

NPDES PERMIT APPLICATION FOR DISCHARGES  
FROM MSSSS  
MAY 16, 1992

APPENDICES B-E

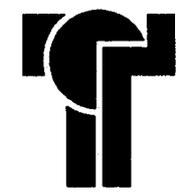
**TEMPE**

Property of  
Flood Control District of MC Library  
Please Return to  
2801 W. Durango  
Phoenix, AZ 85009

1199.015

**APPENDIX B**

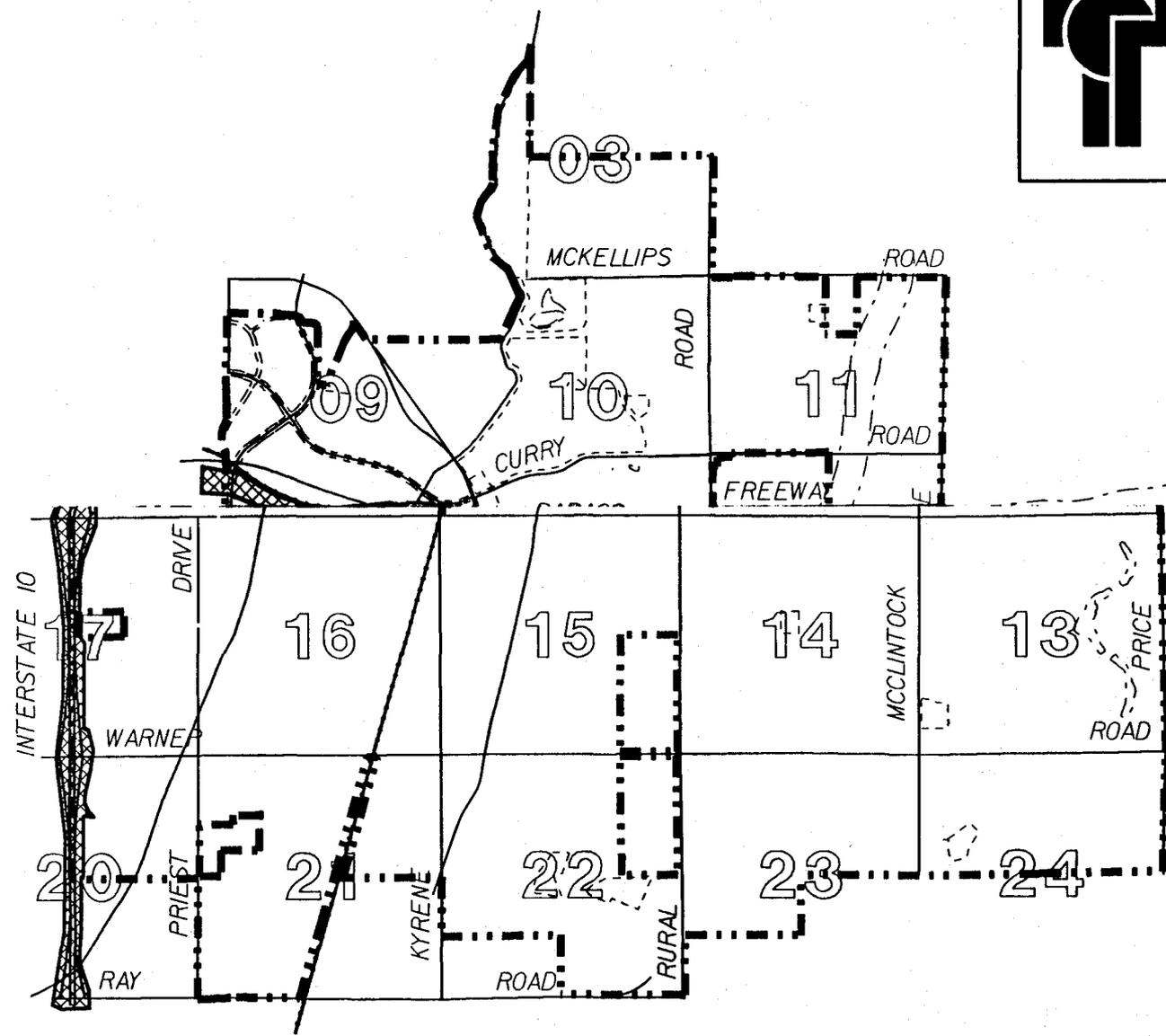
**SOURCE IDENTIFICATION**



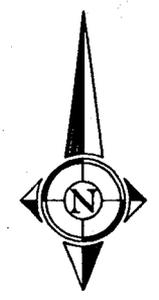
CITY OF TEMPE  
ADOT STORM  
DRAIN AREAS

DATE: 5-15-92	MAP NO: SCALE:
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APP. B.1



0 1000 2000 4000  
Scale



APP. B. 2



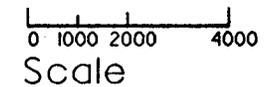
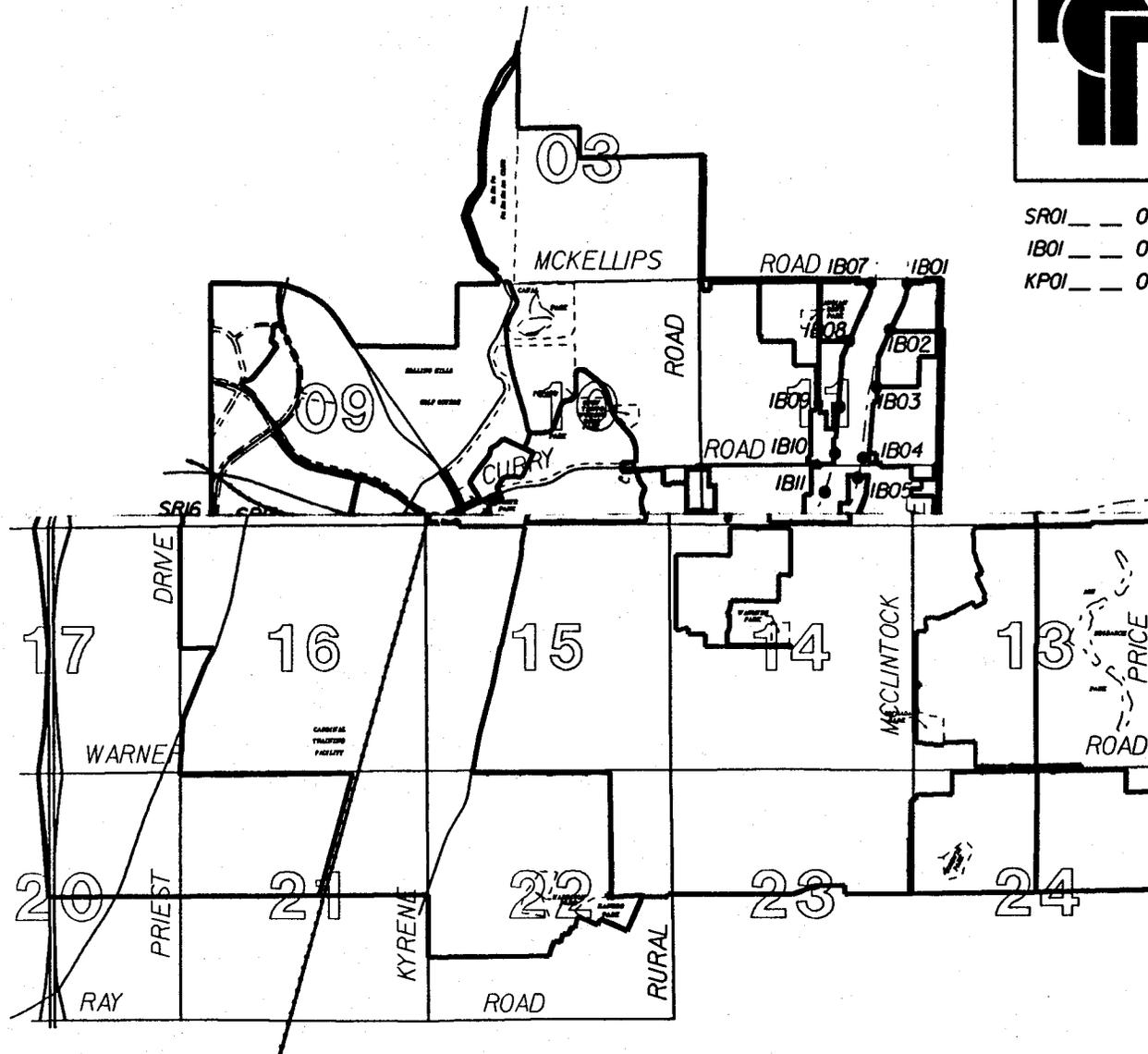
# CITY OF TEMPE

## MACRO DRAINAGE AREAS W/OUTFALLS TO WATERS OF THE US

DATE:  
5-15-92

MAP NO:  
SCALE:

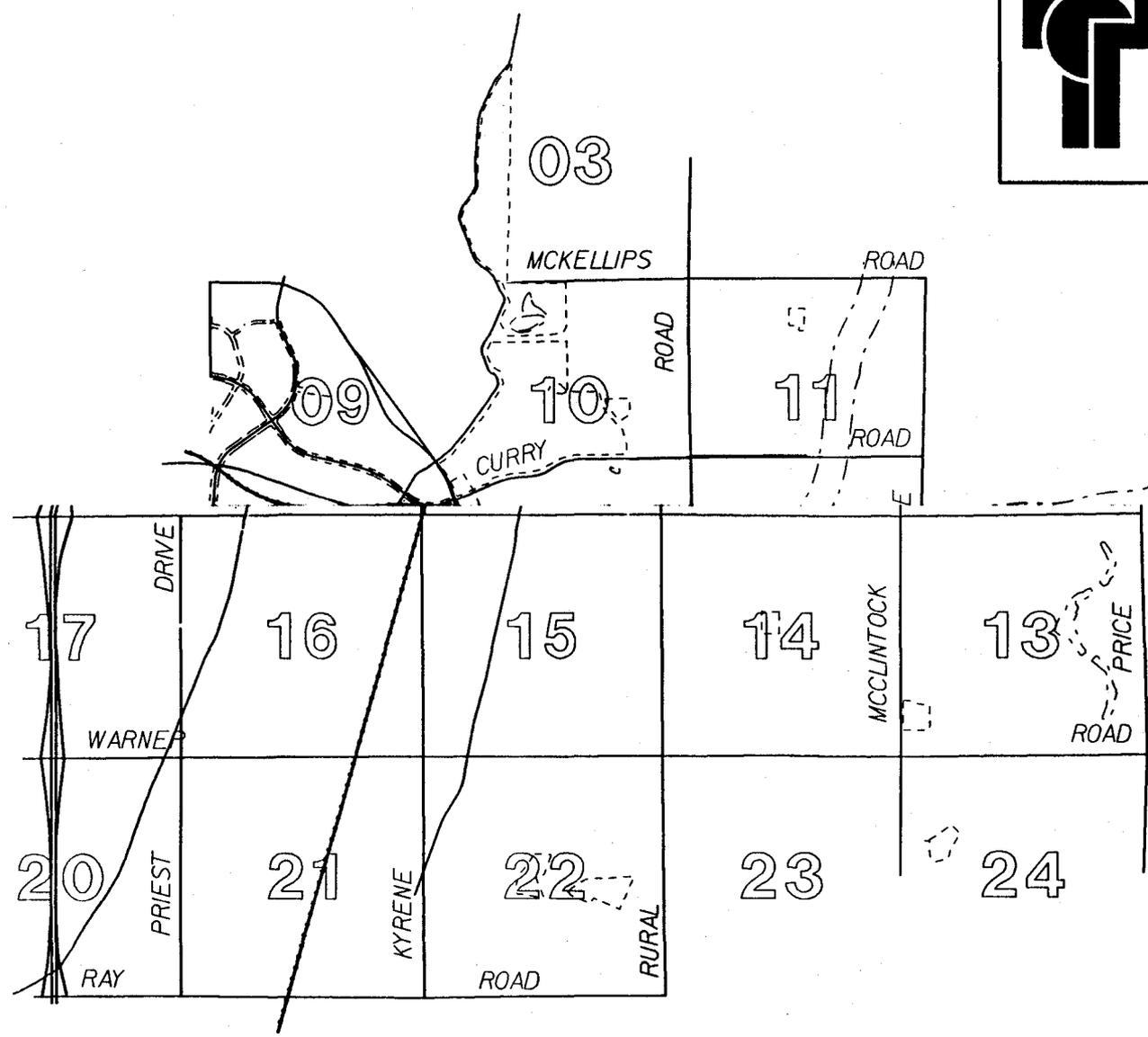
SROI \_\_\_ OUTFALLS TO WATERS OF THE U.S.  
IBOI \_\_\_ OUTFALLS TO WATERS OF THE U.S.  
KPOI \_\_\_ OUTFALL TO WATERS OF THE U.S.



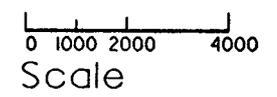


CITY OF TEMPE  
SECTION MAP  
INDEX

DATE:	MAP NO:
5-15-92	SCALE:

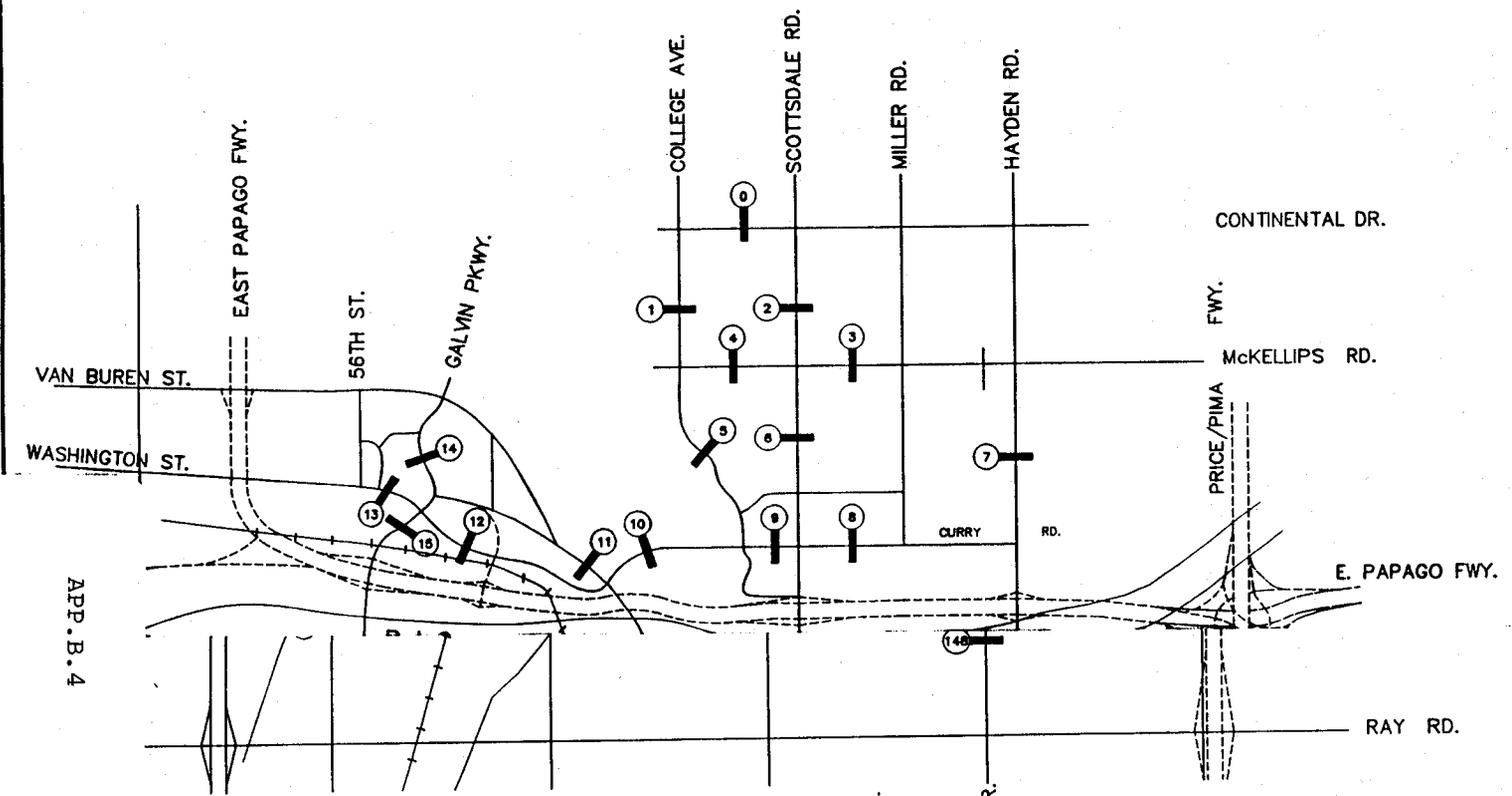


APP. B. 3



# CITY OF TEMPE

## TRAFFIC COUNTS MAP



	91-92	92-93	01-00
0.	4,789	-	5,408
1.	14,390	17,549	17,878(2)
2.	39,344	36,053(4)	42,534(3)
3.	16,574(9)	23,900	-
4.	9,739	12,093	10,849
5.	10,825	12,995	13,824(2)
6.	38,242	37,996(4)	43,964(3)
7.	51,802	48,841	43,906
8.	17,334(4)	20,624	17,557
9.	24,558	22,422	22,890
10.	28,583	33,684	33,068
11.	20,903	27,027(6)	49,003
12.	20,515(4)	23,208(4)	-
13.	22,463(4)	32,075(4)	-
14.	16,743	7,948(8)	-
15.	22,571	18,325(4)	16,976
16.	7,181(9)	9,273	-
17.	25,773(4,9)	39,038	39,343
18.	36,757(4)	-	-
19.	53,653	50,520	47,863
20.	7,916(9)	(1)	-
21.	21,766	18,714(4)	21,649
22.	4,874	5,378	-
23.	8,677	6,849	7,597
24.	8,616	10,623	10,841
25.	8,804(9)	13,322	12,306
26.	39,648	38,237(4)	46,103
27.	8,496	4,688(5)	8,389
28.	5,334(4)	4,727(5)	8,124
29.	8,274(4,10)	6,983(4)	(1)
30.	42,995	37,302	37,754(4)
31.	50,328	48,368	(1)
32.	38,817	36,740	37,987
33.	4,623	5,620	7,118
34.	8,093	8,894	10,412
35.	5,207	-	-
36.	48,014	43,350	41,321
37.	39,724	38,190	33,774
38.	41,787	40,914	38,219
39.	8,090	8,444	-
40.	44,000	44,539	(1)
41.	36,732	37,198	(1)
42.	6,329(4,10)	13,858(4)	(1)
43.	30,378(4)	31,809(4)	(1)
44.	28,953(4)	29,082(4)	34,273
45.	28,917(4)	31,458(4)	36,288
143	21,093	19,739	12,172
144	20,679	20,056	15,907
145	4,107	3,447	2,621
146	10,435	9,581	5,509
147	16,450	15,364	11,211
148	21,649	18,860	7,444
149	11,081	10,361	-

APP. B.4



# COUNT LOCATION AND NUMBER

### FOOTNOTES

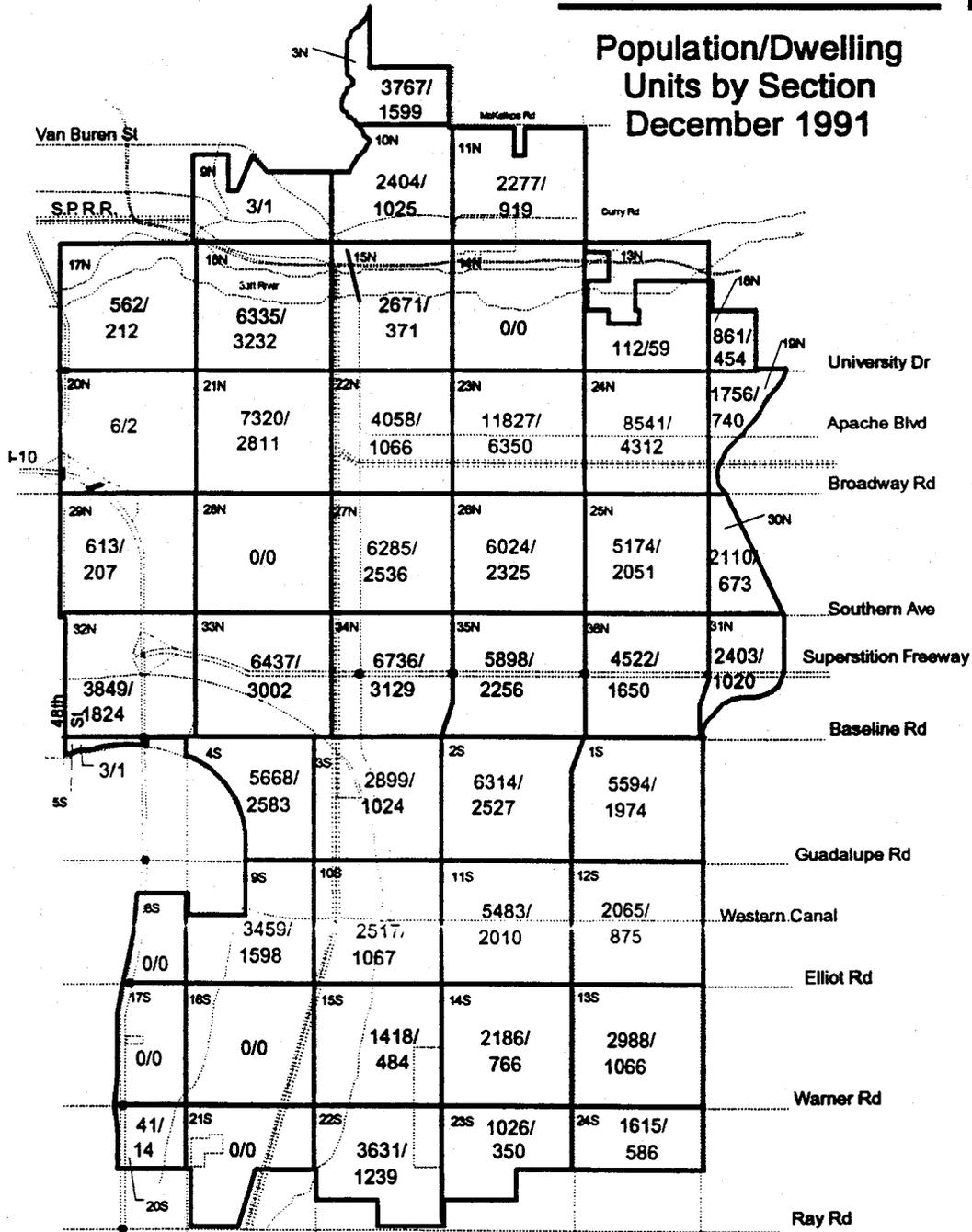
- Counts not available due to construction.
- The widening of Galvin Parkway to 4 lanes may have caused this reduction from 1986 volumes.
- Hayden Road was under construction when 1986 counts were taken.
- Construction in area when count was taken.
- Rio Salado Pkwy closed from Mill Ave. to Rural Rd. when count was taken.
- Count taken after opening of realigned Washington Street.
- The widening of Rural Road may have caused this reduction from 88 volumes.
- Count taken on 4/10/91, 1 week after opening of Priest Drive to Van Buren/Galvin Parkway.
- Reduction in volume due to S.R.P. water release in Salt River.
- Reduction in volume due to opening of Price/Pima Freeway (Southern Avenue to University Drive).

\* In case of volume discrepancies, refer to the Tempe average daily traffic volumes memorandum dated April 15, 1992

# City of Tempe



## Population/Dwelling Units by Section December 1991



Scale



Priest Dr

Kyrene Rd

Rural Rd

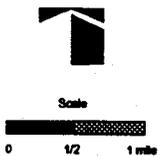
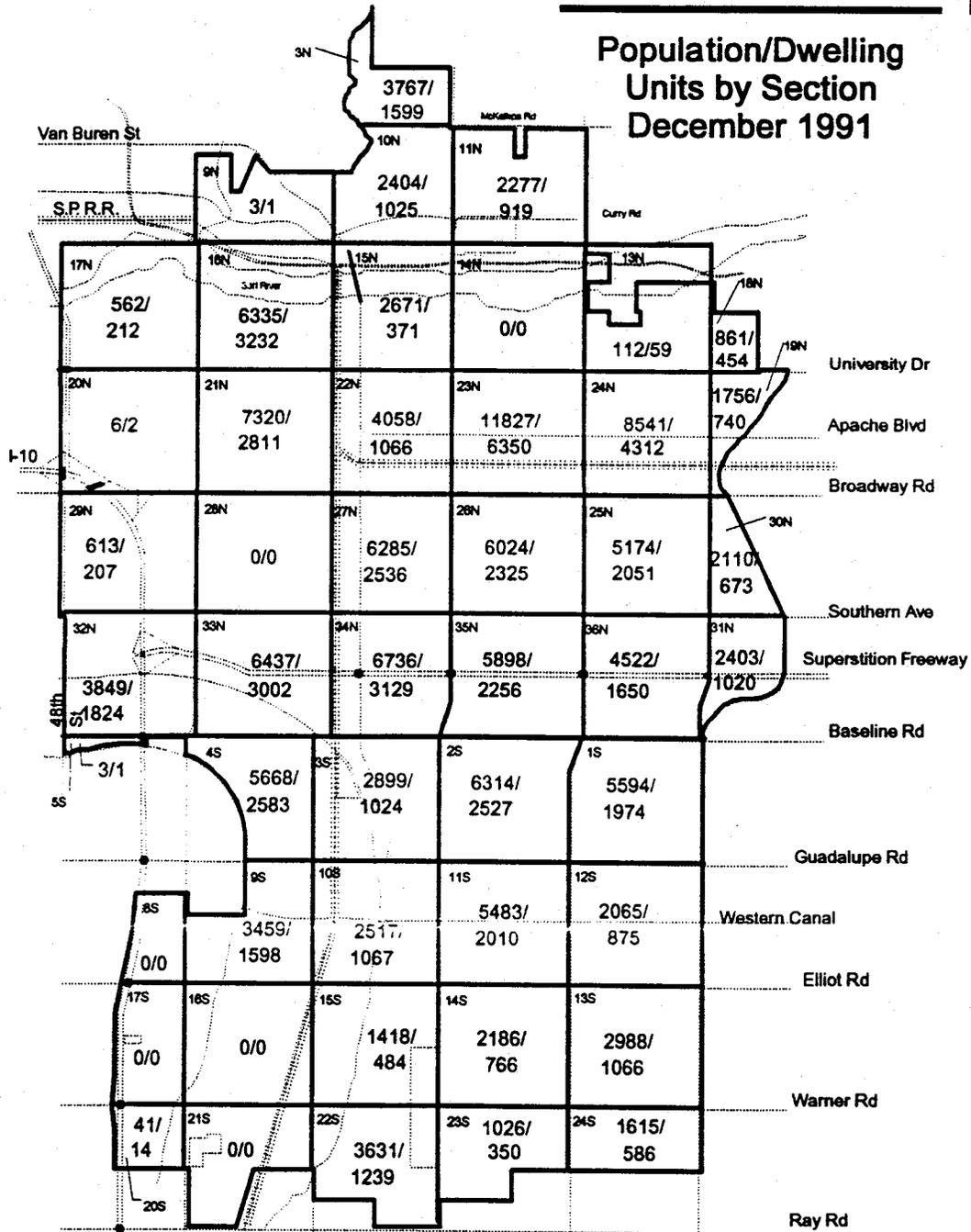
McClintock Dr

Price Rd

# City of Tempe



## Population/Dwelling Units by Section December 1991



Priest Dr

Kyrene Rd

Rural Rd

McClintock Dr

Price Rd



December 1991

## Population and Dwelling Units by Section

Section	Population*	Group Qtr Population	Dwelling Units^	Section	Population*	Group Qtr Population	Dwelling Units^
3N	3,767		1,599	1S	5,624	3	1,974
9N	3		1	2S	6,314		2,527
10N	2,404		1,025	3S	2,899	93	1,024
11N	2,277		919	4S	5,668		2,583
13N	112		59	5S	3		1
14N	0		0	8S	0		0
15N	2,671	1,928	371	9S	3,459		1,598
16N	6,335	56	3,232	10S	2,517		1,067
17N	562		212	11S	5,483		2,010
18N	861		454	12S	2,065		875
19N	1,756		740	13S	2,988		1,066
20N	6		2	14S	2,186	7	766
21N	7,320	9	2,811	15S	1,418		484
22N	4,058	1,459	1,066	16S	0		0
23N	11,827		6,350	17S	0		0
24N	8,541	145	4,312	20S	41		14
25N	5,174	14	2,051	21S	0		0
26N	6,024		2,325	22S	3,631		1,239
27N	6,285	19	2,536	23S	1,026		350
28N	0		0	24S	1,615		586
29N	613		207				
30N	2,110	118	673				
31N	2,403		1,020				
32N	3,849		1,824				
33N	6,437		3,002				
34N	6,736		3,129				
35N	5,898	6	2,256				
36N	4,522	15	1,650				
<b>Subtotal</b>	<b>102,551</b>	<b>3,769</b>	<b>43,826</b>	<b>Subtotal</b>	<b>46,937</b>	<b>103</b>	<b>18,164</b>

Source: City of Tempe Land Use Inventory, July 1989.  
 Residential Units Completed, July, 1989 to December 1991.  
 Phoenix Metro Housing Study, 4th qtr, 1991 vacancy rates.  
 1990 Census, Persons Per Housing Type, April 1, 1990.

\* Includes Group Quarter Population.  
 ^ ASU Dorms/Fraternities Units not included.

