

DAL HYDRO - POWER PROJECT		Geotechnical Investigation		Equipment and Methods	
HAND EXCAVATION PICK and SPADE		DAL - left bank		Geological log	
G.A.I		G.A.I		G.A.I	
Carried out for Dam Implementation Unit		Ground Level 0.00 m		Coordinates E 246721 N 2322926	
Date 11-01-2010		Dug :-		11-01-2010	
Layer	Sample No.	Depth (m)	Sketch of Faces	Strata Description	
1	1	0.0-0.5		1 Light grey, sandy CLAY, dry, low to medium plasticity 2 Light grey, silty SAND, with completely weathered fragments of granite. 3 Light grey, silty SAND, dry, with few gravel 4 White, SAND, dry, fine grain. End of excavation at 2.0 m due to sand	
2	2	0.5-1.0			
3	3	1.0-1.5			
4	4	1.5-2.0			
Notes Ease of excavation : Easy excavated Variability of faces : No variation Groundwater : Not encountered Quality of faces : Good Weather : warm					
Excuted by: Geotechnical Engineering Division - Dam Implementation Unit					

DAL HYDRO - POWER PROJECT		Geotechnical Investigation		Equipment and Methods	
HAND EXCAVATION PICK and SPADE		DAL - right bank		Geological log	
G.A.I		G.A.I		G.A.I	
Carried out for Dam Implementation Unit		Ground Level 0.00 m		Coordinates E 246611 N 2322076	
Date 10-01-2010		Dug :-		10-01-2010	
Layer	Sample No.	Depth (m)	Sketch of Faces	Strata Description	
1	1	0.0-0.3		1 Light grey, sandy CLAY, slightly moist, low plasticity with vegetation roots 2 Light grey, sandy CLAY, slightly moist, low plasticity with vegetation roots, with calcareous material 3 Brownish grey, sandy SILT, moist 4 Brownish grey, sandy SILT, moist 5 Brownish grey, sandy SILT, moist 6 Brownish grey, sandy SILT, moist 7 Brownish grey, sandy SILT, moist 8 Brownish grey, sandy SILT, moist, with rock fragments End of excavation at 4.0 m	
2	2	0.3-1.0			
3	3	1.0-1.5			
4	4	1.5-2.0			
5	5	2.0-2.5			
6	6	2.5-3.0			
7	7	3.0-3.5			
8	8	3.5-4.0			
Notes Ease of excavation : Easy excavated Variability of faces : No variation Groundwater : Not encountered Quality of faces : Good Weather : warm					
Excuted by: Geotechnical Engineering Division - Dam Implementation Unit					

DAL HYDRO - POWER PROJECT

Geotechnical Investigation

Equipment and Methods

HAND EXCAVATION PICK and SPADE

Carried out for

Dams Implementation Unit

Location

ABRI - right bank

Ground Level

0.00 m

Coordinates

E 225914
N 2302744

Date

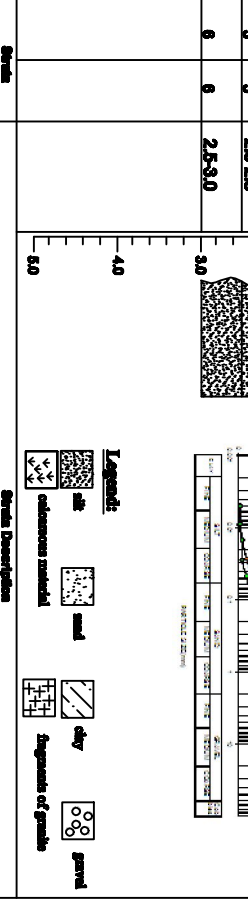
Dug - 12-01-2010

TRIAL PIT NO. ABRI-5

Sheet 1 of 1

Geological log

GAI



Notes

Ease of excavation : Easy excavated

Variability of faces : No variation

Groundwater : Not encountered

Stability of faces : unstable

Weather : warm

Plan (not to scale)



