THE INTERVAL(X) 20.0
THE INTERVAL(Y) 20.0
THE INTERVAL(R) 10.0
STOPPING HEIGHT FROM SURFACE..... 5.0
START LINE OF CIRCLE ..... Y=(0.000E-01)X+(-6.200E+01)
NUMBER OF LIMITTED CONDITIONS..... 2

NUMBER	TYPE	**********	**********	**********	**********
1	-1	-198.9	-70.0	0.0	0.0
2	-1	-33.0	-62.0	0.0	0.0

COORDINATE OF NODAL POINT

POINT	X-COORDINATE (M)	Y-COORDINATE (M)
1	47.500	19.000
2	-101.250	-40.500
3	-123.000	-40.500
4	-131.000	-40.500
5	-198.850	-70.000
6	-134.000	-67.000
7	-120.000	-67.000
8	-15.525	-79.500
9	-9.525	-79.500
10	24.525	-79.500
11	30.525	-79.500
12	39.525	-71.000
13	-102.000	-54.000
14	-41.025	-54.000
15	-6.000	-16.000
16	-0.050	-16.000
17	15.000	-16.000
18	21.000	-16.000
19	226.700	-75.000
20	57.500	19.000
21	-113.077	-62.000
22	-33.025	-62.000

23	-200.000	16.500
24	44.103	16.500
25	48.393	11.500
26	50.000	-71.000

GROUND SURFACE DATA (NODAL NUMBER)

5 4 3 2 1 20 19

WATER LINE DATA (NODAL NUMBER)

23 24 25 26 19

ELEMENT DATA

ELEMENT	TYPE	I	J	K	L
1	2	4	5	6	4
2	5	4	6	7	3
3	2	3	7	21	13
4	2	3	13	2	3
5	4	21	22	14	13
6	2	2	13	14	15
7	2	1	2	15	1
8	2	15	14	22	8
9	3	15	8	9	16
10	3	1	15	16	1
11	1	16	9	10	17
12	1	1	16	17	20
13	3	20	17	18	20
14	3	17	10	11	18
15	2	18	11	12	18
16	2	20	18	12	26
17	2	20	26	19	20

TRO DAM FUTURE EXT. DESIGN FLOOD. WL.212.5 (U/S) 1:2.5 <MF-10>

BLOCK	-- X-COORDINATE -- (START)	(PERIOD)	MAT	WATER	WEIGHT(SAT)	ACCEL	FRICTION	GRA. OF SLOPE	SAFETY FACTOR (NORMAL)	(SEISMIC)
1	-200.000	-198.850	0	-	-	-	-	-	-	-
2	-198.850	-134.000	2	-1	2.370	0.000	0.839	0.435	1.930	1.930
3	-134.000	-131.000	2	-1	2.370	0.000	0.839	0.435	1.930	1.930
4	-131.000	-123.000	5	-1	1.800	0.000	0.577	0.000	100.000	100.000
5	-123.000	-120.000	2	-1	2.370	0.000	0.839	0.000	100.000	100.000
6	-120.000	-113.077	2	-1	2.370	0.000	0.839	0.000	100.000	100.000
7	-113.077	-102.000	2	-1	2.370	0.000	0.839	0.000	100.000	100.000
8	-102.000	-101.250	2	-1	2.370	0.000	0.839	0.000	100.000	100.000
9	-101.250	-41.025	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
10	-41.025	-33.025	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
11	-33.025	-15.525	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
12	-15.525	-9.525	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
13	-9.525	-6.000	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
14	-6.000	-0.050	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
15	-0.050	15.000	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
16	15.000	21.000	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
17	21.000	24.525	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
18	24.525	30.525	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
19	30.525	39.525	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
20	39.525	41.250	2	-1	2.370	0.000	0.839	0.400	2.098	2.098
21	41.250	43.679	2	1	2.370	0.000	0.839	0.400	2.098	2.098
22	43.679	44.103	2	1	2.370	0.000	0.839	0.400	2.098	2.098
23	44.103	47.500	2	1	2.370	0.000	0.839	0.400	2.098	2.098
24	47.500	48.393	1	1	1.800	0.000	0.577	0.000	100.000	100.000
25	48.393	48.417	1	1	1.800	0.000	0.577	0.000	100.000	100.000
26	48.417	50.000	1	1	1.800	0.000	0.577	0.000	100.000	100.000
27	50.000	57.500	1	1	1.800	0.000	0.577	0.000	100.000	100.000
28	57.500	226.700	2	1	2.370	0.000	0.839	0.556	1.510	1.510

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*                              STABILITY ANALYSIS                           *
*                        (MOST DANGEROUS SLIPPE CIRCLE)  (NORMAL)           *
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TRO DAM FUTURE EXT. DESIGN FLOOD. WL.212.5 (U/S) 1:2.5 <MF-10>
-----------------------------------------------------------------------------

CALCULATION NUMBER.....................        178

SLIPPE CIRCLE(X-COORDINATE).............      0.000 (M)
      -DO-   (Y-COORDINATE).............     60.000 (M)
      -DO-   (RADIUS)...................     62.000 (M)

SAFETY FACTOR(NORMAL  CONDITION)........      1.982
      -DO-   (SEISMIC CONDITION)........      1.982

RESISTANCE MOMENT(TOTAL:NORMAL )........     13090. (TON*M)
      -DO-       ( -DO-:SEISMIC).......     13090. (TON*M)
RESISTANCE FORCE (COHESION).............      0.00 (TON)
      -DO-       (FRICTION:BODY FORCE   )...  695.35 (TON)
      -DO-       (  -DO-  :WATER PRESSURE)...  45.50 (TON)
      -DO-       (  -DO-  :PORE  PRESSURE)... -529.73 (TON)
      -DO-       (  -DO-  :EARTHQUAKE   )...    0.00 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........      6603. (TON*M)
      -DO-    ( -DO-:SEISMIC).........      6603. (TON*M)
SLIDING FORCE (BODY FORCE)..............     257.50 (TON)
      -DO-    (WATER PRESSURE)........    -150.99 (TON)
      -DO-    (EARTHQUAKE)............       0.00 (TON)
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****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
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TRO DAM FUTURE EXT. DESIGN FLOOD. WL.212.5 (U/S) 1:2.5 <MF-10>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
3	-100.000	20.000	62.000	2.328	15713.	6751.	2.328	15713.	6751.
6	-100.000	40.000	82.000	2.288	32265.	14104.	2.288	32265.	14104.
9	-100.000	60.000	102.000	2.263	57466.	25399.	2.263	57466.	25399.
12	-100.000	80.000	122.000	2.246	93119.	41468.	2.246	93119.	41468.
15	-100.000	100.000	142.000	2.233	141031.	63146.	2.233	141031.	63146.
18	-100.000	120.000	162.000	2.224	203007.	91268.	2.224	203007.	91268.
21	-100.000	140.000	182.000	2.217	280853.	126667.	2.217	280853.	126667.
24	-80.000	20.000	62.000	2.348	46878.	19962.	2.348	46878.	19962.
28	-80.000	40.000	72.000	2.171	14078.	6486.	2.171	14078.	6486.
32	-80.000	60.000	92.000	2.171	29371.	13531.	2.171	29371.	13531.
36	-80.000	80.000	112.000	2.171	52992.	24412.	2.171	52992.	24412.
39	-80.000	100.000	142.000	2.161	265639.	122932.	2.161	265639.	122932.
43	-80.000	120.000	162.000	2.163	338851.	156623.	2.163	338851.	156623.
48	-80.000	140.000	172.000	2.103	185292.	88121.	2.103	185292.	88121.
52	-60.000	20.000	52.000	2.339	26423.	11295.	2.339	26423.	11295.
56	-60.000	40.000	72.000	2.289	52181.	22796.	2.289	52181.	22796.
60	-60.000	60.000	92.000	2.262	89153.	39415.	2.262	89153.	39415.
65	-60.000	80.000	102.000	2.151	25897.	12037.	2.151	25897.	12037.
69	-60.000	100.000	132.000	2.090	178206.	85256.	2.090	178206.	85256.
74	-60.000	120.000	152.000	2.140	232800.	108802.	2.140	232800.	108802.
80	-60.000	140.000	162.000	2.019	113581.	56245.	2.019	113581.	56245.
85	-40.000	20.000	42.000	2.326	12978.	5579.	2.326	12978.	5579.
90	-40.000	40.000	62.000	2.273	29696.	13066.	2.273	29696.	13066.
95	-40.000	60.000	82.000	2.247	55538.	24719.	2.247	55538.	24719.
100	-40.000	80.000	102.000	2.025	81212.	40096.	2.025	81212.	40096.
105	-40.000	100.000	122.000	2.020	111604.	55240.	2.020	111604.	55240.
111	-40.000	120.000	132.000	2.141	41330.	19308.	2.141	41330.	19308.
117	-40.000	140.000	152.000	2.004	61319.	30596.	2.004	61319.	30596.

123	I	-20.000	20.000	32.000	I	2.305	5079.	2203.	I	2.305	5079.	2203.
128	I	-20.000	40.000	62.000	I	2.241	52484.	23418.	I	2.241	52484.	23418.
135	I	-20.000	60.000	72.000	I	2.142	30004.	14006.	I	2.142	30004.	14006.
141	I	-20.000	80.000	92.000	I	1.984	45904.	23132.	I	1.984	45904.	23132.
147	I	-20.000	100.000	112.000	I	2.135	68686.	32174.	I	2.135	68686.	32174.
153	I	-20.000	120.000	132.000	I	2.528	107014.	42328.	I	2.528	107014.	42328.
159	I	-20.000	140.000	152.000	I	2.967	149123.	50262.	I	2.967	149123.	50262.
165	I	0.000	20.000	32.000	I	2.306	12233.	5306.	I	2.306	12233.	5306.
171	I	0.000	40.000	52.000	I	2.185	27216.	12456.	I	2.185	27216.	12456.
178	I	0.000	60.000	62.000	I	1.982	13090.	6603.	I	1.982	13090.	6603.
185	I	0.000	80.000	82.000	I	2.066	22862.	11064.	I	2.066	22862.	11064.
192	I	0.000	100.000	102.000	I	2.520	39455.	15660.	I	2.520	39455.	15660.
199	I	0.000	120.000	122.000	I	3.113	60356.	19388.	I	3.113	60356.	19388.
206	I	0.000	140.000	142.000	I	3.766	82931.	22020.	I	3.766	82931.	22020.

****
* LIST OF INPUT DATA *
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TRO DAM FUTURE EXT. RESERVOIR FULL WL.209m 1:2.3 & 1:1.8 <MFR-01>

NUMBER OF NODAL POINTS..... 30
NUMBER OF DIFFERENT MATERIALS..... 5
NUMBER OF ELEMENTS..... 20
NUMBER OF SURFACE LINES..... 8
NUMBER OF WATER POINTS..... 7
NUMBER OF PORE PRESSURE POINTS..... 0
ACCELERATION OF EARTHQUAKE..... 0.0500
UNITE WEIGHT OF WATER..... 1.0000

MATERIAL PROPATY

	TYPE	COHESION (T/M2)	FRICTION (DEGREE)	WEIGHT(WET) (T/M3)	WEIGHT(SAT) (T/M3)	ACC.FACTOR	PORE.FACTOR
1	0	0.0	30.0	1.72	1.80	1.000	0.000
2	0	0.0	40.0	2.13	2.37	1.000	0.000
3	0	0.0	36.0	1.93	2.23	1.000	0.000
4	0	0.0	36.0	1.93	2.23	1.000	0.000
5	0	0.0	30.0	1.72	1.80	1.000	0.000

DATA OF SLIPPE CIRCLE

OUTLINE OF GRID

NUMBER	GROUP(1) X-COOR	GROUP(1) Y-COOR	GROUP(2) X-COOR	GROUP(2) Y-COOR
1	150.000	20.000	0.000	0.000
2	300.000	20.000	0.000	0.000
3	300.000	100.000	0.000	0.000
4	150.000	100.000	0.000	0.000

THE INTERVAL(X)..... 20.0
THE INTERVAL(Y)..... 10.0
THE INTERVAL(R)..... 5.0
STOPPING HEIGHT FROM SURFACE..... 5.0
START LINE OF CIRCLE ..... Y=(0.000E-01)X+(-6.600E+01)

NUMBER OF LIMITTED CONDITIONS..... 1

NUMBER	TYPE	**********	**********	**********	**********
1	1	188.0	-56.0	0.0	0.0

COORDINATE OF NODAL POINT

POINT	X-COORDINATE (M)	Y-COORDINATE (M)
1	43.700	19.000
2	-93.150	-40.500
3	-114.900	-40.500
4	-122.900	-40.500
5	-190.750	-70.000
6	-125.900	-67.000
7	-111.900	-67.000
8	-15.525	-79.500
9	-9.525	-79.500
10	24.525	-79.500
11	30.525	-79.500
12	50.000	-71.000
13	-93.900	-54.000
14	-41.025	-54.000
15	-6.000	-16.000
16	-0.050	-16.000
17	15.000	-16.000
18	21.000	-16.000
19	188.700	-56.000
20	53.700	19.000
21	-104.977	-62.000
22	-33.025	-62.000
23	-200.000	13.000
24	36.200	13.000
25	41.537	8.000
26	96.233	-66.000
27	340.000	-56.000
28	341.000	-66.000
29	49.000	-56.000
30	106.000	-56.000

GROUND SURFACE DATA (NODAL NUMBER)

5 4 3 2 1 20 19 27

WATER LINE DATA (NODAL NUMBER)

23 24 25 29 30 19 27

ELEMENT DATA

ELEMENT	TYPE	I	J	K	L
1	2	4	5	6	4
2	5	4	6	7	3
3	2	3	7	21	13
4	2	3	13	2	3
5	4	13	21	22	14
6	2	2	13	14	15
7	2	1	2	15	1
8	2	15	14	22	8
9	3	15	8	9	16
10	3	1	15	16	1
11	1	16	9	10	17
12	1	1	16	17	20
13	3	20	17	18	20
14	3	17	10	11	18
15	2	20	18	11	29
16	2	29	11	12	29
17	2	29	12	26	30
18	2	20	29	30	19
19	4	30	26	19	30
20	4	19	26	28	27

TRO DAM FUTURE EXT. RESERVOIR FULL WL.209m 1:2.3 & 1:1.8 <MFR-01>

BLOCK	-- X-COORDINATE -- (START)	(PERIOD)	MAT	WATER	WEIGHT(SAT)	ACCEL	FRICTION	GRA. OF SLOPE	SAFETY FACTOR (NORMAL)	(SEISMIC)
1	-200.000	-190.750	0	-	-	-	-	-	-	-
2	-190.750	-125.900	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
3	-125.900	-122.900	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
4	-122.900	-114.900	5	-1	1.800	0.050	0.577	0.000	100.000	100.000
5	-114.900	-111.900	2	-1	2.370	0.050	0.839	0.000	100.000	100.000
6	-111.900	-104.977	2	-1	2.370	0.050	0.839	0.000	100.000	100.000
7	-104.977	-93.900	2	-1	2.370	0.050	0.839	0.000	100.000	100.000
8	-93.900	-93.150	2	-1	2.370	0.050	0.839	0.000	100.000	100.000
9	-93.150	-41.025	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
10	-41.025	-33.025	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
11	-33.025	-15.525	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
12	-15.525	-9.525	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
13	-9.525	-6.000	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
14	-6.000	-0.050	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
15	-0.050	15.000	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
16	15.000	21.000	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
17	21.000	24.525	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
18	24.525	29.900	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
19	29.900	30.525	2	1	2.370	0.050	0.839	0.435	1.930	1.693
20	30.525	35.180	2	1	2.370	0.050	0.839	0.435	1.930	1.693
21	35.180	36.200	2	1	2.370	0.050	0.839	0.435	1.930	1.693
22	36.200	41.537	2	1	2.370	0.050	0.839	0.435	1.930	1.693
23	41.537	41.746	2	1	2.370	0.050	0.839	0.435	1.930	1.693
24	41.746	43.700	2	1	2.370	0.050	0.839	0.435	1.930	1.693
25	43.700	49.000	1	1	1.800	0.050	0.577	0.000	100.000	100.000
26	49.000	50.000	1	1	1.800	0.050	0.577	0.000	100.000	100.000
27	50.000	53.700	1	1	1.800	0.050	0.577	0.000	100.000	100.000
28	53.700	96.233	2	1	2.370	0.050	0.839	0.556	1.510	1.347
29	96.233	106.000	2	1	2.370	0.050	0.839	0.556	1.510	1.347
30	106.000	188.700	2	1	2.370	0.050	0.839	0.556	1.510	1.347
31	188.700	340.000	4	-1	2.230	0.050	0.625	0.000	100.000	100.000
32	340.000	341.000	4	1	2.230	0.050	0.625	10.000	0.062	0.031

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*                              STABILITY ANALYSIS                             *
*                        (MOST DANGEROUS SLIPPE CIRCLE)   (NORMAL)            *
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TRO DAM FUTURE EXT. RESERVOIR FULL WL.209m  1:2.3 & 1:1.8 <MFR-01>
-------------------------------------------------------------------------------

CALCULATION NUMBER.....................        12

SLIPPE CIRCLE(X-COORDINATE).............     170.000 (M)
      -DO-    (Y-COORDINATE).............      20.000 (M)
      -DO-    (RADIUS)...................      86.000 (M)

SAFETY FACTOR(NORMAL  CONDITION)........       1.464
      -DO-    (SEISMIC CONDITION)........       1.276

RESISTANCE MOMENT(TOTAL:NORMAL )........     260351. (TON*M)
      -DO-          ( -DO-:SEISMIC).....     253345. (TON*M)
RESISTANCE FORCE (COHESION).............        0.00 (TON)
      -DO-          (FRICTION:BODY FORCE    )...  3359.05 (TON)
      -DO-          (  -DO-  :WATER PRESSURE)...    15.87 (TON)
      -DO-          (  -DO-  :PORE  PRESSURE)...  -347.58 (TON)
      -DO-          (  -DO-  :EARTHQUAKE    )...   -81.47 (TON)

SLIDING MOMENT(TOTAL:NORMAL ).......... -177806. (TON*M)
      -DO-     ( -DO-:SEISMIC).......... -198478. (TON*M)
SLIDING FORCE (BODY FORCE).............  -2067.51 (TON)
      -DO-     (WATER PRESSURE).......       0.00 (TON)
      -DO-     (EARTHQUAKE)...........    -240.38 (TON)
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****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
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TRO DAM FUTURE EXT. RESERVOIR FULL WL.209m 1:2.3 & 1:1.8 <MFR-01>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
1	150.000	20.000	86.000	1.558	394342.	-253083.	1.356	384274.	-283475.
2	150.000	30.000	96.000	1.542	498449.	-323292.	1.344	485537.	-361182.
3	150.000	40.000	106.000	1.551	617440.	-398157.	1.353	601471.	-444436.
4	150.000	50.000	116.000	1.593	748980.	-470182.	1.389	730052.	-525547.
5	150.000	60.000	126.000	1.619	873484.	-539412.	1.409	851748.	-604435.
6	150.000	70.000	136.000	1.637	994696.	-607585.	1.421	970266.	-682780.
7	150.000	80.000	146.000	1.660	1120030.	-674674.	1.437	1093042.	-760477.
8	150.000	90.000	156.000	1.687	1249263.	-740465.	1.457	1219846.	-837255.
10	150.000	100.000	166.000	1.717	1382080.	-804849.	1.479	1350353.	-912963.
12	170.000	20.000	86.000	1.464	260351.	-177806.	1.276	253345.	-198478.
14	170.000	30.000	96.000	1.468	335147.	-228225.	1.282	326102.	-254371.
16	170.000	40.000	106.000	1.474	421943.	-286353.	1.288	410538.	-318758.
18	170.000	50.000	116.000	1.479	521509.	-352660.	1.294	507404.	-392152.
20	170.000	60.000	126.000	1.486	634344.	-426774.	1.302	617217.	-474213.
22	170.000	70.000	136.000	1.512	757719.	-501143.	1.324	737584.	-557236.
24	170.000	80.000	146.000	1.553	889166.	-572711.	1.358	866158.	-638015.
26	170.000	90.000	156.000	1.591	1020197.	-641070.	1.389	994462.	-716052.
28	170.000	100.000	166.000	1.617	1144915.	-708049.	1.408	1116550.	-793158.
30	190.000	20.000	86.000	1.530	152289.	-99518.	1.319	148376.	-112520.
32	190.000	30.000	96.000	1.528	201321.	-131785.	1.320	196105.	-148510.
34	190.000	40.000	106.000	1.527	259591.	-170028.	1.323	252825.	-191086.
36	190.000	50.000	116.000	1.527	327870.	-214722.	1.326	319285.	-240767.
38	190.000	60.000	126.000	1.528	406924.	-266339.	1.329	396233.	-298071.
40	190.000	70.000	136.000	1.529	497524.	-325353.	1.333	484419.	-363516.
42	190.000	80.000	146.000	1.531	600436.	-392238.	1.336	584590.	-437621.
44	190.000	90.000	156.000	1.535	716014.	-466569.	1.341	697118.	-519983.
46	190.000	100.000	166.000	1.554	840871.	-541235.	1.357	818936.	-603301.
48	210.000	20.000	86.000	2.221	73704.	-33190.	1.774	72388.	-40795.
50	210.000	30.000	96.000	2.047	100801.	-49234.	1.672	98838.	-59100.
52	210.000	40.000	106.000	1.933	134406.	-69547.	1.603	131619.	-82111.
55	210.000	50.000	111.000	1.851	87695.	-47365.	1.579	85732.	-54295.

57	I	210.000	60.000	121.000	I	1.784	119928.	-67227.	I	1.534	117140.	-76343.
59	I	210.000	70.000	131.000	I	1.738	159504.	-91775.	I	1.504	155695.	-103532.
61	I	210.000	80.000	141.000	I	1.705	207185.	-121484.	I	1.482	202139.	-136383.
63	I	210.000	90.000	151.000	I	1.682	263733.	-156826.	I	1.466	257216.	-175413.
65	I	210.000	100.000	161.000	I	1.664	329914.	-198276.	I	1.455	321669.	-221141.
66	I	230.000	30.000	96.000	I	42.658	42999.	-1008.	I	6.030	42957.	-7124.
67	I	230.000	40.000	106.000	I	10.822	55538.	-5132.	I	4.395	55326.	-12587.
68	I	230.000	50.000	116.000	I	5.854	72803.	-12436.	I	3.355	72291.	-21550.
69	I	230.000	60.000	126.000	I	4.093	95440.	-23317.	I	2.743	94480.	-34448.
70	I	230.000	70.000	136.000	I	3.248	124166.	-38223.	I	2.368	122592.	-51771.
71	I	230.000	80.000	146.000	I	2.772	159720.	-57612.	I	2.126	157346.	-74021.
72	I	230.000	90.000	156.000	I	2.475	202849.	-81950.	I	1.961	199471.	-101709.
73	I	230.000	100.000	166.000	I	2.277	254307.	-111707.	I	1.845	249698.	-135348.

****
* LIST OF INPUT DATA *
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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>

NUMBER OF NODAL POINTS..... 13
NUMBER OF DIFFERENT MATERIALS..... 3
NUMBER OF ELEMENTS..... 5
NUMBER OF SURFACE LINES..... 6
NUMBER OF WATER POINTS..... 6
NUMBER OF PORE PRESSURE POINTS..... 26
ACCELERATION OF EARTHQUAKE..... 0.0500
UNITE WEIGHT OF WATER..... 1.0000

MATERIAL PROPATY

	TYPE	COHESION (T/M2)	FRICTION (DEGREE)	WEIGHT(WET) (T/M3)	WEIGHT(SAT) (T/M3)	ACC.FACTOR	PORE.FACTOR
1	0	0.0	30.0	1.72	1.80	1.000	0.000
2	0	0.0	40.0	2.13	2.37	1.000	0.000
3	0	0.0	36.0	1.93	2.23	1.000	0.000

DATA OF SLIPPE CIRCLE

OUTLINE OF GRID

NUMBER	GROUP(1) X-COOR	GROUP(1) Y-COOR	GROUP(2) X-COOR	GROUP(2) Y-COOR
1	-100.000	0.000	10.000	0.000
2	-20.000	0.000	100.000	0.000
3	-20.000	100.000	100.000	100.000
4	-100.000	100.000	10.000	100.000

THE INTERVAL(X)..... 20.0
THE INTERVAL(Y)..... 20.0
THE INTERVAL(R)..... 10.0
STOPPING HEIGHT FROM SURFACE..... 5.0
START LINE OF CIRCLE ..... Y=(0.000E-01)X+(-3.350E+01)
NUMBER OF LIMITTED CONDITIONS..... 1

NUMBER	TYPE	**********	**********	**********	**********
1	-1	-77.0	-33.5	0.0	0.0

COORDINATE OF NODAL POINT

POINT	X-COORDINATE (M)	Y-COORDINATE (M)
1	-77.050	-33.500
2	0.000	0.000
3	2.000	0.000
4	6.000	0.000
5	8.000	0.000
6	68.300	-33.500
7	-5.025	-33.500
8	-3.025	-33.500
9	11.025	-33.500
10	13.025	-33.500
11	-100.000	-17.500
12	-0.625	-17.500
13	10.006	-26.708

GROUND SURFACE DATA (NODAL NUMBER)

1	2	3	4	5	6

WATER LINE DATA (NODAL NUMBER)

11	12	13	9	10	6

ELEMENT DATA

ELEMENT	TYPE	I	J	K	L
1	2	2	1	7	2
2	3	2	7	8	3
3	1	3	8	9	4
4	3	4	9	10	5
5	2	5	10	6	5

DATA OF PORE PRESSURE IN NON-PERMEATION ZONE

NODAL POINT	X-COORDINATE	Y-COORDINATE	POTENTIAL
1	-3.025	-33.500	-16.000
2	-2.425	-29.500	-16.000
3	-1.825	-25.500	-16.000
4	-1.225	-21.500	-16.000
5	-0.625	-17.500	-16.000
6	0.000	-33.500	-13.000
7	0.625	-30.250	-13.000
8	1.250	-27.000	-13.000
9	1.875	-23.750	-13.000
10	2.500	-20.500	-13.000
11	2.500	-33.500	-11.000
12	3.125	-30.750	-11.000
13	3.750	-28.000	-11.000
14	4.375	-25.250	-11.000
15	5.000	-22.500	-11.000
16	5.500	-33.500	-9.000
17	6.000	-31.250	-9.000
18	6.500	-29.000	-9.000
19	7.000	-26.750	-9.000
20	7.500	-24.500	-9.000
21	8.000	-33.500	-6.792
22	8.502	-31.802	-6.792
23	9.003	-30.104	-6.792
24	9.505	-28.406	-6.792
25	10.006	-26.708	-6.792
26	11.025	-33.500	0.000

TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>

BLOCK	-- X-COORDINATE -- (START)	(PERIOD)	MAT	WATER	WEIGHT(SAT)	ACCEL	FRICTION	GRA. OF SLOPE	SAFETY FACTOR (NORMAL)	(SEISMIC)
1	-100.000	-77.050	0	-	-	-	-	-	-	-
2	-77.050	-40.250	2	-1	2.370	0.050	0.839	0.435	1.930	1.549
3	-40.250	-5.025	2	1	2.370	0.050	0.839	0.435	1.930	1.693
4	-5.025	-3.025	2	1	2.370	0.050	0.839	0.435	1.930	1.693
5	-3.025	-2.625	2	1	2.370	0.050	0.839	0.435	1.930	1.693
6	-2.625	-0.625	2	1	2.370	0.050	0.839	0.435	1.930	1.693
7	-0.625	0.000	2	1	2.370	0.050	0.839	0.435	1.930	1.693
8	0.000	2.000	3	1	2.230	0.050	0.727	0.000	100.000	100.000
9	2.000	6.000	1	1	1.800	0.050	0.577	0.000	100.000	100.000
10	6.000	8.000	3	1	2.230	0.050	0.727	0.000	100.000	100.000
11	8.000	10.006	2	1	2.370	0.050	0.839	0.556	1.510	1.347
12	10.006	11.025	2	1	2.370	0.050	0.839	0.556	1.510	1.347
13	11.025	13.025	2	1	2.370	0.050	0.839	0.556	1.510	1.347
14	13.025	68.300	2	1	2.370	0.050	0.839	0.556	1.510	1.347

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*                              STABILITY ANALYSIS                           *
*                        (MOST DANGEROUS SLIPPE CIRCLE)  (NORMAL)           *
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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>
-----------------------------------------------------------------------------

CALCULATION NUMBER.....................        2

SLIPPE CIRCLE(X-COORDINATE).............    -80.000 (M)
      -DO-    (Y-COORDINATE).............     80.000 (M)
      -DO-    (RADIUS)...................    113.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)........      1.843
      -DO-    (SEISMIC CONDITION)........      1.553

RESISTANCE MOMENT(TOTAL:NORMAL )........     66762. (TON*M)
      -DO-        ( -DO-:SEISMIC).....     64853. (TON*M)
RESISTANCE FORCE  (COHESION)............       0.00 (TON)
      -DO-        (FRICTION:BODY FORCE    )...  1060.73 (TON)
      -DO-        (  -DO-  :WATER PRESSURE)...    29.94 (TON)
      -DO-        (  -DO-  :PORE  PRESSURE)...  -502.46 (TON)
      -DO-        (  -DO-  :EARTHQUAKE    )...   -16.82 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........     36219. (TON*M)
      -DO-    ( -DO-:SEISMIC).....     41751. (TON*M)
SLIDING FORCE (BODY FORCE)..............     440.44 (TON)
      -DO-    (WATER PRESSURE)........    -121.33 (TON)
      -DO-    (EARTHQUAKE)............      48.74 (TON)
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*                              STABILITY ANALYSIS                                *
*                        (MOST DANGEROUS SLIPPE CIRCLE)  (SEISMIC)               *
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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>
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CALCULATION NUMBER.....................          1

SLIPPE CIRCLE(X-COORDINATE).............     -80.000 (M)
      -DO-   (Y-COORDINATE).............      60.000 (M)
      -DO-   (RADIUS)...................      93.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)........       1.860
      -DO-   (SEISMIC CONDITION)........       1.546

RESISTANCE MOMENT(TOTAL:NORMAL )........      33531. (TON*M)
      -DO-        ( -DO-:SEISMIC).....      32492. (TON*M)
RESISTANCE FORCE (COHESION).............        0.00 (TON)
      -DO-        (FRICTION:BODY FORCE    )...  778.52 (TON)
      -DO-        (  -DO-  :WATER PRESSURE)...   32.87 (TON)
      -DO-        (  -DO-  :PORE  PRESSURE)...  -452.77 (TON)
      -DO-        (  -DO-  :EARTHQUAKE    )...  -11.11 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........      18028. (TON*M)
      -DO-    ( -DO-:SEISMIC).....             21023. (TON*M)
SLIDING FORCE (BODY FORCE)..............      312.71 (TON)
      -DO-    (WATER PRESSURE)........     -119.90 (TON)
      -DO-    (EARTHQUAKE)............       32.03 (TON)
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* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *

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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
1	-80.000	60.000	93.500	1.860	33531.	18028.	1.546	32492.	21023.
2	-80.000	80.000	113.500	1.843	66762.	36219.	1.553	64853.	41751.
3	-80.000	100.000	133.500	1.916	109815.	57306.	1.617	106968.	66132.
4	-60.000	0.000	33.500	2.111	10850.	5141.	1.689	10515.	6225.
5	-60.000	20.000	53.500	1.919	30526.	15903.	1.585	29634.	18701.
6	-60.000	40.000	73.500	1.874	64762.	34562.	1.572	62983.	40075.
7	-60.000	60.000	93.500	1.988	108533.	54586.	1.664	105910.	63629.
9	-60.000	80.000	103.500	1.968	42759.	21731.	1.698	41809.	24623.
11	-60.000	100.000	123.500	2.153	68887.	32000.	1.841	67539.	36695.
13	-40.000	0.000	23.500	1.964	5300.	2698.	1.657	5175.	3123.
15	-40.000	20.000	43.500	1.924	19990.	10391.	1.648	19528.	11849.
17	-40.000	40.000	63.500	2.081	43834.	21067.	1.775	42957.	24198.
19	-40.000	60.000	83.500	2.397	71404.	29792.	2.010	70201.	34925.
21	-40.000	80.000	103.500	2.764	101316.	36656.	2.271	99847.	43970.
24	-40.000	100.000	113.500	2.633	27345.	10385.	2.224	26943.	12113.
27	-20.000	0.000	13.500	2.436	1782.	732.	2.090	1752.	838.
30	-20.000	20.000	33.500	2.430	9835.	4047.	2.081	9679.	4651.
33	-20.000	40.000	53.500	3.007	20857.	6935.	2.493	20600.	8263.
36	-20.000	60.000	73.500	3.717	33249.	8944.	2.970	32919.	11084.
39	-20.000	80.000	93.500	4.447	46394.	10433.	3.426	46007.	13430.
42	-20.000	100.000	113.500	5.179	60011.	11588.	3.851	59580.	15470.

