

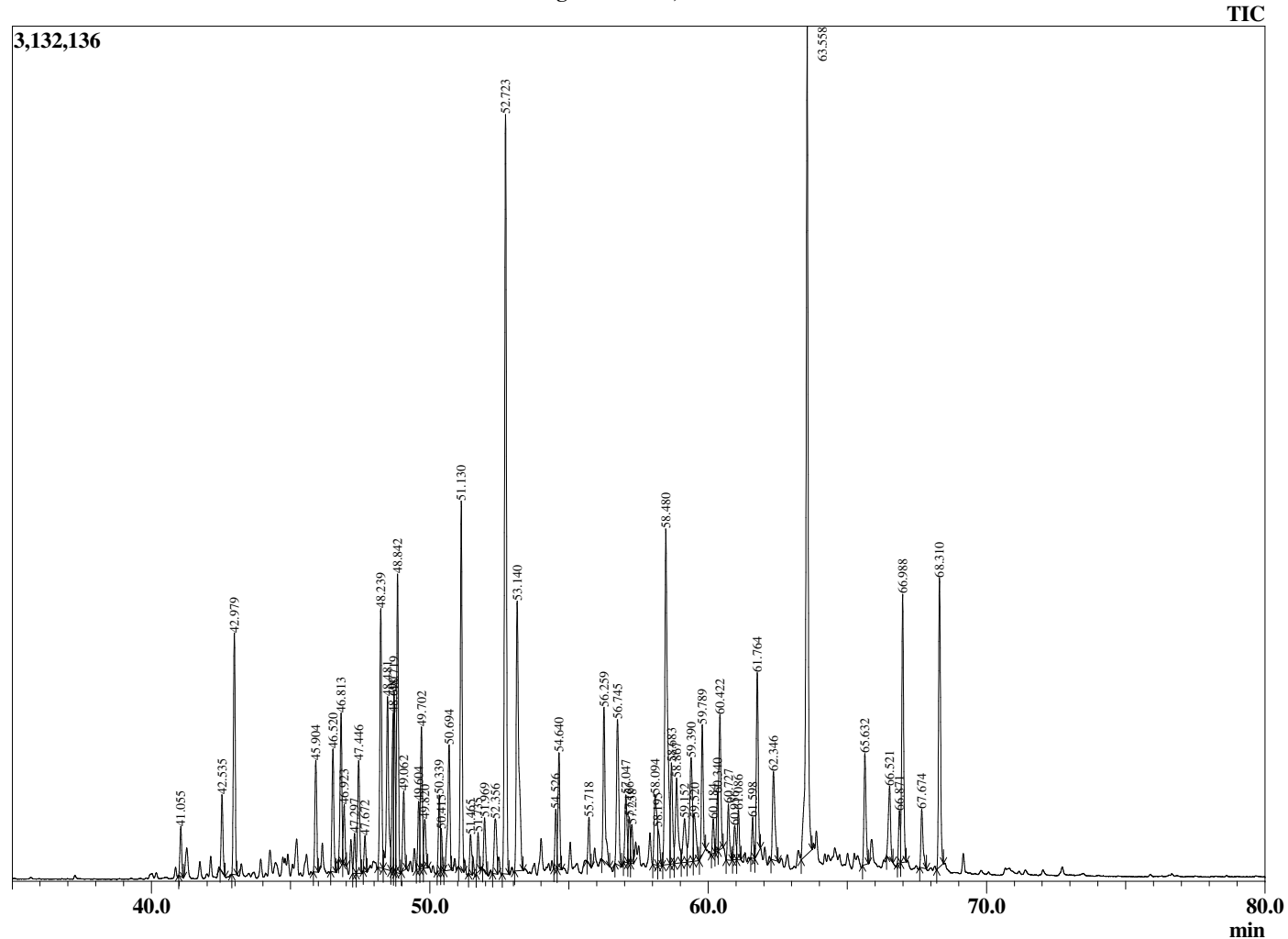
### Sample Information

Analyzed by : Dr. Robert S. Pappas  
 Analyzed : 7/27/2019 3:17:36 AM  
 Sample Type : Essential Oil  
 Sample Name : Vetiver, China - Helias  
 Sample ID : C2B0716M  
 Injection Volume : 0.10  
 Instrument ID : GC-4



This report is valid for 1 year from the analyzed date.

### Chromatogram Vetiver, China - Helias



R.Time	Name	Peak Report TIC	Area%
41.055	Unidentified		0.53
42.535	Unidentified		0.82
42.979	Unidentified		2.62
45.904	Unidentified		1.24
46.520	Prezizaene		1.37
46.813	Khusimene		1.61
46.923	Gurjunene isomer		0.60
47.297	Unidentified		0.42
47.446	Unidentified		1.43
47.672	(E)-Eremophila-1(10),7(11)-dien-12-yl acetate		0.35
48.239	alpha-Amorphene		2.94
48.481	Unidentified		2.41
48.690	Unidentified		1.33
48.719	delta-Selinene		1.81
48.842	beta-Vetispirene		3.15
49.062	Valencene		0.87
49.604	Unidentified		0.72
49.702	Epizonarene		1.62
49.820	alpha-Cuprenene		0.60
50.339	Nootkatene		0.87
50.415	Unidentified		0.31
50.694	beta-Guaiene		1.72
51.130	Unidentified		4.01
51.465	alpha-Maaline		0.46
51.735	Eremophilene isomer		0.41
51.969	alpha-Calacorene		0.60
52.356	Unidentified		0.85
52.723	beta-Vetivenene		8.79
53.140	Vetivenene isomer		4.16
54.526	3,5,11-Eudesmatriene		0.60
54.640	(Z)-Eremophila-1(10),7(11)-dien-12-yl acetate		1.31
55.718	Unidentified		0.47
56.259	3,5,11-Eudesmatriene isomer		1.92
56.745	10-epi-gamma-Eudesmol		1.98
57.047	Unidentified		0.85
57.166	Unidentified		0.51
57.258	gamma-Eudesmol		0.42
58.094	Unidentified		1.21
58.195	alpha-Cadinol		0.40
58.480	Unidentified		5.52
58.683	Cyclocopacamphan-12-ol <epimer A>		1.32
58.867	Cyclocopacamphan-12-ol <epimer B>		1.40
59.152	Unidentified		0.80
59.390	Unidentified		1.82
59.520	Unidentified		0.75
59.789	Unidentified		1.42
60.184	Unidentified		0.34
60.340	Unidentified		0.56
60.422	Khusian-2-ol		1.69
60.727	Unidentified		0.67
60.956	Eudsm-7(11)-en-4-ol		0.42
61.086	2-epi-Ziza-6(13)-en-3-alpha-ol		0.57
61.598	13-nor-Eudesma-4,6-dien-11-one		0.40
61.764	Unidentified		2.06
62.346	Vetiselinenol		1.31
63.558	Khusimol		10.53
65.632	trans-Isovalencenol		1.37
66.521	Unidentified		0.98
66.871	Unidentified		0.55
66.988	beta-Vetivone		3.07
67.674	Unidentified		0.77
68.310	alpha-Vetivone		3.39
			100.00

### Comments:

The analysis of this Vetiver, China batch sample meets the expected chemical profile for authentic essential oil of *Vetiveria zizanioides*. No contamination or adulteration was detected.