CAVE SPRINGS WATER DEPT.

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P.O. BOX 5

CAVE SPRINGS, ARKANSAS 72718 PH: 479-248-1040 FAX: 479-248-7521

Re: Permit No: 4893-WR-2: AFIN: 04-01642

Dear Mr. Rick McConnell Here is a copy of our Waste Management Plan. Nothing has changed in our Waste Management Plan.

If you have any more questions please feel free to call our office, or my cell phone 479-721-7539

Sincerely,

Rick A Sayre City of Cave Springs



FOR CAVE SPRINGS MUNICIPAL PROPERTY OWNERS IMPROVEMENT DISCTRICT #1 / THE CREEKS SPECIAL SEWER DISTRICT

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CAVE SPRINGS, ARKANSAS

CEI Project No. 20733.0

Revised February 22, 2006

REV.1

GENERAL OFFICES: CEI Engineering Associates, Inc. P.O Box 1408 3317 SW"I" Street Bentonville, AR 72712 (479) 273-9472 FAX (479) 273-0844



DRIPFIELD DESIGN FOR CAVE SPRINGS MUNICIPAL PROPERTY OWNERS IMPROVEMENT DISTRICT #1 / THE CREEKS SPECIAL SEWER DISTRICT CAVE SPRINGS, ARKANSAS

There are five effluent disposal fields proposed on the Creeks golf course to discharge effluent from the proposed treatment facilities into the underground drip system. Engineering services Inc. (ESI) designed a drip field just west of Treatment facility #1 on the driving range. This drip field is designed to have enough capacity to dispose the effluent generated on the 92 lots that is the Fairway Valley subdivision.

The second field is actually an expansion of the drip field for Treatment Plant #1. This dripfield is designed by CEI Engineering and is located just south of Spring Creek (See Construction Drawings). The dripfield is designed to dispose of the excess capacity of Treatment Plant #1. Treatment Plant #1 has a capacity of 92,000 gallons per day. The expanded dripfield south of Spring Creek is sized to dispose of 66,000 gallons per day.

Dripfields 3 through 5 will be connected to Treatment Plant #2 as follows:

The third field is located west of Osage Creek (See Construction Drawings sheet 22 of 42 for dripfield layout). This field is divided into 13 zones. Each zone is subdivided into a specific number of areas. These areas have the same size and allowable perc rate, and therefore the exact same dosing times.

The fourth field is to the north of the third field. It contains 18 zones, which again is subdivided into areas with the same dosing times, as shown in the calculations.

The fifth field is to the north of the fourth field. It contains 10 zones, subdivided into areas with, again, the same dosing times.

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13-2-10=41

Waste Management Plan Cave Springs, AR CEI #20733.0 Page 2 of 6

Treatment Plant #1 is described in the attached letter from Engineering Services, Inc.

Treatment Plant #2 will be located at the following approximate latitude and longitude: 36°15'02''N LAT, 94°14'30''W LONG.

Wastewater will enter Treatment Plant #2 from the proposed Cave Springs Interceptor line. From here the wastewater will be split into two "Lotus" Aerobic reactor tanks. Next the wastewater will flow to the two proposed 26-diameter concrete secondary clarifiers. Effluent from the clarifiers will flow to three proposed pump tanks on the fairway of The Creeks Golf course. Please refer to the included Specifications of this project for specific information regarding the wastewater treatment plant components.

Treatment facility #2 is designed with the following parameters in mind:

	Settled	Final
	Influent	Effluent
Design Flow (gpd)	320000	320000
pН	6.5-8.5	6.5-8.5
BOD5 (mg/L)	150	
CBOD5 (mg/L)	-	150
TSS (mg/L)	150	15
Fecal Coliform	-	<10000

Concrete sludge holding tanks will be constructed as part of Treatment Plant #2. Sludge from these tanks will be periodically removed. This service will be provided by the following subcontractor at the request of the Sewer district.

Best Jet Sewer and Drain, Inc. P.O Box 8113 Fayetteville, AR 72703 Phone: (479) 973-4446

Respectfully Submitted,

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Ferdi Fourie, E.I. Project Designer

DRIPFIELD DESIGN CALCULATIONS

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DRIPFIELD DESIGN FOR CAVE SPRINGS MUNICIPAL PROPERTY OWNERS IMPROVEMENT DISTRICT #1 / THE CREEKS SPECIAL SEWER DISTRICT CAVE SPRINGS, ARKANSAS

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The fifth field is to the north of the fourth field. It contains 10 zones, subdivided into areas with, again, the same dosing times.



8317 SW "I" ST Bentonville, AR 72712 Tel. (479) 273-9472 Ferdi Fourie

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				DRI	PFIELD	SUMM/	ARY CA	LCULAT	ION				
Zone	Area	Hydraulic	Area	Daily	Flowrate	Number	Dosing	Disposal	Number	Dosing	Dosing	Dose	Disposal
Number	Number	Loading		Allowable	for	of	Time	Rate	of	Time	Time	Volume	Rate
j		Rate	.n)	Disposal	area	doses	for area	For	doses	for	for	for zone	for
		(g/d/sq.ft)	; ch j	(g/d)	(gpm)	for area		Area	for zone	zone	zone	10. 20.00	zone
		(8.204.0)	· · · · · · ·	(9.0)	(9011)		(min)	(g/d/sq.ft)	101 20110	(min)	(hours)		(g/d/sq.ft)
							(11001)	(check)		(1111)	(10015)		
	1	0.42	7650	2040	46.00	15							(check)
		0.42		3213	16.89	15	12.68	3212					
1	2	0.42	7650	3213	16.89	15	12.68	3212	<u>45</u>	570.60	9.51	9637	<u>0.42</u>
	3	0.42	7650	3213	16.89	15	12.68	3212					
_	1	0.45	6950	3128	15.35	15	13.58	3127					
2	2	0.45	6950	3128	15.35	15	13.58	3127	<u>45</u>	611.10	10.19	9380	<u>0.45</u>
	3	0.45	6950	3128	15.35	15	13.58	3127					
	1	0.40	6620	2648	14.62	15	12.08	2649					
3	2	0.40	6620	2648	14.62	15	12.08	2649	<u>45</u>	543.60	9.06	7947	0.40
	3	0.40	6620	2648	14.62	15	12.08	2649			1		
	1	0.45	6950	3128	15.35	20	10.19	3128					
4	2	0.45	6950	3128	15.35	20	10.19	3128	40	407.60	6.79	6257	0.25
	1	0.20									·		
	2		11262	2252	24.87	10	9.06	2253	· ·				
5		0.20	11262	2252	24.87	10	9.06	2253	-		<u> </u>		
5	3	0.20	11262	2252	24.87	10	9.06	2253	<u>50</u>	453.00	7.55	11266	<u>0.20</u>
	4	0.20	11262	2252	24.87	10	9.06	2253					
	5	0.20	11262	2252	24.87	10	9.06	2253					
6	1	0.20	13728	2746	30.31	10	9.06	2746	20	181.20	3.02	5492	0.40
	2	0.20	13728	2746	30.31	10	9.06	2746	20	101.20	3.02	3492	0.16
	1	0.20	7642	1528	16.88	10	9.06	1529					
7	2	0.20	7642	1528	16.88	10	9.06	1529	<u>30</u>	271.80	4.53	4588	0.20
	3	0.20	7642	1528	16.88	10	9.06	1529	-				
	1	0.30	7820	2346	17.27	15	9.06	2347					
8	2	0.30	7820	2346	17.27	15	9.06	2347	45	407.70	6.80	7041	0.00
Ů I	3	0.30	7820	2346	17.27				<u>45</u>	407.70	0.00	7041	<u>0.30</u>
	1					15	9.06	2347					
		0.50	845	423	1.87	20	11.32	423					
	2	0.50	845	423	1.87	20	11.32	423					
9	3	0.50	845	423	1.87	20	11.32	423	<u>100</u>	1132.00	18.87	2117	0.50
[4	0.50	845	423	1.87	20	11.32	423					
	5	0.50	845	423	1.87	20	11.32	423	_				
10	1	0.20	5950	1190	13.14	10	9.06	1190	20	181.20	2.02	0204	0.44
10	2	0.20	5950	1190	13.14	10	9.06	1190	20	101.20	3.02	2381	0.11
11	1	0.30	10547	3164	23.29	10	13.58	3163		074.00	4.53		
	2	0.30	10547	3164	23.29	10	13.58	3163	20	271.60	4.53	6326	0.21
	1	0.40	8916	3566	19.69	15	12.08	3568	_				
	2	0.40	8916	3566	19.69	15	12.08	3568					
12	3	0.40	8916	3566	19.69	15	12.08	3568	<u>75</u>	906.00	15.10	17839	0.40
	4	0.40	8916	3566	19.69	15	12.08	3568	<u> </u>				<u>v.7v</u>
Í	5	0.40	8916	3566	19.69	15	12.08	3568					
13	1	0.16	7638	1222	16.87	10	7.25	1223		70 50	101	1202	0.40
1	1	0.45	8682	3907	19.17	20		3907	10	72.50	1.21	1223	0.16
14	2	0.45	8682			20 20	10.19		40	407.60	6.79	7814	0.31
				3907	19.17		10.19	3907					
15	1	0.10	7450	745	16.45	5	9.06	745	ا ₋ ا				
13	2	0.10	7450	745	16.45	5	9.06	745	<u>15</u>	135.90	2.27	2236	<u>0.10</u>
	3	0.10	7450	745	16.45	5	9.06	745					
	1	0.40	10114	4046	22.34	15	12.08	4048					
	2	0.40	10114	4046	22.34	15	12.08	4048	<u>45</u>	543.60	9.06	12144	<u>0.40</u>
16		0.40	10114	4046	22.34	15	12.08	4048	أ				
16	3				00.04	10	9.06	2166					
	<u>3</u> 1	0.20	10828	2166	23.91	10 1			1				
16 17	3		10828 10828				9.06	2166	30 (271.80	4,53	6499	0.20
	<u>3</u> 1	0.20 0.20	10828	2166	23.91	10	9.06 9.06	2166 2166	<u>30</u>	271.80	4.53	6499	<u>0.20</u>
	3 1 2 3	0.20 0.20 0.20	10828 10828	2166 2166	23.91 23.91	10 10	9.06	2166	30	271.80	4.53	6499	<u>0.20</u>
17	3 1 2 3 1	0.20 0.20 0.20 0.60	10828 10828 9697	2166 2166 5818	23.91 23.91 21.41	10 10 20	9.06 13.58	2166 5815					
	3 1 2 3 1 2	0.20 0.20 0.20 0.60 0.60	10828 10828 9697 9697	2166 2166 5818 5818	23.91 23.91 21.41 21.41	10 10 20 20	9.06 13.58 13.58	2166 5815 5815	<u>30</u> <u>60</u>	271.80 814.80	4.53 13.58	6499 17445	<u>0.20</u> 0.60
17	3 1 2 3 1	0.20 0.20 0.20 0.60	10828 10828 9697	2166 2166 5818	23.91 23.91 21.41	10 10 20	9.06 13.58	2166 5815					