TOTAL POPULATION: 149,488  
 TOTAL DWELLING UNITS: 61,990  
 PERSONS/OCCUPIED UNIT: 2.53

Population Estimations: Reference Table

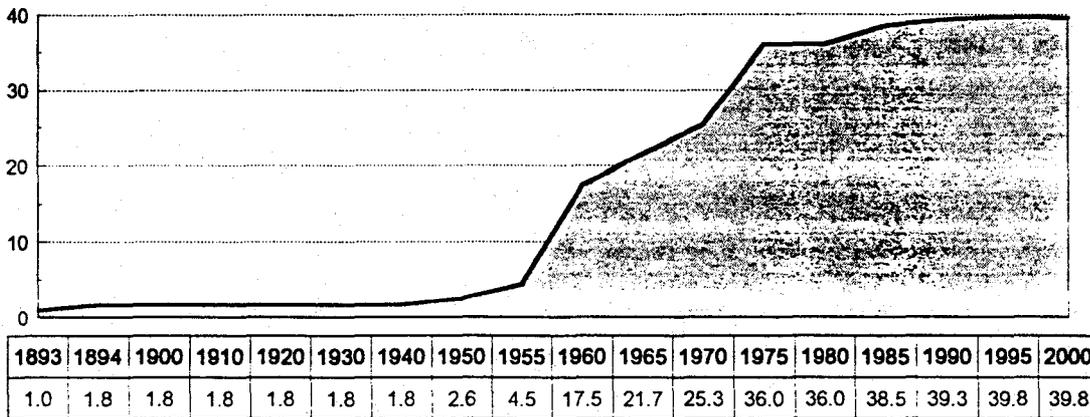
Unit Type	Household Size (Persons/Unit)	Vacancy Rates		Vacant Units
		North Tempe	South Tempe	
Single Family:	2.90	1.0%	2.0%	382
TH/PH/Condos:	2.20	2.0%	2.0%	188
Multifamily:	1.98	9.0%	8.0%	2,052
Mobile Homes:	1.90	14.0%	14.0%	405

# Demographic History



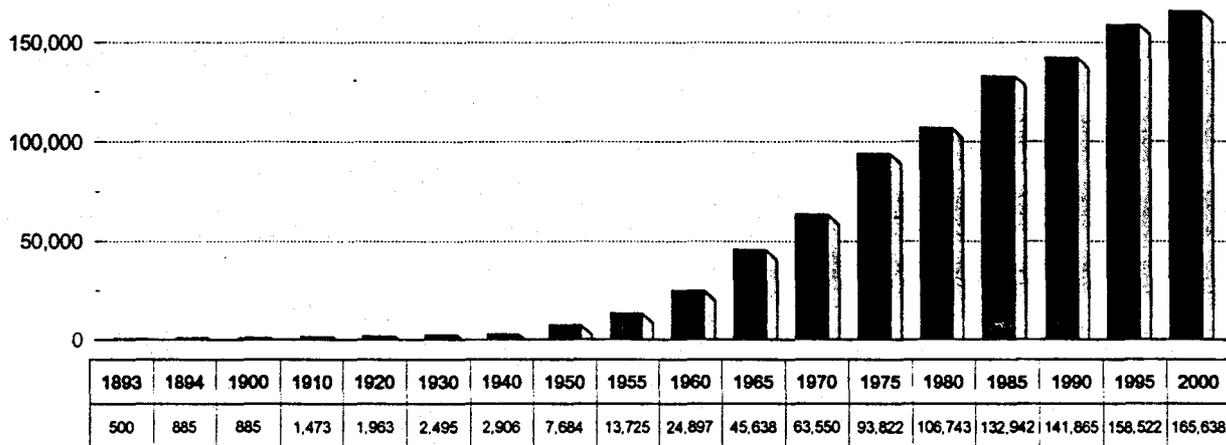
The original settlement, known as "Hayden's Ferry", was founded in 1871. Twenty-three years later, on November 26, 1894, "the Town of Tempe" was incorporated. On November 17, 1929, Tempe was recognized as the "City of Tempe". Thirty-five years later, on October 19, 1964, Tempe became a "Charter City".

Area (square miles)



The population picture, during the 1990's, will be different from the "boom" years, from 1950 to 1985. As a land locked community, Tempe will experience slowed population growth but will retain a strong commitment to diversifying its employment base, expanding its commercial activity opportunities, and maintaining its well established residential neighborhoods.

Population





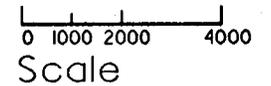
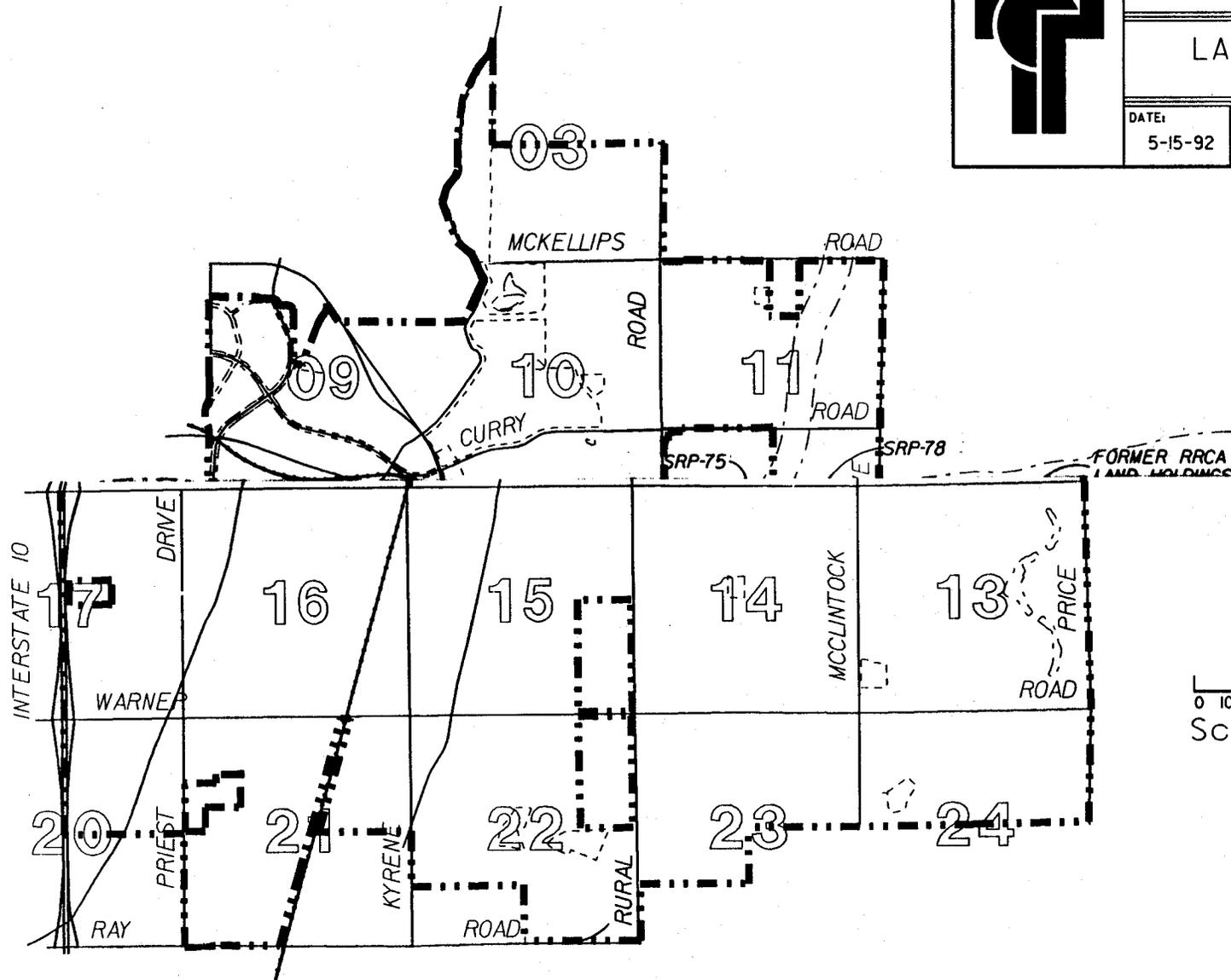
CITY OF TEMPE

LANDFILLS

DATE:  
5-15-92

MAP NO:  
SCALE:

APP. B. 6





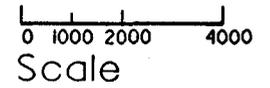
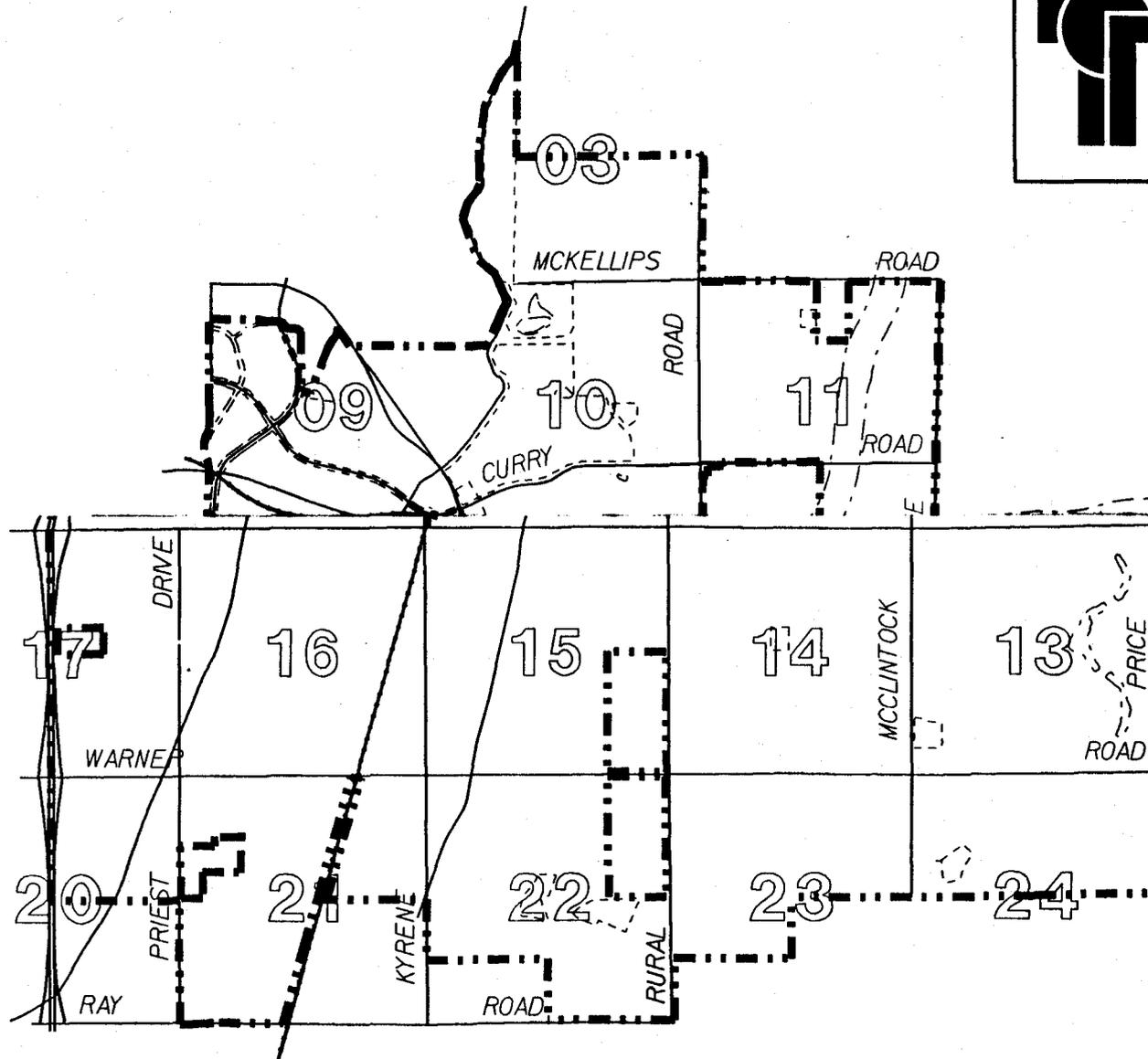
CITY OF TEMPE

NPDES PERMITTED DISCHARGE

DATE:  
5-15-92

MAP NO:  
SCALE:

APP. B. 7





**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION IX**

**75 Hawthorne Street  
San Francisco, Ca. 94105-3901**

**In Reply  
Refer To: W-5-1  
Certified Mail:  
P-878-532-626**

**MAR 31 1992**  
Jim Jones  
Public Work Director  
City of Tempe  
31 East Fifth Street  
Tempe, Arizona 85280

Dear Mr. Jones:

Enclosed is a copy of a National Pollutant Discharge Elimination System (NPDES) permit for the following discharger:

**City of Tempe  
Kyrene Reclamation Plant  
NPDES Permit No. AZ0023248**

The staff at the Environmental Protection Agency (EPA) prepared a proposed permit in accordance with the Water Quality Act of 1987. The EPA also published a public notice of its tentative decision to issue a permit to the above discharger. After considering the expressed views of all interested persons and agencies, pertinent Federal statutes and regulations, the EPA, pursuant to 40 CFR 124, prepared a final permit which does not differ significantly from the proposed permit.

The NPDES permits are hereby issued upon the date of signature and shall become effective thirty-three (33) days from the date of this cover letter, unless there is a written request for an evidentiary hearing. Pursuant to 40 CFR 124.76, requests for an evidentiary hearing must state each of the legal or factual questions alleged to be at issue and must demonstrate one of the following for each issue being raised in the hearing request: that the issue was raised during the public comment period; that the issue was not reasonably ascertainable during the public comment period; or the requester could not have reasonably anticipated the relevance or materiality of the issue during the comment period. Any request for an evidentiary hearing must be submitted within 33 days from the date of this letter to me (W-5-1) at the above address.

*Printed on Recycled Paper*

The EPA will issue a decision to grant or deny an evidentiary hearing within 63 days from the date of this letter. The EPA will routinely deny any evidentiary hearing request which is postmarked later than the 33rd day from the date of this cover letter. Also, the EPA will routinely deny any evidentiary hearing request which raises only legal issues. Any denial of a request for an evidentiary hearing may be appealed to the Administrator within 30 days from the date of notice of the denial.

If you have any questions regarding the procedures outlined above, please call Joe Ferreri at (415) 744-1922.

Sincerely,

  
Terry Oda, Chief  
Permits Issuance Section  
Water Management Division

Enclosures

cc: Wayne Palsma, ADEQ, Water Permits Unit, w/enclosure



## Parks & Recreation

Section	Park Name/Location	General Description	Acres
10N	Canal Park McKellips & College	Covered picnic ramadas, picnic tables/grills, restrooms, lagoon, trails, fishing.	40.0
10N	Moeur Park Curry & Mill Avenue	Ramadas, picnic tables/grills, restrooms, general area lighting, handicapped playground, turfed area, natural open spaces.	10.0
10N	Papago Park College & Curry	Picnic ramadas, picnic tables, grills, restrooms, lake, lagoon, lighted ball field, playground equipment, natural desert terrain, nature trails, general area lighting, multi purpose slab, turf area, volleyball courts.	296.0
10N	Tempe Women's Club College & Weber	Play ground equipment, turfed, picnic tables, grill.	2.0
11N	Indian Bend Park Miller & Marigold	One covered ramada, picnic tables/grills, turfed, playground equipment, lighted multi-purpose slab, two lighted tennis courts, area lighting.	8.0
11N	Indian Bend Wash 1600 East McKellips Road	Flood control area under City jurisdiction, natural open space, trails, turfed area, general area lighting.	10.0
15N	Plazita de Descanso 550 South Mill Avenue	Urban Plaza area, benches, general area lighting.	0.3
15N	Tempe Beach Park First & Mill	Picnic tables/grills, turfed, restrooms, playground equipment, lighted ball field, general area lighting, lighted multi purpose slab, Community Arts Center Public Arts Sculpture Area.	15.0
15N	Tempe Butte Park Mill & First	Natural Desert Terrain, trail system, viewing areas.	25.0
16N	Jaycee Park Fifth & Hardy	Picnic ramada, shaded picnic tables/grills, turfed, restrooms, playground equipment, general area lighting, lighted multi purpose slab, lighted ballfield.	7.0
21N	Clark Park 19th & Roosevelt	Picnic ramadas, picnic tables/grills, restrooms, playground equipment, general area lighting, lighted multi purpose slab, lighted ball field, swimming pool, two volleyball courts, recreation center, turfed areas.	10.0
22N	Daley Park Encanto & College	Picnic ramadas, picnic tables/grills, restrooms, playground equipment, general area lighting, lighted multi purpose slab, two lighted ball fields, turfed areas, two volleyball courts, eight lighted horseshoe courts.	17.0
22N	Birchett Park Mill & Apache	Botanical garden, general area lighting, turfed.	1.0
23N	Hudson Park Cedar & Spence	Picnic tables/grills, restrooms, playground equipment, general area lighting, multi purpose slab, turfed.	3.0

# Parks & Recreation



Section	Park Name/Location	General Description	Acres
24N	Escalante Park River & Orange Adjacent to Thew School	Picnic ramada, picnic tables/grills, playground equipment, area lighting, lighted multi purpose slab, one lighted ball field, one volleyball court, horseshoe courts, swimming pool, recreation center, turf.	10.0
25N	Connolly School Fields River & Concorda	Restrooms, two lighted softball/baseball fields, turf areas.	7.7
25N	Selleh Park Los Feliz & Aspen Adjacent to Curry School	Picnic tables/grills, restrooms, creative playground, general area lighting, lighted multi purpose slab, ball fields, lake, turf areas.	6.3
26N	Meyer Park Dorsey & Alameda Adjacent to Meyer School	Picnic tables/grills, playground equipment, general area lighting, lighted multi purpose slab, unlighted ball field, turf areas.	8.0
27N	McKemy School Fields Broadmor & College	Restroom, two lighted softball/baseball fields, soccer fields, turf areas.	6.6
29N	Diablo Stadium Alameda & 48th	Restrooms, five lighted baseball fields, five lighted soccer fields, turf areas.	125.0
29N	Petersen Park Priest & Southern	Picnic tables/grills, playground equipment, multi purpose slab, historical features, turf.	5.0
30N	Daumler Park Evergreen & Balboa	Picnic tables/grills, playground equipment, area lighting, lighted multi purpose slab, turf.	4.0
31N	Ehrhardt Park Evergreen & Balboa	Picnic tables/grills, playground equipment, area lighting, lighted multi purpose slab, turf.	6.5
32N	Svob Park Vineyard & Park	Picnic tables/grills, playground equipment, general area lighting, lighted multi purpose slab, lighted soccer field, turf areas.	7.8
33N	Dwight Park Roosevelt & Manhattan	Picnic tables/grills, playground equipment, area lighting, lighted multi purpose slab, turf.	4.0
34N	Joyce Park Hermosa & Laguna Adjacent to Carminati School	Picnic tables/grills, playground equipment, area lighting, lighted multi purpose slab, turf.	4.6
34N	Palmer Park College & Carson Adjacent to Evans School	Picnic tables/grills, playground equipment, area lighting, lighted multi purpose slab, lighted ballfield, turf areas.	4.5
35N	Arredondo Park Dorsey & Carson Adjacent to Arredondo School	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turf.	4.0
35N	Cyprus Park Dorsey & Malibu Adjacent to Hudson School	Picnic ramadas, picnic tables/grills, restrooms, playground equipment, general area lighting, lighted multi purpose slab, unlighted ballfield, turf.	4.5
36N	Cole Park Country Club & Carson Adjacent to Bustoz School	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turf.	3.7
36N	Rotary Park Country Club & Hermosa Adjacent to Ward School	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turf.	5.0



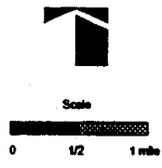
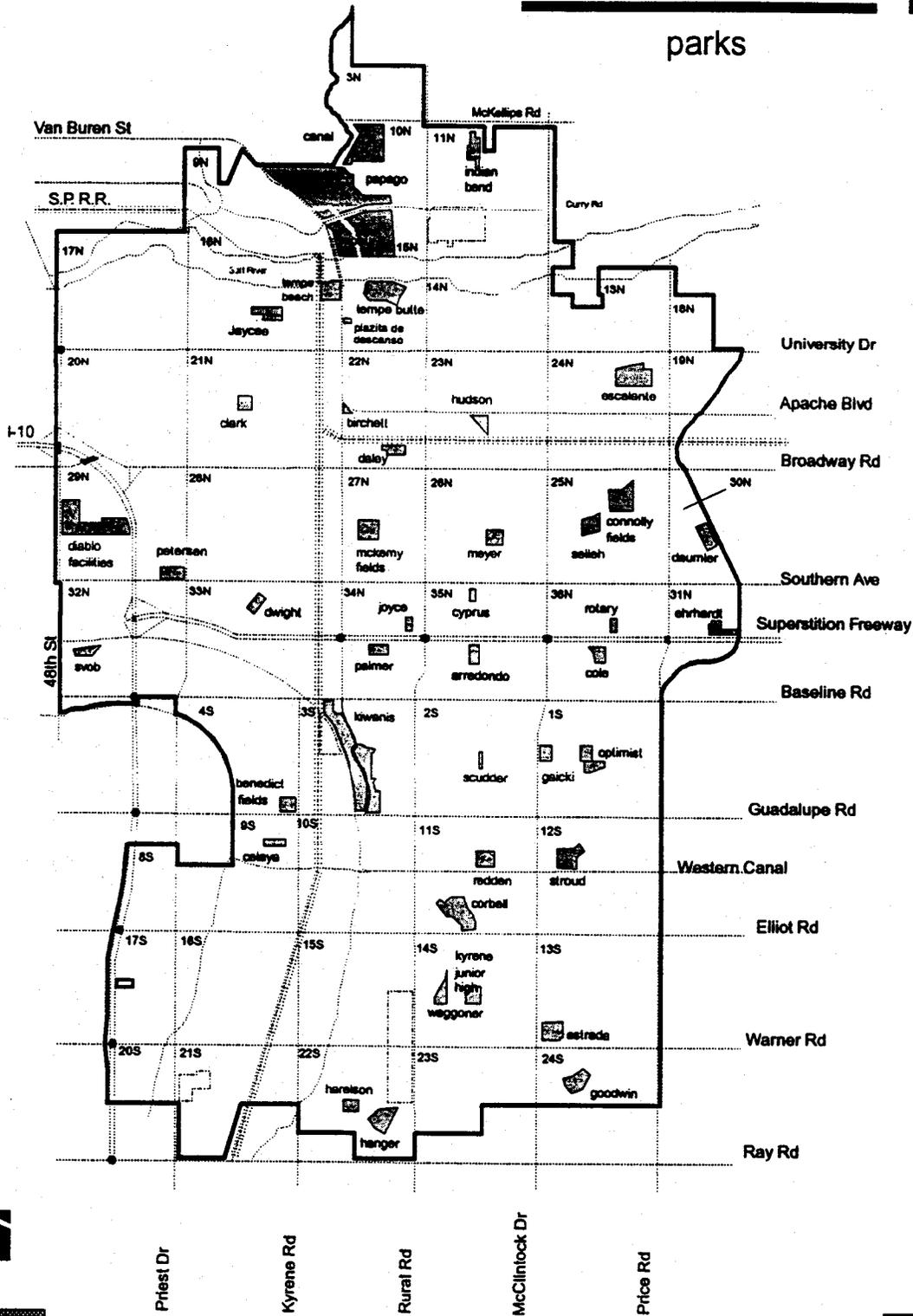
## Parks & Recreation

Section	Park Name/Location	General Description	Acres
1S	Gaicki Park Cornell & McClintock	Ramada, soccer field, turfed.	2.0
1S	Optimist Park Cornell & Kenwood Adjacent to Fuller School	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turfed, four volleyball courts.	9.0
2S	Scudder Park Lakeshore & Watson Adjacent to Rover School	Playground equipment, picnic tables/grills, general area lighting, public art (sculpture), turfed.	4.0
3S	Kiwanis Community Park Mill & All-America Way Adjacent to Aguilar School	Covered ramadas, picnic tables/grills, restrooms playground equipment, area lighting, four lighted ballfields, fifteen court lighted tennis center, five lighted volleyball courts, four soccer fields, twelve acre lake, fishing, exercise course, recreation center with indoor pool and gymnasium, corporate picnic facility, turfed.	125.0
4S	Benedict Fields Kyrene & Guadalupe	Restrooms, six lighted multi purpose athletic fields, turfed.	15.0
9S	Celaya Park Roosevelt & Vaughn	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turfed, one lighted soccer field.	5.5
11S	Corbell Park Lakeshore & Chilton Adjacent to Kyrene de los Ninos School	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turfed, one lighted soccer field.	11.0
11S	Redden Park Redfield & Lakeshore Adjacent to Kyrene del Norte School	Covered ramada, picnic tables/grills, restrooms, playground equipment, area lighting, lighted multi purpose slab, one lighted soccer field.	4.0
12S	Stroud Park Taylor & Redfield	Playground equipment, picnic tables/grills, area lighting, lighted multi purpose slab, turfed, one lighted soccer field.	5.6
13S	Estrada Park McClintock & Palomino	Playground equipment, picnic tables/grills, general area lighting, lighted multi purpose slab, lighted soccer field.	8.0
14S	Waggoner Park Lakeshore & Carver Adjacent to Kyrene Junior High School	Playground equipment, picnic tables/grills, general area lighting, lighted multi purpose slab, soccer field, turfed areas.	5.0
22S	Hanger Park Knox, West of Rural	Playground equipment, picnic tables/grills, general area lighting, multi purpose lighted slab, lighted soccer field, turfed.	15.0
22S	Harelson Park Warner Ranch & Myrna Adjacent to Kyrene de la Mariposa School	Playground equipment, picnic tables/grills, general area lighting, lighted multi purpose slab, soccer field, two lighted tennis courts, turfed.	11.2
24S	Goodwin Park Taylor & Caroline	Playground equipment, picnic tables/grills, general area lighting, lighted multi purpose slab, one lighted soccer field, turfed.	11.2

# City of Tempe



## parks



# Tempe Arizona

The unique "workstyle" of Tempe, coupled with Tempe's geographical location, holds tremendous appeal for corporations seeking sites to relocate or launch new businesses.

Tempe is in the center of the 1.7-million-population Metro Phoenix area, close to Phoenix's Sky Harbor Airport and is easily reached by two major freeways, I-10 and the Superstition Freeway.

Besides its great location, Tempe has been fortunate enough to reach its clearly defined geographical borders with roads, storm sewers, sanitary sewers, water plants and water lines already in place. With this infrastructure already established, major growth can be anticipated and adjusted to easily.

Yet there is still room for major growth within Tempe's borders. Nearly twenty percent of the city's 24,670 total acres remains undeveloped. Of that amount 465 acres are earmarked for commercial development, 85 for service and 1,570 for industrial use.

The ambitious Rio Salado Project is expected to open up even more industrial and commercial land for Tempe. The Rio Salado is an innovative flood-control master plan to develop 10,000 acres along the Salt River and make available space along the dry river bed for residential, commercial, office and retail construction.

Tempe will continue to lead the East Valley in both the office space and industrial space markets. It contains sixty-five percent of all office space in the rapidly growing East Valley and has eighty-five percent of the East Valley's nearly 10 million square feet of industrial space, or more than twenty-eight percent of all industrial space in the metropolitan area.

Tempe continues to expand its office space with some of the largest projects in its history. Corporate Lakes (\$400 million) will feature eleven high-rise buildings, a 300-room luxury hotel, retail shops and a waterway. Southwest Technology Center (\$100 million) will include two eleven-story office towers and a 300-room hotel. Tempe City Center (\$150 million), being built over a five-year period, will have four high-rise towers and three shopping malls. Fountainhead Corporate Park (\$200 million) will contain more than two million square feet of office/retail space.

# Tempe Arizona

## OFFICIAL MAP GUIDE



**TCC Tempe**  
Chamber of Commerce

504 East Southern Avenue, Tempe, Arizona 85282, (602) 967-7891

# TEMPE

ARIZONA

\$1.00

APP. B. 11

Tempe:  
committed to quality service

**STREET and RECREATION MAPS**  
MEAD PUBLISHING - MESA

APPENDIX C  
DISCHARGE CHARACTERIZATION

Flood Control District of Maricopa County  
2801 West Durango Street  
Phoenix, Arizona 85009  
(602) 506-1501

FAX # 506-4601

COVER SHEET

TO: Tom Ankeny

COMPANY  
OR DEPT: City of Tempe FAX # 350-8591

FROM: David Phillips *DSP*

NUMBER OF PAGES BEING SENT INCLUDING COVER SHEET: 3

IF THERE ARE ANY PROBLEMS, PLEASE CALL (602) 506-1501.

COMMENTS: Tom, here is the representative storm event material that we handed out at the URC meeting. Woodward-Clyde used an EPA software program called SYNOP, which can read data from the National Climatic Data Center precipitation files. If you have any questions about this, please give me a call at 506-1173.

\_\_\_\_\_  
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**REPRESENTATIVE STORM EVENT  
FOR THE GREATER PHOENIX AREA**

**Background**

The Hydrology Division of the Flood Control District (HD/FCD) has been installing state of the art equipment to monitor rainfall in the Phoenix area. Although we are able to gather accurate rainfall data, our database includes only the past 5 years. We believe that a best estimate of a representative storm event can be determined using existing data collected at Sky Harbor Airport for the past 40 years by the National Weather Service (NWS).

**Method**

Woodward-Clyde Consultants (WCC) calculated an estimate of a representative storm event using NWS data and forwarded it to us. The raw rainfall data was not available, however the HD/FCD reviewed the information provided by WCC and find that it correlates well with our own in-house data for the area. Although the NPDES regulations require annual characterization of storm data, we believe that separating summer and winter storms will provide more accurate and meaningful definition of "representative".

**Results**

The average rainfall data is shown in Table 1 (attached) for NWS data at Sky Harbor Airport over the past 40 years. The representative storm event(s) summarized below was derived from this data. The summer storm event includes storms during July through September and the winter storm event from October through March.

	<u>Average Duration (hr)</u>	<u>Average Volume (in)</u>
Summer average (July - Sept)	4.35	0.47
Summer Representative Storm Event	2.2 to 6.5	0.24 to 0.77
Winter average (Oct - March)	10.38	0.43
Winter Representative Storm Event	5.2 to 15.6	0.22 to 0.65
Year average	7.81	0.42

The representative storm event for both summer and winter can be expected to occur several times per year at a particular site. It must be emphasized that these estimates are highly variable and should be used only as a general guideline.

**Discussion**

Its important to note that in determining the monthly average number of storms (Table 1), the separation period (from end of preceding storm to beginning of next storm) may be less than 72 hours, causing two storms to be entered as one storm. This could account for the low average number of storms per month.

**Recommendation**

The HD/FCD recommends that the representative storm event(s) summarized above be used for guidance to comply with NPDES stormwater regulations.

