Dominguez channel 4-25

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DOMINGUEZ CHANNEL BACTERIA TMDL STUDY 2003

Prepared For:

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INTRODUCTION

On October 1, 2003, MEC Analytical Systems, Inc. (MEC) conducted water quality sampling along the Dominguez Channel in support of the Los Angeles Regional Water Quality Control Board's (LARWQCB) Total Maximum Daily Load (TMDL) Program for coliform bacteria contamination. This sampling effort was a follow-up to an initial bacterial TMDL study performed by MEC in June 2002.

The Dominguez Watershed (Hydrologic Unit 405.12) is a large watershed in the southern portion of Los Angeles County and covers approximately 110 square miles (Figure 1). Ninety-six percent of its total area is developed and the predominant land use is transportation.

The Dominguez Channel drains the Dominguez Watershed. It is a concrete channel from the headwaters near the City of Inglewood until it enters the estuarine environment below Vermont Street. From Vermont Street to the Consolidated Slip in the Los Angeles Harbor, the Dominguez Channel has either riprap or concrete banks and is tidally influenced. Throughout the entire course of the channel, large culverts, laterals and small storm drain outfalls provide freshwater and urban runoff inputs to the system.

The entire Dominguez Channel (above and below Vermont Street) is listed on the Clean Water Act Section 303(d) List of Impaired Water Bodies for high coliform bacteria counts. As a result of this impairment, the LARWQCB is developing a coliform bacteria TMDL for the Dominguez Channel.

METHODS

A total of 34 water samples were collected for bacterial analyses, including 13 water samples from within the freshwater portion of the Dominguez Channel (above Vermont St.), 12 water samples from within the Dominguez Channel estuary (below Vermont St.), six duplicate samples and three field blanks for quality control. In addition to water samples, physical water quality measurements were collected at each site. This survey effort was completed by a two person field crew, one representative each from the LARWQCB and MEC.

Of the 13 samples collected above Vermont Street, two samples were collected at the headwaters, three samples were collected from laterals entering the channel, four samples were collected from outfalls discharging to the channel and four samples were collected directly from the center of the channel. Of the 12 samples collected from the estuarine environment downstream of Vermont Street, three samples were collected from laterals entering the channel and 9 samples were collected from three transects across the channel. At each of these three transects a sample was collected from the center and sides of the channel.

Field observations and measurements were recorded on field log sheets and are included in Appendix A. Observations included weather conditions, a physical description of each site (location, type and size of outfall, if applicable, and GPS coordinates), visual water quality, flow estimations, physical water quality data and comments. Each site was also documented with a digital photograph (Appendix B). A white board listing the Site ID, sample time and date was included in each photograph.

Flow estimations were conducted by several methods. For conveyances with low flows, flow was estimated by recording the length of time it took to fill a container to a known volume or flow was estimated using the area velocity method (measure the depth and width of flow and record the length of time for an object to be transported an known distance). Flow within the main channel was measured using a Marsh McBirney Flo-Mate Model 2000 portable flow meter. Upstream of Vermont Street, measurements made with the meter were taken from the horizontal and vertical center of the channel. Downstream of Vermont Street, measurements were made approximately 3 feet from the channel banks at mid-water column depth.

Physical water quality data measurements were taken for pH, temperature and conductivity using an Oakton CON10 ph/conductivity/temperature meter. All field instruments were calibrated prior to the sampling efforts.

During all sampling operations, extreme care was taken to minimize exposure of the sample to human, atmospheric and other sources of contamination. In order to accomplish this, the field crew utilized clean sampling techniques for collecting water samples. In addition, samples were collected from downstream to upstream so that sampling personnel and vehicles did not disturb the channel prior to samples being taken.

Water samples for bacterial analyses were collected using pre-sterilized, EPA approved, Whirl-pacTM sampling bags or ½ liter sample containers (depending on flow volume). The samplers cleaned their hands using an antibacterial hand wash prior to sampling at each site. Sterile, powder-free nitrile gloves were worn at all times during sample collection and changed between each site. After sampling, the sample bags or sample containers were closed tightly and kept in separate, sealed, zip-lock bags. Bags were placed in coolers with ice and delivered to the laboratory at 4 C. Sample coolers also reduced the exposure of the sample to sunlight. Chains of custody were filled out completely and accurately and were signed by the sampling and receiving technicians. To ensure holding times were met, technicians received samples from the field crew and delivered samples to the laboratory throughout the day.

All bacterial analyses were initiated within the National Environmental Laboratory Accreditation Program's (NELAP) approved holding times for total coliform, fecal coliform, *E. coli* and enterococcus. All samples were analyzed at MEC's microbiology laboratory in Carlsbad, California. Samples were analyzed with the following methods: total coliform with Colilert 18, fecal coliform with Membrane Filtration, *E. coli* with Colilert 18 and enterococcus with Enterolert.

RESULTS

Concentrations of all four bacterial indicators exhibited a wide range of values, depending on the location of the sample site. Samples collected in the upper, freshwater reaches of the Dominguez Channel had the greatest variation in bacterial concentrations, with samples of outfall discharge and at the headwaters having the most elevated bacterial concentrations (Figures 2 through 5). Samples collected within the channel in this reach usually had lower bacterial levels than those collected from laterals or outfalls. Levels for the different bacterial indicators above Vermont Street were:

- Total Coliform – 3,873 MPN/100mL to >24,196,000 MPN/100mL
- Fecal Coliform – 230 CFU/100mL to 20,000,000 CFU/100mL
- *E. coli* – 134 MPN/100mL to 313,010 MPN/100mL
- Enterococcus – 10 MPN/100mL to 111,987 MPN/100mL

For each indicator, the maximum concentration occurred from outfall discharge at Site 4. The minimum concentration occurred at Site 18 for each indicator except for *E. coli*, which occurred at Site 13. Each of these sites was located within the center of the channel. Table 1 lists all water quality data and bacterial analyses results for all stations.

The lower, estuarine portion of the Dominguez Channel typically had values that decreased with increasing distance downstream (Figures 7 – 10). Bacterial concentrations did not fluctuate greatly from site to site. The majority of samples collected in this reach were taken from the channel instead of laterals and outfalls, and these in-channel samples typically had bacterial concentrations an order of magnitude greater than in-channel samples collected above Vermont Street. Levels for the different bacterial indicators below Vermont Street were:

- Total Coliform – 199 MPN/100mL to 32,554 MPN/100mL
- Fecal Coliform – 10 CFU/100mL to 26,500 CFU/100mL
- *E. coli* – non detect (<10) MPN/100mL to 7,894 MPN/100mL
- Enterococcus – non detect (<10) MPN/100mL to 185 MPN/100mL

The maximum concentration for total coliform was located at Site 29, a lateral entering the Dominguez Channel downstream of 190th Street. The maximum concentration for fecal coliform and *E. coli* were located along the transect at 190th Street (Site 26) and the maximum concentration for enterococcus was located at Site 36 (223rd Street). The minimum concentrations for all four bacterial indicators were located at the furthest downstream transect consisting of Sites 38, 39 and 40. Table 1 lists all water quality data and bacterial analyses results for all stations.

Figures 2 through 11 illustrate the relative locations of sample sites, station type (headwaters, lateral, outfall or in-channel) and relative bacterial concentration for each indicator as well as the fecal coliform to enterococcus ratio. These figures are divided

into the upper, freshwater reaches of Dominguez Channel (Figures 2 – 6) and the lower, estuarine reaches of the Dominguez Channel (Figures 7 – 11).

Figures 12 – 15 graphically display all samples by station type with distance downstream and actual bacterial concentration for each indicator. Included in these graphs are data collected during the June 2002 sampling effort for comparison between dry-weather years. Figure 16 – 18 compare results for samples based on conveyance type and freshwater versus saline environments.

DISCUSSION

Several sites within the upper portion of the Dominguez Channel have bacterial concentrations that are of concern, warranting possible further investigation. These sites are discussed in sequence from the headwaters of the channel to the mouth of the Dominguez Channel at Consolidated Slip.

Sites 50 and 51 are two large double box-culverts located at the headwaters where the channel first emerges from underground. The bacterial levels at Sites 50 and 51 are indicative of possible sewage contamination. Although bacterial contamination values at Sites 50 and 51 are slightly different than results from samples collected in 2002, the results are within close enough range to show consistency in bacterial contamination.

Comparable to 2002, the laterals at Sites 24 and 15 and the channel at Site 1 show elevated levels of total coliform, with low fecal coliform, *E. coli* and enterococcus counts. Due to the ability of total coliforms to grow readily in the environment, elevated total coliform numbers, without a corresponding increase in one or more of the other bacterial indicators, should not be overly concerning. This does not suggest, however, that high total coliform counts should not be investigated, rather investigations at these sites should not be given priority over sites with elevated bacterial levels of multiple indicators.

The outfall samples appeared to have the greatest contributory affect to bacterial levels within the Dominguez Channel. Sites 12, 4 and 3 were outfalls with elevated levels of bacterial contamination. For all bacterial indicators, Site 4 had the highest bacterial concentrations and these bacterial concentrations are representative of undiluted raw sewage. In 2002, Site 3 was recommended for additional investigations due to possible sewage contamination.

An overall assessment of the bacterial concentrations for each reach (above and below Vermont Street) provides interesting results. In 2003, sample results showed that the geometric mean bacterial concentration of **all** samples collected above Vermont Street was approximately one order of magnitude higher than the geometric mean bacterial concentration for **all** samples collected below Vermont Street (Figure 17). However, calculating the geometric mean bacterial concentration utilizing only in-channel samples

(excluding headwaters, laterals and outfalls), the bacterial levels are similar for each reach (Figure 18).