20	1	0.25	8030	2008	17.73	10	11.32	2007		200.40	0.77	1 4044	
	2	0.25	8030	2008	17.73	10	11.32	2007	20	226.40	3.77	4014	0.1
	1	0.25	9516	2379	21.01	10	11.32	2378					
21	2	0.25	9516	2379	21.01	10	11.32	2378	40	452.80	7.55	9513	0.2
Í	3	0.25	9516	2379	21.01	10	11.32	2378					<u> </u>
	4	0.25	9516	2379	21.01	10	11.32	2378					
	1	0.40	8814	3526	19.46	20	9.06	3526	Ì			1	
	2	0.40	8814	3526	19.46	20	9.06	3526					
22	3	0.40	8814	3526	19.46	20	9.06	3526	<u>100</u>	906.00	15.10	17631	0.4
	4	0.40	8814	3526	19.46	20	9.06	3526					
	5	0.40	8814	3526	19.46	20	9.06	3526					
22	1	0.20	6952	1390	15.35	10	9.06	1391			}		
23	2	0.20	6952	1390	15.35	10	9.06	1391	<u>30</u>	271.80	4.53	4172	<u>0.2</u>
	3	0.20	6952	1390	15.35	10	9.06	1391				<u> </u>	
24	1	0.20	9335	1867	20.61	10	9.06	1867					
24	2	0.20	9335	1867	20.61	10	9.06	1867	<u>30</u>	271.80	4.53	5602	0.2
	3	0.20	9335	1867	20.61	10	9.06	1867				L	
25		0.40	7856	3142	17.35	15	12.08	3144	1				
25	2	0.40	7856	3142	17.35	15	12.08	3144	45	543.60	9.06	9431	<u>0.4</u>
	3	0.40	7856	3142	17.35	15	12.08	3144					
	$\begin{bmatrix} - & - & - \\ 1 & - & - & - \end{bmatrix}$	0.30	10493	3148	23.17	15	9.06	3149					
26	2	0.30	10493	3148	23.17	15	9.06	3149	60	543.60	0.06	12595	، م
	3	0.30	10493	3148	23.17	15	9.06	3149	<u>60</u>	J43.00	9.06	12095	<u>0.</u> :
	4	0.30	10493	3148	23.17	15	9.06	3149			l		
	1	0.20	7010	1402	15.48	15	6.04	1402				<u> </u>	-
27	2	0.20	7010	1402	15.48	15	6.04	1402	<u>45</u>	271.80	4.53	4207	<u>o.</u> :
	3	0.20	7010	1402	15.48	15	6.04	1402	_				<u> </u>
28	1	0.50	11144	5572	24.61	20	11.32	5572				1	
20	2	0.50	11144	5572	24.61	20	11.32	5572	40	452.80	7.55	11143	0.:
	1	0.50	9802	4901	21.65	20	11.32	4902					
29	2	0.50	9802	4901	21.65	20	11.32	4902	<u>60</u>	679.20	11.32	14705	<u>0.</u>
	3	0.50	9802	4901	21.65	20	11.32	4902		0.0.10		14700	<u> </u>
	1	0.15	5667	850	12.51	20	3.4	851		<u> </u>		<u> </u>	
30	2	0.15	5667	850	12.51	20	3.4	851	<u>60</u>	204.00	3.40	2552	<u>0,</u> -
	3	0.15	5667	850	12.51	20	3.4	851	<u> </u>	204.00	3.40	2002	<u>v.</u>
	1	0.25	8134	2034	17.96	10	11.32	2033		├ ────┤			_
31	2	0.25	8134	2034	17.96	10	11.32	2033	20	226.40	3.77	4066	0.1
	1	0.15	8616	1292	19.03	5	13.58	1292					
32	2	0.15	8616	1292	19.03	5			45	202 70	2.40	2070	
•••	3	0.15	8616	1292	19.03	5	13.58 13.58	1292	<u>15</u>	203.70	3.40	3876	<u>0.</u>
	1	0.15	11434	2859	25.25	10	11.32	1292					
33	2	0.25	11434	2859	25.25	10		2858	20	226.40	3.77	5717	0.1
	1	0.20	9625	1925	21.26	10	11.32	2858		<u>↓ </u>			
34	2	0.20	9625	1925		1	9.06	1926	20	181.20	3.02	3852	0.1
	1	0.50	10247	5124	21.26	10	9.06	1926					
	2	0.50			22.63	20	11.32	5123					
35			10247	5124	22.63	20	11.32	5123	<u>80</u>	905.60	15.09	20494	<u>0.</u>
	3	0.50	10247	5124	22.63	20	11.32	5123					9.14
	4	0.50	10247	5124	22.63	20	11.32	5123					
	1	0.50	8876	4438	19.6	20	11.32	4437					
	2	0.50	8876	4438	19.6	20	11.32	4437		I 1			
36	3	0.50	8876	4438	19.6	20	11.32	4437	<u>120</u>	1358.40	22.64	26625	<u>0.</u>
	4	0.50	8876	4438	19.6	20	11.32	4437				~~~~~	ديلا
	5	0.50	8876	4438	19.6	20	11.32	4437	· ·				
	<u>6</u> 1	0.50	8876	4438	19.6	20	11.32	4437					
37		0.30	10371	3111	22.9	15	9.06	3112					
57	2 3	0.30	10371	3111	22.9	15	9.06	3112	<u>45</u>	407.70	6.80	9336	<u>0.3</u>
	1	0.30	10371	3111	22.9	15	9.06	3112		├─── ↓			
	2	0.50	11389 11389	5695	25.15	20	11.32	5694			I	(I	
35	23	0.50	11389	5695	25.15	20	11.32	5694	<u>80</u>	905.60	15.09	22776	0.5
	3	0.50		5695	25.15	20	11.32	5694					
	1	0.50	11389	5695	25.15	20	11.32	5694		┝────┪			
39	2	0.25	8286 8286	2072	18.3	10	11.32	2072	20	226.40	3.77	4143	0.1
40	1	0.25		2072	18.3	10	11.32	2072					
40			5607	1682	12.38	10	13.58	1681	10	135.80	2.26	1681	0.3
41	1	0.60	9198	5518	20.31	25	10.87	5519	50	543.50	9.06	11038	0.4
		0.60	9196	5518	20.31	25	10.87	5519			3.00		0.4
42	1	0.20	6415	1283	14.17	10	9.06	1284	10	90.60	1.51	1284	0.2
43	1	0.49	4480	2195	9.89	20	11.09	2194	20	221.80	3.70	2194	0.4
	1	0.38	8037	3054	17.75	15	11.47	3054					
	2	0.38	8037	3054	17.75	15	11.47	3054		000.00		40040	
44									<u>60</u>	688.20	11.47	12216	<u>0.3</u>
44	3	0.38 0.38	8037 8037	3054	17.75	15	11.47	3054					

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Foarie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		29	gallons / day
Hydraulic loading rate		濯	gallons / sq.ft. / day
Total Dispersal Field Area	22,9	50	square ft.
Number of areas		13	Areas(s)
Dispersal area	7,6	50	square ft.
Choose spacing between WASTEFLOW lines		10	ft.
Choose spacing between WASTEFLOW emitters	2ft.	•	ft.
Total linear fLper zone (minimum required)	3,8	25	each
Total number of emitters per zone		13	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield		59.3	ft.
What is the flow rate per emitter in gph?	(),53	gallons per hour
Total flow per area - dusing	16.	.89	gallons per minute

If required, choose flush velocity	HAR BURNES	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to schieve flushing velocity	9.25	gpm
Total System Flow - worst case scenario	26.14	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (ite n no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (iten.no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		1
and WASTEFLOW hydraulics worksheet.		

	新新自制和代码 在19	
Number of doses per day / area:		doses
Pump run time per doss/area (minutes):	12.68	minutes
Pump run time per day/area (hours):	3.17	hours / day
Number of doses per day for zone	45	
Pump run time per day for zone	9.51	hows
Dose volume per area	214	gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTE! LOW dripline / zone	3,825	ft
Total Volume in dripline / zone	47.21	gallons

Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458	ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft ³ /sec

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Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day	TO DAY	124		gallons / day
Hydraulic loading rate				gallons / sq.ft. / day
Total Dispersal Field Area		20,8	51	square ft.
			150	
Number of areas				
Dispersal area		6,6	50	square ft.
Choose spacing between WASTEFLOW lines			÷,	ft.
Choose spacing between WASTEFLOW emitters		2 ft.	•	ft.
Total linear ft.per area (minimum required)		3,4	175	each
Total number of emitters		1,7	38	each
Select Wasteflow dripline	Wasterlow PC -	1/2gph	•	dripline
Pressure at the beginning of the dripfield		30 psi	•	psi
Feet of Head at the beginning of the dripfield			59.3	ft.
What is the flow rate per emitter in gph?		. (0.53	gallons per hour
Total flow per zone - dosing		15	.35	gallons per minute

If required, choose flush velocity		ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	9.25	gom
Total System Flow - worst case scenario	24.60	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	R.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	13.58 minutes
Pump run time per day/area (hours):	3.40 hours / day
Number of doses per day for zone	45
Pump run time per day for zone	10.19 hours
lose volume per area	209 gallons per dose

Dripline Volume Formula		
Tubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	3,475	ft
Total Volume in dripline / zone	42.89	galions
Phase Caulo Flour Commute		1
Flush Cycle Flow formula Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458	A

	0.0400	
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft³/sec

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

			V.S. A. A. F. A. H
Total Quantity of effinent to be disposed per day		4	gallons / day
Hydraulic loading rate		b a	gallons / sq.ft. / day
Total Dispersal Field Area	19	860	square ft.
			ACCESSION AND
Number of Zones		\$ 1	zone(s)
Dispersal area per zone	6,	620	square ft.
Choose spacing between WASTEFLOW lines		54	ft.
Choose spacing between WASTEFLOW emitters	2ft		ft
Total linear ft.per zone (minimum required)	3,	310	each
Total number of emitters per zone	1	655	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	-	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing	14	1.62	gallons per minute

If required, choose flush velocity		ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	7.77	gpm
Total System Flow - worst case scenario	22.39	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

Number of doses per day / area:	doses	
Pump run time per dose/area (minutes):	12.08 minutes	
Pump run time per day/area (hours):	3.02 hours / day	
Number of doses per day for zone	45	
Pump run time per day for zone	9.06 hours	
lose volume per area	177 gallons per dose	

ubing Inside diameter	0.55	inch
Total length of WASTEFLOW dripline / zone	3,310	ft
total Volume in dripline / zone	40.85	gallon
Drip tube diameter	0.55	
Drip tube diameter	0.55 0.0458	
Push Cycle Flow formula Drip tube diameter Drip Tube Diameter Drip Tube Cross Sectional Area		ft

Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	13,900	square ft.
Number of Zones		Zone(s)
Dispersal area per zone	6,950	square ft.
Choose spacing between WASTEFLOW lines	A CONTRACTOR	A.
Choose spacing between WASTEFLOW emitters	2ft. 🔻	f
Total linear ft.per zone (minimum required)	3,475	cach
Total number of emitters per zone	1,738	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph 🔻	dripline
Pressure at the beginning of the dripfield	30 psi 🛡	psi
Feet of Head at the beginning of the dripfield	69.	3 ft.
What is the flow rate per emitter in gph?	0.5	3 gallons per hour
Total flow per 200e - dosing	15.35	gallons per minute

If required, choose flush velocity	11-2-16-17-12-05	ft/sec
How many lines of WASTEFLOW?	公共在1 3月1日	lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	6.29	ழும
Total System Flow - worst case scenario	21.64	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	10.19	minutes
Pump run time per day/area (hours):	3.40	hours / day
Number of doses per day for zone	40	
Pump run time per day for zone	6.79	hours
Dose volume per area	156	gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	3,475	ft
otal Volume in dripline / zone	42.89	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/24/2006

	N BASSING		
Total Quantity of effluent to be disposed per day		62	gallons / day
Hydraulic loading rate		10	galions / sq.fl. / day
Total Dispersal Field Area	56,3	10	square ft.
CRAME AS A CONTRACT OF			
Number of Zones		5	zone(s)
Dispersal area per zone	11,2	62	square fl.
Choose spacing between WASTEFLOW lines		8	ft.
Choose spacing between WASTEFLOW emitters	2 n.	¥	ft
Total linear ft.per zone (minimum required)	5,6	31	each
(Total number of emitters per zone	2,8	16	each
Select Wasteflow dripline	Wastellow PC - 1/2gph	¥	dripline
Pressure at the beginning of the dripfield	25 psi	♥	psi
Feet of Head at the beginning of the dripfield	51	1.75	A.
What is the flow rate per emitter in gph?).53	gallons per hour
Total flow per zone - dosing	24	.87	gallons per minute

If required, choose flush velocity	105	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	5.18	gpm
Total System Flow - worst case scenario	30.05	gpm
Select pipe diameters for manifolds and submains	• 2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (lin.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	478	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Check below to choose quantity and length of daily doses

Number of doses per day / zone:	a literation of the second
Pump run time per dose/zone (minutes):	9.06 minutes
Pump run time per day/zone (hours):	1.51 hours / day
Number of doses per day / all zones	50
Pump run time per day/all zones (hours):	7.55 hours
Dose volume per zone	225 gallons per dose

Tubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	5,631	ft
Total Volume in dripline / zone	69.50	gallons

Flush Cycle Flow formula		
Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458	ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft3/

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

	N. A. A. A.	1	
Total Quantity of effluent to be disposed per day			gallons / day
Hydraulic loading rate	C. Wardshirt	3	gallons / sq.ft. / day
Total Dispersal Field Area			square ft.
		Set X	
Number of Zones	SP 10 Strate	鎴	zone(s)
Dispersal area per zone	13,7	28	square ft.
Choose spacing between WASTEFLOW lines		6	ft
Choose spacing between WASTEFLOW emitters	2 ft.	¥	ft.
Total linear ft.per zone (minimum required)	6,8	64	each
Total number of emitters per zone	3,4	32	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	۲	dripline
Pressure at the beginning of the dripfield	25 psi	۲	psi
Feet of Head at the beginning of the dripfield	\$7	.75	ft.
What is the flow rate per emitter in gph?	0	.53	gallons per hour
Total flow per zone - dosing	30.	31	gallons per minute

If required, choose flush velocity	NAME AND ADDRESS OF	fl/sec
How many lines of WASTEFLOW?	10	lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	7.03	gpm
Total System Flow - worst case scenario	37.35	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1.5F-3 (1.5in./3hole)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	478	£.

