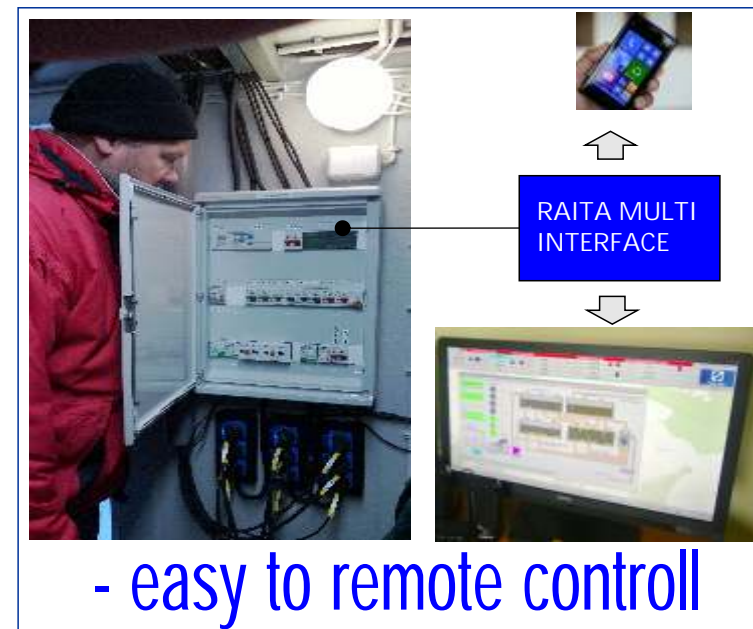
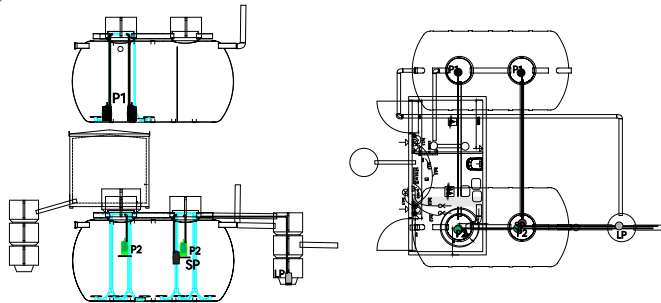


RAITA's sewage treatment for villages and small towns





RAITA PA 25 PÄINURME VILLAGE TREATMENT PLANT



BATCH SIZE: 1,5-8,5 m³ adjusts automatically, 3 batches max / 24 h, aeration 6 h, clarification 1,5 h
CAPACITY: 25m³/24 h treated + 12 m³ storage capacity → max 37 m³/ 24 h
 Incoming sewage characteristics BOD7 200 mg – 600 mg/l, max BOD7 14,5 kg/ 24 h
 kg BOD/m³/d = 0,42 av sludgeage 28 days

ENERGY CONSUME: 1-2 kWh/ m³

CHEMICAL CONSUME:

pix 200-400 gr/ m³

sodium hydroxide 0-5 gr/ m³

SLUDGE PRODUCTION : 0,02-0,1 % treated 1000 l wastewater

PURIFICATION EFFICIENCY:

