

**FINDINGS OF THE SURVEY OF ANNU NAGAR [ground water contaminated]**  
 17, JULY 2001 TO 9, JANUARY 2003

**1528 INDIVIDUALS FROM 270 FAMILIES**

[NUMBER OF MEMBERS IN A FAMILY VARIES FROM 1 TO 14]

**1. DURATION OF RESIDENCE IN ANNU NAGAR**

SINCE	NO. OF FAMILY	Percent	Cum.
0.4	1	0.4%	0.4%
0.7	2	0.7%	1.1%
1.0	4	1.5%	2.6%
1.6	1	0.4%	3.0%
2.0	7	2.6%	5.6%
3.0	17	6.3%	11.9%
4.0	10	3.7%	15.6%
5.0	12	4.4%	20.0%
6.0	12	4.4%	24.4%
7.0	6	2.2%	26.7%
8.0	37	13.7%	40.4%
9.0	7	2.6%	43.0%
<b>10.0</b>	<b>70</b>	<b>25.9%</b>	<b>68.9%</b>
11.0	4	1.5%	70.4%
12.0	33	12.2%	82.6%
13.0	12	4.4%	87.0%
14.0	11	4.1%	91.1%
15.0	24	8.9%	100.0%
Total	270	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
270	2455	<b>9.094</b>	14.127	3.759	0.229
Minimum	25%ile	Median	75%ile	Maximum	Mode
0.400	7.000	10.000	<b>12.000</b>	15.000	10.000

**2. AGE DISTRIBUTION OF RESIDENT POPULATION**

**2.a. AGE < 1 YEAR**

	SEX F	M	Total
0.01	1	0	1
0.02	1	3	4
0.03	4	2	6
0.04	0	3	3
0.05	1	4	5
0.06	4	1	5
0.08	3	2	5
0.09	1	2	3
0.10	1	1	2
<b>Total</b>	<b>16</b>	<b>18</b>	<b>34</b>

**2.b. AGE 1 TO 9 YEARS**

	SEX F	M	Total
1.00	12	10	22
1.06	11	5	16
2.00	16	20	36
2.06	0	3	3
3.00	29	30	59
3.06	1	1	2
4.00	21	28	49
4.06	0	1	1
5.00	41	34	75
6.00	22	35	57
7.00	20	27	47
8.00	41	36	77
9.00	11	10	21
<b>Total</b>	<b>225</b>	<b>240</b>	<b>465</b>

**2.c. AGE 10 TO 90+ YEARS**

	SEX F	M	Total
10 TO 19	153	233	386
20 TO 29	112	88	200
30 TO 39	112	112	224
40 TO 49	37	73	110
50 TO 59	25	22	47
60 TO 69	24	22	46
70 TO 79	1	8	9
80 TO 89	3	2	5
90 +	1	1	2
<b>Total</b>	<b>468</b>	<b>561</b>	<b>1029</b>

**3. PERSONS WITH HARMFUL EXPOSURE**

EXPOSURE	Freq	Percent	Cum.
GAS + WATER	353	23.1%	23.1%
ONLY WATER	<b>1175</b>	<b>76.9%</b>	100.0%
Total	1528	100.0	

**4. AGE SEX DISTRIBUTION OF GAS + WATER EXPOSED POPULATION**

	Female	Male	Total
17 TO 19	18	32	50
20 TO 29	28	35	63
30 TO 39	59	54	113
40 TO 49	22	45	67
50 TO 59	14	12	26
60 TO 69	9	15	24
70 TO 79	1	6	7
80 TO 89	1	0	1
90 +	1	1	2
<b>Total</b>	<b>153</b>	<b>200</b>	<b>353</b>