Number of doses per day / zone:	10	doses
Pump run time per dose/zone (minutes):	9.06	minutes
Pump run time per day/zone (hours):	[.5]	hours / day
Number of doses per day / all zones	20	
Pump run time per day/ail zones (hours):	3.02	hours
lose volume per zone	275	gallons per dose

Tubing Inside diameter	0.55 i	nches
Total length of WASTEFLOW dripline / zone	6,864 f	1
Total Volume in dripline / zone	84.72	rallons

Flush Cycle Flow formula	
Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0,0008

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day			gallons / day
Hydraulic loading rate		<u>, </u>	gallons / sq.ft. / day
Total Dispersal Field Area	22,93	25	square ft.
Number of Zones		2	zone(s)
Dispersal area per zone	7,64	42	square ft.
Choose spacing between WASTEFLOW lines		边	fL.
Choose spacing between WASTEFLOW emitters	21.	۲	fi.
Total linear ft.per zone (minimum required)	3,8:	21	each
Total number of emitters per zone	1,9	10	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	۳	dripline
Pressure at the beginning of the dripfield	25 psl	•	psi
Feet of Head at the beginning of the dripfield	57	.75	ft.
What is the flow rate per emitter in gph?		.53	gallons per hour
Total flow per zone - dosing	16.	88	gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gom
Total Flow required to achieve flushing velocity	9.99	gpm
Total System Flow - worst case scenario	26.87	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	478	£.

Number of doses per day / area:	a to see a second second
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	1.51 hours / day
Number of doses per day for zone	30
Pump run time per day for zone	4.53 hours
Dose volume per area	153 gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	3,821	ft
otal Volume in dripline / zone	47.16	gallons

.55	in 👘
58	ft
016	ft²
008	ft ³ /sec
	016 008

Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fonrie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		Ϋ́ι,	gallons / day
Hydraulic loading rate		1	gallons / sq.ft. / day
Total Dispersal Field Area	23,	460	square ft.
		1	
Number of Zones			zone(s)
Dispersal area per zone	7,	B20	square ft.
Choose spacing between WASTEFLOW lines	2	A.	fi.
Choose spacing between WASTEFLOW emitters	2 fL	-	ft.
Total linear ft.per zone (minimum required)	3,	910	each
Total number of emitters per zone	1,	955	each
Select Wasteflow dripline	Wasterlow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing	17	1.27	gallons per minute

If required, choose finsh velocity	A LANDARY DE	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	14.43	gpm
Total System Flow - worst case scenario	31.70	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-IF (1in.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	2.26 hours / day
Number of doses per day for zone	45
Pump run time per day for zone	6.79 hours
Dose volume per area	156 gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	3,910	£.
otal Volume in driptine / zone	48.26	galions

Drip tube diameter	0.55 in
Drip Tube Diameter	0.0458 R
Drip Tube Cross Sectional Area	0.0016 ft ²
Flow required per dripline for flush velocity	0.0008 ft ³ /s

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		galions / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area		square ft.
Number of Zones	Tel Local All States	zone(s)
Dispersal area per zone	845	square ft.
Choose spacing between WASTEFLOW lines		ft.
Choose spacing between WASTEFLOW emitters	2 fL 🔻	ft
Total linear ft.per zone (minimum required)	423	each
Total number of emitters per zone	211	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph 🛡	dripline
Pressure at the beginning of the dripfield	30 psi 🔻	psi
Feet of Head at the beginning of the dripfield	69.3	ft.
What is the flow rate per emitter in gph?	0.53	gallons per hour
Total flow per zone - dosing	1.87	gallons per minute

If required, choose flush velocity	Reserved No.	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	3.33	gpm
Total System Flow - worst case scenario	5.20	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E75F	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	11.32 minutes
Pump run time per day/area (hours):	3.77 hours / day
Number of doses per day for zone	100
Pump run time per day for zone	18.87 hours
lose volume per area	21 gallons per dose

Dripline Volume Formula	
Tubing Inside diameter	0.55 inches
Total length of WASTEFLOW dripline / zone	423 ft
Total Volume in dripline / zone	5.22 gallons
Tush Cycle Flow formula	
Drip tube diameter	0.55 in
Drin Tube Diameter	0.0458 ft

Drip Tube Diameter	0.0458 ft
Drip Tube Cross Sectional Area	0.0016 ft ²
Flow required per dripline for flush velocity	0.0008 ft ³ /sec

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate	STATISTICS OF	gallons / sq.ft. / day
Total Dispersal Field Area	11,90	0 square ft.
Number of Zones	CALLS ON ALL	zone(s)
Dispersal area per zone	5,95	0 square ft.
Choose spacing between WASTEFLOW lines	利用の日本	ft.
Choose spacing between WASTEFLOW emitters	2 ft.	▼ ft.
Total linear ft.per zone (minimum required)	2,97	5 each
Total number of emitters per zone	1,48	8 each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	30 psi	psi
Feet of Head at the beginning of the dripfield	69	.3 ft.
What is the flow rate per emitter in gph?	0.:	53 gallons per hour
Total Now per zone - dosing	13.1	4 gallons per minute

If required, choose flush velocity		ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	10.36	gpm
Total System Flow - worst case scenario	23.50	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (lin.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	fL.

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	9.06	minutes
Pump run time per day/area (hours):	1.51	hours / day
Number of doses per day for zone	20	
Pump run time per day for zone	3.02	hours
lose volume per area	119	gailons per dose

Lubing Inside diameter	0.55 inches
Total length of WASTEFLOW dripline / zone	2,975 R
Total Volume in dripline / zone	36.72 gallons

tush Cycle Flow formula Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458	ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft ³ /se

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		gailons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	21,093	
Number of Zones		zone(s)
Dispersal area per zone	10,547	square ft.
Choose spacing between WASTEFLOW lines		ft.
Choose spacing between WASTEFLOW emitters	2ft. 🔻	fi.
Total linear ft.per zone (minimum required)	5,273	each
Total number of emitters per zone	2,637	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph 🛡	dripline
Pressure at the beginning of the dripfield	30 psi 🛡	psi
Feet of Head at the beginning of the dripfield	69.	3 fl.
What is the flow rate per emitter in gph?	0.5	gailons per hour
Total flow per zone - dosing	23.29	gallons per minute

If required, choose flush velocity	Constant Sector 104	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	6.66	ஜா
Total System Flow - worst case scenario	29.95	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (lin.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	13.58 minutes
Pump run time per day/area (hours):	2.26 hours / day
Number of doses per day for zone	20
Pump run time per day for zone	4.53 hours
lose volume per area	316 gallons per dose

Pripline Volume Formula	0.55
Total length of WASTEFLOW dripline / zone	5,273
Total Volume in dripline / zone	65.09
Drip tube diameter	0.55
Drip Tube Diameter	0.0458
	0.0016
Drip Tube Cross Sectional Area	0.0010

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

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Total Quantity of effluent to be disposed per day		$\mathbf{v}_{\mathbf{i}}$	gallons / day
Hydraulic loading rate		14	gallons / sq.ft. / day
Total Dispersal Field Area			square ft.
Number of Zones			zone(s)
Dispersal area per zone	8,9	16	square fl.
Choose spacing between WASTEFLOW lines		64	ft
Choose spacing between WASTEFLOW emitters	2n.		ft
Total linear fl.per zone (minimum required)	4,4	58	each
Total number of emitters per zone	2,2	29	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	▼	dripline
Pressure at the beginning of the dripfield	30 psl	۲	psi
Feet of Head at the beginning of the dripfield		\$9.3	ft.
What is the flow rate per emitter in gph?).53	gallons per hour
Total flow per zone - dosing	19	.69	galions per minute

If required, choose flush velocity	CASE AND AND	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	12.58	gpm
Total System Flow - worst case scenario	32.27	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (1in.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		1
and WASTEFLOW hydraulics worksheet.		

	·加亚拉人特别的注意	
Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	12.08	minutes
Pump run time per day/area (hours):	3.02	hours / day
Number of doses per day for zone	75	
Pump run time per day for zone	15.09	hours
Dose volume per area	238	gallons per dose

fubing Inside diameter	0.55	inc
Total length of WASTEFLOW driphine / zone	4,458	ft
Total Volume in dripline / zone	55.02	gallor
lush Cycle Flow formula		
Drip tube diameter	0.55	İm
	0.55 0.0458	
Drip tube diameter		A

Flow required per dripline for flush velocity	0.0008 ft ³ /sec

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day			i C	gallons / day
Hydraulic loading rate			56	gallons / sq.ft. / day
Total Dispersal Field Area		7,6	38	square ft.
		1957	14	
Number of Zones	A A A ST		卻	zone(s)
Dispersal area per zone		7,6	38	square ft.
Choose spacing between WASTEFLOW lines	子大方学会会			ft
Choose spacing between WASTEFLOW emitters		2 ft.	۳	ft.
Total linear fl.per zone (minimum required)		3,8	19	each
Total number of emitters per zone		1,9	09	each
Select Wasteflow dripline	Wasteflow PC -	1/Zgph	•	dripline
Pressure at the beginning of the dripfield		30 psi	•	psi
Feet of Head at the beginning of the dripfield			\$9.3	A.
What is the flow rate per emitter in gph?		().53	gallons per hour
Total flow per zone - dosing		16	.87	gallons per minute

If required, choose flush velocity	AVE: WARDEN DS	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	6.29	gpm
Total System Flow - worst case scenario	23.16	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	not applicable	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	7.25	minutes
Pump run time per day/area (hours):	1.21	hours / day
Number of doses per day for zone	10	
Pump run time per day for zone	1.21	hours
Dose volume per area	122	gallons per dose

Tubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	3,819	£
Total Volume in dripline / zone	47.13	gailons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per driphine for flush velocity	0.0008

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		Z	gallons / day
Hydraulic loading rate			gallons / sq.ft. / dzy
Total Dispersal Field Area	17,36	i4	square fl.
Number of Zones	$\mathcal{F}_{1}(\mathcal{G}_{1}) > \mathcal{F}_{1}(\mathcal{G}_{2})$		20nc(s)
Dispersal area per zone	8,68	12	square ft.
Choose spacing between WASTEFLOW lines		6	£.
Choose spacing between WASTEFLOW emitters	2ft.	•	ft
Total linear ft.per zone (minimum required)	4,34	и	each
Total number of emitters per zone	2,17	11	each
Select Wasteflow dripline	Wasterlow PC - 1/2gph	¥ į	dripline
Pressure at the beginning of the dripfield	30 ps	•	psi
Feet of Head at the beginning of the dripfield	65	9.3	ft.
What is the flow rate per emitter in gph?	0.	53	gallons per hour
Total flow per zone - dosing	19.1	17	gallons per minute

If required, choose flush velocity	这一页1 57次目前165	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	13.32	gpm
Total System Flow - worst case scenario	32.49	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (1in.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		1
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	10.19 minutes
Pump run time per day/area (hours):	3.40 hours / day
Number of doses per day for zone	40
Pump run time per day for zone	6.79 hours
Dose volume per area	195 gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	4,341	ft
Total Volume in dripline / zone	53.58	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	22,350	square ft.
Number of Zones	e 2 i nes ≫β	zone(s)
Dispersal area per zone	7,450	square ft.
Choose spacing between WASTEFLOW lines		2 A.
Choose spacing between WASTEFLOW emitters	21.	fi.
Total linear ft.per zone (minimum required)	3,725	each
Total number of emitters per zone	1,863	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	30 psi 🗨	psi
Feet of Head at the beginning of the dripfield	69.	3 fL
What is the flow rate per emitter in gph?	0.5	3 gallons per hour
Total flow per zone - dosing	16.45	gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	ஜுற
Total Flow required to achieve flushing velocity	7.77	gpm
Total System Flow - worst case scenario	24.22	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	9.06	minutes
Pump run time per day/area (hours):	0.75	hours / day
Number of doses per day for zone	15	
Pump run time per day for zone	2.26	hours
lose volume per arca	149	gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	3,725	ft
otal Volume in dripline / zone	45,98	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