BOD7 < 7 mg/l

Ptot < 0,7 mg/l

Ntot < 40 mg/l

NEED OF SURVELLAINCE: 10-15 m / surveillance, recommendation once in a week

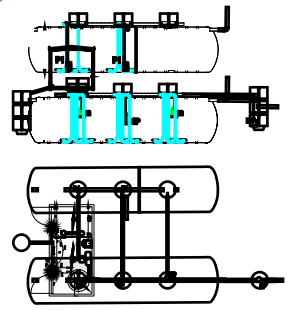
raita.com

Plant		Purification rate 2016.a.					Outgoing	
		Limit	I kv	II kv	III kv	IV kv	2016.a	2016.a
			Outgoing	Outgoing	Outgoing	Outgoing	In average	Incoming
R-Alliku	BOD7	25	8,6				8,60	
	321979 SS	35	15,0				15,00	
	Ntot	60	24,0				24,00	
	Ptot	2	0,20				0,20	
	COD	125	31,0				31,00	
Viisu	BOD7	25	7,4				7,40	
	321979 SS	35	13,0				13,00	
	Ntot	60	35,0				35,00	
	Ptot	2	0,25				0,25	
	COD	125	17,0				17,00	
Sargvere	BOD7	40	6,0				6,00	
	321956 SS	35	7,8				7,80	
	Ntot	-	29,0				29,00	
	Ptot	-	0,52				0,52	
	COD	150	27,0				27,00	
Anna	BOD7	40	18,0				18,00	
	321956 SS	35	33,0				33,00	
	Ntot	-	66,0				66,00	
	Ptot	-	1,50				1,50	
	COD	150	100,0				100,00	
Peetri	BOD7	40	5,1				5,10	
	321966 SS	35	7,5				7,50	
	Ntot	-	29,0				29,00	
	Ptot	-	0,23				0,23	
	COD	150	20,0				20,00	
Koigi	BOD7	25	3,0				3,00	
	321187 SS	35	3,3				3,30	
	Ntot	60	16,0				16,00	
	Ptot	2	0,10				0,10	
	COD	125	15,0				15,00	
Painurme	BOD7	40	3,0				3,00	
	321187 SS	35	3,8				3,80	
	Ntot	-	13,0				13,00	
	Ptot	-	0,79				0,79	
	COD	150	15,0				15,00	

Plant		2016.a.					Outgoing	
		Limit	I kv	II kv	III kv	IV kv	2016.a	2015.a
			Outgoing	Outgoing	Outgoing	Outgoing	In average	Incoming
Aravete	BOD7	25	6,4				6,40	
	321982 SS	35	2,8				2,80	
	Ntot	60	19,0				19,00	
	Ptot	2	0,94				0,94	
	COD	125	17,0				17,00	
Karavete	BOD7	25	5,3				5,30	
	321982 SS	35	9,5				9,50	
	Ntot	60	41,0				41,00	
	Ptot	2	1,20				1,20	
	COD	125	18,0				18,00	



RAITA PA 50 KOIGI VILLAGE TREATMENT PLANT



ENERGY CONSUME: 1-3 kWh/ m3
CHEMICAL CONSUME:
 pix 200-400 gr/ m3
 sodium hydroxide 0-5 gr/ m3
SLUDGE PRODUCTION : 0,02-0,1 % treated 1000 l wastewater

