

## CERTIFICATE OF ANALYSIS

**Order Type:** Cannabis  
**Order ID:** OR2020-6836

**Customer ID:** 1648  
**Customer Name:** Red Dirt Sungrown

**Harvest/Extract Lot:** PE012308  
**Harvest/Extract Batch:** None

**Cultivar (Strain):** Pineapple Express  
**Sample Date:** 01/30/2020

**Lab ID:** SA2020-21853  
**Date Received:** 01/28/2020

**Sample Matrix:** Flower  
**Date Completed:** 02/04/2020

### Remarks:

### CANNABINOID (POTENCY) PROFILE

**Analysis Date/Time:** 02/03/2020 1520  
**Analyst:** OL

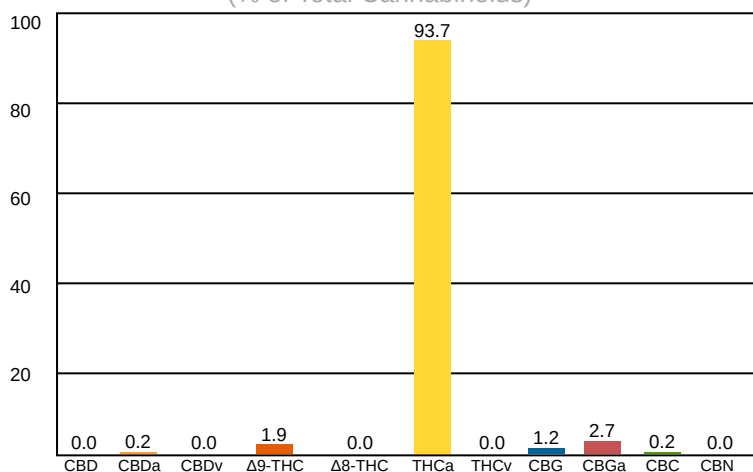
**Method:** HPLC/DAD  
**Instrument:** Agilent 1100

**Moisture Content (%):** 11.7  
**Water Activity (aw):** 0.403 @ 23.64°C

Cannabinoid	Result (%)	Result (mg/g)	Reporting Limit (mg/g)	Result (mg/mL)	Per Unit (mg)
CBD	-	-	0.0499	-	-
CBDa	0.046	0.46	0.0499	-	0.46
CBDv	-	-	0.0499	-	-
Δ9-THC	0.382	3.82	0.0499	-	4
Δ8-THC	-	-	0.0499	-	-
THCa	18.6	186	0.0499	-	186
THCv	-	-	0.0499	-	-
CBC	0.0475	0.475	0.0499	-	0.475
CBG	0.234	2.34	0.0499	-	2
CBGa	0.534	5.34	0.0499	-	5
CBN	-	-	0.0499	-	-
<b>TOTAL</b>	<b>19.9</b>	<b>199</b>			<b>199</b>
<b>TOTAL THC</b>	<b>16.7</b>	<b>167</b>			<b>167</b>
<b>TOTAL CBD</b>	<b>0.0403</b>	<b>0.403</b>			<b>0.403</b>



### Cannabinoid Distribution (% of Total Cannabinoids)



Deviations from standard operating procedure: None

Recoveries for all analyte standards: 90-110%  
Replicate Uncertainties: <5% RSD, <20% RPD  
Sample/Reagent Blanks: <RL for all analytes

Values for plant matter are adjusted for moisture content.

Total THC = (THCa x 0.877) + Δ9-THC  
Total CBD = (CBDa x 0.877) + CBD

Percentage results are reported by mass.  
mg/g results are reported as mass component per mass material.

Abbreviations: UV - Ultraviolet, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation

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*Kyle W. Felling*  
Kyle W. Felling, Ph.D.  
Laboratory Director

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### Remarks:

### TERPENOID PROFILE

**Analysis Date/Time:** 02/03/2020 1520  
**Analyst:** OL

**Method:** HS/GC/FID (Internal Method-002)  
**Instrument:** Agilent 6890

**Deviations from SOP:**  
None

Terpene	Result (µg/g)	Result (%)	
α-Bisabolol	-	-	
Camphene	-	-	
δ-3-Carene	-	-	
β-Caryophyllene	1761	0.176	
Caryophyllene oxide	-	-	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	142	0.0142	
α-Humulene	868	0.0868	
Isopulegol	-	-	
d-Limonene	-	-	
Linalool	243	0.0243	
β-Myrcene	1078	0.108	
cis-Nerolidol	-	-	
trans-Nerolidol	-	-	
α-Ocimene	-	-	
β-Ocimene	-	-	
α-Pinene	1132	0.113	
β-Pinene	621	0.0621	
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	744	0.0744	
<b>TOTAL</b>	<b>6588</b>	<b>0.659</b>	



*Abbreviations:* HS - Headspace, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit

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"-" Not detected above RL.

