b>2.51</b>
220	110.38	AROMATIC ACID Mw=234	0.76
		<b>TOTAL</b>	<b>98.79</b>

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