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Job Description	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		í.	gallons / day
Hydraulic loading rate			gallons / sq.ft. / day
Total Dispersal Field Area	30,34	13	square ft.
		10 10 10 10	
Number of Zones		3	zone(s)
Dispersal area per 20ne	10,11	14	square ft.
Choose spacing between WASTEFLOW lines			A.
Choose spacing between WASTEFLOW emitters	2n.	•	ft
Total linear ft.per zone (minimum required)	5,05	57	each
Total number of emitters per zone	2,52	29	each
Select Wasteflow dripline	Wasteriow PC - 1/2gph	•	driptine
Pressure at the beginning of the dripfield	al si de la 30 psi	•	psi
Feet of Head at the beginning of the dripfield	65	9.3	ft.
What is the flow rate per emitter in gph?	0.	.53	gallons per hour
Total flow per zone - dosing	22.3	34	gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	7.03	gpm
Total System Flow - worst case scenario	29.37	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (Lin.)	
Select Zone Vaive (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing	535	ft.
data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	7.5 doses
Pump run time per dose/area (minutes):	12.08 minutes
Pump run time per day/area (hours):	3.02 hours / day
Number of doses per day for zone	45
Pump run time per day for zone	9.06 hours
lose volume per area	270 gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	5,057	ft
Total Vohime in dripline / zone	62.42	gallons

Drip tube diameter	<u>0.55</u>
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		$\langle c \rangle$	gallons / day
Hydraulic loading rate		6.02	gallons / sq.ft. / day
Total Dispersal Field Area	3:	2,485	square ft.
		10	
Number of Zones		7. A	zone(s)
Dispersal area per zone	16),828	square ft.
Choose spacing between WASTEFLOW lines		6.2	ft.
Choose spacing between WASTEFLOW emitters	21.	•	ft.
Total linear fl.per zone (minimum required)		5,414	cach
Total number of emitters per zone		2,707	each
Select Wasteflow dripline	Wasteflow PC - 1/2gp	h 💌	dripline
Pressure at the beginning of the dripfield	30 ps	-	psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing	:	13.91	gallons per minute

If required, choose flush velocity	Contraction and the	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	ழுற
Total Flow required to achieve flushing velocity	7.77	gpm
Total System Flow - worst case scenario	31.68	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (1in.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.	,	

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	1.51 hours / day
Number of doses per day for zone	30
Pump run time per day for zone	4.53 hours
Dose volume per area	217 gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	5,414	ft
Total Volume in dripline / zone	66.83	gallons

Flush Cycle Flow formula	
Drip tube diameter	0.55 in
Drip Tube Diameter	0.0458 ft
Drip Tube Cross Sectional Area	0.0016 ft ²
Flow required per dripline for flush velocity	0.0008 ft ³

Job Description	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day	学们在 在图14		gallons / day
Hydraulic loading rate	时代的第三人称单数	新始	gallons / sq.ft. / day
Total Dispersal Field Area	2	,090_	square fi.
		4	
Number of Zones		1.3	zone(s)
Dispersal area per zone		9,697	square ft.
Choose spacing between WASTEFLOW lines		12	ft.
Choose spacing between WASTEFLOW emitters	2 n.		ft.
Total linear ft.per zone (minimum required)		4,848	each
Total number of emitters per zone		2,424	each
Select Wasteflow dripline	Wasterlow PC - 1/2gp	h 💙	dripline
Pressure at the beginning of the dripfield	30 ps	•	psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing		21.41	gallons per minute

If required, choose flush velocity	17 A. 10 A. 10	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	ழூ
Total Flow required to achieve flushing velocity	5.55	gpm
Total System Flow - worst case scenario	26.96	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

		3. 64.22
Number of doses per day / area:	doses	
Pump run time per dose/area (minutes):	13.58 minutes	
Pump run time per day/area (hours):	4.53 hours / day	
Number of doses per day for zone	60	
Pump run time per day for zone	13.58 hours	
Dose volume per area	291 gallons per dose	

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	4,848	ft
Total Volume in dripline / zone	59.84	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description	1: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		5.6 m (
Total Quantity of effluent to be disposed per day	What A water		gailons / day
Hydraulic loading rate	TV JAME & STA	3	gallons / sq.ft. / day
Total Dispersal Field Area	15,6	14	square fl.
Number of Zones			zone(s)
Dispersal area per zone	7,8	07	square ft.
Choose spacing between WASTEFLOW lines		96	ft.
Choose spacing between WASTEFLOW emitters	2 ft.	▼	ft.
Total linear ft.per zone (minimum required)	3,9	04	each
Total number of emitters per zone	1,9	52	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 psi	۳	psi
Feet of Head at the beginning of the dripfield		9.3	ft.
What is the flow rate per emitter in gph?	(.53	gailons per hour
Total flow per zone - dosing	17.	24	gallons per minute

If required, choose flush velocity		ft/sec
How many lines of WASTEFLOW?		lines
Finsh flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	4.44	gpm
Total System Flow - worst case scenarlo	21.68	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual	1	
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	8.45 minutes
Pump run time per day/area (hours):	2.11 hours / day
Number of doses per day for zone	30
Pump run time per day for zone	4.23 hours
lose volume per area	146 gallons per dose

Tubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	3,904	ft
Total Volume in dripline / zone	48.18	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

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Job Description	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		galions	/ day
Hydraulic loading rate		5 gallons	/ sq.ft. / day
Total Dispersal Field Area	16,06	square i	ft
建汽油 经公司 计算机		8	
Number of Zones		zone(s)	
Dispersal area per zone	8,03	0 square	ft.
Choose spacing between WASTEFLOW lines		£ ft.	
Choose spacing between WASTEFLOW emitters	2ft 2ft	₽ ft.	
Total linear ft.per zone (minimum required)	4,01	5 each	
Total number of emitters per zone	2,00	8_each	
Select Wasteflow dripline	Wasterlow PC - 1/2gph	dripfine	
Pressure at the beginning of the dripfield	30 psi	▶ psi	
Feet of Head at the beginning of the dripfield	69	.3 ft.	
What is the flow rate per emitter in gph?	0.	3 gailons	per hour
Total flow per zone - dosing	17.1	3 gallons	per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	8.14	gpm
Total System Flow - worst case scenario	25.87	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

MARTINE CONTRACTOR		
Number of doses per day / area:		
Pump run time per dose/area (minutes):		minutes
Pump run time per day/area (hours):	1.89	hours / day
Number of doses per day for zone	20	
Pump run time per day for zone	3.77	hours
Dose volume per area	201	gallons per dose
Ubing Inside diameter	0.55	inches
Dripline Volume Formula		
Total length of WASTEFLOW dripline / zone	4,015	ft
Total Volume in dripline / zone	49.56	gallons
flash Cycle Flow formula]
Drip tube diameter	0.55]in
Drip Tube Diameter	0.0458]£
Drip Tube Cross Sectional Area	0.0016	1.2

Ship Tube city Detriving These	0.0010 11
Flow required per dripline for flush velocity	0.0008 ft ³ /sec
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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		e je	
Total Quantity of effluent to be disposed per day	ANNAL 1975	1.1	gailons / day
Hydraulic loading rate	<u></u>	ŝ	gallons / sq.ft. / day
Total Dispersal Field Area			square ft.
		ينية: الفيت	
Number of Zones		1	zone(s)
Dispersal area per zone	9,5	16	square ft.
Choose spacing between WASTEFLOW lines		295	ft.
Choose spacing between WASTEFLOW emitters	2 ft.	▼	ft
Total linear ft.per zone (minimum required)	4,7	58	each
Total number of emitters per zone	2,3'	79	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	Ψ.	dripline
Pressure at the beginning of the dripfield	30 psi	٠	psi
Feet of Head at the beginning of the dripfield	6	9.3	ft.
What is the flow rate per emitter in gph?	0	.53	gallons per hour
Total flow per zone - dosing	21.	01	gallons per minute

If required, choose flush velocity	全部 的小时的	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	8.14	gpm
Total System Flow - worst case scenario	29.16	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (lin.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual]
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	1.89	hours / day
Number of doses per day for zone	40	
Pump run time per day for zone	7.55	hours
ose volume per area	238	gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	4,758	ft
otal Vohme in dripline / zone	58.73	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

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Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		, íS	
Total Quantity of effluent to be disposed per day		÷,	gallons / day
Hydraulic loading rate	$\mathbf{X} = \mathbf{A} \in \mathcal{A}$		gallons / sq.ft. / day
Total Dispersal Field Area	44,07	70	square ft.
Number of Zones		s,	zone(s)
Dispersal area per zone	8,81	14	square ft.
Choose spacing between WASTEFLOW lines		Ċ,	ft.
Choose spacing between WASTEFLOW emitters	2n.	¥	ft.
Total linear ft.per zone (minimum required)	4,40	70	each
Total number of emitters per zone	2,20	14	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield	6	9.3	£.
What is the flow rate per emitter in gph?	0.	.53	gallons per hour
Total flow per zone - dosing	19.4	16	gallons per minute

If required, choose flush velocity	2	fl/sec
How many lines of WASTEFLOW?		hnes
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	10.36	gpm
Total System Flow - worst case scenario	29.83	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (lin.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	3.02 hours / day
Number of doses per day for zone	100
Pump run time per day for zone	15.09 hours
Dose volume per area	176 gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	4,407	ft
otal Volume in dripline / zone	54.39	gations

Drip tube diameter	0.55 ju
Drip Tube Diameter	0.0458 f
Drip Tube Cross Sectional Area	0.0016 f
Flow required per dripline for flush velocity	0.0008 #

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Founie
Date:	2/8/2006

Total field		
Total Quantity of effluent to be disposed per day	5,604	gallons / day
Hydraulic loading rate	0.7	gallons / sq.ft. / day
Total Dispersal Field Area	28,005	square ft.
Flow per sper		
Number of Zones	3	zone(s)
Dispensal area per zone	9,335	square ft.
Choose spacing between WASTEFLOW lines		R.
Choose spacing between WASTEFLOW emitters	2 R. 🔻	n.
Total linear ft.per zone (minimum required)	4,668	each
Total number of emitters per zone	2,334	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph 💌	dripline
Pressure at the beginning of the dripfield	30 psi 🔻	psi
Feet of Head at the beginning of the dripfield	69.3	A.
What is the flow rate per emilter in gph?	0.53	gallons per hour
Total flow per zone - dosing	20.61	gallons per minute

0.5	fl/sec
16	lines
0.37	gpm
5.92	gpm
26.54	gpm
2	inch
AP4E-1F/5 (lin.)	
SVLV-100	
535	ft.
	16 0.37 5.92 26.54

Number of doses per day / area:	ji (doses
Pump run time per dos e/area (mimites):	9.06	minutes
Pump run time per day/area (hours):	1.51	hours / day
Number of doses per day for zone	30	
Pump tun time per day for zone	4.53	hours
lose volume per area	187	gallons per dose

Fubing Inside diameter	0.55	inches
Total length of WASTEFLOW driptine / zone	4,668	R
Total Volume in dripline / zone	57.61	gallons

Flush Cycle Flow formula	
Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per driphine for flush velocity	0.0008

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

教皇的问题,这个教授的问题		Nagara Altari Altari	
Total Quantity of effluent to be disposed per day	Sec. 18	7164	gallons / day
Hydraulic loading rate	ALT A CREAT AVENUE A APRICE AND	Sec. 1	gallons / sq.ft. / day
Total Dispersal Field Area	23	,568	square ft.
		૾ૢૻ૾	
Number of Zones			zone(s)
Dispersal area per zone	7	,856	square ft.
Choose spacing between WASTEFLOW lines_	TRACK STRA	22	ft.
Choose spacing between WASTEFLOW emitters	2 n.	-	ft.
Total linear ft.per zone (minimum required)	3	,928	each
Total number of emitters per zone	1	.964	each
Select Wasteflow dripline	Wasteflow PC - 1/2gpl	n 💌	dripline
Pressure at the beginning of the dripfield	30 psi		psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing	1	7.35	gallons per minute