Executed by: Geotechnical Engineering Division - Dams Implementation Unit

DAL HYDRO - POWER PROJECT

Geotechnical Investigation

Equipment and Methods

HAND EXCAVATION PICK and SPADE

Carried out for

Dams Implementation Unit

Location

ABRI- right bank

Ground Level

0.00 m

Coordinates

E 225000
N 2301628

Date

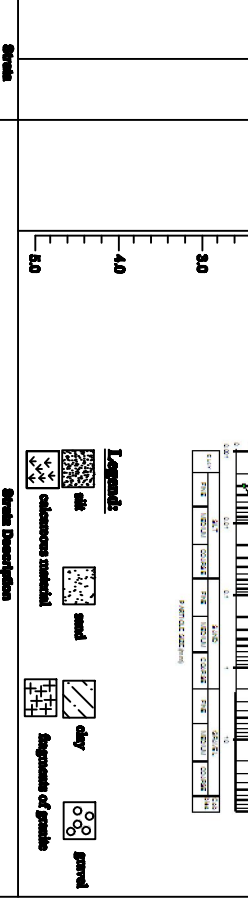
Dug - 12-01-2010

TRIAL PIT NO. ABRI 3

Sheet 1 of 1

Geological log

GAI



Notes

Ease of excavation : Easy excavated

Variability of faces : No variation

Groundwater : Not encountered

Stability of faces : unstable

Weather : warm

Plan (not to scale)