PURIFICATION EFFICIENCY:
 BOD7 < 7 mg/l
 Ptot < 0.7 mg/l
 Ntot < 25 mg/l

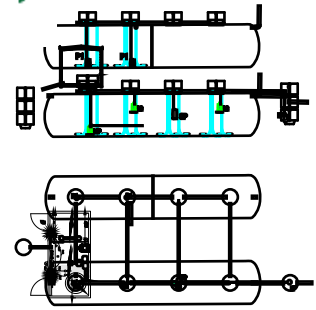
raita.com

		Purification rate 2015.a.					Outgoing 16.07.15.		Purification %
		Limit	I kv	II kv	III kv	IV kv	2015.a	2015.a	
Plant			Outgoing	Outgoing	Outgoing	Outgoing	In average	Incoming	
R-Alliku 321979	BOD7	25	3,0	3	9,6	7,5	5,78	330	98
	SS	35	9,2	7	17,0	12,0	11,30	240	95
	Ntot	60	11,0	17	58,0	22,0	27,00	110	75
	Ptot	2	0,10	2,8	0,85	0,96	1,18	17	93
	COD	125	15,0	14	50,0	36,0	28,75	560	95
Viisu 321979	BOD7	25	6,6	6,1	6,0	4,3	5,75	330	98
	SS	35	9,5	13	9,5	6,0	9,50	150	94
	Ntot	60	16,0	67	5,8	11,0	24,95	97	74
	Ptot	2	1,30	0,43	0,10	0,20	0,51	9,4	95
	COD	125	18,0	76	32,0	19,0	36,25	720	95
Sargvere 321956	BOD7	40	3,9	10	13,0	6,5	8,35	500	98
	SS	35	2,0	24	8,6	12,0	11,65	490	98
	Ntot	-	32,0	43	24,0	24,0	30,75	71	57
	Ptot	-	2,10	0,83	0,40	0,66	1,00	7,4	87
	COD	150	44,0	60	60,0	35,0	49,75	940	95
Anna 321956	BOD7	40	6,9	3,7	12,0	7,7	7,58	430	98
	SS	35	7,0	5	25,0	6,8	10,95	530	98
	Ntot	-	66,0	66	21,0	29,0	45,50	130	65
	Ptot	-	2,60	1	0,81	0,7	1,28	14	91
	COD	150	63,0	52	45,0	31,0	47,75	1000	95
Peetri 321966	BOD7	40	5,0	3,1	10,0	9,2	6,83	900	99
	SS	35	6,0	7	10,0	17,0	10,00	790	99
	Ntot	-	25,0	72	32,0	29,0	39,50	130	70
	Ptot	-	0,24	0,73	0,44	1,60	0,75	15	95
	COD	150	41,0	46	37,0	47,0	42,75	1100	96
Koigi 321187	BOD7	25	4,9	4	8,7	6,9	6,13	180	97
	SS	35	3,4	7	2,2	8,6	5,30	360	99
	Ntot	60	35,0	12	35,0	28,0	27,50	67	59
	Ptot	2	0,66	0,39	0,28	1,10	0,61	6,5	91
	COD	125	16,0	14	38,0	30,0	24,50	370	93
Painurme 321187	BOD7	40	3,0	3	3,0	3,4	3,10	600	99
	SS	35	3,2	6	4,5	3,7	4,35	290	99
	Ntot	-	18,0	11	52,0	17,0	24,50	140	83
	Ptot	-	1,20	0,14	0,35	0,14	0,46	13	96
	COD	150	36,0	14	15,0	15,0	20,00	700	97

		2015.a.					Outgoing IV KV		Purification %
		Limit	I kv	II kv	III kv	IV kv	2015.a	2015.a	
Plant			Outgoing	Outgoing	Outgoing	Outgoing	In average	Incoming	
Aravete 321982	BOD7	25	3,6	3	3,6	12,0	5,55	610	99
	SS	35	2,1	6	3,1	17,0	7,05	310	98
	Ntot	60	20,0	12	16,0	23,0	17,75	120	85
	Ptot	2	0,57	0,26	0,43	0,40	0,42	36	99
	COD	125	27,0	14	15,0	46,0	25,50	1200	98
Käravete 321982	BOD7	25	10,0	3	6,6	5,40	6,25	120	95
	SS	35	13,0	2	12,0	6,80	8,45	120	93
	Ntot	60	12,0	16	37,0	12,00	19,25	99	81
	Ptot	2	0,60	0,96	0,63	0,77	0,74	9	92
	COD	125	30,0	14	27,0	36,00	26,75	300	91



RAITA PA 70 ROOSNA ALLIKU VILLAGE TREATMENT PLANT



BATCH SIZE: 6-35 m3 adjusts automatically, 2 batches max / 24 h, aeration on/off 10 h , clarification 2 h
CAPACITY: 70 m3/24 h treated +30 m3 storage capacity→ max 100 m3/ 24 h
 Incoming sewage characteristics BOD7 200 mg – 600 mg/ l, max BOD7 14,5 kg/ 24 h
 kg BOD/m3/d = 0,42 av sludgeage 28 days

ENERGY CONSUME: 1-3 kWh/ m3
CHEMICAL CONSUME:
 pix 200-400 gr/ m3
 sodium hydroxide 0-5 gr/ m3
SLUDGE PRODUCTION : 0,02-0,1 % treated 1000 l wastewater