If required, choose flush velocity	1. 4. 5. 6. 9. 6.	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	3.70	gpm
Total System Flow - worst case scenario	21.05	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	<u>AP4E-1F/5 (lin.)</u>	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

Number of doses per day / area:	di d	oses
Pump run time per dose/area (minutes):	12.08 m	ainutes ·
Pump run time per day/area (hours):	3.02 h	ours / day
Number of doses per day for zone	45	
Pump run time per day for zone	9.06 h	ours
lose volume per area	209 g	allons per dose

ubing Inside diameter	0.55
otal length of WASTEFLOW dripline / zone	3,928
otal Volume in dripline / zone	48.48
	0.55
ilush Cycle Flow formula Drip tube diameter Drip Tube diameter Drin Tube Diameter	0.55
	0.55 0.0458 0.0016

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		5 V.	
Total Quantity of effluent to be disposed per day		2	gallons / day
Hydraulic loading rate		jo,	gallons / sq.ft. / day
Total Dispersal Field Area	41,97		square ft.
		$r_{\rm v}$	
Number of Zones		ŧ.	zone(s)
Dispersal area per zone	10,49	93	square ft.
Choose spacing between WASTEFLOW lines		£.	ft.
Choose spacing between WASTEFLOW emitters	2 ft.	-	ft.
Total linear fl.per zone (minimum required)	5,24	47	each
Total number of emitters per zone	2,63	23	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield	6	9.3	ft.
What is the flow rate per emitter in gph?	0	.53	gallons per hour
Total flow per zone - dosing	23.	17	gallons per minute

If required, choose flush velocity	A 45	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	6.29	gym
Total System Flow - worst case scenario	29.46	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-IF (1in.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	2.26 hours / day
Number of doses per day for zone	60
Pamp run time per day for zone	9.06 hours
ose volume per area	210 gallons per dose

ubing Inside diameter	0.55	inch
Total length of WASTEFLOW dripline / zone	5,247	ft
Total Volume in dripline / zone	64.76	gallor
Drip tube diameter Drip Tube Diameter	0.55	A
Drip Tube Cross Sectional Area	0.0016	
Flow required per dripline for flush velocity	0.0008	ft3/sec

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

	AMPAGE AND	A PART SALAR
Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	21,030	square ft.
	E CARACTER OF	
Number of Zones		zone(s)
Dispersal area per zone	7,010	square ft.
Choose spacing between WASTEFLOW lines		ft.
Choose spacing between WASTEFLOW emitters	2n. 🔻	ft.
Total linear ft.per zone (minimum required)	3,505	each .
Total number of emitters per zone	1,753	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph 💌	dripline
Pressure at the beginning of the dripfield	30 psi 🔻	psi
Feet of Head at the beginning of the dripfield	69.3	ft.
What is the flow rate per emitter in gph?	0.53	gallons per hour
Total flow per zone - dosing	15.48	gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	3.33	gpm
Total System Flow - worst case scenario	18.81	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	6.04 minutes
Pump run time per day/area (hours):	1.51 hours / day
Number of doses per day for zone	45
Pump run time per day for zone	4.53 hours
Dose volume per area	93 gallons per dose

ubing Inside diameter	0.55	inches
total length of WASTEFLOW dripline / zone	3,505	A
Total Volume in driphine / zone	43.26	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		(17:2%) S		
Total Quantity of effluent to be disposed per day		潮的		gallons / day
Hydraulic loading rate	MA STATE PROVIDE A THE STATE OF	10 Mar 10 Mar 10	12.17	gallons / sq.ft. / day
Total Dispersal Field Area		22,2	88	square ft.
			Υ.T	
Number of Zones	69. Se 1813		ð,	zone(s)
Dispersal area per zone		11,1	44	square ft.
Choose spacing between WASTEFLOW lines			南	ft.
Choose spacing between WASTEFLOW emitters		2 ft.	•	£L.
Total linear ft.per zone (minimum required)		5,5	72	each
Total number of emitters per zone		2,7	86	each
Select Wasteflow dripline	Wasteflow PC - 1,	/2gph	¥	dripline
Pressure at the beginning of the dripfield	3	i0 psi	•	psi
Feet of Head at the beginning of the dripfield		6	93	ft.
What is the flow rate per emitter in gph?		C	.53	gallons per hour
Total flow per zone - dosing		24.	61	gallons per minute

If required, choose flush velocity	245 7 St. St. Sof	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	3.33	gpm
Total System Flow - worst case scenario	27.94	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manuai		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	a doses
Pump run time per dose/area (minutes):	11.32 minutes
Pump run time per day/area (hours):	3.77 hours / day
Number of doses per day for zone	40
Pump run time per day for zone	7.55 hours
Dose volume per area	279 gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	5,572	ft
Total Volume in dripline / zone	68.77	gallons

Drip tube diameter	0.55 in
Drip Tube Diameter	0.0458 ft
Drip Tube Cross Sectional Area	0.0016 ft
Flow required per dripline for flush velocity	0.0008 ft

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		e.	
Total Quantity of effluent to be disposed per day	6 - <u>1 - 1</u> - 6 - 5	da.	gallons / day
Hydraulic loading rate			gallons / sq.ft. / day
Total Dispersal Field Area	29,	406	square ft.
Number of Zones			zone(s)
Dispersal area per zone	9,	802	square ft.
Choose spacing between WASTEFLOW lines	Cast MAN	8 Đ	ft.
Choose spacing between WASTEFLOW emitters	2 n.	-	ft.
Total linear ft.per zone (minimum required)	4,	901	each
Total number of emitters per zone	2,	451	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	-	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing	21	.65	gallons per minute

If required, choose flush velocity	Constant and the	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	ஜாம
Total Flow required to achieve flushing velocity	4.81	gpm
Total System Flow - worst case scenario	26.46	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		1
and WASTEFLOW hydraulics worksheet.		
	1	1

Number of doses per day / area:	125 YEAR (2018) 120	doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	3.77	hours / day
Number of doses pet day for zone	60	
Pump run time per day for zone	11.32	hours
Dose volume per area	245	gallons per dose
Tubing Inside diameter Total length of WASTEFLOW dripline / zone	4,901	inches ft
Pripline Volume Formula		
otal Volume in dripline / zone	60.49	galions
lush Cycle Flow formula]
Drip tube diameter	0.55	
Drip Tube Diameter	0.0458	∫ £
Drip Tube Cross Sectional Area	0.0016	∫£²
Flow required per driphine for flush velocity	0.0008	ft³/sec

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		n is	
Total Quantity of effluent to be disposed per day	Girls and the	235	gallons / day
Hydraulic loading rate		258	gallons / sq.ft. / day
Total Dispersal Field Area		17,000) square ft.
[]] 由於和時間的[]] 以此的[]] [] [] [] [] [] [] [] [] [] [] [] []			
Number of Zones			zone(s)
Dispersal area per zone		5,66	square ft.
Choose spacing between WASTEFLOW lines	15 (6) (<i>11 - 71 - 71 - 71 - 71 - 71 - 71 - 71 -</i>	di k	2 ft.
Choose spacing between WASTEFLOW emitters	1	î.	₹ fL
Total linear ft.per zone (minimum required)		2,833	each
Total number of emitters per zone		1,41	/ each
Select Wasteflow dripline	Wasteflow PC - 1/2	2gph 🗨	dripline
Pressure at the beginning of the dripfield	30	psi 🗨	psi
Feet of Head at the beginning of the dripfield	of Head at the beginning of the dripfield 69.3		3 ft.
What is the flow rate per emitter in gph?	0.53		3 gallons per hour
Total flow per zone - dosing		12.5	gallons per minute

If required, choose flush velocity	AN CONSTRUCT ON S	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	4.81	фш
Total System Flow - worst case scenario	17.32	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (lin.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	f .

Number of doses per day / area:	2	doses
Pump run time per dose/area (minutes):	3.40	minutes
Pump run time per day/area (hours):	1.13	hours / day
Number of doses per day for zone	60	
Pump run time per day for zone	3.40	hours
Dose volume per area	43	gallons per dose
Driptine Volume Formula		· · · · ·
Tubing Inside diameter	0.55	inches
THE AND ADDREET ON AT THE CASE	0.000	•

Total length of WASTEFLOW dripline / zone	2,833	ft
Total Volume in dripline / zone	34.97	gallons
lush Cycle Flow formula		
Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458	ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft ³ /sec

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day	A CONTRACTOR		gallons / day
Hydraulic loading rate	为你们又有些好	18	gallons / sq.ft. / day
Total Dispersal Field Area			square ft.
Number of Zones		物	zone(s)
Dispersal area per zone	8,	134	square ft.
Choose spacing between WASTEFLOW lines			ft.
Choose spacing between WASTEFLOW emitters	2 ft.	•	ft_
Total linear ft.per zone (minimum required)	4,	067	each
Total number of emitters per zone	2,	034	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	-	dripline
Pressure at the beginning of the dripfield	30 psi	-	psi
Feet of Head at the beginning of the dripfield		69.3	ft.
What is the flow rate per emitter in gph?		0.53	gallons per hour
Total flow per zone - dosing	1'	7.96	gallons per minute

If required, choose flush velocity	A STATISTICS	
How many lines of WASTEFLOW?		hnes
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	8.51	gpm
Total System Flow - worst case scenario	26.47	gрш
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydrautics worksheet.	535	£.

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	1.89	hours / day
Number of doses per day for zone	20	
Pump run time per day for zone	3.77	hours
Dose volume per area	203	gallons per dose
Tubing Inside diameter Total length of WASTEFLOW dripline / zone	0.55	ft f
Dripline Volume Formula		
Total Volume in dripline / zone		gailons
Tush Cycle Flow formula]
Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458]ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft ³ /sec

Job Description	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

		1	
Total Quantity of effluent to be disposed per day	354-25 S.M. O		gallons / day
Hydraulic loading rate	243344	di S	gallons / sq.ft. / day
Total Dispersal Field Area			square ft.
		4.5	
Number of Zones			zone(s)
Dispersal area per zone	8,6	16	square ft.
Choose spacing between WASTEFLOW lines	如此这些问题	ē.	ft
Choose spacing between WASTEFLOW emitters	2ft.	¥	ft.
Total linear ft.per zone (minimum required)	4,3	108	each
Total number of emitters per zone	2,1	54	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 ps	¥	psi
Feet of Head at the beginning of the dripfield		59.3	ft.
What is the flow rate per emitter in gph?).53	gallons per hour
Total flow per zone - dosing	19	.03	gallons per minute

If required, choose flush velocity	200 00 0 1 1 2 1 1 A 105	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	ஜு
Total Flow required to achieve flushing velocity	4.81	gpm
Total System Flow - worst case scenario	23.84	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	13.58	minutes
Pump run time per day/area (hours):	1.13	hours / day
Number of doses per day for zone		
Pump run time per day for zone	3.40	hours
Dose volume per area	258	galions per dose
Dripline Volume Formula	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Tubing Inside diameter	0.55	inches
CALL AN ADDACT TO OW ANALY A	4 208	ما

fotal length of WASTEFLOW driphine / zone	4,308	ft.
Total Volume in dripline / zone	53.17	gallons
lush Cycle Flow formula		
Drip tube diameter	0.55	in
Drip Tube Diameter	0.0458	ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft ³ /sec

.

