



ቀን 26 JAN 2009
Date
ቁጥር: MTH/15/18/73
Ref. No.

To Bishan Gari Purification Industries

Addis Ababa

Reference is made to your letter no. bg/005/2009 dated 22, January, 2009.

Accordingly please find attached here with the laboratory test results of untreated and water treated with Bishan Gari for comparison from the same source.

The result indicates that water treated with Bishan Gari Water Purifier was found to be free from coliform, E coli and fecal coliforms. Toxicity result shows no evidence of acute toxicity and physico-chemical test to be with in a given standard.



"Working together for our Health"

BIRRU ARAYA
Δ/Head, Hygiene and Environmental
Health Department

C.C.

- Hygiene and Environmental Health Department
 - Water and Waste Management Control Team
- MoH



ቀን 3/10/2000
Date
ቁጥር 0001/5764/2002
Ref. No.

ልቦናን ጋራ ፕሮረጎብን እንዲስተራ ደ.የተ.የግል ማህበር
አዲስ አበባ

ጉዳይ፣ ቢሻን ጋራ የውሃ ማከሚያ ምጥን የህክምና አቅም ሙከራ በተመለከተ።

በቁጥር ቢጂ/028/08 ሚያዝያ 28/2000 ዓ.ም. በጻፉት ደብዳቤ ድርጅታችሁ የመረተውን 2.5 ግራም ቢሻን ጋራ የውሃ ማከሚያ ምጥን በውሃ ውስጥ ያሉ ጀርቆችን መግደል መቻል አለመቻሉንና እንዲሁም የደፈረሰ ውሃ ማጣራቱን በተጨማሪም በኬሚካል ምክንያት የሚከሰቱ ለጤና ጎጂ የሆኑ ነገሮች መኖር አለመኖራቸውን ሙከራ ተደርጎ የማረጋገጫ ሰርተፍኬት እንዲሰጣችሁ መጠየቃችሁ ይታወሳል።

በመሆኑም በጥያቄአችሁ መሰረት ለሙከራ የወንዝ ውሃ፣ ከከተማ የባንባ ውሃ መስመር የተወሰደ ንጹህ ውሃ፣ ክሎሪን ያለውና የሌለው የተቀቀለ ጠርመሽ /ከብሔራዊ ጤናና ስነ ምግብ ምርምር ኢንስቲትዩት የተወሰደ /ከድርጅታችሁ ምርት የቀረበ 2.5 ግራም ቢሻን ጋራ የውሃ ማከሚያ ምጥን እንዲሁም ናሙና ለማደባለቅና ለመያዝ የሚረዳ ፕላስቲክ ጀሪካን በማዘጋጀት

- በመጀመሪያ የወንዝ ውሃ በጀሪካን እንዲቀዳ ተደረገ
- በሁለተኛ ደረጃ ከተበከለው ውሃ ለንድ ናሙና ለባክቴሪዮሎጂካልና ለንድ ናሙና ለኬሚካል ምርመራ ተወሰደ (River Water Raw)
- በሦስተኛ ደረጃ የተበከለውን ውሃ ድርጅታችሁ ባቀረበው የውሃ ማከሚያ ምጥን እንዲታከም ተደረገ
- ከተወሰነ የመቆያ ጊዜ (Contact time) በኋላ እንደገና ለባክቴሪዮሎጂካልና ለኬሚካል ምርመራ ናሙና ተወሰደ (River water Treated)
- በተጨማሪም ከከተማ መስመር የባንባ ውሃ ላይ ውሃ በጀሪካን በመውሰድ ድርጅታችሁ ባመረተው የውሃ ማከሚያ ምጥን ከመታከሙ በፊት እና ከታከመ

በኃላ ለኪሚካል ምርመራ የውሃ ናሙናና ተወሰደ (piped Water Raw and piped water treated)

- በመጨረሻም ከህክምና (Disinfection) በፊት የተወሰዱትን ናሙናዎችና ከህክምና በኋላ የተወሰዱትን ናሙናዎች ለባክቴሪያል-ጂካልና ለኪሚካል ምርመራ ለብሔራዊ ጤናና ስነ ምግብ ምርምር ኢንስቲትዩት ተሰጠ