Executed by: Geotechnical Engineering Division - Dams Implementation Unit

DAL HYDRO - POWER PROJECT		TRIAL PT NO.ABR-2	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log	
Carried out for Dams Implementation Unit		Location ABRI - right bank	Geological log GAI
Ground Level 0.00 m		Coordinates E 248911 N 2822078	Date Dug :- 10-01-2010
Layer	Sample No	Depth (m)	Strata of Faces
1	1	0.0-0.5	
2	2	0.5-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-3.0	
7	7	3.0-3.3	
8	8	3.3-3.3	
<p>Strata Description</p> <p>1 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>2 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>3 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>4 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>5 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>6 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>7 Dark grey/sandy CLAY dry, high to medium plasticity</p> <p>8 Dark grey/sandy CLAY dry, high to medium plasticity with some gravel.</p> <p>End of excavation at 3.3 m due to unavailability of faces</p>			
<p>Notes</p> <p>Ease of excavation : Easy excavated</p> <p>Variability of faces : No variation</p> <p>Groundwater : Not encountered</p>		<p>Stability of faces : unstable</p> <p>Weather : warm</p>	<p>Plan (not to scale)</p>
Executed by: Geotechnical Engineering Division - Dams Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PT NO. D -	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log	
Carried out for Dams Implementation Unit		Location DAL - left bank	Geological log GAI
Ground Level 0.00 m		Coordinates E 246340 N 2817416	Date Dug :- 11-01-2010
Layer	Sample No	Depth (m)	Strata of Faces
1	1	0.0-0.5	
2	2	0.5-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-2.8	
<p>Strata Description</p> <p>1 Light grey, sandy SILT dry, low to medium plasticity.</p> <p>2 Light grey, sandy SILT dry, low to medium plasticity.</p> <p>3 Light grey/silty SAND, slight moak.</p> <p>4 Light grey/silty SAND, slight moak.</p> <p>5 Light grey/silty SAND, slight moak.</p> <p>6 Light grey sandy silty CLAY, with weather Rock fragments.</p> <p>End of excavation at 2.8 m due to rock</p>			
<p>Notes</p> <p>Ease of excavation : Easy excavated</p> <p>Variability of faces : No variation</p> <p>Groundwater : Not encountered</p>		<p>Stability of faces : Stable</p> <p>Weather : warm</p>	<p>Plan (not to scale)</p>
Executed by: Geotechnical Engineering Division - Dams Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. D1 Sheet 1 of 1	
Geotechnical Investigation Equipment and Methods HAND EXCAVATION PICK and SPADE		Location DAL - left bank Geological log GAI	
Carried out for Dam Implementation Unit		Ground Level 0.00 m	
Coordinates E 2317230 N 246417		Date Dug :- 11-01-2010	
Layer	Sample No	Depth (m)	Strata of Faces
1	1	0.0-0.3	<p>Soil Parameters Chart (TTCU 2)</p> <p>Legend: silt, sand, clay, fragments of gravel calcareous material</p>
2	2	0.3-1.0	
3	3	1.0-1.5	
4	4	1.5-1.7	
Strata Description 1 Light grey, sandy CLAY, dry, low to medium plasticity 2 Light grey, sandy CLAY, dry, low to medium plasticity 3 Light grey, sandy SAND, slightly moist 4 Light grey, silty SAND, slightly moist with weathered rock fragments End of excavation at 1.7 m due to sand			
Notes Ease of excavation : Easy excavated Variability of faces : No variation Groundwater : Not encountered Weather : warm		Plan (cut to scale) 	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO.62 Sheet 1 of 1	
Geotechnical Investigation Equipment and Methods HAND EXCAVATION PICK and SPADE		Location DAL - right bank Geological log GAI	
Carried out for Dam Implementation Unit		Ground Level 0.00 m	
Coordinates E 2322989 N 246733		Date Dug :- 12-01-2010	
Layer	Sample No	Depth (m)	Strata of Faces
1	1	0.0-0.3	<p>Soil Parameters Chart (TTCU 2)</p> <p>Legend: silt, sand, clay, fragments of gravel calcareous material</p>
2	2	0.3-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-3.0	
7	7	3.0-3.5	
8	8	3.5-4.0	
Strata Description 1 Light grey, sand CLAY, dry, low to medium plasticity 2 Light grey, sand CLAY, dry, low to medium plasticity 3 Light grey, sand CLAY, dry, low to medium plasticity 4 Light grey, sand CLAY, dry, low to medium plasticity 5 Light grey, sand CLAY, dry, low to medium plasticity 6 Light grey, sand CLAY, dry, low to medium plasticity 7 Light grey, sandy silty CLAY, dry, low to medium plasticity 8 Light grey, sandy silty CLAY, dry, low to medium plasticity End of excavation 4.0 m			
Notes Ease of excavation : Easy excavated Variability of faces : No variation Groundwater : Not encountered Weather : warm		Plan (cut to scale) 	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. G3	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log	
Location DAL - left bank		G.A.I	
Carried out for Dam Implementation Unit		Ground Level 0.00 m	Date Dug - 12-01-2010
		Coordinates E 240023 N 23273026	
Layer	Sample No	Depth (m)	Sketch of Faces
1	1	0.0-0.3	
2	2	0.3-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-3.0	
7	7	3.0-3.5	
8	8	3.5-4.0	
Strata			Strata Description
1			Light grey, sandy CLAY, dry, low to medium plasticity
2			Light grey, sandy CLAY, dry, low to medium plasticity
3			Light grey, SAND, slightly moist
4			Light grey, SAND, slightly moist
5			Light grey, sandy SILT
6			Light grey, sandy SILT
7			Light grey, sandy SILT, moist
8			Light grey, sandy SILT, moist
End of excavation at 4.0 m			
Notes		Plan (not to scale)	
Ease of excavation : Easy excavated			
Variability of faces : No variation		Stability of faces : Stable	
Groundwater : Not encountered		Weather : warm	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. C	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log	
Location DAL-left bank		G.A.I	
Carried out for Dam Implementation Unit		Ground Level 0.00 m	Date Dug - 13-01-2010
		Coordinates E 246523 N 2319418	
Layer	Sample No	Depth (m)	Sketch of Faces
1	1	0.0-0.5	
2	2	0.5-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-3.0	
7	7	3.0-3.5	
Strata			Strata Description
1			Light grey, silty CLAY, dry firm, high to medium plasticity
2			Light grey, silty CLAY, dry firm, high to medium plasticity
3			Light grey, sandy CLAY, dry firm, high to medium plasticity
4			Light grey, sandy CLAY, dry firm, high to medium plasticity
5			Light grey, sandy CLAY
6			Light grey, sandy CLAY, slightly moist
7			Light grey, sandy CLAY, slightly moist
End of excavation at 3.5 m due to variability of faces			
Notes		Plan (not to scale)	
Ease of excavation : Easy excavated			
Variability of faces : No variation		Stability of faces : unstable	
Groundwater : Not encountered		Weather : warm	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. D2	
Geotechnical Investigation Equipment and Methods HAND EXCAVATION PICK and SPADE		Location DAL - left bank	
Geotechnical Investigation Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log G:All	
Carried out for Dam Implementation Unit		Ground Level 0.00 m	Date 11-01-2010
Carried out for Dam Implementation Unit		Coordinates E 246992 N 2318102	Dug -> 11-01-2010
Layer	Sample No	Depth (m)	Strata of Faces
1	1	0.0-0.5	
2	2	0.5-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-2.7	
Soils			
1	Light grey,sandy SILT, dry, low to medium plasticity.		
2	Light grey,sandy SILT, dry, low to medium plasticity.		
3	Light grey, clayey SILT ,slightly moist, low plasticity.		
4	Light grey , silty SAND.		
5	Light grey, sandy silty CLAY.		
6	Light grey,clayey SILT, with weather rock fragments.		
End of excavation at 2.7 m due to rock			
Notes			
Ease of excavation : Easy excavated		Plan (not to scale)	
Variability of faces : No variation		Stability of faces : Stable	
Groundwater : Not encountered		Weather : warm	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. B.	
Geotechnical Investigation Equipment and Methods HAND EXCAVATION PICK and SPADE		Location DAL - left bank	
Geotechnical Investigation Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log G:All	
Carried out for Dam Implementation Unit		Ground Level 0.00 m	Date 09-01-2010
Carried out for Dam Implementation Unit		Coordinates E 246460 N 2321607	Dug -> 09-01-2010
Layer	Sample No	Depth (m)	Strata of Faces
1	1	0.0-0.3	
2	2	0.3-1.0	
3	3	1.0-1.5	
4	4	1.5-1.75	
Soils			
1	Light green,sandy CLAY, dry, low to plasticity		
2	Light grey silty SAND, fine grain, dry		
3	Light grey, sandy CLAY, slightly moist, low plasticity		
4	Light grey ,SAND, fine grain, slightly moist		
End of excavation at 1.75 m due to sand			
Notes			
Ease of excavation : Easy excavated		Plan (not to scale)	
Variability of faces : No variation		Stability of faces : Stable	
Groundwater : Not encountered		Weather : warm	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. A-	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods		Geological log	
HAND EXCAVATION PICK and SPADE		GAI	
Carried out for Dam Implementation Unit		Location DAL - left bank	Date 11-01-2010
Ground Level 0.00 m		Coordinates E 247209 N 2323087	
Layer	Sample No	Depth (m)	Status of Faces
1	1	0.0-0.3	
2	2	0.3-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
Soils			
1	Light grey, sandy CLAY, dry, low plasticity		
2	Light grey, sandy CLAY, dry, low plasticity		
3	Light grey, clayey SILT, dry, low plasticity		
4	Light grey, clayey SILT, dry, low plasticity		
End of excavation at 2.0 m due to instability of Soils			
Notes		Plan (not to scale)	
Ease of excavation : Easy excavated			
Variability of faces : No variation		Stability of faces : unstable	
Groundwater : Not encountered		Weather : warm	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRIAL PIT NO. ABRI - 1	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods		Geological log	
HAND EXCAVATION PICK and SPADE		GAI	
Carried out for Dam Implementation Unit		Location ABRI - right bank	Date 10-01-2010
Ground Level 0.00 m		Coordinates E 225689 N 2302362	
Layer	Sample No	Depth (m)	Status of Faces
1	1	0.0-0.3	
2	2	0.3-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-3.0	
7	7	3.0-3.5	
8	8	3.5-4.0	
Soils			
1	Dark grey, sandy CLAY, dry, with few calcareous material		
2	Dark grey, sandy CLAY, dry, with few calcareous material		
3	Dark grey, silty CLAY, dry, without calcareous material		
4	Dark grey, silty CLAY, dry, without calcareous material		
5	Dark grey, silty CLAY, dry, without calcareous material		
6	Dark grey, silty CLAY, dry, without calcareous material		
7	Dark grey, silty CLAY, dry, without calcareous material		
8	Dark grey, silty CLAY, dry, without calcareous material		
End of excavation at 4.0 m			
Notes		Plan (not to scale)	
Ease of excavation : Easy excavated			
Variability of faces : No variation		Stability of faces : Stable	
Groundwater : Not encountered		Weather : warm	
Executed by: Geotechnical Engineering Division - Dam Implementation Unit			