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* MINMIM SAFETY FACTOR AT EACH GRID POINT (SEISMIC) *
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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>

NUMBER	SLIPPE CIRCLE COORDINATE X	Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
1	-80.000	60.000	93.500	1.860	33531.	18028.	1.546	32492.	21023.
2	-80.000	80.000	113.500	1.843	66762.	36219.	1.553	64853.	41751.
3	-80.000	100.000	133.500	1.916	109815.	57306.	1.617	106968.	66132.
4	-60.000	0.000	33.500	2.111	10850.	5141.	1.689	10515.	6225.
5	-60.000	20.000	53.500	1.919	30526.	15903.	1.585	29634.	18701.
6	-60.000	40.000	73.500	1.874	64762.	34562.	1.572	62983.	40075.
7	-60.000	60.000	93.500	1.988	108533.	54586.	1.664	105910.	63629.
9	-60.000	80.000	103.500	1.968	42759.	21731.	1.698	41809.	24623.
11	-60.000	100.000	123.500	2.153	68887.	32000.	1.841	67539.	36695.
13	-40.000	0.000	23.500	1.964	5300.	2698.	1.657	5175.	3123.
15	-40.000	20.000	43.500	1.924	19990.	10391.	1.648	19528.	11849.
17	-40.000	40.000	63.500	2.081	43834.	21067.	1.775	42957.	24198.
19	-40.000	60.000	83.500	2.397	71404.	29792.	2.010	70201.	34925.
21	-40.000	80.000	103.500	2.764	101316.	36656.	2.271	99847.	43970.
24	-40.000	100.000	113.500	2.633	27345.	10385.	2.224	26943.	12113.
27	-20.000	0.000	13.500	2.436	1782.	732.	2.090	1752.	838.
30	-20.000	20.000	33.500	2.430	9835.	4047.	2.081	9679.	4651.
33	-20.000	40.000	53.500	3.007	20857.	6935.	2.493	20600.	8263.
36	-20.000	60.000	73.500	3.717	33249.	8944.	2.970	32919.	11084.
39	-20.000	80.000	93.500	4.447	46394.	10433.	3.426	46007.	13430.
42	-20.000	100.000	113.500	5.179	60011.	11588.	3.851	59580.	15470.

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*                                STABILITY ANALYSIS                              *
*                          (MOST DANGEROUS SLIPPE CIRCLE)   (NORMAL)             *
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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>
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CALCULATION NUMBER.....................          48

SLIPPE CIRCLE(X-COORDINATE).............      70.000 (M)
      -DO-    (Y-COORDINATE).............      20.000 (M)
      -DO-    (RADIUS)...................      53.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)........       1.604
      -DO-    (SEISMIC CONDITION)........       1.426

RESISTANCE MOMENT(TOTAL:NORMAL )........      16144. (TON*M)
      -DO-          ( -DO-:SEISMIC).....      15722. (TON*M)
RESISTANCE FORCE (COHESION).............          0.00 (TON)
      -DO-          (FRICTION:BODY FORCE    )...  301.76 (TON)
      -DO-          (  -DO-  :WATER PRESSURE)...    0.00 (TON)
      -DO-          (  -DO-  :PORE  PRESSURE)...    0.00 (TON)
      -DO-          (  -DO-  :EARTHQUAKE    )...   -7.89 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........     -10063. (TON*M)
      -DO-     ( -DO-:SEISMIC).....        -11025. (TON*M)
SLIDING FORCE (BODY FORCE)..............     -188.10 (TON)
      -DO-     (WATER PRESSURE).....          0.00 (TON)
      -DO-     (EARTHQUAKE).........         -17.98 (TON)
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****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
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TRO COFFERDAM MEDIUM WL.138.0 1:2.3 & 1:1.8 <C-01>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	SLIPPE CIRCLE RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
3	10.000	0.000	13.500	5.178	3777.	-729.	3.795	3760.	-991.
6	10.000	20.000	33.500	6.633	15036.	-2267.	4.566	14957.	-3276.
9	10.000	40.000	53.500	8.769	27998.	-3193.	5.522	27881.	-5049.
10	10.000	60.000	93.500	10.097	234957.	-23270.	5.738	234085.	-40797.
13	10.000	80.000	113.500	11.045	299163.	-27085.	6.022	298148.	-49511.
16	10.000	100.000	133.500	11.853	364529.	-30753.	6.245	363392.	-58187.
20	30.000	0.000	23.500	2.185	13600.	-6223.	1.897	13345.	-7036.
23	30.000	20.000	33.500	1.805	6171.	-3420.	1.590	6034.	-3795.
26	30.000	40.000	53.500	2.289	15123.	-6606.	1.963	14877.	-7578.
29	30.000	60.000	73.500	2.862	25839.	-9028.	2.381	25504.	-10709.
32	30.000	80.000	93.500	3.447	37600.	-10909.	2.783	37194.	-13364.
35	30.000	100.000	113.500	4.030	50055.	-12421.	3.160	49590.	-15692.
36	50.000	0.000	33.500	1.921	24856.	-12942.	1.686	24313.	-14423.
38	50.000	20.000	43.500	1.622	10938.	-6745.	1.441	10655.	-7397.
40	50.000	40.000	63.500	1.741	30735.	-17653.	1.538	30025.	-19522.
42	50.000	60.000	83.500	2.022	55435.	-27419.	1.760	54376.	-30892.
44	50.000	80.000	103.500	2.350	83428.	-35499.	2.012	82069.	-40791.
47	50.000	100.000	113.500	2.180	15984.	-7332.	1.878	15705.	-8361.
48	70.000	20.000	53.500	1.604	16144.	-10063.	1.426	15722.	-11025.
49	70.000	40.000	73.500	1.608	44231.	-27505.	1.429	43077.	-30140.
50	70.000	60.000	93.500	1.719	86182.	-50145.	1.520	84157.	-55379.
51	70.000	80.000	113.500	1.919	134310.	-70003.	1.680	131557.	-78320.
53	70.000	100.000	123.500	1.798	39716.	-22090.	1.582	38839.	-24552.
54	90.000	100.000	133.500	1.619	64153.	-39628.	1.437	62522.	-43498.

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*******************************************************************************
*                        LIST OF INPUT DATA                                   *
*******************************************************************************
TRO COFFERDAM AFTER COMPLETION 1:2.3 & 1:1.8 <C-02>
-------------------------------------------------------------------------------
NUMBER OF NODAL POINTS.................   10
NUMBER OF DIFFERENT MATERIALS..........    3
NUMBER OF ELEMENTS.....................    5
NUMBER OF SURFACE LINES................    6
NUMBER OF WATER POINTS.................    0
NUMBER OF PORE PRESSURE POINTS.........    0
ACCELERATION OF EARTHQUAKE.............    0.0250
UNITE WEIGHT OF WATER..................    1.0000

MATERIAL PROPATY
----------------
              TYPE        COHESION    FRICTION  WEIGHT(WET) WEIGHT(SAT) ACC.FACTOR PORE.FACTOR
                           (T/M2)     (DEGREE)    (T/M3)      (T/M3)
     1         0            0.0        30.0        1.72        1.80       1.000       0.300
     2         0            0.0        40.0        2.13        2.37       1.000       0.000
     3         0            0.0        36.0        1.93        2.23       1.000       0.000

DATA OF SLIPPE CIRCLE
---------------------
OUTLINE OF GRID
     NUMBER    ------GROUP(1)------   ------GROUP(2)------
                 X-COOR    Y-COOR      X-COOR    Y-COOR
         1      -100.000    0.000       10.000    0.000
         2       -20.000    0.000      100.000    0.000
         3       -20.000  100.000      100.000  100.000
         4      -100.000  100.000       10.000  100.000

THE INTERVAL(X).....................      20.0
THE INTERVAL(Y).....................      20.0
THE INTERVAL(R).....................      10.0
STOPPING HEIGHT FROM SURFACE........       5.0
START LINE OF CIRCLE ..............  Y=( 0.000E-01)X+(-3.350E+01)
NUMBER OF LIMITTED CONDITIONS......       1
     NUMBER     TYPE     ********** ********** ********** **********
         1        -1      -77.0      -33.5        0.0        0.0
```

COORDINATE OF NODAL POINT

POINT	X-COORDINATE (M)	Y-COORDINATE (M)
1	-77.050	-33.500
2	0.000	0.000
3	2.000	0.000
4	6.000	0.000
5	8.000	0.000
6	68.300	-33.500
7	-5.025	-33.500
8	-3.025	-33.500
9	11.025	-33.500
10	13.025	-33.500

GROUND SURFACE DATA (NODAL NUMBER)

1	2	3	4	5	6

ELEMENT DATA

ELEMENT	TYPE	I	J	K	L
1	2	2	1	7	2
2	3	2	7	8	3
3	1	3	8	9	4
4	3	4	9	10	5
5	2	5	10	6	5

TRO COFFERDAM AFTER COMPLETION 1:2.3 & 1:1.8 <C-02>

BLOCK	-- X-COORDINATE -- (START)	(PERIOD)	MAT	WATER	WEIGHT(SAT)	ACCEL	FRICTION	GRA. OF SLOPE	SAFETY FACTOR (NORMAL)	(SEISMIC)
1	-77.050	-5.025	2	1	2.370	0.025	0.839	0.435	1.930	1.805
2	-5.025	-3.025	2	1	2.370	0.025	0.839	0.435	1.930	1.805
3	-3.025	0.000	2	1	2.370	0.025	0.839	0.435	1.930	1.805
4	0.000	2.000	3	1	2.230	0.025	0.727	0.000	100.000	100.000
5	2.000	6.000	1	1	1.800	0.025	0.577	0.000	100.000	100.000
6	6.000	8.000	3	1	2.230	0.025	0.727	0.000	100.000	100.000
7	8.000	11.025	2	1	2.370	0.025	0.839	0.556	1.510	1.425
8	11.025	13.025	2	1	2.370	0.025	0.839	0.556	1.510	1.425
9	13.025	68.300	2	1	2.370	0.025	0.839	0.556	1.510	1.425

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*                              STABILITY ANALYSIS                           *
*                        (MOST DANGEROUS SLIPPE CIRCLE)  (NORMAL)           *
*****************************************************************************

TRO COFFERDAM AFTER COMPLETION 1:2.3 & 1:1.8 <C-02>
-----------------------------------------------------------------------------

CALCULATION NUMBER.....................        1

SLIPPE CIRCLE(X-COORDINATE).............    -80.000 (M)
      -DO-    (Y-COORDINATE).............     60.000 (M)
      -DO-    (RADIUS)...................     93.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)........      1.998
      -DO-    (SEISMIC CONDITION)........      1.866

RESISTANCE MOMENT(TOTAL:NORMAL )........     46239. (TON*M)
      -DO-        ( -DO-:SEISMIC).....     45753. (TON*M)
RESISTANCE FORCE (COHESION).............       0.00 (TON)
      -DO-        (FRICTION:BODY FORCE    )...  494.53 (TON)
      -DO-        (  -DO-  :WATER PRESSURE)...    0.00 (TON)
      -DO-        (  -DO-  :PORE  PRESSURE)...    0.00 (TON)
      -DO-        (  -DO-  :EARTHQUAKE    )...   -5.19 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........     23148. (TON*M)
      -DO-    ( -DO-:SEISMIC).....     24525. (TON*M)
SLIDING FORCE (BODY FORCE)..............     247.57 (TON)
      -DO-    (WATER PRESSURE)........       0.00 (TON)
      -DO-    (EARTHQUAKE)............      14.73 (TON)
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****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
****

TRO COFFERDAM AFTER COMPLETION 1:2.3 & 1:1.8 <C-02>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
1	-80.000	60.000	93.500	1.998	46239.	23148.	1.866	45753.	24525.
2	-80.000	80.000	113.500	2.000	86578.	43284.	1.868	85670.	45864.
3	-80.000	100.000	133.500	2.079	137862.	66317.	1.937	136498.	70466.
4	-60.000	0.000	33.500	2.250	16430.	7301.	2.089	16277.	7791.
5	-60.000	20.000	53.500	2.152	43009.	19982.	2.003	42589.	21263.
6	-60.000	40.000	73.500	2.116	85837.	40569.	1.971	84987.	43128.
7	-60.000	60.000	93.500	2.233	139606.	62527.	2.072	138347.	66756.
9	-60.000	80.000	103.500	2.062	46829.	22708.	1.922	46360.	24116.
11	-60.000	100.000	123.500	2.249	74776.	33251.	2.085	74111.	35543.
13	-40.000	0.000	23.500	2.300	6695.	2911.	2.133	6634.	3110.
15	-40.000	20.000	43.500	2.154	23391.	10857.	2.005	23163.	11554.
17	-40.000	40.000	63.500	2.279	49673.	21795.	2.113	49239.	23306.
19	-40.000	60.000	83.500	2.599	80026.	30787.	2.387	79431.	33272.
21	-40.000	80.000	103.500	2.981	113020.	37920.	2.708	112294.	41466.
24	-40.000	100.000	113.500	2.633	27344.	10385.	2.413	27143.	11249.
27	-20.000	0.000	13.500	2.436	1782.	732.	2.251	1767.	785.
30	-20.000	20.000	33.500	2.430	9835.	4047.	2.243	9757.	4349.
33	-20.000	40.000	53.500	3.007	20856.	6935.	2.728	20728.	7599.
36	-20.000	60.000	73.500	3.717	33249.	8944.	3.304	33084.	10014.
39	-20.000	80.000	93.500	4.447	46394.	10433.	3.872	46200.	11931.
42	-20.000	100.000	113.500	5.179	60011.	11588.	4.420	59795.	13529.

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*****************************************************************************
*                              STABILITY ANALYSIS                           *
*                        (MOST DANGEROUS SLIPPE CIRCLE)  (NORMAL)           *
*****************************************************************************


TRO COFFERDAM AFTER COMPLETION 1:2.3 & 1:1.8 <C-02>
-----------------------------------------------------------------------------


CALCULATION NUMBER.........................        48

SLIPPE CIRCLE(X-COORDINATE).................     70.000 (M)
      -DO-    (Y-COORDINATE).................     20.000 (M)
      -DO-    (RADIUS).......................     53.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)............      1.604
      -DO-    (SEISMIC CONDITION)............      1.511

RESISTANCE MOMENT(TOTAL:NORMAL )............     16144. (TON*M)
      -DO-        ( -DO-:SEISMIC)............     15933. (TON*M)
RESISTANCE FORCE (COHESION).................       0.00 (TON)
      -DO-        (FRICTION:BODY FORCE    )...    301.76 (TON)
      -DO-        (  -DO-  :WATER PRESSURE)...      0.00 (TON)
      -DO-        (  -DO-  :PORE  PRESSURE)...      0.00 (TON)
      -DO-        (  -DO-  :EARTHQUAKE    )...     -3.95 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...............    -10063. (TON*M)
      -DO-    ( -DO-:SEISMIC)...............    -10544. (TON*M)
SLIDING FORCE (BODY FORCE)..................    -188.10 (TON)
      -DO-    (WATER PRESSURE)..............       0.00 (TON)
      -DO-    (EARTHQUAKE)..................      -8.99 (TON)
```

****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
****

TRO COFFERDAM AFTER COMPLETION 1:2.3 & 1:1.8 <C-02>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
3	10.000	0.000	13.500	5.178	3777.	-729.	4.381	3768.	-860.
6	10.000	20.000	33.500	6.633	15036.	-2267.	5.412	14996.	-2771.
9	10.000	40.000	53.500	8.769	27998.	-3193.	6.780	27939.	-4121.
12	10.000	60.000	73.500	10.851	41684.	-3842.	7.980	41612.	-5215.
15	10.000	80.000	93.500	12.885	55776.	-4329.	9.043	55694.	-6159.
18	10.000	100.000	113.500	14.888	70127.	-4710.	9.998	70037.	-7005.
20	30.000	0.000	23.500	2.185	13600.	-6223.	2.032	13472.	-6629.
23	30.000	20.000	33.500	1.805	6171.	-3420.	1.692	6102.	-3608.
26	30.000	40.000	53.500	2.289	15123.	-6606.	2.115	15000.	-7092.
29	30.000	60.000	73.500	2.862	25839.	-9028.	2.601	25671.	-9869.
32	30.000	80.000	93.500	3.447	37600.	-10909.	3.081	37397.	-12137.
35	30.000	100.000	113.500	4.030	50055.	-12421.	3.544	49822.	-14057.
36	50.000	0.000	33.500	1.921	24856.	-12942.	1.797	24584.	-13683.
38	50.000	20.000	43.500	1.622	10938.	-6745.	1.527	10797.	-7071.
40	50.000	40.000	63.500	1.741	30735.	-17653.	1.634	30380.	-18587.
42	50.000	60.000	83.500	2.022	55435.	-27419.	1.883	54905.	-29155.
44	50.000	80.000	103.500	2.350	83428.	-35499.	2.169	82748.	-38145.
47	50.000	100.000	113.500	2.180	15984.	-7332.	2.019	15845.	-7846.
48	70.000	20.000	53.500	1.604	16144.	-10063.	1.511	15933.	-10544.
49	70.000	40.000	73.500	1.608	44231.	-27505.	1.515	43654.	-28822.
50	70.000	60.000	93.500	1.719	86182.	-50145.	1.614	85169.	-52762.
51	70.000	80.000	113.500	1.919	134309.	-70003.	1.792	132933.	-74162.
53	70.000	100.000	123.500	1.798	39716.	-22090.	1.684	39278.	-23321.
54	90.000	100.000	133.500	1.619	64153.	-39628.	1.524	63338.	-41563.

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**********************************************************************************
*                        LIST OF INPUT DATA                                      *
**********************************************************************************
TRO COFFERDAM FLOOD WL.154.5m 1:2.3 & 1:1.8 <C-03>
----------------------------------------------------------------------------------
NUMBER OF NODAL POINTS.................   13
NUMBER OF DIFFERENT MATERIALS..........    3
NUMBER OF ELEMENTS.....................    5
NUMBER OF SURFACE LINES................    6
NUMBER OF WATER POINTS.................    6
NUMBER OF PORE PRESSURE POINTS.........   37
ACCELERATION OF EARTHQUAKE.............    0.0000
UNITE WEIGHT OF WATER..................    1.0000

MATERIAL PROPATY
----------------
              TYPE        COHESION   FRICTION  WEIGHT(WET) WEIGHT(SAT) ACC.FACTOR PORE.FACTOR
                           (T/M2)    (DEGREE)    (T/M3)      (T/M3)
     1         0            0.0       30.0        1.72        1.80       1.000       0.000
     2         0            0.0       40.0        2.13        2.37       1.000       0.000
     3         0            0.0       36.0        1.93        2.23       1.000       0.000

DATA OF SLIPPE CIRCLE
---------------------
OUTLINE OF GRID
     NUMBER   ------GROUP(1)------   ------GROUP(2)------
                X-COOR    Y-COOR      X-COOR    Y-COOR
          1    -100.000    0.000      10.000     0.000
          2     -20.000    0.000     100.000     0.000
          3     -20.000  100.000     100.000   100.000
          4    -100.000  100.000      10.000   100.000

THE INTERVAL(X).....................     20.0
THE INTERVAL(Y).....................     20.0
THE INTERVAL(R).....................     10.0
STOPPING HEIGHT FROM SURFACE.......      5.0
START LINE OF CIRCLE ..............  Y=( 0.000E-01)X+(-3.350E+01)
NUMBER OF LIMITTED CONDITIONS......      1
     NUMBER     TYPE     ********** ********** ********** **********
          1       -1      -77.0      -33.5        0.0        0.0
```

COORDINATE OF NODAL POINT

POINT	X-COORDINATE (M)	Y-COORDINATE (M)
1	-77.050	-33.500
2	0.000	0.000
3	2.000	0.000
4	6.000	0.000
5	8.000	0.000
6	68.300	-33.500
7	-5.025	-33.500
8	-3.025	-33.500
9	11.025	-33.500
10	13.025	-33.500
11	-100.000	-1.000
12	1.850	-1.000
13	7.996	-13.308

GROUND SURFACE DATA (NODAL NUMBER)

1	2	3	4	5	6

WATER LINE DATA (NODAL NUMBER)

11	12	13	9	10	6

ELEMENT DATA

ELEMENT	TYPE	I	J	K	L
1	2	2	1	7	2
2	3	2	7	8	3
3	1	3	8	9	4
4	3	4	9	10	5
5	2	5	10	6	5

DATA OF PORE PRESSURE IN NON-PERMEATION ZONE

NODAL POINT	X-COORDINATE	Y-COORDINATE	POTENTIAL
1	-3.025	-33.500	-32.500
2	-2.416	-29.437	-32.500
3	-1.806	-25.375	-32.500
4	-1.197	-21.312	-32.500
5	-0.588	-17.250	-32.500
6	0.022	-13.187	-32.500
7	0.631	-9.125	-32.500
8	1.241	-5.062	-32.500
9	1.850	-1.000	-32.500
10	-0.525	-33.500	-26.500
11	0.106	-30.187	-26.500
12	0.738	-26.875	-26.500
13	1.369	-23.562	-26.500
14	2.000	-20.250	-26.500
15	2.631	-16.937	-26.500
16	3.262	-13.625	-26.500
17	3.894	-10.312	-26.500
18	4.525	-7.000	-26.500
19	1.975	-33.500	-20.200
20	2.728	-30.976	-20.200
21	3.480	-28.452	-20.200
22	4.233	-25.928	-20.200
23	4.985	-23.404	-20.200
24	5.738	-20.880	-20.200
25	6.491	-18.356	-20.200
26	7.243	-15.832	-20.200
27	7.996	-13.308	-20.200
28	5.025	-33.500	-11.500
29	5.905	-31.200	-11.500
30	6.785	-28.900	-11.500
31	7.665	-26.600	-11.500
32	8.545	-24.300	-11.500
33	9.425	-22.000	-11.500
34	9.025	-33.500	-4.000
35	9.775	-31.500	-4.000
36	10.525	-29.500	-4.000
37	11.025	-33.500	-1.000

TRO COFFERDAM FLOOD WL.154.5m 1:2.3 & 1:1.8 <C-03>

BLOCK	-- X-COORDINATE -- (START)	(PERIOD)	MAT	WATER	WEIGHT(SAT)	ACCEL	FRICTION	GRA. OF SLOPE	SAFETY FACTOR (NORMAL)	(SEISMIC)
1	-100.000	-77.050	0	-	-	-	-	-	-	-
2	-77.050	-5.025	2	-1	2.370	0.000	0.839	0.435	1.930	1.930
3	-5.025	-3.025	2	-1	2.370	0.000	0.839	0.435	1.930	1.930
4	-3.025	-2.300	2	-1	2.370	0.000	0.839	0.435	1.930	1.930
5	-2.300	-0.150	2	1	2.370	0.000	0.839	0.435	1.930	1.930
6	-0.150	0.000	2	1	2.370	0.000	0.839	0.435	1.930	1.930
7	0.000	1.850	3	1	2.230	0.000	0.727	0.000	100.000	100.000
8	1.850	2.000	3	1	2.230	0.000	0.727	0.000	100.000	100.000
9	2.000	6.000	1	1	1.800	0.000	0.577	0.000	100.000	100.000
10	6.000	7.996	3	1	2.230	0.000	0.727	0.000	100.000	100.000
11	7.996	8.000	3	1	2.230	0.000	0.727	0.000	100.000	100.000
12	8.000	11.025	2	1	2.370	0.000	0.839	0.556	1.510	1.510
13	11.025	13.025	2	1	2.370	0.000	0.839	0.556	1.510	1.510
14	13.025	68.300	2	1	2.370	0.000	0.839	0.556	1.510	1.510

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*****************************************************************************
*                              STABILITY ANALYSIS                           *
*                         (MOST DANGEROUS SLIPPE CIRCLE)  (NORMAL)          *
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TRO COFFERDAM FLOOD WL.154.5m 1:2.3 & 1:1.8 <C-03>
-----------------------------------------------------------------------------

CALCULATION NUMBER.....................          2

SLIPPE CIRCLE(X-COORDINATE).............     -80.000 (M)
      -DO-   (Y-COORDINATE).............      80.000 (M)
      -DO-   (RADIUS)...................     113.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)........       1.997
      -DO-   (SEISMIC CONDITION)........       1.997

RESISTANCE MOMENT(TOTAL:NORMAL )........      55745. (TON*M)
      -DO-       ( -DO-:SEISMIC)........      55745. (TON*M)
RESISTANCE FORCE (COHESION).............          0.00 (TON)
      -DO-       (FRICTION:BODY FORCE   )...  1819.95 (TON)
      -DO-       (  -DO-  :WATER PRESSURE)...  173.24 (TON)
      -DO-       (  -DO-  :PORE  PRESSURE)... -1502.04 (TON)
      -DO-       (  -DO-  :EARTHQUAKE   )...     0.00 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........      27909. (TON*M)
      -DO-    ( -DO-:SEISMIC).........      27909. (TON*M)
SLIDING FORCE (BODY FORCE)..............      722.29 (TON)
      -DO-    (WATER PRESSURE)........     -476.39 (TON)
      -DO-    (EARTHQUAKE)............          0.00 (TON)
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****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
****

TRO COFFERDAM FLOOD WL.154.5m 1:2.3 & 1:1.8 <C-03>

NUMBER	SLIPPE CIRCLE COORDINATE X	Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
1	-80.000	60.000	93.500	1.998	29740.	14888.	1.998	29740.	14888.
2	-80.000	80.000	113.500	1.997	55745.	27909.	1.997	55745.	27909.
3	-80.000	100.000	133.500	2.099	89641.	42713.	2.099	89641.	42713.
4	-60.000	0.000	33.500	2.250	10568.	4696.	2.250	10568.	4696.
5	-60.000	20.000	53.500	2.152	27663.	12852.	2.152	27663.	12852.
6	-60.000	40.000	73.500	2.109	55267.	26200.	2.109	55267.	26200.
7	-60.000	60.000	93.500	2.322	91631.	39465.	2.322	91631.	39465.
9	-60.000	80.000	103.500	2.058	30432.	14789.	2.058	30432.	14789.
11	-60.000	100.000	123.500	2.360	49773.	21094.	2.360	49773.	21094.
13	-40.000	0.000	23.500	2.300	4306.	1872.	2.300	4306.	1872.
15	-40.000	20.000	43.500	2.154	15046.	6984.	2.154	15046.	6984.
17	-40.000	40.000	63.500	2.361	32689.	13844.	2.361	32689.	13844.
19	-40.000	60.000	83.500	3.010	54448.	18090.	3.010	54448.	18090.
21	-40.000	80.000	103.500	3.879	78628.	20269.	3.879	78628.	20269.
24	-40.000	100.000	113.500	2.889	18958.	6561.	2.889	18958.	6561.
27	-20.000	0.000	13.500	2.436	1146.	471.	2.436	1146.	471.
30	-20.000	20.000	33.500	2.499	6522.	2610.	2.499	6522.	2610.
33	-20.000	40.000	53.500	3.658	14593.	3989.	3.658	14593.	3989.
36	-20.000	60.000	73.500	5.390	23925.	4439.	5.390	23925.	4439.
39	-20.000	80.000	93.500	7.788	33950.	4359.	7.788	33950.	4359.
42	-20.000	100.000	113.500	11.257	44414.	3946.	11.257	44414.	3946.