Environmental stresses, such as elevated pH values, sunlight, and salinity are factors that may reduce bacterial concentrations in the channel. Above Vermont Street, pH levels greater than 10 were measured at three stations (Sites 13, 18 and 23) in the concrete portion of the channel and a pH of 9.7 was measured at Site 1. High pH values were also recorded in 2002 and are likely the result of calcium carbonate deposits creating an alkaline environment in the channel waters. Elevated pH values can act as a bactericide and restrict the bacterial levels to relatively low counts; pH levels above 8 become bactericidal for coliforms and bacteriostatic for enterococcus. Although enterococcus are more resistant to high pH, even this family of organisms loses its resistance to pH levels above 9.

For all indicators except enterococcus, bacteria levels appear to rise during the first mile of the estuary. Surprisingly, within this same reach, enterococcus levels dropped. This may be explained by a combination of factors. First, enterococcus concentrations are more susceptible to decreases by sunlight in a more fresh water environment than coliforms and *E. coli* (Sinton, 2002). All bacterial indicators react similarly to sunlight deactivation with increases in saltwater concentration. However, downstream in the estuary, as salinity levels do increase, coliforms and *E. coli* are more susceptible to inactivation by increases in salinity as compared to enterococcus; this is evident in Figures 12 – 15 where the coliform and *E. coli* levels decrease by one to two orders of magnitude and the enterococcus levels remain relatively stable.

Comparison of Results

Figures 12 through 15 graphically display each indicator, differentiating between in-channel bacterial counts and inputs from headwaters, outfalls and laterals, and are plotted against their relative distance downstream. For comparison, results from the 2002 survey are included. From 2002 to 2003, only enterococcus appears to have an overall drop in numbers.

Figure 16 compares the geometric mean of bacteria levels for all parameters tested between in-channel, lateral, outfall and headwater samples. The same trend was observed for all parameters. Headwater levels were highest, followed by outfalls, laterals and lastly in-channel bacteria levels were lowest. Typically in human sewage, total coliforms numbers are approximately 2 logs higher than fecal coliforms (including *E. coli*), and enterococcus are typically 1-2 logs lower than fecal coliforms. This trend is evident in Figure 16. If animal waste were the predominant source, the trend should be reversed, with greater enterococcus numbers followed by decreasing levels of fecal and total coliforms, respectively.

Fecal Coliform/*Enterococcus* Ratio

There has long been a debate in the microbiological community with regard to the ratio between fecal coliforms and fecal streptococcus (or enterococcus) (fc/fs). Studies have

implied that a ratio of 4:1 fc/fs in a given sample indicates more human contamination, while a ratio of 0.7:1 indicates a higher possibility of animal pollution. This theory is based in part on the fact that *in general*, humans produce much higher numbers of coliform bacteria, while most animals produce higher numbers of enterococcus.

Studies have shown this ratio to be valid only during recent (24-hour) pollution episodes and in fresh water samples (coliform bacteria cannot withstand the high salinity in seawater as well as enterococcus can). An additional drawback is that substantial changes in temperature and pH can affect growth and die-off of these organisms differently. In addition, while coliforms can often grow in the environment, especially in the presence of organic material and higher water temperatures, they also die-off more easily due to extreme temperatures, pH, and lack of nutrients. Enterococcus however, does not tend to grow in water as coliforms can, but remains constant with little die-off, even in extreme temperatures, pH and saline environments.

The fecal coliform results for each sample were divided by the corresponding enterococcus results. The methods used for enumeration were the membrane filtration method for fecal coliforms and the IDEXX Enterolert method for enterococcus. The fc/fs ratios presented in Figures 6 and 11 were compared to the site observation sheets. If the ratio held true, with the presence of birds and other animals, a higher fecal streptococcus (enterococcus) ratio would be exhibited. It was therefore expected that lack of animals, the potential for sewage contamination, etc., *might* present a possibility of more human contamination emanating from channel flows.

In 2002, a number of the fecal coliform to enterococcus results suggested an abundance of animal contamination, despite the lack of visible animals present. In 2003, the fecal to enterococcus ratios suggested a greater influence from human contamination. However, this change may be in response to environmental stresses such as temperature, pH and the presence of organic materials among other things. Such physical stresses create the possibility for drastic changes in bacterial counts from one location – and one moment - to the next.

CONCLUSIONS and RECOMMENDATIONS

As this year's sampling included only a subset of the sites sampled in 2002, a complete analysis of sources and trends from one year to the next is impossible to perform. However, some general conclusions and recommendations can be made. The headwaters, laterals and outfalls are contributing sources to the bacterial contamination in the Dominguez Channel. Further sampling upstream of each of these discharge points would be required to determine potential sources. Samples from within the concrete channel are low, likely due to environmental stresses such as pH, temperature, and dilution. Samples from within the estuary are also low, and decrease steadily with increasing distance downstream. This decrease is likely due to environmental stresses such as salinity, UV and dilution.

Sites 3, 4, 12, 50 and 51 have significantly elevated bacterial levels and should be addressed. Sites 3, 4 and 12 are possibly impacted by raw sewage contamination.

REFERENCES

Sinton, Lester W., Finlay, Rochelle K. and Lynch, Philippa A. Sunlight Inactivation of Fecal Bacteriophages and Bacteria in Sewage-Polluted Seawater. Applied and Environmental Microbiology. Aug. 1999. p. 3605-3613.

Table 1. Dominguez Channel Water Quality Sampling Results, October 1, 2003

	Sample ID	Notes	Miles Downstream from Headwaters	Time Sampled	Lat Lat Decimal Degrees Minutes	Long Long Decimal Degrees Minutes	Water Temp (°C)	pH	Conductivity (uS)	Total Coliform (MPN/100mL)	Fecal Coliform (CFU/100mL)	*E. coli* (MPN/100mL)	Enterococcus (MPN/100mL)
fresh water	51	headwaters	0	18:25	33° 55.724'	118° 20.290'	22.5	8.41	731	488,440	150,000	6,488	14,672
	50	headwaters	0.06	18:36	33° 55.659'	118° 20.257'	21.8	8.27	701	682,800	73,500	48,844	3,076
	24	lateral	3.61	17:40	33° 53.238'	118° 20.103'	21.9	8.91	1393	41,058	1,850	1,281	368
	23	in channel	3.61	17:32	33° 53.229'	118° 20.102'	23.4	10.08	741	6,867	340	301	30
	18	in channel	4.07	17:17	33° 52.872'	118° 19.870'	24.9	10.34	571	3,873	230	203	10
	15	lateral	4.36	16:57	33° 52.798'	118° 19.609'	20.8	8.44	1475	74,300	2,000	910	1,850
	13	in channel	4.69	16:29	33° 52.172'	118° 19.267'	26.9	10.52	557	2,755	255	134	41
	12	outfall	4.9	16:08	33° 52.684'	118° 19.069'	21.6	8.29	837	512,100	53,500	38,732	40,770
	11	outfall	4.9	16:05	33° 52.686'	118° 19.059'	21.7	8.78	1280	4,352	400	199	31
	5	lateral	6.28	15:20	33° 52.277'	118° 17.920'	23.3	8.27	590	32,554	1,400	520	97
	4	outfall	6.47	15:02	33° 52.264'	118° 17.713'	22.3	7.99	1683	>24,196,000	20,000,000	313,010	111,987
	3	outfall	6.66	14:41	33° 52.265'	118° 17.534'	23.2	8.50	863	387,320	58,000	13,169	4,884
	1	in channel	6.75	14:25	33° 52.258'	118° 17.431'	25.8	9.72	788	124,570	4,950	1,918	318
estuary (tidally influenced)	29	lateral	7.53	13:04	33° 51.698'	118° 17.015'	22.8	7.74	saline	32,554	7,800	7,701	20
	28	in channel	7.51	12:15	33° 51.697'	118° 17.049'	22.9	7.89	saline	24,809	6,650	5,794	10
	27	in channel	7.51	12:23	33° 51.699'	118° 17.035'	na	na	na	20,354	9,500	6,631	30
	26	in channel	7.51	12:35	33° 51.703'	118° 17.031'	22.7	7.70	saline	30,759	26,500	7,894	62
	31	lateral	8.98	11:40	33° 50.753'	118° 16.063'	22.1	7.68	saline	11,446	2,050	1,597	31
	32	lateral	9.32	11:10	33° 50.461'	118° 15.831'	22.0	8.11	saline	16,071	3,250	1,935	74
	36	in channel	11.08	9:40	33° 49.463'	118° 14.590'	20.9	7.91	saline	13,735	2,000	1,989	185
	35	in channel	11.08	9:58	33° 49.465'	118° 14.576'	na	na	na	21,872	1,800	1,314	98
	34	in channel	11.08	10:05	33° 49.462'	118° 14.554'	na	na	na	9,854	2,660	1,334	83
	40	in channel	14.95	9:00	33° 46.641'	118° 14.462'	17.4	7.75	saline	1,989	25	<10	31
	39	in channel	14.95	8:50	33° 46.632'	118° 14.456'	na	na	na	199	10	10	20
	38	in channel	14.95	8:30	33° 46.625'	118° 14.457'	17.5	7.68	saline	256	15	10	<10
duplicates	30	at site 27	7.51	12:27	33° 51.699'	118° 17.035'				19,890	8,400	6,015	20
	48	at site 50	0.06	18:48	33° 55.659'	118° 20.257'				512,200	180,000	143,870	1,904
	22	at site 23	3.61	17:34	33° 53.229'	118° 20.102'				3,255	180	175	20
	14	at site 13	4.69	16:31	33° 52.172'	118° 19.267'				3,654	145	122	41
	6	at site 3	6.66	14:46	33° 52.265'	118° 17.534'				726,990	350,000 E	16,242	7,701
	20	at site 29	7.51	13:07	33° 51.698'	118° 17.015'				24,809	6,500	5,794	10
blanks	37	at site 36		9:42	33° 49.463'	118° 14.590'				<10	<10	<10	<10
	21	at site 23		17:37	33° 53.229'	118° 20.102'				<10	<10	<10	<10
	33	at site 27		12:30	33° 51.699'	118° 17.035'				<10	<10	<10	<10

E = Estimated Value

Red values exceed Dry Weather Action Levels developed by the County of San Diego based on the upper 90% confidence level of the San Diego County Copermittees 2002 dry weather analytical monitoring data and applied to the Dominguez Channel solely as a point of reference. There has been no Action Level developed for *E. coli*.

