UHH Analytical Laboratory
Marine Science Department
University of Hawai'i at Hilo
Hilo, Hawai'i 96720

For: Rick Cabados

cev@earthtrade.com

Lab Test Results

Lab Job No. 1899

Project Description: Soil analysis

				measured in mg/kg							
Sample ID	**UHH Lab ID**	**pH**	**Organic Matter LOI (%)**	**Ca [1]**	**Mg [1]**	**Na [1]**	**K [1]**	**PO_4 [2] (as P)**	**NO_3+NO_2 [2] (as N)**	**NH_4 [2] (as N)**	**Arsenic (As)**
1	1899-1	5.47	29.3	117.1	55.4	25.7	73.4	7.8	2.9	27.5	ND
1 duplicate	1899-1 dup	5.44	28.7	117.9	53.0	25.6	72.1	7.3	2.9	27.7	ND
Detection Limits (mg/L)				**0.50**	**0.50**	**0.50**	**0.50**	**0.001**	**0.001**	**0.005**	**0.10**

		measured in mg/L							
QC utilized -IV-QCP-cat		Ca	Mg	Na	K	PO_4	NO_3+NO_2	NH_4	As
QC utilized -IV-QCP-nut *	QC actual	5.54	8.93	13.89	10.95	0.26	0.37	0.36	0.73
QC utilized -IV-QCP-mtl70 (arsenic)	*QC accepted*	*4.09-6.03*	*6.84-9.23*	*11.03-15.28*	*8.05-12.07*	*0.25 ± 10% **	*0.35 ± 10% **	*0.35 ± 10% **	*0.63-0.86*

[1] Ca, Mg, K, Na concentrations were measured on a Thermo iCAP 7400 DUO ICP-OES using certified standards traceable to NIST standard reference materials. Calibration verified with certified reference standards.

[2] PO_4, NO_3 + NO_2, and NH_4 concentrations were measured on a Lachat Quickchem 8500 Series 2 using certified standards traceable to NIST standard reference materials. Calibration verified with a secondary lab standard.

Method used: Soil pH. (p. 28-30) *in* Laboratory Guide for Conducting Soil Tests and Plant Analysis, Edited by J. Benton Jones, Jr. **CRC Press 2001**

For Ca, Mg, K, and Na analysis:

Method used: Method 18.4 Exhangeable cations and total exchange capacity by the ammonium acetate method at pH 7.0 (Lavkulich 1981) (p. 203-205) *in* Soil Sampling and Methods of Analysis, Second Edition. Edited by M . R . Carter and E . G . Gregorich. **CRC Press 2007**

PO4 analysis

Method used for extraction: Chapter 9. Predicting Soil Phosphorus Requirements. (p. 95-100) *in* Plant Nutrient Management In Hawaii's Soils: Approaches for Tropical and Subtropical Agriculture. Silva, J.A., R. Uchida eds. 2000. **University of Hawaii**
Methods used for analysis: EPA 365.5

NO3+NO2 and NH4 analysis

Method used for extraction: 6.2 Extraction of NO_3-N and NH_4-N with 2.0 M KCl (p. 72-73) *in* Soil Sampling and Methods of Analysis, Second Edition. Edited by M . R . Carter and E . G . Gregorich. **CRC Press 2007**
Method used for analysis: EPA 353.2

****For recommendations, please see your extension agent**

Soil Sample Submission/Analysis Request Form

UHH ANALYTICAL LABORATORY
200 W. KAWILI STREET, HILO, HI 96720-4091
PHONE: (808) 932-7590 FAX: (808) 932-7586
EMAIL: analytic@hawaii.edu
WEB: http://www.ctahr.hawaii.edu/uhhanalyticallab

CUSTOMER INFORMATION	
Client Name:	Rick H Cabodi
Project Title:	
Phone:	495 0474
Email:	cevo@hotmail.com

SAMPLE INFORMATION	
Soil Type:	
Area Sampled	
Plants to be grown	
Previous fertilizer	
Fertilizers or conditioners	

Instructions:
1. Email or drop-off completed sample submission form
2. Every new sample submission requires a complete sample submission form
3. Fill in all white boxes, *please do not change anything else*
4. Once completed, a Sample Data Sheet (on second tab) is required for sample submission greater than 4 samples

Please email Sample Submission Form and Sample Data Sheet to analytic@hawaii.edu

SAMPLE ID	SOIL ANALYSIS REQUESTED (Circle Y or N)						PLANT ANALYSIS REQUESTED (Circle Y or N)		OTHER SERVICES REQUESTED
	pH (extractable nutrients (Ca, Mg, K, Na)	Modified Truog	Organic Matter	IM KCl (Nitrate)	Brazilian Methods (Cu, Zn, Fe, Mn)	Metal analysis (EPA 3250E)	Total Carbon and Nitrogen (Plant or Soil)	Plant Tissue (B, Ca, Cu, Fe, K, Mg, Mn, Na, P, Zn)	PLEASE LIST ANY ADDITIONAL ANALYSES BELOW
	(Y) N	(Y) N	(Y) N	(Y) N	Y N	(Y) N	Y N	Y N	
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	

LABORATORY USE ONLY	
Project Name / PI:	
Job Number	1899
Date Rec'd:	

SPECIAL INSTRUCTIONS FOR LAB

LAB INFORMATION

We are located at the University of Hawaii at Hilo in the Marine Science Building (MSB109). You can access the laboratory from W. Lanikaula St (Across from the Church of the Holy Cross)
Lab Hours: Monday - Friday, 8:00-4:00

Please call if any additional directions are required (808) 932-7590.