```
*****************************************************************************
*                              STABILITY ANALYSIS                           *
*                        (MOST DANGEROUS SLIPPE CIRCLE)  (NORMAL)           *
*****************************************************************************

TRO COFFERDAM FLOOD WL.154.5m 1:2.3 & 1:1.8 <C-03>
-----------------------------------------------------------------------------

CALCULATION NUMBER.....................        48

SLIPPE CIRCLE(X-COORDINATE).............      70.000 (M)
      -DO-   (Y-COORDINATE).............      20.000 (M)
      -DO-   (RADIUS)...................      53.500 (M)

SAFETY FACTOR(NORMAL  CONDITION)........       1.604
      -DO-   (SEISMIC CONDITION)........       1.604

RESISTANCE MOMENT(TOTAL:NORMAL )........      16144. (TON*M)
      -DO-       ( -DO-:SEISMIC)........      16144. (TON*M)
RESISTANCE FORCE (COHESION).............       0.00 (TON)
      -DO-       (FRICTION:BODY FORCE   )...  301.76 (TON)
      -DO-       (  -DO-  :WATER PRESSURE)...   0.00 (TON)
      -DO-       (  -DO-  :PORE  PRESSURE)...   0.00 (TON)
      -DO-       (  -DO-  :EARTHQUAKE   )...   0.00 (TON)