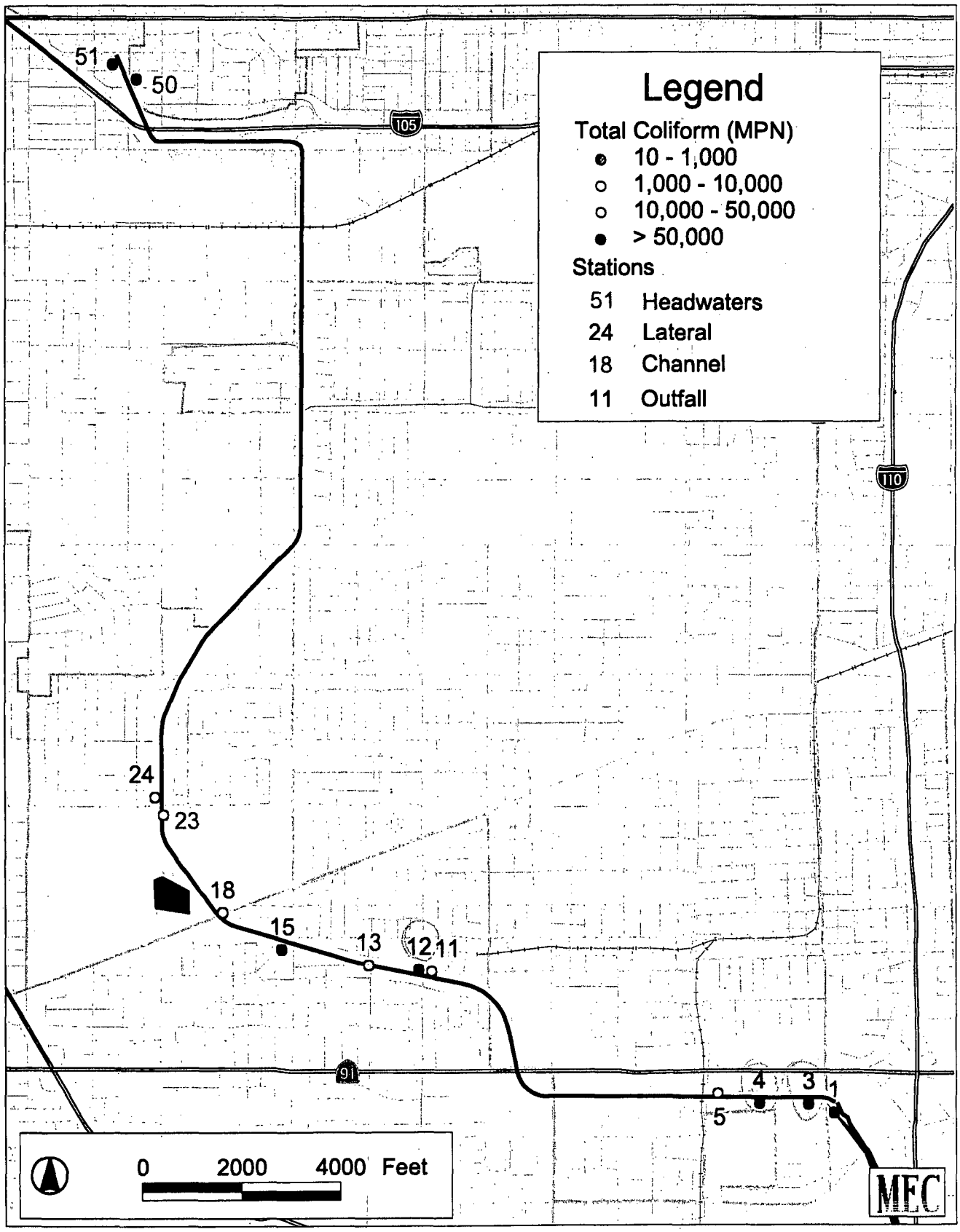

Figure 2. Total coliform in northern Dominguez Channel.

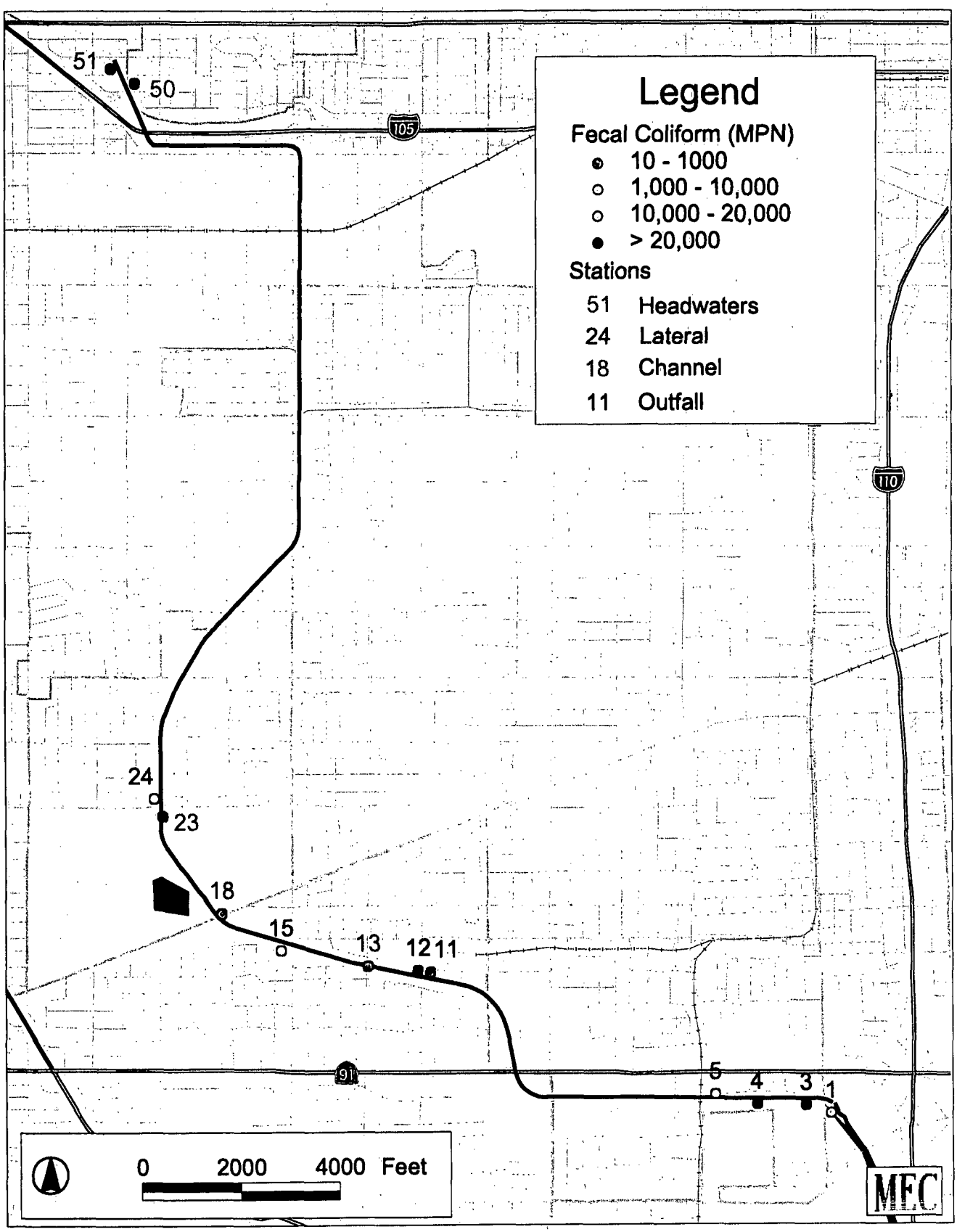

Figure 3. Fecal coliform in northern Dominguez Channel.