**5. AGE SEX DISTRIBUTION OF WATER EXPOSED POPULATION**

	Female	Male	Total
< 1	16	18	34
1 to 9	225	240	465
10 TO 19	135	201	336
20 TO 29	84	53	137
30 TO 39	53	58	111
40 TO 49	15	28	43
50 TO 59	11	10	21
60 TO 69	15	7	22
70 TO 79	0	2	2
80 TO 89	2	2	4
90 +	-	-	-
<b>Total</b>	<b>556</b>	<b>619</b>	<b>1175</b>

**6. PERSONS USING DIFFERENT SOURCES OF DRINKING WATER**

SOURCE	Freq	Percent	Cum.
1 <b>HAND PUMP</b>	<b>1387</b>	90.8%	90.8%
6 HAND PUMP + MUNICIPAL LINE	8	0.5%	92.9%
7 HAND PUMP + WATER TANKER	109	7.1%	100.0%
4 TUBE WELL	18	1.2%	92.0%
5 TUBE WELL + MUNICIPAL LINE	6	0.4%	92.3%
<b>Total</b>	<b>1528</b>	<b>100.0%</b>	

**1528-24= 1504 INDIVIDUALS ARE USING HAND PUMP WATER**

## 7. PERSONS USING HAND PUMP WATER IN DIFFERENT LOCATIONS

HAND PUMP LOCATION	Freq	Percent	Cum.
1 [NEAR JAMUN TREE]	202	13.4%	13.4%
2 [ <b>NEAR SINTEX TANK</b> ]	<b>512</b>	34.0%	47.5%
3 [NEAR TOWER]	175	11.6%	59.1%
4 [INFRONT OF NAWAB COLONY]	218	14.5%	73.6%
5 [NEAR WEST RAILWAY CABIL]	397	26.4%	100.0%
Total	1504	100.0%	

## 8. MENARCHE AT DIFFERENT AGES AMONG YOUNG FEMALE POPULATION

AGE	11 YEAR	12 YEAR	13 YEAR	14 YEAR	15 YEAR	TOTAL
NO. OF FEMALES	12	24	13	10	17	76
NO ONSET OF MENARCHE	12	22	10	05	06	55
ONSET OF MENARCHE	0	02	03	05	11	21

NUMBER OF FEMALES WHO HAD EITHER MISCARIAGE OR STILL BIRTH AFTER 1984 = 28

## 9. DISTRIBUTION OF SYMPTOMS AMONG FEMALE POPULATION WITH DIFFERENT EXPOSURES

SYMPTOM	GAS + WATER	WATER	Total
ASYMPTOMATIC	17	335	352
GIDDINESS	67	85	152
PAIN IN ABDOMEN	55	97	152
JOINT PAIN	45	51	96
HEADACHE	33	50	83
REDUCED WORK ABILITY	28	38	66
FEVER	12	44	56
BREATHLESSNESS	34	21	55
WHITE DISCHARGE	17	30	47
BACKACHE	18	28	46
COUGH	18	24	42
BODYACHE	15	15	30
ANXIETY (BECHAINEE)	11	19	30
BURNING/WATERING EYE	16	09	25
DIMINISHED VISION	14	10	24
SKIN ALLERGY	08	12	20
IRREGULAR MENSES	11	08	19
FATIGUE	04	09	13
OTHERS	35	48	83
TOTAL	458	933	1391

**10. DISTRIBUTION OF SYMPTOMS AMONG MALE POPULATION WITH DIFFERENT EXPOSURES**

SYMPTOM	GAS + WATER	WATER	Total
ASYMPTOMATIC	24	402	426
PAIN IN ABDOMEN	102	121	223
GIDDINESS	78	60	138
JOINT PAIN	59	39	98
COUGH	53	38	91
PAIN IN CHEST	44	37	81
HEADACHE	23	38	61
BREATHLESSNESS	35	20	55
FEVER	13	25	38
BURNING/WATERING EYE	20	8	28
DIMINISHED VISION	19	9	28
SKIN ALLERGY	10	18	28
BODYACHE	11	8	19
ANXIETY (BECHAINEE)	10	5	15
FATIGUE	5	8	13
REDUCED WORK ABILITY	4	8	12
VOMITING	2	9	11
BACKACHE	4	5	9
OTHERS	29	33	62
Total	545	891	1436