SLIDING MOMENT(TOTAL:NORMAL )...........    -10063. (TON*M)
      -DO-    ( -DO-:SEISMIC).........    -10063. (TON*M)
SLIDING FORCE (BODY FORCE)..............    -188.10 (TON)
      -DO-    (WATER PRESSURE)........       0.00 (TON)
      -DO-    (EARTHQUAKE)............       0.00 (TON)
```

****
* MINMIM SAFETY FACTOR AT EACH GRID POINT (NORMAL) *
****

TRO COFFERDAM FLOOD WL.154.5m 1:2.3 & 1:1.8 <C-03>

NUMBER	SLIPPE CIRCLE COORDINATE X	SLIPPE CIRCLE COORDINATE Y	RADIUS	STATIC SAFETY FACTOR	STATIC MOMENT RESISTANCE	STATIC MOMENT SLIDING	DYNAMIC SAFETY FACTOR	DYNAMIC MOMENT RESISTANCE	DYNAMIC MOMENT SLIDING
2	10.000	0.000	23.500	2.789	16434.	-5892.	2.789	16434.	-5892.
4	10.000	20.000	53.500	3.316	97610.	-29440.	3.316	97610.	-29440.
7	10.000	40.000	73.500	3.644	151822.	-41666.	3.644	151822.	-41666.
10	10.000	60.000	93.500	3.886	208542.	-53668.	3.886	208542.	-53668.
13	10.000	80.000	113.500	4.076	266951.	-65491.	4.076	266951.	-65491.
16	10.000	100.000	133.500	4.232	326568.	-77166.	4.232	326568.	-77166.
19	30.000	0.000	33.500	2.164	43318.	-20015.	2.164	43318.	-20015.
23	30.000	20.000	33.500	1.805	6171.	-3420.	1.805	6171.	-3420.
26	30.000	40.000	53.500	2.124	14383.	-6772.	2.124	14383.	-6772.
29	30.000	60.000	73.500	2.392	23404.	-9785.	2.392	23404.	-9785.
31	30.000	80.000	103.500	2.631	113539.	-43153.	2.631	113539.	-43153.
34	30.000	100.000	123.500	2.816	142546.	-50613.	2.816	142546.	-50613.
36	50.000	0.000	33.500	1.921	24856.	-12942.	1.921	24856.	-12942.
38	50.000	20.000	43.500	1.622	10938.	-6745.	1.622	10938.	-6745.
40	50.000	40.000	63.500	1.740	30726.	-17654.	1.740	30726.	-17654.
42	50.000	60.000	83.500	1.867	52552.	-28143.	1.867	52552.	-28143.
44	50.000	80.000	103.500	1.998	75944.	-38001.	1.998	75944.	-38001.
47	50.000	100.000	113.500	2.126	15695.	-7381.	2.126	15695.	-7381.
48	70.000	20.000	53.500	1.604	16144.	-10063.	1.604	16144.	-10063.
49	70.000	40.000	73.500	1.608	44231.	-27505.	1.608	44231.	-27505.
50	70.000	60.000	93.500	1.702	85525.	-50256.	1.702	85525.	-50256.
51	70.000	80.000	113.500	1.771	127277.	-71883.	1.771	127277.	-71883.
53	70.000	100.000	123.500	1.777	39366.	-22156.	1.777	39366.	-22156.
54	90.000	100.000	133.500	1.619	64154.	-39628.	1.619	64154.	-39628.

PART III LEAKAGE ANALYSIS

PART III LAEKAGE ANALYSIS

3.1 Main Dam

3.1.1 General

The dam site topography forms a steep slope of about 50 to 60 degree in right abutment and relatively gentle slope of about 35 degree in left abutment. Although the hard basalt is exposed on the river bed, top soils or talus deposits cover the abutments.

The impervious core will be embanked on the foundation where the top soils, talus deposits or highly weathered portions underlain will be removed and the intercalated soft layers will be replaced with concrete. To avoid an excessive leakage and piping through the foundation of the impervious core, the curtain grouting is planned to be carried out in the foundation under the core by two lanes with rout holes at two meters interval.

The excessive leakage and piping under the foundation are considered to be avoided by the foundation treatment as mentioned. However, the leakage through the foundation is one of the most important factors for securing the safety of dam, and therefore, analyses on the leakage through the dam body and its foundation are made to confirm the matter.

3.1.2 Analysis of Seepage

The leakage is analyzed by the Finite Element Method. Permeability coefficients of elements required in the seepage analysis by the Finite Element Method are assumed as follows:

Assumed Permeability Coefficient

Items	Permeability Coefficient (cm/sec)
- Impervious core:	
Horizontal direction	1×10^{-5}
Vertical direction	1×10^{-6}
- Grout curtain	5×10^{-5}
- Foundation below core	1×10^{-4}
- Foundation deeper than the grout curtain	1×10^{-5}

The above assumptions are based on geological investigations and material investigations carried out. As for improvement of the permeability coefficient by curtain grouting, a relatively conservative

assumption is given for a safety sake: that is, the permeability coefficient is assumed to be improved from 1 x 10^{-4} cm/sec to 5 x 10^{-5} cm/sec by the curtain grouting.

The analysis are two-dimensionally carried out for five (5) dam sections as shown in Fig. 3.1.1, based on which total leakage through the dam and its foundation is obtained.

Models for analysis by the Finite Element Method(F.E.M.) for the above five (5) dam sections are as seen in Fig. 3.1.2 to Fig. 3.1.6. Parameters of models are as follows:

Parameters of Models

Section No. (Station No.)	Number of nodal point	Number of element	Analysis condition
I (4)	112	97	steady
II (8)	118	99	steady
III (12)	121	100	steady
IV (16)	149	125	steady
V (20)	142	122	steady

Ralationship assumed among moisture content,conductivity and pressure head required in the seepage analysis are shown in Fig.3.1.7. Seepage flows obtained by the analysis are as shown in Fig. 3.1.8 to Fig. 3.1.12. Results of the analysis are shown in Table 3.1.1 to Table 3.1.10. Abbreviations in these tables are as follows:

Abbreviation	Unit	Meaning
XC	m	Position of center of element on X-axis(horizontal)
YC	m	Position of center of element on Y-axis(vertical)
H.G.(X)	-	Hydraulic gradient , direction to X
H.G.(Y)	-	Hydraulic gradient , direction to Y
VX	m/day	Velocity , direction to X -axis
VY	m/day	Velocity , direction to Y -axis
VXY	m/day	Velocity vector
ANGLE	degree	Angle between VXYand X-axis

3.1.3 Examination for Piping

The piping is a phenomenon that material particles discharge out due to a large seepage pressure,forming a large flow passage and resulting in a damage on the dam.

Possibility of the piping is examined by Justin's method. Justin obtains the upper limit of seepage flow velocity against particle sizes of soil material. Particles of soil material begin to move when the seepage flow velocity exceeds the above upper limit which is called as "the critical velocity of flow", causing the piping as mentioned.

The critical velocity of flow is obtained as follows:

$$Vc = (\frac{2}{3}(Gs - 1) \cdot d \cdot g)^{0.5}$$

where,

Vc	:Critical velocity of flow (cm/sec)
Gs	:Specific gravity of soil particle (2.6)
d	:Diameter of soil particle
	(d_{10} = 0.0001 mm = 0.00001 cm)
g	:Acceleration of gravity (980 cm/sec^2)

Hence, the critical velocity of flow is calculated at 1.02×10^{-1} cm/sec as follows:

$$Vc = (\frac{2}{3}(Gs - 1) \cdot d \cdot g)^{0.5}$$
$$= (\frac{2}{3}(2.6 - 1) \times 0.00001 \times 980)^{0.5}$$
$$= 1.02 \times 10^{-1} \text{ (cm/sec)}$$

On the other hand, the maximum flow velocity (Va cm/sec) is calculated for each of five (5) dam sections by F.E.M.seepage analysis as follows:

Maximum Seepage Velocity

Section No. (Station No.)	Element No.	Maximum Seepage Velocity, Va (cm/sec)
I (4)	52	0.13×10^{-3}
II (8)	48	0.15×10^{-3}
III (12)	41	0.24×10^{-3}
IV (16)	49	0.23×10^{-3}
V (20)	56	0.22×10^{-3}

A criteria specify that the safety factor of 100 times should be ensured: that is, F = Vc/Va should not be less than 100. F is calculated as follows:

Section No. (Station No.)	Element No.	Vc (cm/sec)	Va (cm/sec)	F = Vc/Va
I (4)	52	1.02×10^{-1}	0.13×10^{-3}	785
II (8)	48	1.02×10^{-1}	0.15×10^{-3}	680
III (12)	41	1.02×10^{-1}	0.24×10^{-3}	425
IV (16)	49	1.02×10^{-1}	0.23×10^{-3}	443
V (20)	56	1.02×10^{-1}	0.22×10^{-3}	464

As seen, the values of F above exceed sufficiently beyond 100, suggesting that a sufficient safety against piping is secured.

3.1.3 Examination on Seepage Quantity

The total seepage quantity is assessed based on the seepage calculated for the five (5) dam sections shown in Fig. 3.1.1.

The total seepage quantity through the dam body and its foundation is calculated at 86.2×10^{-4} m^3/sec as follows:

Total Seepage through Dam and Foundation

Section No. (Station No.)	Width (m)	Unit Seepage (l/sec/m)		Total Seepage (m3/sec)	
		Core	Foundation	Core	Foundation
I (4)	30	1.4×10^{-2}	0.8×10^{-2}	4.2×10^{-4}	2.4×10^{-4}
II (8)	50	2.2×10^{-2}	1.1×10^{-2}	11.0×10^{-4}	5.5×10^{-4}
III (12)	30	4.2×10^{-2}	0.8×10^{-2}	12.6×10^{-4}	2.4×10^{-4}
IV (16)	50	3.9×10^{-2}	1.3×10^{-2}	19.5×10^{-4}	6.5×10^{-4}
V (20)	45	3.4×10^{-2}	1.5×10^{-2}	15.3×10^{-4}	6.8×10^{-4}
Total	200			62.6×10^{-4}	23.6×10^{-4}

The total seepage quantity of 86.2×10^{-4} m^3/sec through the dam and its foundation corresponds to about 0.5% of the mean annual river inflow of about 1.8 m3/sec, which is sufficiently within the acceptable seepage quantity in consideration that the standard mentions that the total leakage volume should be less than 1% of mean annual river inflow.

The standard also mentions that the daily seepage volume through the dam and foundation should be less than 0.05% of the gross storage capacity of reservoir. This standard is also met as follows:

Daily seepage	745 m^3/day
Gross storage of reservoir	6.7×10^6 m^3
Percentage of daily seepage	0.01%

3.2 Left Bank

3.2.1 General

Fig. 3.2.1 shows a general plan of the dam site and surrounding areas. As seen, the left bank of the dam site forms a relatively thin plateau located between the Terre Rouge river where the dam is planned to be constructed and the Plaines Wilhem river flowing in the south of the Terre Rouge river.

As a result of the geological investigations for this thin plateau, the geology of the plateau is found to have permeability coefficients of 10^{-4} cm/sec as a whole. The geological investigations also revealed that large openings such as the lava tunnel may not exist there. However, the geological investigations discovered a portion where a low piezometric head is shown, implying that a localized zone with relatively higher permeability exists with a limited horizontal width, indicating necessity of rim grouting along the left bank plateau.

Thus, the design considers to execute the rim grouting along the left bank plateau. The rim grouting will be carried out by the split-spacing method which will make it possible to find parts with the high permeability and efficiently concentrate the grouting there.

Although the rim grouting as mentioned will sufficiently improve the parts with relatively high permeability, examinations on the leakage through the left bank after impounding of reservoir are considered necessary because of its thin plateau.

The examinations are made in this section hereunder.

3.2.2 Analysis of Seepage

The geological section of damsite and left bank is shown in Fig. 3.2.2. The low piezometric head is discovered near the boring hole No. JD-12 shown in Fig. 3.2.2. The zone with relatively high permeability is considered to exist at EL. 130 m to EL. 140 m near the boring hole No. JD-12 in the direction from the Terre Rough river to the Plaines Wilhem river. However, the analysis is made, assuming these zones with the higher permeability will be all improved by the rim grouting.

The two-dimensional F.E.M. seepage analyses are made for three (3) typical sections as shown in Fig. 3.2.1, i.e. Section A-A, B-B and C-C. The geological sections of Section A-A, B-B and C-C are as seen in Fig. 3.2.3.

Models for the F.E.M. seepage analysis for the above three (3) sections are given in Fig. 3.2.4 to Fig. 3.2.6. Parameters of Models are as follows:

Parameters of Models

Section No.	Number of nodal point	Number of element	Analysis condition
A-A	220	202	steady
B-B	246	229	steady
C-C	201	188	steady

In the models, the permeability coefficient of each element is assumed as follows:

Assumed Permeability Coefficients

Items	Assumed Permeability Coefficient (cm/sec)
- Original left bank:	1×10^{-4}
- Rim grout curtain:	7×10^{-5}
- Old lava below rim grout curtain:	1×10^{-5}

In the above, the permeability coefficient of 7×10^{-5} cm/sec is conservatively given to the rim grout curtain, although the degree of improvement by the rim grout is considered to be more effective. Then Relationship assumed among moisture content,conductivity and pressure head required in the seepage analysis are also shown in Fig.3.1.7. Original Left bank is assumed sa SAMLE-B, and Rim grout curtain and Old lava below Rim grout curtain are assumed as SAMPLE-A in Fig.3.1.7.

3.2.3 Result of Analysis

The F.E.M. seepage analyses for three (3) typical sections have resulted in the followings:

Section	Seepage Quantity (m^3/day/m)
A - A	0.24
B - B	0.35
C - C	0.64

Results of the analysis are shown in Table 3.2.1 to Table 3.2.6. Abbriviations in these tables are same as those in Table 3.1.1to Table 3.1.10.

As seen above, the seepage increase in accordance with that of hydraulic gradient, and therefore, assuming that little seepage arise upstream more than Section A-A, the total seepage quantity is approximately assessed at 185 m^3/day as follows:

$$V = 450\ m \times (0.24 + 0.35 + 0.64) / 3 = 185\ m^3/day$$

This daily seepage quantity corresponds to 0.003% of the gross storage capacity of reservoir.

The sum of daily seepage quantities from the dam, its foundation and left bank will be 930 m^3/day which corresponds to 0.014% of the gross storage capacity of reservoir, which sufficiently satisfies the criteria for seepage quantity (0.05%).

The maximum flow velocity is calculated to be 2.04 cm/day at Element No. 108 in Section C - C. This maximum flow velocity corresponds to 0.24×10^{-4} cm/sec which is much less than those in the dam, suggesting that the safety against piping more sufficient than the dam will be secured.

Seepage flows obtained by the analysis are as shown in Fig.3.2.7 to Fig.3.2.9.

Table 3.1.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (1/3)

(SECTION NO. I)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
1	0	0.1813E+03	0.1113E+03	0.0000E+00	0.1930E+00
2	0	0.1800E+03	0.1100E+03	0.0000E+00	0.1930E+00
3	0	0.1772E+03	0.1072E+03	0.0000E+00	0.1930E+00
4	0	0.1717E+03	0.1017E+03	0.0000E+00	0.1930E+00
5	0	0.1676E+03	0.9764E+02	0.0000E+00	0.1930E+00
6	0	0.1655E+03	0.9552E+02	0.0000E+00	0.1930E+00
7	0	0.1642E+03	0.9421E+02	0.0000E+00	0.1930E+00
8	0	0.1639E+03	0.9388E+02	0.0000E+00	0.1930E+00
9	0	0.1818E+03	0.9184E+02	0.0000E+00	0.1930E+00
10	0	0.1806E+03	0.9056E+02	0.0000E+00	0.1930E+00
11	0	0.1775E+03	0.8754E+02	0.0000E+00	0.1930E+00
12	0	0.1715E+03	0.8149E+02	0.0000E+00	0.1930E+00
13	0	0.1673E+03	0.7730E+02	0.0000E+00	0.1930E+00
14	0	0.1653E+03	0.7529E+02	0.0000E+00	0.1930E+00
15	0	0.1641E+03	0.7411E+02	0.0000E+00	0.1930E+00
16	0	0.1638E+03	0.7382E+02	0.0000E+00	0.1930E+00
17	0	0.1836E+03	0.7358E+02	0.0000E+00	0.1930E+00
18	0	0.1822E+03	0.7219E+02	0.0000E+00	0.1930E+00
19	0	0.1786E+03	0.6863E+02	0.0000E+00	0.1930E+00
20	0	0.1705E+03	0.6054E+02	0.0000E+00	0.1930E+00
21	0	0.1663E+03	0.5628E+02	0.0000E+00	0.1930E+00
22	0	0.1646E+03	0.5463E+02	0.0000E+00	0.1930E+00
23	0	0.1638E+03	0.5382E+02	0.0000E+00	0.1930E+00
24	0	0.1636E+03	0.5363E+02	0.0000E+00	0.1930E+00
25	0	0.1860E+03	0.5805E+02	0.0000E+00	0.1930E+00
26	0	0.1849E+03	0.5688E+02	0.0000E+00	0.1930E+00
27	0	0.1806E+03	0.5264E+02	0.0000E+00	0.1930E+00
28	0	0.1771E+03	0.4906E+02	0.0000E+00	0.1930E+00
29	0	0.1754E+03	0.4744E+02	0.0000E+00	0.1930E+00
30	0	0.1687E+03	0.4075E+02	0.0000E+00	0.1930E+00
31	0	0.1646E+03	0.3659E+02	0.0000E+00	0.1930E+00
32	0	0.1637E+03	0.3574E+02	0.0000E+00	0.1930E+00
33	0	0.1635E+03	0.3546E+02	0.0000E+00	0.1930E+00
34	0	0.1634E+03	0.3540E+02	0.0000E+00	0.1930E+00
35	0	0.1864E+03	0.4637E+02	0.0000E+00	0.2160E+00
36	0	0.1854E+03	0.4537E+02	0.0000E+00	0.2160E+00
37	0	0.1815E+03	0.4153E+02	0.0000E+00	0.2160E+00
38	0	0.1774E+03	0.3743E+02	0.0000E+00	0.2160E+00
39	0	0.1756E+03	0.3563E+02	0.0000E+00	0.1930E+00
40	0	0.1717E+03	0.3167E+02	0.0000E+00	0.2160E+00
41	0	0.1680E+03	0.2803E+02	0.0000E+00	0.2160E+00
42	0	0.1643E+03	0.2432E+02	0.0000E+00	0.2160E+00
43	0	0.1637E+03	0.2365E+02	0.0000E+00	0.2160E+00
44	0	0.1634E+03	0.2342E+02	0.0000E+00	0.2160E+00
45	0	0.1634E+03	0.2338E+02	0.0000E+00	0.2160E+00
46	0	0.1868E+03	0.3680E+02	0.0000E+00	0.2160E+00
47	0	0.1867E+03	0.3667E+02	0.0000E+00	0.2160E+00
48	0	0.1860E+03	0.3600E+02	0.0000E+00	0.2160E+00
49	0	0.1853E+03	0.3526E+02	0.0000E+00	0.2160E+00
50	0	0.1832E+03	0.3317E+02	0.0000E+00	0.2160E+00

Table 3.1.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (2/3)

(SECTION NO. I)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
51	0	0.1810E+03	0.3101E+02	0.0000E+00	0.2160E+00
52	0	0.1782E+03	0.2817E+02	0.0000E+00	0.2160E+00
53	0	0.1758E+03	0.2582E+02	0.0000E+00	0.1930E+00
54	0	0.1732E+03	0.2325E+02	0.0000E+00	0.2160E+00
55	0	0.1703E+03	0.2029E+02	0.0000E+00	0.2160E+00
56	0	0.1681E+03	0.1814E+02	0.0000E+00	0.2160E+00
57	0	0.1666E+03	0.1656E+02	0.0000E+00	0.2160E+00
58	0	0.1639E+03	0.1391E+02	0.0000E+00	0.2160E+00
59	0	0.1635E+03	0.1354E+02	0.0000E+00	0.2160E+00
60	0	0.1634E+03	0.1339E+02	0.0000E+00	0.2160E+00
61	0	0.1634E+03	0.1336E+02	0.0000E+00	0.2160E+00
62	0	0.1889E+03	-0.1095E+01	0.0000E+00	0.2076E+00
63	1	0.1890E+03	0.2500E+01	0.1020E+00	0.2160E+00
64	1	0.1890E+03	0.1100E+02	0.1720E+00	0.2160E+00
65	1	0.1890E+03	0.1300E+02	0.1193E+00	0.2160E+00
66	1	0.1890E+03	0.2566E+02	0.4960E+00	0.2160E+00
67	1	0.1890E+03	0.2566E+02	0.8677E+00	0.2160E+00
68	0	0.1834E+03	0.2008E+02	0.0000E+00	0.2160E+00
69	0	0.1810E+03	0.1765E+02	0.0000E+00	0.2160E+00
70	0	0.1754E+03	0.1210E+02	0.0000E+00	0.1930E+00
71	0	0.1739E+03	0.1059E+02	0.0000E+00	0.2160E+00
72	0	0.1701E+03	0.6745E+01	0.0000E+00	0.2160E+00
73	0	0.1672E+03	0.3881E+01	0.0000E+00	0.2160E+00
74	1	0.1633E+03	-0.5615E-05	-0.8596E+00	0.2160E+00
75	1	0.1633E+03	-0.5615E-05	-0.2297E+00	0.2160E+00
76	0	0.1633E+03	-0.6663E+01	0.0000E+00	0.1649E+00
77	0	0.1633E+03	-0.4163E+01	0.0000E+00	0.1841E+00
78	0	0.1633E+03	-0.2163E+01	0.0000E+00	0.1994E+00
79	1	0.1633E+03	0.3370E+09	-0.1951E-01	0.2160E+00
80	1	0.1633E+03	0.2837E+01	-0.5200E-02	0.2160E+00
81	1	0.1890E+03	0.2100E+02	0.4741E-01	0.1930E+00
82	0	0.1839E+03	0.1590E+02	0.0000E+00	0.1930E+00
83	0	0.1788E+03	0.1077E+02	0.0000E+00	0.1930E+00
84	0	0.1740E+03	0.6001E+01	0.0000E+00	0.1930E+00
85	0	0.1705E+03	0.2492E+01	0.0000E+00	0.1930E+00
86	2	0.1680E+03	0.0000E+00	-0.4529E-01	0.1930E+00
87	1	0.1890E+03	0.1600E+02	0.4066E-01	0.1930E+00
88	0	0.1858E+03	0.1279E+02	0.0000E+00	0.1930E+00
89	0	0.1810E+03	0.7988E+01	0.0000E+00	0.1930E+00
90	0	0.1773E+03	0.4296E+01	0.0000E+00	0.1930E+00
91	0	0.1745E+03	0.1517E+01	0.0000E+00	0.1930E+00
92	2	0.1730E+03	0.0000E+00	-0.3987E-01	0.1930E+00
93	1	0.1890E+03	0.1100E+02	0.3284E-01	0.1930E+00
94	0	0.1871E+03	0.9088E+01	0.0000E+00	0.1930E+00
95	0	0.1836E+03	0.5563E+01	0.0000E+00	0.1930E+00
96	0	0.1807E+03	0.2733E+01	0.0000E+00	0.1930E+00
97	0	0.1785E+03	0.5405E+00	0.0000E+00	0.1930E+00
98	2	0.1780E+03	0.0000E+00	-0.3202E-01	0.1930E+00
99	1	0.1890E+03	0.5000E+01	0.1873E-01	0.1930E+00
100	0	0.1884E+03	0.4378E+01	0.0000E+00	0.1930E+00

Table 3.1.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (3/3)

(SECTION NO. I)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
101	0	0.1865E+03	0.2483E+01	0.0000E+00	0.1930E+00
102	0	0.1849E+03	0.9249E+00	0.0000E+00	0.1930E+00
103	2	0.1840E+03	0.0000E+00	-0.1684E-01	0.1930E+00
104	1	0.1890E+03	0.0000E+00	0.4400E-02	0.1930E+00
105	0	0.1890E+03	-0.3004E-01	0.0000E+00	0.1928E+00
106	0	0.1887E+03	-0.2528E+00	0.0000E+00	0.1914E+00
107	-2	0.1888E+03	-0.1864E+00	0.0000E+00	0.1918E+00
108	0	0.1888E+03	-0.6726E+01	0.0000E+00	0.1571E+00
109	-2	0.1889E+03	-0.6627E+01	0.0000E+00	0.1573E+00
110	1	0.1633E+03	-0.5615E-05	-0.3791E+00	0.2160E+00
111	1	0.1633E+03	-0.5615E-05	-0.2212E+00	0.2160E+00
112	1	0.1633E+03	-0.5615E-05	-0.5269E-01	0.2160E+00

FLOWIN = 0.1901E+01

FLOWOUT = -0.1901E+01

TOTAL = -0.8345E-06

Table 3.1.2 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (1/2)

(SECTION NO. I)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
1	15.00	80.00	-0.4183E-01	-0.9728E+00	0.3614E-03	-0.2352E-03	0.4312E-03	-33.06
2	43.00	80.00	-0.1119E+00	-0.9797E+00	0.9665E-03	-0.1752E-03	0.9823E-03	-10.28
3	75.50	80.00	-0.1483E+00	-0.9984E+00	0.1281E-02	-0.1405E-04	0.1282E-02	-0.63
4	112.50	80.00	-0.1182E+00	-0.1014E+01	0.1021E-02	0.1211E-03	0.1028E-02	6.76
5	145.00	80.00	-0.6892E-01	-0.1014E+01	0.5954E-03	0.1201E-03	0.6074E-03	11.40
6	180.00	80.00	-0.3104E-01	-0.1008E+01	0.2682E-03	0.7108E-04	0.2774E-03	14.85
7	220.00	80.00	-0.7751E-02	-0.1004E+01	0.6697E-04	0.3691E-04	0.7646E-04	28.86
8	15.00	100.00	-0.4449E-01	-0.9158E+00	0.3844E-03	-0.7272E-03	0.8226E-03	-62.14
9	43.00	100.00	-0.1266E+00	-0.9320E+00	0.1093E-02	-0.5877E-03	0.1241E-02	-28.26
10	75.50	100.00	-0.1813E+00	-0.9967E+00	0.1566E-02	-0.2894E-04	0.1566E-02	-1.06
11	112.50	100.00	-0.1207E+00	-0.1050E+01	0.1043E-02	0.4286E-03	0.1127E-02	22.35
12	145.00	100.00	-0.6101E-01	-0.1042E+01	0.5271E-03	0.3648E-03	0.6410E-03	34.69
13	180.00	100.00	-0.2488E-01	-0.1024E+01	0.2150E-03	0.2049E-03	0.2970E-03	43.63
14	220.00	100.00	-0.5980E-02	-0.1012E+01	0.5166E-04	0.1021E-03	0.1145E-03	63.17
15	15.00	119.00	-0.4265E-01	-0.8566E+00	0.3685E-03	-0.1239E-02	0.1293E-02	-73.44
16	43.00	119.00	-0.1500E+00	-0.8695E+00	0.1296E-02	-0.1127E-02	0.1718E-02	-41.00
17	59.13	119.00	-0.2860E+00	-0.8885E+00	0.2471E-02	-0.9638E-03	0.2653E-02	-21.31
18	72.63	119.00	-0.2341E+00	-0.9822E+00	0.2023E-02	-0.1534E-03	0.2029E-02	-4.34
19	89.00	119.00	-0.2786E+00	-0.1099E+01	0.2407E-02	0.8582E-03	0.2556E-02	19.62
20	112.50	119.00	-0.1202E+00	-0.1096E+01	0.1038E-02	0.8328E-03	0.1331E-02	38.73
21	145.00	119.00	-0.4161E-01	-0.1071E+01	0.3595E-03	0.6164E-03	0.7136E-03	59.75
22	180.00	119.00	-0.1371E-01	-0.1035E+01	0.1185E-03	0.3003E-03	0.3228E-03	68.47
23	220.00	119.00	-0.3019E-02	-0.1017E+01	0.2608E-04	0.1432E-03	0.1455E-03	79.68
24	15.00	134.00	-0.3625E-01	-0.9661E+00	0.3132E-02	-0.2925E-02	0.4285E-02	-43.05
25	43.00	134.00	-0.1553E+00	-0.9421E+00	0.1342E-01	-0.4999E-02	0.1432E-01	-20.43
26	62.25	134.00	-0.3070E+00	-0.9470E+00	0.2652E-01	-0.4576E-02	0.2691E-01	-9.79
27	69.75	134.00	-0.6858E+00	-0.9763E+00	0.2963E-01	-0.1024E-02	0.2964E-01	-1.98
28	79.75	134.00	-0.3043E+00	-0.1035E+01	0.2629E-01	0.3026E-02	0.2646E-01	6.57
29	91.75	134.00	-0.2796E+00	-0.1060E+01	0.2416E-01	0.5147E-02	0.2470E-01	12.03
30	112.50	134.00	-0.1124E+00	-0.1041E+01	0.9715E-02	0.3575E-02	0.1035E-01	20.20
31	145.00	134.00	-0.2526E-01	-0.1015E+01	0.2183E-02	0.1338E-02	0.2560E-02	31.50
32	180.00	134.00	-0.6443E-02	-0.1005E+01	0.5567E-03	0.4551E-03	0.7191E-03	39.27
33	220.00	134.00	-0.1188E-02	-0.1002E+01	0.1026E-03	0.1903E-03	0.2162E-03	61.67
34	10.00	145.00	-0.2841E-01	-0.9421E+00	0.2454E-02	-0.5003E-02	0.5573E-02	-63.87
35	28.25	147.50	-0.4268E-01	-0.9370E+00	0.3688E-02	-0.5442E-02	0.6574E-02	-55.88
36	46.25	145.00	-0.1519E+00	-0.8251E+00	0.1313E-01	-0.1511E-01	0.2002E-01	-49.03
37	57.50	145.00	-0.3594E+00	-0.8365E+00	0.3106E-01	-0.1412E-01	0.3412E-01	-24.46
38	63.75	145.00	-0.3655E+00	-0.8799E+00	0.3158E-01	-0.1038E-01	0.3324E-01	-18.19
39	69.75	145.00	-0.8292E+00	-0.9538E+00	0.3582E-01	-0.1997E-02	0.3588E-01	-3.19
40	75.00	145.00	-0.4088E+00	-0.1034E+01	0.3532E-01	0.2949E-02	0.3544E-01	4.77