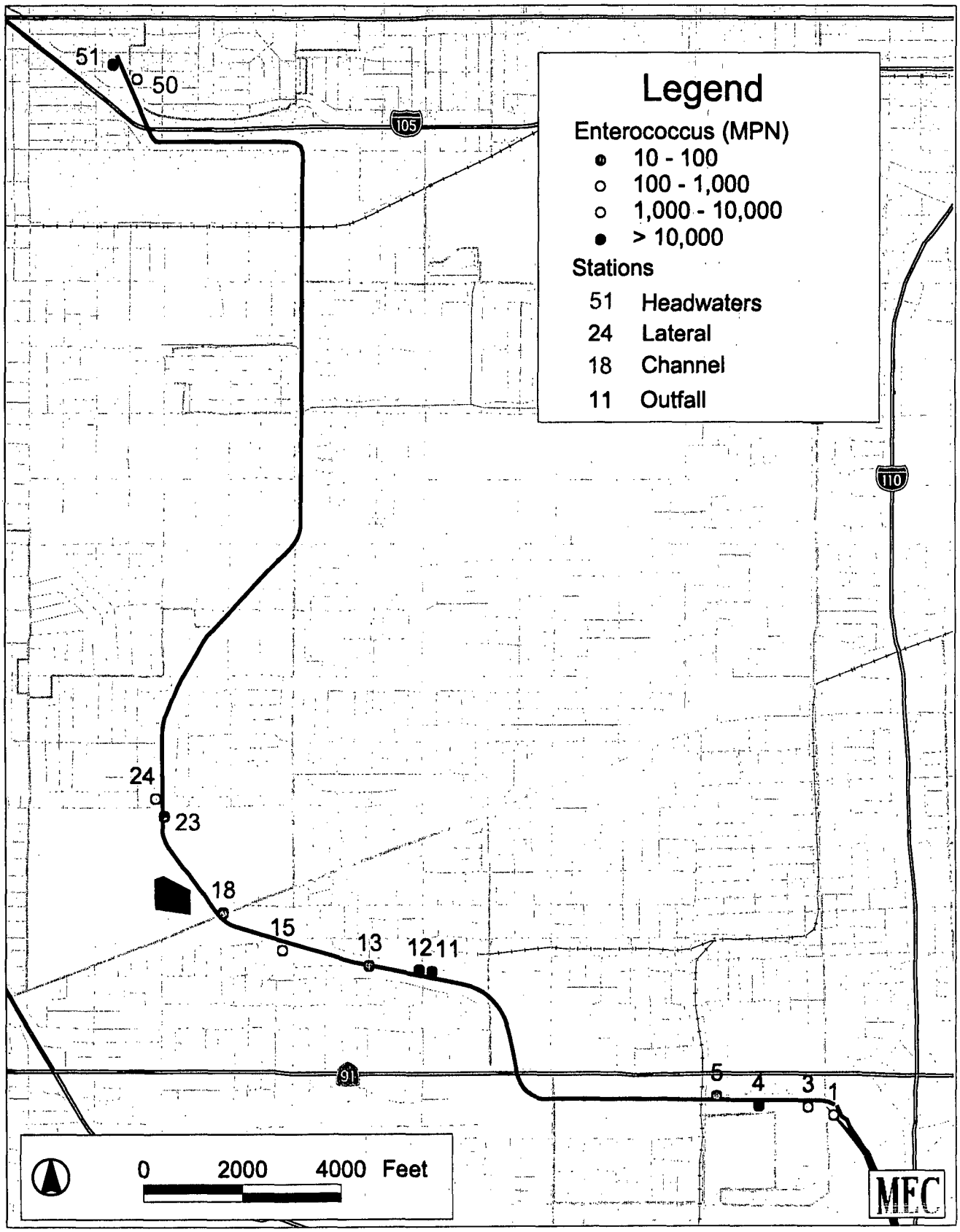

Figure 4. Enterococcus in northern Dominguez Channel.

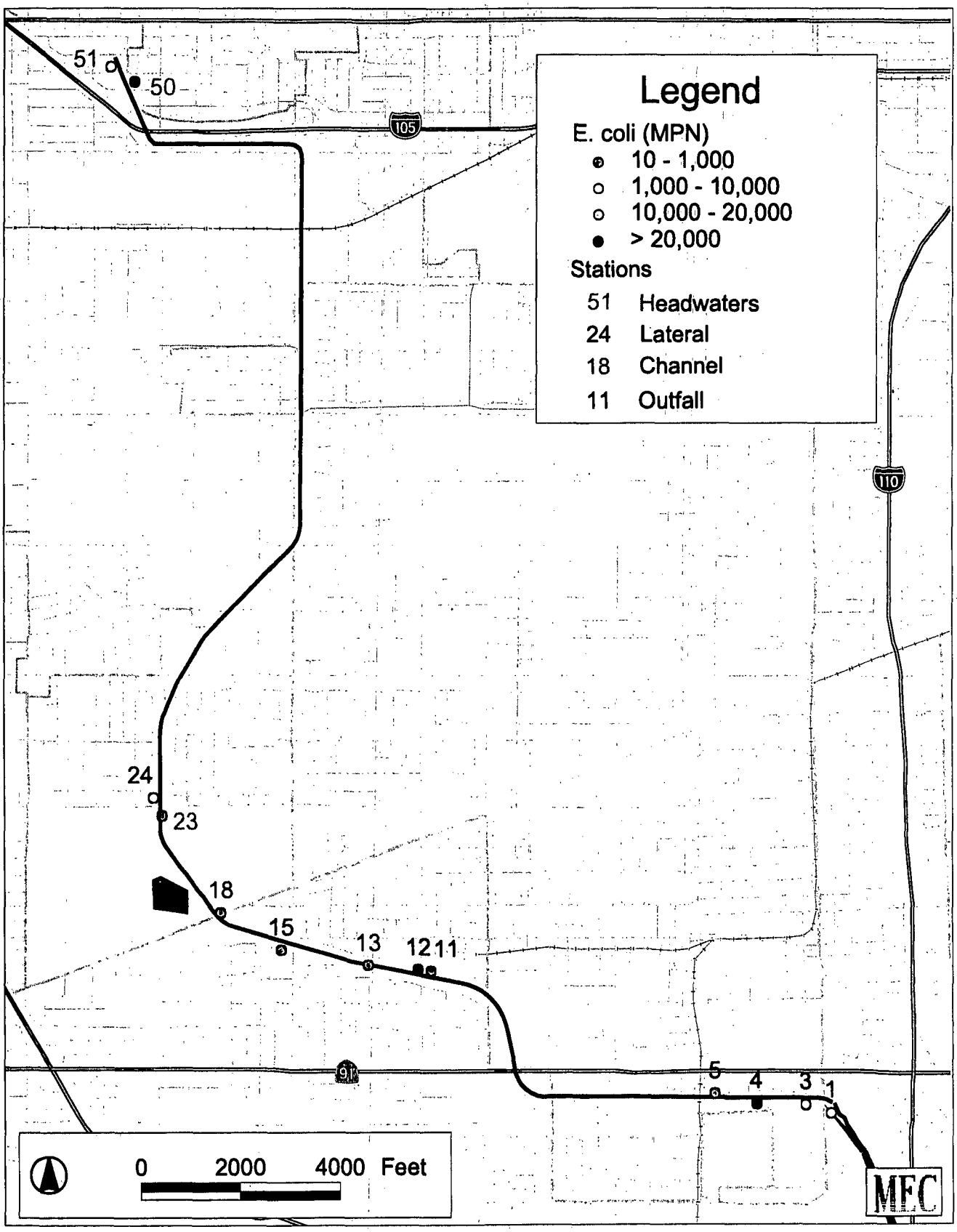

Figure 5. E. coli in northern Dominguez Channel.

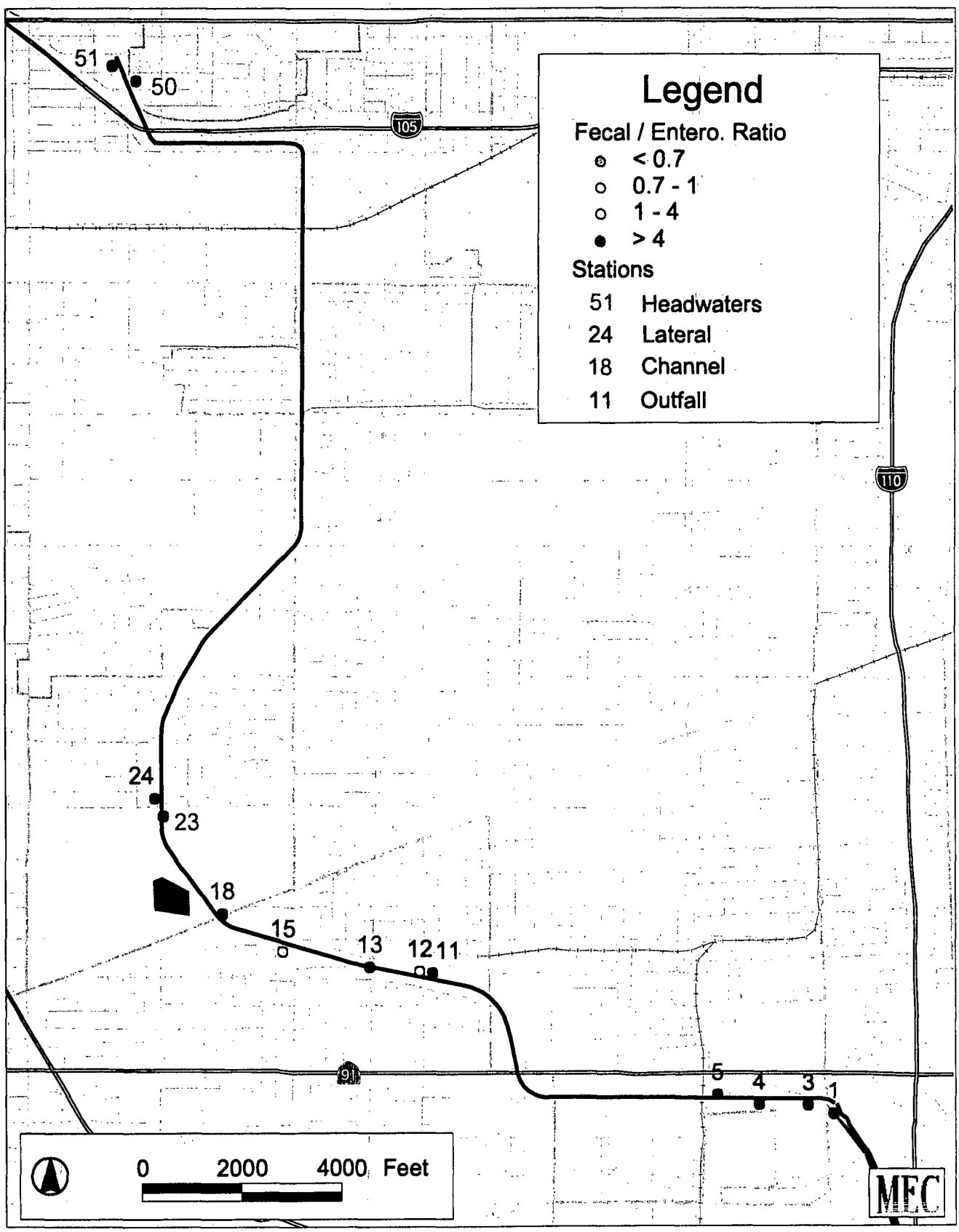

Figure 6. Fecal coliform to Enterococcus ratio in northern Dominguez Channel.