**GA = Gas Affected**

**GWCA = Ground Water Contamination Affected**

**AGE GROUP [< 13 years ] Number of individuals 685.**

Complaint	GA + GWCA	ONLY GWCA	TOTAL (%)
Pain in abdomen	None	70 (10.2 %)	70 (10.2 %)
Giddiness	None	29 (4.6 %)	29 (4.6 %)
Pain in chest	None	23 (3.6 %)	23 (3.6 %)
Fever	None	23 (3.6 %)	23 (3.6 %)
Headache	None	21 (3.3 %)	21 (3.3 %)

**AGE GROUP [14 to 25 years] Total number of individuals 358, (103 GA+GWCA, 255 GWCA)**

Complaint	GA + GWCA	ONLY GWCA	TOTAL (%)
Pain in abdomen	44 (42.7 %)	69 (27 %)	113 (31.5 %)
Giddiness	33 (32 %)	44 (17.2 %)	77 (21.5 %)
Headache	16 (15.5 %)	34 (13.3 %)	50 (14 %)
Joint Pain	19 (18.4 %)	28 (10.9 %)	37 (10.3 %)
Pain in chest	14 (13.5 %)	29 (11.3 %)	33 (9.2 %)

**AGE GROUP [26 to 50 years] Total number of individuals 408, (210 GA+GWCA, 198 GWCA)**

Complaint	GA + GWCA	ONLY GWCA	TOTAL (%)
Pain in abdomen	94 (44.7 % )	63 (31.8 %)	157 (38.4 %)
Giddiness	97 (46 %)	59 (29.7 %)	156 (38.2 %)
Pain in chest	65 (30.9 %)	44 (22.2 %)	109 (26.7 % )

Fever	57 (27.1 %)	27 (13.6 %)	78 (19.1 %)
Headache	55 (26.1 %)	22 (11.1 %)	77 (18.8 %)

**AGE GROUP [> 50 years] Total number of individuals 77, (40 GA+GWCA, 37 GWCA)**

Complaint	GA + GWCA	ONLY GWCA	TOTAL (%)
Pain in abdomen	19 (47.5 %)	16 (43.2 %)	35 (45.4 %)
Giddiness	20 (50 %)	14 (37.8 %)	34 (44.1 %)
Pain in chest	15 (37.5 %)	13 (35.1 %)	28 (36.3 %)
Fever	8 (20 %)	10 (27 %)	18 (23.3 %)
Headache	10 (25 %)	5 (13.5 %)	15 (19.4 %)

- Number of females who had either miscarriage or still birth after 1984 are 28.  
Total number times pregnant 140, 37 miscarriage, 18 still births, 85 living child (35M,50 F)

According to a recent survey carried out by the community health workers of the Sambhavna clinic in Annu Nagar (population 1528), 91 % of the residents were using water from the contaminated hand pumps. According to the survey, every second person in the community was suffering from a multitude of symptoms. The most common symptoms among all age groups were found to be abdominal pain followed by giddiness, pain in chest, headache and fever. These symptoms were most frequent among gas affected people who were additionally exposed to contaminated water. One of the significant findings of the survey was that among the teenage females between 13 and 15, 43% had not begun their periods.

**ANNU NAGAR SURVEY [July 2001 to January 2003]**

- 1528 individuals [819 male 54 %, 709 46 % female] from 270 families.
- 75 %ile families living in Annu Nagar since 12 years.
- Out of 1528 individuals (1175 individuals) 77 % are only contaminated water victim and (353 individuals) 23 % are Gas victim + Water Victim.
- 91 % community dwellers are using hand pump water as their drinking water.
- Only 1 % community dwellers have municipal water tap/facility.
- Number of children below 2 years of age are 108 [55 female child, 53 male child]
- Major complaints reported :