

Table S8. Cost calculation for excavation to build access and in-block roads

	A	B	C
1		Excavator	
2	Time	Base Year	
3	Production	Non-Frozen	Frozen
4	Total Access Road to Build (km)	300.00	600.00
5	Days	106	83
6	Hours/Day	21	19
7	Input		
8	Annual Available Hours	2,226	1,577
9	Utilization Percentage [42]	75	75
10	Annual Production Hours	1,670	1,183
11	Expected Life (Years) [49]	4.00	
12	Purchase Information		
13	Equipment Purchase Cost (\$) [47]	440,000	
14	Salvage Value (%) [49]	0.15	
15	Fuel Price (\$) [41]	1.00	
16	Oil Lube Costs (%) [41]	0.10	
17	Insurance Costs (%) [41]	0.035	
18	Load Factor	0.25	
19	Salvage Value (\$)	66,000	
20	Rate of Return on Total Capital	253,000	
21	Average Annual Equipment Value (\$)	0.10	
22	Fuel Consumption (lt/hr) [51]	41.60	43.00
23	Ownership Costs		
24	Depreciation (\$/year)	93,500	
25	Insurance (\$/year)	8,855	
26	Return on Capital (\$/year)	25,300	
27	Annual Ownership Costs (\$/year)	127,655	
28	Total Ownership Costs (\$/year)	638,275	
29	Total Ownership Unit Cost (\$/km)	709.19	
30	Labor Costs		
31	Straight Time	1,908	1,494
32	Overtime Worked	318	83
33	Wage (\$/hr) [32]	29.29	29.29
34	Overtime (\$/hr)	43.94	43.94
35	Seasonal Labor Costs (\$)	69,857	47,406
36	Add Employee Load (Benefits)	17,464	11,851
37	Total Labour Costs (\$)	87,321	59,257
38	Total Labor Unit Costs(\$/km)	1,341.12	634.19
39	Operation Costs		
40	Fuel cost (\$/hr)	41.60	43.00
41	Oil/Lube Cost (\$/hr)	4.16	4.30
42	Fuel & Lube Cost (\$/km)	254.65	93.24
43	Repair & Maintenance Costs (\$/year)	74,800	
44	Repair & Maintenance Costs (\$/km)	672.434	
45	Total Operation Costs (Season)	98,104	72,942
46	Total Operation Unit Costs (\$/km)	1,506.73	780.65
47	Total Equipment Unit Costs (seasonal) (\$/km)	3,557.05	2,124.04
48	Number of Equipments	3	5
49	Prodcutivity (km/Pmh) ¹	0.039	0.079
50	Availability (%)	1.00	1.00
51	Productivity (km/Smh)	0.039	0.079
52	¹ obtained from contractor		