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate	后来在2.2001-E	25 gallons / sq.ft. / day
Total Dispersal Field Area	22,86	58 square fl.
Number of Zones		zone(s)
Dispersal area per zone	11,43	34 square ft.
Choose spacing between WASTEFLOW lines		A.
Choose spacing between WASTEFLOW emitters	2 ft.	▼ <u>ft.</u>
Total linear ft.per zone (minimum required)	5,71	17 each
Total number of emitters per zone	2,85	59 each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	▼ dripline
Pressure at the beginning of the dripfield	30 psi	▼ psi
Feet of Head at the beginning of the dripfield	65	9.3 fL
What is the flow rate per emitter in gph?	0.	.53 gallons per hour
Total flow per zone - dosing	25.2	25 gallons per minute

2015 10 10 10 10 10 10 10 10 10 10 10 10 10	fl/sec
RESERVED BY	lines
0.37	gpm
5.92	gpm
31.17	gpm
2	inch
Two x AP4E-IF (lin.)	
SVLV-150	
535	ft.
	0.37

Number of doses per day / area:	1.5.10.000	doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	1.89	hours / day
Number of doses per day for zone	20	
Pump run time per day for zone	3.77	hours
Dose volume per area	286	gallons per dose

ubing Inside diameter	0.55 inches
fotal length of WASTEFLOW dripline / zone	5,717 ft
Total Volume in dripline / zone	70.56 galions

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

			10 M	西亞印刷過
Total Quantity of effluent to be disposed per day				gallons / day
Hydraulic loading rate	武大道 (1994)。	的影	63	gallons / sq.ft. / day
Total Dispersal Field Area		19,2	50	square ft.
Number of Zones		的事	55	zone(s)
Dispersal area per zone		9,6	25	square ft.
Choose spacing between WASTEFLOW lines		理想	27	ft
Choose spacing between WASTEFLOW emitters		2 ft.	•	ft.
Total linear ft.per zone (minimum required)		4,8	13	each
Total number of emitters per zone		2,4	06	each
Select Wasteflow dripline	Wasteriow PC -	1/Zgph	۷	dripline
Pressure at the beginning of the dripfield	《宗经》, 但	30 psi	•	psi
Feet of Head at the beginning of the dripfield		(59.3	ft.
What is the flow rate per emitter in gph?).53	gallons per hour
Total flow per zone - dosing		21	.26	gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?	这一种不是他们。 第二十一章	lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	13.69	gpm
Total System Flow - worst case scenario	34.95	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1.5F-3 (1.5in./3hole)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		
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Number of doses per day / area:		loses
Pump run time per dose/area (minutes):	9.06 г	ninutes
Pump run time per day/area (hours):	1.51	nours / day
Number of doses per day for zone	20	
Pump run time per day for zone	3.02	hours
Dose volume per area	193 (gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	4,813	ft
otal Vomme in dripline / zone	59.40	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

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Job Description	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

			3.6	
Total Quantity of effluent to be disposed per day		(i,j)	941	gallons / day
Hydraulic loading rate	和名称的现在		55	gallons / sq.ft. / day
Total Dispersal Field Area		40,9	88	square ft.
			1	
Number of Zones		24. B., S		zone(s)
Dispersal area per zone		10,2	47	square ft.
Choose spacing between WASTEFLOW lines	A			ft.
Choose spacing between WASTEFLOW emitters	A SEA CO	2 ft.		ft
Total linear fl.per zone (minimum required)		5,1	24	each
Total number of emitters per zone		2,5	62	each
Select Wasteflow dripline	Wasteflow PC -	1/2gph	•	dripline
Pressure at the beginning of the dripfield		30 psi	▼	psi
Feet of Head at the beginning of the dripfield			59.3	Ω .
What is the flow rate per emitter in gph?		().53	gallons per hour
Total flow per zone - dosing		22	.63	gallons per minute

If required, choose flush velocity	The second second	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	9.25	gpm
Total System Flow - worst case scenario	31.88	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-IF (lin.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

		A A A A A A A A
Number of doses per day / area:	1945 - Frank State	doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	3.77	hours / day
Number of doses per day for zone	80	
Pump run time per day for zone	15.09	hours
Dose volume per area	256	gallons per dose

ubing Inside diameter	0.55 i	inches
Total length of WASTEFLOW dripline / zone	5,124	ft
Total Volume in dripline / zone	63.24	rallons

Drip tube diameter	0.55 in
Drip Tube Diameter	0.0458 ft
Drip Tube Cross Sectional Area	0.0016 ft ²
Flow required per dripline for flush velocity	0.0008 ft ³ /sec

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day			gallons / day
Hydraulic loading rate		Ő,S	gallons / sq.ft. / day
Total Dispersal Field Area	. 53,2	58	square fl.
		2	
Number of Zones	$\mathcal{L}_{1,1} = \{\mathcal{L}_{1,2}, \mathcal{L}_{1,2}, $		zone(s)
Dispersal area per zone	8,8	76	square ft.
Choose spacing between WASTEFLOW lines			<u>ft.</u>
Choose spacing between WASTEFLOW emitters	2 A	•	ft.
Total linear ft.per zone (minimum required)	4,4	38	each
Total number of emitters per zone	2,2	19	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	۳	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield	6	i9.3	ft.
What is the flow rate per emitter in gph?).53	gallons per hour
Total flow per zone - dosing	19.	60	gallons per minute

If required, choose flush velocity	NAMES OF STREET	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	13.69	gpm
Total System Flow - worst case scenario	33.29	gpaa
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (lin.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	£.

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	3.77	hours / day
Number of doses per day for zone	120	
Pump run time per day for zone	22.64	hours
Dose volume per area	222	gallons per dose
	······································	
ubing Inside diameter	0.55	inches
Dripline Volume Formula "ubing Inside diameter Total length of WASTEFLOW dripline / zone "otal Volume in dripline / zone	4,438	
ubing Inside diameter fotal length of WASTEFLOW dripline / zone	4,438	ft
ubing Inside diameter fotal length of WASTEFLOW dripline / zone fotal Volume in dripline / zone	4,438	ft gallons

Drip Tube Diameter	0.0458 ft
Drip Tube Cross Sectional Area	0.0016 ft ²
Flow required per dripline for finsh velocity	0.0008 ft ³ /sec

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Pourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

医急性静脉 化合理器		
Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	31,113	
Number of Zones		zone(s)
Dispersal area per zone	10,371	square ft.
Choose spacing between WASTEFLOW lines		2 ft.
Choose spacing between WASTEFLOW emitters	2ft -	ft.
Total linear ft.per zone (minimum required)	5,186	each
Total number of emitters per zone	2,593	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	30 psi	psi
Feet of Head at the beginning of the dripfield	69.	3 ft.
What is the flow rate per emitter in gph?	0.5	3 gallons per hour
Total flow per zone - dosing	22.90	gallons per minute

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If required, choose flush velocity	1.1.1.2 200 1.0.5	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	ழுற
Total Flow required to achieve flushing velocity	11.10	gpm
Total System Flow - worst case scenario	34.00	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1.5F-3 (1.5m/3hole)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line. For additional technical flow, pressure and flushing data please refer to Geoflow's Design Manual and WASTEFLOW hydraulics worksheet.	535	ft.

AT A MARKEN AND A SECOND AND A S	
Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	2.26 hours / day
Number of doses per day for zone	45
Pump run time per day for zone	6.79 hours
Dose volume per area	207 gallons per dose

ubing Inside diameter	0.55	ínc
otal length of WASTEFLOW dripline / zone	5,186	ft
otal Volume in dripline / zone	64.00	galk
	0.55	in
Flush Cycle Flow formula Drip tube diameter	0.55	in
Drip tube diameter	0.55	
		ft

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day	TEL NOT	2	gallons / day
Hydraulic loading rate	Carl Disc Vickshift		gallons / sq.ft. / day
Total Dispersal Field Area	45,55	56	square fl.
Number of Zones		È.	zone(s)
Dispersal area per zone	11,38	39	square ft.
Choose spacing between WASTEFLOW lines		ð,	ft.
Choose spacing between WASTEFLOW emitters	2R	▼	ft.
Total linear ft.per zone (minimum required)	5,69	95	each
Total number of emitters per zone	2,84	47	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	▼	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield	6	9.3	ft.
What is the flow rate per emitter in gph?	0.	.53	gallons per hour
Total flow per zone - dosing	25.1	15	gallons per minute

If required, choose flush velocity	这些法律现在已经	fl/sec
How many lines of WASTEFLOW?	VARIAN FARMAN	lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	9.62	gpm
Total System Flow - worst case scenario	34.77	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1.5F-3 (1.5in/3hole)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	A.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		Í

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	11.32	minutes
Pump run time per day/area (hours):	3.77	hours / day
Number of doses per day for zone	80	
Pump run time per day for zone	15.09	hours
Dose volume per area	285	gallons per dose

ubing Inside diameter	0.55
otal length of WASTEFLOW dripline / zone	5,695
otal Volume in dripline / zone	70.29
Drip tube diameter	0.55
	0.0458
Drip Tube Diameter Drip Tube Cross Sectional Area Flow required per dripline for flush velocity	0.0016

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

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Total Quantity of effluent to be disposed per day	S. Charles & H		gallons / day
Hydraulic loading rate	Strict Laboration	2	gallons / sq.ft. / day
Total Dispersal Field Area	16,5	72	square ft.
Number of Zones	1. 1. 1. 1. 1. 1.		zone(s)
Dispersal area per zone	8,2	86	square ft.
Choose spacing between WASTEFLOW lines	1.2.1. 2020	١Ĺ	ft.
Choose spacing between WASTEFLOW emitters	2ft.	•	ft.
Total linear ft.per zone (minimum required)	4,1	43	each
Total number of emitters per zone	2,0	72	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	۳	dripline
Pressure at the beginning of the dripfield	A CALL REPORTS 30 pst	٠	psi
Feet of Head at the beginning of the dripfield	6	9.3	ft
What is the flow rate per emitter in gph?	0	.53	gallons per hour
Total flow per zone - dosing	18.	30	gallous per minute

If required, choose flush velocity	172 AU SHARE FINDS	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	6.29	gpm
Total System Flow - worst case scenario	24.59	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (lin.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		ĺ

Pump run time per dose/area (minutes): 11.32 minutes Pump run time per day/area (hours): 1.89 hours / day Number of doses per day for zone 20 Pump run time per day for zone 3.77 hours Dose volume per area 207 gallons per dose		
Number of doses per day for zone 20 Pump run time per day for zone 3.77 hours		
Pump run time per day for zone 3.77 hours	1.89	hours / day
	20	
Dose volume per area 207 gallons per dose	3.77	hours
	207	gallons per dose
Dripline Volume Formula		20

otal length of WASTEFLOW dripline / zone	4,143	A
otal Volume in dripline / zone	51.14	gallon
		_
lush Cycle Flow formula		
Drip tube diameter	0.55	lin
Drip Tube Diameter	0.0458]ft
Drip Tube Cross Sectional Area	0.0016	ft²
Flow required per dripline for flush velocity	0.0008	ft ³ /sec

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Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day	Harris College	gallons / day
Hydraulic loading rate	MRN REFERENCE	13 gallons / sq.ft. / day
Total Dispersal Field Area	5,60	07 square ft.
Number of Zones		zone(s)
Dispersal area per zone	5,60	07 square ft.
Choose spacing between WASTEFLOW lines_		f2 ft.
Choose spacing between WASTEFLOW emitters	2ft.	▼ <u>ft</u> .
Total linear fl.per zone (minimum required)	2,80	03 each
Total number of emitters per zone	1,40	02 each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	▼ dripline
Pressure at the beginning of the dripfield	30 psi	▼ psi
Feet of Head at the beginning of the dripfield	69	9.3 ft.
What is the flow rate per emitter in gph?	0.	.53 gallons per hour
Total flow per zone - dosing	12.3	38 gallons per minute

If required, choose flush velocity	特殊的社会和 各种内部	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpn
Total Flow required to achieve flushing velocity	9.99	gpm
Total System Flow - worst case scenario	22.37	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	not applicable	
Maximum length of each WASTEFLOW line.	535	fL.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

	TE PHILIPACE (
Number of doses per day / area:	NOV SERVICE IN	doses
Pump run time per dose/area (minutes):	13.58	minutes
Pump run time per day/area (hours):	2.26	hours / day
Number of doses per day for zone	10	
Pump run time per day for zone	2.26	hours
Dose volume per area	168	gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	2,803	R
Total Volume in dripline / zone	34.60	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description	: Cave Springs Wastewater Transfer
Contact:	Ferdi Pourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

	GARE AND TO	
Total Quantity of effluent to be disposed per day	N. Bass of the	gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	18,392	square ft.
Number of Zones		zone(s)
Dispersal area per zone	9,196	square ft.
Choose spacing between WASTEFLOW lines		A.
Choose spacing between WASTEFLOW emitters	ZfL .	ft.
Total linear ft.per zone (minimum required)	4,598	each
Total number of emitters per zone	2,299	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	30 psi 🛡	psi
Feet of Head at the beginning of the dripfield	69.	3 ft.
What is the flow rate per emitter in gph?	0.5	3 gallons per hour
Total flow per zone - dosing	20.31	gallons per minute

If required, choose flush velocity	0.0	fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpn
Total Flow required to achieve flushing velocity	5.55	gpm
Total System Flow - worst case scenario	25.86	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	SVLV-100	
Maximum length of each WASTEFLOW line.	535	ft
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	10.87 minutes
Pump run time per day/area (hours):	4.53 hours / day
Number of doses per day for zone	50
Pump run time per day for zone	9.06 hours
lose volume per area	221 gallons per dose

ubing Inside diameter	0.55	inches
otal length of WASTEFLOW dripline / zone	4,598	Ĥ
otal Volume in dripline / zone	56.75	gallons