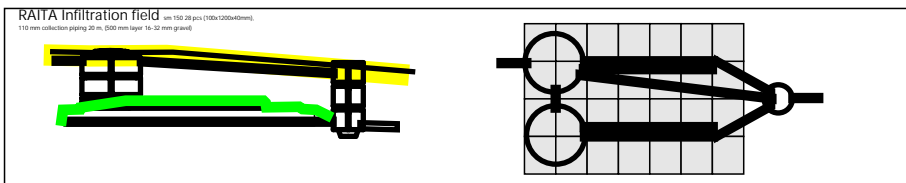
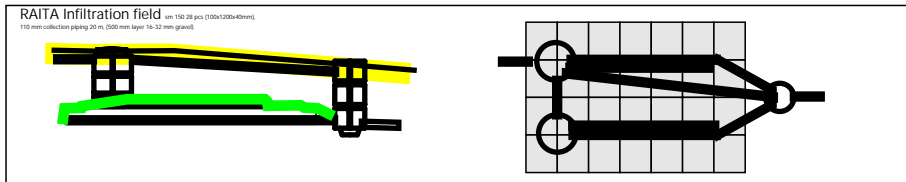
PURIFICATION EFFICIENCY:
 BOD7 < 7 mg/l
 Ptot < 0.7 mg/l
 Ntot < 25 mg/l

NEED OF SURVELLAINCE: 10-15 m / survellaince, recommendation once in a week

raita.com

Plant		Limit	03.03.14.	10.07.14.	09.10.14.	09.10.14.		Purification %	
			04.02.2014	16.07.14.	16.10.14.	Outgoing	16.10.14.		
			2014.a.	06.01.14.	07.05.14.	13.08.14.	2014.a		2014.a.
			I kv	II kv	III kv	IV kv	In average	Incoming	
R.Alliku 321979	BOD7	25	3,3	12	3,2	3,0	5,38	520	99
	SS	35	2,5	34	8,0	7,4	12,98	290	96
	Ntot	-	33,0	9,3	23,0	6,6	17,98	110	84
	Ptot	2	0,87	0,5	1,70	0,27	0,84	13	94
	COD		34,0	60	46,0	32,0	43,00	730	94
Viisu 321979	BOD7	25	15,0	5,4	21,0	4,8	11,55	630	98
	SS	35	17,0	37	14,0	14,0	20,50	300	93
	Ntot	-	48,0	25	48,0	19,0	35,00	120	71
	Ptot	-	0,54	0,65	0,81	0,22	0,56	14	96
	COD		48,0	60	92,0	25,0	56,25	790	93
Sargvere 321956	BOD7	25	4,5	6,5	7,5	4,0	5,63	420	99
	SS	35	7,3	14	27,0	10,0	14,58	240	94
	Ntot	-	28,0	52	50,0	9,9	34,98	120	71
	Ptot	-	1,70	0,44	0,69	0,68	0,88	13	93
	COD	125	34,0	35	65,0	28,0	40,50	740	95
Anna 321956	BOD7	25	9,1	9	22,0	3,0	10,78	540	98
	SS	35	24,0	5,8	8,0	11,0	12,20	240	95
	Ntot	-	47,0	49	56,0	42,0	48,50	120	60
	Ptot	-	4,20	4,1	7,40	2,5	4,55	15	70
	COD		90,0	60	130,0	29,0	77,25	750	90
Peetri 321966	BOD7	25	15,0	3	21,0	3,0	10,50	390	97
	SS	35	11,0	4,5	26,0	4,3	11,45	240	95
	Ntot	-	15,0	36	11,0	44,0	26,50	120	78
	Ptot	2	0,95	0,61	1,0	0,74	0,83	12	93
	COD		44,0	22	60,0	40,0	41,50	1100	96
Koigi 321187	BOD7	25	3,8	10	3,0	6,3	5,78	1300	100
	SS	35	9,2	15	9,3	11,0	11,13	1200	99
	Ntot	-	42,0	12	42,0	19,0	28,75	133	78
	Ptot	2	1,10	0,6	0,97	1,30	0,99	17	94
	COD	125	42,0	29	15,0	28,0	28,50	2600	99
Painurme 321187	BOD7	25	3,0	3	3,0	3,7	3,18	310	99
	SS	35	6,2	4,3	7,6	8,4	6,63	210	97
	Ntot	-	39,0	14	32,0	39,0	31,00	99	69
	Ptot	2	0,38	0,97	0,28	1,20	0,71	12	94
	COD		19,0	19	16,0	24,0	19,50	480	96