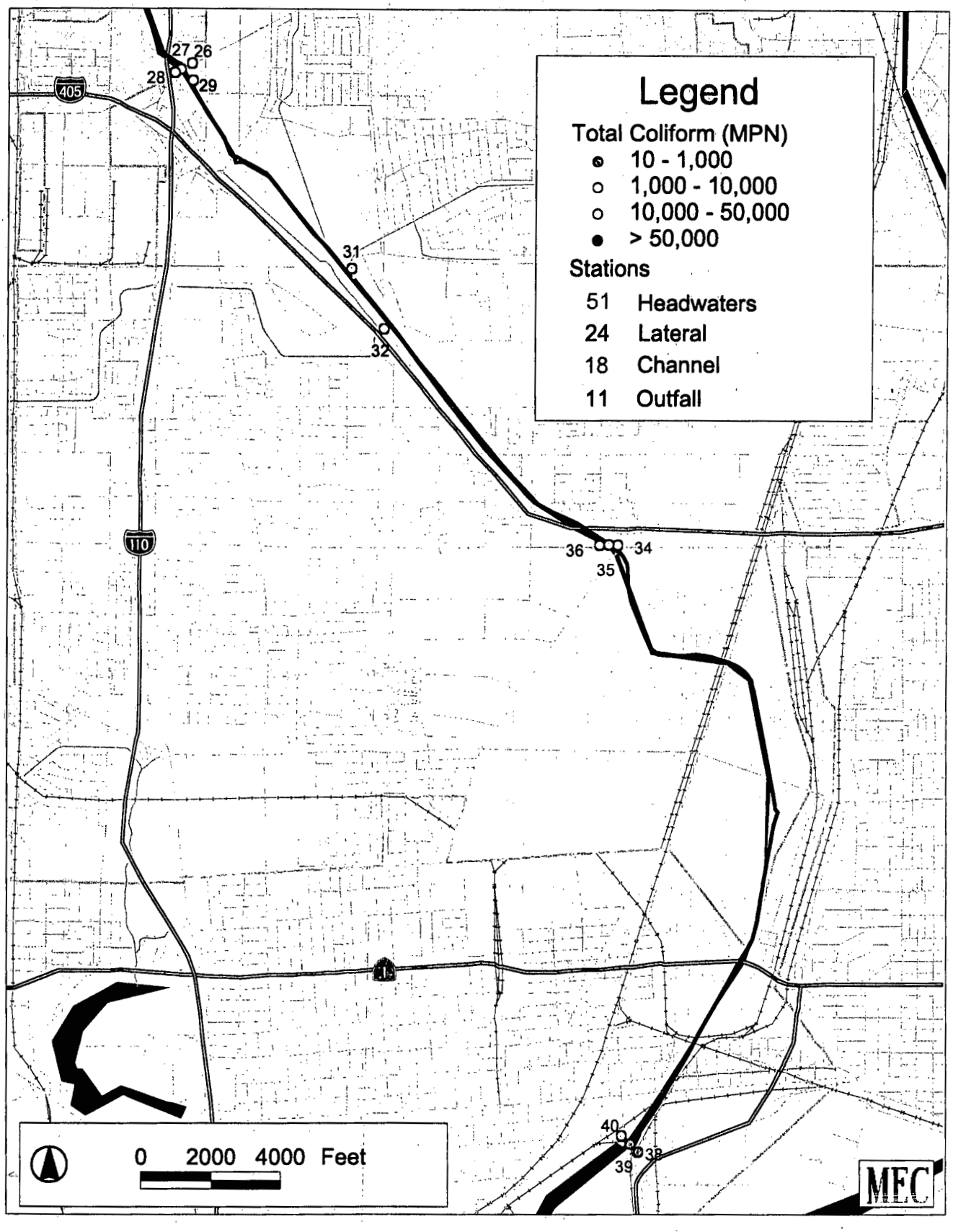

Figure 7. Total coliform in southern Dominguez Channel.

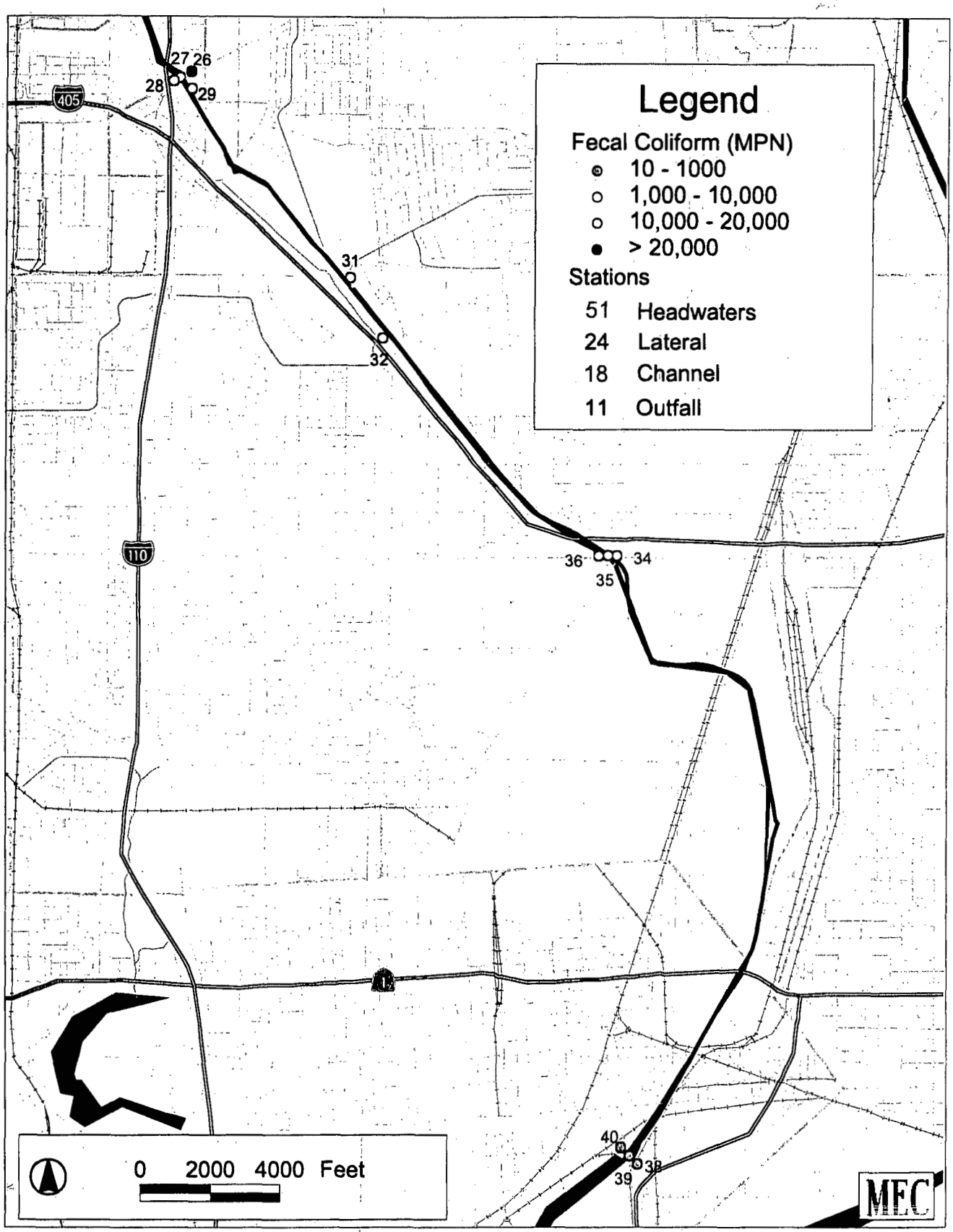

Figure 8. Fecal coliform in southern Dominguez Channel.