በውጤቱ መሰረት ከወንዝ ውሃ የተወሰደው የባክቴሪያል-ጂካል የውሃ ናሙና ውጤት ብክለት ሲያሳይ ድርጅታችሁ ባቀረበው የውሃ ማከሚያ ምጥን ከታከመ በኋላ የተወሰደው የባክቴሪያል-ጂካል የውሃ ናሙና ውጤት ውሃው በካይ ነገሮች የሌሉት መሆኑን ያመለክታል።

እንዲሁም ከህክምና በፊትና ከህክምና በኋላ የተወሰደው የኪሚካል ምርመራ ውጤት ለጤና ተስማሚ ደረጃ መሆኑን ያሳያል።

በመሆኑም ከሙከራው ውጤት ለመረዳት እንደቻልነው በድርጅታችሁ የተመረተው 2.5 ግራም ቢሻን ጋሪ የውሃ ማከሚያ ምጥን አሁን ባለበት ደረጃ በውሃ ውስጥ ያሉ ጀርጦችን መግደልና የደፈረሰውን ውሃ ማጣራት እንደሚችል በተጨማሪም ከዚህ አባሪ ጋር ተያይዞ የቀረበው የኪሚካል ምርመራ ውጤትም የውሃ ጥራት ደረጃ ስታንደርዱን የጠበቀ መሆኑን አያገለጽን

- ለወደፊቱ ቢበዛ በሰድስት ወር እንዴ የማከም አቅሙን ማረጋገጥ እንደሚገባ
- በተጨማሪም በጤና ላይ ስለሚያስከትለው ሁኔታ በተጠቃሚው አካባቢ ትርብ ክትትልና ቅኝት ቢደረግ ጠቃሚ መሆኑን አያገለጽን ከብሔራዊ ጤናና ስነ ምግብ ምርምር ኢንስቲትዩት የደረሰንን 6 ገጽ የላቦራቶሪ ውጤት ከዚህ ጋር አባሪ በማድረግ የላክን መሆናችንን እናሳስባለን።



ለጤናችን በጋራ እንስራ

[Handwritten signature]
ወ/ሮ አብነት
አድገትና አካባቢ ጤና አገልግሎት
መዋዕል ት/ጋላሬ

ግልባጭ/

- ለሐይደችንና የአካባቢ ጤና አገልግሎት መምሪያ
- ለውሃ ጥራት ፍላጎት ንጽህና ቁጥጥር ቡድን ጤና ጥበቃ



Ethiopian Drug Administration and Control Authority
Drug Quality Control & Toxicology Laboratory Department

Toxicology Laboratory Analysis Certificate

Submission Details

Submitted by **Ministry of Health**

For the account of **Bishan Gari**

Lab. Ref. No. **T-6863**

Client Ref. No. **624260**

Sample Details

Date sampled **28/08/00** (if applicable) Mfg. Date **/ /** Exp. Date **/ /**

Sample ID (Code) **AT-502** Batch No.

Sample Description **Treated river water**

Analysis Requested **Acute Toxicity** Method of analysis (test)

Analysis (Test) Results

The Submitted sample of "Treated river water" was tested on laboratory animals under fifteen days observation period. None of the animals have showed any signs or died during this period.

Comments:

No comments.

Conclusion:

We did not find any evidences of acute toxicity.

Analyzed by
Name **Dr.Hailu Mamo** Sign.  Date **08/11/00**
Checked by (Head of Div.)
Name Sign. Date
Approved by (Head of laboratory Dept.)
Name **Wondie Alemu** Sign.  Date **08/11/00**



EHNRI Food Microbiology Laboratory

☎. 011275 34 70 ext.269 or 011277 10 53/55

✉ 1242/5654 E-mail ehnri@ethionet.et

ADDIS ABABA , ETHIOPIA**Drinking Water test report**

Prepared by: FMQT

Reviewed by: QM

Approved by: GM

Edition1

Effective from: 25.02.08

Type of water sample	Piped <input type="checkbox"/> Well <input type="checkbox"/> Spring <input type="checkbox"/> reservoir <input type="checkbox"/>
	<u>Other River</u>
	Chlorinated <input type="checkbox"/> Unchlorinated <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>
Sample code:	Raw Water
Date collected:	06/05/08