41	83.75	145.00	-0.3467E+00	-0.1138E+01	0.2996E-01	0.1189E-01	0.3223E-01	21.64
42	90.00	147.50	-0.2873E+00	-0.1190E+01	0.2482E-01	0.1646E-01	0.2978E-01	33.54
43	112.50	145.00	-0.9087E-01	-0.1094E+01	0.7851E-02	0.8115E-02	0.1129E-01	45.95
44	145.00	145.00	-0.1739E-01	-0.1026E+01	0.1503E-02	0.2235E-02	0.2694E-02	56.09
45	180.00	145.00	-0.4708E-02	-0.1008E+01	0.4068E-03	0.6542E-03	0.7703E-03	58.13
46	220.00	145.00	-0.8223E-03	-0.1003E+01	0.7104E-04	0.2459E-03	0.2559E-03	73.88
47	5.00	169.13	0.8194E-02	-0.9420E+00	-0.6886E-03	-0.4876E-02	0.4924E-02	81.96
48	20.00	166.13	0.8836E-03	-0.9173E+00	-0.7634E-04	-0.7146E-02	0.7146E-02	89.39
49	36.50	163.50	-0.1889E-01	-0.8751E+00	0.1632E-02	-0.1079E-01	0.1091E-01	-81.40
50	49.50	159.83	0.3816E-01	-0.7566E+00	-0.3297E-02	-0.2103E-01	0.2128E-01	81.09

Table 3.1.2 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (2/2)

(SECTION NO. I)

****

***** ELEMENT VELOCITY *****

****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
51	59.00	156.67	-0.1797E+00	-0.4819E+00	0.1553E-01	-0.4476E-01	0.4738E-01	-70.87
52	63.25	156.67	-0.1117E+01	-0.4010E+00	0.9648E-01	-0.5175E-01	0.1095E+00	-28.21
53	66.50	156.67	-0.6599E+00	-0.6805E+00	0.5701E-01	-0.2760E-01	0.6334E-01	-25.83
54	69.75	156.67	-0.1578E+01	-0.9089E+00	0.6817E-01	-0.3934E-02	0.6828E-01	-3.30
55	72.50	156.67	-0.6818E+00	-0.1091E+01	0.5891E-01	0.7897E-02	0.5944E-01	7.64
56	75.00	156.67	-0.9603E+00	-0.1237E+01	0.8297E-01	0.2050E-01	0.8547E-01	13.88
57	78.25	160.00	-0.1124E+01	-0.1199E+01	0.9712E-01	0.1720E-01	0.9863E-01	10.04
58	79.00	153.33	-0.4921E+00	-0.1522E+01	0.4252E-01	0.4506E-01	0.6195E-01	46.66
59	85.00	156.67	-0.1794E+00	-0.1441E+01	0.1550E-01	0.3809E-01	0.4112E-01	67.86
60	91.50	156.67	-0.1130E+00	-0.1301E+01	0.9765E-02	0.2599E-01	0.2776E-01	69.41
61	112.50	156.67	-0.3777E-01	-0.1142E+01	0.3263E-02	0.1230E-01	0.1273E-01	75.14
62	145.00	156.67	-0.6301E-02	-0.1029E+01	0.5444E-03	0.2512E-02	0.2570E-02	77.77
63	180.00	156.58	-0.1903E-02	-0.1009E+01	0.1644E-03	0.8148E-03	0.8313E-03	78.60
64	220.00	155.88	-0.4105E-03	-0.1003E+01	0.3547E-04	0.2737E-03	0.2760E-03	82.62
65	64.68	165.67	-0.1152E+01	-0.8584E+00	0.9950E-02	-0.1223E-03	0.9951E-02	-0.70
66	69.63	165.67	-0.1423E+01	-0.4054E+00	0.1230E-01	-0.5137E-03	0.1231E-01	-2.39
67	74.00	165.67	-0.1077E+01	-0.5955E-01	0.9303E-02	-0.8126E-03	0.9339E-02	-4.99
68	77.50	165.67	-0.1062E+01	-0.2286E+00	0.9177E-02	-0.6665E-03	0.9202E-02	-4.15
69	80.33	165.67	-0.1197E+01	-0.2358E+00	0.1034E-01	-0.6603E-03	0.1036E-01	-3.65
70	65.06	170.50	-0.1068E+01	-0.7277E+00	0.9230E-02	-0.2353E-03	0.9233E-02	-1.46
71	69.50	170.50	-0.9935E+00	-0.5893E+00	0.8584E-02	-0.3548E-03	0.8591E-02	-2.37
72	74.00	170.50	-0.1058E+01	-0.4491E+00	0.9141E-02	-0.4760E-03	0.9154E-02	-2.98
73	77.50	170.50	-0.1048E+01	-0.2680E+00	0.9055E-02	-0.6325E-03	0.9077E-02	-4.00
74	79.98	170.50	-0.1023E+01	-0.1717E+00	0.8836E-02	-0.7156E-03	0.8865E-02	-4.63
75	65.45	175.50	-0.8229E+00	-0.8068E+00	0.7110E-02	-0.1670E-03	0.7112E-02	-1.35
76	69.50	175.50	-0.8331E+00	-0.6131E+00	0.7198E-02	-0.3343E-03	0.7206E-02	-2.66
77	74.00	175.50	-0.8153E+00	-0.3988E+00	0.7044E-02	-0.5194E-03	0.7063E-02	-4.22
78	77.50	175.50	-0.8285E+00	-0.2540E+00	0.7159E-02	-0.6445E-03	0.7188E-02	-5.14
79	79.62	175.50	-0.8337E+00	-0.1582E+00	0.7203E-02	-0.7273E-03	0.7240E-02	-5.77
80	65.87	181.00	-0.5620E+00	-0.8488E+00	0.4856E-02	-0.1307E-03	0.4857E-02	-1.54
81	69.50	181.00	-0.5420E+00	-0.6492E+00	0.4683E-02	-0.3031E-03	0.4693E-02	-3.70
82	74.00	181.00	-0.5486E+00	-0.4073E+00	0.4740E-02	-0.5121E-03	0.4767E-02	-6.17
83	77.50	181.00	-0.5195E+00	-0.1957E+00	0.4488E-02	-0.6949E-03	0.4542E-02	-8.80
84	79.22	179.50	-0.6205E+00	-0.9008E-01	0.5361E-02	-0.7862E-03	0.5419E-02	-8.34
85	66.30	186.50	-0.2330E+00	-0.9227E+00	0.2011E-02	-0.6672E-04	0.2012E-02	-1.90
86	69.50	186.50	-0.2118E+00	-0.7144E+00	0.1810E-02	-0.2441E-03	0.1827E-02	-7.68
87	74.00	186.50	-0.1864E+00	-0.3847E+00	0.1584E-02	-0.5227E-03	0.1668E-02	-18.27
88	76.75	185.25	-0.3083E+00	-0.2223E+00	0.2645E-02	-0.6672E-03	0.2728E-02	-14.16
89	66.50	190.63	-0.2975E-01	-0.1030E+01	0.2169E-03	0.2199E-04	0.2180E-03	5.79
90	69.50	192.25	-0.1237E-01	-0.1005E+01	0.7262E-04	0.3168E-05	0.7269E-04	2.50
91	73.00	190.63	0.1660E-01	-0.9806E+00	-0.1175E-03	-0.1370E-04	0.1183E-03	6.65
92	67.38	164.50	-0.1622E+01	-0.8959E+00	0.1402E-01	-0.8990E-04	0.1402E-01	-0.37
93	71.50	164.50	-0.1513E+01	0.4035E-01	0.1307E-01	-0.8989E-03	0.1310E-01	-3.93
94	91.50	165.00	-0.4698E-15	-0.1000E+01	0.3414E-16	-0.4331E-08	0.4331E-08	-90.00
95	112.50	166.04	0.3324E-07	-0.1000E+01	-0.2116E-08	-0.1518E-07	0.1533E-07	82.06
96	145.00	164.92	0.2926E-07	-0.1000E+01	-0.2128E-08	-0.4768E-07	0.4773E-07	87.45
97	170.00	163.79	0.1025E-07	-0.1000E+01	-0.8378E-09	-0.9255E-07	0.9256E-07	89.48

Table 3.1.3 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (1/3)

(SECTION NO. II)

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
1	0	0.1776E+03	0.1126E+03	0.0000E+00	0.1930E+00
2	0	0.1762E+03	0.1112E+03	0.0000E+00	0.1930E+00
3	0	0.1723E+03	0.1073E+03	0.0000E+00	0.1930E+00
4	0	0.1685E+03	0.1035E+03	0.0000E+00	0.1930E+00
5	0	0.1523E+03	0.8732E+02	0.0000E+00	0.1930E+00
6	0	0.1455E+03	0.8046E+02	0.0000E+00	0.1930E+00
7	0	0.1421E+03	0.7712E+02	0.0000E+00	0.1930E+00
8	0	0.1405E+03	0.7553E+02	0.0000E+00	0.1930E+00
9	0	0.1402E+03	0.7523E+02	0.0000E+00	0.1930E+00
10	0	0.1790E+03	0.9395E+02	0.0000E+00	0.1930E+00
11	0	0.1776E+03	0.9258E+02	0.0000E+00	0.1930E+00
12	0	0.1735E+03	0.8847E+02	0.0000E+00	0.1930E+00
13	0	0.1695E+03	0.8452E+02	0.0000E+00	0.1930E+00
14	0	0.1511E+03	0.6609E+02	0.0000E+00	0.1930E+00
15	0	0.1447E+03	0.5971E+02	0.0000E+00	0.1930E+00
16	0	0.1417E+03	0.5672E+02	0.0000E+00	0.1930E+00
17	0	0.1404E+03	0.5542E+02	0.0000E+00	0.1930E+00
18	0	0.1402E+03	0.5518E+02	0.0000E+00	0.1930E+00
19	0	0.1829E+03	0.7792E+02	0.0000E+00	0.1930E+00
20	0	0.1817E+03	0.7674E+02	0.0000E+00	0.1930E+00
21	0	0.1774E+03	0.7245E+02	0.0000E+00	0.1930E+00
22	0	0.1724E+03	0.6736E+02	0.0000E+00	0.1930E+00
23	0	0.1695E+03	0.6450E+02	0.0000E+00	0.1930E+00
24	0	0.1645E+03	0.5949E+02	0.0000E+00	0.1930E+00
25	0	0.1619E+03	0.5687E+02	0.0000E+00	0.1930E+00
26	0	0.1509E+03	0.4590E+02	0.0000E+00	0.1930E+00
27	0	0.1480E+03	0.4304E+02	0.0000E+00	0.1930E+00
28	0	0.1422E+03	0.3723E+02	0.0000E+00	0.1930E+00
29	0	0.1406E+03	0.3564E+02	0.0000E+00	0.1930E+00
30	0	0.1401E+03	0.3513E+02	0.0000E+00	0.1930E+00
31	0	0.1400E+03	0.3505E+02	0.0000E+00	0.1930E+00
32	0	0.1838E+03	0.6383E+02	0.0000E+00	0.2160E+00
33	0	0.1829E+03	0.6293E+02	0.0000E+00	0.2160E+00
34	0	0.1793E+03	0.5931E+02	0.0000E+00	0.2160E+00
35	0	0.1742E+03	0.5416E+02	0.0000E+00	0.2160E+00
36	0	0.1708E+03	0.5080E+02	0.0000E+00	0.2160E+00
37	0	0.1647E+03	0.4474E+02	0.0000E+00	0.2160E+00
38	0	0.1612E+03	0.4121E+02	0.0000E+00	0.1930E+00
39	0	0.1492E+03	0.2923E+02	0.0000E+00	0.2160E+00
40	0	0.1463E+03	0.2630E+02	0.0000E+00	0.2160E+00
41	0	0.1416E+03	0.2159E+02	0.0000E+00	0.2160E+00
42	0	0.1405E+03	0.2045E+02	0.0000E+00	0.2160E+00
43	0	0.1401E+03	0.2008E+02	0.0000E+00	0.2160E+00
44	0	0.1400E+03	0.2003E+02	0.0000E+00	0.2160E+00
45	0	0.1850E+03	0.5502E+02	0.0000E+00	0.2160E+00
46	0	0.1843E+03	0.5430E+02	0.0000E+00	0.2160E+00
47	0	0.1825E+03	0.5252E+02	0.0000E+00	0.2160E+00
48	0	0.1772E+03	0.4725E+02	0.0000E+00	0.2160E+00
49	0	0.1738E+03	0.4385E+02	0.0000E+00	0.2160E+00
50	0	0.1652E+03	0.3518E+02	0.0000E+00	0.2160E+00

Table 3.1.3 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (2/3)

(SECTION NO. II)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
51	0	0.1609E+03	0.3094E+02	0.0000E+00	0.1930E+00
52	0	0.1542E+03	0.2418E+02	0.0000E+00	0.2160E+00
53	0	0.1457E+03	0.1568E+02	0.0000E+00	0.2160E+00
54	0	0.1436E+03	0.1360E+02	0.0000E+00	0.2160E+00
55	0	0.1408E+03	0.1085E+02	0.0000E+00	0.2160E+00
56	0	0.1402E+03	0.1025E+02	0.0000E+00	0.2160E+00
57	0	0.1400E+03	0.1004E+02	0.0000E+00	0.2160E+00
58	0	0.1400E+03	0.1001E+02	0.0000E+00	0.2160E+00
59	1	0.1890E+03	0.3350E+02	0.1493E+00	0.2160E+00
60	1	0.1890E+03	0.3500E+02	0.3660E+00	0.2160E+00
61	1	0.1890E+03	0.3650E+02	0.3588E+00	0.2160E+00
62	1	0.1890E+03	0.4900E+02	0.1602E+01	0.2160E+00
63	0	0.1760E+03	0.3597E+02	0.0000E+00	0.2160E+00
64	0	0.1684E+03	0.2837E+02	0.0000E+00	0.2160E+00
65	0	0.1655E+03	0.2550E+02	0.0000E+00	0.2160E+00
66	0	0.1603E+03	0.2029E+02	0.0000E+00	0.1930E+00
67	0	0.1578E+03	0.1775E+02	0.0000E+00	0.2160E+00
68	0	0.1512E+03	0.1124E+02	0.0000E+00	0.2160E+00
69	1	0.1400E+03	0.0000E+00	-0.1111E+01	0.2160E+00
70	1	0.1400E+03	0.0000E+00	-0.4241E+00	0.2160E+00
71	0	0.1400E+03	-0.6000E+01	0.0000E+00	0.1700E+00
72	0	0.1400E+03	-0.4000E+01	0.0000E+00	0.1853E+00
73	0	0.1400E+03	-0.2000E+01	0.0000E+00	0.2007E+00
74	1	0.1400E+03	0.1000E+01	-0.2739E-01	0.2160E+00
75	1	0.1400E+03	0.4500E+01	-0.5386E-02	0.2160E+00
76	1	0.1890E+03	0.4200E+02	0.1073E+00	0.1930E+00
77	0	0.1773E+03	0.3032E+02	0.0000E+00	0.1930E+00
78	0	0.1663E+03	0.1932E+02	0.0000E+00	0.1930E+00
79	0	0.1561E+03	0.9123E+01	0.0000E+00	0.1930E+00
80	2	0.1470E+03	0.0000E+00	-0.9354E-01	0.1930E+00
81	1	0.1890E+03	0.3500E+02	0.8751E-01	0.1930E+00
82	0	0.1812E+03	0.2723E+02	0.0000E+00	0.1930E+00
83	0	0.1703E+03	0.1631E+02	0.0000E+00	0.1930E+00
84	0	0.1613E+03	0.7276E+01	0.0000E+00	0.1930E+00
85	2	0.1540E+03	0.0000E+00	-0.8440E-01	0.1930E+00
86	1	0.1890E+03	0.2900E+02	0.7059E-01	0.1930E+00
87	0	0.1829E+03	0.2288E+02	0.0000E+00	0.1930E+00
88	0	0.1734E+03	0.1339E+02	0.0000E+00	0.1930E+00
89	0	0.1652E+03	0.5177E+01	0.0000E+00	0.1930E+00
90	2	0.1600E+03	0.0000E+00	-0.7008E-01	0.1930E+00
91	1	0.1890E+03	0.2300E+02	0.6095E-01	0.1930E+00
92	0	0.1846E+03	0.1865E+02	0.0000E+00	0.1930E+00
93	0	0.1764E+03	0.1040E+02	0.0000E+00	0.1930E+00
94	0	0.1693E+03	0.3348E+01	0.0000E+00	0.1930E+00
95	2	0.1660E+03	0.0000E+00	-0.6028E-01	0.1930E+00
96	1	0.1890E+03	0.1700E+02	0.4930E-01	0.1930E+00
97	0	0.1862E+03	0.1420E+02	0.0000E+00	0.1930E+00
98	0	0.1795E+03	0.7523E+01	0.0000E+00	0.1930E+00
99	0	0.1738E+03	0.1800E+01	0.0000E+00	0.1930E+00
100	2	0.1720E+03	0.0000E+00	-0.4861E-01	0.1930E+00

Table 3.1.3 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (3/3)

(SECTION NO. II)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
101	1	0.1890E+03	0.1100E+02	0.3524E-01	0.1930E+00
102	0	0.1875E+03	0.9521E+01	0.0000E+00	0.1930E+00
103	0	0.1827E+03	0.4725E+01	0.0000E+00	0.1930E+00
104	0	0.1786E+03	0.5773E+00	0.0000E+00	0.1930E+00
105	2	0.1780E+03	0.0000E+00	-0.3463E-01	0.1930E+00
106	1	0.1890E+03	0.5000E+01	0.1774E-01	0.1930E+00
107	0	0.1885E+03	0.4526E+01	0.0000E+00	0.1930E+00
108	0	0.1860E+03	0.2049E+01	0.0000E+00	0.1930E+00
109	2	0.1840E+03	0.0000E+00	-0.1575E-01	0.1930E+00
110	1	0.1890E+03	0.0000E+00	0.4522E-02	0.1930E+00
111	0	0.1890E+03	-0.3162E-01	0.0000E+00	0.1928E+00
112	0	0.1886E+03	-0.3812E+00	0.0000E+00	0.1906E+00
113	-2	0.1887E+03	-0.2576E+00	0.0000E+00	0.1914E+00
114	0	0.1887E+03	-0.6818E+01	0.0000E+00	0.1569E+00
115	-2	0.1888E+03	-0.6672E+01	0.0000E+00	0.1572E+00
116	1	0.1400E+03	0.0000E+00	-0.5200E+00	0.2160E+00
117	1	0.1400E+03	0.0000E+00	-0.3230E+00	0.2160E+00
118	1	0.1400E+03	0.0000E+00	-0.9147E-01	0.2160E+00

FLOWIN = 0.2910E+01

FLOWOUT = -0.2910E+01

TOTAL = -0.1383E-04

Table 3.1.4 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (1/2)

(SECTION NO. II)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
1	10.00	75.00	-0.6801E-01	-0.9323E+00	0.5876E-03	-0.5848E-03	0.8290E-03	-44.86
2	30.00	75.00	-0.2010E+00	-0.9375E+00	0.1736E-02	-0.5396E-03	0.1818E-02	-17.26
3	46.50	75.00	-0.2981E+00	-0.9462E+00	0.2576E-02	-0.4652E-03	0.2617E-02	-10.24
4	76.50	75.00	-0.3683E+00	-0.1006E+01	0.3182E-02	0.4950E-04	0.3183E-02	0.89
5	115.00	75.00	-0.2206E+00	-0.1049E+01	0.1906E-02	0.4269E-03	0.1953E-02	12.63
6	145.00	75.00	-0.1056E+00	-0.1029E+01	0.9124E-03	0.2500E-03	0.9460E-03	15.33
7	180.00	75.00	-0.3605E-01	-0.1013E+01	0.3115E-03	0.1125E-03	0.3312E-03	19.85
8	220.00	75.00	-0.6869E-02	-0.1004E+01	0.5935E-04	0.3507E-04	0.6894E-04	30.58
9	10.00	95.00	-0.6371E-01	-0.7971E+00	0.5505E-03	-0.1753E-02	0.1838E-02	-72.57
10	30.00	95.00	-0.2101E+00	-0.7967E+00	0.1815E-02	-0.1756E-02	0.2526E-02	-44.05
11	46.50	95.00	-0.3477E+00	-0.8295E+00	0.3004E-02	-0.1473E-02	0.3346E-02	-26.12
12	58.38	100.00	-0.5079E+00	-0.8482E+00	0.4388E-02	-0.1311E-02	0.4580E-02	-16.64
13	73.13	95.00	-0.4251E+00	-0.9997E+00	0.3673E-02	-0.2974E-05	0.3673E-02	-0.05
14	90.75	100.00	-0.4770E+00	-0.1200E+01	0.4121E-02	0.1730E-02	0.4469E-02	22.78
15	115.00	95.00	-0.2032E+00	-0.1138E+01	0.1755E-02	0.1196E-02	0.2124E-02	34.28
16	145.00	95.00	-0.7643E-01	-0.1089E+01	0.6604E-03	0.7698E-03	0.1014E-02	49.38
17	180.00	95.00	-0.2254E-01	-0.1034E+01	0.1948E-03	0.2960E-03	0.3543E-03	56.65
18	220.00	95.00	-0.4077E-02	-0.1011E+01	0.3523E-04	0.9167E-04	0.9821E-04	68.98
19	10.00	112.50	-0.5186E-01	-0.9299E+00	0.4481E-02	-0.6061E-02	0.7537E-02	-53.53
20	30.00	112.50	-0.1978E+00	-0.8981E+00	0.1709E-01	-0.8803E-02	0.1922E-01	-27.26
21	46.50	112.50	-0.3938E+00	-0.8779E+00	0.3402E-01	-0.1055E-01	0.3562E-01	-17.22
22	56.00	112.50	-0.5177E+00	-0.8968E+00	0.4473E-01	-0.8915E-02	0.4561E-01	-11.27
23	63.75	112.50	-0.5829E+00	-0.9483E+00	0.5037E-01	-0.4466E-02	0.5056E-01	-5.07
24	69.75	112.50	-0.1229E+01	-0.1013E+01	0.5309E-01	0.5823E-03	0.5309E-01	0.63
25	76.25	108.75	-0.5224E+00	-0.1044E+01	0.4514E-01	0.3793E-02	0.4530E-01	4.80
26	86.75	112.50	-0.5706E+00	-0.1111E+01	0.4930E-01	0.9627E-02	0.5023E-01	11.05
27	96.00	112.50	-0.3620E+00	-0.1114E+01	0.3128E-01	0.9830E-02	0.3279E-01	17.45
28	115.00	112.50	-0.1753E+00	-0.1079E+01	0.1514E-01	0.6835E-02	0.1662E-01	24.29
29	145.00	112.50	-0.4549E-01	-0.1027E+01	0.3930E-02	0.2355E-02	0.4582E-02	30.93
30	180.00	112.50	-0.1098E-01	-0.1008E+01	0.9485E-03	0.6623E-03	0.1157E-02	34.93
31	220.00	112.50	-0.1718E-02	-0.1002E+01	0.1484E-03	0.1780E-03	0.2318E-03	50.18
32	10.00	125.00	-0.4041E-01	-0.8720E+00	0.3492E-02	-0.1106E-01	0.1160E-01	-72.48
33	30.00	125.00	-0.1350E+00	-0.7712E+00	0.1167E-01	-0.1977E-01	0.2295E-01	-59.45
34	46.50	125.00	-0.4008E+00	-0.6851E+00	0.3463E-01	-0.2720E-01	0.4404E-01	-38.15
35	56.00	125.00	-0.5631E+00	-0.6932E+00	0.4865E-01	-0.2651E-01	0.5541E-01	-28.59
36	63.75	125.00	-0.7753E+00	-0.8258E+00	0.6699E-01	-0.1505E-01	0.6865E-01	-12.66
37	69.75	125.00	-0.1553E+01	-0.9918E+00	0.6709E-01	-0.3524E-03	0.6709E-01	-0.30
38	78.25	125.00	-0.6463E+00	-0.1186E+01	0.5584E-01	0.1608E-01	0.5811E-01	16.06
39	88.75	125.00	-0.6542E+00	-0.1355E+01	0.5653E-01	0.3070E-01	0.6432E-01	28.51
40	96.00	125.00	-0.3132E+00	-0.1313E+01	0.2706E-01	0.2702E-01	0.3823E-01	44.96
41	115.00	125.00	-0.1242E+00	-0.1172E+01	0.1073E-01	0.1489E-01	0.1835E-01	54.22
42	145.00	125.00	-0.2910E-01	-0.1048E+01	0.2514E-02	0.4117E-02	0.4824E-02	58.59
43	180.00	125.00	-0.7150E-02	-0.1013E+01	0.6178E-03	0.1085E-02	0.1249E-02	60.35
44	220.00	125.00	-0.1080E-02	-0.1003E+01	0.9332E-04	0.2685E-03	0.2842E-03	70.83
45	10.00	142.38	-0.1144E-01	-0.8246E+00	0.9883E-03	-0.1516E-01	0.1519E-01	-86.27
46	30.00	141.63	-0.3549E-01	-0.7595E+00	0.3066E-02	-0.2078E-01	0.2101E-01	-81.61
47	46.50	138.13	0.6704E-01	-0.4389E+00	-0.5792E-02	-0.4848E-01	0.4882E-01	83.19
48	56.00	135.00	-0.1369E+01	-0.3063E+00	0.1183E+00	-0.5994E-01	0.1326E+00	-26.87
49	60.75	135.00	-0.1085E+01	-0.7878E+00	0.9376E-01	-0.1833E-01	0.9554E-01	-11.06
50	65.50	135.00	-0.9622E+00	-0.9209E+00	0.8314E-01	-0.6834E-02	0.8342E-01	-4.70

Table 3.1.4 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (2/2)

(SECTION NO. II)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
51	69.75	135.00	-0.1889E+01	-0.1016E+01	0.8159E-01	0.7094E-03	0.8159E-01	0.50
52	73.50	135.00	-0.9299E+00	-0.1133E+01	0.8034E-01	0.1149E-01	0.8116E-01	8.14
53	79.25	137.50	-0.1365E+01	-0.1294E+01	0.1180E+00	0.2542E-01	0.1207E+00	12.16
54	87.25	135.00	-0.4476E+00	-0.1836E+01	0.3868E-01	0.7225E-01	0.8195E-01	61.84
55	96.00	135.00	-0.1299E+00	-0.1464E+01	0.1123E-01	0.4006E-01	0.4161E-01	74.35
56	115.00	135.00	-0.4581E-01	-0.1222E+01	0.3958E-02	0.1921E-01	0.1961E-01	78.36
57	145.00	135.00	-0.1007E-01	-0.1055E+01	0.8696E-03	0.4727E-02	0.4807E-02	79.58
58	180.00	134.75	-0.2742E-02	-0.1015E+01	0.2369E-03	0.1301E-02	0.1322E-02	79.68
59	220.00	133.63	-0.5350E-03	-0.1004E+01	0.4622E-04	0.3064E-03	0.3099E-03	81.42
60	62.72	143.50	-0.1469E+01	0.6627E+00	0.1269E-01	-0.1437E-02	0.1278E-01	-6.46
61	69.63	143.50	-0.1706E+01	0.2146E+00	0.1474E-01	-0.1049E-02	0.1478E-01	-4.07
62	76.00	143.50	-0.1393E+01	-0.3900E-01	0.1203E-01	-0.8303E-03	0.1206E-01	-3.95
63	82.22	143.50	-0.1580E+01	-0.2769E+00	0.1365E-01	-0.6247E-03	0.1367E-01	-2.62
64	63.16	150.50	-0.1713E+01	-0.6129E+00	0.1480E-01	-0.3345E-03	0.1480E-01	-1.29
65	69.50	150.50	-0.1566E+01	-0.4358E+00	0.1353E-01	-0.4875E-03	0.1354E-01	-2.06
66	76.00	150.50	-0.1603E+01	-0.3467E+00	0.1385E-01	-0.5644E-03	0.1386E-01	-2.33
67	81.65	150.50	-0.1544E+01	-0.2591E+00	0.1334E-01	-0.6402E-03	0.1336E-01	-2.75
68	63.57	157.00	-0.1431E+01	-0.7727E+00	0.1236E-01	-0.1964E-03	0.1236E-01	-0.91
69	69.50	157.00	-0.1457E+01	-0.6065E+00	0.1259E-01	-0.3400E-03	0.1259E-01	-1.55
70	76.00	157.00	-0.1438E+01	-0.4185E+00	0.1242E-01	-0.5024E-03	0.1243E-01	-2.32
71	81.14	157.00	-0.1456E+01	-0.2860E+00	0.1258E-01	-0.6169E-03	0.1260E-01	-2.81
72	63.95	163.00	-0.1278E+01	-0.7717E+00	0.1104E-01	-0.1973E-03	0.1104E-01	-1.02
73	69.50	163.00	-0.1266E+01	-0.6011E+00	0.1094E-01	-0.3446E-03	0.1095E-01	-1.80
74	76.00	163.00	-0.1273E+01	-0.4014E+00	0.1100E-01	-0.5172E-03	0.1101E-01	-2.69
75	80.67	163.00	-0.1276E+01	-0.2538E+00	0.1102E-01	-0.6447E-03	0.1104E-01	-3.35
76	64.33	169.00	-0.1070E+01	-0.8037E+00	0.9247E-02	-0.1696E-03	0.9249E-02	-1.05
77	69.50	169.00	-0.1066E+01	-0.6113E+00	0.9206E-02	-0.3359E-03	0.9212E-02	-2.09
78	76.00	169.00	-0.1065E+01	-0.3690E+00	0.9201E-02	-0.5452E-03	0.9217E-02	-3.39
79	80.19	169.00	-0.1079E+01	-0.2148E+00	0.9319E-02	-0.6784E-03	0.9344E-02	-4.16
80	64.71	175.00	-0.8283E+00	-0.8373E+00	0.7157E-02	-0.1406E-03	0.7158E-02	-1.13
81	69.50	175.00	-0.8191E+00	-0.6227E+00	0.7077E-02	-0.3260E-03	0.7085E-02	-2.64
82	76.00	175.00	-0.8226E+00	-0.3351E+00	0.7107E-02	-0.5745E-03	0.7130E-02	-4.62
83	79.72	175.00	-0.8302E+00	-0.1679E+00	0.7173E-02	-0.7189E-03	0.7209E-02	-5.72
84	65.09	181.00	-0.5341E+00	-0.8826E+00	0.4615E-02	-0.1014E-03	0.4616E-02	-1.26
85	69.50	181.00	-0.5194E+00	-0.6393E+00	0.4488E-02	-0.3117E-03	0.4499E-02	-3.97
86	76.00	181.00	-0.5165E+00	-0.2711E+00	0.4462E-02	-0.6298E-03	0.4506E-02	-8.03
87	79.24	179.50	-0.6045E+00	-0.9621E-01	0.5223E-02	-0.7809E-03	0.5281E-02	-8.50
88	65.43	186.50	-0.2229E+00	-0.9417E+00	0.1924E-02	-0.5033E-04	0.1924E-02	-1.50
89	69.50	186.50	-0.2018E+00	-0.6988E+00	0.1716E-02	-0.2561E-03	0.1735E-02	-8.49
90	75.35	186.50	-0.2051E+00	-0.3223E+00	0.1729E-02	-0.5712E-03	0.1820E-02	-18.29
91	65.59	190.63	-0.3856E-01	-0.1044E+01	0.2811E-03	0.3209E-04	0.2829E-03	6.51
92	69.50	192.25	-0.1451E-01	-0.1006E+01	0.8454E-04	0.3431E-05	0.8461E-04	2.32
93	73.85	190.63	0.3643E-01	-0.9677E+00	-0.2537E-03	-0.2247E-04	0.2547E-03	5.06
94	66.63	141.75	-0.1150E+01	0.2786E+00	0.9937E-02	-0.1105E-02	0.9999E-02	-6.34
95	72.00	141.75	-0.1270E+01	0.2244E+00	0.1097E-01	-0.1058E-02	0.1102E-01	-5.51
96	96.00	141.50	0.0000E+00	-0.1000E+01	0.0000E+00	0.8754E-08	0.8754E-08	90.00
97	115.00	142.50	-0.1733E-08	-0.1000E+01	0.1123E-09	0.7724E-08	0.7724E-08	89.17
98	145.00	141.50	-0.1788E-07	-0.1000E+01	0.1313E-08	0.2626E-07	0.2629E-07	87.14
99	170.00	140.25	-0.1549E-07	-0.1000E+01	0.1272E-08	0.4892E-07	0.4894E-07	88.51

Table 3.1.5 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (1/3)

(SECTION NO. III)

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
1	0	0.1702E+03	0.1362E+03	0.0000E+00	0.1930E+00
2	0	0.1669E+03	0.1329E+03	0.0000E+00	0.1930E+00
3	0	0.1614E+03	0.1274E+03	0.0000E+00	0.1930E+00
4	0	0.1590E+03	0.1250E+03	0.0000E+00	0.1930E+00
5	0	0.1424E+03	0.1084E+03	0.0000E+00	0.1930E+00
6	0	0.1333E+03	0.9925E+02	0.0000E+00	0.1930E+00
7	0	0.1278E+03	0.9378E+02	0.0000E+00	0.1930E+00
8	0	0.1246E+03	0.9063E+02	0.0000E+00	0.1930E+00
9	0	0.1239E+03	0.8989E+02	0.0000E+00	0.1930E+00
10	0	0.1717E+03	0.1177E+03	0.0000E+00	0.1930E+00
11	0	0.1683E+03	0.1143E+03	0.0000E+00	0.1930E+00
12	0	0.1624E+03	0.1084E+03	0.0000E+00	0.1930E+00
13	0	0.1597E+03	0.1057E+03	0.0000E+00	0.1930E+00
14	0	0.1416E+03	0.8765E+02	0.0000E+00	0.1930E+00
15	0	0.1323E+03	0.7831E+02	0.0000E+00	0.1930E+00
16	0	0.1272E+03	0.7317E+02	0.0000E+00	0.1930E+00
17	0	0.1244E+03	0.7038E+02	0.0000E+00	0.1930E+00
18	0	0.1237E+03	0.6975E+02	0.0000E+00	0.1930E+00
19	0	0.1764E+03	0.1024E+03	0.0000E+00	0.1930E+00
20	0	0.1727E+03	0.9867E+02	0.0000E+00	0.1930E+00
21	0	0.1657E+03	0.9173E+02	0.0000E+00	0.1930E+00
22	0	0.1625E+03	0.8855E+02	0.0000E+00	0.1930E+00
23	0	0.1386E+03	0.6458E+02	0.0000E+00	0.1930E+00
24	0	0.1294E+03	0.5539E+02	0.0000E+00	0.1930E+00
25	0	0.1254E+03	0.5138E+02	0.0000E+00	0.1930E+00
26	0	0.1237E+03	0.4971E+02	0.0000E+00	0.1930E+00
27	0	0.1234E+03	0.4937E+02	0.0000E+00	0.1930E+00
28	0	0.1814E+03	0.9339E+02	0.0000E+00	0.1930E+00
29	0	0.1780E+03	0.8999E+02	0.0000E+00	0.1930E+00
30	0	0.1702E+03	0.8222E+02	0.0000E+00	0.1930E+00
31	0	0.1659E+03	0.7790E+02	0.0000E+00	0.1930E+00
32	0	0.1582E+03	0.7021E+02	0.0000E+00	0.1930E+00
33	0	0.1545E+03	0.6650E+02	0.0000E+00	0.1930E+00
34	0	0.1349E+03	0.4694E+02	0.0000E+00	0.1930E+00
35	0	0.1258E+03	0.3778E+02	0.0000E+00	0.1930E+00
36	0	0.1236E+03	0.3560E+02	0.0000E+00	0.1930E+00
37	0	0.1231E+03	0.3509E+02	0.0000E+00	0.1930E+00
38	0	0.1230E+03	0.3502E+02	0.0000E+00	0.1930E+00
39	0	0.1833E+03	0.7432E+02	0.0000E+00	0.2160E+00
40	0	0.1812E+03	0.7216E+02	0.0000E+00	0.2160E+00
41	0	0.1753E+03	0.6634E+02	0.0000E+00	0.2160E+00
42	0	0.1716E+03	0.6262E+02	0.0000E+00	0.2160E+00
43	0	0.1605E+03	0.5154E+02	0.0000E+00	0.2160E+00
44	0	0.1554E+03	0.4640E+02	0.0000E+00	0.1930E+00
45	0	0.1454E+03	0.3636E+02	0.0000E+00	0.2160E+00
46	0	0.1298E+03	0.2084E+02	0.0000E+00	0.2160E+00
47	0	0.1239E+03	0.1494E+02	0.0000E+00	0.2160E+00
48	0	0.1231E+03	0.1411E+02	0.0000E+00	0.2160E+00
49	0	0.1230E+03	0.1397E+02	0.0000E+00	0.2160E+00
50	1	0.1230E+03	0.1396E+02	-0.7364E-02	0.2160E+00

Table 3.1.5 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (2/3)

(SECTION NO. III)

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
51	0	0.1852E+03	0.6221E+02	0.0000E+00	0.2160E+00
52	0	0.1855E+03	0.6255E+02	0.0000E+00	0.2160E+00
53	1	0.1890E+03	0.4700E+02	0.2499E+00	0.2160E+00
54	1	0.1890E+03	0.4700E+02	0.4069E+00	0.2160E+00
55	1	0.1890E+03	0.6604E+02	0.9059E+00	0.1930E+00
56	1	0.1890E+03	0.6604E+02	0.2053E+01	0.2160E+00
57	0	0.1689E+03	0.4594E+02	0.0000E+00	0.2160E+00
58	0	0.1649E+03	0.4189E+02	0.0000E+00	0.2160E+00
59	0	0.1560E+03	0.3307E+02	0.0000E+00	0.1930E+00
60	0	0.1518E+03	0.2886E+02	0.0000E+00	0.2160E+00
61	0	0.1413E+03	0.1838E+02	0.0000E+00	0.2160E+00
62	1	0.1230E+03	0.9155E-06	-0.1925E+01	0.2160E+00
63	1	0.1230E+03	0.9155E-06	-0.9815E+00	0.2160E+00
64	1	0.1230E+03	0.5960E+01	-0.5550E+00	0.2160E+00
65	1	0.1230E+03	0.8460E+01	-0.1293E+00	0.2160E+00
66	1	0.1230E+03	0.1146E+02	-0.3408E-01	0.2160E+00