Drip tube diameter	0.55 ju
Drip Tube Diameter	0.0458 ft
Drip Tube Cross Sectional Area	0.0016 fl
Flow required per dripline for flush velocity	0.0008 f

Job Description	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day		gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	6,415	square ft.
Number of Zones	ARD STAR	zone(s)
Dispersal area per zone	6,415	square fl.
Choose spacing between WASTEFLOW lines	APRIL AND A CALL	ft.
Choose spacing between WASTEFLOW emitters	2 f. 🛡	A.
Total linear ft.per zone (minimum required)	3,208	each
Total number of emitters per zone	1,604	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph 🗢	dripline
Pressure at the beginning of the dripfield	🗸 🗸 🕹 30 psi 💌	psi
Feet of Head at the beginning of the dripfield	69.3	ft.
What is the flow rate per emitter in gph?	0.53	gallons per hour
Total flow per zone - dosing	14.17	gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	4.07	gpm
Total System Flow - worst case scenario	18.24	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	not applicable	
Maximum length of each WASTEFLOW line.	535	ft.
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		1
and WASTEFLOW hydraulics worksheet.		
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Number of doses per day / area:	doses
Pump run time per dose/area (minutes):	9.06 minutes
Pump run time per day/area (hours):	1.51 hours / day
Number of doses per day for zone	10
Pump run time per day for zone	1.51 hours
Dose volume per area	128 gallons per dose

ubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	3,208	ft
Total Volume in dripline / zone	39.59	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

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Total Quantity of effluent to be disposed per day		÷	gallons / day
Hydraulic loading rate	Self 2 Contest	A	gallons / sq.ft. / day
Total Dispersal Field Area	4,4	80	square ft.
Number of Zones	6. S. C. C. C. A.	Ó	zone(s)
Dispersal area per zone	4,4	80	square ft.
Choose spacing between WASTEFLOW lines		2	ft.
Choose spacing between WASTEFLOW emitters	2π	-	ft.
Total linear ft.per zone (minimum required)	2,2	40	each
Total number of emitters per zone	1,1	20	each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	•	dripline
Pressure at the beginning of the dripfield	30 psi	•	psi
Feet of Head at the beginning of the dripfield		<u>;9.3</u>	ft.
What is the flow rate per emitter in gph?).53	gallons per hour
Total flow per zone - dosing	9.	89	gallons per minute

If required, choose flush velocity	14 A 16 A	ft/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gpm
Total Flow required to achieve flushing velocity	3.33	gpm
Total System Flow - worst case scenario	13.22	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	AP4E-1F/5 (1in.)	
Select Zone Valve (item no.)	not applicable	
Maximum length of each WASTEFLOW line.	535	ft
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		1
and WASTEFLOW hydraulics worksheet.		

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	11.09	minutes
Pump run time per day/area (hours):	3.70	hours / day
lumber of doses per day for zone	20	
Pump run time per day for zone	3.70	hours
ose volume per area	110	gallons per dose

Tubing Inside diameter	0.55	inches
Total length of WASTEFLOW dripline / zone	2,240	ft
Total Volume in dripline / zone	27.65	gallons

Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

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Job Description:	Cave Springs Wastewater Transfer
Contact:	Ferdi Fourie
Prepared by:	Ferdi Fourie
Date:	2/8/2006

Total Quantity of effluent to be disposed per day	这些社会 的关键。	gallons / day
Hydraulic loading rate		gallons / sq.ft. / day
Total Dispersal Field Area	32,14	7 square ft.
Number of Zones		zonc(s)
Dispersal area per zone	8,03	7 square ft.
Choose spacing between WASTEFLOW lines		ft.
Choose spacing between WASTEFLOW emitters	2 ft.	▼ ft.
Total linear fl.per zone (minimum required)	4,01	8 each
Total number of emitters per zone	2,00	9 each
Select Wasteflow dripline	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	30 psi	▼ psi
Feet of Head at the beginning of the dripfield	69	9.3 A.
What is the flow rate per emitter in gph?	0.	53 gallons per hour
Total flow per zone - dosing	17.7	5 gallons per minute

If required, choose flush velocity		fl/sec
How many lines of WASTEFLOW?		lines
Flush flow required at the end of each dripline	0.37	gom
Total Flow required to achieve flushing velocity	12.58	gpm
Total System Flow - worst case scenario	30.33	gpm
Select pipe diameters for manifolds and submains	2	inch
Select Vortex Filter (item no.)	Two x AP4E-1F (1in.)	
Select Zone Valve (item no.)	SVLV-150	
Maximum length of each WASTEFLOW line.	535	ft
For additional technical flow, pressure and flushing		
data please refer to Geoflow's Design Manual		
and WASTEFLOW hydraulics worksheet.		•

Number of doses per day / area:		doses
Pump run time per dose/area (minutes):	11.47	minutes
Pump run time per day/area (hours):	2.87	hours / day
Number of doses per day for zone	60	
Pump run time per day for zone	11.47	hours
ose volume per area	204	gallons per dose
ripline Volume Formula		
	0.55	inches
abing inside diameter	1 4010	£
ubing Inside diameter otal length of WASTEFLOW dripline / zone	4,018	

Flush Cycle Flow formula Drip tube diameter	0.55
Drip Tube Diameter	0.0458
Drip Tube Cross Sectional Area	0.0016
Flow required per dripline for flush velocity	0.0008

SOILS INVESTIGATION

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TREATMENT PLANT#1 EXPANSION

FAIRWAY VALLEY RESERVE AREA DRIP DISPERSAL FIELD SIZE AND SOIL LOADING RATES

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<u>Pit 62</u>

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Brief SWT @ 40" Loading rate 0.820 Gal/Ft2/Day 121.951 Ft2/100 Gal

<u>Pit 63</u>

Brief SWT @ 30" Loading rate 0.615 Gal/Ft2/Day 162.602 Ft2/100 Gal

<u>Pit 64</u>

Brief SWT @ 22" Loading rate 0.451 Gal/ft2/Day 221.729Ft2/100 Gal

<u>Pit 65</u>

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Too close to pond and property line

<u>Pit 66</u>

Too close to property line

<u>Pit 67</u>

Brief SWT @ 23" Loading rate 0.472 Ga/Ft2/Day 212.089 Ft2/100 Gal

<u>Pit 68</u>

Brief SWT @ 23" Loading rate 0.472 Gal/Ft2/Day 212.089 Ft2/100 Gal

<u>Pit 69</u>

Too close to property line

<u>Pit 70</u>

Brief SWT @ 22" Loading rate 0.451 Gal/Ft2/Day 221.729 Ft2/100 Gal

Pit 71

Brief SWT @ 22" Moderate SWT @ 42" (Adjusted to 35") Loading rate 0.239 Gal/Ft2/Day 418.118 Ft2/100 Gal

<u>Pit 72</u>

Brief SWT @ 20" Moderate SWT @ 42" (Adjusted to 35") Loading rate 0.239 Gal/Ft2/Day 418.118 Ft2/100 Gal

Pit 73

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Brief SWT @ 20" Moderate @ 34" (Adjusted to 29") Loading rate 0.198 Gal/Ft2/Day 504.626 Ft2/100 Gal

<u>Pit 74</u>

Brief SWT @ 21" Loading rate 0.431 Gal/Ft2/Day 232.288 Ft2/100 Gal

<u>Pit 75</u>

Edge of green. Did not dig.

<u>Pit 76</u>

Edge of sandtrap, disturbed area, did not dig.

<u>Pit 77</u>

Brief SWT @ 19" Moderate SWT @ 40" (Adjusted to 33") Loading rate 0.226 Gal/Ft2/Day 443.459 Ft2/100 Gal

Pit 78

Brief SWT @ 34" Loading rate 0.697 Gal/Ft2/Day 143.472 Ft2/100 Gal

Pit 79

Brief SWT @ 20" Loading rate 0.410 Gal/Ft2/Day 243.902 Ft2/100 Gal

Pit 80

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Brief SWT @ 18" Loading rate 0.369 Gal/Ft2/Day 271.003 Ft2/100 Gal

<u>Pit 81</u>

Brief SWT @ 18" Loading rate 0.369 Gal/Ft2/Day 271.003 Ft2/100 Gal

Pit 82

Brief SWT @ 20" Loading rate 0.410 Gal/Ft2/Day 243.902 Ft2/100 Gal

<u>Pit 83</u>

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Brief SWT @ 19" Loading rate 0.390 Gal/Ft2/Day 256.739 Ft2/100 Gal

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<u>Pit 84</u>

Brief SWT @ 19" Loading rate 0.390 Gal/Ft2/Day -256.739 Ft2/100 Gal

<u>Pit 85</u>

Brief SWT @ 23" Loading rate 0.472 Gal/Ft2/Day 212.089 Ft2/100 Gal

<u>Pit 86</u>

Brief SWT @ 17" Loading rate 0.349 Gal/Ft2/Day 286.944 Ft2/100 Gal

Pits completed 12-15-05 North of Club House and Shed

<u>Pit 1</u>

Overburden @ 8" Brief @ 21" Long @ 31" Unsuitable pit area

<u>Pit 2</u>

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Brief SWT @ 30" Moderate SWT @ 38" (Adjusted to 35") Loading rate 0.239 Gal/Ft2/Day 418.118 Ft2/100 Gal

<u>Pit 3</u>

Brief SWT @ 22" Loading rate 0.451Gal/Ft2/Day 221.729 Ft2/100 Gal

These drip disposal field sizes and loading rates are taken from the Arkansas Department of Health Guidelines for the Design and Construction of Drip Dispersal Systems.

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TREATMENT PLANT #2



BAILEY ENVIRONMENTAL SERVICES, INC.

P.O. Box 6428 Springdale, AR 72766 Ph (479) 361-5044

June 13, 2005

Brian Hash, Developer ReMax and Associates 1285 N. Shiloh Fayetteville, AR 72703

RE: Irrigation lines on the The Creeks Highway 112, Cave Springs, AR

To Whom It May Concern:

Soil pit analyses were made of 105 pits as marked by surveyors from CEI Engineering to determine seasonal water tables and loading rates by Reba Bailey, DR and Glen Laurent, P.S.C. on June 7th and 8th, 2005. This information is also being provided to Benny Mays, E.H.S. from the Benton County Health Department.

This information is pertinent to the area of the property where the soil pits were dug. Pit locations must be shown on the plat. 15 other proposed pits were not dug due either to proximity to ponds, irrigation lines, putting greens or stakes not found. Notes referring to this are included on the attached analysis chart.

The drip field disposal field sizes and loading rates are taken from the Arkansas Department of Health Guidelines for the Design and Construction of Drip Dispersal Systems provided to the designated representatives. Pits were reviewed by Benny Mays, Environmental Health Specialist, on June 7th, 2005. Pit locations considered unsuitable for irrigation lines and proposed pit sites not dug are noted on the plat provided by CEI Engineering.

Sincerely,

Reba Bailey, R.S. Designated Representative #269

C: Benny Mays, E.H.S., Benton County Health Department CEI Engineering Associates Soils Investigation Data Drip Dispersal Field Loading Rates The Creeks Golf Course Cave Springs, AR

> Prepared for: Brett Hash, Developer CEI Engineering Associates

Prepared by: Reba Bailey, R.S. Designated Representative #269

June 13, 2005

Introduction

This report was prepared to provide information for health department approval of the proposed irrigation lines using treated effluent on The Creeks Golf Course.

105 soil pits were dug and soil pit analyses were made on June 7th and 8th, 2005. A health department representative reviewed the pits and concurred with our findings.

Soil pit locations are indicated on the plat provided by CEI Engineering Associates. Related loading rates are pertinent to the referenced pit locations.

Site description

The proposed drip dispersal field is located on The Creeks Golf Course located on Highway 112 in Cave Springs, AR in Benton County. Areas analyzed were staked and identified by CEI Engineering Associates.

Methods

This investigation was performed by digging four feet deep soil pits based on a 100 foot grid in the non disturbed areas over much of the golf course. All soil interpretations and profile descriptions were made by Glen Laurent, Arkansas Registered Professional Soil Classifier. Seasonal water table depths were determined by Reba Bailey, Designated Representative #269 and Glen Laurent, Arkansas Registered Professional Soil Classifier. Soil pits were reviewed by Benny Mays, Environmental Health Specialist with the Arkansas Department of Health.