Plant		Limit	16.10.14.	09.10.14.	16.10.14.	09.10.14.		Purification %	
			2014.a.	16.10.14.	09.10.14.	Outgoing	IV KV		
				09.10.14.	Outgoing	2014.a	2014.a.		
			I kv	II kv	III kv	IV kv	In average	Incoming	
Aravete 321982	BOD7	25	3,0	5,1	3,7	3,2	3,75	840	100
	SS	35	2,7	25	16,0	13,0	14,18	340	96
	Ntot	60	28,0	47	9,2	8,8	23,25	140	83
	Ptot	2	1,10	0,55	1,50	0,34	0,87	16	95
	COD	125	15,0	46	33,0	20,0	28,50	1200	98
Käravete 321982	BOD7	25	3,8	3	3,0	3,00	3,27	210	98
	SS	35	3	8,8	9,90	7,23	7,23	300	98
	Ntot	60	22	24,0	19,00	21,67	130	83	
	Ptot	2	0,63	0,1	0,14	0,29	13	98	
	COD	125	25	15,0	21,00	20,33	510	96	



Sewage treatment
since 1965

raita.com

Raita Environment 2016

Plant		Purification rate	01.08.13.	02.12.13.	Outgoing		IV KV	Purification %
		2013.a.	18.07.13.	15.10.13.	2013.a	2013.a.		
		Limit	III kv	IV kv	In average	Incoming		
R-Ailiku 321979	BOD7	25	3,6	3,7	3,65	810	100	
	SS	35	6,0	9,9	7,95	440	98	
	Ntot	-	9,7	25,0	17,35	180	90	
	Ptot	2	2,50	0,40	1,45	17	91	
	COD		35,0	15,0	25,00	1200	98	
Viisu 321979	BOD7	25	3,0	3,0	3,00	490	99	
	SS	35	6,0	4,3	2,58	210	99	
	Ntot	-	10,3	28,0	9,58	110	91	
	Ptot	-	0,09	0,24	0,17	14	99	
	COD		42,0	23,0	32,50	710	95	
Sargvere 321956	BOD7	25	3,0	3,3	1,58	460	100	
	SS	35	2,0	4,2	3,10	340	99	
	Ntot	-	30,0	20,0	25,00	114	78	
	Ptot	-	0,1	0,5	0,30	12	98	
	COD	125	16,0	26,0	21,00	890	98	
Anna 321956	BOD7	25	12,0	3,7	7,85	160	95	
	SS	35	15,0	10,0	12,50	130	90	
	Ntot	-	60,0	43,0	51,50	160	68	
	Ptot	-	0,54	1,4	0,97	8,9	89	
	COD		82,0	29,0	55,50	400	86	
Peetri 321966	BOD7	25	7,2	3,0	5,10	300	98	
	SS	35	11,0	15,0	13,00	190	93	
	Ntot	-	46,0	30,0	38,00	107	64	
	Ptot	2	0,7	0,50	0,60	15	96	
	COD		65,0	61,0	63,00	550	89	
Koigi 321187	BOD7	25	3,0	3,0	3,00	130	98	
	SS	35	2,0	4,4	1,60	110	99	
	Ntot	-	23,0	29,0	26,00	94	72	
	Ptot	2	0,84	0,78	0,81	7,9	90	
	COD	125	18,0	27,0	22,50	500	96	
Painurme 321187	BOD7	25	3,0	8,4	5,70	360	98	
	SS	35	3,0	10,0	6,50	200	97	
	Ntot	-	66,0	68,0	67,00	108	38	
	Ptot	2	1,00	0,48	0,74	9,8	92	
	COD		60,0	40,0	50,00	550	91	

Plant		2013.a.	01.08.13.	02.12.13.	Outgoing		IV KV	Purification %
		Limit	18.07.13.	15.10.13.	2013.a	2013.a.		
		---	Outgoing	Outgoing	In average	Incoming		
Aravete 321982	BOD7	25	8,0	3,0	5,50	370	99	
	SS	35	8,0	6,0	7,00	140	95	
	Ntot	-	27,0	35,0	31,00	82	62	
	Ptot	2	1,40	0,20	0,80	8,9	91	
	COD	125	47,0	15,0	31,00	530	94	