TABLE 1  
 STORM EVENT STATISTICS FOR CITY OF PHOENIX  
 USING THE SYNOP PROGRAM

*mean interval between storms*

Month	Duration Average (hrs)	Intensity Average (in/hrs)	Volume Average (in.)	Delta Average (hrs)	No. of Storms Average
JAN	11.56	0.044	0.36	849.28	1.82
FEB	10.50	0.046	0.40	470.09	1.47
MAR	9.34	0.055	0.40	375.93	1.97
APR	7.50	0.053	0.30	621.47	0.53
MAY	6.09	0.075	0.30	715.73	0.32
JUN	4.80	0.103	0.46	1662.70	0.29
JUL	3.95	0.146	0.44	1133.33	1.74
AUG	3.47	0.146	0.39	330.50	2.18
SEP	5.62	0.148	0.57	394.10	1.32
OCT	8.89	0.064	0.47	466.67	1.29
NOV	9.67	0.052	0.39	535.12	1.35
DEC	12.33	0.059	0.53	434.82	1.68
			5.01		
Year	7.81	0.083	0.42		
Summer <sub>1</sub> Season	4.35	0.147	0.47		
Representative Storm for Summer <sub>2</sub>	(2.2 to 6.5)		(0.24 to 0.77)		
Winter <sub>3</sub> Season	10.38	0.061	0.43		
Representative Storm for Winter	(5.2 to 15.6)		(0.22 to 0.65)		

1 Summer season is July to September  
 2 ±50% of the mean season value  
 3 Winter season is October to March

dms

SR04

## 72' SALT RIVER AT FARMER AVENUE SHEET 1

DATE	SAMPLE #	COD mg/l	TSS mg/l	BOD mg/l	Ammonia mg/l	Kjeldahl mg/l	Nitrate mg/l	Total Phosphate mg/l	Ortho Phosphate mg/l	Oil/ Grease mg/l	Sulfate mg/l	Alkalinity mg/l	As mg/l	Ag mg/l
23-Aug-88	880652	48	6	8		1								< 0.02
14-Oct-88	880765	270	550	44									< 0.02	< 0.02
04-Oct-89	890913	20	4	8	0.1	0.8	0.5		0.15	< 5	67			< 0.02
21-Oct-89	890975	160	190	31	1.2	3.5	0.9	0.54	0.18	< 5	33	54	< 0.02	< 0.02
17-Jan-90	900040	90		28	0.1	3.2	0.7		0.17	< 5	20	42	< 0.02	< 0.02
01-Feb-90	900111	40		13	0.1	1.2	0.5		0.12	< 5	3	20	< 0.02	< 0.02
29-Mar-90	900394	350		56	4.9	6.5	2.8		0.1	< 5	56	150	< 0.02	< 0.02
24-Apr-90	900510	450		98	3.6	9.1	1.5		0.43	8	17	52	< 0.02	< 0.02
28-May-90	900625	600		79	3	11	2		0.1	< 5	110	150	< 0.02	< 0.02
21-Jul-90	900820	380			0.1	7.7	4.8			6			< 0.02	< 0.02
10-Jul-89	890606	480	920	84	3.7	10	2.6	0.4	0.34	< 5	28	66	< 0.02	< 0.02
10-Jul-90	900790	360		60	1.9	6.8	1.4		0.52	< 5	43	86	< 0.02	< 0.02
16-Jul-90	900814	140		21	0.1	2.9	1.4		0.22	< 5	15	34	< 0.02	< 0.02
14-Sep-90	901015	590			2.8	9.9	3.6			< 5			< 0.02	< 0.02
27-Oct-91	910796	86		13	0.8	1.8	0.47		0.69	< 5	7	14	< 0.02	< 0.02
Parameter Average		271	334	42	1.7	5.4	1.78	0.5	0.27	* 1	36	67	0	0

\* Statistical Anomaly

SR04

## 72\* SALT RIVER AT FARMER AVENUE SHEET 2

DATE	SAMPLE #	Cd mg/l	TCr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	Ni mg/l	Pb mg/l	Se mg/l	Zn mg/l	Coliform bacteria CFU/100ml	Strepto bacteria CFU/100ml	Specific conductanc uhmos/cm
23-Aug-88	880652	< 0.005	< 0.05	0.05	< 0.001	0.082	< 0.05	0.02	< 0.005	0.081			
14-Oct-88	880765	< 0.005	< 0.05	0.059	< 0.001	0.3	< 0.05	0.082	< 0.005	0.39			
04-Oct-89	890913	< 0.005	< 0.05	0.05	< 0.001		< 0.05	0.02		0.12	6000	1580	
21-Oct-89	890975	< 0.005	< 0.05	0.05	< 0.001	0.16	< 0.05	0.04	< 0.005	0.17			210
17-Jan-90	900040	< 0.005	< 0.05	0.065	< 0.001	0.32	< 0.05	0.086	< 0.005	0.34	9100	10000	130
01-Feb-90	900111	< 0.005	< 0.05	0.05	< 0.001	0.077	< 0.05	0.02	< 0.005	0.1	2200	10000	62
29-Mar-90	900394	< 0.005	< 0.05	0.051	< 0.001	0.23	< 0.05	0.02	< 0.005	0.44			800
24-Apr-90	900510	< 0.005	< 0.05	0.082	< 0.001	0.27	< 0.05	0.071	< 0.005	0.44	3000	62000	380
28-May-90	900625	< 0.005	< 0.05	0.05	< 0.001	0.29	< 0.05	0.02	< 0.005	0.3			1000
21-Jul-90	900820	< 0.005	< 0.05	0.06	< 0.001	0.34	< 0.05	0.059	< 0.005	0.25			
10-Jul-89	890606	< 0.005	< 0.05	0.11	< 0.001	0.72	0.069	0.18	< 0.005	0.74			330
10-Jul-90	900790	< 0.005	< 0.05	0.078	< 0.001	0.27	< 0.05	0.063	< 0.005	0.64		53000	680
16-Jul-90	900814	< 0.005	< 0.05	0.05	< 0.001	0.16	< 0.05	0.041	< 0.005	0.17			240
14-Sep-90	901015	< 0.005	< 0.05	0.091	< 0.001	0.62	< 0.05	0.11	< 0.005	0.65			
27-Oct-91	910796	< 0.005	< 0.05	0.05	< 0.001	0.13	< 0.05	0.02	< 0.005	0.1			94
Parameter Average		0	0	0.063	0	0.284	* 0.005	0.057	0	0.329	5075	27316	393

\* Statistical Anomaly

SR05  
54\* SALT RIVER AT ASH AVENUE

DATE	SAMPLE #	COD mg/l	BOD mg/l	Ammonia mg/l	Kjeldahl mg/l	Nitrate mg/l	Ortho Phosphate mg/l	Oil/ Grease mg/l	Sulfate mg/l	Alkalinity mg/l	As mg/l	Ag mg/l			
17-Jan-90	900039	140	14	0.2	2	0.7	0.12	< 5	3	26	< 0.02	< 0.02			
24-Apr-90	900509	380	94	3.1	12	1.6	0.53	< 5	34	32	< 0.02	< 0.02			
16-Jul-90	900813	110	18	0.1	3.6	1	0.26	< 5	8	20	< 0.02	< 0.02			
Parameter Average		210	42	1.1	5.9	1.1	0.30	0	15	26	0	0			
		Cd mg/l	T Cr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	Ni mg/l	Pb mg/l	Se mg/l	Zn mg/l	Coliform bacteria CFU/100ml	Strepto bacteria CFU/100ml	Specific conductan umhos/cm		
17-Jan-90	900039	< 0.005	< 0.05	< 0.05	< 0.001	0.16	< 0.05	0.039	< 0.005	0.12	3300	25000	110		
24-Apr-90	900509	< 0.005	< 0.05	< 0.05	< 0.001	0.66	< 0.05	< 0.02	< 0.005	0.19	160	9400	290		
16-Jul-90	900813	< 0.005	< 0.05	< 0.05	< 0.001	0.12	< 0.05	< 0.02	< 0.005	0.1			120		
Parameter Average		0	0	0	0	0.31	0	* 0.013	0	0.14	1730	17200	173		

\* Statistical Anomaly

SR07

66' SALT RIVER WEST OF RURAL RD. BRIDGE

DATE	SAMPLE	COD mg/l	TSS mg/l	BOD mg/l	Ammonia mg/l	Kjeldahl mg/l	Nitrate mg/l	Total Phosphate mg/l	Ortho Phosphate mg/l	Oil/ Grease mg/l	Sulfate mg/l	Alkalinity mg/l	As mg/l
04-Jan-89	890300	96	280	8	0.1	1.5	0.3	0.25	0.25	< 5	10	34	< 0.02
10-Jul-89	890605	620	930	140	3.6	13	3.5	0.33	0.33	< 5	56	110	< 0.02
27-Jul-89	890677	47	12	5	0.1	0.8	1.9	0.06	0.03	< 5	64	130	< 0.02
24-Apr-90	900507	290		46	3.5	8.7	1.8		0.35	< 5	12	26	< 0.02
21-Apr-88	880334	66	64			1.5	0.5	0.22	0.21	< 5		32	< 0.02
16-Jul-90	900817	80		10	0.1	0.8	1.3		0.21	6	16	28	< 0.02
Parameter Average		200	322	42	1.5	4.4	1.55	0.17	0.23	* 1	31.6	60	0
		Cd mg/l	T Cr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	Ni mg/l	Pb mg/l	Se mg/l	Zn mg/l	Coliform bacteria CFU/100ml	Strepto bacteria CFU/100ml	Specific conductanc umhos/cm
04-Jan-89	890300	< 0.005	< 0.05	< 0.05	< 0.001	0.1	< 0.05	0.026	< 0.005	0.14	6840	14600	100
10-Jul-89	890605	< 0.005	< 0.05	0.17	< 0.001	0.76	0.06	0.15	< 0.005	1.6			570
27-Jul-89	890677	< 0.005	< 0.05	< 0.05	< 0.001	0.05	< 0.05	0.02	< 0.005	0.01			1300
24-Apr-90	900507	< 0.005	< 0.05	< 0.05	< 0.001	0.24	< 0.05	0.02	< 0.005	0.1	20	1000	130
21-Apr-88	880334	< 0.005	< 0.05	< 0.05	< 0.001	0.068	< 0.05	0.02	< 0.005	0.11			
16-Jul-90	900817	< 0.005	< 0.05	< 0.05	< 0.001	0.19	< 0.05	0.02	< 0.005	0.1			130
Parameter Average		0	0	* 0.03	0	0.235	* 0.01	0.04	0	0.34	3430	7800	446

\* Statistical Anomaly

APP.C.4

SF08

66° SALT RIVER EAST OF RURAL RD. (DORSEY DRAIN)

DATE	SAMPLE	COD mg/l	TSS mg/l	BOD mg/l	Ammonia mg/l	Kjeldahl mg/l	Nitrate mg/l	Total Phosphate mg/l	Ortho Phosphate mg/l	Oil/ Greas mg/l	Sulfate mg/l	Alkalinity mg/l	As mg/l	Ag mg/l
23-Aug-88	880651	48	11	7		1.3							< 0.02	< 0.02
04-Jan-89	890200	72	340	6	0.1	1.3	0.2	0.25	0.25	< 5	3	14	< 0.02	< 0.02
10-Jul-89	890604	630	890	120	4.6	13	3.9	0.69	0.62	< 5	69	120	< 0.02	< 0.02
27-Jul-89	890676	27	10	5	0.1	0.2	0.5	0.05	0.02	< 5	62	130	< 0.02	< 0.02
21-Oct-89	890974	310	440	58	2.2	7.2	1.8	0.46	0.46	< 5	40	36	< 0.02	< 0.02
20-Jan-90	900002	192	41	10	0.1	2.1	0.9	0.48	0.31	< 5	81	220	< 0.02	< 0.02
17-Jan-90	900037	180		16	0.3	4.8	0.5		0.54	< 5	63	110	< 0.02	< 0.02
28-May-90	900626	330		71	1.5	5.6	2.9		0.05	< 5	98	140	< 0.02	< 0.02
10-Jul-90	900789	360		40	3.1	7.6	2.6		0.39	< 5	27	46	< 0.02	< 0.02
20-Sep-90	901060	390		45	0.6	4.5	0.7		0.02	< 5	29	44	< 0.02	< 0.02
05-Sep-91	910666			29	1.6	3.8	0.6		0.24	< 5	30	22	< 0.02	< 0.02
27-Oct-91	910795	210		20	1.3	2.9	1.2		0.24	< 5	11	30	< 0.02	< 0.02
10-Nov-91	910841	310		67	7	7.8	1.6		0.57	6	30	48	< 0.02	< 0.02
Parameter Average		255	289	38	1.9	4.8	1.5	0.39	0.31	* 1	45	80	0	0

APP. C. 5

		Ba mg/l	Cd mg/l	T Cr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	Ni mg/l	Pb mg/l	Se mg/l	Zn mg/l	Coliform bacteria CFU/100ml	Strepto bacteria CFU/100ml
23-Aug-88	880651	< 0.005	< 0.05	< 0.05	< 0.001	0.11	< 0.05	0.02	< 0.005	0.11			
04-Jan-89	890200	< 0.005	< 0.05	< 0.05	< 0.001	0.083	< 0.05	0.026	< 0.005	0.11	0.3	12800	40
10-Jul-89	890604	< 0.005	< 0.05	0.13	< 0.001	0.78	0.072	0.19	< 0.005	0.85			590
27-Jul-89	890676	< 0.005	< 0.05	< 0.05	< 0.001	0.05	< 0.05	0.02	< 0.005	0.1			1400
21-Oct-89	890974	< 0.005	< 0.05	0.091	< 0.001	0.3	< 0.05	0.082	< 0.005	0.73			170
20-Jan-90	900002	< 0.005	< 0.05	< 0.05	< 0.001	0.079	< 0.05	0.02	< 0.005	0.1			600
17-Jan-90	900037	< 0.005	< 0.05	< 0.05	< 0.001	0.14	< 0.05	0.02	< 0.005	0.14	0.2	1000	530
28-May-90	900626	< 0.005	< 0.05	< 0.05	< 0.001	0.31	< 0.05	0.02	< 0.005	0.32			1000
10-Jul-90	900789	< 0.005	< 0.05	0.059	< 0.001	0.57	< 0.05	0.034	< 0.005	0.16	0.16	5100	280
20-Sep-90	901060	< 0.005	< 0.05	0.056	< 0.001	0.36	< 0.05	0.064	< 0.005	0.36			340
05-Sep-91	910666	< 0.005	< 0.05	< 0.05	< 0.001	0.24	< 0.05	0.041	< 0.005	0.27			200
27-Oct-91	910795	< 0.005	< 0.05	< 0.05	< 0.001	0.32	< 0.05	0.065	< 0.005	0.36			170
10-Nov-91	910841	< 0.005	< 0.05	0.079	< 0.001	0.46	< 0.05	0.069	< 0.005	0.45			270
Parameter Average		0	0	* 0.032	0	0.292	* 0.006	0.052	0	0.31	0.22	6300	466

\* Statistical Anomaly

SR10

36° SALT RIVER WEST OF McCLINTOCK DR. BRIDGE SHEET 1

DATE	SAMPLE #	COD mg/l	TSS mg/l	BOD mg/l	Ammonia mg/l	Kjeldahl mg/l	Nitrate mg/l	Total Phosphate mg/l	Ortho Phosphate mg/l	Oil/ Grease mg/l	Sulfate mg/l	Alkalinity mg/l	As mg/l	Ag mg/l
23-Aug-88	880650	24	4	5		4.7							< 0.02	< 0.02
21-Oct-89	890973	290	240	48	1.4	4.9	1.4	1.6	0.41	< 5	3	26	< 0.02	< 0.02
02-Jan-90	900003	352	390	53	1.2	4.9	1.2	0.76	0.21	< 5	16	32	< 0.02	< 0.02
17-Jan-90	900036	600		84	0.6	6.3	1.1		0.46	10	110	80	< 0.02	< 0.02
29-Mar-90	900393	610		100	3.9	12	2.5		0.16	< 5	71	110	< 0.02	< 0.02
24-Apr-90	900506	550		86	3.5	9.8	1.9		0.51	< 5	23	56	< 0.02	< 0.02
28-May-90	900624	580		89	2.6	11	2.8		0.22	< 5	100	120	< 0.02	< 0.02
16-Jul-90	900816	290		44	0.8	5.7	1.2		0.3	6	7	32	< 0.02	< 0.02
10-Jul-90	900788	260		30	0.4	10	1.8		0.4	10	11	52	< 0.02	< 0.02
2-Sep-90	900976	210			0.1	3.2	1			< 5			< 0.02	< 0.02
20-Sep-90	901058	270		80	0.2	3.8	0.2		0.02	18	54	52	< 0.02	< 0.02
27-Oct-91	910794	100		14	1.2	2.6	0.83		0.25	< 5	8	20	< 0.02	< 0.02
10-Nov-91	910840	480		93	2.8	12	4.9		0.41	7	63	72	< 0.02	< 0.02
Parameter Average		355	211	61	1.6	7.0	1.74	1.18	0.30	* 4	42	59	0	0

\* Statistical Anomaly

APP. C. 6

SR10

36° SALT RIVER WEST OF McCLINTOCK DR. BRIDGE SHEET 2

DATE	SAMPLE #	Cd mg/l	T Cr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	Ni mg/l	Pb mg/l	Se mg/l	Zn mg/l	Coliform bacteria CFU/100ml	Strepto bacteria CFU/100ml	Specific conductanc umhos/cm
23-Aug-88	880650	< 0.005	< 0.05	< 0.05	< 0.001	0.12	< 0.05	0.02	< 0.005	0.14			
21-Oct-89	890973	< 0.005	< 0.05	0.078	< 0.001	0.22	< 0.05	0.094	< 0.005	0.47			170
02-Jan-90	900003	< 0.005	< 0.05	0.072	< 0.001	0.21	< 0.05	0.095	< 0.005	0.4			150
17-Jan-90	900036	0.0051	< 0.05	0.14	< 0.001	0.59	< 0.05	0.12	< 0.005	0.82	5000	82000	370
29-Mar-90	900393	0.0056	< 0.05	**1.4	< 0.001	0.4	**1.1	**0.24	< 0.005	0.88			620
24-Apr-90	900506	< 0.005	< 0.05	0.2	< 0.001	0.44	0.077	0.16	< 0.005	0.91	500	9900	310
28-May-90	900624	< 0.005	< 0.05	< 0.05	< 0.001	0.29	< 0.05	0.02	< 0.005	0.28			850
18-Jul-90	900816	< 0.005	< 0.05	0.062	< 0.001	0.17	< 0.05	0.037	< 0.005	0.37			270
10-Jul-90	900788	< 0.005	< 0.05	0.081	< 0.001	0.43	< 0.05	0.1	< 0.005	0.39	120000	18000	200
2-Sep-90	900976	< 0.005	< 0.05	< 0.05	< 0.001	0.14	< 0.05	0.02	< 0.005	0.16			
20-Sep-90	901058	< 0.005	< 0.05	0.076	< 0.001	0.39	< 0.05	0.051	< 0.005	0.43			520
27-Oct-91	910794	< 0.005	< 0.05	< 0.05	< 0.001	0.19	< 0.05	0.047	< 0.005	0.29			130
10-Nov-91	910840	< 0.005	< 0.05	0.099	< 0.001	0.55	< 0.05	0.075	< 0.005	0.53			430
Parameter Average		0.001	0	0.062	0.000	0.32	0.006	0.065	0	0.47	41833	36633	365

\*\* Circuit Tech Fire

SF22

Twin 48' SALT RIVER NORTH BANK AT COLLEGE AVENUE

DATE	SAMPLE #	COD mg/l	BOD mg/l	Ammoni mg/l	Kjeldahl mg/l	Nitrate mg/l	Ortho Phosphate mg/l	Oil/ Grease mg/l	Sulfate mg/l	Alkalinity mg/l	As mg/l	Ag mg/l
02-Sep-90	900972	51		0.1	1.9	0.8		5			< 0.02	< 0.02
20-Sep-90	901055	320	33	1.1	4.3	1.2	0.11	7	24	32	< 0.02	< 0.02
Parameter Average		185.5	33	0.6	3.1	1.0	0.11	6	24	32	0	0

		Cd mg/l	T Cr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	N mg/l	Pb mg/l	Se mg/l	Zn mg/l	Specific Conductance umhos/cm
02-Sep-90	900972	< 0.005	< 0.05	< 0.05	< 0.001	< 0.05	< 0.05	< 0.02	< 0.005	0.1	
20-Sep-90	901055	< 0.005	< 0.05	< 0.05	< 0.001	0.16	< 0.05	< 0.02	< 0.005	0.14	320
Parameter Average		0	0	0	0	* 0.08	0	0	0	0.12	320

\* Statistical Anomaly

APP. C.7

SR23

36' SALT RIVER NORTH BANK WEST OF RURAL RD. BRIDGE

DATE	SAMPLE #	COD mg/l	BOD mg/l	Ammoni mg/l	Kjeldahl mg/l	Nitrate mg/l	Ortho Phosphate mg/l	Oil/ Grease mg/l	Sulfate mg/l	Alkalini mg/l	As mg/l	Ag mg/l
02-Sep-90	900973	150		0.1	2.1	0.8		< 5			< 0.02	< 0.02
20-Sep-90	901056	520	75	1.5	6.5	0.3	0.04	8	40	44	< 0.02	< 0.02
Parameter Average		335	75	0.8	4.3	0.6	0.04	* 4.0	40	44	0	0
		Cd mg/l	T Cr mg/l	Cu mg/l	Hg mg/l	Mn mg/l	N mg/l	Pb mg/l	Se mg/l	Zn mg/l	Specific Conductance	
02-Sep-90	900973	< 0.005	< 0.05	< 0.05	< 0.001	0.15	< 0.05	0.045	< 0.005	0.17		
20-Sep-90	901056	< 0.005	< 0.05	0.059	< 0.001	0.29	< 0.05	0.02	< 0.005	0.2	480	
Parameter Average		0	0	* 0.03	0	0.22	0	0.033	0	0.19	480	

\* Statistical Anomaly

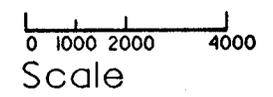
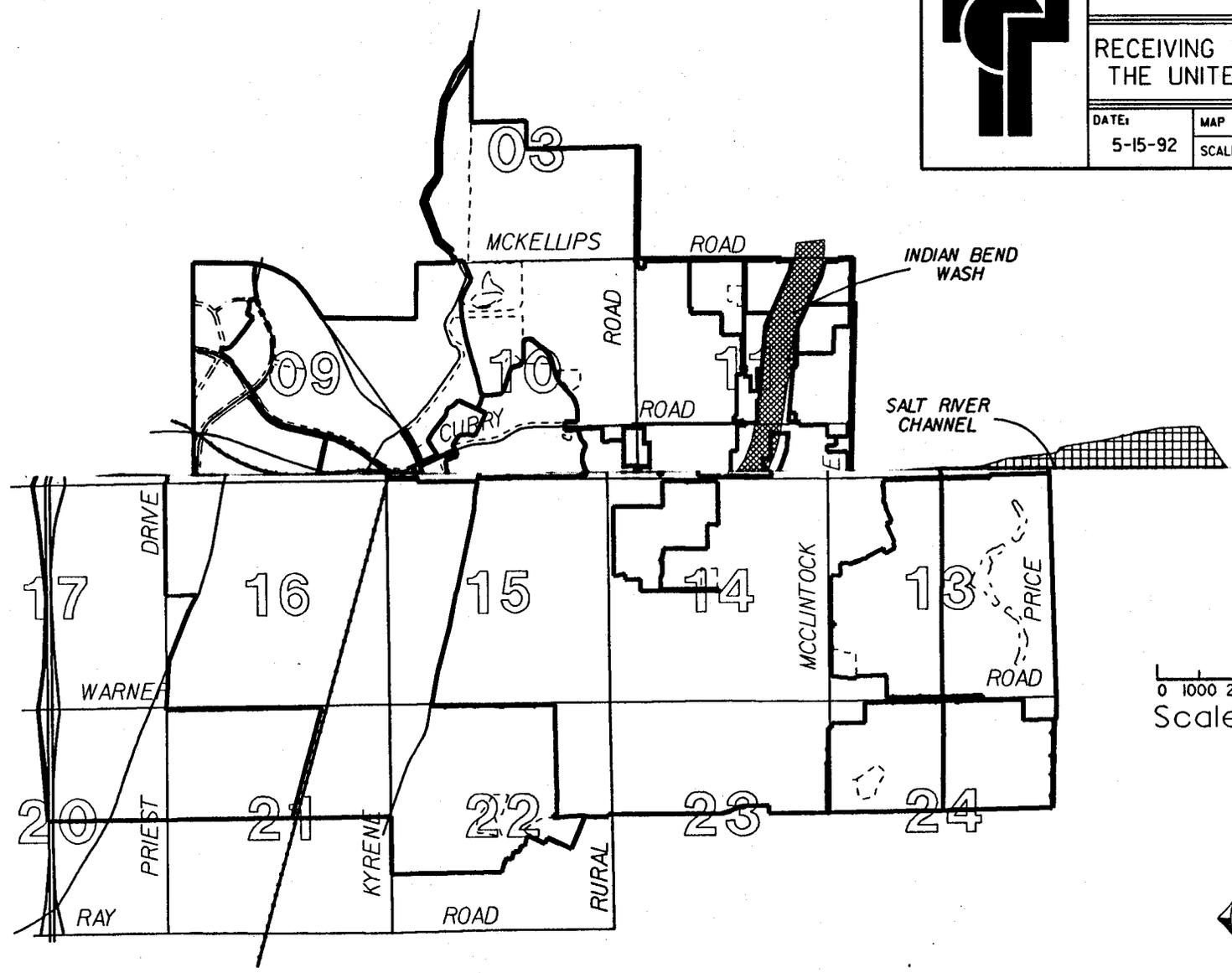
APP. C. 8



CITY OF TEMPE  
RECEIVING WATERS OF  
THE UNITED STATES

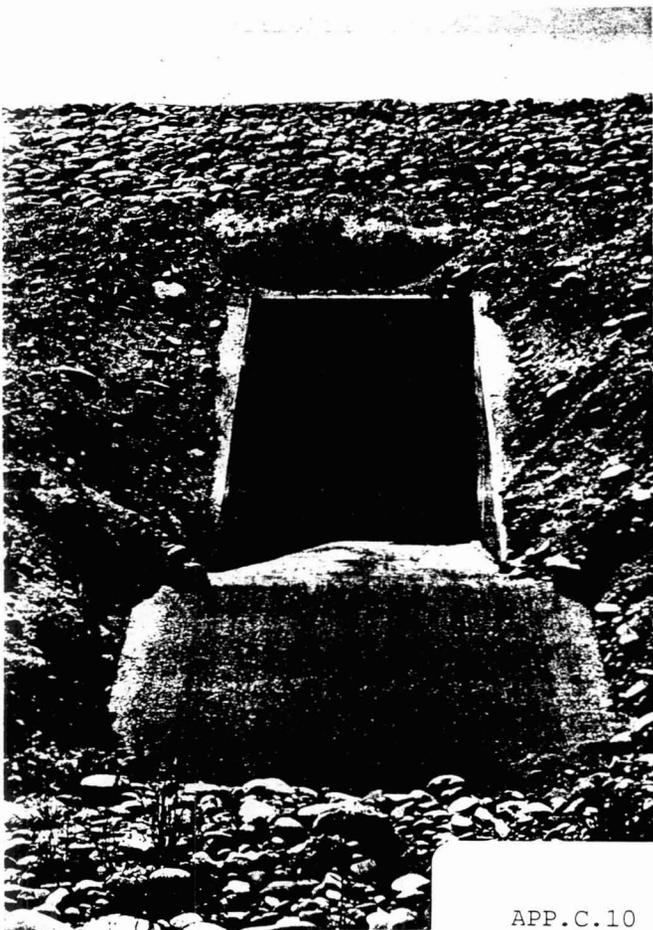
DATE:  
5-15-92

MAP NO:  
SCALE:



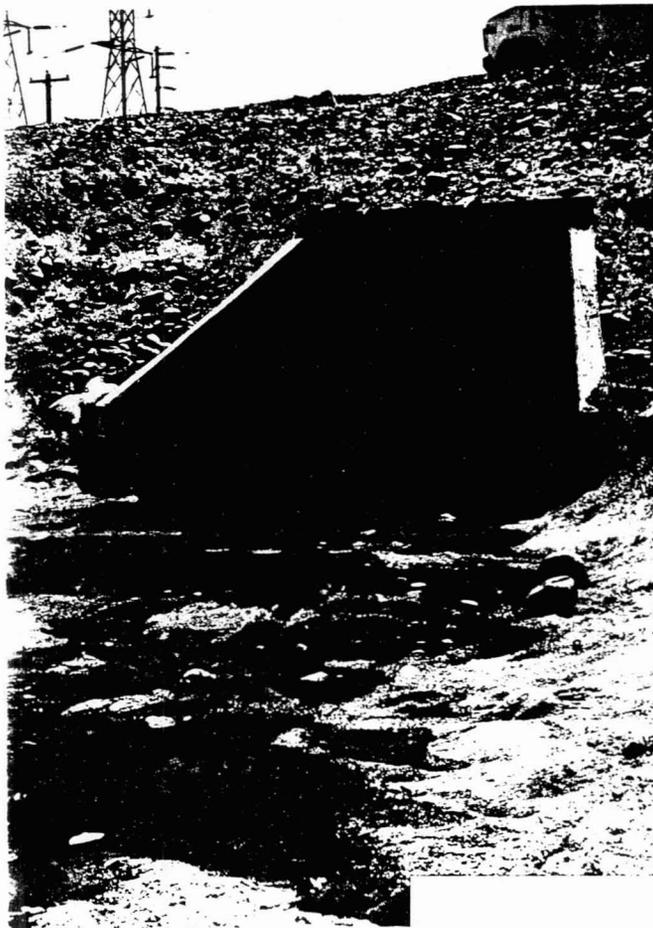
APP. C. 9

SR01 - 36" SALT RIVER  
PRIEST DRIVE SOUTH WEST

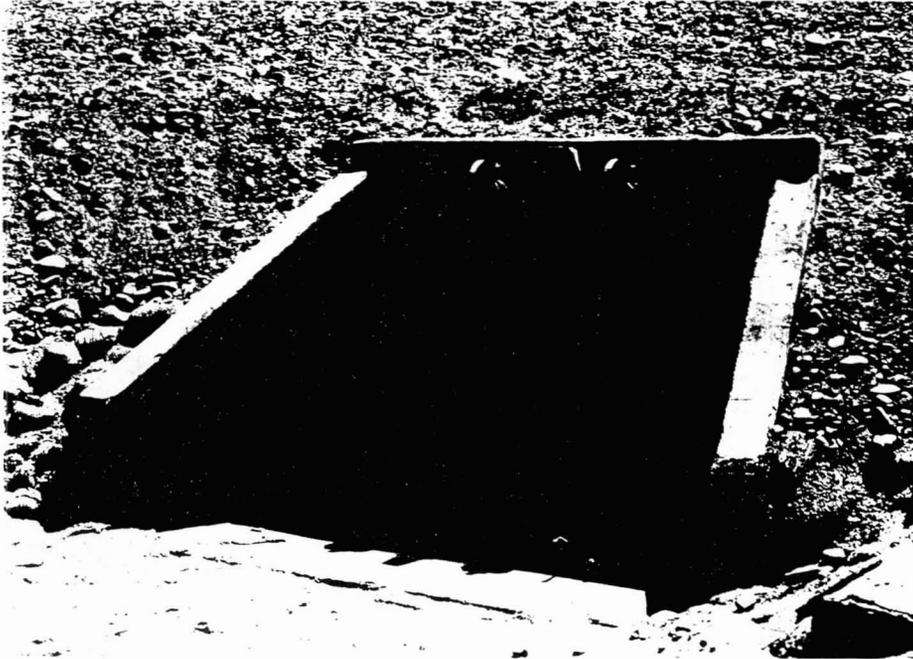


SR02 - 24" SALT RIVER  
PRIEST DRIVE MAINTENANCE  
FACILITY

SR03 - 36" SALT RIVER  
EAST SIDE OF PRIEST YARD



SR04 - 72" SALT RIVER  
AT FARMER

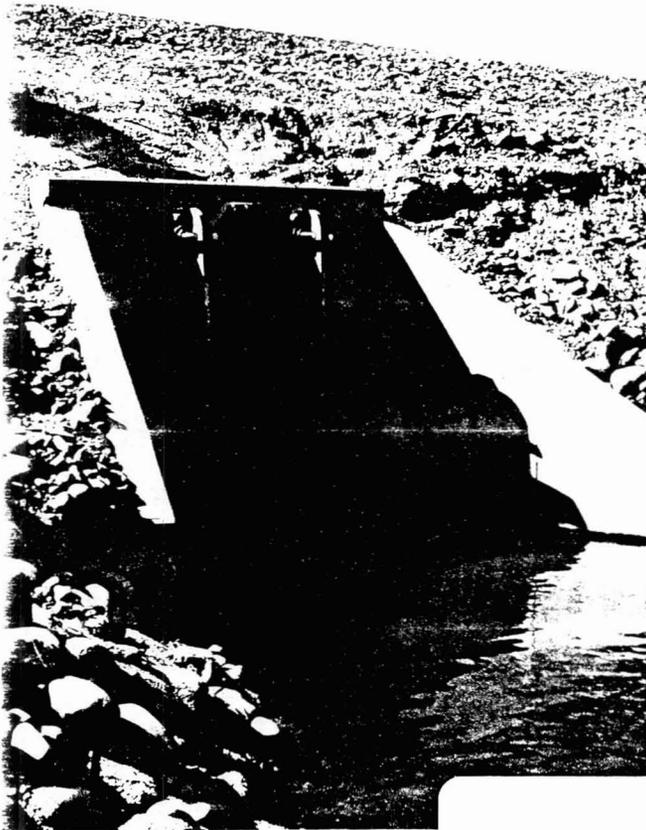
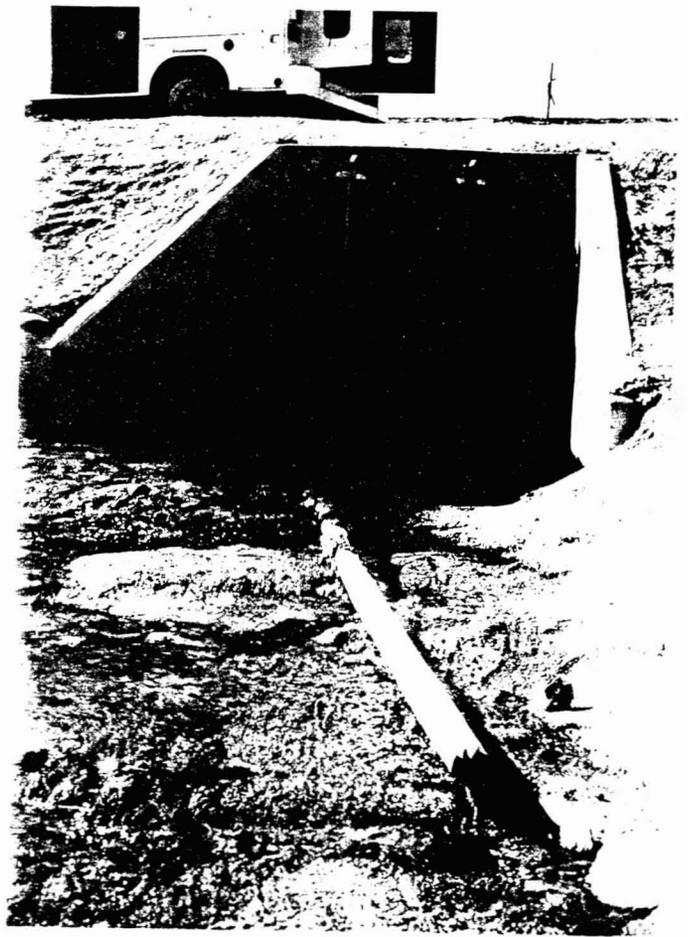