67	1	0.1890E+03	0.5900E+02	0.1207E+00	0.1930E+00
68	0	0.1708E+03	0.4077E+02	0.0000E+00	0.1930E+00
69	0	0.1600E+03	0.2997E+02	0.0000E+00	0.1930E+00
70	0	0.1454E+03	0.1536E+02	0.0000E+00	0.1930E+00
71	2	0.1300E+03	0.0000E+00	-0.1172E+00	0.1930E+00
72	1	0.1890E+03	0.5200E+02	0.1051E+00	0.1930E+00
73	0	0.1741E+03	0.3713E+02	0.0000E+00	0.1930E+00
74	0	0.1627E+03	0.2573E+02	0.0000E+00	0.1930E+00
75	0	0.1499E+03	0.1294E+02	0.0000E+00	0.1930E+00
76	2	0.1370E+03	0.0000E+00	-0.1040E+00	0.1930E+00
77	1	0.1890E+03	0.4600E+02	0.9091E-01	0.1930E+00
78	0	0.1763E+03	0.3331E+02	0.0000E+00	0.1930E+00
79	0	0.1659E+03	0.2287E+02	0.0000E+00	0.1930E+00
80	0	0.1536E+03	0.1056E+02	0.0000E+00	0.1930E+00
81	2	0.1430E+03	0.0000E+00	-0.9026E-01	0.1930E+00
82	1	0.1890E+03	0.4000E+02	0.8461E-01	0.1930E+00
83	0	0.1786E+03	0.2957E+02	0.0000E+00	0.1930E+00
84	0	0.1688E+03	0.1979E+02	0.0000E+00	0.1930E+00
85	0	0.1574E+03	0.8401E+01	0.0000E+00	0.1930E+00
86	2	0.1490E+03	0.0000E+00	-0.8388E-01	0.1930E+00
87	1	0.1890E+03	0.3400E+02	0.7729E-01	0.1930E+00
88	0	0.1807E+03	0.2570E+02	0.0000E+00	0.1930E+00
89	0	0.1718E+03	0.1677E+02	0.0000E+00	0.1930E+00
90	0	0.1614E+03	0.6351E+01	0.0000E+00	0.1930E+00
91	2	0.1550E+03	0.0000E+00	-0.7658E-01	0.1930E+00
92	1	0.1890E+03	0.2800E+02	0.6879E-01	0.1930E+00
93	0	0.1827E+03	0.2171E+02	0.0000E+00	0.1930E+00
94	0	0.1748E+03	0.1376E+02	0.0000E+00	0.1930E+00
95	0	0.1655E+03	0.4480E+01	0.0000E+00	0.1930E+00
96	2	0.1610E+03	0.0000E+00	-0.6807E-01	0.1930E+00
97	1	0.1890E+03	0.2200E+02	0.5879E-01	0.1930E+00
98	0	0.1846E+03	0.1757E+02	0.0000E+00	0.1930E+00
99	0	0.1778E+03	0.1076E+02	0.0000E+00	0.1930E+00
100	0	0.1698E+03	0.2816E+01	0.0000E+00	0.1930E+00

Table 3.1.5 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (3/3)

(SECTION NO. III)

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**********************************************************************************
*****          POTENTIAL AND DISCHARGE VALUE     CONDITION--STEDY          *****
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NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
101	2	0.1670E+03	0.0000E+00	-0.5808E-01	0.1930E+00
102	1	0.1890E+03	0.1600E+02	0.4365E-01	0.1930E+00
103	0	0.1862E+03	0.1321E+02	0.0000E+00	0.1930E+00
104	0	0.1808E+03	0.7781E+01	0.0000E+00	0.1930E+00
105	0	0.1745E+03	0.1454E+01	0.0000E+00	0.1930E+00
106	2	0.1730E+03	0.0000E+00	-0.4292E-01	0.1930E+00
107	1	0.1890E+03	0.1100E+02	0.3137E-01	0.1930E+00
108	0	0.1874E+03	0.9390E+01	0.0000E+00	0.1930E+00
109	0	0.1833E+03	0.5314E+01	0.0000E+00	0.1930E+00
110	0	0.1785E+03	0.5138E+00	0.0000E+00	0.1930E+00
111	2	0.1780E+03	0.0000E+00	-0.3079E-01	0.1930E+00
112	1	0.1890E+03	0.5000E+01	0.1769E-01	0.1930E+00
113	0	0.1885E+03	0.4482E+01	0.0000E+00	0.1930E+00
114	0	0.1864E+03	0.2367E+01	0.0000E+00	0.1930E+00
115	2	0.1840E+03	0.0000E+00	-0.1549E-01	0.1930E+00
116	1	0.1890E+03	0.0000E+00	0.4449E-02	0.1930E+00
117	0	0.1890E+03	-0.3287E-01	0.0000E+00	0.1928E+00
118	0	0.1887E+03	-0.3470E+00	0.0000E+00	0.1908E+00
119	-2	0.1888E+03	-0.2335E+00	0.0000E+00	0.1915E+00
120	0	0.1887E+03	-0.6802E+01	0.0000E+00	0.1569E+00
121	-2	0.1888E+03	-0.6667E+01	0.0000E+00	0.1572E+00

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FLOWIN  =  0.4319E+01
FLOWOUT = -0.4319E+01
TOTAL   =  0.8583E-05
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Table 3.1.6 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (1/2)

(SECTION NO. III)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
1	15.00	44.00	-0.1126E+00	-0.9269E+00	0.9728E-03	-0.6320E-03	0.1160E-02	-33.01
2	40.00	44.00	-0.2854E+00	-0.9403E+00	0.2466E-02	-0.5154E-03	0.2520E-02	-11.81
3	53.50	44.00	-0.3607E+00	-0.9560E+00	0.3117E-02	-0.3803E-03	0.3140E-02	-6.96
4	78.50	44.00	-0.4024E+00	-0.1000E+01	0.3477E-02	0.1161E-05	0.3477E-02	0.02
5	115.00	44.00	-0.3083E+00	-0.1043E+01	0.2664E-02	0.3682E-03	0.2689E-02	7.87
6	145.00	44.00	-0.1770E+00	-0.1039E+01	0.1529E-02	0.3352E-03	0.1565E-02	12.36
7	180.00	44.00	-0.7426E-01	-0.1021E+01	0.6416E-03	0.1857E-03	0.6679E-03	16.14
8	220.00	44.00	-0.1711E-01	-0.1010E+01	0.1478E-03	0.8382E-04	0.1699E-03	29.56
9	15.00	64.00	-0.1193E+00	-0.7733E+00	0.1031E-02	-0.1959E-02	0.2213E-02	-62.25
10	40.00	64.00	-0.3212E+00	-0.8056E+00	0.2775E-02	-0.1680E-02	0.3244E-02	-31.19
11	53.50	64.00	-0.4160E+00	-0.8450E+00	0.3594E-02	-0.1339E-02	0.3835E-02	-20.43
12	78.50	64.00	-0.4888E+00	-0.1006E+01	0.4223E-02	0.5018E-04	0.4223E-02	0.68
13	115.00	64.00	-0.3088E+00	-0.1150E+01	0.2668E-02	0.1293E-02	0.2965E-02	25.86
14	145.00	64.00	-0.1526E+00	-0.1118E+01	0.1318E-02	0.1017E-02	0.1665E-02	37.64
15	180.00	64.00	-0.5577E-01	-0.1061E+01	0.4818E-03	0.5307E-03	0.7168E-03	47.76
16	220.00	64.00	-0.1208E-01	-0.1026E+01	0.1044E-03	0.2262E-03	0.2492E-03	65.23
17	15.00	81.00	-0.1183E+00	-0.6313E+00	0.1022E-02	-0.3186E-02	0.3346E-02	-72.21
18	40.00	81.00	-0.3680E+00	-0.6499E+00	0.3179E-02	-0.3025E-02	0.4388E-02	-43.57
19	53.50	81.00	-0.5353E+00	-0.7200E+00	0.4625E-02	-0.2419E-02	0.5219E-02	-27.61
20	59.88	81.00	-0.6688E+00	-0.7608E+00	0.5778E-02	-0.2067E-02	0.6137E-02	-19.68
21	74.13	81.00	-0.8084E+00	-0.9669E+00	0.5256E-02	-0.2856E-03	0.5264E-02	-3.11
22	92.75	81.00	-0.6744E+00	-0.1260E+01	0.5827E-02	0.2249E-02	0.6246E-02	21.10
23	115.00	81.00	-0.3058E+00	-0.1259E+01	0.2642E-02	0.2239E-02	0.3463E-02	40.28
24	145.00	81.00	-0.1032E+00	-0.1193E+01	0.8920E-03	0.1665E-02	0.1889E-02	61.82
25	180.00	81.00	-0.2726E-01	-0.1086E+01	0.2355E-03	0.7422E-03	0.7787E-03	72.40
26	220.00	81.00	-0.5021E-02	-0.1035E+01	0.4338E-04	0.2990E-03	0.3021E-03	81.74
27	15.00	98.50	-0.9268E-01	-0.8785E+00	0.8008E-02	-0.1050E-01	0.1320E-01	-52.66
28	40.00	98.50	-0.3396E+00	-0.8024E+00	0.2934E-01	-0.1707E-01	0.3395E-01	-30.19
29	53.50	98.50	-0.5747E+00	-0.7418E+00	0.4965E-01	-0.2231E-01	0.5443E-01	-24.20
30	62.75	98.50	-0.8160E+00	-0.8084E+00	0.7050E-01	-0.1656E-01	0.7242E-01	-13.22
31	69.75	98.50	-0.1770E+01	-0.9229E+00	0.7646E-01	-0.3329E-02	0.7653E-01	-2.49
32	80.50	98.50	-0.7789E+00	-0.1101E+01	0.6730E-01	0.8747E-02	0.6787E-01	7.40
33	95.00	98.50	-0.7761E+00	-0.1243E+01	0.6705E-01	0.2098E-01	0.7026E-01	17.38
34	115.00	98.50	-0.2509E+00	-0.1165E+01	0.2167E-01	0.1427E-01	0.2595E-01	33.35
35	145.00	98.50	-0.5024E-01	-0.1055E+01	0.4341E-02	0.4767E-02	0.6447E-02	47.68
36	180.00	98.50	-0.8155E-02	-0.1014E+01	0.7046E-03	0.1234E-02	0.1421E-02	60.27
37	220.00	98.50	-0.9284E-03	-0.1004E+01	0.8021E-04	0.3719E-03	0.3804E-03	77.83
38	15.00	115.98	-0.3039E-01	-0.7779E+00	0.2626E-02	-0.1919E-01	0.1937E-01	-82.21
39	40.00	115.98	-0.5803E-01	-0.3551E+00	0.2507E-02	-0.2786E-01	0.2797E-01	-84.86
40	53.50	115.98	-0.2663E+00	0.1118E+00	0.2301E-01	-0.9606E-01	0.9877E-01	-76.53
41	59.50	115.98	-0.2010E+01	0.2453E+00	0.1737E+00	-0.1076E+00	0.2043E+00	-31.78
42	65.25	115.98	-0.1163E+01	-0.5262E+00	0.1005E+00	-0.4094E-01	0.1085E+00	-22.16
43	69.75	115.98	-0.2792E+01	-0.8230E+00	0.1206E+00	-0.7645E-02	0.1209E+00	-3.63
44	73.75	115.98	-0.1295E+01	-0.1071E+01	0.1119E+00	0.6126E-02	0.1121E+00	3.13
45	80.50	119.47	-0.1804E+01	-0.1288E+01	0.1558E+00	0.2487E-01	0.1578E+00	9.07
46	92.25	115.98	-0.5007E+00	-0.1887E+01	0.4326E-01	0.7665E-01	0.8802E-01	60.56
47	115.00	114.49	-0.1338E+00	-0.1358E+01	0.1156E-01	0.3093E-01	0.3302E-01	69.51
48	145.00	112.38	-0.1736E-01	-0.1084E+01	0.1500E-02	0.7286E-02	0.7439E-02	78.37
49	180.00	111.00	-0.2564E-02	-0.1020E+01	0.2215E-03	0.1771E-02	0.1785E-02	82.87
50	210.00	109.63	-0.2544E-03	-0.1004E+01	0.2198E-04	0.3518E-03	0.3524E-03	86.43

Table 3.1.6 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (2/2)

(SECTION NO. III)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
51	15.00	132.48	0.5623E-02	-0.8077E+00	-0.4859E-03	-0.1661E-01	0.1662E-01	88.33
52	35.00	127.72	0.1746E+00	-0.8166E+00	-0.1509E-01	-0.1585E-01	0.2188E-01	46.41
53	62.24	126.48	-0.2014E+01	-0.7280E+00	0.1741E-01	-0.2350E-03	0.1741E-01	-0.77
54	67.38	124.72	-0.2697E+01	-0.7341E+00	0.2330E-01	-0.2297E-03	0.2330E-01	-0.56
55	69.88	126.48	-0.2309E+01	-0.2178E+00	0.1995E-01	-0.6758E-03	0.1996E-01	-1.94
56	72.00	124.72	-0.2104E+01	0.1575E+00	0.1818E-01	-0.1000E-02	0.1820E-01	-3.15
57	76.50	126.48	-0.1792E+01	-0.1361E+00	0.1549E-01	-0.7464E-03	0.1550E-01	-2.76
58	84.24	126.48	-0.1989E+01	-0.3616E+00	0.1719E-01	-0.5516E-03	0.1719E-01	-1.84
59	62.73	133.50	-0.1937E+01	-0.6267E+00	0.1673E-01	-0.3225E-03	0.1674E-01	-1.10
60	70.00	133.50	-0.1850E+01	-0.5630E+00	0.1598E-01	-0.3776E-03	0.1599E-01	-1.35
61	76.50	133.50	-0.1957E+01	-0.4752E+00	0.1691E-01	-0.4534E-03	0.1692E-01	-1.54
62	83.72	133.50	-0.1900E+01	-0.3125E+00	0.1642E-01	-0.5940E-03	0.1643E-01	-2.07
63	63.18	140.00	-0.1801E+01	-0.6937E+00	0.1556E-01	-0.2647E-03	0.1557E-01	-0.97
64	70.00	140.00	-0.1820E+01	-0.5566E+00	0.1573E-01	-0.3831E-03	0.1573E-01	-1.40
65	76.50	140.00	-0.1792E+01	-0.4373E+00	0.1549E-01	-0.4862E-03	0.1549E-01	-1.80
66	83.24	140.00	-0.1812E+01	-0.3321E+00	0.1565E-01	-0.5770E-03	0.1566E-01	-2.11
67	63.59	146.00	-0.1694E+01	-0.6948E+00	0.1463E-01	-0.2637E-03	0.1464E-01	-1.03
68	70.00	146.00	-0.1686E+01	-0.5677E+00	0.1457E-01	-0.3735E-03	0.1457E-01	-1.47
69	76.50	146.00	-0.1693E+01	-0.4361E+00	0.1462E-01	-0.4872E-03	0.1463E-01	-1.91
70	82.80	146.00	-0.1692E+01	-0.3046E+00	0.1462E-01	-0.6009E-03	0.1463E-01	-2.35
71	64.00	152.00	-0.1562E+01	-0.7152E+00	0.1349E-01	-0.2461E-03	0.1349E-01	-1.04
72	70.00	152.00	-0.1559E+01	-0.5742E+00	0.1347E-01	-0.3679E-03	0.1348E-01	-1.56
73	76.50	152.00	-0.1558E+01	-0.4222E+00	0.1346E-01	-0.4992E-03	0.1347E-01	-2.12
74	82.36	152.00	-0.1563E+01	-0.2861E+00	0.1351E-01	-0.6168E-03	0.1352E-01	-2.61
75	64.42	158.00	-0.1411E+01	-0.7352E+00	0.1219E-01	-0.2288E-03	0.1219E-01	-1.08
76	70.00	158.00	-0.1407E+01	-0.5837E+00	0.1215E-01	-0.3597E-03	0.1216E-01	-1.70
77	76.50	158.00	-0.1407E+01	-0.4072E+00	0.1216E-01	-0.5122E-03	0.1217E-01	-2.41
78	81.92	158.00	-0.1413E+01	-0.2600E+00	0.1221E-01	-0.6394E-03	0.1222E-01	-3.00
79	64.83	164.00	-0.1235E+01	-0.7804E+00	0.1067E-01	-0.2071E-03	0.1067E-01	-1.11
80	70.00	164.00	-0.1230E+01	-0.5952E+00	0.1063E-01	-0.3498E-03	0.1063E-01	-1.89
81	76.50	164.00	-0.1230E+01	-0.3884E+00	0.1063E-01	-0.5284E-03	0.1064E-01	-2.85
82	81.47	164.00	-0.1237E+01	-0.2299E+00	0.1069E-01	-0.6653E-03	0.1071E-01	-3.56
83	65.24	170.00	-0.1027E+01	-0.7921E+00	0.8877E-02	-0.1796E-03	0.8879E-02	-1.16
84	70.00	170.00	-0.1020E+01	-0.6113E+00	0.8809E-02	-0.3358E-03	0.8815E-02	-2.18
85	76.50	170.00	-0.1020E+01	-0.3619E+00	0.8809E-02	-0.5513E-03	0.8826E-02	-3.58
86	81.03	170.00	-0.1034E+01	-0.1897E+00	0.8936E-02	-0.7001E-03	0.8963E-02	-4.48
87	65.62	175.50	-0.7978E+00	-0.8271E+00	0.6893E-02	-0.1494E-03	0.6894E-02	-1.24
88	70.00	175.50	-0.7923E+00	-0.6288E+00	0.6845E-02	-0.3207E-03	0.6853E-02	-2.68
89	76.50	175.50	-0.7948E+00	-0.3407E+00	0.6867E-02	-0.5696E-03	0.6891E-02	-4.74
90	80.62	175.50	-0.7943E+00	-0.1549E+00	0.6863E-02	-0.7302E-03	0.6901E-02	-6.07
91	66.00	181.00	-0.5322E+00	-0.8723E+00	0.4598E-02	-0.1103E-03	0.4600E-02	-1.37
92	70.00	181.00	-0.5160E+00	-0.6546E+00	0.4458E-02	-0.2985E-03	0.4468E-02	-3.83
93	76.50	181.00	-0.5119E+00	-0.2884E+00	0.4423E-02	-0.6148E-03	0.4466E-02	-7.91
94	80.21	179.50	-0.6009E+00	-0.8563E-01	0.5192E-02	-0.7900E-03	0.5251E-02	-8.65
95	66.38	186.50	-0.2219E+00	-0.9362E+00	0.1915E-02	-0.5503E-04	0.1916E-02	-1.65
96	70.00	186.50	-0.2025E+00	-0.7229E+00	0.1724E-02	-0.2359E-03	0.1740E-02	-7.79
97	75.74	186.50	-0.2057E+00	-0.3573E+00	0.1737E-02	-0.5429E-03	0.1820E-02	-17.35
98	66.55	190.63	-0.3668E-01	-0.1041E+01	0.2673E-03	0.3020E-04	0.2690E-03	6.45
99	70.00	192.25	-0.1490E-01	-0.1007E+01	0.8697E-04	0.4006E-05	0.8706E-04	2.64
100	73.99	190.63	0.2867E-01	-0.9723E+00	-0.2006E-03	-0.1938E-04	0.2015E-03	5.52

Table 3.1.7 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (1/3)

(SECTION NO. IV)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
1	0	0.1753E+03	0.1353E+03	0.0000E+00	0.1930E+00
2	0	0.1732E+03	0.1332E+03	0.0000E+00	0.1930E+00
3	0	0.1669E+03	0.1269E+03	0.0000E+00	0.1930E+00
4	0	0.1599E+03	0.1199E+03	0.0000E+00	0.1930E+00
5	0	0.1461E+03	0.1061E+03	0.0000E+00	0.1930E+00
6	0	0.1366E+03	0.9657E+02	0.0000E+00	0.1930E+00
7	0	0.1279E+03	0.8785E+02	0.0000E+00	0.1930E+00
8	0	0.1194E+03	0.7944E+02	0.0000E+00	0.1930E+00
9	0	0.1162E+03	0.7619E+02	0.0000E+00	0.1930E+00
10	0	0.1151E+03	0.7507E+02	0.0000E+00	0.1930E+00
11	0	0.1147E+03	0.7474E+02	0.0000E+00	0.1930E+00
12	0	0.1774E+03	0.1174E+03	0.0000E+00	0.1930E+00
13	0	0.1753E+03	0.1153E+03	0.0000E+00	0.1930E+00
14	0	0.1689E+03	0.1089E+03	0.0000E+00	0.1930E+00
15	0	0.1614E+03	0.1014E+03	0.0000E+00	0.1930E+00
16	0	0.1458E+03	0.8577E+02	0.0000E+00	0.1930E+00
17	0	0.1350E+03	0.7498E+02	0.0000E+00	0.1930E+00
18	0	0.1262E+03	0.6623E+02	0.0000E+00	0.1930E+00
19	0	0.1184E+03	0.5836E+02	0.0000E+00	0.1930E+00
20	0	0.1156E+03	0.5563E+02	0.0000E+00	0.1930E+00
21	0	0.1147E+03	0.5472E+02	0.0000E+00	0.1930E+00
22	0	0.1145E+03	0.5446E+02	0.0000E+00	0.1930E+00
23	0	0.1832E+03	0.1032E+03	0.0000E+00	0.1930E+00
24	0	0.1817E+03	0.1017E+03	0.0000E+00	0.1930E+00
25	0	0.1758E+03	0.9583E+02	0.0000E+00	0.1930E+00
26	0	0.1667E+03	0.8666E+02	0.0000E+00	0.1930E+00
27	0	0.1554E+03	0.7537E+02	0.0000E+00	0.1930E+00
28	0	0.1507E+03	0.7071E+02	0.0000E+00	0.1930E+00
29	0	0.1434E+03	0.6344E+02	0.0000E+00	0.1930E+00
30	0	0.1342E+03	0.5415E+02	0.0000E+00	0.1930E+00
31	0	0.1300E+03	0.4997E+02	0.0000E+00	0.1930E+00
32	0	0.1206E+03	0.4062E+02	0.0000E+00	0.1930E+00
33	0	0.1153E+03	0.3532E+02	0.0000E+00	0.1930E+00
34	0	0.1141E+03	0.3415E+02	0.0000E+00	0.1930E+00
35	0	0.1138E+03	0.3381E+02	0.0000E+00	0.1930E+00
36	0	0.1137E+03	0.3372E+02	0.0000E+00	0.1930E+00
37	0	0.1845E+03	0.8898E+02	0.0000E+00	0.2160E+00
38	0	0.1833E+03	0.8785E+02	0.0000E+00	0.2160E+00
39	0	0.1791E+03	0.8364E+02	0.0000E+00	0.2160E+00
40	0	0.1704E+03	0.7492E+02	0.0000E+00	0.2160E+00
41	0	0.1565E+03	0.6095E+02	0.0000E+00	0.2160E+00
42	0	0.1511E+03	0.5555E+02	0.0000E+00	0.1930E+00
43	0	0.1419E+03	0.4639E+02	0.0000E+00	0.2160E+00
44	0	0.1312E+03	0.3568E+02	0.0000E+00	0.2160E+00
45	0	0.1262E+03	0.3072E+02	0.0000E+00	0.2160E+00
46	0	0.1184E+03	0.2295E+02	0.0000E+00	0.2160E+00
47	0	0.1147E+03	0.1921E+02	0.0000E+00	0.2160E+00
48	0	0.1139E+03	0.1839E+02	0.0000E+00	0.2160E+00
49	0	0.1137E+03	0.1817E+02	0.0000E+00	0.2160E+00
50	0	0.1136E+03	0.1811E+02	0.0000E+00	0.2160E+00

Table 3.1.7 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (2/3)

(SECTION NO. IV)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
51	0	0.1874E+03	0.7399E+02	0.0000E+00	0.2160E+00
52	0	0.1871E+03	0.7366E+02	0.0000E+00	0.2160E+00
53	0	0.1866E+03	0.7318E+02	0.0000E+00	0.2160E+00
54	1	0.1890E+03	0.7560E+02	0.5118E+00	0.2160E+00
55	1	0.1890E+03	0.6700E+02	0.1790E+00	0.2160E+00
56	1	0.1890E+03	0.6800E+02	0.4497E+00	0.2160E+00
57	1	0.1890E+03	0.6900E+02	0.4257E+00	0.2160E+00
58	1	0.1890E+03	0.7560E+02	0.2393E+01	0.2160E+00
59	0	0.1654E+03	0.5200E+02	0.0000E+00	0.2160E+00
60	0	0.1611E+03	0.4766E+02	0.0000E+00	0.2160E+00
61	0	0.1518E+03	0.3844E+02	0.0000E+00	0.1930E+00
62	0	0.1474E+03	0.3402E+02	0.0000E+00	0.2160E+00
63	0	0.1354E+03	0.2200E+02	0.0000E+00	0.2160E+00
64	1	0.1134E+03	0.6714E-06	-0.2108E+01	0.2160E+00
65	1	0.1134E+03	0.6714E-06	-0.7861E+00	0.2160E+00
66	1	0.1134E+03	0.6714E-06	-0.6980E+00	0.2160E+00
67	1	0.1134E+03	0.6714E-06	-0.2704E+00	0.2160E+00
68	1	0.1134E+03	0.6714E-06	-0.7113E-01	0.2160E+00
69	1	0.1134E+03	0.6714E-06	-0.3006E-01	0.2160E+00
70	1	0.1134E+03	0.6714E-06	-0.1150E-01	0.2160E+00
71	0	0.1134E+03	-0.1160E+02	0.0000E+00	0.1433E+00
72	0	0.1134E+03	-0.1160E+02	0.0000E+00	0.1433E+00
73	0	0.1134E+03	-0.1160E+02	0.0000E+00	0.1433E+00
74	0	0.1134E+03	-0.1160E+02	0.0000E+00	0.1433E+00
75	0	0.1134E+03	-0.1160E+02	0.0000E+00	0.1433E+00
76	0	0.1134E+03	-0.1660E+02	0.0000E+00	0.1272E+00
77	0	0.1134E+03	-0.1660E+02	0.0000E+00	0.1272E+00
78	0	0.1134E+03	-0.1660E+02	0.0000E+00	0.1272E+00
79	0	0.1134E+03	-0.1660E+02	0.0000E+00	0.1272E+00
80	0	0.1134E+03	-0.2160E+02	0.0000E+00	0.1186E+00
81	0	0.1134E+03	-0.2160E+02	0.0000E+00	0.1186E+00
82	0	0.1134E+03	-0.2160E+02	0.0000E+00	0.1186E+00
83	0	0.1134E+03	-0.2660E+02	0.0000E+00	0.1099E+00
84	0	0.1134E+03	-0.2660E+02	0.0000E+00	0.1099E+00
85	1	0.1890E+03	0.6800E+02	0.1219E+00	0.1930E+00
86	0	0.1657E+03	0.4470E+02	0.0000E+00	0.1930E+00
87	0	0.1543E+03	0.3334E+02	0.0000E+00	0.1930E+00
88	0	0.1415E+03	0.2052E+02	0.0000E+00	0.1930E+00
89	2	0.1210E+03	0.0000E+00	-0.1201E+00	0.1930E+00
90	1	0.1890E+03	0.6200E+02	0.1042E+00	0.1930E+00
91	0	0.1690E+03	0.4202E+02	0.0000E+00	0.1930E+00
92	0	0.1568E+03	0.2977E+02	0.0000E+00	0.1930E+00
93	0	0.1449E+03	0.1788E+02	0.0000E+00	0.1930E+00
94	2	0.1270E+03	0.0000E+00	-0.1040E+00	0.1930E+00
95	1	0.1890E+03	0.5600E+02	0.8802E-01	0.1930E+00
96	0	0.1719E+03	0.3886E+02	0.0000E+00	0.1930E+00
97	0	0.1604E+03	0.2737E+02	0.0000E+00	0.1930E+00
98	0	0.1484E+03	0.1544E+02	0.0000E+00	0.1930E+00
99	2	0.1330E+03	0.0000E+00	-0.9693E-01	0.1930E+00
100	1	0.1890E+03	0.5100E+02	0.6817E-01	0.1930E+00

Table 3.1.7 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (3/3)

(SECTION NO. IV)

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
101	0	0.1757E+03	0.3771E+02	0.0000E+00	0.1930E+00
102	0	0.1660E+03	0.2805E+02	0.0000E+00	0.1930E+00
103	0	0.1556E+03	0.1756E+02	0.0000E+00	0.1930E+00
104	2	0.1380E+03	0.0000E+00	-0.8874E-01	0.1930E+00
105	1	0.1890E+03	0.4600E+02	0.5523E-01	0.1930E+00
106	0	0.1795E+03	0.3649E+02	0.0000E+00	0.1930E+00
107	0	0.1728E+03	0.2981E+02	0.0000E+00	0.1930E+00
108	0	0.1684E+03	0.2544E+02	0.0000E+00	0.1930E+00
109	-2	0.1430E+03	0.0000E+00	0.0000E+00	0.1930E+00
110	1	0.1890E+03	0.4100E+02	0.4784E-01	0.1930E+00
111	0	0.1814E+03	0.3338E+02	0.0000E+00	0.1930E+00
112	0	0.1740E+03	0.2597E+02	0.0000E+00	0.1930E+00
113	0	0.1641E+03	0.1608E+02	0.0000E+00	0.1930E+00
114	2	0.1480E+03	0.0000E+00	-0.9970E-01	0.1930E+00
115	1	0.1890E+03	0.3500E+02	0.2880E-01	0.1930E+00
116	0	0.1859E+03	0.3195E+02	0.0000E+00	0.1930E+00
117	0	0.1833E+03	0.2934E+02	0.0000E+00	0.1930E+00
118	0	0.1821E+03	0.2815E+02	0.0000E+00	0.1930E+00
119	-2	0.1845E+03	0.3050E+02	0.0000E+00	0.1930E+00
120	1	0.1890E+03	0.2900E+02	0.8823E-02	0.1930E+00
121	0	0.1885E+03	0.2846E+02	0.0000E+00	0.1930E+00
122	0	0.1880E+03	0.2796E+02	0.0000E+00	0.1930E+00
123	0	0.1876E+03	0.2765E+02	0.0000E+00	0.1930E+00
124	-2	0.1870E+03	0.2700E+02	0.0000E+00	0.1930E+00
125	1	0.1890E+03	0.2300E+02	0.1792E-02	0.1930E+00
126	0	0.1889E+03	0.2291E+02	0.0000E+00	0.1930E+00
127	0	0.1888E+03	0.2279E+02	0.0000E+00	0.1930E+00
128	0	0.1887E+03	0.2271E+02	0.0000E+00	0.1930E+00
129	-2	0.1888E+03	0.2282E+02	0.0000E+00	0.1930E+00
130	1	0.1890E+03	0.1700E+02	0.3407E-03	0.1930E+00
131	0	0.1890E+03	0.1699E+02	0.0000E+00	0.1930E+00
132	0	0.1890E+03	0.1697E+02	0.0000E+00	0.1930E+00
133	0	0.1890E+03	0.1697E+02	0.0000E+00	0.1930E+00
134	-2	0.1889E+03	0.1694E+02	0.0000E+00	0.1930E+00
135	1	0.1890E+03	0.1100E+02	0.4742E-04	0.1930E+00
136	0	0.1890E+03	0.1100E+02	0.0000E+00	0.1930E+00
137	0	0.1890E+03	0.1100E+02	0.0000E+00	0.1930E+00
138	0	0.1890E+03	0.1100E+02	0.0000E+00	0.1930E+00
139	-2	0.1890E+03	0.1100E+02	0.0000E+00	0.1930E+00
140	1	0.1890E+03	0.5000E+01	0.4655E-05	0.1930E+00
141	0	0.1890E+03	0.5000E+01	0.0000E+00	0.1930E+00
142	0	0.1890E+03	0.5000E+01	0.0000E+00	0.1930E+00
143	-2	0.1890E+03	0.5000E+01	0.0000E+00	0.1930E+00
144	1	0.1890E+03	0.0000E+00	0.3517E-06	0.1930E+00
145	0	0.1890E+03	0.7311E-05	0.0000E+00	0.1930E+00
146	0	0.1890E+03	-0.1067E-04	0.0000E+00	0.1930E+00
147	-2	0.1890E+03	-0.3993E-04	0.0000E+00	0.1930E+00
148	0	0.1890E+03	-0.6500E+01	0.0000E+00	0.1575E+00
149	-2	0.1890E+03	-0.6500E+01	0.0000E+00	0.1575E+00

FLOWIN = 0.4485E+01

FLOWOUT = -0.4485E+01

TOTAL = -0.1287E-04

Table 3.1.8 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (1/3)

(SECTION NO. IV)

****

***** ELEMENT VELOCITY *****

****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
1	10.00	50.00	-0.1041E+00	-0.8950E+00	0.8993E-03	-0.9073E-03	0.1277E-02	-45.25
2	30.00	50.00	-0.3151E+00	-0.8974E+00	0.2723E-02	-0.8863E-03	0.2863E-02	-18.03
3	47.50	50.00	-0.4886E+00	-0.9132E+00	0.4222E-02	-0.7501E-03	0.4288E-02	-10.08
4	67.00	50.00	-0.6116E+00	-0.9705E+00	0.5284E-02	-0.2551E-03	0.5290E-02	-2.76
5	87.50	50.00	-0.5973E+00	-0.1048E+01	0.5161E-02	0.4115E-03	0.5177E-02	4.56
6	105.50	50.00	-0.4596E+00	-0.1080E+01	0.3971E-02	0.6939E-03	0.4031E-02	9.91
7	130.00	50.00	-0.2715E+00	-0.1068E+01	0.2345E-02	0.5845E-03	0.2417E-02	13.99
8	157.50	50.00	-0.1195E+00	-0.1041E+01	0.1032E-02	0.3549E-03	0.1092E-02	18.97
9	180.00	50.00	-0.5081E-01	-0.1023E+01	0.4390E-03	0.1963E-03	0.4809E-03	24.09
10	200.00	50.00	-0.1475E-01	-0.1016E+01	0.1275E-03	0.1367E-03	0.1869E-03	46.99
11	10.00	70.00	-0.8802E-01	-0.6940E+00	0.7605E-03	-0.2644E-02	0.2751E-02	-73.95
12	30.00	70.00	-0.3065E+00	-0.6669E+00	0.2648E-02	-0.2878E-02	0.3911E-02	-47.38
13	47.50	70.00	-0.5579E+00	-0.6944E+00	0.4820E-02	-0.2640E-02	0.5496E-02	-28.71
14	58.38	70.00	-0.8363E+00	-0.7345E+00	0.7225E-02	-0.2294E-02	0.7581E-02	-17.62
15	68.38	70.00	-0.7640E+00	-0.9208E+00	0.6601E-02	-0.6839E-03	0.6636E-02	-5.92
16	77.00	70.00	-0.9092E+00	-0.1117E+01	0.7856E-02	0.1007E-02	0.7920E-02	7.30
17	81.75	70.00	-0.8443E+00	-0.1117E+01	0.7295E-02	0.1007E-02	0.7364E-02	7.86
18	90.25	70.00	-0.6511E+00	-0.1237E+01	0.5626E-02	0.2045E-02	0.5986E-02	19.98
19	105.50	70.00	-0.4762E+00	-0.1266E+01	0.4115E-02	0.2294E-02	0.4711E-02	29.15
20	130.00	70.00	-0.2195E+00	-0.1216E+01	0.1897E-02	0.1867E-02	0.2662E-02	44.55
21	157.50	70.00	-0.7801E-01	-0.1113E+01	0.6740E-03	0.9764E-03	0.1186E-02	55.38
22	180.00	70.00	-0.3116E-01	-0.1060E+01	0.2693E-03	0.5174E-03	0.5832E-03	62.51
23	200.00	70.00	-0.8858E-02	-0.1041E+01	0.7654E-04	0.3563E-03	0.3644E-03	77.88
24	10.00	87.75	-0.6498E-01	-0.9055E+00	0.5614E-02	-0.8168E-02	0.9911E-02	-55.50
25	30.00	87.75	-0.2520E+00	-0.8405E+00	0.2178E-01	-0.1378E-01	0.2577E-01	-32.33
26	47.50	87.75	-0.5966E+00	-0.7721E+00	0.5154E-01	-0.1969E-01	0.5518E-01	-20.91
27	61.75	87.75	-0.9354E+00	-0.8442E+00	0.8082E-01	-0.1346E-01	0.8193E-01	-9.46
28	69.75	87.75	-0.2012E+01	-0.9543E+00	0.8693E-01	-0.1974E-02	0.8695E-01	-1.30
29	75.00	87.75	-0.1027E+01	-0.1039E+01	0.8874E-01	0.3363E-02	0.8880E-01	2.17
30	84.50	87.75	-0.9090E+00	-0.1146E+01	0.7853E-01	0.1258E-01	0.7954E-01	9.10
31	93.00	87.75	-0.7627E+00	-0.1217E+01	0.6589E-01	0.1873E-01	0.6850E-01	15.87
32	105.50	87.75	-0.4504E+00	-0.1191E+01	0.3891E-01	0.1651E-01	0.4227E-01	22.99
33	130.00	87.75	-0.1507E+00	-0.1090E+01	0.1302E-01	0.7763E-02	0.1516E-01	30.81
34	157.50	87.75	-0.3981E-01	-0.1028E+01	0.3440E-02	0.2421E-02	0.4206E-02	35.14
35	180.00	87.75	-0.1400E-01	-0.1013E+01	0.1210E-02	0.1107E-02	0.1640E-02	42.46
36	200.00	87.75	-0.3792E-02	-0.1008E+01	0.3277E-03	0.7074E-03	0.7796E-03	65.15
37	10.00	104.45	-0.3670E-01	-0.8147E+00	0.3171E-02	-0.1601E-01	0.1632E-01	-78.80
38	30.00	104.45	-0.1171E+00	-0.6885E+00	0.1011E-01	-0.2691E-01	0.2875E-01	-69.40
39	46.00	104.45	-0.2629E+00	-0.3174E+00	0.2271E-01	-0.5898E-01	0.6320E-01	-68.94
40	53.50	104.45	0.6636E-06	0.3795E-01	-0.5734E-07	-0.8968E-01	0.8968E-01	90.00