Loading rates were based on the seasonal water tables and interpretations were made using the Arkansas Department of Health Guidelines for the Design and Construction of Drip Dispersal Systems

THE CREEKS GOLF COURSE PIT B4

PROFILE DESCRIPTION

- A 0-10" Dark brown (10YR3/3) silt loam; weak, medium subangular blocky structure; friable; 5% gravel by volume1/2 to 3 inches in diameter; gradual, smooth boundary.
- В

10-18"

Brown (10YR4/4) silt loam; weak, medium subangular blocky structure; friable; 10% gravel by volume 1 to 3 inches in diameter; gradual, smooth boundary.

- Bt1 18-27" Brown (7.5YR4/4) gravelly silt loam with common, medium distinct yellowish brown (10YR5/4) iron depletions; moderate, medium subangular blocky structure; friable; common, distinct clay films on ped faces; 2% common black stains on ped faces; 20% rounded gravel by volume 1 to 3 inches in diameter; gradual, wavy boundary.
- Bt2 27-42" Brown (7.5YR4/4) gravelly silty clay loam with common, medium distinct brown (7.5YR5/4) iron depletions; moderate, medium subangular blocky structure; friable; many, distinct clay films on ped faces; common black stains; 15% rounded gravel by volume 1 to 3 inches in diameter; gradual, wavy boundary.
- Bt3 42-52" Brown (7.5YR4/4) silty clay loam with common, medium distinct yellowish brown (10YR5/4) iron depletions; moderate, medium subangular blocky structure; friable; common, distinct clay films on ped faces; common black stains on ped faces; 10% rounded gravel by volume 1 to 3 inches in diameter.

THE CREEKS GOLF COURSE PIT B33

PROFILE DESCRIPTION

- A 0-18" Dark yellowish brown (10YR4/4) silt loam; weak, medium subangular blocky structure; friable; gradual, smooth boundary.
- Bt1 18-28" Brown (7.5YR4/4) silt loam with common, medium distinct yellowish brown (10YR5/4) iron depletions; moderate, medium subangular blocky structure; friable; common, clay films; gradual, smooth boundary.
- Bt2 28-45" Brown (7.5YR4/4) silty clay loam with common, medium distinct light yellowish brown (10YR6/4) iron depletions; moderate, medium subangular blocky structure; friable; common, distinct clay films on ped faces; 2% common black stains on ped faces; gradual, smooth boundary.
- Bt3 45 52" Brown (7.5YR4/4) silty clay loam with common, medium distinct light yellowish brown (10YR6/4) and light brownish gray (10YR6/2) iron depletions; moderate, medium subangular blocky structure; friable; common, distinct clay films on ped faces; common FeMn concretions.

THE CREEKS GOLF COURSE PIT B75

PROFILE DESCRIPTION

- A 0-13" Dark yellowish brown (10YR4/4) silt loam; weak, medium subangular blocky structure; friable; 10% rounded gravel by volume1 to 3 inches in diameter; gradual, smooth boundary.
- B1 13-21" Brown (10YR4/4) very gravelly silt loam; weak, medium subangular blocky structure; very friable; 60% rounded gravel by volume 1 to 3 inches in diameter; gradual, smooth boundary.
- B2 21-48" Dark brown (7.5YR3/4) extremely gravelly silt loam; wesak, medium subangular blocky structure; very friable; 80% rounded gravel by volume 1 to 3 inches in diameter.

SOIL PITS SIN	AILAR TO SOIL	PROFILE DESCR	RIPTIONS FOR :]	
		· · · ·	· ·			
B4	B33		B75		`	
D4				D140	4	
B1	B25	B72	B6	B110	4	
B2	B26	B73	B11	B112	_	
B3 B7	B27 B29	874	B12	B113	-4	
B7 B8	B29 B30	B81 B86	B15 B16	B120	- ·	
B0 B10	B30 B31		B10 B21		- J ·	
B76	B31	B88 B89	B21 B22		-l·	
B76 B77	B32	B90	B22 B23		-	
B78	B34	B92	B28		-	
B79	B34 B36	B93	B35			
B80	B38	B94	B33		-	
B95	B39	B96	B43		-	
B104	B40	B97	B50			
B107	B41	B98	B54		-	
B114	B44	B99	B55		4	
	B45	B100	B56		-	
	B46	B102	B57		-	
	B48	B105	B58	· · · · · · · · · · · · · · · · · · ·	4	
	B49	B106	B62		1	
	B51	B109	B67		<u> </u>	
	B52	B115	B69	-	-	
•	B53	B116	B71	•	1	
	B59	B117	B75		7	
	B60	B118	B82		7	
	B61	B119	B83			
	B64		B84			
	B65		B91			
	B66		B101			
	B68		B103			
	B70		B108			
		•				
					•	

PIT#	BSWT	MSWT	LSWT	ADJ MSWT	ADJ LSWT	LOADING RATE G/FT2/DAY	FT2/100 GAL	
B1	19"			1 · .		0.39		
B 2	18"					0.369	271.003	
B3 .	19"					0.39	256.739	
B4	18"					0.369	271.003	
B 5	NO PIT O	R STAKE						
56		•	28" FRE	EE H20		0.096	1045.3	UNSUITABLE
B7	18"	34"		29"		0.198		
B8	29"					0.492	203.252	
189	NO PIT O	R STAKE		· ·				
B10	20"						243.902	
B11	22"	<u> </u>			· .	0.451	221.729	
B12	>48"	<u> </u>				0.984	101.626	
B13	NO PIT OF					·		
B14	NO PIT OF	R STAKE		<u> </u>				
B15			47" FRE	E H20		0.161	· 622.73	
B16	43"	<u> </u>	<u> </u>			0.882	113.443	
817	LOCATED			·				
B 18	NO PIT OF					USE LE from	PITIO	
B 19	NO PIT OF		<u> </u>			11 0	" 25	
B 20	LOCATED	IN DRY PO	DND					
B21	>51"	·	ļ			0.984	101.626	
B22	23"	·				0.472	212.069	
B23	19"					0.39	256.739	
B24	NO PIT OF	R STAKE				USE LR from f	+ 25	
B25	29"					0.595	168.209	
B26		42"		35"		0.239	418,118	
B27	19"	42"		34"		0.226	443.459	
B28	>48"					0.984	101.626	
B29		33"		28"		0.191	522.648	
B30		38"		31"	· ·	0.212	472.069	
B31		43"		35"		0.239	418.118	
B32		44"		35"		0.239	418.118	
B33	18"	45"		36"		0.246	406.504	•

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PIT#	BSWT	MSWT	LSWT			LOADING RATE G/FT2/D	TT0//00 041		
B34	20"	MOVI	LOVVI	ADJ MOVI	ADJ LOVVI	LUADING RATE G/F12/D 0.41			
B35	20	48"		39"	<u> </u>		243.902	·	
					35"	0.267	375.235		1 :
B36	17"	30"	45" FREE H20	26"		/ 0.12	836.237		
837		UF PUNU	-(H20 PUMPED II	<u>v)</u>	NOT DUG				
B38	22"				<u></u>	0.451	221.729		
B39	22*				05"	· 0.451	221.729		
B40	12"	24"	50" FREE H20	20"	35"	0.12	836.237		
B41	18"	32"		27".	<u> </u>	0.185	542.005		I`
B42	55"+	<u> </u>		L		0.984	101.626		
B43	22"	46"	<u></u>	38"		0.26	385.109	<u>;</u>	
B44	10"	20"	45" FREE H20	17"	31"	0.106	944.138		
B45	25"					0.513	195.122		
B46	27"					0.554	180.668		
B47	AT EDGE	OF POND	-(H20 PUMPED IN	1)					
B48	18"	49"		39"		0.267	375.235		
B49	18"	38" ·	51" FREE H20	31"	41"	0.14	713.861		
P50	4 ⁿ	24"	46" FREE H20	18"	34"	0.082	1219.51		
IB51	SURFACE	12"	25"						
B52	19"	45"		36"		0.246	406.504		
B53	20"	47"		38"		0.26	385.109		
B54	>54"	·				0.984	101.626		
855	28"		<u> </u>			0.574	174.216		
B56	28"	36"	45" FREE H20	33"	39"	0.133	750,469		
B57	5" FILL	25"	1			DO NOT USE THIS AREA,		TREQUEST	
B58	38"	- <u>-</u>			·· <u> </u>	0.779	128.37		(·
B59		49"		43"	•	0.294	340.329		
B60	19"	48"	-	38"	· ·	0.26	385.109	÷	
B61		48"	+	38"		0.26	385.109		
B62	SURFACE		27" , 34" H20			5.20			
B63	NOT DUG.								
B64		41"		35"	43"	0.147	680.658		
				38"		0.147	385.109	_	
B65		48"		30 31"			472.069		
B66		33"		31		0.212			
B67	44"					0.902	110.865		

	ROJECT SE	ASONAL V		BLES AND LO	ADING RAT	ES THE CREEKS			
PIT #	BSWT	MSWT	LSWT			LOADING RATE G/FT2/D	FT2/100 GAL		
B68	20"	30"		27"		0.185	542.005		
B69	26"	54"	· · ·	45"		0.308	325.203		
B70	20"	39"		33"		0.226	443.459		
B71	SURFACE					UNSUITABLE			
B72	30"					0.615	162.602		
B73 ·	23"	28"		26"		0.178	562.852		
B74	20"	52"		41"		0.28	356.93		
B75	48"+					0.984	101.626		
B76		24"				0.164	609.756		
B77	22"					0.451	221.729		
B78	6"	20"		15"		0.103	975.61		
B79	48"+					0.984	101.626		
B80	22"		<u> </u>			0.451	221.729		
B81	33"	51"		45'		0.308	325.203		
B82	34"				·	0.697	143.472		
B83	23"					0.472	212.089		
B84	48"+	TOON				0.984	101.626		
B85 B86	20"	40"	SE TO T (C	33"			440.450		
B87				IGATION LINE		0.226	443.459		
B88	18"					0.369	271.003		
B89		33"	+	28"		0.389	522.648		
B90		27"	<u> </u>	24"		0.164	609.756		
391	21"	<u> </u>	-	<u></u>		0.431	232.288		
392		26"		24"		0.164	609.756		
393		29"	+	25"		0.171	585.366		
		37"		31"		0.212	472.069	· · · ·	
394	30"		-	<u> -</u>		0.615	162.602		
						0.451	221.729		
395									
394 395 396 397	22"	35"		30"		0.205	487.205		

HASH PI	ROJECT SE	EASONAL	WATER TAE	BLES AND LC	ADING RAT	ES THE CREEKS		
PIT#	BSWT	MSWT	LSWT			LOADING RATE G/FT2/D	FT2/100 GAL	
B99	29"	34"		32"		0.219		
B100	29"	38"		35"		0.239	418.118	
B101	23"	36"		32"		0.219	457.317	
B102	23"	34"		30"		0.205	487.205	
B103	33"					0.677	147.82	
B104	20"	28"		25"		0.171	585.366	
B105	17"	27"		24"		0.164	609.756	
B106	17"	24"		22"		0.15	665,188	
B107	20"	33"		29"		0.198	504.628	
B108	48"					0.984	101.626	
B109	22"	25"		24"		0.164	609.756	
B110	SURFAC	E UNSUIT/	ABLE AREA					
B111	TOO CLO	OSE TO PC	ND-HEALT	H DEPT ASK	ED NOT TO L	JSE AREA		
B112	7"	15"		12"		0.082	1219.51	
B113	35"					0.718	139.373	
B114	20"	26"		24"		0.164	609.756	
B115	SURFACE 16" UNSUI		UNSUITA	BLE				/
B116	SURFACE							/
B117	10"	16"		14"		0.096		/
B118	6"	19"		15"		0.103	975.61	
B119	23"	33"		30"		0.205	487.805	
B120	34"					0.697	143.472	
BSWT=B	RIFE SEAS							
	NODERATE							
LSWT=L								
ADJ=AD								

AVE 0.375

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P.O. Box 5 MAter P.O. Box 5 Mater CAUE Springs, AKK FZFTO CAUE Springs, AKK FZFTO 31 FIDOT CI ACO ARVANSAS DEPArtment of Environmental Quality 5301 Northshore Drive 5301 Northshore Drive North Little Rock, ARIL . 72118-5317 ATTO RECK McConnell