

MINERALS RECORDED AT DIFFERENT LOCALITIES IN
SUCCESSIVE HORIZONS OF LATERITE PROFILE

Localities	Goethite					Hematite					Maghemite					Lepidocrocite				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Duricrust	+++	++		+++	+++	++	++	++	++	++	++	++			++		++			
Unindurated laterite	—	++	R++	—	++	—	++	R++	—	++	—	++	R+	—	++	—		R	—	
Bauxitic laterite	++	++		++	—	++	++	++	++	—	++	++	++		—				++	—
Lateritic bauxite	—	—		++	—	—	—	—	++	—	—	—	—		—		—			—
Bauxite	+	—	R+	—	—	+	—	R+	—	—	+	—	R++	—	—		—	R	—	—
Lithomarga	—	—		++	++	—	—	—	++	++	—	—	—		++		—			
Transitional zone	—	—		++	—	—	—	—	++	—	—	—	—		—		—			—
Keolinite	++	++		++	++	++			++	++		++			++		++			
Transitional zone	—	—	R	—	++	—	—	R++	—	++	—	—	R++	—	++	—	—	R	—	
Bentonite	+	++			++	+	++	++	++	++	++	++	++		++					
Weathered basalt		++			—	++	++	++	++	—	++	++	++		++					—

Goethite : $\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$.
 Maghemite : $\gamma\text{-Fe}_2\text{O}_3$
 Hematite : $\alpha\text{-Fe}_2\text{O}_3$
 Lepidocrocite: $1/2 (\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O})$

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Localities	Gibbsite					Boehmite					Halloysite					Kaolinite				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Duriorust	++	++		++	+											++			++	
Unindurated laterite	—	++	R+++	—	++	—	—	R++	—	++	—	—	R	—	—	—	—	R++	—	++
Bauxitic laterite	++	++		++	—					—					—	++			++	—
Lateritic bauxite	—	—		++	—	—	—	—	—	—	—	—	—	—	—	—	—	—	++	—
Bauxite	+++	—	R+++	—	—	—	—	R	—	—	—	—	R	—	—	+	—	R+	—	—
Lithomarga	—	—				—	—	—			—	—				—	—	—	++	++
Transitional zone	—	—			—	—	—	—		—	—	—	—			—	—	—	+++	—
Kaolinite	+	+			+											++			+++	++
Transitional zone	—	—	R+	—	—	—	—	R					R					R++		++
Bentonite		+			+											++	++		++	+++
Weathered basalt	+				—					—					—					—

Gibbsite : $Al(OH)_3$
 Boehmite : $\gamma - AlOOH$
 Halloysite : $Al_2O_3 \cdot 2.5H_2O$
 Kaolinite : $Al_2Si_2O_5(OH)_4$

APPENDIX - III
(iii)

MINERALS RECORDED AT DIFFERENT LOCALITIES IN
SUCCESSIVE HORIZONS OF LATERITE PROFILE

Localities	Montmorillonite					Anatase					Rutile					Ankerite				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Duriorust						++	++			++	++				++	++				++
Unindurated laterite	—	R		—		—	++	R++	—	++	++	R+	—		—	—	R++	—		—
Bauxitic laterite					—	++	++			—	++				—				++	—
Lateritic bauxite	—	—			—	—	—	—	++	—	—	—	—		—	—				—
Bauxite		R++				++		R++				R					R			
Lithomarge	—	—				—	—	—	++	++	—	—	—		++	—	—			++
Transitional zone	—	—			—	—	—	—	++	—	—	—	++		—	—	—			—
Kaolinite						++	++		++	++	++				++	++			++	
Transitional zone	—	—	R++	—	++	—	—	—	—	++	—	—	R	—	—	—	R	—		—
Bentonite	+++	+++	+++	++					++	++		++			++	++			++	
Weathered basalt	++	+++	++		—				++	—					—				++	—

Montmorillonite : $(Al_{1.67}Mg_{.33})Si_4O_{10}(OH)_2 \cdot nH_2O$
Anatase : TiO_2

Rutile : TiO_2
Ankerite : $(Ca,Mg)Fe(CO_3)_2$

APPENDIX - III
(iv)

MINERALS RECORDED AT DIFFERENT LOCALITIES IN
SUCCESSIVE HORIZONS OF LATERITE PROFILE

Localities	Calcite					Quartz				
	1	2	3	4	5	1	2	3	4	5
Duriorust	+++	++		++	++	++	++	+	+	+
Unindurated laterite	—	++	R+	—	—	—	++	R+	—	+
Bauxitic laterite	++	+++		++	—	++	++	+	+	—
Lateritic bauxite	—	—		++	—	—	—		++	—
Bauxite	+++	—	R+	—	—	+	—	R+	—	—
Lithomarga	—	—		++		—	—		+	+
Transitional zone	—	—			—	—	—		+	—
Kaolinite	++	++		++		+	++	++	++	+
Transitional zone	—	—	R+++	—	—	—	—	R++	—	++
Bentonite	++			++		+	++	+	+	+
Weathered basalt	++			++	—	+	++	+	+	—

+ -- Trace (< 5%)
 ++ -- Moderate (5 to 30 %)
 +++ -- Dominant (> 30 %)
 R -- Reworked

Localities -- Absent horizon

1. Amliyara profile
2. Amliyara bore hole profile
3. Amliyara quarry
4. Manjau profile
5. Terbhon profile