Client's Name:	FMOH	Address (Postal, email):
Contact person:	FMOH	
Tel no:	011559587	
Fax :	-	

Lab Register no:	160/08	Date received:	06/05/08
Receipt no:	433289	Analysis started:	06/05/08

(Parameters (Testes))	Method reference	Result	Acceptable
APC at 35°C/48hr. **	APHA, 1995 19 th ed.	40x10⁵ Cfu/ml	-
APC at 22°C/48hrs. **	APHA, 1995 19 th ed.	-	-
Coliform *	WHO, 1971/2004,Eijkman tes	>161 Mpn /100 ml	10-30
Fecal coliform*	WHO, 1971/2004,Eijkman tes	161 Mpn /100 ml	
E.coli type I	ICMSE, 1988,2nd ed.	Present	Absent

i.e. APC = Aerobic bacteria plate count

* In the coliform count minimum detection level of <1 is considered as not detected.

** In the other counts <1 x 10¹ is the standard reporting format for plates from all dilution of the sample has no coloniesComment: Potable Non-potable Suspicious Analysis done by Bisrat Reported date **08/05/08**Approved by [Signature] Approved date **12/05/08**

/ZT



EHNRI Food Microbiology Laboratory

☎. 011275 34 70 ext.269 or 011277 10 53/55

☒ 1242/5654 E-mail ehnri@ethionet.et

ADDIS ABABA, ETHIOPIA

Drinking Water test report

Prepared by: FMQT

Reviewed by: QM

Edition 1

Effective from: 25.02.08

Approved by: GM

Type of water sample	Piped <input type="checkbox"/>	Well <input type="checkbox"/>	Spring <input type="checkbox"/>	reservoir <input type="checkbox"/>
	Other River _____			
Chlorinated <input checked="" type="checkbox"/>		Unchlorinated <input type="checkbox"/>	Unknown <input type="checkbox"/>	
Sample code:	Treated Water		Date collected:	06/05/08

Client's Name:	FMOH	Address (Postal, email):	37 Ambo
Contact person:	FMOH		
Tel no:	011559587		
Fax :	-		

Lab Register no:	159/08	Date received:	06/05/08
Receipt no:	433289	Analysis started:	06/05/08

(Parameters (Testes))	Method reference	Result	Acceptable
APC at 35°C/48hr. **	APHA, 1995 19 th ed.	3x10 ¹ Cfu/ml	< 100
APC at 22°C/48hrs. **	APHA, 1995 19 th ed.	-	-
Coliform *	WHO, 1971/2004, Eijkman test	< 1 Mpn /100 ml	< 1
Fecal coliform*	WHO, 1971/2004, Eijkman test	< 1 Mpn /100 ml	< 1
E.coli type I	ICMSF, 1988, 2nd ed.	Absent	Absent

i.e. APC = Aerobic bacteria plate count

* In the coliform count minimum detection level of <1 is considered as not detected.

** In the other counts <1 x 10¹ is the standard reporting format for plates from all dilution of the sample has no coloniesComment: Potable Non-potable Suspicious Analysis done by Bisrat Reported date 08/05/08Approved by [Signature] Approved date 12/05/08

/ZT



Laboratory Serial No: 433965

Date: 03/06/2008

**ETHIOPIAN HEALTH AND NUTRITION
RESEARCH INSTITUTE**

Sender: Federal Ministry Of Health

Public Health Chemistry Laboratory

Nature of Sample: River Water (Raw)

Tel. 75 34 70, 75 15 22

Origin of Sample: A.A

P.O.Box 1242

Purpose of Analysis: For Drinking

Telex 21522 EHNRI

Date and time of Collection: 29/05/2008

Addis Ababa, Ethiopia

Date and time of arrival: 30/05/2008

**Comprehensive physical and Chemical
Analysis of Water**

Head of Laboratory



Report Sheet

Laboratory Serial No: 433965

Date: 03/06/2008

Sender: Federal Ministry Of Health

Nature of Sample: River Water (Treated)