SR05 - 54" SALT RIVER AT ASH



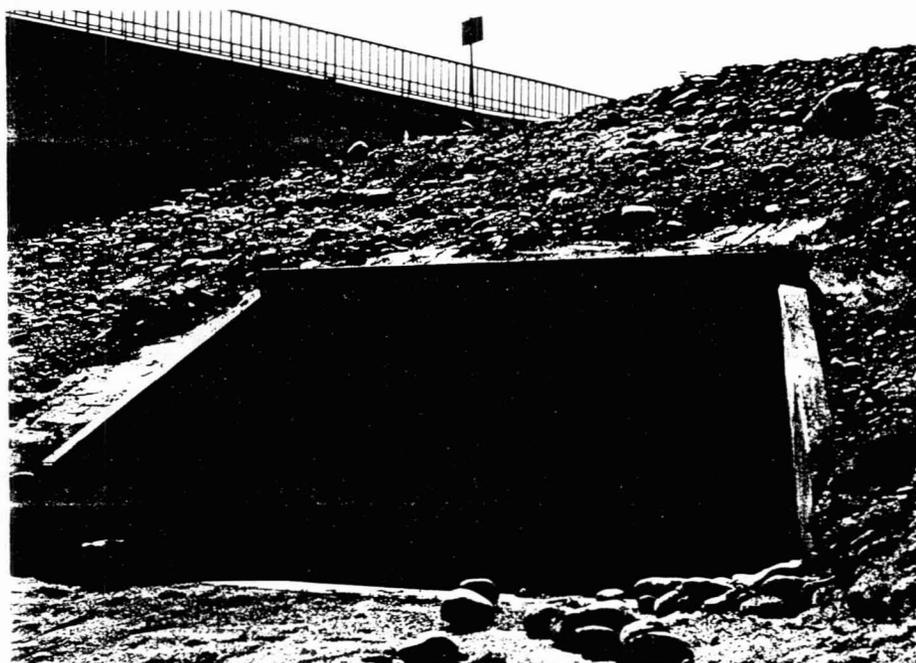
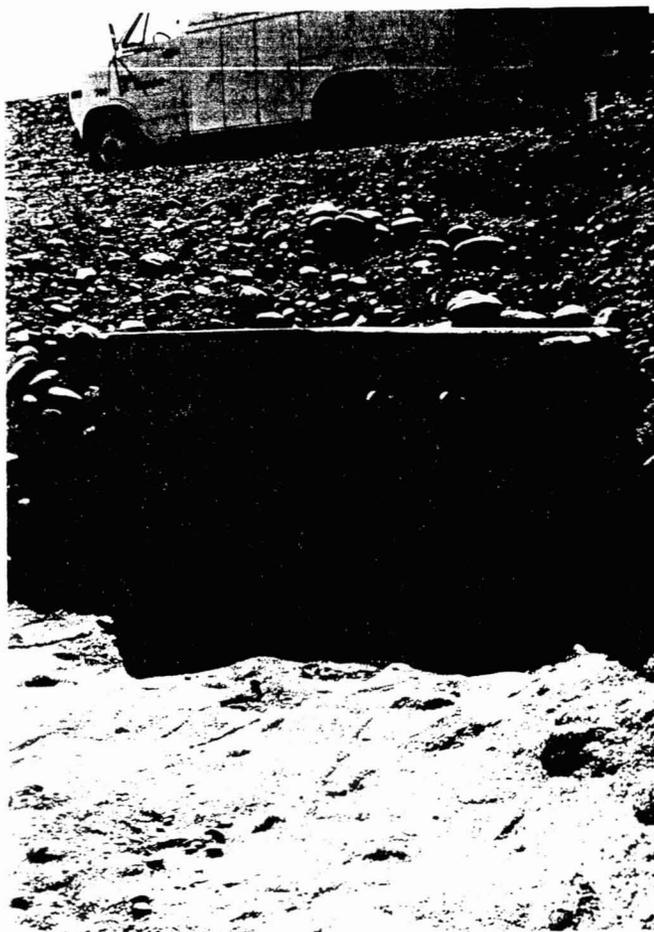
SR06 - 24" SALT RIVER  
AT MILL AVENUE

SR07 - 56" SALT RIVER  
WEST OF RURAL RD. BRIDGE (ASU)



SR08 - 56" SALT RIVER  
EAST OF RURAL RD. BRIDGE  
(DORSEY DRAIN)

SR09 - 30" SALT RIVER  
WEST OF McCLINTOCK BRIDGE  
(ASU/KARSTEN)



SR10 - 36" SALT RIVER

SR11 - 66" WEST OF McCLINTOCK DR. BRIDGE

SR16 - 96" SALT RIVER

NORTH BANK WEST OF PRIEST BRIDGE

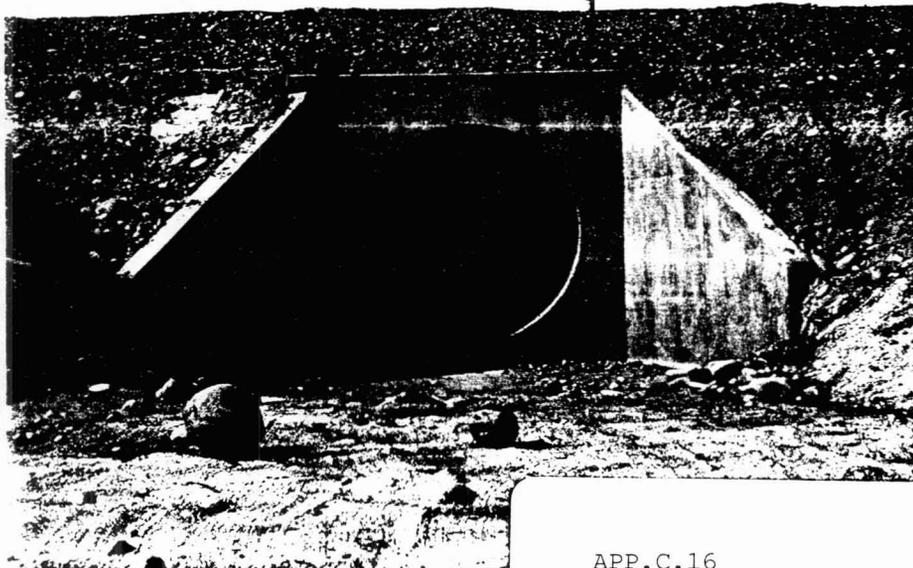
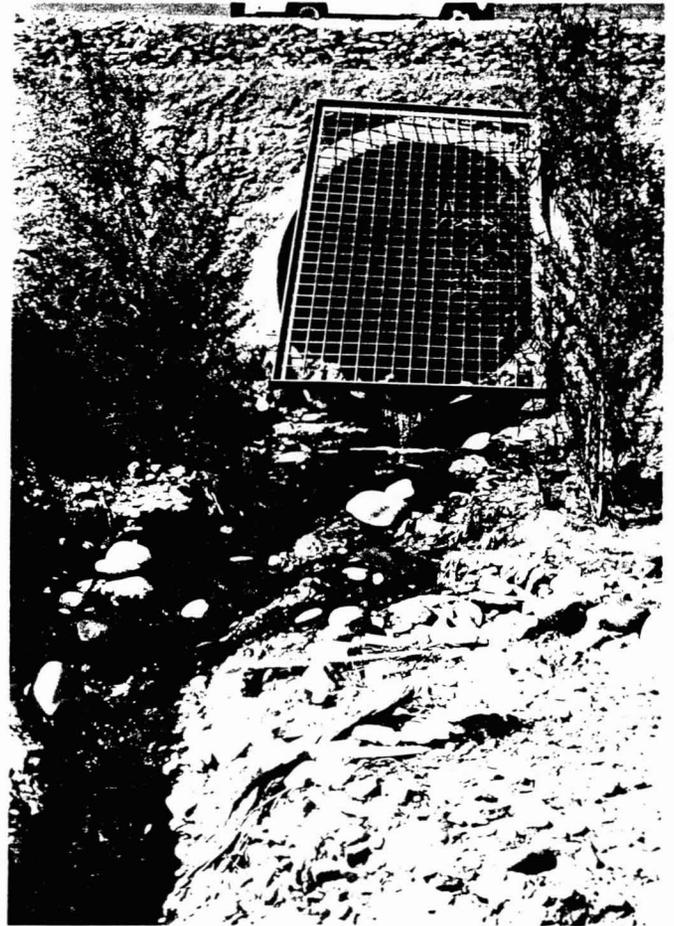


SR17 - 36" SALT RIVER

NORTH BANK NORTH OF PRIEST YARD

SR18 - 102" SALT RIVER NORTH BANK

SRP - PAPAGO PARK

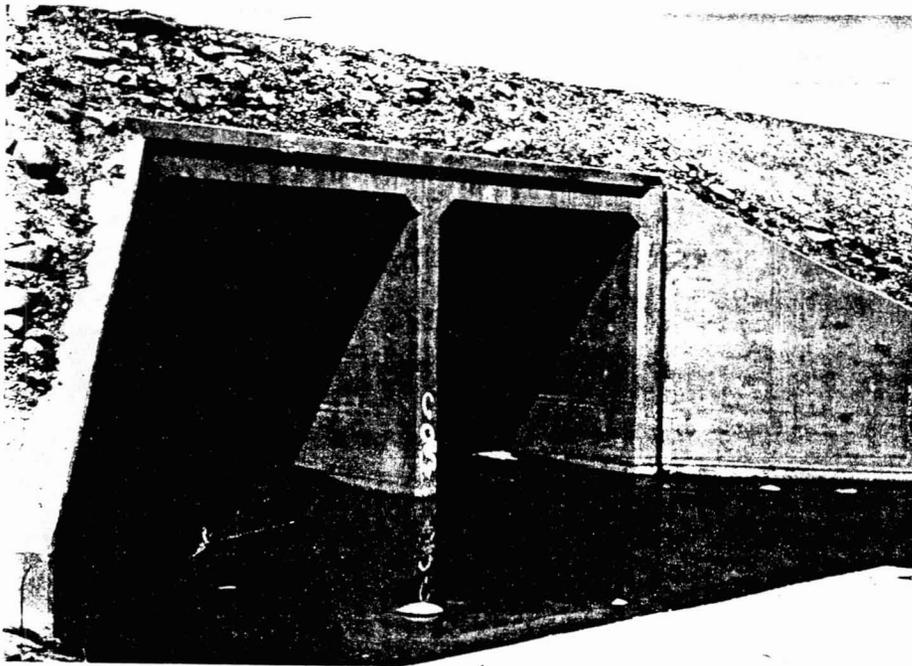


SR19 - 66" SALT RIVER  
NORTH BANK AT S.P.R.R. BRIDGE

SR20 - 48" SALT RIVER

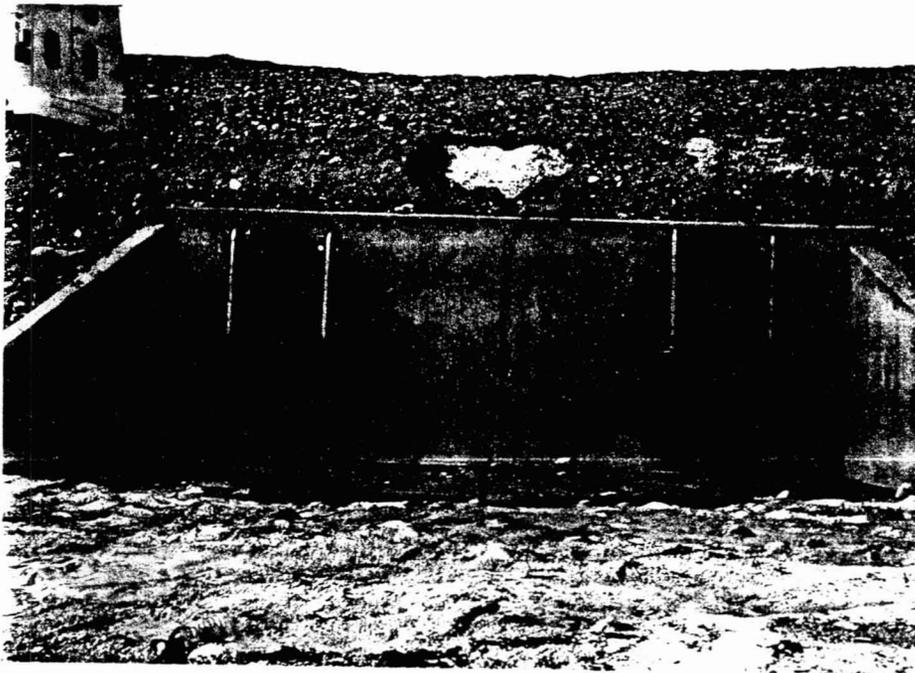
NORTH BANK EAST OF MILL AVE.





SR21 - TWIN 8' x 8'

NORTH BANK PEDESTRIAN UNDER PASS



SR22 - TWIN 48"

NORTH BANK AT COLLEGE AVE.

SR23 - 36"

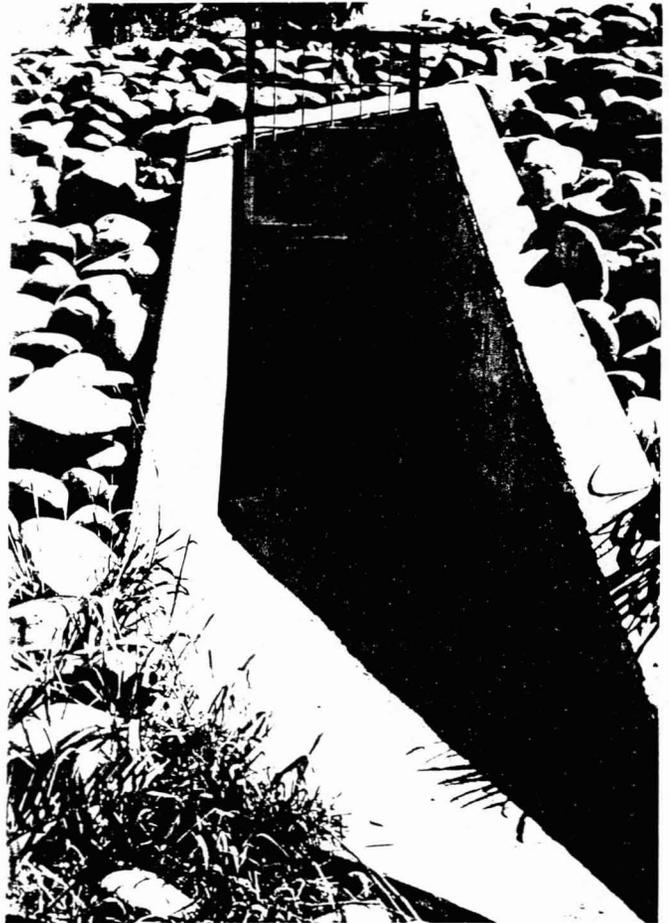
NORTH BANK WEST OF RURAL BRIDGE



SR24 - TWIN 8' x 8'

NORTH BANK WEST OF INDIAN BEND

IB01 - 42" INDIAN BEND WASH  
EAST SIDE SOUTH OF McKELLIPS ROAD



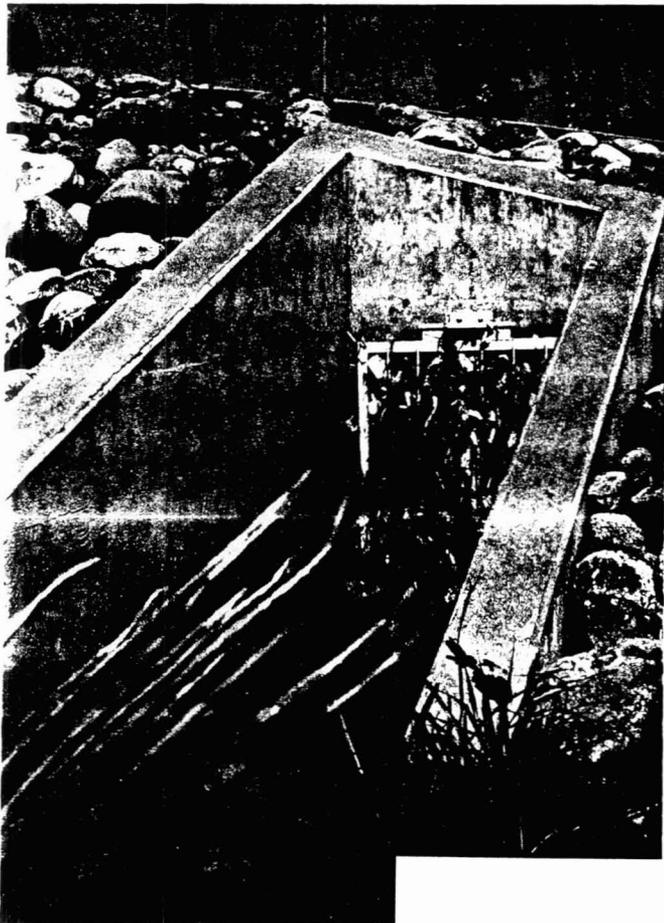
IB02 - 36" INDIAN BEND WASH  
EAST SIDE (MALIBU GRAND PRIX)

IB03 - 42" INDIAN BEND WASH  
EAST SIDE (GOLF COURSE MAIN. YD)



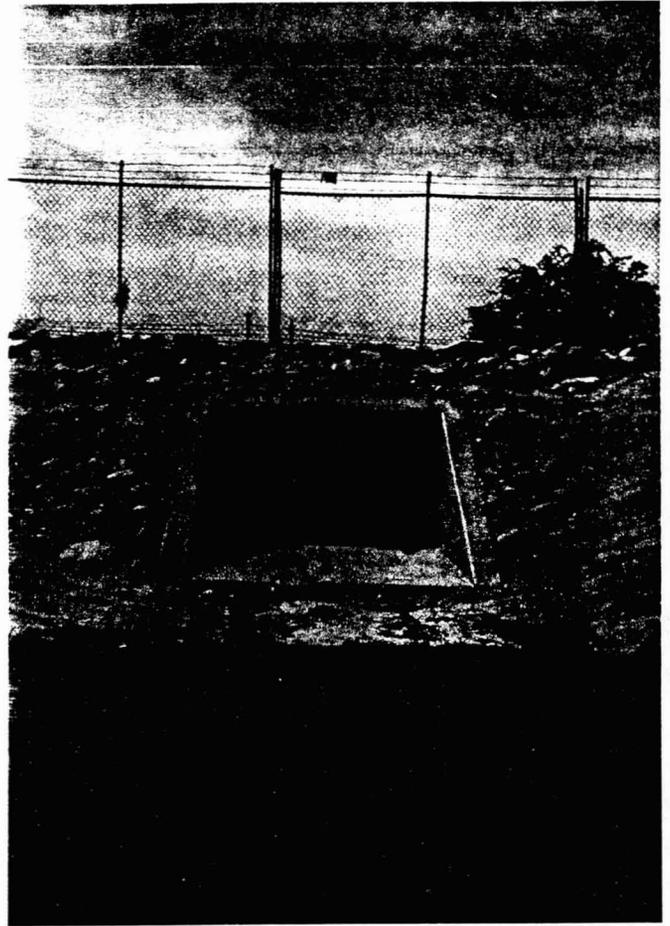
IB04 - 36" INDIAN BEND WASH  
EAST SIDE NORTH OF CURRY RD.

IB05 - 48" INDIAN BEND WASH  
EAST SIDE SOUTH OF CURRY ROAD



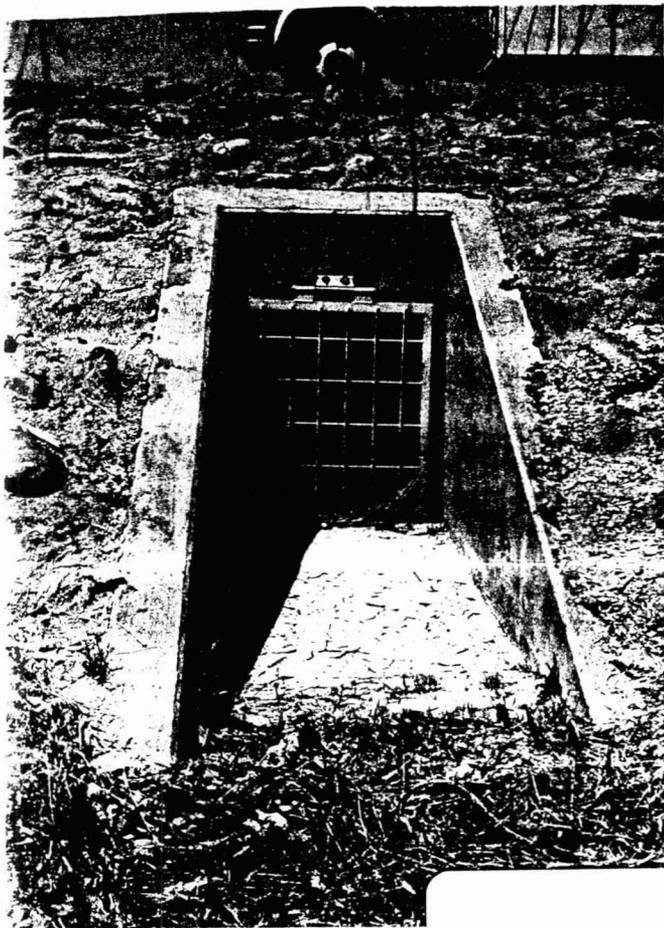
IB07 - 48" INDIAN BEND WASH  
WEST SIDE SOUTH OF McKELLIPS RD

IB08 - TWIN 36" INDIAN BEND WASH  
WEST SIDE RV STORAGE/HOLE #5



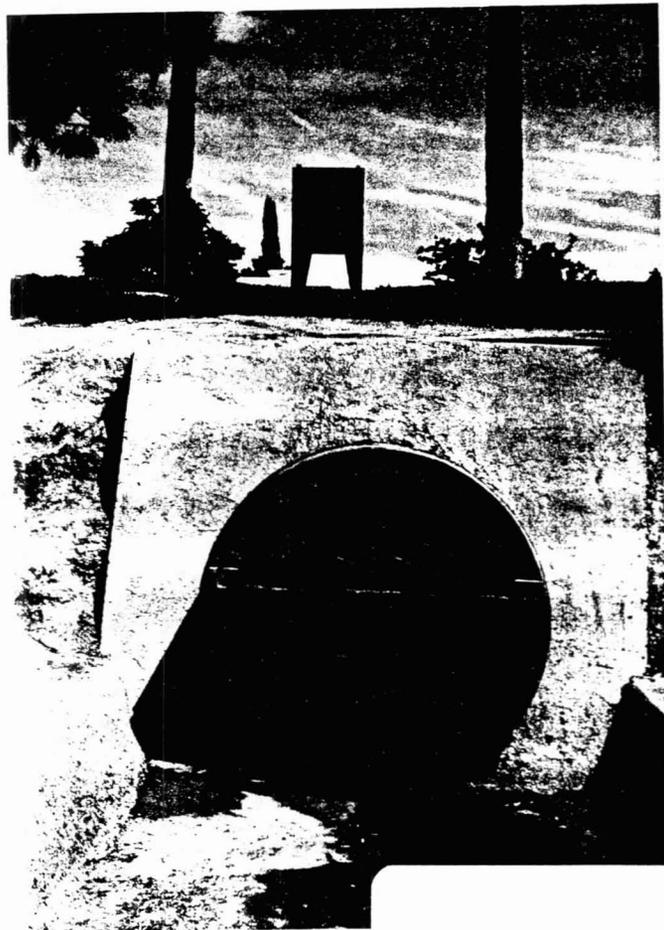
IB09 - 42" INDIAN BEND WASH  
WEST SIDE AT WEBER RD.

IB10 - 42" INDIAN BEND WASH  
WEST SIDE NORTH OF CURRY RD.



IB11 - 36" INDIAN BEND WASH  
WEST SIDE OF NINA STAKE

IB12 - 48" INDIAN BEND WASH  
WEST SIDE AT GILBERT RD.



KP01 - 54"

KIWANIS PARK LAKE (MILL AVENUE)

## FIELD ANALYSES EQUIPMENT

### WATER TEMPERATURE:

Orion pH Meter, Model number SA520 with Automatic Temperature Compensating Probe.

Specifications: Temperature -5.0 to 105.0 degrees celsius  
Relative Accuracy +/- 1.0 degree celsius

### pH

Orion pH Meter, Model number SA520

Specifications: mV -999 to 999 pH -2.00 to 19.99  
Isopotential 0.01 to 19.99  
Slope 80 to 110%

Relative Accuracy

pH.1\* +/- .1 or +/- 0.05% of reading whichever is greater  
pH.01\* +/- .01 or +/- 0.05% of reading whichever is greater

\* After calibration with two buffers according to manufactures procedures.

### PHENOL

CHEMetrics, Inc. Model P -12  
Method, 4 - aminoantipyrine (4AAP)  
Range (0 - 1 and 0 - 12 ppm)

### CHLORINE (TOTAL)

Hach DPD Reagent Powder Pillows for Total Chlorine.  
(Colorimetric Method)  
Range 0 - 2.00 mg/l (spectrophotometer)

### COPPER

Hach Cuper 1 Copper Reagent  
Range (0 - 5.0 mg/l Cu)  
Bicinchoninate Method

### DETERGENTS

(Colorimetric Method Toluidine Blue O Method)  
Range (0 - 1.0 mg/l)

SPECTROPHOTOMETER

Hach DR 2000

Optical System Monochromator: Littrow prism, aspheric optics

Detector: Silicon photodiode, UV enhanced

Wavelength: Range, 400 - 900 nm:

Accuracy, +/- 2nm at 400 - 700 nm

+/- 3nm at 700 - 900 nm

Figure 4.6

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO: \_\_\_\_\_  
OUTFALL ID NO: SR 01  
DATE: 4/10/92  
TIME: 11:25

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: 20.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: PERKST DRIVE S.W. side AT SAINT RIVER

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

*Review of Project Bridge Proj. ID 139 @ 0.0026 Q<sub>6</sub> = 26 cfs*

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 25

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/WALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE) \_\_\_\_\_

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 01  
DATE: 4/16/92  
TIME: 11.25

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: 20.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: PRIEST DRIVE S.W. side AT SAUT RIVER

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) =  $1 \times 2 \times 3 =$  \_\_\_\_\_

*Review of Priest Bridge 30" ID 139 @ 0.0026 Q = 26 cfs Proj.*

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 45

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Mark J. Miller

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

Photo #

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR02  
DATE: 4/6/92  
TIME: 11:35

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: TEMPE PRIEST DR. MAINTENANCE FACILITY

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 24"

Drscob

20'-30' IN LIGHT @ TOP OF PIPE

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) #6

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Tom Aubrey

Figure 4.6

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO: \_\_\_\_\_  
OUTFALL ID NO: SR 03  
DATE: 4/6/92  
TIME: 11:45

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: <0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER E. Side PRIEST YD.

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 7

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Tom Auker

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 04  
DATE: 4/16/92  
TIME: 12:10 pm

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT River AT FARMER

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 72"

- 1.) WIDTH OF WATER SURFACE (FEET) 11" *78" @ 0.0011*
- 2.) APPROXIMATE DEPTH OF WATER (FEET) 5" *OR 66" @ 0.0046*
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) 1.7 *Q<sub>67</sub> = 190 cfs*
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = 0.044 (0.031) *Q<sub>78</sub> = 250 cfs*

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 8

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: 20.9 degrees C  
pH 7.4  
PHENOL \_\_\_\_\_ mg/l

CHLORINE (TOTAL): 0.4 mg/l  
COPPER: 0.01 mg/l  
DETERGENTS: 0.45 mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: SAMPLE FOR PHENOL ANALYSIS

DATA SHEET FILLED OUT BY (SIGNATURE): Tom Aubrey

SR04



Analytical Technologies, Inc.

9830 S. 51st Street Suite B-113 Phoenix, AZ 85044 (602) 496-4400

RECEIVED  
CITY OF TEMPE

APR 20 1992

ATI I.D. 204577

IND. WASTE SECTION

April 15, 1992

City of Tempe  
P.O. Box 5002  
Tempe, AZ 85280

Project Name/Number: Salt River at Farmer/92-0356

Attention: Al Jensen

On 04/07/92, Analytical Technologies, Inc. received a request to analyze aqueous sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (602) 496-4400.