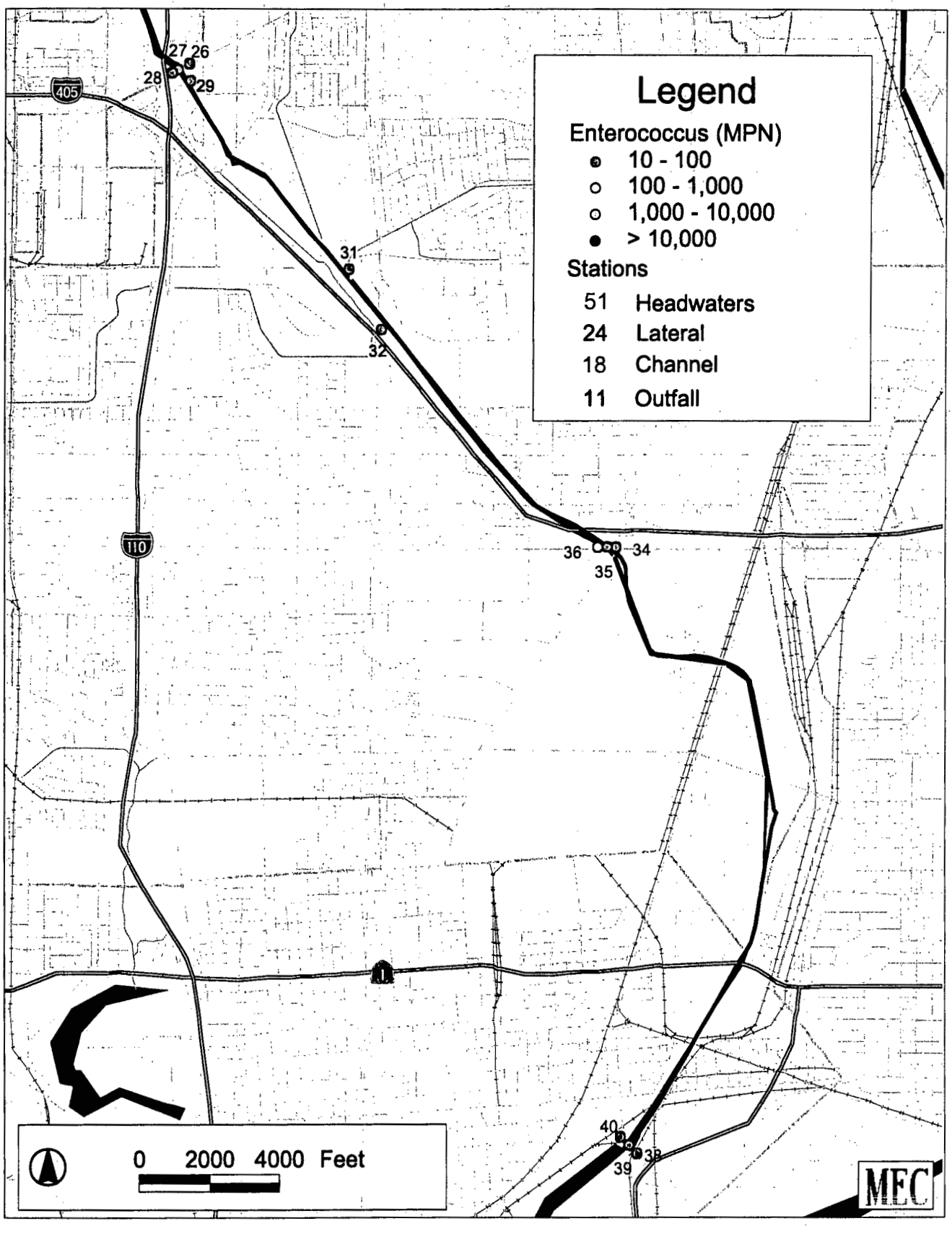

Figure 9. Enterococcus in southern Dominguez Channel.

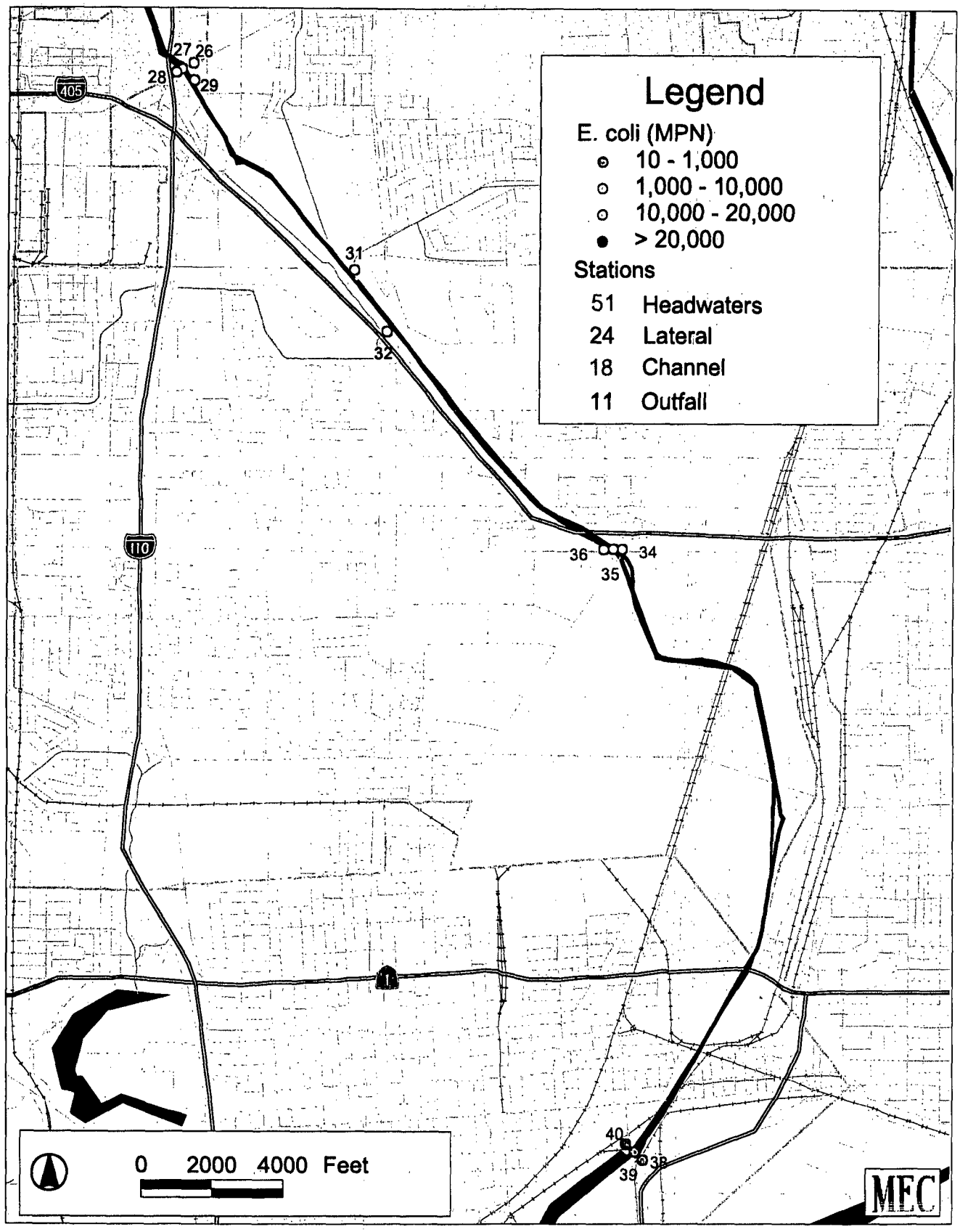

Figure 10. E. coli in southern Dominguez Channel.

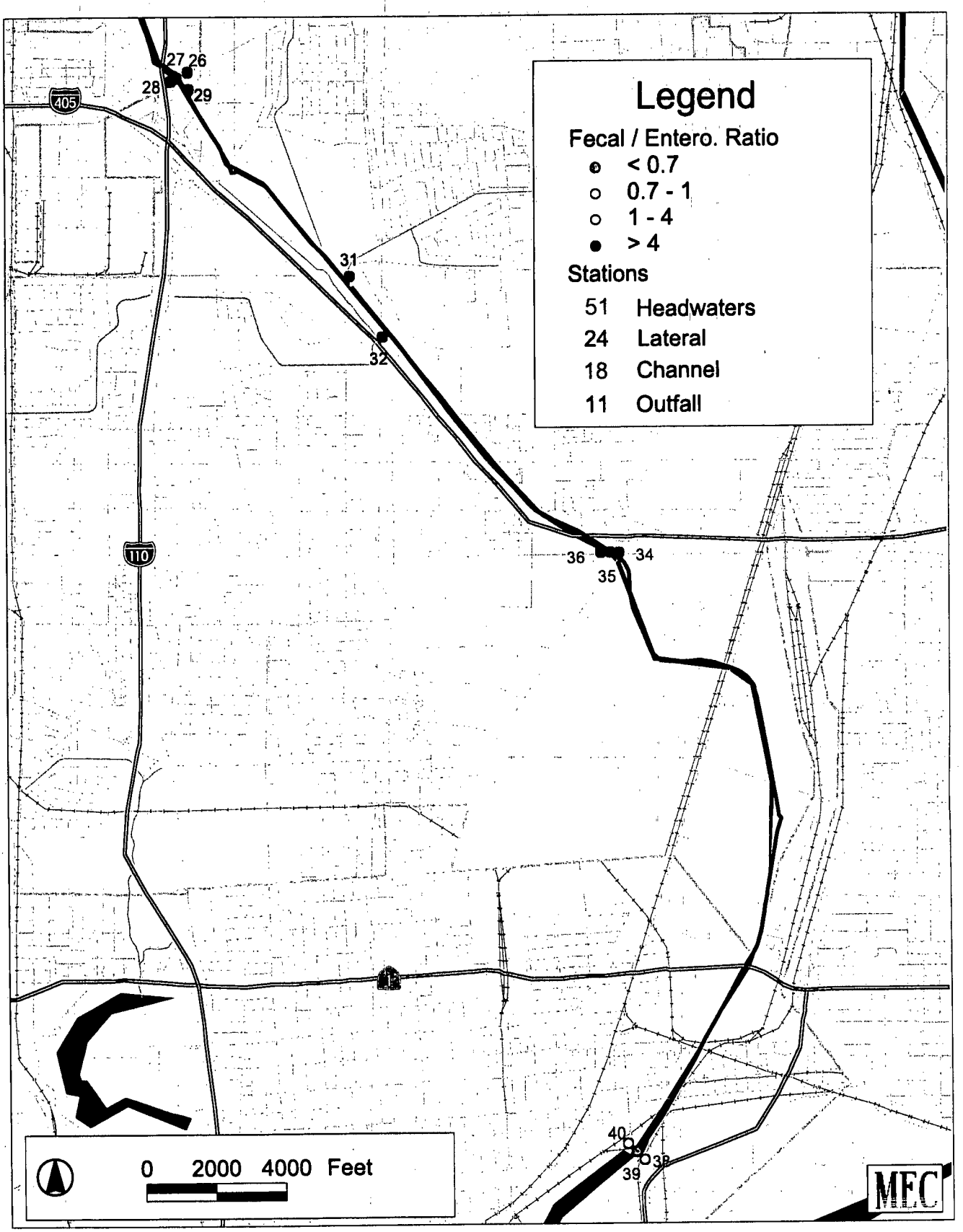

Figure 11. Fecal coliform to Enterococcus ratio in southern Dominguez Channel.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 14.457 W
33° 46.625 N