Origin of Sample: A.A

Purpose of Analysis: For Drinking

Date and time of Collection: 29/05/2008

Date and time of arrival: 30/05/2008

**ETHIOPIAN HEALTH AND NUTRITION
RESEARCH INSTITUTE**

Public Health Chemistry Laboratory

Tel. 75 34 70, 75 15 22

P.O.Box 1242

Telex 21522 EHNRI

Addis Ababa, Ethiopia

**Comprehensive physical and Chemical
Analysis of Water**

Head of Laboratory



Report Sheet

Laboratory Serial No: 433965

Date: 03/06/2008

Sender: Federal Ministry Of Health

Nature of Sample: Piped Water-untreated

Origin of Sample: A.A

Purpose of Analysis: For Drinking

Date and time of Collection: 29/05/2008

Date and time of arrival: 30/05/2008

**ETHIOPIAN HEALTH AND NUTRITION
RESEARCH INSTITUTE**

Public Health Chemistry Laboratory

Tel. 75 34 70, 75 15 22

P.O.Box 1242

Telex 21522 EHNRI

Addis Ababa, Ethiopia

**Comprehensive physical and Chemical
Analysis of Water**

Head of Laboratory



Report Sheet

Laboratory Serial No: 433965

Date: 03/06/2008

Sender: Federal Ministry Of Health

Nature of Sample: Pipe Water (Treated)

Origin of Sample: A.A

Purpose of Analysis: For Drinking

Date and time of Collection: 29/05/2008

Date and time of arrival: 30/05/2008

**ETHIOPIAN HEALTH AND NUTRITION
RESEARCH INSTITUTE**

Public Health Chemistry Laboratory

Tel. 75 34 70, 75 15 22

P.O.Box 1242

Telex 21522 EHNRI

Addis Ababa, Ethiopia

**Comprehensive physical and Chemical
Analysis of Water**

Head of Laboratory



Report Sheet

I	Temperature at the time of collection: _____	-
	Appearance: _____	Colourless
	Odour: _____	Odourless
	Taste: _____	Tasteless
	Settleable Solid: _____	Absent
	Floating Solids: _____	Absent
	Suspended Solids: _____	Absent
	Colour, true: _____	Colourless
	Turbidity: _____	Clear
	Filterable Residue dried at 180 °C: _____	76.0
	Filterable Residue dried at _____ °C: _____	-
	Total solids dried at _____ °C: _____	-
	Electrical Conductivity at 25 °C: _____	110.8 $\mu\text{S}/\text{cm}$
	pH at 20 °C: _____	6.90
	Carbonate Alkalinity as CaCO_3 : _____	Nil
	Bicarbonate Alkalinity as CaCO_3 : _____	50.0
	Hydroxyl Alkalinity as CaCO_3 : _____	Nil
	Acidity as CaCO_3 : _____	-
	Total Hardness as CaCO_3 : _____	48.0
	Organic Nitrogen (N): _____	-
	Phenolic Compounds as phenol: _____	-
	Carbon dioxide (CO_2): _____	-
	Oxygen (O_2): _____	-
	Silica, total (SiO_2): _____	38.6

II		
	<u>Cations</u>	<u>Anions</u>
	H^+ : _____	OH^- : _____ Nil
	NH_4^+ : _____ 0.05	Cl^- : _____ 5.2
	Na^+ : _____ 2.96	NO_2^- : _____ 0.01
	K^+ : _____ 1.65	NO_3^- : _____ 2.97
	Li^+ : _____ -	F^- : _____ -
	Ag^+ : _____ -	Br^- : _____ -
	Ba^{++} : _____ -	I^- : _____ 0.33
	Ca^{++} : _____ 14.43	HCO_3^- : _____ 61.0
	Mg^{++} : _____ 2.92	CO_3^{--} : _____ Nil
	Fe^{++} : _____ -	SO_4^{--} : _____ Nil
	Fe^{+++} : _____ -	PO_4^{--} Ortho: 0.04
	Fe_{total} : _____ 0.02	PO_4^{--} Meta/poly: -
	Mn^{++} : _____ Nil	
	Zn^{++} : _____ -	
	Cu^{++} : _____ -	
	Al^{+++} : _____ -	

III	
	<u>Boron</u> : _____
	<u>Sodium</u> : _____ Na _____ X 100 _____
	Na+K+Mg+Ca _____