*Jane M. Foote*  
Jane M. Foote  
Project Manager

*Robert V. Woods*  
Robert V. Woods  
Laboratory Manager

RVW:clf  
Enclosure



Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 204577

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0356  
PROJECT NAME : SALT RIVER

DATE RECEIVED : 04/07/92

REPORT DATE : 04/09/92

PARAMETER	UNITS	01
PHENOLICS, TOTAL	MG/L	<0.02



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0356  
PROJECT NAME : SALT RIVER

ATI I.D. : 204577

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE CONC	SPIKE CONC	% REC
PHENOLICS; TOTAL	MG/L	20458701	<0.02	<0.02	NA	0.24	0.25	96

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

Photo #

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 05  
DATE: 4/16/92  
TIME: 12:44p

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER AT ASH

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 54"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

#79007  
S = 0.0017  
Q<sub>G</sub> = 71 cfs

VISUAL OBSERVATIONS:    PHOTO TAKEN NO YES... ROLL(S) AND PHOTO NUMBER(S) 9

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPAULING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Wm J. Cohen

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR06  
DATE: 7/6/92  
TIME: 12:50p

**GENERAL INFORMATION:**

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: (≥0.1in) <0.1in

**FIELD SITE DESCRIPTION**

LOCATION: Salt River at Mill Ave

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

**FLOW ESTIMATION:**    FLOW OBSERVED YES  NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 24"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

**VISUAL OBSERVATIONS:**

PHOTO TAKEN    NO    YES     ROLL(S) AND PHOTO NUMBER(S) 10

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPAULING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

**FIELD ANALYSES:**

**FIELD ANALYSES:**

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES  NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): *Wm J. Green*

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 07  
DATE: 4/10/92  
TIME: 0850

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_

QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER W. Rural Rd. Bridge (ASU)

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 66"

1.) WIDTH OF WATER SURFACE (FEET) 2.2'

#55005  
 $S = 0.001297$

2.) APPROXIMATE DEPTH OF WATER (FEET) 0.2'

3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) 1.2'

$Q_G = 130 \text{ cfs}$

4.) FLOW RATE (CUBIC FEET PER SECOND) =  $1 \times 2 \times 3 = \underline{6.0 \text{ cfs}}$

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 14

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER Flop GATE 0.22' from concrete structure

BIOLOGICAL: MOSQUITO LARVAE BACTERIA ALGAE OTHER Moss

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: 18.3 degrees C

CHLORINE (TOTAL): 0.6 mg/l

pH 8.23

COPPER: 0.09 mg/l

PHENOL 0.0 mg/l

DETERGENTS: 0.15 mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Tom Ankeny

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR08  
DATE: 4/10/97  
TIME: 1936

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: 20.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: Smt Pike E Rural Rd. Bridge <sup>DORSEY</sup> <sub>DRAIN</sub>

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES  NO  APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 46"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

#68024  
78" @ 5 = 0.001  
Q<sub>G</sub> = 180 cfs

VISUAL OBSERVATIONS: PHOTO TAKEN NO  YES  ROLL(S) AND PHOTO NUMBER(S) 15 + 16

ODOR: NONE \_\_\_\_\_ MUSTY \_\_\_\_\_ SEWAGE \_\_\_\_\_ ROTTEN EGGS \_\_\_\_\_ SOUR MILK \_\_\_\_\_ OTHER \_\_\_\_\_

2 S. OF LEVEL

COLOR: CLEAR \_\_\_\_\_ RED \_\_\_\_\_ YELLOW \_\_\_\_\_ BROWN \_\_\_\_\_ GREEN \_\_\_\_\_ GREY \_\_\_\_\_ OTHER \_\_\_\_\_

CLARITY: CLEAR \_\_\_\_\_ CLOUDY \_\_\_\_\_ OPAQUE \_\_\_\_\_ SUSPENDED SOLIDS \_\_\_\_\_

FLOATABLES: NONE \_\_\_\_\_ OILY SHEEN \_\_\_\_\_ GARBAGE/SEWAGE \_\_\_\_\_ OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE \_\_\_\_\_ SEDIMENTS \_\_\_\_\_ OILY \_\_\_\_\_ OTHER \_\_\_\_\_

VEGETATION CONDITION:  NONE \_\_\_\_\_ NORMAL \_\_\_\_\_ EXCESSIVE GROWTH \_\_\_\_\_ INHIBITED GROWTH \_\_\_\_\_

STRUCTURAL CONDITION:  NORMAL \_\_\_\_\_ CONCRETE CRACKING/SPALING \_\_\_\_\_ METAL CORROSION \_\_\_\_\_ OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE \_\_\_\_\_ BACTERIA/ALGAE \_\_\_\_\_ OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES  NO   
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Tom Ankeny

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 09  
DATE: 4/10/92  
TIME: 0945

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER w. of MS Clintock ASU/KARSTEN

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 30"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) 17

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPAULING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Michael J. Sohlen

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 10  
DATE: 4/10/92  
TIME: 0955

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: 20.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: Salt River W. McClintock Rd. Bridge

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_  
DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"  
#83014  
S = 0.0028  
Vg = 39 cfs  
1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_  
2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_  
3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_  
4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) 18

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_  
COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_  
CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS \_\_\_\_\_  
FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_  
DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_  
VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH  
STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_  
BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES: \_\_\_\_\_ FIELD ANALYSES: \_\_\_\_\_  
WATER TEMP: \_\_\_\_\_ degrees C CHLORINE (TOTAL): \_\_\_\_\_ mg/l  
pH \_\_\_\_\_ COPPER: \_\_\_\_\_ mg/l  
PHENOL \_\_\_\_\_ mg/l DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Michael J. Green

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 11  
DATE: 4/10/92  
TIME: 0955

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: 20.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: Salt River W. McClintock Rd. Bridge

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 46"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

*Stub for future*

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES..ROLL(S) AND PHOTO NUMBER(S) 18

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: Stub for future storm drain

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

GENERAL INFORMATION

TIME SINCE LAST RAIN: 72 hrs INSPECTION TEAM:  
QUANTITY OF LAST RAIN: 2.5 in

FIELD SITE DESCRIPTION

CITY OF TENNE LOCATIONS: 501 River Road, Nashville, TN  
OPEN CHANNEL:  OUTFALL:  OTHER: A.T. I.D. 204570  
DOMINANT WATER USE: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER

FLOW ESTIMATION

FLOW ESTIMATED:  YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 72  
1) WIDTH OF CHANNEL (FEET): 0.95  
2) APPROXIMATE DEPTH OF WATER (FEET): 0.03  
3) APPROXIMATE FLOW VELOCITY (FEET PER SECOND): 1.5  
4) FLOW RATE (CUBIC FEET PER SECOND) = 1x2x3 = 0.029

VISUAL OBSERVATIONS

PHOTO TAKEN: NO  YES ROLL(S) AND PHOTO NUMBER: 72  
ODOR:  NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER

COLOR:  CLEAR RED YELLOW BROWN GREEN GREY OTHER

CLARITY:  CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES:  NONE OILY WASTE GARBAGE/SEWAGE OTHER  
DEPOSITS/STAINS: NONE OILY OTHER

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION:  NORMAL CONCRETE CRACKING/SPALLING METAL CORROSION OTHER

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER

FIELD ANALYSES:

Jane M. Foote  
WATER TEMP: 57.6  
pH: 8.0  
PHENOL: mg/l

FIELD ANALYSES:

Robert V. Woods  
Laboratory Manager  
CHLORINE (TOTAL): 0.9 mg/l  
COPPER: 0.25 mg/l  
DETERGENTS: 0.42 mg/l

LABORATORY SAMPLE COLLECTED:  YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: SAMPLE FOR PHENOL ANALYSIS

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 16  
DATE: 7/6/92  
TIME: 2:45 AM

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER North BANK VI. PRIEST BRIDGE

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 96"

- 1.) WIDTH OF WATER SURFACE (FEET) 0.95'
- 2.) APPROXIMATE DEPTH OF WATER (FEET) 0.02'
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) 1.5'
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = 0.019

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 12

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: 21.6 degrees C

CHLORINE (TOTAL): 0.9 mg/l

pH 8.0

COPPER: 0.25 mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: 0.42 mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: SAMPLE FOR PHENOL ANALYSIS

DATA SHEET FILLED OUT BY (SIGNATURE): Tom Aubrey

SR 16



Analytical **Technologies**, Inc.

9830 S. 51st Street Suite B-113 Phoenix, AZ 85044 (602) 496-4400

**RECEIVED  
CITY OF TEMPE**

**APR 20 1992**

ATI I.D. 204578

April 15, 1992

**IND. WASTE SECTION**

City of Tempe  
P.O. Box 5002  
Tempe, AZ 85280

Project Name/Number: Salt River North Bank West of Priest  
Bridge/92-0355

Attention: Al Jensen

On 04/07/92, Analytical Technologies, Inc. received a request to analyze aqueous sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (602) 496-4400.

Jane M. Foote  
Project Manager

Robert V. Woods  
Laboratory Manager

RVW:clf  
Enclosure



Analytical Technologies, Inc.

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0355  
PROJECT NAME : SALT RIVER

DATE RECEIVED : 04/07/92  
REPORT DATE : 04/09/92

ATI I.D. : 204578

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	92-0355	AQUEOUS	04/06/92

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.



Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 204578

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0355  
PROJECT NAME : SALT RIVER

DATE RECEIVED : 04/07/92

REPORT DATE : 04/09/92

PARAMETER	UNITS	01
PHENOLICS, TOTAL	MG/L	<0.02



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0355  
PROJECT NAME : SALT RIVER

ATI I.D. : 204578

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
PHENOLICS, TOTAL	MG/L	20458701	<0.02	<0.02	NA	0.24	0.25	96

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

FIELD DATA SHEET *Photo #*  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 17  
DATE: 4/16/91  
TIME: 7:10 pm

GENERAL INFORMATION:

TIME SINCE LAST RAIN: 672 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT River NORTH BANK N. of Priest Pt.

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"  
"ADOT"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 11

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: drains ADOT East Papago Freeway

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

Photo #

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 18  
DATE: 4/8/92  
TIME: 3:15 PM

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER NORTH BANK - SRP

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 102"

- 1.) WIDTH OF WATER SURFACE (FEET) 2.3
- 2.) APPROXIMATE DEPTH OF WATER (FEET) 0.145
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) 1.25
- 4.) FLOW RATE (CUBIC FEET PER SECOND) =  $1 \times 2 \times 3 =$  0.417

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 13

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH Moss INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: 20.9 degrees C

CHLORINE (TOTAL): 1.1 mg/l

pH 7.7

COPPER: 0.15 mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: 0.45 mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: SAMPLE FOR PHENOL ANALYSIS

DATA SHEET FILLED OUT BY (SIGNATURE): Michael J. Zander

SR 18



Analytical Technologies, Inc.

9830 S. 51st Street Suite B-113 Phoenix, AZ 85044 (602) 496-4400

RECEIVED  
CITY OF TEMPE

APR 20 1992

ATI I.D. 204576

IND. WASTE SECTION

April 15, 1992

City of Tempe  
P.O. Box 5002  
Tempe, AZ 85280

Project Name/Number: Salt River North Bank/92-0353

Attention: Al Jensen

On 04/07/92, Analytical Technologies, Inc. received a request to analyze aqueous sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (602) 496-4400.

*Jane M. Foote*

Jane M. Foote  
Project Manager

*Robert V. Woods*

Robert V. Woods  
Laboratory Manager

RVW:clf  
Enclosure



Analytical Technologies, Inc.

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0353  
PROJECT NAME : SALT RIVER

DATE RECEIVED : 04/07/92  
REPORT DATE : 04/09/92

ATI I.D. : 204576

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	92-0353	AQUEOUS	04/06/92

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.



Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 204576

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0353  
PROJECT NAME : SALT RIVER

DATE RECEIVED : 04/07/92

REPORT DATE : 04/09/92

-----  
PARAMETER UNITS 01  
-----  
PHENOLICS, TOTAL MG/L <0.02



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : CITY OF TEMPE, ENVIRONMENTAL SERV.  
PROJECT # : 92-0353  
PROJECT NAME : SALT RIVER

ATI I.D. : 204576

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE CONC	SPIKE CONC	% REC
PHENOLICS, TOTAL	MG/L	20458701	<0.02	<0.02	NA	0.24	0.25	96

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 19  
DATE: 4/10/92  
TIME: 1537

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER N. AT PACIFIC R.R. BRIDGE

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 60"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) R2, 11

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPALING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): M. J. Golden

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 20  
DATE: 4/10/92  
TIME: 1532

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER N. E. OF MILL AVE

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 40"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES, ROLL(S) AND PHOTO NUMBER(S) R2, 10

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPAULING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: FIAP, GATE HAS SHAKEN BOLTS - 3 RETAINING GATE.

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 21  
DATE: 4/10/92  
TIME: 1523

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: SALT RIVER N. Pedestrian UNDERPASS

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: TWIN 2' x 3'

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) R2, 8, 9

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_ #8 = Right side SARTHEND  
9 = Full View

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Ann J. Green

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR22  
DATE: 4/10/92  
TIME: 1518

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: SALT RIVER N AT College

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: TOTAL 48"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES, ROLL(S) AND PHOTO NUMBER(S) R2, 7

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: GATES Improperly Installed

DATA SHEET FILLED OUT BY (SIGNATURE): Michael J. Sheen

**FIELD DATA SHEET**  
**ILLEGAL DISCHARGE FIELD SCREENING PROGRAM**

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 23  
DATE: 4/10/92  
TIME: 1515

**GENERAL INFORMATION:**

TIME SINCE LAST RAIN: >72 hrs <72 hrs    INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

**FIELD SITE DESCRIPTION**

LOCATION: SALT RIVER N. RURAL BRIDGE WEST

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

**FLOW ESTIMATION:**    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

**VISUAL OBSERVATIONS:**

PHOTO TAKEN YES NO    ROLL(S) AND PHOTO NUMBER(S) R2, 6

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPALING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

**FIELD ANALYSES:**

**FIELD ANALYSES:**

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): *Meredith J. Jones*

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: SR 24  
DATE: 4/10/92  
TIME: 12:35

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: SALT RIVER N. W. OF INDIAN BEND.

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:

FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: TWIN 8x8'

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) R2, 2

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Michael J. Green

DATE: \_\_\_\_\_  
TIME: \_\_\_\_\_

GENERAL INFORMATION

TIME SINCE LAST RAIN: 23 hrs < 72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: 0.10 < 0.1 in

FIELD SITE DESCRIPTION

Western Trench Basin S. Highway 101

OPEN CHANNEL  MANHOLE  OUTFALL  OTHER

DOMINANT WATERSHED LAND USES: INDUSTRIAL  COMMERCIAL  RESIDENTIAL  UNKNOWN  OTHER   
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES  NO  APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: \_\_\_\_\_

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

874059-124

VISUAL OBSERVATIONS

PHOTO TAKEN NO  YES  ROLL(S) AND PHOTO NUMBER(S) 2

ODOR: NONE  MUSTY  SEWAGE  ROTTEN EGGS  SOUR MILK  OTHER \_\_\_\_\_

COLOR: CLEAR  RED  YELLOW  BROWN  GREEN  GREY  OTHER \_\_\_\_\_

CLARITY: CLEAR  CLOUDY  OPAQUE  SUSPENDED SOLIDS

FLOATABLES: NONE  OILY SHEEN  GARBAGE/SEWAGE  OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE  SEDIMENTS  OILY  OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE  NORMAL  EXCESSIVE GROWTH  INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL  CONCRETE CRACKING/SPALLING  METAL CORROSION  OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE  BACTERIA/ALGAE  OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ Degree C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED: YES  NO   
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): \_\_\_\_\_

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB 01  
DATE: 4/10/92  
TIME: 10:15

GENERAL INFORMATION:

TIME SINCE LAST RAIN: <72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: INDIAN BRID E. So. McKellips Rd.

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 42"

#74059-<sup>No</sup> 2/42

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 20

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB 02  
DATE: 4/10/92  
TIME: 10:22

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: INDIAN BEND E. Side (Mallory house)

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) 21

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB03  
DATE: 4/10/92  
TIME: 10:26

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_

QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: INDIAN BEND E Side (GOLF COURSE MAINT YARD)

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 42"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) 22

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER Flies

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Michael J. Golden

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: 1804  
DATE: 4/10/92  
TIME: 10:35

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: INDIAN BEND E. N. of Curry Rd.

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 23

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES:    NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION:    NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION:    NORMAL    CONCRETE CRACKING/SPALLING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Maura J. Green

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: TR05  
DATE: 4/10/92  
TIME: 10:40

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: INDIAN BEND E. South of Cucey Rd.

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:

FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 18"  
*Correct # IO 132*

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) 24

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALLING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER NO FLIES AT SITE

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IA 07  
DATE: 4/10/92  
TIME: 10:12

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: INDIAN BEND W. So. McCellips Rd  
OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 48"  
#74059 - No Info  
1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_  
2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_  
3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_  
4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) 19  
ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_  
COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_  
CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS  
FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_  
DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_  
VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH  
STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_  
BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES: FIELD ANALYSES:  
WATER TEMP: \_\_\_\_\_ degrees C CHLORINE (TOTAL): \_\_\_\_\_ mg/l  
pH \_\_\_\_\_ COPPER: \_\_\_\_\_ mg/l  
PHENOL \_\_\_\_\_ mg/l DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): Wm J. Green

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB 08  
DATE: 4/10/92  
TIME: 1333

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: >0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: INDIAN BEND W (RV STORAGE HOLES)

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:

FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: TWIN 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) RR, 5

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: TR09  
DATE: 4/10/92  
TIME: 13:25

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: INDIAN BEND W. (BIKE BATH) Weber

OPEN CHANNEL \_\_\_\_\_ MANHOLE \_\_\_\_\_ OUTFALL \_\_\_\_\_ OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL \_\_\_\_\_ COMMERCIAL \_\_\_\_\_ RESIDENTIAL \_\_\_\_\_ UNKNOWN \_\_\_\_\_ OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: \_\_\_\_\_

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) R2, 4

ODOR: NONE \_\_\_\_\_ MUSTY \_\_\_\_\_ SEWAGE \_\_\_\_\_ ROTTEN EGGS \_\_\_\_\_ SOUR MILK \_\_\_\_\_ OTHER \_\_\_\_\_

COLOR: CLEAR \_\_\_\_\_ RED \_\_\_\_\_ YELLOW \_\_\_\_\_ BROWN \_\_\_\_\_ GREEN \_\_\_\_\_ GREY \_\_\_\_\_ OTHER \_\_\_\_\_

CLARITY: CLEAR \_\_\_\_\_ CLOUDY \_\_\_\_\_ OPAQUE \_\_\_\_\_ SUSPENDED SOLIDS \_\_\_\_\_

FLOATABLES: NONE \_\_\_\_\_ OILY SHEEN \_\_\_\_\_ GARBAGE/SEWAGE \_\_\_\_\_ OTHER \_\_\_\_\_

DEPOSITS STAINS \_\_\_\_\_ NONE \_\_\_\_\_ SEDIMENTS \_\_\_\_\_ OILY \_\_\_\_\_ OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE \_\_\_\_\_ NORMAL \_\_\_\_\_ EXCESSIVE GROWTH \_\_\_\_\_ INHIBITED GROWTH \_\_\_\_\_

STRUCTURAL CONDITION: NORMAL \_\_\_\_\_ CONCRETE CRACKING/SPAULING \_\_\_\_\_ METAL CORROSION \_\_\_\_\_ OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE \_\_\_\_\_ BACTERIA/ALGAE \_\_\_\_\_ OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB 10  
DATE: 4/10/92  
TIME: 1320

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION

LOCATION: Indian Bend W, N of Curry Rd.

OPEN CHANNEL    MANHOLE    OUTFALL    OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL    COMMERCIAL    RESIDENTIAL    UNKNOWN    OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION:    FLOW OBSERVED YES NO    APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 42"  
#74059 No Info

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN NO YES, ROLL(S) AND PHOTO NUMBER(S) R2, 3

ODOR: NONE    MUSTY    SEWAGE    ROTTEN EGGS    SOUR MILK    OTHER \_\_\_\_\_

COLOR: CLEAR    RED    YELLOW    BROWN    GREEN    GREY    OTHER \_\_\_\_\_

CLARITY: CLEAR    CLOUDY    OPAQUE    SUSPENDED SOLIDS

FLOATABLES: NONE    OILY SHEEN    GARBAGE/SEWAGE    OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE    SEDIMENTS    OILY    OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE    NORMAL    EXCESSIVE GROWTH    INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL    CONCRETE CRACKING/SPAULING    METAL CORROSION    OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE    BACTERIA/ALGAE    OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB 11  
DATE: 4/10/97  
TIME: 12:24

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: Indian Bend W. (NINA STATE)

OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 36"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES ROLL(S) AND PHOTO NUMBER(S) R2, 0

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

Figure 4.6

FIELD DATA SHEET  
ILLEGAL DISCHARGE FIELD SCREENING PROGRAM

SHEET NO. \_\_\_\_\_  
OUTFALL ID NO: IB12  
DATE: 4/10/92  
TIME: 12:25

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM: \_\_\_\_\_  
QUANTITY OF LAST RAIN: ≥0.1in <0.1in

FIELD SITE DESCRIPTION \_\_\_\_\_ LOCATION: INDIAN BND W. (GILBERT)  
OPEN CHANNEL MANHOLE OUTFALL OTHER \_\_\_\_\_

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER \_\_\_\_\_  
IF KNOWN, LIST THEM: \_\_\_\_\_

FLOW ESTIMATION: FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 48"  
1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_  
2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_  
3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_  
4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTO TAKEN NO YES...ROLL(S) AND PHOTO NUMBER(S) R2, 1  
ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_  
COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_  
CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS  
FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_  
DEPOSITS / STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_  
VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH  
STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPAULING METAL CORROSION OTHER \_\_\_\_\_  
BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER \_\_\_\_\_

FIELD ANALYSES: FIELD ANALYSES:  
WATER TEMP: \_\_\_\_\_ degrees C CHLORINE (TOTAL): \_\_\_\_\_ mg/l  
pH \_\_\_\_\_ COPPER: \_\_\_\_\_ mg/l  
PHENOL \_\_\_\_\_ mg/l DETERGENTS: \_\_\_\_\_ mg/l

LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATA SHEET FILLED OUT BY (SIGNATURE): [Signature]

COURTESY OF [unclear]  
DATE: 4/12/03  
TIME: 12:45

GENERAL INFORMATION:

TIME SINCE LAST RAIN: >72 hrs <72 hrs INSPECTION TEAM:  
QUANTITY OF LAST RAIN: 26.1in <0.1in

FIELD SITE DESCRIPTION:

LOCATION: Kiwanis Park Lake (MNH)

OPEN CHANNEL MANHOLE OUTFALL OTHER

DOMINANT WATERSHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER  
IF KNOWN, LIST THEM:

FLOW ESTIMATION:

FLOW OBSERVED YES NO APPROXIMATE CHANNEL WIDTH OR PIPE DIAMETER: 54"

- 1.) WIDTH OF WATER SURFACE (FEET) \_\_\_\_\_
- 2.) APPROXIMATE DEPTH OF WATER (FEET) \_\_\_\_\_
- 3.) APPROXIMATE FLOW VELOCITY (FEET PER SECOND) \_\_\_\_\_
- 4.) FLOW RATE (CUBIC FEET PER SECOND) = 1 x 2 x 3 = \_\_\_\_\_

VISUAL OBSERVATIONS:

PHOTO TAKEN: NO YES ROLL(S) AND PHOTO NUMBER(S) P-12

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER \_\_\_\_\_

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER \_\_\_\_\_

CLARITY: CLEAR CLOUDY OPAQUE SUSPENDED SOLIDS

FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER \_\_\_\_\_

DEPOSITS/STAINS: NONE SEDIMENTS OILY OTHER \_\_\_\_\_

VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH

STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING/SPALLING METAL CORROSION OTHER \_\_\_\_\_

BIOLOGICAL: MOSQUITO LARVAE BACTERIA/WALGAE OTHER \_\_\_\_\_

FIELD ANALYSES:

FIELD ANALYSES:

WATER TEMP: \_\_\_\_\_ degrees C

CHLORINE (TOTAL): \_\_\_\_\_ mg/l

pH \_\_\_\_\_

COPPER: \_\_\_\_\_ mg/l

PHENOL \_\_\_\_\_ mg/l

DETERGENTS: \_\_\_\_\_ mg/l

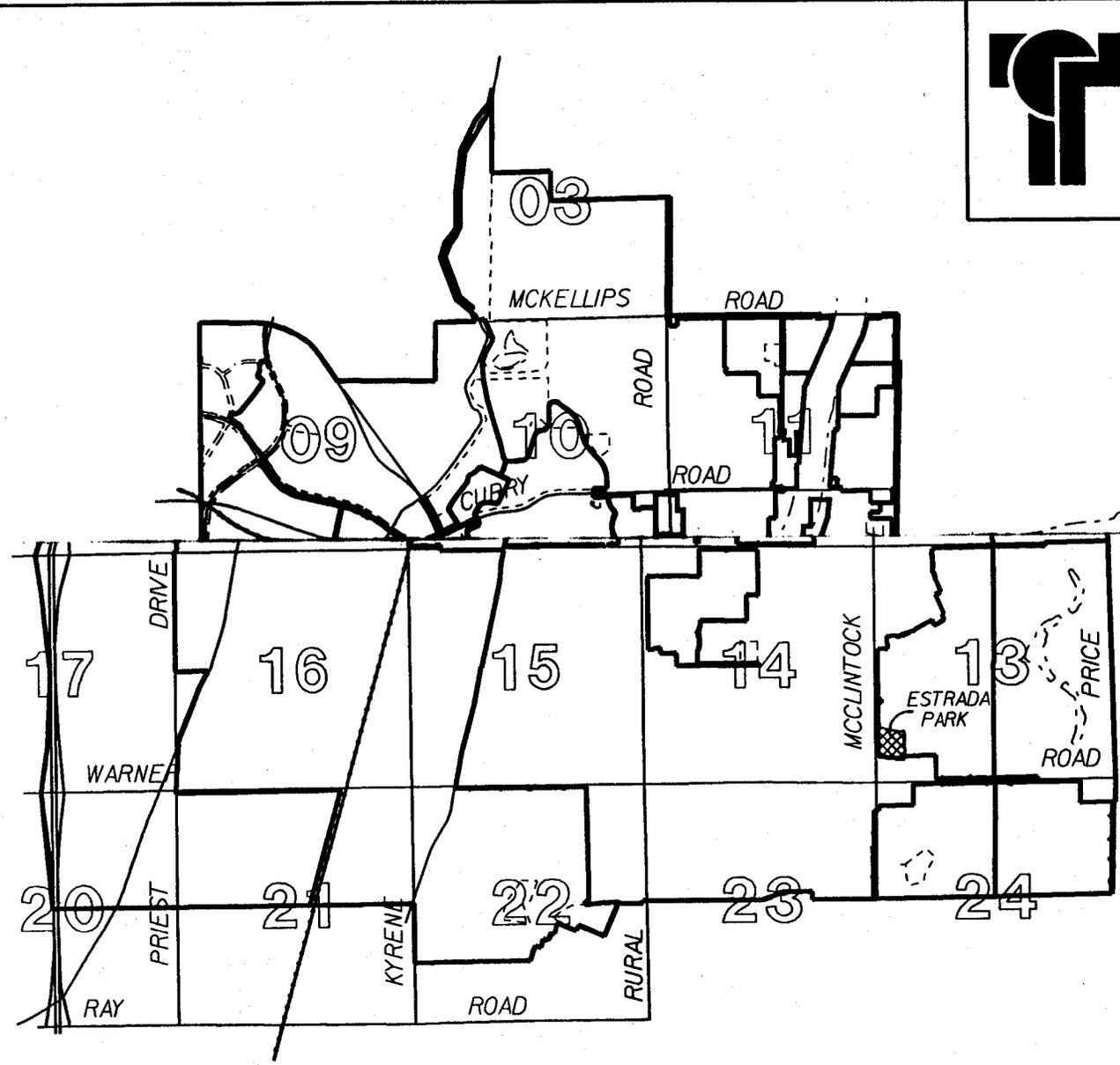
LABORATORY SAMPLE COLLECTED YES NO  
IF YES ATTACH COPY OF CHAIN-OF-CUSTODY RECORD

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

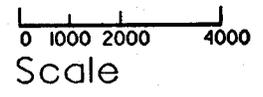
DATA SHEET FILLED OUT BY (SIGNATURE): \_\_\_\_\_



CITY OF TEMPE  
SAMPLING  
LOCATION MAP  
DATE: 5-15-92  
MAP NO:  
SCALE:



APP. C.31



A. SAMPLING METHODS

CITY OF TEMPE, ARIZONA  
AUTOMATIC STORM WATER SAMPLING STATION

TECHNICAL SPECIFICATIONS

1.0 Location

The automatic storm water sampling stations shall be installed at the following four locations:

SR07, SR08, Estrada Park and Kiwanis Park Lake

1.02 System Description

- A. Automatic stormwater sampling stations shall be installed in the City storm drainage system for sampling from closed conduits under open channel and full pipe conditions, and in man-made or natural open channels. Stations shall perform precipitation monitoring, flow measurement, stormwater sampling, and data logging with communication of data and status to a remotely located desktop computer

Each station shall be capable of sensing a storm event (rainfall in excess of 0.01 inches), recording five minute and total rainfall volume for each event, and collecting flow proportional composite samples. A minimum of 13-16 liters of flow proportional composite sample shall be collected in a set of one or more glass containers. All compositing shall be performed within the station during the storm event. Systems which only collect time weighted discrete samples for later compositing are not acceptable.

Stations shall incorporate hardware and software necessary for the City to remotely identify; the status of the station, rainfall occurring at the rainfall gauge, total volume of the flow that has occurred at the station at the time of interrogation, and total volume of sample collected, using an IBM compatible personal computer with a modem to be supplied according to Section 2.08. The station shall be programmed to detect the beginning and end of the storm event based on stage, rainfall, and elapsed time inputs. The station shall be capable of being "locked down" to prevent it from responding to non-storm water discharges in dry weather periods. The station shall be capable of variable sample volumes and intervals.

Materials that come into contact with the sample shall not contaminate the sample or interfere with laboratory detection of pollutants listed in Tables 1 and 2 included at the end of this specification.

### 1.03 Electrical

- A. Electrical conduit and conductors shall be supplied and installed as shown on the approved plans.
- B. Telephone Conductor Cable. Cable between the telephone point-of-service and the sample stations shall meet the following requirements.

Description:	22 AWG 4 Conductor Cable with overall shield
Conductor:	Tinned copper braid 87% coverage
Drain Wire:	22 AWG solid tinned copper
Insulation:	0.32 inch polyethelene
Separator:	.0005 clear mylar warp
Jacket:	0.32 inch organce PVC
Electrical:	600 volts
Capacitance:	25 pf/ft between conductors 45 pf/ft between one conductor and conductor connected to shield

Passes the VW-1 Vertical wire flame test.

### 2.0 Products

#### 2.01 Approved Manufacturers

- A. The complete stormwater sampling and monitoring system shall be as manufactured by American Sigma, Model 800SL. Hardware and software shall be compatible with equipment currently in use at the present time at the City of Tempe.

#### 2.02 Description of Operation

- A. The system shall monitor rainfall and stormwater flow continuously. Upon detection of rainfall in sufficient quantity and stormwater flow above a desired rate, the sampler system shall perform the following.
  1. Begin sampling in accordance with a pre-programmed sampling sequence.
  2. Continue logging rainfall data from the rain gage.
  3. Continue logging low data from the stormwater flow stream.
  4. Log the time each sample is taken.
  5. Produce an output for use in activating an autodialer indicating start of a sampling event.

- B. Sufficient memory shall be provided in the sampling station data loggers(s) to store up to 400 flow, rainfall and sampling data items collected.
- C. Data accumulated during events shall be available for down loading to a laptop computer, connected locally to the sampler system or to a central computer via modem and phone line.
- D. Downloaded data shall be prepared for presentation in graphs and ASCII format by data logging software, furnished with the stormwater sampling and monitoring system, and be compatible with hardware and software currently in use by the City of Tempe.

### 2.03 System Components

- A. The stormwater sampling and monitoring system shall be furnished with the following components.
  - 1. Sampling collection system with appropriate intake structures and hoses constructed of non-contaminating material.
  - 2. Rain Gauge.
  - 3. Stormwater flow monitoring system.
  - 4. Modem.
  - 5. Autodialer.
  - 6. Laptop data logging computer.
  - 7. Data logging software, compatible with equipment presently in use by the City of Tempe.

### 2.04 Sample Collection Systems

- A. The sample collection system shall be composed of the following:
  - 1. Enclosure.
  - 2. Glass sample bottles.
  - 3. Sample distribution assembly.
  - 4. 3/8" diameter intake tubing.
  - 5. Sample strainer.
  - 6. Stormwater stream level detection system.
  - 7. Sample pump.