Site ID: 38

Date/Time: 10/1/03 @ 8:30

Weather Information:

Field Crew: L. Caslin / A. Martin

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: >72 hours / <72 hours / <3 hours

Precipitation: >0.1" / <0.1"

Site Description: Location: N. Ford Bridge, East/South

Earthen Drainage / ~~Concrete Channel~~ / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm / ft / in) 140	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm / ft / in) 5	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm / ft / in / sec) 0.25 Upstream		3. Velocity _____
4. Flow 168 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 1	
Odor	Chemical	Sewage	Rotten Eggs	None/Other
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other only on side
Biology	Mosquitos	Algae	Snails / Fish (small)	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
0 % Organic (food)
100 % Plastics (cups, straws, bags, wrappers, bottles, junk)
____ % Recyclables-not plastic (paper, glass bottles, metal)
____ % Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. <5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type:
____ % film algae
100 % turf algae
____ % macroalgae

Other Observations:
Fish: (yes) / no — School of small fish
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: 0
Evidence of dumping: yes / (no)

*Field Screening
Water Temp (°C) 17.5
pH (pH units) 7.68
Conductivity saline mS / uS (Circle appropriate units)

*Laboratory Analysis
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s 038 _____ _____

Comments Observations: Water moving upstream — tide coming in.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 14.456 W / 33° 46.632 N **Site ID:** 39

Date/Time: 10/11/03 0850

Weather Information: **Field Crew:** L. Carlson / A. Merton

Light Conditions: Sunny / Partly Cloudy

Last Rain: >72 hours / <72 hours / <3 hours **Precipitation:** >0.1" / <0.1"

Site Description: **Location:** Henry Ford Bridge

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 140	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) _____ unknown	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) _____		3. Velocity _____
4. Flow ≈ 168 Ft³/sec N/A - Similar to Site 38	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 2		
Odor	Chemical	Sewage	Rotten Eggs	None/Other
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other Not visible
Biology	Mosquitos	Algae	Snails / Fish	None/Other Not visible

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
100 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle): N/A
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: 00
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units) N/A
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____ (MPN) E.Coli_____ (MPN)
Enterococcus_____ (MPN) Total Coliform_____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 039 _____ _____

Comments Observations Mid Channel, Field screening readings not available Water is murky. Can't see 75ft below surface

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 14.462 W
33° 46.641 N

Site ID: 40

Date/Time: 10/1/03 09:00

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny / Partly Cloudy / Overcast

Last Rain: ≥ 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: **Location:** Henry Ford Bridge North

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 140	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 6	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) 0.04		3. Velocity _____
4. Flow 0.04 x 6 = 2.68 ft³/sec ***See formula on back		***See formula on back

Visuals:	Photo Taken: yes / no	Roll#/Pic# 3		
Odor	Chemical	Sewage	Rotten Eggs	None/Other
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other on side
Biology	Mosquitos	Algae	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. <5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
50% film algae
50% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: 0
Evidence of dumping: yes no
- Clothing

***Field Screening**
Water Temp (°C) 17.4
pH (pH units) 7.75
Conductivity Saline mS / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 40 _____ _____

Comments Observations Water moving upstream - tide coming in.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118°14.590 W / 33°49.463 N **Site ID:** 36

Date/Time: 10-3 9:40

Weather Information: **Field Crew:** L. Carlson

Light Conditions: Sunny / (Overcast) / Partly Cloudy

Last Rain: (≥ 72 hours) / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** 223rd St, NW

(Earthen Drainage) / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm / (ft) / in) 197	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm / (ft) / in) 3	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm / (ft) / in / sec) 0.10		3. Velocity _____
4. Flow 47.3 Ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no	Roll#/Pic# 4	
Odor	Chemical / Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish / Greenish	(Browish)	None/Other_____
Clarity	Clear / (Cloudy)		Other_____
'oatables	(Oily) / Rainbow / (Trash)	Bubbles	None/Other Silversheen
egetation	(Limited) / Extensive		None/Other_____
Biology	Mosquitos / (Algae)	Snails / (Fish)	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
(5) Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
20 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
(5.) > 75%

Algae outside of flow?: (yes) / no

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: (yes) no — Schools – Hundreds.
Snails: yes (no)
Birds: (yes) no
Other: _____
Number of homeless: ____
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 20.9 Conductivity Salme mS / uS (Circle appropriate units)

pH (pH units) 7.91

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 036 _____ _____

Comments Observations A flock of pigeons flew in as we arrived at the site. They landed on the box culvert. A duck flew across the water. Many other species

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: _____ W
_____ N

Site ID: 368837

Date/Time: 10/1/03 9:42

Weather Information:

Field Crew: L. Carlson A. Martin

Light Conditions: Sunny Overcast Partly Cloudy
Last Rain: > 72 hours < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: 223rd St. Bridge
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other_____

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)
1. Width (cm - ft - in) 197
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow N/A

Filling a Bottle
1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)
1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 1	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening
Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____

*Laboratory Analysis
Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No Bottle ID#'s 037 _____ _____

Comments Observations: Field Blank - DIW from Regional Board.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 14.576 W
33° 49.465 N

Site ID: 35

Date/Time: 10/1/03 0958

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: >72 hours / <72 hours / <3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** 223rd Bridge Center of Channel.

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm / ft / in) 197	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm / ft / in) 350	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm / ft / in / sec) 0.10		3. Velocity _____
4. Flow n/a	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 5	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
10 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae: Could not See bottom
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no) None floating

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes / no
Snails: yes / no
Birds: yes / no — Not in water
Other: _____
Number of homeless: 0
Evidence of dumping: yes / no

***Field Screening** Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____ Site inaccessible

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 035 _____ _____

Comments Observations flowing out to Ocean. Trash bag floating in Water. Left down.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 14, 554 W
33° 49, 462 N

Site ID: 34

Date/Time: 10/1/03 10:05am

Weather Information:

Field Crew: L. Carlson / A. Marston

Light Conditions: Sunny / (Overcast) / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: 223rd Street Bridge ~~Sacatar~~ SE

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow N/A

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 6	
Odor	Chemical	Sewage	Rotten Eggs (None/Other)_____
Color	Greyish	(Greenish)	Browish None/Other_____
Clarity	Clear	(Cloudy)	Other_____
Floatables	(Oily) / Rainbow	(Trash)	Bubbles None/Other_____
Vegetation	(Limited)	Extensive	None/Other_____
Biology	Mosquitos	(Algae)	Snails / (Fish) None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type:

____% film algae
100% turf algae
____%macroalgae

Other Observations:

Fish: (yes) / no
Snails: yes / (no)
Birds: (yes) / no
Other: _____
Number of homeless: _____
Evidence of dumping: (yes) / no Full garbage bags on bank

*Field Screening

Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)

pH (pH units)_____ ~~Site inaccessible~~ Site inaccessible

*Laboratory Analysis

Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No Bottle ID#'s 034 _____ _____

Comments
Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: ~~118° 15.831~~ ~~W~~ **Site ID:** D32

~~33° 49.4602~~ N **Date/Time:** Oct 01/03 11:10

Weather Information: 33° 50.461 **Field Crew:** L. Carlson A. Martin

Light Conditions: Sunny (Overcast) Partly Cloudy **Precipitation:** > 0.1" < 0.1"

Last Rain: (> 72 hours) < 72 hours < 3 hours

Site Description: **Location:** Torrance Lateral at D.C.

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm / (ft) / in) ~50	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm / (ft) / in) 1.5	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm / (ft) / in / sec) 0.02		3. Velocity _____
4. Flow 1.2 Ft³/sec	***See formula on back	***See formula on back

Visuals:

	Photo Taken: (yes) / no	Roll#/Pic# 7	
Odor	Chemical Sewage	Rotten Eggs	None/Other Slight rotting veg; tar
Color	Greyish ~~Greenish~~	Browish	None/Other _____
Clarity	Clear Cloudy		Other _____
Floatables	Oily / Rainbow (Trash)	Bubbles	~~None~~/Other _____
Vegetation	(Limited) Extensive		None/Other _____
Biology	Mosquitos (Algae)	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
25 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (Yes) / no

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: (yes) no – Egret
Other: _____
Number of homeless: 0
Evidence of dumping: ~~yes~~ (no)

***Field Screening** Water Temp (°C) 22.0 Conductivity Saline mS / uS (Circle appropriate units)

pH (pH units) 8.11

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** D32 _____ _____

Comments
Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 16.063 W
33.50.753 N

Site ID: 31

Date/Time: Oct 1/03 11:40

Field Crew: L. Carlson A. Martin

Weather Information:

Light Conditions: Sunny / Overcast / (Partly Cloudy)

Last Rain: (> 72 hours) / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: Torrance Lateral East at DC