DAL HYDRO - POWER PROJECT		TRAL PT NOABR-2	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log GAI1	
Carried out for Dams Implementation Unit		Location ABR1- right bank	Date Dug - 10-01-2010
Ground Level 0.00 m		Coordinates E 246811 N 2322076	
Layer	Sample No	Depth (m)	Sketch of Faces
1	1	0.0-0.5	
2	2	0.5-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-3.0	
7	7	3.0-3.3	
8	8	3.3-3.3	
9	9	3.3-3.3	
<p>Strata Description</p> <p>1 Dark grey, sandy CLAY <i>dry</i>, high to medium plasticity</p> <p>2 Dark grey, sandy CLAY <i>dry</i>, high to medium plasticity</p> <p>3 Dark grey, sandy CLAY <i>dry</i>, high to medium plasticity</p> <p>4 Dark grey, sandy CLAY <i>dry</i>, high to medium plasticity</p> <p>5 Dark grey, sandy CLAY <i>dry</i>, high to medium plasticity</p> <p>6 Dark grey, sandy CLAY <i>dry</i>, high to medium plasticity</p> <p>7 Dark grey, silty CLAY <i>dry</i>, high to medium plasticity</p> <p>8 Dark grey, silty CLAY <i>dry</i>, high to medium plasticity with some gravel.</p> <p>9 End of excavation at 3.3 m due to instability of face</p>			
Notes		Plan (next to scale)	
Ease of excavation : Easy excavated		Quality of faces : unstable	
Variability of faces : No variation		Weather : warm	
Groundwater : Not encountered			
Executed by: Geotechnical Engineering Division - Dams Implementation Unit			