8. Microprocessor-based control unit.

- B. The enclosure shall be constructed of high impact vacuum formed ABS plastic. The enclosure shall consist of a double wall insulated base section which houses the sample bottles and ice to maintain sample temperatures. The base shall hold an amount of ice and be constructed so that all sample bottles are in direct contact with the ice. The base shall contain a drain plug to allow drainage of melted ice.
- C. Sample bottles shall be provided in two (2) complete sets for each sampler. Each set shall be large enough to hold the required 13-16 liter composite sample. Minimum sample bottle capacity shall be 1.9 liters each. Sample bottles shall be constructed of glass. For each of cleaning, sample bottles shall have no inaccessible corners.
- D. Sample distribution assembly shall be mounted beneath the sample controller. The distribution assembly tubing shall be the same diameter and material as the intake tubing.
- E. Intake tubing shall be 3/8 inch internal diameter teflon lined. Length shall be as required for each site.
- F. The sample strainer shall be constructed of 316 stainless steel and teflon and shall be mounted on the sampling end of the intake tube. The strainer shall be weighted to prevent drift during sampling. The strainer shall be installed at a sufficient distance downstream of any flow monitoring device so as not to interfere with flow measurement.
- G. The sample pump shall consist of a peristaltic pump and a drive motor, for the representative collection of toxic and conventional pollutants. The pump system shall be designed for the following operating conditions.

1. Total sample volume/event (liters)	13-16
2. Sample volume accuracy (percent)	+/-10
3. Sample volume repeatability (milliliters)	+/-10
4. Suction lift (feet)	26
5. Pumping rate, minimum (milliliters per minute at 3 feet head)	3500
6. Intake line transport velocity, minimum (feet/second) at 3 feet head with 3/8" I.D. intake line	2.5
7. Intake line diameter (inches)	3/8

The pump shall utilize 3/8" I.D. x 5/8" O.D. diameter, medical grade silicon tubing for the pump tube components. Pump housing and fittings shall be sealed to conform to NEMA 4X and NEMA 6 standards for watertight/submersible, dust tight and corrosion resistant operation.

- H. The microprocessor-based control unit shall control and monitor all sampler operations. The control unit shall accept signals from the stormwater flowmeter, stormwater depth sensor and the rain gauge to produce outputs controlling the sampler pump and the sample distribution unit. The control unit shall have the following characteristics.
1. The sampler shall have a hermetically sealed keypad and self-prompting 16 character alphanumeric liquid crystal display. The unit shall not use special symbols and/or codes to represent programming steps or operational status. The unit shall have the capability of retaining up to three complete sampling programs in memory. A program lock shall be provided to preclude tampering by unauthorized personnel. The sampler shall be equipped with a clock providing time and date. It shall be possible to delay the start of the sampling program. The delay shall be independent of the sampling interval and shall be accomplished by setting the actual sample program start time and date.
  2. The sampler shall be capable of operation in a timed or flow proportional mode. In the timed mode, the interval between samples shall be adjustable in one minute increments from 1-5999 minutes. In the flow mode, the sampler shall be capable of totalizing from 1-5999 flow signals from a flowmeter having a 4-20 mA current output. Further, the sampler may be utilized in conjunction with an auxiliary device such as a liquid level actuator to initiate a sampling program at a predetermined set point.
  3. The sample volume shall be set directly in milliliters. The sampler shall be equipped with a liquid sensing system whereby pump flow rate is calculated every collection cycle and pumping time automatically adjusted assuring constant sample volume even when changing lift.
  4. So that overflows do not occur, the sampler shall automatically reject program entries for sample volume and the number of samples per bottle, the combination of which will exceed the volume of the container. With any rejected entry, the sampler shall immediately compute and indicate the closest acceptable entry.

5. The sampler shall be capable of rinsing the intake line with the source liquid immediately prior to sample collection. The number of rinses shall be selected from 1-3 or bypassed. In the event that sample liquid is not obtained on the initial attempt, the sampler shall automatically purge and repeat the collection cycle. The number of repeated attempts shall be selected from 1-3 or bypassed. In the event of a third unsuccessful attempt, the sampler shall stop until the next sampling interval. The time and date of any missed sample event shall be indicated during program review. Further, the sampler shall have the capability for initiating a manual sample independent of the program in process.
  6. To permit sampling during work shifts or other specific periods, the sampler shall be programmable for up to 24 start/stop intervals. The sampler shall also have the capability for programming up to 99 independent and non-uniform intervals between sampling events.
  7. In the multiple bottle mode, the sampler shall be capable of depositing 1 to 50 samples per bottle, or each interval depositing sample liquid to 1-24 bottles.
  8. One keystroke shall provide the program status including time and date program started, minutes or flow signals remaining to next sample bottle number, number of samples collected, number remaining, volume collected and volume remaining. The sampler shall have an internal solid state data logger which records up to 400 sample collection times and dates whether collected or missed. Further, it shall be possible to quickly determine all program settings as well as to provide a review of the complete program. An RS-232 compatible serial interface with cable shall be provided to allow on-site collection or transfer of stored data for computer analysis or hard-copy report.
  9. The control unit shall also provide an output signal that is initiated whenever the sampling system begins sampling a stormwater event. This signal will be used to trigger an autodialer.
- I. The unit shall operate from 12 VDC power. The power source shall be a 120 VAC Power Converter with a rechargeable 12 VDC sealed gel-type battery with a 6 amp-hr capacity. The sampler shall have the capability for alerting the user to a low batter condition. The sampler shall also be equipped with an internal lithium battery providing a five year memory. The lithium battery shall maintain program logic during battery changes or interruptions in power. The stand-by current draw shall not exceed 4 mA.

## 2.05 Rain Gauge

- A. Only rain gauges consistent with National Weather Service practice shall be provided. The gauge shall measure rainfall volume and/or rate. The unit shall consist of an 8 inch diameter collector and funnel. The funnel directs rainwater to a tipping bucket mechanism containing two tipping buckets. The buckets are size to hold 0.01 inches of water each. The rainwater passes through a screen which prevents the gauge from plugging due to leaves and other debris. Rainwater enters into one of the calibrated tipping buckets. When 0.01" of rain is accumulated in the bucket, the bucket tips, sending a signal to the data logger, draining the water from the bucket out the bottom of the gauge and positioning the other bucket to receive rainwater. The cycle repeats as long as there is sufficient rainfall entering the gauge.
- B. The gauge shall be constructed of corrosion resistant aluminum, nickel plated brass and stainless steel. The gauge shall also be furnished with pre-drilled mounting feet and built in level.
- C. The gauge shall be accurate to +/-1 percent at a precipitation rate of up to 3 inches per hour.
- D. Gauge output shall be input to the sampler flow control system for data logging and control.

## 2.06 Stormwater Flow Monitoring System

- A. The flow metering system shall measure stormwater flow by measuring the depth of water over a sensor probe in the stormwater flow stream. The flowmeter shall be integral to the sampling system controller.
- B. The flow sensor shall be submerged pressure transducer housed in a 316 stainless steel case, titanium isolation diaphragm and vented cable for atmospheric pressure change condensation. The transducer in the sensor shall be an integrated silicon strain gauge bridge. The cable shall be watertight with a polyurethane cover. Cable length shall be as required at each monitoring site. The sensor shall be mounted in the stream with an adjustable snap-together mounting band. The mounting band shall be constructed of grade 301 spring stainless steel.
- C. The flow transmitter shall be integral to the sampling control unit. The transmitter shall be programmable so as to accommodate both open channel and closed pipe flow conditions. Open channel flow shall include v-notch, rectangular or cipoletti weirs and parshall, palmer-bowlus, leopold-lagco, h-flume or trapezoidal flumes. Closed pipe flow will utilize the Manning equation. A "head vs. flow" customized lookup table can also be utilized. The lookup table shall accommodate up to 256 points. The transmitter shall have the following characteristics.

1. Operating temperature range: -20 degrees C to +80 degrees C
  2. Compensated temperature range: 0 degrees C to 50 degrees C
  3. Accuracy: 0.1% over the compensated temperature operating range.
  4. Long term stability: 0.1% of full scale per year
  5. Range: 0-10 feet for 68" and larger (5.76 for less than 66" diameter)
- D. The transmitter shall be programmable for flow data logging internals of 1, 5, 10, 15, 20, 30 and 60 minutes memory capacity under each internal shall be 1, 5, 10, 15, 20, 30 and 60 days respectively. Flow units shall be in engineering units.
- E. Programming shall be accomplished by integral keypad and display. Inputs for rain gauge depth sensor and power shall be provided.
- F. A serial port connection shall be furnished for the flowmeter to use by the onsite modem and/or the laptop computer for data down loading. The port shall conform to RS-232 standards. Port cable shall be furnished with the ports. Cable connectors attaching to the flowmeter enclosure shall maintain the NEMA 4X/6 rating of the enclosure. Firmware/software integral to the unit shall be furnished to control the port and modem.

#### 2.07 Modem

- A. The modem shall be a solid state microprocessor-based device that permits the sampling system data to be downloaded to a remote location via dial up telephone characteristics.
1. Standards: Bell 212A
  2. Baud Rate: 1200 (2400)
  3. Operation: Full duplex over standard phone lines
  4. Operating temperature: -25 degrees C to +50 degrees C

#### 2.08 Automatic Telephone Dialer

##### A. General

The dialer shall be a solid state component capable of dialing from one to three phone numbers, each number up to fifteen digits in length. The dialer shall be U.L. listed. The dialer shall be capable of activation from both a normally open and normally closed external contact. The dialer, when activated, shall call from one to three phone numbers and replay a pre-recorded message.

The dialer and software shall be comparable with equipment presently used by the City of Tempe.

B. Power Supply

Normal power shall be 120 VAC with a battery backup. The battery backup shall allow full operation of the dialer in the event of AC power failure. Batteries shall be standard, alkali, disposable batteries.

C. Phone Line

The dialer is to operate on a standard rotary pulse or touch tone phone line. Connection to the telephone shall be through an industry standard 4-pin modular jack.

2.09 Laptop Data Logging Computer

A. The laptop data logging computer shall be a portable, IBM compatible type with integral keyboard, display, mass storage device and telecommunication modem. The unit shall be as manufactured by CompuAdd, Swan 386 SX/25, or Dell NX20.

B. The unit shall have the following features:

1. 80386SX processor running at a minimum of 20 MHZ clock speed.
2. 2 MB random access memory, expandable to 4 MB.
3. 60 MB hard disk.
4. 3 1/2 - 1.44 MB capacity floppy disk drive.
5. 10" diagonal supertwist LCD sidelit display with 640 x 480 pixels resolution and 64 gray shades.
6. Two removable, rechargeable Nicad batteries with 2.5 hour typical use and AC adaptor.
7. 80 key keyboard with 101 key emulation.
8. Carrying case.
9. External VGA port for attaching external color monitor.
10. 1 RS-232 serial port.
11. 1 Centronix type parallel port.
12. Mouse port (built in mouse).
13. DC power in port and cable.

14. Internal 2400 baud modem.
15. Internal memory expansion slot.
16. 80387 math coprocessor - installed.
17. MS-DOS 5.0 operating system software, loaded on to the system hard drive. Full documentation and software disks shall be included.

#### 2.10 Data Logging Software

- A. The data logging software shall allow a laptop portable computer or central computer to access and retrieve stored data from the sampling system, process, display and print reports based on the retrieved data.
- B. Software shall be modular and menu driven with each module dedicated to a unique task. Software shall be compatible with software presently in use by the City of Tempe.
- C. Minimum computer hardware requirements to utilize the software are:
  1. 640K of Random Access Memory.
  2. 1-3 1/2" floppy disk drive (1.44 MB).
  3. IBM CGA compatible graphics adaptor and display.
  4. IBM CGA compatible graphics printer (dot matrix).
- D. Software shall be furnished by the manufacturer of the sampling system.
- E. Full documentation shall accompany the software along with all required software disks

- Table 4-14. PARAMETERS FOR REPRESENTATIVE STORM WATER SAMPLING

Grab Sample	Representative Stormwater Flow-Weighted Sample
<u>Organics</u>	<u>Organics</u>
Volatile Organic Carbon (VOCs) <sup>1</sup> Compounds (BNA) Base/Neutral-Acid Extractable Compounds (BNA)	Base/Neutral-Acid Extractable Oil and Grease
Pesticides/Polychlorinated Biphenyls (PCB) Phenols (total)	Pesticides/Polychlorinated Biphenyls (PCB)
<u>Metals</u>	<u>Metals</u>
Antimony	Antimony
Arsenic	Arsenic
Beryllium	Beryllium
Cadmium	Cadmium
Chromium (total)	Chromium (total)
Chromium (hexavalent)	Chromium (hexavalent)
Copper	Copper
Lead	Lead
Mercury	Mercury
Nickel	Nickel
Selenium	Selenium
Silver	Silver
Thallium	Thallium
Zinc	Zinc
<u>Physical</u>	<u>Physical</u>
pH	
Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS)
Total Suspended Solids (TSS)	Total Suspended Solids (TSS)
Biochemical Oxygen Demand (BOD <sub>5</sub> )	Biochemical Oxygen Demand (BOD <sub>5</sub> )
Chemical Oxygen Demand (COD)	Chemical Oxygen Demand (COD)
<u>Other</u>	<u>Other</u>
Fecal coliform	
Fecalstreptococcus	
Phosphorous (total)	Phosphorous (total)
Phosphorous (dissolved)	Phosphorous (dissolved)
Cyanide (total)	
Nitrogen (total)	Nitrogen (total)
Total ammonia and organic nitrogen	Total ammonia and Organic nitrogen

<sup>1</sup> except for bis(chlormethyl)ether, dischlorofluoromethane, and trichlorofluoromethane.

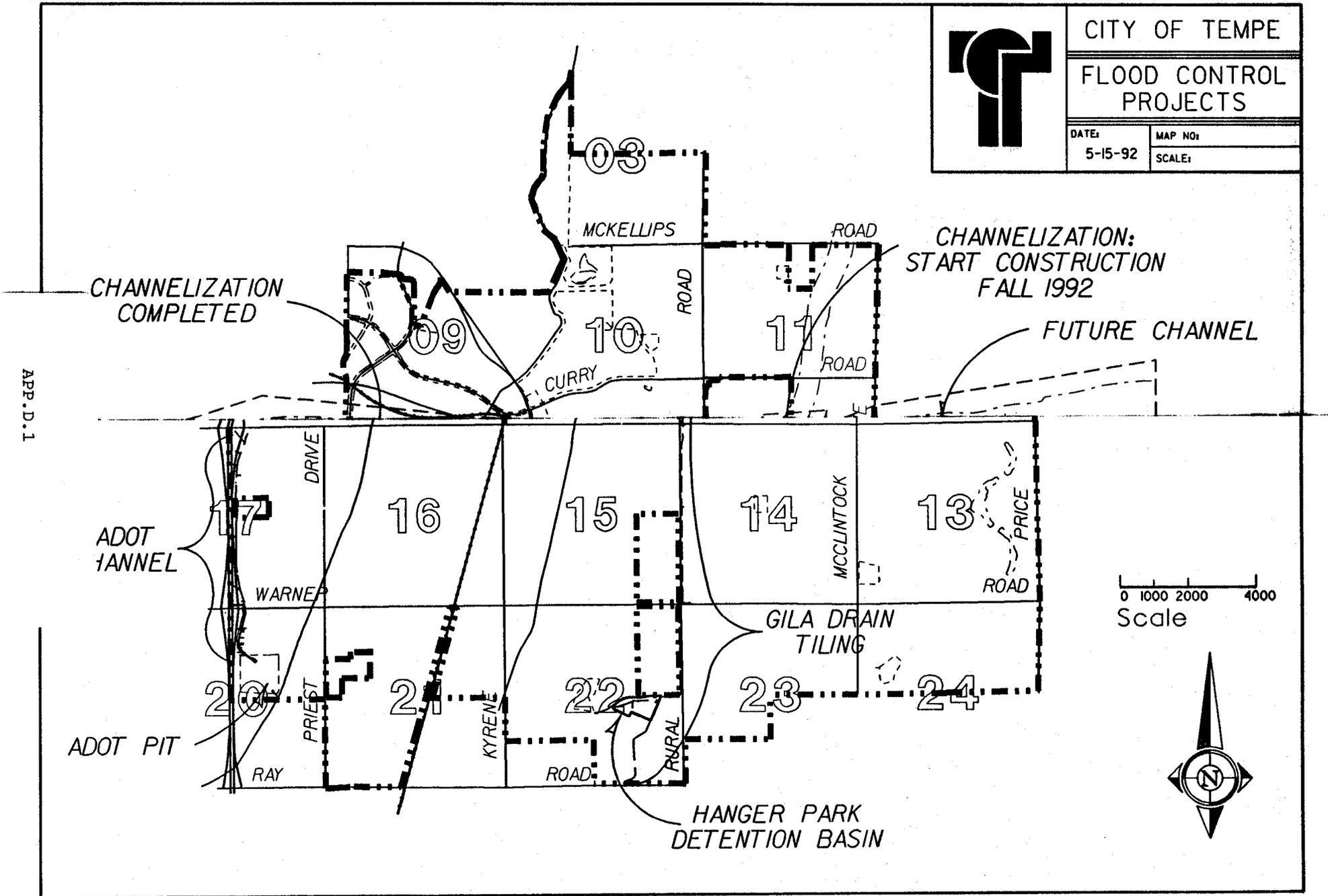
**APPENDIX D**  
**MANAGEMENT PROGRAMS**



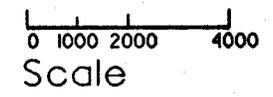
CITY OF TEMPE  
 FLOOD CONTROL  
 PROJECTS

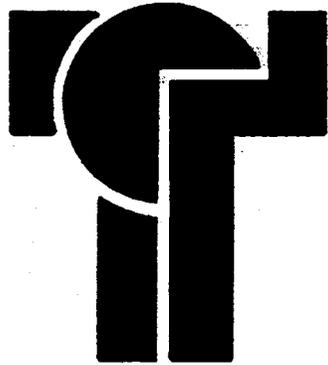
DATE:  
 5-15-92

MAP NO:  
 SCALE:



APP. D.1





CITY OF TEMPE  
PUBLIC WORKS DEPARTMENT  
DIVISION OF ENGINEERING

**ENGINEERING DESIGN CRITERIA**

**SEPTEMBER 1991**

CITY OF TEMPE  
PUBLIC WORKS DEPARTMENT

DRAINAGE CRITERIA

JANUARY 1987

In accordance with Ordinance No. 819.1 adopted by the Tempe City Council on April 21, 1977, the following criteria are established to provide proper measures for handling and disposal of storm water runoff. Requirements for specific development (subdivision, offsite) will be determined by the applicable criteria.

I. Hydrology Reports:

Flows (Q's) should be calculated for the 100 year storm according to the methods outlined in the hydrologic design manual published by the Maricopa County Flood Control District. The rational method may be used for areas of 160 acres or less.

A. Subdivisions

Preliminary hydrology report must be submitted with the preliminary subdivision plat. A contour map will be required with the report showing the existing drainage of the property (channels, ditches, structures, overland flow, etc.), including any drainage crossing the property from upstream areas. Another map shall show the proposed subdivisions runoff Q's points of concentration, limits of each drainage area, location and size of storm sewers and catch basins. For retention, show volume of water required to be stored, location of storage, and method of disposal. Final hydrology report must be provided before construction plans will be reviewed. The report will show:

- a. A complete runoff analysis in tabular form.
- b. Points of concentration with peak street flows and drainage areas.
- c. Calculation for sizing catch basins and pipe.
- d. Retention basin characteristics.
  1. Inlet structure.
  2. Detailed calculation of volume required and actual holding volume.
  3. Calculation and verification for disposing of water in thirty-six hours.
- e. Calculations of 100 year runoff at critical points of subdivisions (low points).

B. Commercial and Industrial

For developments not requiring a subdivision map, such as a lot, tract, or individual parcel the Hydrology and Retention Volume calculations can be put on a "Grading & Drainage Plan" or submitted separately with the initial submission. The plan and calculations must contain the following:

1. Hydrology and Retention calculations for a one hundred year storm including:
  - a. Volume required
  - b. Volume retained
2. General Notes for Grading and Drainage.
3. Easily identified retention areas, fully dimensioned with high water elevation called out. (Section views as required for clarity).
4. Retention Basin Volume calculations easily verified.
5. When paved areas are incorporated into lot retention, water depth is not to exceed 1.0'.
6. Finish floor elevation is to be a minimum of 10" above the highwater design.

7. Some acceptable method of dissipating storm water within a 36 Hr. period. If a drywell is to be used, the dry-well volume can be included in the calculations for volume provided. No allowances for volume due to percolation rate will be given.
8. Dry-wells must penetrate a minimum of 10' into suitable permeable strata.
9. Dry-wells must be registered with the Arizona State Department of Health Services Water Quality Control Permit Section.

II. Street and Storm Drain Design:

- A. Use the Maricopa County Flood Control District Hydrologic Design Manual for determining peak runoff for subdivisions.

Note: A composite value is to be used for storm drain design purposes only. Required retention volume is calculated per section IV. pp. 30-33 in this section.

- B. Rainfall intensity is related to time of concentration. Time of concentration is the summation of Overland Flow Time, Street Time and Pipe Time.
  1. Overland Flow Time is that time required for a drop of water falling on an open area (lawn, field, etc.) to reach an outlet point (street, ditch, pipe, etc.).
  2. Street Time is that time required for the runoff to travel from entrance onto the street to entrance into a catch basin, drainage channel (or to some other point along the street where the runoff exits from the street).
  3. Pipe Time is that time required for the runoff to travel in the pipe from the entrance catch basin to another point along the storm drain - usually an entrance structure for another drainage area, retention basin, drainage channel, etc.

Keep in mind, that the time of concentration is calculated from the part most remote in time, not necessarily in distance.

The time of concentration shall be arrived at in the following sequence:

- a. Overland Flow Time shall be obtained using MCFCO Hydrologic Manual.
- b. Street Time is computed by dividing the length of street flow by the runoff velocity when flowing at top of curb. Velocity shall be computed using Manning's equation with  $n = .015$ .

- c. Pipe and channel flow shall be computed using the velocity occurring at design flow in a pipe or channel of given size and material. Velocity shall be computed using Manning's equation with the "n" value for pipe of 0.012.

Refer to any published table of values for "n" values of channels. Pipe velocities and capacity can be obtained directly from Figure I.

### III. Design Storm:

Streets, catch basins and storm sewers shall be designed for a minimum five year storm, except where the design drainage area is sumped (low pointed) within itself and the only outlet is a storm drain then a ten year design must be used. In all cases larger storm frequencies may be used or required. When the computed runoff exceeds the capacity of a street (where the depth of flow is at the top of curb) subsurface drainage will be required. Note: the most common error is the overloading of one side of a street where the majority of runoff is placed on one side of the street and the capacity is considered for both sides. Valley gutters will not be permitted across midsection collector streets or arterial streets. Valley gutters will be discouraged on other collector streets. Peak flows from a 100 year storm must be carried within the cross section between buildings (front yards and streets).

Storm drains shall be designed to provide the required capacity without surcharging the line. Storm drain outlets shall be designed to function as a part of the ultimate drainage system. Where major trunk lines are not available, a temporary retention basin and a future connection to the proposed trunk storm drain shall be provided. This is to permit effective drainage during the interim of development and construction of a completed storm drain system. Storm sewers

shall not be designed with less than a velocity of 3 fps. No pipe shall be less than 18 inches. When a pipe size has been established, it shall not be reduced, unless for a metered situation. Maximum manhole spacing for 36" pipe or less is 600 feet and above 36" is 800 feet. Manholes will be required at a change of grade, change of pipe size, or alignment. Curved pipe will not be permitted for 36" pipe or less. Catch basins shall be designed to intercept a minimum of 80% of the total runoff delivered to the point in the street where depth of street flow reaches curb height. Sump catch basins shall be designed to receive all of the runoff at the catch basin. In situations where catch basins are sumped, the Engineer will verify that overland relief for the 100 yr. storm is available without damage to buildings. Catch basin capacities shall be determined from Hydraulic Engineering Circular No. 12 (HEC-12) published by the Federal Highway Administration. No grate type catch basins are permitted.

#### IV. Retention Design Criteria

- A. Retention is required when there is no existing design storm outlet to the Salt River.
- B. Method of Storage
  - 1. Individual lot storage shall consist of providing adequate storage volume for the lot, plot or parcel of land using method in part IV C.1. Storage volume shall include adjacent streets and alleys except for arterial streets. Although Ordinance 819.1 allows a maximum depression of 8" for single family lots, experience with depressed lot construction and maintenance shows that normal rounding of typical confined

yard depressions results in an average of 6" through-out the basin bottom area. Therefore, the maximum allowable depth of water for calculation of retention volume provided for single family residential lots by depressing them will be 6".

Subdivisions of less than 18,000 sq.ft. lot (single family zoning) will be required to utilize combination storage. The perimeter and house-footing berm configurations shall be submitted with the final hydrology to substantiate the retention volume provided (Fig. II) - Individual storage of over 1.0' in depth will require a disposal mechanism to meet the 36 hr. criteria.

2. Central storage shall provide adequate volume to handle the 100 yr., 1 hour storm runoff from the property being developed. In the case where the central basin will remain as private ownership, it will be required that such property be set aside for drainage purposes per easement, see Figure III. All maintenance and operation shall be the responsibility of the owner of the property. In the case where the central storage will be dedicated to the City for public use, an easement for the drainage area will be required. (Figure IV) The City Council may require the owner to comply with the following conditions:

- a. Construction of dry wells as necessary to dispose of nuisance water.
- b. Seeding to provide ground cover.
- c. Construction of flood irrigation and/or sprinkler systems.
- d. Other construction as the City Council may deem necessary to the proper public use of the property.

Upon acceptance of the dedication and the completion of the required construction, the City will assume responsibility for operation and maintenance. Design of such storage is outlined in the following section (IV C).

3. Combination storage shall consist of providing retention for a 5 yr., 1 hour storm (1.24 inches) on individual lots and the balance of the 100 year, 1 hour storm (2.4 inches) within a central storage area. See subsection IV. B.1. for onsite retention and the above subsection (IV. B.2.) and following section (IV. C.) for central storage. The "C" factor is the non-absorption factor of (.95) on the onsite lot area and the run-off factor for the right-of-way water contributing to the central storage.

a. Where a residential subdivision is designed using combination storage, the entire volume of water generated minus the amount held by the depressed lots is the amount of central storage required.

b. Finish floor elevation to be a minimum of 14" above outfall of lot per Figure II, p. 35.

C. The design of the central storage retention facility will be the following: (Do not use MCFCD Hydrologic Manual to determine required retention volumes.)

1. Determine volume:

$$V = \frac{(D)}{12} AC$$

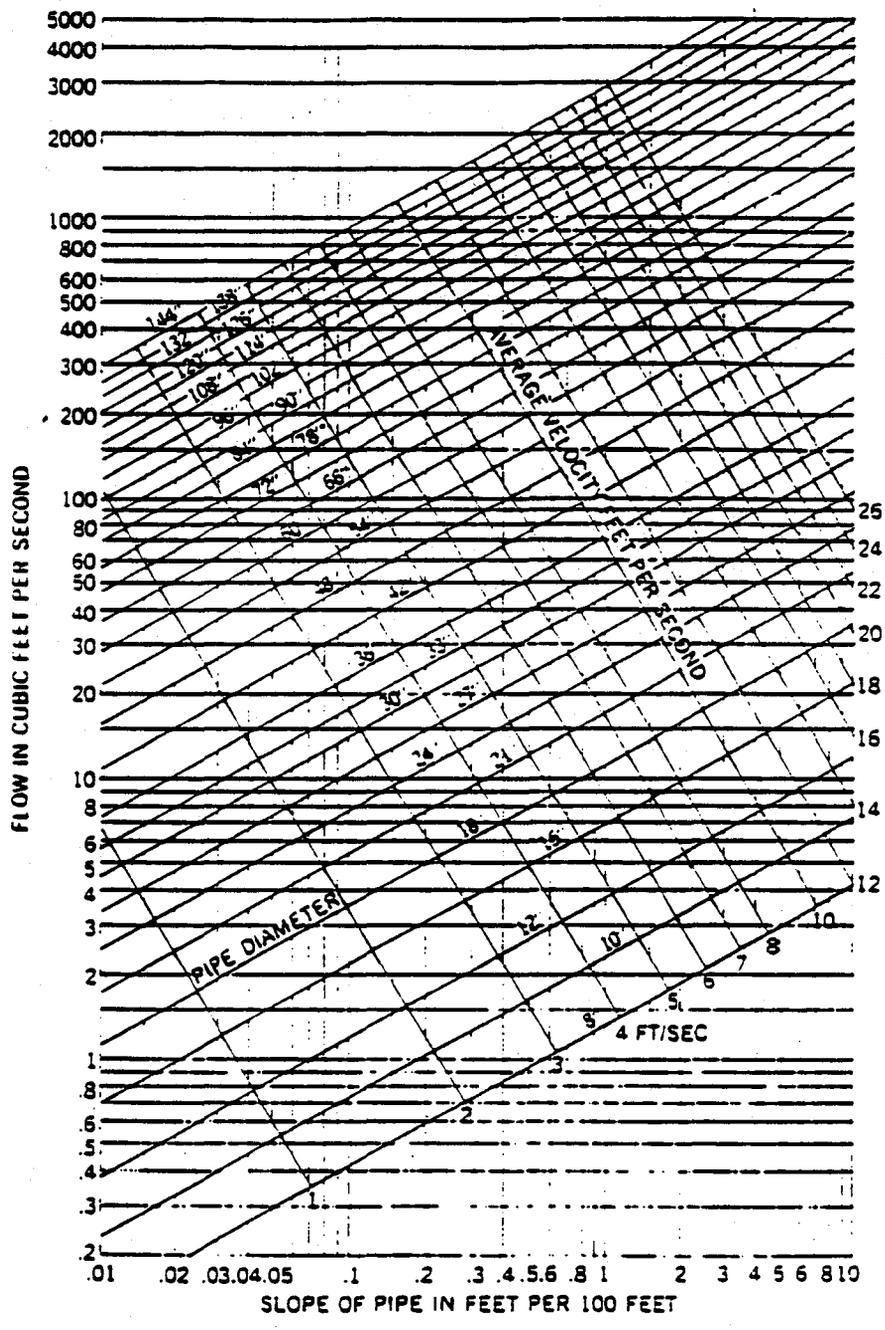
V = volume (ft)

A = area (ft), total area of development excluding arterial right-of-way only

D = depth of water required to retain (2.4 inches)

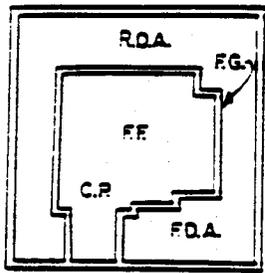
C = runoff coefficient (.95)

2. All central storage basins must drain towards outlet.
3. Minimum bottom grade = 1%; maximum side slope = 4:1; City parks require flat bottoms (irrigation) & 10:1 side slopes.
4. Maximum depth of water in central storage shall be 3 ft.
5. Provide a minimum of 1 foot freeboard above the high water design elevation on all sides of the retention area, including lowest development gutter flow line.
6. Wherever possible, overland relief must be provided.
7. Discharge requirements:
  - a. Retention volume must be disposed of in 36 hours.
  - b. Any discharge into Salt River Project, Maricopa County Flood Control District, etc. ditches will require approval from that agency.
  - c. Basins greater than 1' in depth will require a drywell or other approved disposal mechanism.
8. Drywells will be permitted, pending approval by State Dept. of Health Services, for disposal of water, however, no percolation rate will be considered for reduction of retention volume.
9. Invert of inlet pipe shall not be lower than bottom of retention facility at point of entrance unless otherwise approved.
10. Inlet structure shall have a 6' wide concrete apron at the opening and shall be constructed to prevent easy access (children).