**Reporting Limit (µg/g): 2**

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<b>Cultivar (Strain):</b> Pineapple Express	<b>Lab ID:</b> SA2020-21853	<b>Sample Matrix:</b> Flower
<b>Sample Date:</b> 01/30/2020	<b>Date Received:</b> 01/28/2020	<b>Date Completed:</b> 02/04/2020

**Remarks:**

### PESTICIDES PROFILE

<b>Analysis Date/Time:</b> 02/03/2020 1520	<b>Method:</b> LC/MS/MS	<b>Deviations from SOP:</b>
<b>Analyst:</b> OL	<b>Instrument:</b> Waters Acquity/TQD	None

Pesticide	Result (µg/g)	Action Level (µg/g)
Abamectin (71751-41-2)	-	0.5
Azoxystrobin (131860-33-8)	-	0.5
Bifenazate* (149877-41-8)	-	0.5
Etoazazole (153233-91-1)	-	0.5
Imazalil (35554-44-0)	-	0.5
Imidacloprid (138261-41-3)	-	0.5
Malathion (121-75-5)	-	0.5
Myclobutanil (88671-89-0)	-	0.5
Permethrins* (52645-53-1)	-	0.5
Spinosad A (168316-95-8)	-	0.5
Spinosad D (168316-95-8)	-	0.5
Spiromesifen (283594-90-1)	-	0.5
Spirotetramat (203313-25-1)	-	0.5
Tebuconazole (80443-41-0)	-	0.5

#### Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

**Reporting Limit (µg/g)**  
1/2 of AL

"-" not detected above reporting limit

"\*" analyzed by GC/MS  
(all others analyzed by LC/MS/MS)

Permethrins measured as the cumulative residue of the *cis*- and *trans*-permethrin isomers.



**Abbreviations:** LC - Liquid Chromatography, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services

Pesticide	Synonym(s)	Pesticide	Synonym(s)	Pesticide	Synonym(s)
Cyfluthrin	Baythroid	Myclobutanil	Systhane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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**Date Completed:** 02/04/2020**Remarks:****MYCOTOXIN PROFILE****Analysis Date/Time:** 02/03/2020 1520  
**Analyst:** OL**Method:** LC/MS/MS  
**Instrument:** Waters Acquity/TQD**Deviations from SOP:**  
None

<u>Mycotoxin</u>	<u>Result</u> (µg/kg)	<u>Action Level</u> (µg/kg)
Aflatoxin B1	-	20
Aflatoxin B2	-	20
Aflatoxin G1	-	20
Aflatoxin G2	-	20
Ochratoxin A	-	20



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit,  
RL - Reporting Limit, AL - Action Level

**Color Key**

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

**Reporting Limit (CFU/g)**  
1"- " not detected above  
reporting limit

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**Date Completed:** 02/04/2020**Remarks:****HEAVY METAL PROFILE****Analysis Date/Time:** 02/03/2020 1520  
**Analyst:** CC**Method:** ICP/MS  
**Instrument:** PerkinElmer Elan 9000**Deviations from SOP:**  
None

<u>Heavy Metal</u>	<u>Result</u> (µg/kg)	<u>Action Level</u> (µg/kg)
Arsenic (As)	-	400
Cadmium (Cd)	-	440
Lead (Pb)	-	1000
Mercury (Hg)	-	200



**Abbreviations:** ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy,  
MS - Mass Spectroscopy, RL - Reporting Limit, AL - Action Level

**Color Key**

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

**Reporting Limit (µg/kg)**  
50"- " not detected above  
reporting limit

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<b>Remarks:</b>		

## MICROBIOLOGICAL PROFILE

<b>Analysis Date/Time:</b> 02/03/2020 1520	<b>Method:</b> Hardy Diagnostics CompactDry	<b>Deviations from SOP:</b>
<b>Analyst:</b>	<b>Instrument:</b> Thermo Incubator	None

<u>Bacteria/Microbe</u>	<u>Result</u> <u>(CFU/g)</u>	<u>Action Level</u> <u>(CFU/g)</u>
Aerobic Plate Count, Total	Absent	-
Escherichia Coli (E. Coli)	Absent	1
Mold	Absent	10000
Yeast	Absent	10000
Salmonella spp.	Absent	1



*Abbreviations:* EC - Escherichia Coli, CFU - Colony-Forming Unit,  
RL - Reporting Limit, AL - Action Level, NT - Not Tested

### Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

**Reporting Limit (CFU/g)**  
1

"-" not detected above reporting limit

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