DAL HYDRO - POWER PROJECT		TRAL PT NO. D -	
Geotechnical Investigation		Sheet 1 of 1	
Equipment and Methods HAND EXCAVATION PICK and SPADE		Geological log GAI1	
Carried out for Dams Implementation Unit		Location DAL - left bank	Date Dug - 11-01-2010
Ground Level 0.00 m		Coordinates E 246349 N 2317416	
Layer	Sample No	Depth (m)	Sketch of Faces
1	1	0.0-0.5	
2	2	0.5-1.0	
3	3	1.0-1.5	
4	4	1.5-2.0	
5	5	2.0-2.5	
6	6	2.5-2.8	
7	7	2.8-2.8	
8	8	2.8-2.8	
9	9	2.8-2.8	
<p>Strata Description</p> <p>1 Light grey, sandy SILT <i>dry</i>, low to medium plasticity.</p> <p>2 Light grey, sandy SILT <i>dry</i>, low to medium plasticity.</p> <p>3 Light grey, silty SAND, slight moist.</p> <p>4 Light grey, silty SAND, slight moist.</p> <p>5 Light grey, silty SAND, slight moist.</p> <p>6 Light grey, sandy silty CLAY, with weather Rock fragments.</p> <p>7 End of excavation at 2.8 m due to rock</p>			
Notes		Plan (next to scale)	
Ease of excavation : Easy excavated		Quality of faces : stable	
Variability of faces : No variation		Weather : warm	
Groundwater : Not encountered			
Executed by: Geotechnical Engineering Division - Dams Implementation Unit			