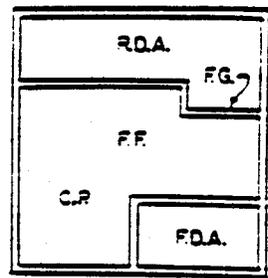
**FLOW FOR CIRCULAR PIPE FLOWING FULL  
 BASED ON MANNING'S EQUATION  $n=0.012$**

FIGURE I



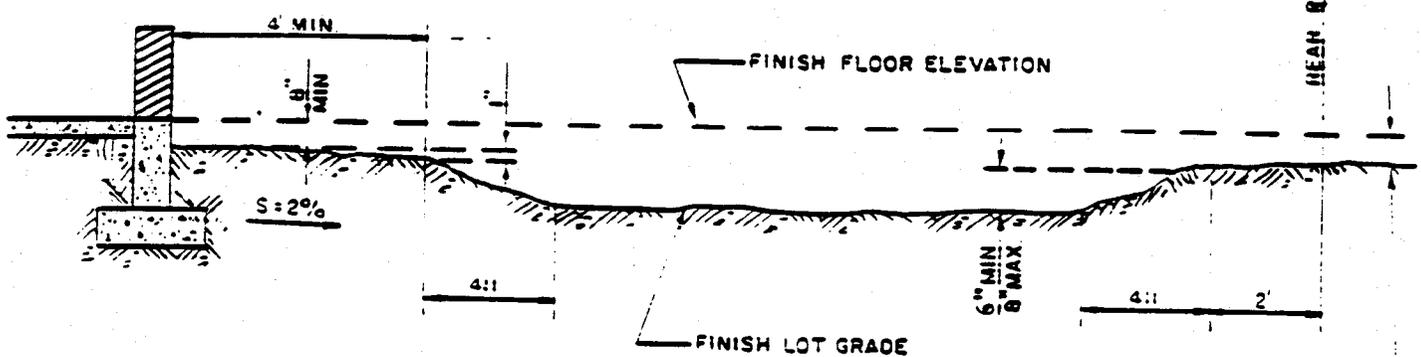
**PLAN "A"**

**LEGEND**  
 F.D.A. = FRONT DEPRESSED AREA  
 F.F. = FINISHED FLOOR  
 C.P. = CARPORT  
 F.G. = FINISH PAD GRADE  
 R.D.A. = REAR DEPRESSED AREA



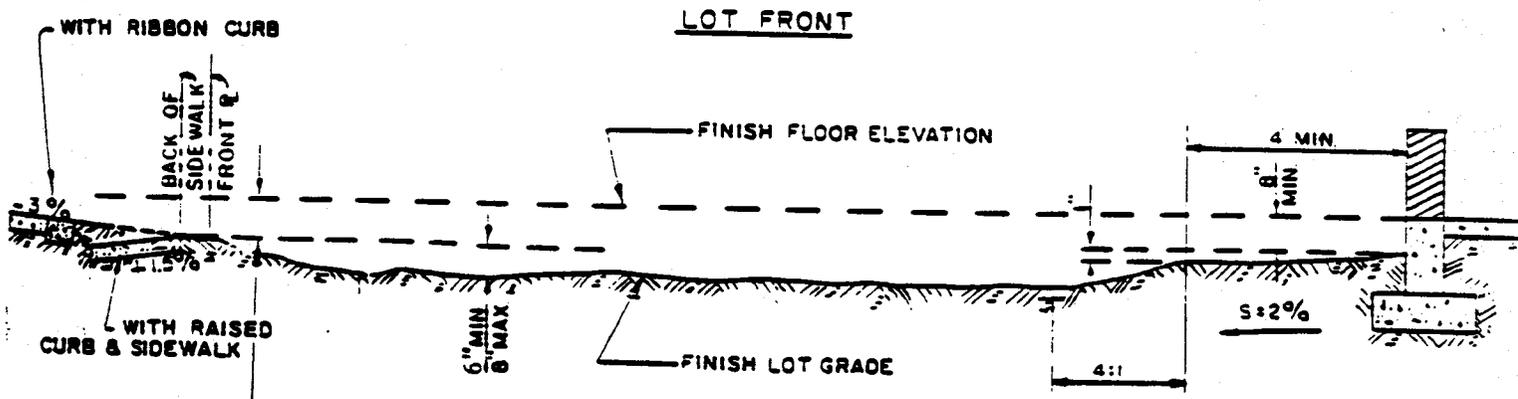
**PLAN "B"**

LOT BACK



TO BE MIN. 14" WHEN  
 OUT-FALL OF LOT.  
 ( F.H.A. Req't.)

LOT FRONT



TO BE MIN. 14" WHEN  
 OUT-FALL OF LOT  
 ( F.H.A. Req't.)

STANDARD DETAIL

(DEPRESSED LOT, STORM WATER RETENTION AREA)

NOTE:

INCLUDE THE APPROPRIATE PLAN "A" OR PLAN "B" PLUS THE FOLLOWING NOTE ON THE RECORDED PLAT:  
 THESE LOTS TO BE GRADED TO RETAIN STORM WATER IN ACCORDANCE WITH ORDINANCE 819.1.

FIGURE II

E A S E M E N T

An Easement for the consideration of one dollar (\$1.00) and other valuable consideration, JOHN DOE AND MARY DOE, his wife, or XYZ Corporation, hereby grants to the City of Tempe a municipal corporation of the State of Arizona, an Easement for the central storage and disposal of storm water runoff and subject to the following terms and conditions, over, under and across the following described property situated in Maricopa County, State of Arizona, to-wit:

DRAINAGE AREA

Parcel No. 1

(Legal description of property from which storm water runoff allowed to drain to Central Storage Basin)

(Legal)

CENTRAL STORAGE BASIN

Parcel No. 2

(Legal Description of Central Storage Basin)

(Legal)

This conveyance is made upon the following expressed conditions:

1. That said John and Mary Doe or the XYZ Corporation is--are responsible for the construction and perpetual maintenance of the Central Storage Basin in accordance with standards established by the Tempe City Engineer pursuant to Ordinance No. 819.1;

2. No buildings or structures of any sort may be constructed within the CENTRAL STORAGE BASIN, nor any deviations from the approved Drainage Plan

FIGURE III

showing existing and proposed grades together with calculations showing the volume of storage required and provided within the Central Storage Basin or which may impede the flow of water to the Central Storage Basin.

3. The property, as more particularly set forth above, shall be used for the purposes stated so long as such use is required by the City of Tempe;

4. All the terms and provisions of Ordinance No. 819.1 are expressly incorporated herein by reference.

5. That all or any part of this easement may be abandoned upon recordation of an Affidavit by the Tempe City Engineer, stating the described area is no longer necessary for the purposes stated herein.

The rights and obligations, as more particularly set forth herein, shall be binding upon the heirs, successors in interest or assigns of the parties hereto.

Dated this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
John Doe

\_\_\_\_\_  
Mary Doe

XYZ Corporation

CITY OF TEMPE

By \_\_\_\_\_

By \_\_\_\_\_

Mayor

STATE OF ARIZONA )  
                                  ) ss  
COUNTY OF MARICOPA)

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, by \_\_\_\_\_.

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public

STATE OF ARIZONA )  
                                  ) ss  
COUNTY OF MARICOPA)

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, by \_\_\_\_\_, Mayor of the City of Tempe, a municipal corporation of the State of Arizona, on behalf of the corporation.

\_\_\_\_\_  
City Clerk

E A S E M E N T

An Easement for the consideration of one dollar (\$1.00) and other valuable consideration, JOHN DOE AND MARY DOE, his wife, or XYZ Corporation, hereby grants to the City of Tempe, A municipal corporation of the State of Arizona, an Easement for the disposal of storm water runoff and subject to the following terms and conditions, over, under and across the following described property, situated in Maricopa County, State of Arizona, to-wit:

DRAINAGE AREA

(Legal description of property from which storm water runoff allowed to drain to Central Storage Basin).

(Legal)

This conveyance is made upon the following expressed conditions:

1. No deviations from the approved Drainage Plan showing existing and proposed grades together with calculations showing the volume of storage required and provided within the Central Storage Basin.
2. The property, as more particularly set forth above, shall be used for the purposes stated so long as such use is required by the City of Tempe;
3. All the terms and provisions of Ordinance No. 819.1 are expressly incorporated herein by reference.
4. That all, or any part of this Easement may be abandoned upon recordation of an affidavit by the Tempe City Engineer, stating the described area is no longer necessary for the purposes stated herein.

The rights and obligations, as more particularly set forth herein, shall be binding upon the heirs, successors in interest or assigns of the parties hereto.

FIGURE IV

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_.

\_\_\_\_\_  
John Doe

\_\_\_\_\_  
Mary Doe

XYZ Corporation

CITY OF TEMPE

By \_\_\_\_\_

By \_\_\_\_\_  
Mayor

STATE OF ARIZONA )  
                          ) ss  
COUNTY OF MARICOPA)

The foregoing instrument was acknowledged before me this \_\_\_\_\_  
day of \_\_\_\_\_, 19\_\_\_\_\_, by \_\_\_\_\_.

My Commission Expires:

\_\_\_\_\_

\_\_\_\_\_  
Notary Public

STATE OF ARIZONA )  
                          ) ss  
COUNTY OF MARICOPA)

The foregoing instrument was acknowledged before me this \_\_\_\_\_  
day of \_\_\_\_\_, 19\_\_\_\_\_, by \_\_\_\_\_,  
Mayor of the City of Tempe, a municipal corporation of the State of Arizona on  
behalf of the corporation.

\_\_\_\_\_  
City Clerk

GENERAL NOTES

ON-SITE DRAINAGE PLANS

1. All work under the Public Works permit shall be done in accordance with the Maricopa Association of Governments Uniform Standard Specifications and Details (MAG Specifications and Details), City of Tempe Supplement to the MAG Specifications and Details, and Tempe Traffic Barricade Manual.
2. A Public Works permit issued by the Engineering Division shall be required for the onsite grading of the project and for all work in the City of Tempe rights-of-way.
3. No job will be considered complete until all curbs, pavement and sidewalks within public rights-of-way have been swept clean of all dirt and debris.
4. The City will not participate in the cost of construction, utility relocation, construction staking, or as-builts.
5. Prior to acceptance the owner/developer shall furnish the following:
  - A. Drilling log and certification of compliance for all dry wells.
  - B. A 3 mil. reproducible mylar copy of the approved plans with this certification signed by a registered professional engineer:
6. "This is to certify that an actual field survey was made under my supervision of the subject site and that finish floor and retention elevations are the true "As-Built" conditions, and they meet or exceed the original retention requirements as shown on this approved plan."

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Engineer

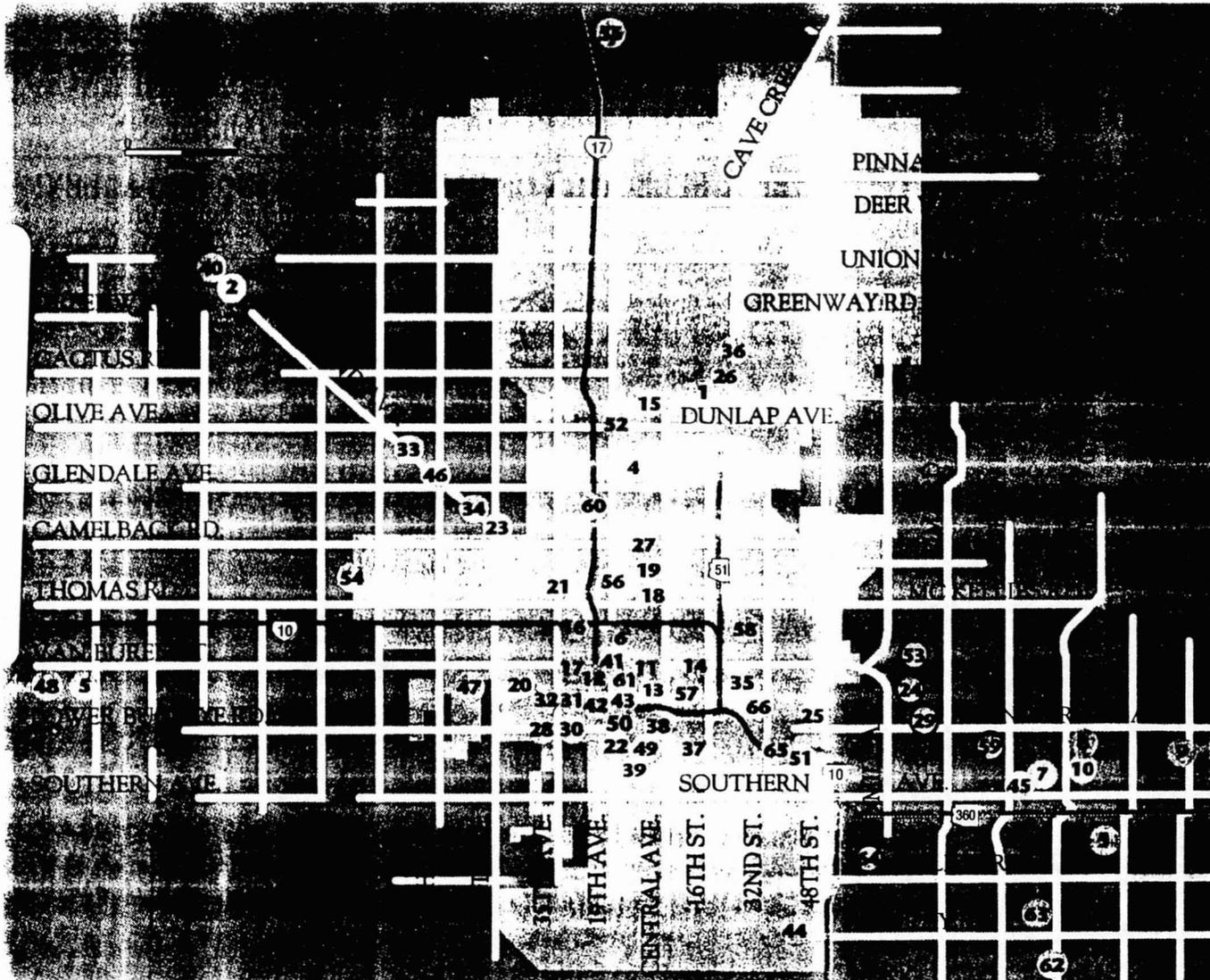
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Date

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P.E. Number

APP. D. 3



## VALLEY RECYCLING CENTERS

If you live outside Maricopa County, contact the Arizona Department of Environmental Quality for its Directory of Arizona Recyclers. The DEQ also can help you find collection centers for the safe disposal of household toxicants.

Plastics collection also at all:

- Fry's Food Stores

Automotive oil also collected at all:

- Checker Auto Works
- Grease and Go
- Sears Automotive Center

## MATERIAL PREPARATION

**PAPER** There are four kinds of paper you can separate and recycle. 1) Newspapers with inserts removed. 2) Typing paper, copy-machine paper, writing papers. 3) Cardboard boxes and paper bags. 4) Computer paper.

**GLASS** Separate bottles and jars according to color and remove all caps and lids. Don't worry about removing labels.

**PLASTIC** There are two kinds of plastic that can be recycled. Be sure to check with the recycler to find out what they accept. 1) Milk jugs, antifreeze and motor-oil containers, detergent bottles. 2) Filmy products like plastic bags and dry-cleaning bags. Plastic cups, glasses, dishes and other serving items cannot be recycled.

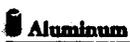
## AUTO PRODUCTS

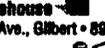
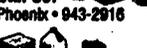
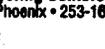
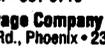
Products such as motor oil and tires also can be recycled into useable fuels. And other automotive products such as batteries, transmission fluids and antifreeze should be taken to collection centers for environmentally safe disposal.

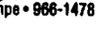
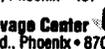
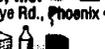
Source: Arizona Department of Environmental Quality

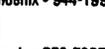
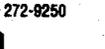
# RECYCLING LOCATIONS

The symbols below identify what items each site recycles.

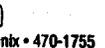
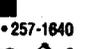
 Aluminum
  Paper
  Plastic
  Glass
  Auto Products

- 1 ABCO Recycling   
9637 N. Cave Creek Rd., Phoenix • 943-9676
- 2 ABCO Recycling   
12222 NW Grand Ave., Phoenix • 563-0209
- 3 ABD Battery Warehouse   
823 W. Commerce Ave., Gilbert • 892-2206
- 4 Admiral Scrap Metal Co.   
9232 N. 11th Ave., Phoenix • 943-2916
- 5 Allied American   
10902 W. Buckeye Rd., Cashion • 935-4228
- 6 American Metals Co.   
1001 N. 19th Ave., Phoenix • 253-7728, 257-1179
- 7 American Metals Co.   
740 W. Broadway Rd., Mesa • 834-1923
- 8 American Recycling   
360 Center St., Mesa • 833-6100
- 9 Apache Recycling Co.   
351 S. Meridian Rd., Apache Jct. • 982-5979
- 10 Applegate Insulation   
360 Center St., Mesa • 833-6100
- 11 Arizona Recycling Corp.   
400 S. 15th Ave., Phoenix • 258-5323
- 12 Arizona Waste Service   
2114 W. Grant St., Phoenix • 256-7736
- 13 AZ Scrap Iron & Metal   
433 S. 7th Ave., Phoenix • 252-8423
- 14 AZ-All Valley Recycling Centers   
821 E. Jackson St., Phoenix • 253-1644
- 15 Battery Bank   
9015 N. Seventh Ave. • 861-9715
- 16 Battery Lead Salvage Company   
3447 W. McDowell Rd., Phoenix • 233-3831

- 17 Big Sky Recycling   
123 N. 30th Ave., Phoenix • 225-0839
- 18 Can Depot Recycling   
4017 N. Seventh St., Phoenix • 230-0011
- 19 Can-Do-Recycling   
4519 N. Seventh Ave., Phoenix • 279-7016
- 20 Cannibal Recycling   
415 S. 35th Ave., Phoenix • 269-5949
- 21 Cannibal Recycling   
3501 NW Grand Ave., Phoenix • 248-0923
- 22 C.A.N.S. Recycling Center   
3210 S. 19th Ave., Phoenix • 258-8417
- 23 C.A.N.S. Recycling Center   
5032 W. Colter St., Phoenix • 934-6475
- 24 C.A.N.S. Recycling Center   
1990 E. First St., Tempe • 966-1478
- 25 Cash McCall   
4221 E. University Dr., Phoenix • 437-4866
- 26 Cave Mountain Salvage Center   
9810 N. Cave Creek Rd., Phoenix • 870-0900
- 27 Cave Mountain Salvage Center   
711 W. Camelback Rd., Phoenix • 870-0900
- 28 Copperstate Metals, Inc.   
3720 W. Lower Buckeye Rd., Phoenix • 272-6434
- 29 Empire Metals   
1990 E. 1st St., Tempe • 966-1478
- 30 Empire Metals   
2010 W. Lower Buckeye Rd., Phoenix • 257-9400
- 31 Empire Recycling   
415 S. 35th Ave., Glendale • 269-5949
- 32 Friedman Recycling Co.   
3640 W. Lincoln St., Phoenix • 269-9324

- 33 Glendale Iron & Metal   
6210 N. 55th Ave., Glendale • 931-3701
- 34 Glendale Recycling Center   
5120 W. Bethany Home Rd., Glendale • 435-2267
- 35 Go Power Battery Co.   
1801 E. Jefferson St., Phoenix • 254-6608
- 36 HBC Recycling   
9835 N. Cave Creek Rd., Phoenix • 944-1996
- 37 Hendrix & Co.   
1530 E. Broadway Rd., Phoenix • 276-7885
- 38 Hendrix Recycling   
805 W. Watkins St., Phoenix • 253-5564
- 39 Holiday Recycling   
2454 S. Seventh Ave., Phoenix • 252-5402
- 40 J & R Recycling   
12910 W. Santa Fe Circle, Surprise • 583-2509
- 41 National Metals Co.   
320 S. 19th Ave., Phoenix • 258-8074
- 42 Phoenix Metal Trading   
610 S. 19th Ave., Phoenix • 257-4660
- 43 Recycle America   
425 S. 15th Ave., Phoenix • 252-7484
- 44 Recycling Industries Inc.   
4937 E. Ray Rd., Phoenix • 961-1057
- 45 The Recycling Place   
12 W. Southern Ave., Mesa • 844-0088
- 46 Rockazona, Inc.   
9241 NW Grand Ave., Peoria • 979-7400
- 47 S & S Recycling   
248 S. 59th Ave., Phoenix • 272-9250
- 48 Saguaro Metals   
4040 S. Estrella Parkway, Goodyear • 932-2060
- 49 Seventh Avenue Recycling   
2450 S. Seventh Ave., Phoenix • 252-8868

The Arizona Republic

- 50 Southwest Recyclers   
1601 S. 19th Ave., Phoenix • 254-8968
- 51 Spiral Distributors   
3814 E. Roeser Rd., Phoenix • 470-1755
- 52 Sumo Recycling   
9601 N. 19th Ave., Phoenix • 944-4129
- 53 Sun Belt Recycling   
1976 E. Pima St., Tempe • 921-1091
- 54 Sun Country Metals Co.   
7450 W. Indian School Rd., Phoenix • 848-5501
- 55 Sun Country Metals Co.   
21469 N. 24th Ave., Phoenix • 582-6450
- 56 Sun Country Metals Co.   
4117 N. 23rd Ave., Phoenix • 268-2168
- 57 Sun Country Metals Co.   
821 E. Jackson St., Phoenix • 267-1644
- 58 Sun Country Metals Co.   
3548 E. Van Buren St., Phoenix • 267-9622
- 59 Sun Country Metals Co.   
105 N. McClintock Rd., Tempe • 784-4416
- 60 Sweep America   
6845 N. Black Canyon Freeway, Phoenix • 944-5225
- 61 Terrell Battery Corp.   
802 S. 19th Ave., Phoenix • 257-1640
- 62 Valley Recycling   
143 Frye Rd., Chandler • 963-5940
- 63 Valley Recycling Works   
390 E. Ray Rd., Chandler • 821-0003
- 64 Valley Steel & Supply   
8200 S. Kyrene Rd., Tempe • 893-2777
- 65 Western State Recycling Inc.   
3700 E. Anne St., Phoenix • 228-6182
- 66 Why Waste America   
301 S. 30th St., Phoenix • 225-0560

# Valley recycling proponents talking trash

## Communities, residents urged to do their part

tak  
iblic

ents are looking to their for help in recycling trash. tends Cynthia Tegge of he residents are like ut parental guidance. ce is the key," said lunteer with Phoenix aautiful. "Cities (so far) t convenient."

the responsibility of most Valley residents on their shoulders.

it many hours manning he Environmental Expo Maricopa County Fair

hundreds of people.

"The biggest complaint I get from the people is why cities are not doing more," Tegge said.

Many people save items to be recycled, she said, but end up throwing them away when they can't find a place to recycle.

Help for Phoenix residents is on the way, assured Karen Schuldt, recycling coordinator in the city's Public Works Department. If all goes according to plans, the 285,000 homes currently being serviced with city garbage

pickup will have weekly curbside recycling services by June 1997.

Phoenix began a pilot curbside project in 1989 with 4,000 homes. A few thousand homes have been added since then in selected areas. Beginning in June, the program will be expanded again to include about 15,000 more homes south of Baseline Road in the Ahwatukee area, Schuldt said.

The next area to be serviced will be homes south of Cactus Road and east of Central Avenue, followed by residences south of Cactus and west of Central. Finally, in about 1996, homes north of Cactus are scheduled to receive their blue barrels.

### 2 barrels per home

As the expansion of the program increases from one neighborhood to another, each home will receive two barrels — the current green one for non-recyclable garbage, and a blue barrel for recyclables, which includes newspapers, magazines, corrugated cardboard, chipboard (such as cereal boxes), junk mail, glass bottles, tin cans, small household appliances, wire, plumbing fixtures, clothes, plastic containers and aluminum cans, pie tins, clean TV-dinner trays and foil.

The city also provides each home with a smaller container for the kitchen or utility room. People are asked to stash their recyclables in the container before emptying it in the blue barrel.

As in the pilot program, homeowners will not need to separate

## Use products time and time again

Here are some tips to help people to stop waste and to recycle:

- Reuse shopping bags. Better yet, buy sturdy bags of your own, and bring them with you each time you shop.
- Reuse boxes and jars to store items.
- Use scrap paper for memos and notes.
- In the kitchen or utility room, remember to place your garbage in one container and your recyclable items in another container. Recycling containers are available for purchase at such places as Home Depot and Kmart.
- Pour used motor oil into a clean, residue-free plastic container with a tight lid. Take it to an oil

recycler.

- Turn milk cartons into bird feeders.
- Keep an empty milk carton next to the kitchen sink for easy transport of wet garbage to the compost pile.
- Cut the good pieces from a stained or torn tablecloth into place mats or runners and napkins. Use the rest for rags.
- Avoid disposable goods such as razors, pens, lighters, diapers, batteries, plates, cups and napkins.
- Purchase in bulk because this uses less packaging and often costs less per ounce.

the various items (such as cans, glass, newspapers and plastic bottles) but can dump them all together into the blue barrel.

There still will be two pickups each week, one for garbage and one for recyclables.

Trucks will haul the recyclables to a Phoenix-operated warehouse, where they will be dumped onto a conveyor belt. Inmates from the Arizona State Prison at Perryville then will separate the items into piles of cans, plastic bottles, newspapers, etc., Schuldt said.

Once separated, the items will be sent to several different recycling centers and sold; the money will help pay for the city's recycling program.

Schuldt said a survey has shown that 50 percent of Phoenix residents'

trash could be recycled.

### Cities making effort

Other Valley communities have varying degrees of recycling programs for their residents. Tempe has a pilot curbside program for about 2,500 of its 31,000 single-family homes. There also are 15 sites in Tempe where people can deposit recyclables.

Mesa does not have curbside service, but at 70 sites throughout the city are large containers where residents can bring aluminum cans and newspapers. Seven of the sites also take clear, amber and green glass.

Scottsdale sends mobile trailers to four parks each weekend throughout the year to collect aluminum cans, newspapers (excluding glossy inserts)

and glass from residents. The hot number giving locations of upcoming sites is 391-5611.

Glendale provides bins on all elementary-school and high-school campuses for people to drop aluminum and tin cans and newspapers. Half the money the city gets from selling the cans goes to schools.

For those who are not plugged into city-sponsored recycling programs (curbside or bins at parks and schools), recycling can be a hassle. Some recycling centers accept limited items, requiring people to dispose their varied recyclables by driving more than one center.

On a small scale, people are helping neighbors to recycle. Tegge and

— See TRASH, page E

# Trash is terrible thing to waste

— TRASH, from page ED4

neighbors, for example, leave their aluminum cans in plastic bags on the street for a local man to pick up and take to a recycling center.

Rita Hoeflein and Sandy Boggioni have a curbside-recycling pickup service called Grassroots Recycling. For a fee of \$15 per home, they will pick up recyclable items and haul them to Why Waste America recycling center. They average 4 to 6 tons of recyclables a week.

Hoeflein said they currently service 250 homes throughout the Valley. She and Boggioni are single parents and between them have seven children. What started as a way to earn extra pocket money has turned into a business.

Sally Stearman of central Phoenix recycles as much as possible of throwaway items by taking them to Why Waste America center. The center does not pay, but accepts a wide selection of recyclables.

In addition to recycling, it is important to re-use such items as refillable soap containers, she said.

Prices for recyclables fluctuate with supply and demand, according to Kim MacEachern, an assistant state attorney general and counsel for the Arizona Department of Environmental Quality.

## Overwhelming supply

In many cases, supply exceeds demand and recyclables sit in warehouses or even outdoors until the market is more favorable.

When people can't find a market for their recyclables, they throw them away, adding more of a burden to an already exploding landfill problem.

One city worker said his community pays someone to haul away glass the city collects because there is no market for it.

MacEachern is concerned that the technology to recycle items into new products is not keeping pace with the people's desire to recycle.

The cost to remanufacture may be prohibitive, and byproducts may create caustic waste, she said.

However, she said people should put pressure on the marketplace to develop new technologies.

For example, a plant in Georgia developed a procedure to turn recycled soda bottles into carpeting, said Ellen Bonnin-Bilbrey, president of Eco-logical Marketing. The recycled carpets are being sold at local Carpetime outlets.

The new carpet, she explained, is made from polyethylene terephthalate (PET), which is used to make soft-drink containers. The recycled bottles are ground into pieces and melted to the consistency of honey. This is forced through molds that create fibers about the thickness of a human hair.

And carpet technology doesn't stop there. To go with the soda-bottle carpeting, there is padding for sale made from recycled tires.

## HOTLINE OFFERS TIPS, LOCATIONS FOR RECYCLING

To help Valley residents to recycle, a free hotline number has been established. By dialing the number and entering a ZIP code, a resident will receive general information about recycling and the nearest recycling location for virtually all disposable items. The number is CLEAN UP (253-2687) or 1-800-947-3873.

**APPENDIX E**  
**FISCAL RESOURCES**

ACCT	DESCRIPTION	ORIGINAL BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES REVENUES	ENCUMBRANCES	BALANCE	ACT/ENC TO DATE	PLAN TO DATE	PCT VAR (- UNF)
***** EXPENDITURES *****									
06656	CONSULTANTS	0	116,000-	0	0	116,000-	0	87,000-	75
06672	CONTRACTED SERVICES	0	0	67,775	475	68,250	68,250	0	
06675	SOFTWARE EXPENSES	0	0	17,143	0	17,143	17,143	0	
06999	MISC. FEES & SERVICES	0	0	100	0	100	100	0	
	**OBJECT TOTAL 06600	0	116,000-	85,018	475	30,507-	85,493	87,000-	1
	***TOTAL EXPENDITURES	0	116,000-	85,018	475	30,507-	85,493	87,000-	

APP.E.1

**PROPOSED  
CAPITAL PROGRAM  
SUMMARY**

**1992-97 Storm Drains**

<u>Project Description</u>	<u>1992-93 Funded Program</u>	<u>Additional Needs</u>				<u>Total 5-Year Needs</u>
		<u>1993-94</u>	<u>1994-95</u>	<u>1995-96</u>	<u>1996-97</u>	
NPDES (Stormwater Management)	\$192,000	149,000	156,000	164,000	172,000	833,000
Storm Drain Improvements	100,000	100,000	100,000	100,000	100,000	500,000
Rio Salado Pkwy. - Farm to Scottsdale	0	0	600,000	0	0	600,000
Retention Basin Landscaping	50,000	50,000	50,000	50,000	50,000	250,000
McClintock Dr. Area Storm Drain	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>940,000<sup>(1)</sup></u>	<u>940,000</u>
<b>TOTALS</b>	<b><u>\$342,000</u></b>	<b><u>299,000</u></b>	<b><u>906,000</u></b>	<b><u>314,000</u></b>	<b><u>1,262,000</u></b>	<b><u>3,123,000</u></b>

<sup>(1)</sup> Requires additional funding in future years.

# CAPITAL IMPROVEMENTS REQUEST

<b>DEPARTMENT</b> Public Works	<b>DEPARTMENTAL PRIORITY</b> I <u>  X  </u> II    III    IV
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<b>PROJECT TITLE:</b> NPDES (Storm water management)	<b>FUND-PROJECT #</b> 58-916396	<b>COST CENTER #</b> 6396
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**Describe Project:**

This project provides for the purchase of five (5) non-manned storm water samplers and the ongoing sample testing with associated computer data base work as required by federal regulations.