41	10.00	117.45	-0.2930E-02	-0.7814E+00	0.2531E-03	-0.1889E-01	0.1889E-01	-89.23
42	30.00	116.95	-0.4356E-02	-0.6930E+00	0.3763E-03	-0.2652E-01	0.2652E-01	-89.19
43	42.25	115.05	0.2688E+00	-0.6333E+00	-0.2322E-01	-0.3168E-01	0.3928E-01	53.76
44	58.00	104.45	-0.1966E+01	0.3795E-01	0.1699E+00	-0.8968E-01	0.1921E+00	-27.83
45	64.75	104.45	-0.1220E+01	-0.6023E+00	0.1054E+00	-0.3436E-01	0.1109E+00	-18.05
46	69.75	104.45	-0.2923E+01	-0.8490E+00	0.1263E+00	-0.6522E-02	0.1264E+00	-2.96
47	73.50	104.45	-0.1358E+01	-0.1051E+01	0.1174E+00	0.4393E-02	0.1174E+00	2.14
48	80.25	104.45	-0.1337E+01	-0.1363E+01	0.1155E+00	0.3133E-01	0.1197E+00	15.17
49	87.25	104.45	-0.2000E+01	-0.1993E+01	0.1728E+00	0.8579E-01	0.1929E+00	26.41
50	93.00	104.45	-0.4139E+00	-0.1854E+01	0.3576E-01	0.7381E-01	0.8202E-01	64.15

Table 3.1.8 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (2/3)

(SECTION NO. IV)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	M.C.(X)	M.C.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
51	105.50	104.45	-0.2044E+00	-0.1499E+01	0.1766E-01	0.4308E-01	0.4656E-01	67.71
52	130.00	104.45	-0.6236E-01	-0.1177E+01	0.5388E-02	0.1531E-01	0.1623E-01	70.62
53	157.50	104.45	-0.1632E-01	-0.1050E+01	0.1410E-02	0.4315E-02	0.4539E-02	71.90
54	180.00	104.45	-0.5590E-02	-0.1021E+01	0.4830E-03	0.1806E-02	0.1870E-02	75.03
55	200.00	104.45	-0.1514E-02	-0.1013E+01	0.1308E-03	0.1121E-02	0.1128E-02	83.34
56	105.50	116.30	-0.1162E-14	-0.1000E+01	0.8062E-16	-0.4136E-08	0.4136E-08	-90.00
57	130.00	119.20	0.1691E-06	-0.1000E+01	-0.8857E-08	-0.2498E-07	0.2651E-07	70.48
58	157.50	119.20	-0.2701E-06	-0.1000E+01	0.1415E-07	-0.2186E-07	0.2604E-07	-57.08
59	180.00	119.20	0.1647E-06	-0.1000E+01	-0.8629E-08	-0.3123E-08	0.9176E-08	19.90
60	200.00	119.20	-0.3428E-07	-0.1000E+01	0.1796E-08	-0.1561E-07	0.1572E-07	-83.44
61	130.00	126.25	0.3515E-06	-0.1000E+01	-0.5721E-08	-0.2425E-07	0.2492E-07	76.73
62	157.50	127.50	-0.8335E-06	-0.1000E+01	0.1180E-07	-0.4221E-08	0.1254E-07	-19.68
63	180.00	127.50	0.5861E-06	-0.1000E+01	-0.8301E-08	0.3377E-08	0.8962E-08	-22.14
64	200.00	127.50	0.6388E-07	-0.1000E+01	-0.9047E-09	-0.1351E-07	0.1354E-07	86.17
65	157.50	131.25	-0.1130E-05	-0.1000E+01	0.1085E-07	0.2289E-07	0.2533E-07	64.63
66	180.00	132.50	0.1378E-05	-0.1000E+01	-0.1277E-07	0.2209E-08	0.1296E-07	-9.81
67	200.00	132.50	0.5633E-07	-0.1000E+01	-0.5218E-09	-0.1546E-07	0.1547E-07	88.07
68	180.00	136.25	0.1923E-05	-0.1000E+01	-0.1587E-07	-0.7379E-08	0.1750E-07	24.94
69	200.00	137.50	-0.2255E-08	-0.1000E+01	0.1785E-10	-0.8493E-08	0.8493E-08	-89.88
70	61.28	117.20	-0.2049E+01	-0.8306E+00	0.1770E-01	-0.1463E-03	0.1770E-01	-0.47
71	67.38	115.30	-0.2894E+01	-0.9607E+00	0.2500E-01	-0.3399E-04	0.2500E-01	-0.08
72	69.88	117.20	-0.2421E+01	-0.4510E+00	0.2092E-01	-0.4743E-03	0.2092E-01	-1.30
73	72.00	115.30	-0.2212E+01	-0.8985E-01	0.1911E-01	-0.7864E-03	0.1912E-01	-2.36
74	76.00	117.20	-0.2070E+01	-0.1418E+00	0.1788E-01	-0.7415E-03	0.1790E-01	-2.37
75	84.20	117.20	-0.2043E+01	-0.2561E+00	0.1765E-01	-0.6427E-03	0.1766E-01	-2.09
76	61.77	124.00	-0.2070E+01	-0.5719E+00	0.1789E-01	-0.3699E-03	0.1789E-01	-1.18
77	70.00	124.00	-0.1968E+01	-0.5208E+00	0.1700E-01	-0.4140E-03	0.1701E-01	-1.39
78	76.00	124.00	-0.2059E+01	-0.5182E+00	0.1779E-01	-0.4163E-03	0.1779E-01	-1.34
79	83.67	124.00	-0.2054E+01	-0.3805E+00	0.1774E-01	-0.5353E-03	0.1775E-01	-1.73
80	62.21	130.00	-0.1939E+01	-0.6221E+00	0.1675E-01	-0.3265E-03	0.1675E-01	-1.12
81	70.00	130.00	-0.1978E+01	-0.4634E+00	0.1709E-01	-0.4636E-03	0.1710E-01	-1.55
82	76.00	130.00	-0.1985E+01	-0.4026E+00	0.1715E-01	-0.5162E-03	0.1716E-01	-1.72
83	83.21	130.00	-0.1980E+01	-0.3572E+00	0.1711E-01	-0.5554E-03	0.1711E-01	-1.86
84	62.61	135.50	-0.1735E+01	-0.4879E+00	0.1499E-01	-0.4425E-03	0.1500E-01	-1.69
85	70.00	135.50	-0.1762E+01	-0.4705E-01	0.1523E-01	-0.8234E-03	0.1525E-01	-3.10
86	76.00	135.50	-0.1869E+01	0.2791E+00	0.1614E-01	-0.1105E-02	0.1618E-01	-3.92
87	82.78	135.50	-0.2183E+01	0.4134E-01	0.1886E-01	-0.8997E-03	0.1888E-01	-2.73
88	62.98	140.50	-0.1418E+01	-0.5180E+00	0.1225E-01	-0.4165E-03	0.1226E-01	-1.95
89	70.00	140.50	-0.1362E+01	0.5428E-01	0.1177E-01	-0.9109E-03	0.1181E-01	-4.43
90	76.00	140.50	-0.1238E+01	0.9647E+00	0.1070E-01	-0.1698E-02	0.1083E-01	-9.02
91	82.39	140.50	-0.3172E+01	0.5414E+00	0.2741E-01	-0.1332E-02	0.2744E-01	-2.78
92	63.35	145.50	-0.1172E+01	-0.7257E+00	0.1012E-01	-0.2370E-03	0.1013E-01	-1.34
93	70.00	145.50	-0.1175E+01	-0.6949E+00	0.1015E-01	-0.2636E-03	0.1015E-01	-1.49
94	76.00	145.50	-0.1188E+01	-0.1320E+01	0.1026E-01	0.2764E-03	0.1027E-01	1.54
95	82.00	145.50	-0.3461E+01	-0.1206E+01	0.2990E-01	0.1780E-03	0.2990E-01	0.34
96	63.75	151.00	-0.8204E+00	-0.5596E+00	0.7088E-02	-0.3805E-03	0.7098E-02	-3.07
97	70.00	151.00	-0.8347E+00	0.1611E+00	0.7212E-02	-0.1003E-02	0.7281E-02	-7.92
98	76.00	151.00	-0.9236E+00	0.1286E+01	0.7980E-02	-0.1975E-02	0.8220E-02	-13.90
99	81.57	151.00	-0.1335E+01	0.3443E+01	0.1154E-01	-0.3839E-02	0.1216E-01	-18.41
100	64.19	157.00	-0.3195E+00	-0.7674E+00	0.2761E-02	-0.2010E-03	0.2768E-02	-4.16

Table 3.1.8 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (3/3)

(SECTION NO. IV)

****

***** ELEMENT VELOCITY *****

****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
101	70.00	157.00	-0.2583E+00	-0.4053E+00	0.2232E-02	-0.5138E-03	0.2290E-02	-12.96
102	76.00	157.00	-0.1256E+00	-0.1562E+00	0.1085E-02	-0.7290E-03	0.1307E-02	-33.90
103	81.10	157.00	0.2019E+00	-0.3176E+00	-0.1745E-02	-0.5896E-03	0.1842E-02	18.67
104	64.62	163.00	-0.6658E-01	-0.9574E+00	0.5752E-03	-0.3682E-04	0.5764E-03	-3.66
105	70.00	163.00	-0.5148E-01	-0.8938E+00	0.4448E-03	-0.9175E-04	0.4541E-03	-11.66
106	76.00	163.00	-0.3288E-01	-0.8434E+00	0.2840E-03	-0.1353E-03	0.3146E-03	-25.47
107	80.64	163.00	-0.8187E-01	-0.7662E+00	0.7073E-03	-0.2020E-03	0.7356E-03	-15.94
108	65.06	169.00	-0.1326E-01	-0.9926E+00	0.1145E-03	-0.6371E-05	0.1147E-03	-3.18
109	70.00	169.00	-0.1179E-01	-0.9782E+00	0.1019E-03	-0.1884E-04	0.1036E-03	-10.47
110	76.00	169.00	-0.7013E-02	-0.9631E+00	0.6059E-04	-0.3191E-04	0.6848E-04	-27.78
111	80.17	169.00	0.1917E-01	-0.9671E+00	-0.1656E-03	-0.2838E-04	0.1681E-03	9.72
112	65.50	175.00	-0.2260E-02	-0.9988E+00	0.1952E-04	-0.1028E-05	0.1955E-04	-3.01
113	70.00	175.00	-0.1595E-02	-0.9967E+00	0.1378E-04	-0.2813E-05	0.1407E-04	-11.54
114	76.00	175.00	-0.5997E-03	-0.9953E+00	0.5182E-05	-0.4089E-05	0.6601E-05	-38.28
115	79.70	175.00	-0.7809E-02	-0.9932E+00	0.6747E-04	-0.5895E-05	0.6772E-04	-4.99
116	65.94	181.00	-0.1734E-03	-0.9999E+00	0.1498E-05	-0.4769E-07	0.1499E-05	-1.82
117	70.00	181.00	-0.2068E-03	-0.9997E+00	0.1786E-05	-0.2309E-06	0.1801E-05	-7.37
118	76.00	181.00	-0.1520E-03	-0.9994E+00	0.1313E-05	-0.5410E-06	0.1420E-05	-22.39
119	79.23	179.50	0.3866E-02	-0.9992E+00	-0.3340E-04	-0.6937E-06	0.3341E-04	1.19
120	66.34	186.50	-0.3983E-04	-0.1000E+01	0.3441E-06	-0.1287E-07	0.3444E-06	-2.14
121	70.00	186.50	-0.1383E-04	-0.1000E+01	0.1195E-06	-0.3183E-07	0.1237E-06	-14.91
122	75.35	186.50	0.1277E-04	-0.1000E+01	-0.1103E-06	-0.3059E-07	0.1145E-06	15.50
123	66.53	190.63	0.7696E-05	-0.1000E+01	-0.5624E-07	0.1742E-08	0.5627E-07	-1.77
124	70.00	192.25	-0.7706E-06	-0.1000E+01	0.4605E-08	0.2137E-09	0.4610E-08	2.66
125	73.85	190.63	-0.8628E-05	-0.1000E+01	0.6305E-07	-0.1220E-08	0.6306E-07	-1.11

Table 3.1.9 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (1/3)

(SECTION NO. V)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
1	0	0.1790E+03	0.1190E+03	0.0000E+00	0.1930E+00
2	0	0.1719E+03	0.1119E+03	0.0000E+00	0.1930E+00
3	0	0.1693E+03	0.1093E+03	0.0000E+00	0.1930E+00
4	0	0.1674E+03	0.1074E+03	0.0000E+00	0.1930E+00
5	0	0.1561E+03	0.9606E+02	0.0000E+00	0.1930E+00
6	0	0.1538E+03	0.9382E+02	0.0000E+00	0.1930E+00
7	0	0.1456E+03	0.8563E+02	0.0000E+00	0.1930E+00
8	0	0.1417E+03	0.8166E+02	0.0000E+00	0.1930E+00
9	0	0.1384E+03	0.7837E+02	0.0000E+00	0.1930E+00
10	0	0.1368E+03	0.7680E+02	0.0000E+00	0.1930E+00
11	0	0.1363E+03	0.7630E+02	0.0000E+00	0.1930E+00
12	0	0.1805E+03	0.1005E+03	0.0000E+00	0.1930E+00
13	0	0.1732E+03	0.9317E+02	0.0000E+00	0.1930E+00
14	0	0.1704E+03	0.9038E+02	0.0000E+00	0.1930E+00
15	0	0.1685E+03	0.8845E+02	0.0000E+00	0.1930E+00
16	0	0.1641E+03	0.8410E+02	0.0000E+00	0.1930E+00
17	0	0.1620E+03	0.8202E+02	0.0000E+00	0.1930E+00
18	0	0.1553E+03	0.7528E+02	0.0000E+00	0.1930E+00
19	0	0.1529E+03	0.7294E+02	0.0000E+00	0.1930E+00
20	0	0.1446E+03	0.6463E+02	0.0000E+00	0.1930E+00
21	0	0.1409E+03	0.6090E+02	0.0000E+00	0.1930E+00
22	0	0.1380E+03	0.5801E+02	0.0000E+00	0.1930E+00
23	0	0.1367E+03	0.5666E+02	0.0000E+00	0.1930E+00
24	0	0.1362E+03	0.5623E+02	0.0000E+00	0.1930E+00
25	0	0.1816E+03	0.8659E+02	0.0000E+00	0.2160E+00
26	0	0.1742E+03	0.7917E+02	0.0000E+00	0.2160E+00
27	0	0.1712E+03	0.7623E+02	0.0000E+00	0.2160E+00
28	0	0.1692E+03	0.7417E+02	0.0000E+00	0.2160E+00
29	0	0.1644E+03	0.6937E+02	0.0000E+00	0.2160E+00
30	0	0.1620E+03	0.6704E+02	0.0000E+00	0.1930E+00
31	0	0.1547E+03	0.5968E+02	0.0000E+00	0.2160E+00
32	0	0.1522E+03	0.5718E+02	0.0000E+00	0.2160E+00
33	0	0.1438E+03	0.4883E+02	0.0000E+00	0.2160E+00
34	0	0.1404E+03	0.4538E+02	0.0000E+00	0.2160E+00
35	0	0.1378E+03	0.4277E+02	0.0000E+00	0.2160E+00
36	0	0.1366E+03	0.4157E+02	0.0000E+00	0.2160E+00
37	0	0.1362E+03	0.4118E+02	0.0000E+00	0.2160E+00
38	0	0.1841E+03	0.7411E+02	0.0000E+00	0.2160E+00
39	0	0.1771E+03	0.6713E+02	0.0000E+00	0.2160E+00
40	0	0.1737E+03	0.6371E+02	0.0000E+00	0.2160E+00
41	0	0.1712E+03	0.6120E+02	0.0000E+00	0.2160E+00
42	0	0.1655E+03	0.5547E+02	0.0000E+00	0.2160E+00
43	0	0.1622E+03	0.5217E+02	0.0000E+00	0.1930E+00
44	0	0.1526E+03	0.4264E+02	0.0000E+00	0.2160E+00
45	0	0.1498E+03	0.3976E+02	0.0000E+00	0.2160E+00
46	0	0.1417E+03	0.3166E+02	0.0000E+00	0.2160E+00
47	0	0.1391E+03	0.2910E+02	0.0000E+00	0.2160E+00
48	0	0.1372E+03	0.2722E+02	0.0000E+00	0.2160E+00
49	0	0.1364E+03	0.2635E+02	0.0000E+00	0.2160E+00
50	0	0.1361E+03	0.2608E+02	0.0000E+00	0.2160E+00

Table 3.1.9 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (2/3)

(SECTION NO. V)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
51	0	0.1876E+03	0.6255E+02	0.0000E+00	0.2160E+00
52	0	0.1827E+03	0.5769E+02	0.0000E+00	0.2160E+00
53	0	0.1798E+03	0.5480E+02	0.0000E+00	0.2160E+00
54	0	0.1768E+03	0.5177E+02	0.0000E+00	0.2160E+00
55	0	0.1667E+03	0.4172E+02	0.0000E+00	0.2160E+00
56	0	0.1633E+03	0.3830E+02	0.0000E+00	0.1930E+00
57	0	0.1549E+03	0.2989E+02	0.0000E+00	0.2160E+00
58	0	0.1476E+03	0.2262E+02	0.0000E+00	0.2160E+00
59	0	0.1437E+03	0.1868E+02	0.0000E+00	0.2160E+00
60	0	0.1383E+03	0.1332E+02	0.0000E+00	0.2160E+00
61	0	0.1373E+03	0.1229E+02	0.0000E+00	0.2160E+00
62	0	0.1364E+03	0.1144E+02	0.0000E+00	0.2160E+00
63	0	0.1360E+03	0.1105E+02	0.0000E+00	0.2160E+00
64	0	0.1359E+03	0.1092E+02	0.0000E+00	0.2160E+00
65	1	0.1890E+03	0.5850E+02	0.3565E+00	0.2160E+00
66	1	0.1890E+03	0.5320E+02	0.7355E+00	0.2160E+00
67	1	0.1890E+03	0.4900E+02	0.4923E+00	0.2160E+00
68	0	0.1873E+03	0.5155E+02	0.0000E+00	0.2160E+00
69	1	0.1890E+03	0.5320E+02	0.5896E+00	0.2160E+00
70	1	0.1890E+03	0.5320E+02	0.1502E+01	0.2160E+00
71	0	0.1720E+03	0.3615E+02	0.0000E+00	0.2160E+00
72	0	0.1683E+03	0.3251E+02	0.0000E+00	0.2160E+00
73	0	0.1643E+03	0.2852E+02	0.0000E+00	0.2160E+00
74	0	0.1604E+03	0.2459E+02	0.0000E+00	0.2160E+00
75	0	0.1517E+03	0.1587E+02	0.0000E+00	0.2160E+00
76	1	0.1358E+03	-0.3052E-05	-0.1475E+01	0.2160E+00
77	1	0.1358E+03	-0.3052E-05	-0.9502E+00	0.2160E+00
78	1	0.1358E+03	-0.3052E-05	-0.6625E+00	0.2160E+00
79	1	0.1358E+03	-0.3052E-05	-0.2951E+00	0.2160E+00
80	1	0.1358E+03	-0.3052E-05	-0.1843E+00	0.2160E+00
81	1	0.1358E+03	-0.3052E-05	-0.9132E-01	0.2160E+00
82	1	0.1358E+03	-0.3052E-05	-0.3013E-01	0.2160E+00
83	0	0.1358E+03	-0.1120E+02	0.0000E+00	0.1448E+00
84	0	0.1358E+03	-0.1120E+02	0.0000E+00	0.1448E+00
85	0	0.1358E+03	-0.1120E+02	0.0000E+00	0.1448E+00
86	0	0.1358E+03	-0.1120E+02	0.0000E+00	0.1448E+00
87	0	0.1358E+03	-0.1120E+02	0.0000E+00	0.1448E+00
88	0	0.1358E+03	-0.1120E+02	0.0000E+00	0.1448E+00
89	0	0.1358E+03	-0.2420E+02	0.0000E+00	0.1141E+00
90	0	0.1358E+03	-0.2420E+02	0.0000E+00	0.1141E+00
91	0	0.1358E+03	-0.2420E+02	0.0000E+00	0.1141E+00
92	0	0.1358E+03	-0.2420E+02	0.0000E+00	0.1141E+00
93	0	0.1358E+03	-0.2420E+02	0.0000E+00	0.1141E+00
94	0	0.1358E+03	-0.1520E+02	0.0000E+00	0.1297E+00
95	0	0.1358E+03	-0.3120E+02	0.0000E+00	0.1040E+00
96	0	0.1358E+03	-0.3120E+02	0.0000E+00	0.1040E+00
97	0	0.1358E+03	-0.3120E+02	0.0000E+00	0.1040E+00
98	1	0.1890E+03	0.4700E+02	0.9212E-01	0.1930E+00
99	0	0.1751E+03	0.3312E+02	0.0000E+00	0.1930E+00
100	0	0.1646E+03	0.2256E+02	0.0000E+00	0.1930E+00

Table 3.1.9 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (3/3)

(SECTION NO. V)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
101	0	0.1538E+03	0.1176E+02	0.0000E+00	0.1930E+00
102	2	0.1420E+03	0.0000E+00	-0.9121E-01	0.1930E+00
103	1	0.1890E+03	0.4100E+02	0.8473E-01	0.1930E+00
104	0	0.1773E+03	0.2929E+02	0.0000E+00	0.1930E+00
105	0	0.1675E+03	0.1951E+02	0.0000E+00	0.1930E+00
106	0	0.1578E+03	0.9800E+01	0.0000E+00	0.1930E+00
107	2	0.1480E+03	0.0000E+00	-0.8375E-01	0.1930E+00
108	1	0.1890E+03	0.3500E+02	0.7832E-01	0.1930E+00
109	0	0.1796E+03	0.2559E+02	0.0000E+00	0.1930E+00
110	0	0.1705E+03	0.1654E+02	0.0000E+00	0.1930E+00
111	0	0.1615E+03	0.7483E+01	0.0000E+00	0.1930E+00
112	2	0.1540E+03	0.0000E+00	-0.7754E-01	0.1930E+00
113	1	0.1890E+03	0.2900E+02	0.7063E-01	0.1930E+00
114	0	0.1817E+03	0.2173E+02	0.0000E+00	0.1930E+00
115	0	0.1736E+03	0.1357E+02	0.0000E+00	0.1930E+00
116	0	0.1654E+03	0.5407E+01	0.0000E+00	0.1930E+00
117	2	0.1600E+03	0.0000E+00	-0.6985E-01	0.1930E+00
118	1	0.1890E+03	0.2300E+02	0.6147E-01	0.1930E+00
119	0	0.1837E+03	0.1775E+02	0.0000E+00	0.1930E+00
120	0	0.1766E+03	0.1064E+02	0.0000E+00	0.1930E+00
121	0	0.1695E+03	0.3517E+01	0.0000E+00	0.1930E+00
122	2	0.1660E+03	0.0000E+00	-0.6070E-01	0.1930E+00
123	1	0.1890E+03	0.1700E+02	0.5032E-01	0.1930E+00
124	0	0.1856E+03	0.1358E+02	0.0000E+00	0.1930E+00
125	0	0.1797E+03	0.7747E+01	0.0000E+00	0.1930E+00
126	0	0.1739E+03	0.1917E+01	0.0000E+00	0.1930E+00
127	2	0.1720E+03	0.0000E+00	-0.4950E-01	0.1930E+00
128	1	0.1890E+03	0.1100E+02	0.3646E-01	0.1930E+00
129	0	0.1872E+03	0.9167E+01	0.0000E+00	0.1930E+00
130	0	0.1829E+03	0.4914E+01	0.0000E+00	0.1930E+00
131	0	0.1786E+03	0.6246E+00	0.0000E+00	0.1930E+00
132	2	0.1780E+03	0.0000E+00	-0.3574E-01	0.1930E+00
133	1	0.1890E+03	0.5000E+01	0.1855E-01	0.1930E+00
134	0	0.1884E+03	0.4402E+01	0.0000E+00	0.1930E+00
135	0	0.1862E+03	0.2163E+01	0.0000E+00	0.1930E+00
136	2	0.1840E+03	0.0000E+00	-0.1665E-01	0.1930E+00
137	1	0.1890E+03	0.0000E+00	0.4418E-02	0.1930E+00
138	0	0.1890E+03	-0.3050E-01	0.0000E+00	0.1928E+00
139	0	0.1887E+03	-0.2791E+00	0.0000E+00	0.1913E+00
140	-2	0.1889E+03	-0.1423E+00	0.0000E+00	0.1921E+00
141	0	0.1888E+03	-0.6738E+01	0.0000E+00	0.1570E+00
142	-2	0.1889E+03	-0.6630E+01	0.0000E+00	0.1573E+00

FLOWIN = 0.4173E+01

FLOWOUT = -0.4173E+01

TOTAL = -0.2289E-04

Table 3.1.10 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (1/3)

(SECTION NO. V)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
1	22.50	70.00	-0.1611E+00	-0.9308E+00	0.1392E-02	-0.5979E-03	0.1515E-02	-23.25
2	49.00	70.00	-0.3388E+00	-0.9405E+00	0.2927E-02	-0.5138E-03	0.2972E-02	-9.96
3	55.50	70.00	-0.3759E+00	-0.9469E+00	0.3248E-02	-0.4589E-03	0.3280E-02	-8.04
4	60.63	70.00	-0.4140E+00	-0.9495E+00	0.3577E-02	-0.4363E-03	0.3604E-02	-6.95
5	71.13	70.00	-0.4273E+00	-0.9932E+00	0.3692E-02	-0.5876E-04	0.3693E-02	-0.91
6	83.00	70.00	-0.4211E+00	-0.1039E+01	0.3638E-02	0.3359E-03	0.3654E-02	5.27
7	90.00	70.00	-0.3823E+00	-0.1041E+01	0.3303E-02	0.3574E-03	0.3322E-02	6.18
8	106.50	70.00	-0.3056E+00	-0.1047E+01	0.2641E-02	0.4053E-03	0.2672E-02	8.73
9	130.00	70.00	-0.1922E+00	-0.1044E+01	0.1661E-02	0.3794E-03	0.1703E-02	12.87
10	155.00	70.00	-0.1032E+00	-0.1028E+01	0.8914E-03	0.2424E-03	0.9238E-03	15.21
11	187.50	70.00	-0.4170E-01	-0.1013E+01	0.3603E-03	0.1094E-03	0.3765E-03	16.89
12	227.50	70.00	-0.1034E-01	-0.1005E+01	0.8938E-04	0.4583E-04	0.1004E-03	27.15
13	22.50	87.50	-0.1642E+00	-0.9315E+00	0.1419E-01	-0.5921E-02	0.1537E-01	-22.65
14	49.00	87.50	-0.3581E+00	-0.9382E+00	0.3094E-01	-0.5339E-02	0.3140E-01	-9.79
15	55.50	87.50	-0.3989E+00	-0.9477E+00	0.3447E-01	-0.4519E-02	0.3476E-01	-7.47
16	63.25	87.50	-0.4357E+00	-0.9670E+00	0.3764E-01	-0.2850E-02	0.3775E-01	-4.33
17	69.75	87.50	-0.8819E+00	-0.9904E+00	0.3810E-01	-0.4165E-03	0.3810E-01	-0.63
18	79.00	87.50	-0.4405E+00	-0.1019E+01	0.3806E-01	0.1668E-02	0.3810E-01	2.51
19	90.00	87.50	-0.4036E+00	-0.1045E+01	0.3487E-01	0.3911E-02	0.3509E-01	6.40
20	106.50	87.50	-0.3086E+00	-0.1052E+01	0.2667E-01	0.4478E-02	0.2704E-01	9.53
21	130.00	87.50	-0.1794E+00	-0.1044E+01	0.1550E-01	0.3816E-02	0.1596E-01	13.83
22	155.00	87.50	-0.9170E-01	-0.1025E+01	0.7922E-02	0.2184E-02	0.8218E-02	15.41
23	187.50	87.50	-0.3649E-01	-0.1011E+01	0.3153E-02	0.9241E-03	0.3286E-02	16.34
24	227.50	87.50	-0.9057E-02	-0.1004E+01	0.7825E-03	0.3885E-03	0.8736E-03	26.40
25	22.50	102.50	-0.1599E+00	-0.8176E+00	0.1381E-01	-0.1576E-01	0.2096E-01	-48.77
26	49.00	102.50	-0.3974E+00	-0.8188E+00	0.3434E-01	-0.1566E-01	0.3774E-01	-24.51
27	55.50	102.50	-0.4568E+00	-0.8495E+00	0.3946E-01	-0.1300E-01	0.4155E-01	-18.23
28	63.25	102.50	-0.5019E+00	-0.8958E+00	0.4336E-01	-0.9003E-02	0.4428E-01	-11.73
29	69.75	102.50	-0.1125E+01	-0.9592E+00	0.4859E-01	-0.1761E-02	0.4862E-01	-2.08
30	79.00	102.50	-0.5277E+00	-0.1064E+01	0.4559E-01	0.5505E-02	0.4592E-01	6.88
31	90.00	102.50	-0.4489E+00	-0.1149E+01	0.3878E-01	0.1286E-01	0.4086E-01	18.34
32	106.50	102.50	-0.3047E+00	-0.1153E+01	0.2632E-01	0.1324E-01	0.2947E-01	26.70
33	130.00	102.50	-0.1503E+00	-0.1115E+01	0.1299E-01	0.9933E-02	0.1635E-01	37.42
34	155.00	102.50	-0.7465E-01	-0.1061E+01	0.6450E-02	0.5269E-02	0.8328E-02	39.25
35	187.50	102.50	-0.2968E-01	-0.1026E+01	0.2564E-02	0.2209E-02	0.3384E-02	40.74
36	227.50	102.50	-0.7354E-02	-0.1011E+01	0.6354E-03	0.9284E-03	0.1125E-02	55.61
37	22.50	117.50	-0.1315E+00	-0.6996E+00	0.1136E-01	-0.2596E-01	0.2833E-01	-66.36
38	49.00	117.50	-0.3945E+00	-0.6116E+00	0.3409E-01	-0.3355E-01	0.4783E-01	-44.55
39	55.50	117.50	-0.5537E+00	-0.6117E+00	0.4784E-01	-0.3355E-01	0.5843E-01	-35.04
40	63.25	117.50	-0.7516E+00	-0.7725E+00	0.6494E-01	-0.1965E-01	0.6785E-01	-16.84
41	69.75	117.50	-0.1344E+01	-0.9205E+00	0.5807E-01	-0.3434E-02	0.5817E-01	-3.38
42	77.00	117.50	-0.7473E+00	-0.1087E+01	0.6457E-01	0.7509E-02	0.6501E-01	6.63
43	85.00	117.50	-0.9087E+00	-0.1335E+01	0.7851E-01	0.2895E-01	0.8368E-01	20.24
44	90.00	117.50	-0.5685E+00	-0.1370E+01	0.4912E-01	0.3197E-01	0.5860E-01	33.06
45	106.50	117.50	-0.2493E+00	-0.1314E+01	0.2154E-01	0.2710E-01	0.3462E-01	51.53
46	130.00	117.50	-0.8975E-01	-0.1171E+01	0.7754E-02	0.1482E-01	0.1672E-01	62.38
47	155.00	117.50	-0.4552E-01	-0.1086E+01	0.3933E-02	0.7473E-02	0.8445E-02	62.24
48	187.50	117.50	-0.1798E-01	-0.1036E+01	0.1554E-02	0.3143E-02	0.3506E-02	63.69
49	227.50	117.50	-0.4460E-02	-0.1015E+01	0.3854E-03	0.1316E-02	0.1371E-02	73.68
50	17.25	129.08	-0.9729E-01	-0.6496E+00	0.8406E-02	-0.3027E-01	0.3142E-01	-74.48

Table 3.1.10 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (2/3)

(SECTION NO. V)

***** ELEMENT VELOCITY *****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
51	39.75	130.40	-0.7859E-01	-0.5690E+00	0.6790E-02	-0.3724E-01	0.3785E-01	-79.67
52	39.75	136.85	-0.7859E-01	-0.6070E+00	0.6790E-02	-0.3395E-01	0.3462E-01	-78.69
53	47.00	136.85	0.2063E+00	-0.6071E+00	-0.1782E-01	-0.3395E-01	0.3835E-01	62.30
54	49.00	130.40	-0.7801E-01	-0.3584E+00	0.6740E-02	-0.5543E-01	0.5584E-01	-83.07
55	55.50	130.40	-0.3027E+00	-0.7697E-02	0.2615E-01	-0.8573E-01	0.8963E-01	-73.04
56	60.25	130.40	-0.1894E+01	0.1324E+00	0.1637E+00	-0.9784E-01	0.1907E+00	-30.87
57	65.50	130.40	-0.1141E+01	-0.6745E+00	0.9858E-01	-0.2813E-01	0.1025E+00	-15.92
58	69.75	130.40	-0.1482E+01	-0.8793E+00	0.1280E+00	-0.1043E-01	0.1284E+00	-4.66
59	73.50	130.40	-0.1234E+01	-0.1040E+01	0.1066E+00	0.3491E-02	0.1067E+00	1.88
60	79.50	133.10	-0.1757E+01	-0.1298E+01	0.1518E+00	0.2572E-01	0.1539E+00	9.62
61	83.00	127.70	-0.9087E+00	-0.2094E+01	0.7851E-01	0.9454E-01	0.1229E+00	50.29
62	90.00	130.40	-0.3279E+00	-0.1912E+01	0.2833E-01	0.7881E-01	0.8374E-01	70.23
63	106.50	130.40	-0.9929E-01	-0.1482E+01	0.6591E-02	0.3198E-01	0.3265E-01	78.36
64	130.00	130.40	-0.2577E-01	-0.1186E+01	0.1710E-02	0.1233E-01	0.1245E-01	82.11
65	155.00	130.40	-0.1425E-01	-0.1099E+01	0.1231E-02	0.8511E-02	0.8600E-02	81.77
66	187.50	130.40	-0.5549E-02	-0.1041E+01	0.4794E-03	0.3538E-02	0.3570E-02	82.28
67	227.50	130.40	-0.1384E-02	-0.1017E+01	0.1196E-03	0.1486E-02	0.1491E-02	85.40
68	109.62	141.40	0.6011E-07	-0.1000E+01	-0.1974E-08	0.0000E+00	0.1974E-08	0.00
69	130.00	141.40	0.1616E-07	-0.1000E+01	-0.5308E-09	-0.5873E-08	0.5897E-08	84.84
70	155.00	141.40	-0.8957E-07	-0.1000E+01	0.4735E-08	0.0000E+00	0.4735E-08	0.00
71	187.50	141.40	0.3137E-07	-0.1000E+01	-0.1658E-08	0.6302E-08	0.6516E-08	-75.26
72	227.50	141.40	-0.3823E-07	-0.1000E+01	0.2021E-08	0.1260E-07	0.1276E-07	80.89
73	112.75	150.25	0.2332E-06	-0.1000E+01	-0.3839E-08	-0.1570E-07	0.1616E-07	76.26
74	130.00	153.50	-0.2609E-06	-0.1000E+01	0.3549E-08	-0.7298E-08	0.8116E-08	-64.07
75	155.00	153.50	-0.3098E-06	-0.1000E+01	0.4215E-08	0.4866E-08	0.6438E-08	49.10
76	187.50	153.50	0.1053E-06	-0.1000E+01	-0.1432E-08	0.6487E-08	0.6644E-08	-77.55
77	209.92	153.50	0.1936E-07	-0.1000E+01	-0.2634E-09	0.3244E-08	0.3254E-08	-85.36
78	232.42	151.25	-0.1325E-06	-0.1000E+01	0.1884E-08	0.3388E-08	0.3877E-08	60.93
79	130.00	161.75	-0.5218E-06	-0.1000E+01	0.3912E-08	-0.8937E-08	0.9756E-08	-66.36
80	155.00	163.50	-0.4756E-06	-0.1000E+01	0.3379E-08	-0.8471E-08	0.9120E-08	-68.25
81	187.50	163.50	0.1883E-06	-0.1000E+01	-0.1338E-08	-0.6777E-08	0.6908E-08	78.83
82	209.92	161.75	-0.4467E-07	-0.1000E+01	0.3349E-09	-0.8044E-08	0.8050E-08	-87.62
83	62.73	138.90	-0.1813E+01	-0.6079E+00	0.1566E-01	-0.3388E-03	0.1566E-01	-1.24
84	67.38	137.35	-0.2430E+01	-0.4892E+00	0.2099E-01	-0.4413E-03	0.2100E-01	-1.20
85	69.88	138.90	-0.1711E+01	-0.3627E+00	0.1478E-01	-0.5507E-03	0.1479E-01	-2.13
86	72.00	137.35	-0.1964E+01	-0.3283E+00	0.1697E-01	-0.5803E-03	0.1698E-01	-1.96
87	76.00	138.90	-0.1627E+01	-0.4960E+00	0.1405E-01	-0.4355E-03	0.1406E-01	-1.77
88	82.74	138.90	-0.1846E+01	-0.4850E+00	0.1595E-01	-0.4450E-03	0.1595E-01	-1.60
89	63.19	145.00	-0.1681E+01	-0.6921E+00	0.1452E-01	-0.2660E-03	0.1452E-01	-1.05
90	70.00	145.00	-0.1695E+01	-0.5723E+00	0.1464E-01	-0.3695E-03	0.1465E-01	-1.45
91	76.00	145.00	-0.1709E+01	-0.4168E+00	0.1477E-01	-0.5039E-03	0.1478E-01	-1.95
92	82.24	145.00	-0.1665E+01	-0.3015E+00	0.1439E-01	-0.6035E-03	0.1440E-01	-2.40
93	63.65	151.00	-0.1574E+01	-0.6902E+00	0.1360E-01	-0.2677E-03	0.1360E-01	-1.13
94	70.00	151.00	-0.1568E+01	-0.5566E+00	0.1355E-01	-0.3831E-03	0.1356E-01	-1.62
95	76.00	151.00	-0.1565E+01	-0.4407E+00	0.1352E-01	-0.4832E-03	0.1353E-01	-2.05
96	81.74	151.00	-0.1578E+01	-0.3241E+00	0.1363E-01	-0.5840E-03	0.1364E-01	-2.45
97	64.10	157.00	-0.1437E+01	-0.7129E+00	0.1242E-01	-0.2481E-03	0.1242E-01	-1.14