**Provide cost-benefit information to justify project and priority:**

Part 2 of the NPDES Permit requires monitoring of outfalls to waters of the U.S. Tempe will be required to monitor a minimum of five outfalls. The monitoring will require non-manned samplers that will automatically collect from storm events.

### CAPITAL IMPROVEMENT COSTS

Estimated CIP Costs by Expenditure Type		CIP Requirements by Fiscal Year	
Design	\$ _____	1992-93	\$ 192,000
Construction	_____	1993-94	149,000
Staking	_____	1994-95	156,000
Testing	783,000	1995-96	164,000
Inspection	_____	1996-97	172,000
Right Of Way	_____		
Other (equip)	50,000		
<b>Total</b>	<b>\$ 833,000</b>	<b>Total</b>	<b>\$ 833,000</b>

<b>Proposed Financing Method(s):</b>			
General Operating Revenue	\$ _____	Reimbursable Expenses	_____
General Obligation Bonds	833,000	Other (specify)	_____
Special Assessment	_____	<b>Total</b>	<b>\$ 833,000</b>

### OPERATING BUDGET IMPACT

**Identify personnel required by range and FY as a result of capital project:**

1992-93	1993-94	1994-95	1995-96	1996-97

**Estimated Project Start/Completion Date (month/year):** Continuing

<b>Contact Person</b> Jim Jones	<b>Extension</b> 8371
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**CAPITAL PROGRAM  
&  
DEBT OVERVIEW**

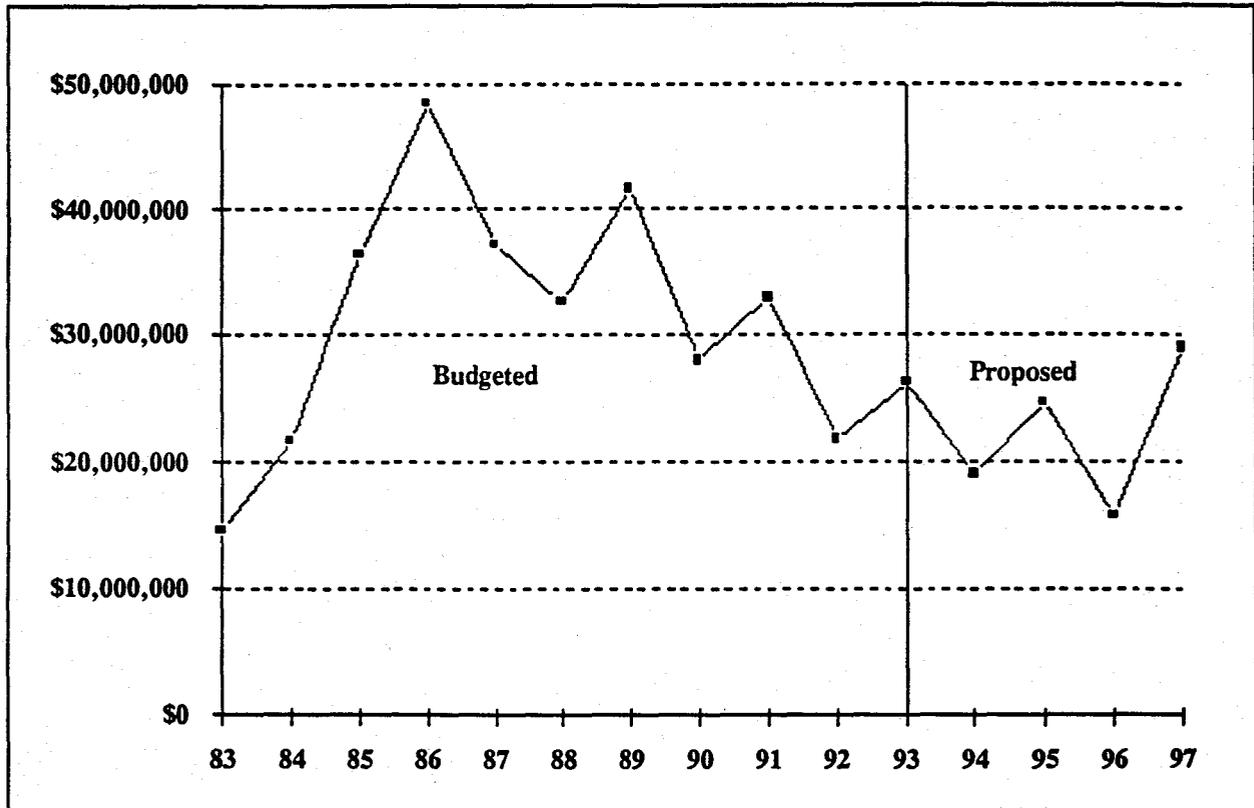
**CAPITAL IMPROVEMENTS PROGRAM SUMMARY**

	<u>1992-93</u>	<u>1993-94</u>	<u>1994-95</u>	<u>1995-96</u>	<u>1996-97</u>	<u>Total 5-Year Program</u>
<b><u>General Purpose Program</u></b>						
Police Protection	\$ 659,607	2,208,576	1,941,519	0	703,800	5,513,502
Fire Protection	1,102,500	940,500	175,000	995,000	840,000	4,053,000
Storm Drains	342,000	299,000	906,000	314,000	1,262,000	3,123,000
<b>Park Improvements</b>						
Recreation	4,559,000	970,000	530,000	470,000	230,000	6,759,000
Public Works	185,000	85,000	85,000	185,000	85,000	625,000
Rio Salado/Comm. Development	970,000	200,000	0	100,000	0	1,270,000
General Governmental	<u>983,000</u>	<u>493,300</u>	<u>1,483,800</u>	<u>730,211</u>	<u>652,550</u>	<u>4,342,861</u>
Total General Purpose	<u>8,801,107</u>	<u>5,196,376</u>	<u>5,121,319</u>	<u>2,794,211</u>	<u>3,773,350</u>	<u>25,686,363</u>
<b><u>Transportation Program</u></b>						
Interstate & State Highways	1,900,000	0	0	0	0	1,900,000
Transp. & R.O.W. Improvements	3,959,000	6,272,000	2,999,000	4,663,000	4,515,000	22,408,000
Bikepaths	420,000	130,000	100,000	100,000	100,000	850,000
Traffic Signals/Street Lighting	<u>738,000</u>	<u>780,000</u>	<u>780,000</u>	<u>730,000</u>	<u>803,000</u>	<u>3,831,000</u>
Total Transportation	<u>7,017,000</u>	<u>7,182,000</u>	<u>3,879,000</u>	<u>5,493,000</u>	<u>5,418,000</u>	<u>28,989,000</u>
Sub Total Tax Supported	<u>15,818,107</u>	<u>12,378,376</u>	<u>9,000,319</u>	<u>8,287,211</u>	<u>9,191,350</u>	<u>54,675,363</u>
<b><u>Enterprise Program</u></b>						
Golf	1,400,000	0	0	0	0	1,400,000
Water	7,154,412	3,915,425	1,784,000	845,000	765,000	14,463,837
Wastewater	<u>1,823,200</u>	<u>2,657,000</u>	<u>13,843,000</u>	<u>6,528,000</u>	<u>18,970,000</u>	<u>43,821,200</u>
Sub Total Enterprise	<u>10,377,612</u>	<u>6,572,425</u>	<u>15,627,000</u>	<u>7,373,000</u>	<u>19,735,000</u>	<u>59,685,037</u>
<b>TOTAL PROGRAM</b>	<b><u>\$26,195,719</u></b>	<b><u>18,950,801</u></b>	<b><u>24,627,319</u></b>	<b><u>15,660,211</u></b>	<b><u>28,926,350</u></b>	<b><u>114,360,400</u></b>

**CAPITAL IMPROVEMENTS PROGRAM SOURCE OF FUNDS**

	<u>1992-93</u>	<u>1993-94</u>	<u>1994-95</u>	<u>1995-96</u>	<u>1996-97</u>	<u>Total 5-Year Program</u>
<b><u>Tax Supported</u></b>						
General Obligation Bonds	\$ 7,500,000	7,500,000	7,500,000	7,500,000	8,500,000	38,500,000
Highway User/LTAF	1,300,000	750,000	250,000	0	0	2,300,000
Residential Development Tax	100,000	100,000	100,000	100,000	100,000	500,000
Federal Grants	33,600	33,600	33,600	33,600	33,600	168,000
General Fund	1,250,000	1,000,000	1,000,000	500,000	500,000	4,250,000
ADOT Grant	220,000	0	0	0	0	220,000
Surface Transp. Program Funds	0	2,750,000	0	0	0	2,750,000
Land Sales	600,000	0	0	0	0	600,000
Water/Wastewater Fund Balance	57,500	57,500	57,500	57,500	57,500	287,500
Diablo Stadium Financing	3,334,000	0	0	0	0	3,334,000
Capital Project Fund Balances	<u>1,423,007</u>	<u>187,276</u>	<u>59,219</u>	<u>96,111</u>	<u>250</u>	<u>1,765,863</u>
Sub Total Tax Supported	<u>15,818,107</u>	<u>12,378,376</u>	<u>9,000,319</u>	<u>8,287,211</u>	<u>9,191,350</u>	<u>54,675,363</u>
<b><u>Enterprise Supported</u></b>						
General Obligation Bonds	8,400,000	6,000,000	15,000,000	6,900,000	19,200,000	55,500,000
Golf Fees	1,400,000	0	0	0	0	1,400,000
Development Fees	500,000	500,000	500,000	500,000	500,000	2,500,000
Capital Project Fund Balances	<u>77,612</u>	<u>72,425</u>	<u>127,000</u>	<u>(27,000)</u>	<u>35,000</u>	<u>285,037</u>
Sub Total Enterprise Supported	<u>10,377,612</u>	<u>6,572,425</u>	<u>15,627,000</u>	<u>7,373,000</u>	<u>19,735,000</u>	<u>59,685,037</u>
<b>TOTAL</b>	<b><u>\$26,195,719</u></b>	<b><u>18,950,801</u></b>	<b><u>24,627,319</u></b>	<b><u>15,660,211</u></b>	<b><u>28,926,350</u></b>	<b><u>114,360,400</u></b>

**CAPITAL IMPROVEMENTS PROGRAM  
FUNDING LEVELS**



Fiscal Year Ending 6/30

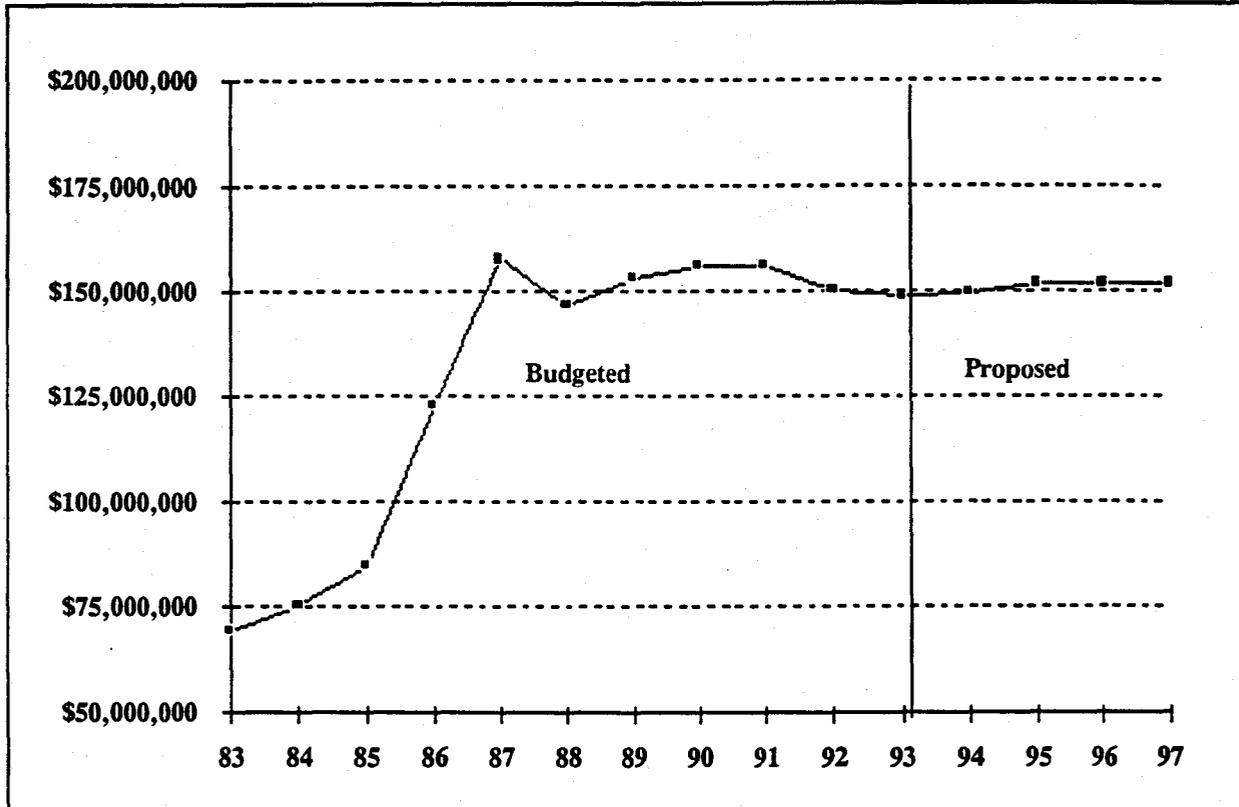
<b>FUNDING LEVELS</b>			
<b>Fiscal Year</b>	<b>Budgeted</b>	<b>Fiscal Year</b>	<b>Proposed</b>
1982-83	\$14,497,996	1992-93	\$26,195,719
1983-84	21,630,133	1993-94	18,950,801
1984-85	36,192,939	1994-95	24,627,319
1985-86	48,329,152	1995-96	15,660,211
1986-87	37,150,089	1996-97	28,926,350
1987-88	32,453,385		
1988-89	41,686,399		
1989-90	27,990,420		
1990-91	32,985,753		
1991-92	21,825,485		

**Remaining General Obligation  
Bond Authorizations**

	<b>Original Authorization</b>	<b>Prior Issues</b>	<b>1992 Issue</b>	<b>Remaining Authorization</b>
<b>1985 Program</b>				
Water/Wastewater	\$28,000,000	26,350,000	1,650,000	0
Storm Drains	4,000,000	3,300,000	350,000	350,000
Streets/Transportation	30,250,000	19,200,000	4,100,000	6,950,000
Police Protection	3,750,000	3,750,000	0	0
Fire Protection	2,000,000	2,000,000	0	0
Library/Museum	10,000,000	10,000,000	0	0
Municipal Facilities	1,500,000	1,500,000	0	0
Parks	8,500,000	8,500,000	0	0
<b>Sub Total</b>	<b>88,000,000</b>	<b>74,600,000</b>	<b>6,100,000</b>	<b>7,300,000</b>
	<b>Authorization</b>	<b>Prior Issues</b>	<b>1992 Issue</b>	<b>Remaining Authorization</b>
<b>1990 Program</b>				
Water/Wastewater	\$30,000,000	2,000,000	6,750,000	20,350,000
Storm Drains	4,500,000	0	0	4,500,000
Streets/Transportation	20,000,000	0	0	20,000,000
Police Protection	6,000,000	400,000	600,000	5,000,000
Fire Protection	4,000,000	1,350,000	1,050,000	1,600,000
Library/Museum	1,000,000	850,000	0	150,000
Parks	9,000,000	1,050,000	1,400,000	6,550,000
<b>Sub Total</b>	<b>74,500,000</b>	<b>5,650,000</b>	<b>9,800,000</b>	<b>58,150,000</b>
<b>TOTAL</b>	<b>\$162,500,000</b>	<b>80,250,000</b>	<b>15,900,000*</b>	<b>65,450,000</b>

\*In addition, another \$1.4 million of Municipal Property Corp. debt is anticipated to finance the new irrigation system at the Ken McDonald Golf Course.

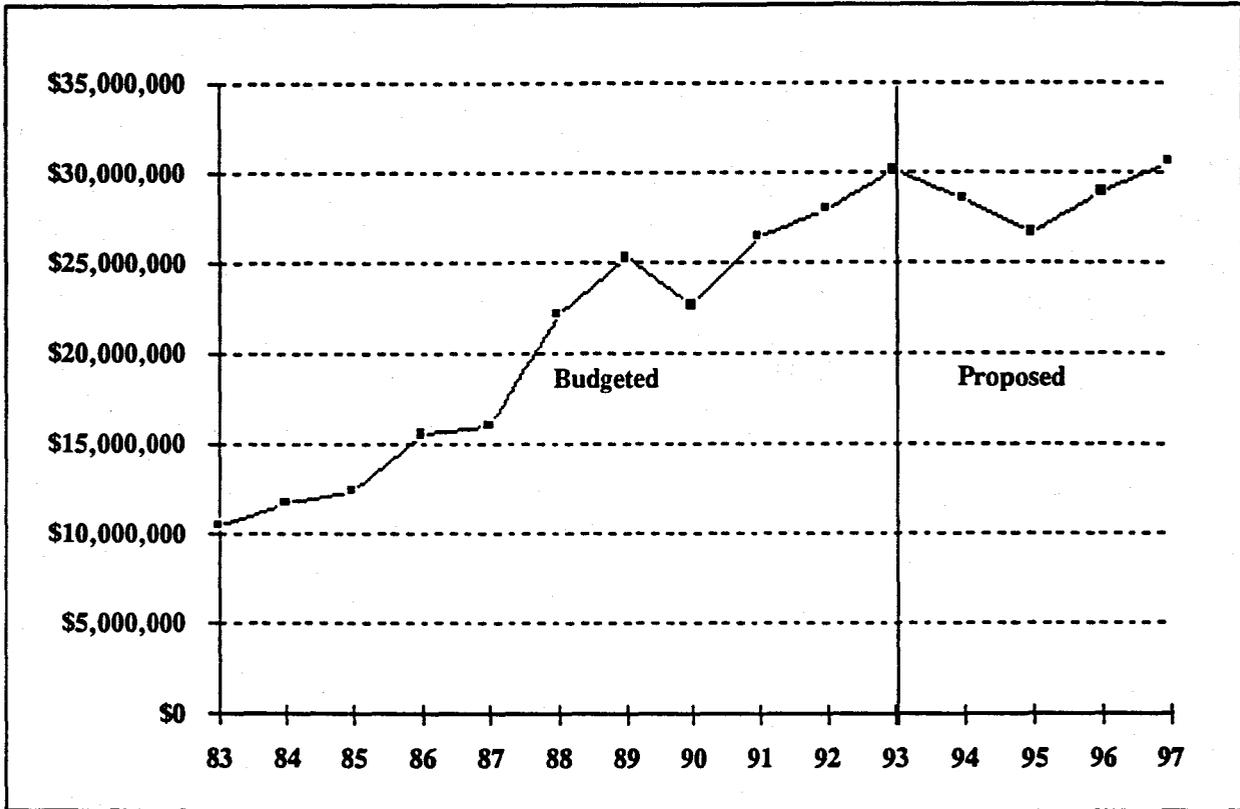
## OUTSTANDING PRINCIPAL DEBT



Fiscal Year Ending 6/30

OUTSTANDING PRINCIPAL DEBT (JULY 1)			
Fiscal Year	Budgeted	Fiscal Year	Proposed
1982-83	\$68,830,000	1992-93	\$148,592,987
1983-84	75,160,000	1993-94	149,184,281
1984-85	84,595,000	1994-95	151,525,458
1985-86	122,390,000	1995-96	151,921,551
1986-87	157,860,000	1996-97	151,630,778
1987-88	146,385,000		
1988-89	152,710,000		
1989-90	155,870,000		
1990-91	155,905,000		
1991-92	149,885,000		

**DEBT SERVICE REQUIREMENTS  
PRINCIPAL AND INTEREST**

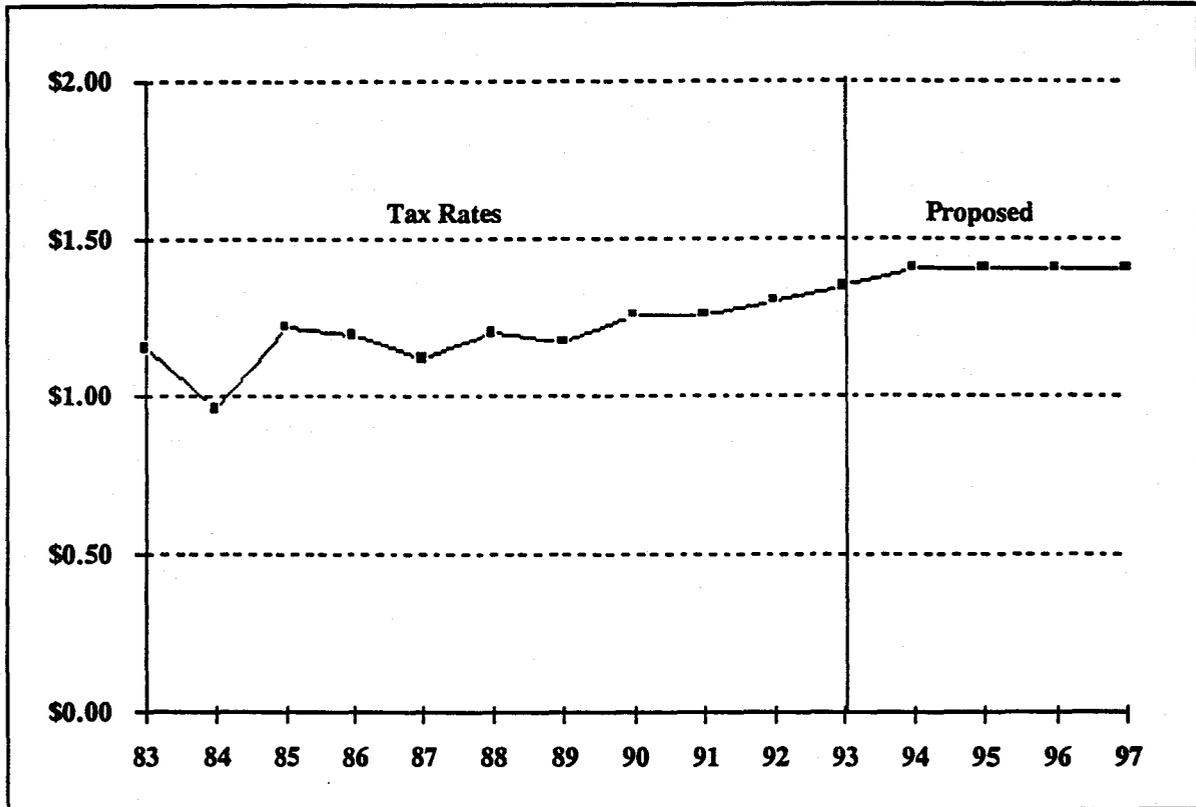


Fiscal Year Ending 6/30

<b>PRINCIPAL AND INTEREST</b>			
<b>Fiscal Year</b>	<b>Budgeted</b>	<b>Fiscal Year</b>	<b>Proposed</b>
1982-83	\$10,442,780	1992-93	\$30,164,914
1983-84	11,608,891	1993-94	28,434,003
1984-85	12,331,256	1994-95	26,693,209
1985-86	15,540,797	1995-96	28,789,670
1986-87	15,953,056	1996-97	30,569,700
1987-88	22,119,827		
1988-89	25,254,950		
1989-90	22,645,886		
1990-91	26,323,590		
1991-92	27,890,431		

Proposed outstanding principal debt based upon City Debt Management Plan.

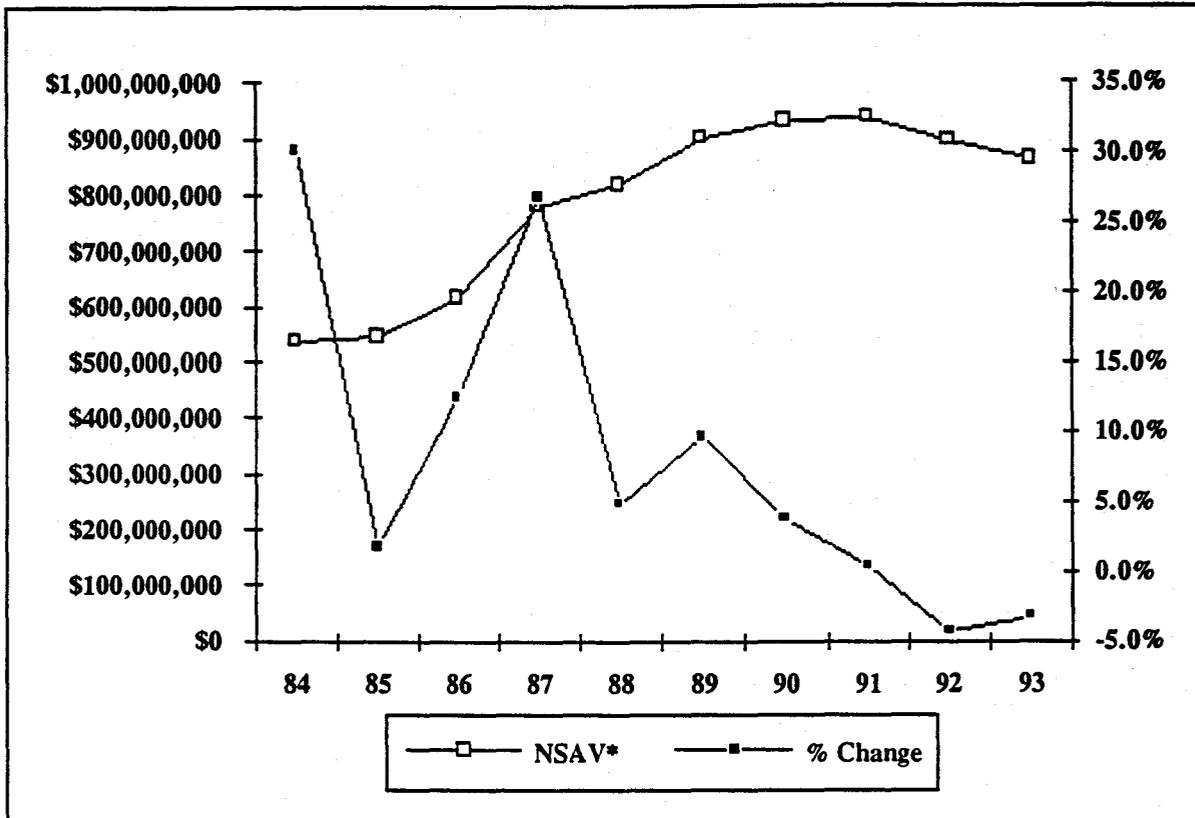
**CITY OF TEMPE  
PROPERTY TAX RATES**



Fiscal Year Ending 6/30

PROPERTY TAX RATES			
Fiscal Year	Tax Rates	Fiscal Year	Proposed
1982-83	\$1.15	1992-93	\$1.35
1983-84	0.96	1993-94	1.40
1984-85	1.21	1994-95	1.40
1985-86	1.19	1995-96	1.40
1986-87	1.12	1996-97	1.40
1987-88	1.20		
1988-89	1.17		
1989-90	1.25		
1990-91	1.25		
1991-92	1.30		

## ASSESSED VALUE GROWTH



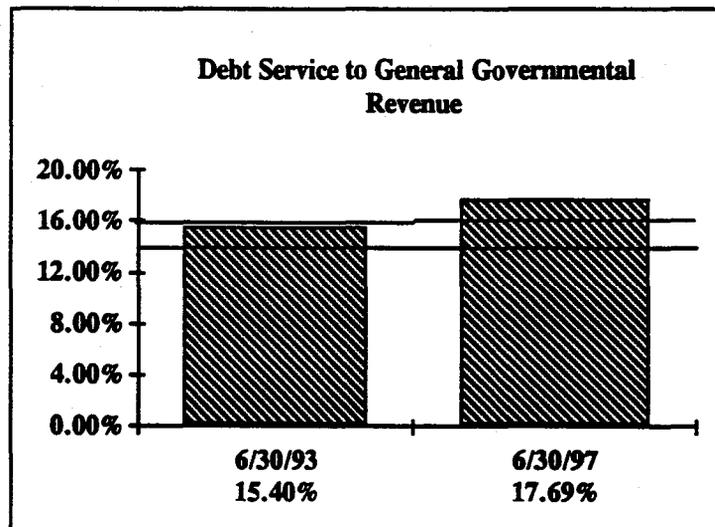
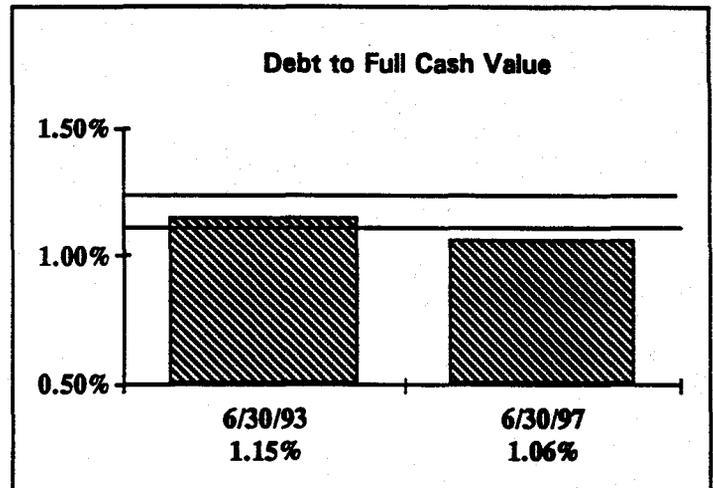
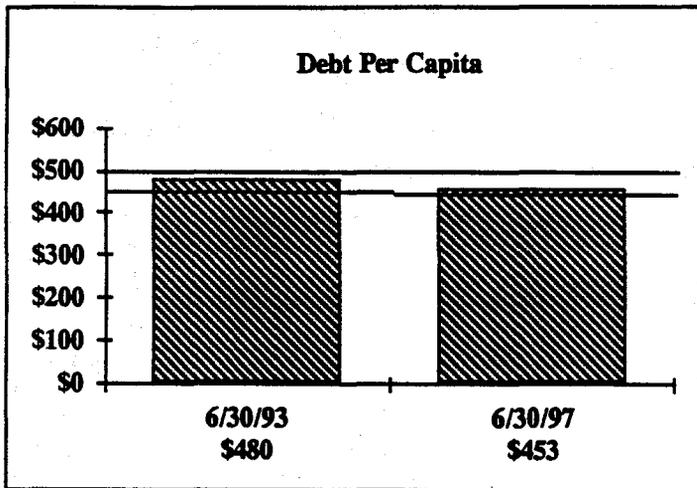
\*Net Secondary Assessed Value

Fiscal Year	Net Secondary Assessed Value	% Chg	Fiscal Year	Net Secondary Assessed Value	% Chg
1983-84	\$536,334,474	30.2%	1988-89	\$896,353,529	9.7%
1984-85	545,998,054	1.8%	1989-90	930,091,424	3.8%
1985-86	614,358,308	12.5%	1990-91	932,769,771	0.3%
1986-87	779,529,708	26.9%	1991-92	892,584,064	-4.3%
1987-88	817,099,065	4.8%	1992-93	863,788,446	-3.2%

1992-93 Preliminary assessed value figures from Maricopa County, 3/6/92.

# Long Range Debt Program

## Key Debt Indicators



The above data are based upon new tax-supported debt of \$7.5 million dollars per year for the first four fiscal years and \$8.5 million in the fifth year.