98	70.00	157.00	-0.1434E+01	-0.5890E+00	0.1239E-01	-0.3724E-03	0.1239E-01	-1.72
99	76.00	157.00	-0.1435E+01	-0.4208E+00	0.1240E-01	-0.5004E-03	0.1241E-01	-2.31
100	81.24	157.00	-0.1438E+01	-0.2924E+00	0.1243E-01	-0.6114E-03	0.1244E-01	-2.82

Table 3.1.10 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (3/3)

(SECTION NO. V)

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***** ELEMENT VELOCITY *****

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ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
101	64.55	163.00	-0.1278E+01	-0.7356E+00	0.1104E-01	-0.2284E-03	0.1104E-01	-1.19
102	70.00	163.00	-0.1273E+01	-0.5764E+00	0.1100E-01	-0.3660E-03	0.1100E-01	-1.91
103	76.00	163.00	-0.1273E+01	-0.4019E+00	0.1100E-01	-0.5168E-03	0.1101E-01	-2.69
104	80.74	163.00	-0.1280E+01	-0.2637E+00	0.1106E-01	-0.6362E-03	0.1108E-01	-3.29
105	65.00	169.00	-0.1085E+01	-0.7655E+00	0.9377E-02	-0.2026E-03	0.9379E-02	-1.24
106	70.00	169.00	-0.1079E+01	-0.5881E+00	0.9320E-02	-0.3559E-03	0.9327E-02	-2.19
107	76.00	169.00	-0.1079E+01	-0.3741E+00	0.9324E-02	-0.5407E-03	0.9339E-02	-3.32
108	80.25	169.00	-0.1091E+01	-0.2239E+00	0.9428E-02	-0.6705E-03	0.9452E-02	-4.07
109	65.45	175.00	-0.8497E+00	-0.8037E+00	0.7342E-02	-0.1696E-03	0.7343E-02	-1.32
110	70.00	175.00	-0.8406E+00	-0.6039E+00	0.7263E-02	-0.3422E-03	0.7271E-02	-2.70
111	76.00	175.00	-0.8433E+00	-0.3438E+00	0.7286E-02	-0.5669E-03	0.7308E-02	-4.45
112	79.75	175.00	-0.8506E+00	-0.1783E+00	0.7350E-02	-0.7099E-03	0.7384E-02	-5.52
113	65.91	181.00	-0.5561E+00	-0.8552E+00	0.4805E-02	-0.1251E-03	0.4807E-02	-1.49
114	70.00	181.00	-0.5410E+00	-0.6263E+00	0.4674E-02	-0.3228E-03	0.4685E-02	-3.95
115	76.00	181.00	-0.5377E+00	-0.2813E+00	0.4646E-02	-0.6210E-03	0.4687E-02	-7.61
116	79.25	179.50	-0.6271E+00	-0.1041E+00	0.5418E-02	-0.7741E-03	0.5473E-02	-8.13
117	66.32	186.50	-0.2318E+00	-0.9257E+00	0.2000E-02	-0.6410E-04	0.2001E-02	-1.84
118	70.00	186.50	-0.2072E+00	-0.6874E+00	0.1769E-02	-0.2669E-03	0.1789E-02	-8.58
119	75.35	186.50	-0.2158E+00	-0.3148E+00	0.1834E-02	-0.5825E-03	0.1924E-02	-17.62
120	66.51	190.63	-0.3112E-01	-0.1032E+01	0.2269E-03	0.2323E-04	0.2281E-03	5.85
121	70.00	192.25	-0.1175E-01	-0.1004E+01	0.6889E-04	0.2620E-05	0.6894E-04	2.18
122	73.85	190.63	0.4033E-01	-0.9771E+00	-0.2852E-03	-0.1622E-04	0.2857E-03	3.25

Table 3.2.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (1/5)

(SECTION A-A)

********** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY **********

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
1	0	0.1886E+03	0.1386E+03	0.0000E+00	0.1930E+00
2	0	0.1884E+03	0.1384E+03	0.0000E+00	0.1930E+00
3	0	0.1880E+03	0.1380E+03	0.0000E+00	0.1930E+00
4	0	0.1873E+03	0.1373E+03	0.0000E+00	0.1930E+00
5	0	0.1863E+03	0.1363E+03	0.0000E+00	0.1930E+00
6	0	0.1850E+03	0.1350E+03	0.0000E+00	0.1930E+00
7	0	0.1835E+03	0.1335E+03	0.0000E+00	0.1930E+00
8	0	0.1820E+03	0.1320E+03	0.0000E+00	0.1930E+00
9	0	0.1803E+03	0.1303E+03	0.0000E+00	0.1930E+00
10	0	0.1786E+03	0.1286E+03	0.0000E+00	0.1930E+00
11	0	0.1769E+03	0.1269E+03	0.0000E+00	0.1930E+00
12	0	0.1751E+03	0.1251E+03	0.0000E+00	0.1930E+00
13	0	0.1733E+03	0.1233E+03	0.0000E+00	0.1930E+00
14	0	0.1715E+03	0.1215E+03	0.0000E+00	0.1930E+00
15	0	0.1698E+03	0.1198E+03	0.0000E+00	0.1930E+00
16	0	0.1684E+03	0.1184E+03	0.0000E+00	0.1930E+00
17	0	0.1675E+03	0.1175E+03	0.0000E+00	0.1930E+00
18	0	0.1674E+03	0.1174E+03	0.0000E+00	0.1930E+00
19	0	0.1887E+03	0.9867E+02	0.0000E+00	0.1930E+00
20	0	0.1886E+03	0.9858E+02	0.0000E+00	0.1930E+00
21	0	0.1882E+03	0.9822E+02	0.0000E+00	0.1930E+00
22	0	0.1875E+03	0.9750E+02	0.0000E+00	0.1930E+00
23	0	0.1864E+03	0.9641E+02	0.0000E+00	0.1930E+00
24	0	0.1851E+03	0.9506E+02	0.0000E+00	0.1930E+00
25	0	0.1836E+03	0.9357E+02	0.0000E+00	0.1930E+00
26	0	0.1820E+03	0.9198E+02	0.0000E+00	0.1930E+00
27	0	0.1803E+03	0.9034E+02	0.0000E+00	0.1930E+00
28	0	0.1786E+03	0.8864E+02	0.0000E+00	0.1930E+00
29	0	0.1769E+03	0.8691E+02	0.0000E+00	0.1930E+00
30	0	0.1751E+03	0.8514E+02	0.0000E+00	0.1930E+00
31	0	0.1733E+03	0.8335E+02	0.0000E+00	0.1930E+00
32	0	0.1715E+03	0.8152E+02	0.0000E+00	0.1930E+00
33	0	0.1697E+03	0.7968E+02	0.0000E+00	0.1930E+00
34	0	0.1680E+03	0.7804E+02	0.0000E+00	0.1930E+00
35	0	0.1671E+03	0.7706E+02	0.0000E+00	0.1930E+00
36	0	0.1669E+03	0.7694E+02	0.0000E+00	0.1930E+00
37	0	0.1890E+03	0.5897E+02	0.0000E+00	0.1930E+00
38	0	0.1890E+03	0.5896E+02	0.0000E+00	0.1930E+00
39	0	0.1889E+03	0.5894E+02	0.0000E+00	0.1930E+00
40	0	0.1889E+03	0.5889E+02	0.0000E+00	0.1930E+00
41	0	0.1888E+03	0.5875E+02	0.0000E+00	0.1930E+00
42	0	0.1885E+03	0.5846E+02	0.0000E+00	0.1930E+00
43	0	0.1880E+03	0.5803E+02	0.0000E+00	0.1930E+00
44	0	0.1874E+03	0.5744E+02	0.0000E+00	0.1930E+00
45	0	0.1868E+03	0.5676E+02	0.0000E+00	0.1930E+00
46	0	0.1860E+03	0.5603E+02	0.0000E+00	0.1930E+00
47	0	0.1853E+03	0.5528E+02	0.0000E+00	0.1930E+00
48	0	0.1845E+03	0.5451E+02	0.0000E+00	0.1930E+00
49	0	0.1837E+03	0.5372E+02	0.0000E+00	0.1930E+00
50	0	0.1829E+03	0.5292E+02	0.0000E+00	0.1930E+00

Table 3.2.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (2/5)

(SECTION A-A)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
51	0	0.1821E+03	0.5210E+02	0.0000E+00	0.1930E+00
52	0	0.1813E+03	0.5128E+02	0.0000E+00	0.1930E+00
53	0	0.1810E+03	0.5105E+02	0.0000E+00	0.1930E+00
54	0	0.1804E+03	0.5038E+02	0.0000E+00	0.1930E+00
55	0	0.1795E+03	0.4954E+02	0.0000E+00	0.1930E+00
56	0	0.1787E+03	0.4869E+02	0.0000E+00	0.1930E+00
57	0	0.1778E+03	0.4782E+02	0.0000E+00	0.1930E+00
58	0	0.1770E+03	0.4696E+02	0.0000E+00	0.1930E+00
59	0	0.1761E+03	0.4608E+02	0.0000E+00	0.1930E+00
60	0	0.1752E+03	0.4519E+02	0.0000E+00	0.1930E+00
61	0	0.1743E+03	0.4430E+02	0.0000E+00	0.1930E+00
62	0	0.1734E+03	0.4339E+02	0.0000E+00	0.1930E+00
63	0	0.1725E+03	0.4245E+02	0.0000E+00	0.1930E+00
64	0	0.1715E+03	0.4150E+02	0.0000E+00	0.1930E+00
65	0	0.1705E+03	0.4048E+02	0.0000E+00	0.1930E+00
66	0	0.1694E+03	0.3938E+02	0.0000E+00	0.1930E+00
67	0	0.1682E+03	0.3822E+02	0.0000E+00	0.1930E+00
68	0	0.1671E+03	0.3709E+02	0.0000E+00	0.1930E+00
69	0	0.1662E+03	0.3622E+02	0.0000E+00	0.1930E+00
70	0	0.1657E+03	0.3566E+02	0.0000E+00	0.1930E+00
71	0	0.1655E+03	0.3551E+02	0.0000E+00	0.1930E+00
72	0	0.1890E+03	0.3899E+02	0.0000E+00	0.2160E+00
73	0	0.1890E+03	0.3899E+02	0.0000E+00	0.2160E+00
74	0	0.1890E+03	0.3898E+02	0.0000E+00	0.2160E+00
75	0	0.1890E+03	0.3895E+02	0.0000E+00	0.2160E+00
76	0	0.1889E+03	0.3887E+02	0.0000E+00	0.2160E+00
77	0	0.1886E+03	0.3860E+02	0.0000E+00	0.2160E+00
78	0	0.1881E+03	0.3814E+02	0.0000E+00	0.2160E+00
79	0	0.1875E+03	0.3752E+02	0.0000E+00	0.2160E+00
80	0	0.1868E+03	0.3681E+02	0.0000E+00	0.2160E+00
81	0	0.1861E+03	0.3606E+02	0.0000E+00	0.2160E+00
82	0	0.1853E+03	0.3530E+02	0.0000E+00	0.2160E+00
83	0	0.1845E+03	0.3452E+02	0.0000E+00	0.2160E+00
84	0	0.1837E+03	0.3373E+02	0.0000E+00	0.2160E+00
85	0	0.1829E+03	0.3293E+02	0.0000E+00	0.2160E+00
86	0	0.1821E+03	0.3212E+02	0.0000E+00	0.2160E+00
87	0	0.1813E+03	0.3129E+02	0.0000E+00	0.2160E+00
88	0	0.1811E+03	0.3105E+02	0.0000E+00	0.1930E+00
89	0	0.1804E+03	0.3039E+02	0.0000E+00	0.2160E+00
90	0	0.1795E+03	0.2955E+02	0.0000E+00	0.2160E+00
91	0	0.1787E+03	0.2869E+02	0.0000E+00	0.2160E+00
92	0	0.1778E+03	0.2783E+02	0.0000E+00	0.2160E+00
93	0	0.1770E+03	0.2696E+02	0.0000E+00	0.2160E+00
94	0	0.1761E+03	0.2609E+02	0.0000E+00	0.2160E+00
95	0	0.1752E+03	0.2520E+02	0.0000E+00	0.2160E+00
96	0	0.1743E+03	0.2431E+02	0.0000E+00	0.2160E+00
97	0	0.1734E+03	0.2340E+02	0.0000E+00	0.2160E+00
98	0	0.1725E+03	0.2247E+02	0.0000E+00	0.2160E+00
99	0	0.1715E+03	0.2152E+02	0.0000E+00	0.2160E+00
100	0	0.1705E+03	0.2053E+02	0.0000E+00	0.2160E+00

Table 3.2.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (3/5)

(SECTION A-A)

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
101	0	0.1694E+03	0.1942E+02	0.0000E+00	0.2160E+00
102	0	0.1682E+03	0.1820E+02	0.0000E+00	0.2160E+00
103	0	0.1669E+03	0.1690E+02	0.0000E+00	0.2160E+00
104	0	0.1659E+03	0.1587E+02	0.0000E+00	0.2160E+00
105	0	0.1654E+03	0.1538E+02	0.0000E+00	0.2160E+00
106	0	0.1653E+03	0.1528E+02	0.0000E+00	0.2160E+00
107	1	0.1890E+03	0.2900E+02	0.1086E-02	0.2160E+00
108	1	0.1890E+03	0.2900E+02	0.2632E-02	0.2160E+00
109	1	0.1890E+03	0.2900E+02	0.4479E-02	0.2160E+00
110	1	0.1890E+03	0.2900E+02	0.1003E-01	0.2160E+00
111	1	0.1890E+03	0.2900E+02	0.3045E-01	0.2160E+00
112	1	0.1890E+03	0.1900E+02	0.7396E-01	0.2160E+00
113	0	0.1884E+03	0.1842E+02	0.0000E+00	0.2160E+00
114	0	0.1877E+03	0.1767E+02	0.0000E+00	0.2160E+00
115	0	0.1869E+03	0.1686E+02	0.0000E+00	0.2160E+00
116	0	0.1861E+03	0.1610E+02	0.0000E+00	0.2160E+00
117	0	0.1853E+03	0.1533E+02	0.0000E+00	0.2160E+00
118	0	0.1846E+03	0.1456E+02	0.0000E+00	0.2160E+00
119	0	0.1838E+03	0.1377E+02	0.0000E+00	0.2160E+00
120	0	0.1830E+03	0.1296E+02	0.0000E+00	0.2160E+00
121	0	0.1821E+03	0.1214E+02	0.0000E+00	0.2160E+00
122	0	0.1813E+03	0.1131E+02	0.0000E+00	0.2160E+00
123	0	0.1811E+03	0.1108E+02	0.0000E+00	0.1930E+00
124	0	0.1804E+03	0.1041E+02	0.0000E+00	0.2160E+00
125	0	0.1796E+03	0.9563E+01	0.0000E+00	0.2160E+00
126	0	0.1787E+03	0.8708E+01	0.0000E+00	0.2160E+00
127	0	0.1778E+03	0.7847E+01	0.0000E+00	0.2160E+00
128	0	0.1770E+03	0.6980E+01	0.0000E+00	0.2160E+00
129	0	0.1761E+03	0.6105E+01	0.0000E+00	0.2160E+00
130	0	0.1752E+03	0.5222E+01	0.0000E+00	0.2160E+00
131	0	0.1743E+03	0.4328E+01	0.0000E+00	0.2160E+00
132	0	0.1734E+03	0.3425E+01	0.0000E+00	0.2160E+00
133	0	0.1725E+03	0.2514E+01	0.0000E+00	0.2160E+00
134	0	0.1716E+03	0.1600E+01	0.0000E+00	0.2160E+00
135	0	0.1706E+03	0.6364E+00	0.0000E+00	0.2160E+00
136	-2	0.1697E+03	-0.3014E+00	0.0000E+00	0.2137E+00
137	-2	0.1682E+03	-0.1060E+00	0.0000E+00	0.2152E+00
138	2	0.1667E+03	0.0000E+00	-0.4347E-01	0.2160E+00
139	1	0.1650E+03	0.0000E+00	-0.1264E+00	0.2160E+00
140	1	0.1650E+03	0.0000E+00	-0.5540E-01	0.2160E+00
141	1	0.1650E+03	0.0000E+00	-0.1907E-01	0.2160E+00
142	1	0.1890E+03	0.0000E+00	0.1217E+00	0.2160E+00
143	0	0.1877E+03	-0.1307E+01	0.0000E+00	0.2060E+00
144	0	0.1869E+03	-0.2100E+01	0.0000E+00	0.1999E+00
145	0	0.1861E+03	-0.2867E+01	0.0000E+00	0.1940E+00
146	0	0.1854E+03	-0.3630E+01	0.0000E+00	0.1882E+00
147	0	0.1846E+03	-0.4403E+01	0.0000E+00	0.1822E+00
148	0	0.1838E+03	-0.5192E+01	0.0000E+00	0.1762E+00
149	0	0.1830E+03	-0.6007E+01	0.0000E+00	0.1699E+00
150	0	0.1821E+03	-0.6856E+01	0.0000E+00	0.1634E+00

Table 3.2.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (4/5)

(SECTION A-A)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
151	0	0.1813E+03	-0.7661E+01	0.0000E+00	0.1586E+00
152	0	0.1811E+03	-0.7897E+01	0.0000E+00	0.1546E+00
153	0	0.1805E+03	-0.8547E+01	0.0000E+00	0.1551E+00
154	0	0.1796E+03	-0.9413E+01	0.0000E+00	0.1518E+00
155	0	0.1787E+03	-0.1027E+02	0.0000E+00	0.1484E+00
156	0	0.1779E+03	-0.1113E+02	0.0000E+00	0.1451E+00
157	0	0.1770E+03	-0.1199E+02	0.0000E+00	0.1417E+00
158	0	0.1761E+03	-0.1286E+02	0.0000E+00	0.1383E+00
159	0	0.1753E+03	-0.1374E+02	0.0000E+00	0.1349E+00
160	0	0.1744E+03	-0.1463E+02	0.0000E+00	0.1314E+00
161	0	0.1735E+03	-0.1552E+02	0.0000E+00	0.1291E+00
162	0	0.1726E+03	-0.1641E+02	0.0000E+00	0.1276E+00
163	0	0.1717E+03	-0.1728E+02	0.0000E+00	0.1260E+00
164	-2	0.1710E+03	-0.1798E+02	0.0000E+00	0.1248E+00
165	0	0.1877E+03	-0.2233E+02	0.0000E+00	0.1173E+00
166	0	0.1876E+03	-0.2242E+02	0.0000E+00	0.1171E+00
167	0	0.1869E+03	-0.2313E+02	0.0000E+00	0.1159E+00
168	0	0.1861E+03	-0.2386E+02	0.0000E+00	0.1146E+00
169	0	0.1854E+03	-0.2461E+02	0.0000E+00	0.1133E+00
170	0	0.1846E+03	-0.2537E+02	0.0000E+00	0.1120E+00
171	0	0.1838E+03	-0.2615E+02	0.0000E+00	0.1107E+00
172	0	0.1830E+03	-0.2697E+02	0.0000E+00	0.1093E+00
173	0	0.1822E+03	-0.2782E+02	0.0000E+00	0.1078E+00
174	0	0.1805E+03	-0.2951E+02	0.0000E+00	0.1048E+00
175	0	0.1796E+03	-0.3037E+02	0.0000E+00	0.1040E+00
176	0	0.1788E+03	-0.3123E+02	0.0000E+00	0.1040E+00
177	0	0.1779E+03	-0.3208E+02	0.0000E+00	0.1040E+00
178	0	0.1771E+03	-0.3293E+02	0.0000E+00	0.1040E+00
179	0	0.1762E+03	-0.3378E+02	0.0000E+00	0.1040E+00
180	0	0.1754E+03	-0.3461E+02	0.0000E+00	0.1040E+00
181	0	0.1746E+03	-0.3542E+02	0.0000E+00	0.1040E+00
182	0	0.1738E+03	-0.3620E+02	0.0000E+00	0.1040E+00
183	0	0.1731E+03	-0.3694E+02	0.0000E+00	0.1040E+00
184	-2	0.1724E+03	-0.3760E+02	0.0000E+00	0.1040E+00
185	0	0.1871E+03	-0.4294E+02	0.0000E+00	0.1040E+00
186	0	0.1870E+03	-0.4300E+02	0.0000E+00	0.1040E+00
187	0	0.1866E+03	-0.4338E+02	0.0000E+00	0.1040E+00
188	0	0.1860E+03	-0.4398E+02	0.0000E+00	0.1040E+00
189	0	0.1853E+03	-0.4467E+02	0.0000E+00	0.1040E+00
190	0	0.1846E+03	-0.4541E+02	0.0000E+00	0.1040E+00
191	0	0.1838E+03	-0.4619E+02	0.0000E+00	0.1040E+00
192	0	0.1830E+03	-0.4700E+02	0.0000E+00	0.1040E+00
193	0	0.1822E+03	-0.4782E+02	0.0000E+00	0.1040E+00
194	0	0.1805E+03	-0.4951E+02	0.0000E+00	0.1040E+00
195	0	0.1796E+03	-0.5037E+02	0.0000E+00	0.1040E+00
196	0	0.1788E+03	-0.5122E+02	0.0000E+00	0.1040E+00
197	0	0.1779E+03	-0.5207E+02	0.0000E+00	0.1040E+00
198	0	0.1771E+03	-0.5291E+02	0.0000E+00	0.1040E+00
199	0	0.1763E+03	-0.5373E+02	0.0000E+00	0.1040E+00
200	0	0.1755E+03	-0.5451E+02	0.0000E+00	0.1040E+00

Table 3.2.1 RESULT OF THE SEEPAGE ANALYSIS - POTENTIAL AND DISCHARGE (5/5)

(SECTION A-A)

****

***** POTENTIAL AND DISCHARGE VALUE CONDITION--STEDY *****

****

NODAL PT.	CONDITION	TOTAL HEAD (m)	PRES. HEAD (m)	DISCHARGE (m3/day)	MOIS. CO.
201	0	0.1748E+03	-0.5523E+02	0.0000E+00	0.1040E+00
202	0	0.1741E+03	-0.5587E+02	0.0000E+00	0.1040E+00
203	-2	0.1736E+03	-0.5637E+02	0.0000E+00	0.1040E+00
204	0	0.1867E+03	-0.6326E+02	0.0000E+00	0.1040E+00
205	0	0.1865E+03	-0.6350E+02	0.0000E+00	0.1040E+00
206	0	0.1860E+03	-0.6403E+02	0.0000E+00	0.1040E+00
207	0	0.1853E+03	-0.6470E+02	0.0000E+00	0.1040E+00
208	0	0.1846E+03	-0.6543E+02	0.0000E+00	0.1040E+00
209	0	0.1838E+03	-0.6620E+02	0.0000E+00	0.1040E+00
210	0	0.1830E+03	-0.6701E+02	0.0000E+00	0.1040E+00
211	0	0.1822E+03	-0.6783E+02	0.0000E+00	0.1040E+00
212	0	0.1805E+03	-0.6952E+02	0.0000E+00	0.1040E+00
213	0	0.1796E+03	-0.7037E+02	0.0000E+00	0.1040E+00
214	0	0.1788E+03	-0.7122E+02	0.0000E+00	0.1040E+00
215	0	0.1779E+03	-0.7206E+02	0.0000E+00	0.1040E+00
216	0	0.1771E+03	-0.7290E+02	0.0000E+00	0.1040E+00
217	0	0.1763E+03	-0.7371E+02	0.0000E+00	0.1040E+00
218	0	0.1755E+03	-0.7448E+02	0.0000E+00	0.1040E+00
219	0	0.1748E+03	-0.7516E+02	0.0000E+00	0.1040E+00
220	-2	0.1744E+03	-0.7559E+02	0.0000E+00	0.1040E+00

FLOWIN = 0.2443E+00

FLOWOUT = -0.2443E+00

TOTAL = -0.1334E-04

Table 3.2.2 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (1/4)

(SECTION A-A)

****

***** ELEMENT VELOCITY *****

****

ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
1	20.00	70.00	-0.2745E-02	-0.9970E+00	0.2372E-04	-0.2549E-04	0.3482E-04	-47.06
2	60.00	70.00	-0.9357E-02	-0.9961E+00	0.8084E-04	-0.3332E-04	0.8744E-04	-22.40
3	100.00	70.00	-0.1807E-01	-0.9955E+00	0.1561E-03	-0.3845E-04	0.1607E-03	-13.84
4	140.00	70.00	-0.2674E-01	-0.9962E+00	0.2310E-03	-0.3265E-04	0.2333E-03	-8.05
5	180.00	70.00	-0.3298E-01	-0.9975E+00	0.2850E-03	-0.2170E-04	0.2858E-03	-4.36
6	220.00	70.00	-0.3690E-01	-0.9984E+00	0.3188E-03	-0.1379E-04	0.3191E-03	-2.48
7	260.00	70.00	-0.3948E-01	-0.9990E+00	0.3411E-03	-0.8870E-05	0.3412E-03	-1.49
8	300.00	70.00	-0.4109E-01	-0.9993E+00	0.3550E-03	-0.6198E-05	0.3551E-03	-1.00
9	340.00	70.00	-0.4239E-01	-0.9995E+00	0.3663E-03	-0.4620E-05	0.3663E-03	-0.72
10	380.00	70.00	-0.4325E-01	-0.9996E+00	0.3737E-03	-0.3574E-05	0.3737E-03	-0.55
11	420.00	70.00	-0.4409E-01	-0.9996E+00	0.3809E-03	-0.3628E-05	0.3809E-03	-0.55
12	460.00	70.00	-0.4491E-01	-0.9996E+00	0.3880E-03	-0.3198E-05	0.3880E-03	-0.47
13	500.00	70.00	-0.4547E-01	-0.1000E+01	0.3929E-03	-0.1591E-06	0.3929E-03	-0.02
14	540.00	70.00	-0.4458E-01	-0.1002E+01	0.3851E-03	0.1349E-04	0.3854E-03	2.01
15	580.00	70.00	-0.3845E-01	-0.1005E+01	0.3322E-03	0.4712E-04	0.3356E-03	8.07
16	620.00	70.00	-0.2261E-01	-0.1010E+01	0.1953E-03	0.8475E-04	0.2129E-03	23.46
17	650.00	70.00	-0.5893E-02	-0.1012E+01	0.5092E-04	0.1005E-03	0.1127E-03	63.14
18	5.00	110.00	-0.3061E-03	-0.9926E+00	0.2644E-05	-0.6394E-04	0.6400E-04	-87.63
19	15.00	100.00	-0.2439E-02	-0.9915E+00	0.2107E-04	-0.7316E-04	0.7613E-04	-73.93
20	40.00	120.00	-0.1925E-02	-0.9908E+00	0.1663E-04	-0.7983E-04	0.8154E-04	-78.23
21	55.00	100.00	-0.8758E-02	-0.9879E+00	0.7567E-04	-0.1049E-03	0.1293E-03	-54.19
22	80.00	120.00	-0.1056E-01	-0.9868E+00	0.9123E-04	-0.1137E-03	0.1458E-03	-51.26
23	95.00	100.00	-0.1807E-01	-0.9850E+00	0.1561E-03	-0.1296E-03	0.2029E-03	-39.69
24	120.00	120.00	-0.2567E-01	-0.9869E+00	0.2218E-03	-0.1135E-03	0.2492E-03	-27.11
25	135.00	100.00	-0.2740E-01	-0.9879E+00	0.2367E-03	-0.1042E-03	0.2587E-03	-23.76
26	160.00	120.00	-0.3512E-01	-0.9911E+00	0.3034E-03	-0.7713E-04	0.3131E-03	-14.26
27	175.00	100.00	-0.3358E-01	-0.9926E+00	0.2902E-03	-0.6426E-04	0.2972E-03	-12.49
28	200.00	120.00	-0.3816E-01	-0.9946E+00	0.3297E-03	-0.4671E-04	0.3330E-03	-8.06
29	215.00	100.00	-0.3721E-01	-0.9953E+00	0.3215E-03	-0.4043E-04	0.3241E-03	-7.17
30	240.00	120.00	-0.3972E-01	-0.9964E+00	0.3432E-03	-0.3135E-04	0.3446E-03	-5.22
31	255.00	100.00	-0.3974E-01	-0.9966E+00	0.3433E-03	-0.2964E-04	0.3446E-03	-4.93
32	280.00	120.00	-0.4097E-01	-0.9970E+00	0.3540E-03	-0.2575E-04	0.3549E-03	-4.16
33	301.00	110.00	-0.4263E-01	-0.9978E+00	0.3683E-03	-0.1867E-04	0.3688E-03	-2.90
34	321.00	120.00	-0.4197E-01	-0.9990E+00	0.3626E-03	-0.8915E-05	0.3628E-03	-1.41
35	335.00	100.00	-0.4252E-01	-0.9988E+00	0.3674E-03	-0.1047E-04	0.3675E-03	-1.63
36	360.00	120.00	-0.4280E-01	-0.9988E+00	0.3698E-03	-0.1027E-04	0.3700E-03	-1.59
37	375.00	100.00	-0.4324E-01	-0.9987E+00	0.3736E-03	-0.1115E-04	0.3738E-03	-1.71
38	400.00	120.00	-0.4363E-01	-0.9988E+00	0.3770E-03	-0.1051E-04	0.3771E-03	-1.60
39	415.00	100.00	-0.4409E-01	-0.9987E+00	0.3809E-03	-0.1143E-04	0.3811E-03	-1.72
40	440.00	120.00	-0.4459E-01	-0.9988E+00	0.3853E-03	-0.1059E-04	0.3854E-03	-1.57
41	455.00	100.00	-0.4496E-01	-0.9987E+00	0.3885E-03	-0.1086E-04	0.3886E-03	-1.60
42	480.00	120.00	-0.4602E-01	-0.9990E+00	0.3977E-03	-0.8639E-05	0.3977E-03	-1.24
43	495.00	100.00	-0.4577E-01	-0.9994E+00	0.3955E-03	-0.5173E-05	0.3955E-03	-0.75
44	520.00	120.00	-0.4948E-01	-0.1000E+01	0.4275E-03	0.4017E-05	0.4276E-03	0.54
45	535.00	100.00	-0.4585E-01	-0.1003E+01	0.3962E-03	0.2655E-04	0.3971E-03	3.83
46	560.00	120.00	-0.5643E-01	-0.1007E+01	0.4875E-03	0.6458E-04	0.4918E-03	7.55
47	575.00	100.00	-0.4107E-01	-0.1016E+01	0.3548E-03	0.1386E-03	0.3809E-03	21.33
48	600.00	120.00	-0.5005E-01	-0.1024E+01	0.4324E-03	0.2049E-03	0.4785E-03	25.35
49	615.00	100.00	-0.2435E-01	-0.1033E+01	0.2103E-03	0.2884E-03	0.3570E-03	53.90
50	640.00	120.00	-0.1754E-01	-0.1035E+01	0.1516E-03	0.3025E-03	0.3383E-03	63.39

Table 3.2.2 RESULT OF THE SEEPAGE ANALYSIS - ELEMENT VELOCITY (2/4)

(SECTION A-A)

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***** ELEMENT VELOCITY *****

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ELEMENT	XC (m)	YC (m)	H.G.(X)	H.G.(Y)	VX (m/day)	VY (m/day)	VXY (m/day)	ANGLE (degree)
51	650.00	100.00	-0.6072E-02	-0.1036E+01	0.5246E-04	0.3086E-03	0.3130E-03	80.35
52	10.00	140.00	-0.2024E-03	-0.9989E+00	0.1749E-04	-0.9265E-04	0.9428E-04	-79.31
53	30.00	140.00	-0.6777E-03	-0.9986E+00	0.5855E-04	-0.1202E-03	0.1337E-03	-64.03
54	50.00	140.00	-0.2065E-02	-0.9975E+00	0.1784E-03	-0.2158E-03	0.2800E-03	-50.42
55	70.00	140.00	-0.5337E-02	-0.9952E+00	0.4611E-03	-0.4122E-03	0.6185E-03	-41.80
56	90.00	140.00	-0.1394E-01	-0.9934E+00	0.1204E-02	-0.5713E-03	0.1333E-02	-25.38
57	110.00	140.00	-0.2245E-01	-0.9936E+00	0.1940E-02	-0.5529E-03	0.2017E-02	-15.91
58	130.00	140.00	-0.3044E-01	-0.9951E+00	0.2630E-02	-0.4192E-03	0.2663E-02	-9.06
59	150.00	140.00	-0.3460E-01	-0.9970E+00	0.2990E-02	-0.2628E-03	0.3001E-02	-5.02
60	170.00	140.00	-0.3693E-01	-0.9983E+00	0.3191E-02	-0.1503E-03	0.3194E-02	-2.70
61	190.00	140.00	-0.3783E-01	-0.9988E+00	0.3269E-02	-0.1022E-03	0.3270E-02	-1.79
62	210.00	140.00	-0.3870E-01	-0.9990E+00	0.3343E-02	-0.8367E-04	0.3344E-02	-1.43
63	230.00	140.00	-0.3940E-01	-0.9991E+00	0.3404E-02	-0.7401E-04	0.3405E-02	-1.25
64	250.00	140.00	-0.4016E-01	-0.9993E+00	0.3470E-02	-0.6429E-04	0.3470E-02	-1.06
65	270.00	140.00	-0.4071E-01	-0.9994E+00	0.3518E-02	-0.5505E-04	0.3518E-02	-0.90
66	290.00	140.00	-0.4122E-01	-0.9994E+00	0.3561E-02	-0.5535E-04	0.3562E-02	-0.89
67	302.00	140.00	-0.5859E-01	-0.9995E+00	0.3544E-02	-0.3027E-04	0.3544E-02	-0.49
68	312.00	140.00	-0.4166E-01	-0.9997E+00	0.3600E-02	-0.2928E-04	0.3600E-02	-0.47
69	330.00	140.00	-0.4216E-01	-0.9996E+00	0.3642E-02	-0.3481E-04	0.3643E-02	-0.55
70	350.00	140.00	-0.4259E-01	-0.9996E+00	0.3680E-02	-0.3290E-04	0.3680E-02	-0.51
71	370.00	140.00	-0.4303E-01	-0.9996E+00	0.3718E-02	-0.3185E-04	0.3718E-02	-0.49
72	390.00	140.00	-0.4340E-01	-0.9996E+00	0.3750E-02	-0.3187E-04	0.3750E-02	-0.49
73	410.00	140.00	-0.4384E-01	-0.9996E+00	0.3788E-02	-0.3392E-04	0.3788E-02	-0.51
74	430.00	140.00	-0.4428E-01	-0.9996E+00	0.3826E-02	-0.3675E-04	0.3826E-02	-0.55
75	450.00	140.00	-0.4485E-01	-0.9995E+00	0.3875E-02	-0.4129E-04	0.3875E-02	-0.61
76	470.00	140.00	-0.4544E-01	-0.9994E+00	0.3926E-02	-0.4833E-04	0.3927E-02	-0.71
77	490.00	140.00	-0.4637E-01	-0.9992E+00	0.4007E-02	-0.6841E-04	0.4007E-02	-0.98
78	510.00	140.00	-0.4774E-01	-0.9989E+00	0.4125E-02	-0.9921E-04	0.4126E-02	-1.38
79	530.00	140.00	-0.5032E-01	-0.9980E+00	0.4348E-02	-0.1769E-03	0.4352E-02	-2.33
80	550.00	140.00	-0.5508E-01	-0.9976E+00	0.4759E-02	-0.2048E-03	0.4763E-02	-2.46
81	570.00	140.00	-0.5974E-01	-0.9996E+00	0.5162E-02	-0.3443E-04	0.5162E-02	-0.38
82	590.00	140.00	-0.6059E-01	-0.1005E+01	0.5235E-02	0.4601E-03	0.5255E-02	5.02
83	610.00	140.00	-0.4767E-01	-0.1013E+01	0.4119E-02	0.1165E-02	0.4280E-02	15.80
84	630.00	140.00	-0.2610E-01	-0.1016E+01	0.2255E-02	0.1379E-02	0.2643E-02	31.46
85	650.00	140.00	-0.6138E-02	-0.1013E+01	0.5303E-03	0.1133E-02	0.1251E-02	64.92
86	10.00	155.00	-0.4951E-04	-0.9987E+00	0.4278E-05	-0.1099E-03	0.1100E-03	-87.77
87	30.00	155.00	-0.2308E-03	-0.9982E+00	0.1994E-04	-0.1584E-03	0.1596E-03	-82.82
88	50.00	155.00	-0.5871E-03	-0.9965E+00	0.5073E-04	-0.2997E-03	0.3040E-03	-80.39
89	70.00	155.00	-0.1977E-02	-0.9914E+00	0.1709E-03	-0.7429E-03	0.7623E-03	-77.05
90	90.00	157.50	-0.1108E-01	-0.9826E+00	0.9572E-03	-0.1499E-02	0.1779E-02	-57.45
91	110.00	160.00	-0.2613E-01	-0.9833E+00	0.2258E-02	-0.1447E-02	0.2682E-02	-32.65
92	130.00	160.00	-0.3426E-01	-0.9892E+00	0.2960E-02	-0.9324E-03	0.3103E-02	-17.49
93	150.00	160.00	-0.3801E-01	-0.9946E+00	0.3284E-02	-0.4642E-03	0.3317E-02	-8.05
94	170.00	160.00	-0.3775E-01	-0.9976E+00	0.3262E-02	-0.2116E-03	0.3269E-02	-3.71
95	190.00	160.00	-0.3815E-01	-0.9981E+00	0.3296E-02	-0.1618E-03	0.3300E-02	-2.81
96	210.00	160.00	-0.3876E-01	-0.9983E+00	0.3349E-02	-0.1474E-03	0.3352E-02	-2.52
97	230.00	160.00	-0.3952E-01	-0.9984E+00	0.3415E-02	-0.1409E-03	0.3418E-02	-2.36
98	250.00	160.00	-0.4035E-01	-0.9986E+00	0.3486E-02	-0.1235E-03	0.3488E-02	-2.03
99	270.00	160.00	-0.4092E-01	-0.9989E+00	0.3536E-02	-0.9815E-04	0.3537E-02	-1.59
100	290.00	160.00	-0.4126E-01	-0.9991E+00	0.3565E-02	-0.7642E-04	0.3566E-02	-1.23