Earthen Drainage / (Concrete Channel) / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - (ft) - in) ~ 30	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - (ft) - in) 1.7	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - (ft) - in / sec) 0.24		3. Velocity _____
4. Flow 9.8 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 8	
Odor	Chemical	Sewage	Rotten Eggs	(None) / Other
Color	Greyish	Greenish	Browish	(None) / Other
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	(Trash)	Bubbles	None/Other film & algae
Vegetation	Limited	Extensive		(None) / Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other Insects - inc. dragonfly

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
(2.) Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
(5.) > 75%

Algae outside of flow?: (yes / (no))

Main algae type:
____% film algae
50 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: (yes) no – downstream
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 22.1
pH (pH units) 7.68
Conductivity Saline mS / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 031 _____ _____

Comments Observations Salt canopy adjacent using recycled water. Flow upstream due to tide. Dominguez Channel flowing downstream. Bird waste on cement bank of lateral.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118°17.049 W
33° 51.697 N

Site ID: 28

Date/Time: Oct 1, 03 12:15

Weather Information:

Field Crew: L. Carlson A. Martin

Light Conditions: Sunny / Partly Cloudy

Last Rain: >72 hours / <72 hours / <3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: **Location:** D.C. 190th St. Bridge — South (previously called Wilmington Drainage 3)

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 101 - 5	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 2	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) 0.07		3. Velocity _____
4. Flow 11.4 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 9	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: 20
Evidence of dumping: yes no

***Field Screening**
Water Temp (°C) 22.9
pH (pH units) 7.89
Conductivity Saline mS / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 028 _____ _____

Comments
Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 17.035 W / 33° 51.699 N **Site ID:** 27

Date/Time: Oct 1, 03 12:23

Weather Information: **Field Crew:** L. Carlson / A. Marston

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (>72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** DC - 190th St. Bridge Center

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other _____

Flow Estimation: Flow (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 101.5'	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) NA	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) NA		3. Velocity _____
4. Flow NA	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 10	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	(Greenish)	Browish	None/Other_____
Clarity	Clear	(Cloudy)		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		None/Other NA
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. (None) – In center
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type: none floaty
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

(Lab Samples taken) (Yes) / No **Bottle ID#'s** 027 _____ _____

Comments
Observations _____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: _____ W
_____ N

Site ID: 30

Date/Time: Oct 01, 03 12:27

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: (Sunny) Overcast Partly Cloudy
Last Rain: (>72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** D.C. 190th St. Center Duplicate
(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other_____

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____ (MPN) E.Coli_____ (MPN)
Enterococcus_____ (MPN) Total Coliform_____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 030 _____ _____

Comments Observations Duplicate for Site 27.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: _____ W
_____ N

Site ID: 33

Date/Time: Oct 1, 03 12:30

Field Crew: L. Carlson / A. Martin

Weather Information:

Light Conditions: Sunny | Overcast | Partly Cloudy

Last Rain: > 72 hours | < 72 hours | < 3 hours

Precipitation: > 0.1" | < 0.1"

Site Description: **Location:** 190th St Bridge Blank for Site 27

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other_____

Flow Estimation: Flow Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 033 _____ _____

Comments Observations Blank for Site 27

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118 17.031 W
33° 51.703 N

Site ID: 26

Date/Time: Oct / 03 ; 12:~~27~~ 12:35

Field Crew: L. Carlson / A. Martin

Weather Information:

Light Conditions: ~~Sunny~~ Overcast Partly Cloudy

Last Rain: > 72 hours < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** 190th St Bridge North (formerly labeled as South)

~~Earthen Drainage~~ Concrete Channel Outfall Manhole Catchbasin Other _____

Flow Estimation: Flow Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ~~ft~~ - in) 101.5	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 3 (CM)	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ~~ft~~ - in / ~~sec~~) 0.19		3. Velocity _____
4. Flow 46.3 ft³/sec	***See formula on back	***See formula on back

Visuals:

	Photo Taken: yes / no		Roll#/Pic# 11	
Odor	Chemical	Sewage	Rotten Eggs	~~None~~/Other _____
Color	Greyish	Greenish	Browish	None/Other _____
Clarity	Clear	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other Biofilm
Vegetation	Limited	Extensive		None/Other _____
Biology	Mosquitos	Algae	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / ~~no~~)

Main algae type:
____% film algae
40 % turf algae
____%macroalgae

Other Observations:
Fish: yes ~~no~~
Snails: yes ~~no~~
Birds: yes ~~no~~
Other: _____
Number of homeless: ~~1~~ DAVE
Evidence of dumping: yes ~~no~~

***Field Screening** Water Temp (°C) 22.7 Conductivity Saline mS / uS (Circle appropriate units)
pH (pH units) 7.70

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 026 _____ _____

Comments Observations _____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 17.015' W
33.51.698 N

Site ID: 29 (304)

Date/Time: Oct 1, 03 1:04 pm

Weather Information:

Field Crew: L. Carlson / A. Marsh

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: **Location:** Culvert on SE Side of 190th St. Bridge

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other Culvert

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - (ft) - in) 10	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - (ft) - in) 6	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm (ft) - in / sec) 0.13		3. Velocity _____
4. Flow 6.2 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 12	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	(Greenish)	Browish	None/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other Biofilm
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes (no)

Main algae type:
____% film algae
100% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes no Barnacles below water level
Birds: yes (no)
Other: _____
Number of homeless: 1 2
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 22.8
pH (pH units) 7.74
Conductivity Saline mS / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 029 _____ _____

Comments Observations: Water flowing into Culvert. Flow from DC to Ocean.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 17.015 W
33° 15.698 N

Site ID: 20

Date/Time: Oct 1, 03 1307

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny | Overcast | Partly Cloudy

Last Rain: > 72 hours | < 72 hours | < 3 hours

Precipitation: > 0.1" | < 0.1"

Site Description: **Location:** Drop for Site 29 – Culvert SW of 190th St. Bridge

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other Box Culvert

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	**Photo Taken:**	yes / no	Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 020 _____ _____

Comments Observations Drop of 29

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118°17.431 W / 33°52.258 N **Site ID:** 1

Date/Time: Oct 03 1405

Weather Information: **Field Crew:** L Carlson / A. Martin

Light Conditions: Sunny Overcast Partly Cloudy

Last Rain: > 72 hours < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** at Vermont, where channel meets Estuary - in channel

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 12 (CAM)	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 1.5 (CAM)	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) 0.85		3. Velocity _____
4. Flow 12.2 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 13	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
30 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
10 % turf algae
____%macroalgae

Other Observations:
Fish: yes / no Schools
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: ND
Evidence of dumping: yes / no

***Field Screening** Water Temp (°C) 25.8 Conductivity 788 mS / uS (Circle appropriate units)

pH (pH units) 9.72

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 01 _____ _____

Comments Observations _____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 17.534 W / 33° 52.265 N

Site ID: 03

Date/Time: Oct 1, 03 14:41

Field Crew: L. Carlson / A. Martin

Weather Information:

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (>72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** 36" round drain into DC - East Side

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other _____

Flow Estimation: Flow (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)
1. Width (cm - ft - in) _____
2. Depth (cm - ft - in) _____
3. Velocity (cm - ft - in / sec) _____
4. Flow .015 ft³/sec

Filling a Bottle
1. Volume 300 (mL) L - oz)
2. Time 10 (sec)
   2" - bag
   24" - flow
   ***See formula on back

Area X Velocity (pipe)
1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____
   ***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 14	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other _____
Color	Greyish	Greenish	(Brownish)	None/Other _____
Clarity	(Clear)	Cloudy		Other _____
'oatables	Oily / Rainbow	Trash	Bubbles	(None)/Other _____
Vegetation	Limited	Extensive		(None)/Other _____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. (High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
10 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (>75%)

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 23.2 Conductivity 863 mS / (uS) (Circle appropriate units)
pH (pH units) 8.5

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 03 _____ _____

Comments Observations Outfall # D552+83 36" Flow reached Channel. Algae along flow down wall of Channel. Weeds/grass growing in flow.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: _____ W
_____ N

Site ID: 4B6

Date/Time: Oct 1, 03 1446

Field Crew: L. Carlson / A Martin

Weather Information:

Light Conditions: (Sunny) / Overcast / Partly Cloudy
Last Rain: (> 72 hours) / < 72 hours / < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: **Location:** Dupl. W/ #3
Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other_____

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	**Photo Taken:**	yes / no	Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations For data see Site 3

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118°17.713 W / 33° 52.264 N **Site ID:** 04

Date/Time: Oct 1, 03; 1502

Weather Information: **Field Crew:** L. Carlson / A. Martin

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** 39th Outfall

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: **Flow** Yes / No / Ponded / Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in)
2. Depth (cm - ft - in)
3. Velocity (cm - ft - in / sec)
4. Flow 0.00079 ft³/sec

Filling a Bottle

1. Volume 300 (mL - L - oz)
2. Time 40 (sec)

2' 4" / 6"

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** yes / no		Roll#/Pic# 15	
Odor	Chemical	Sewage	Rotten Eggs	None/Other
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other
Biology	Mosquitos	Algae	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

0 % Organic (food)
0 %Plastics (cups, straws, bags, wrappers, bottles, junk)
0 % Recyclables-not plastic (paper, glass bottles, metal)
0 % Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: yes / no

Main algae type:

____% film algae
100 % turf algae
____%macroalgae

Other Observations:

Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: 20
Evidence of dumping: yes / no

***Field Screening**

Water Temp (°C) 22.3
pH (pH units) 7.99
Conductivity 1683 mS / uS (Circle appropriate units)

***Laboratory Analysis**

Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 04

Comments Observations 39th Rand. outfall 562 + 00 Flows into Channel

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 17.920 W NAD83
33° 52.277 N

Site ID: 5

Date/Time: Oct 1, 03 3:20 1520

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: **Location:** Box Culvert westside

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 300 (mL) L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time 6 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	2"/14ft	3. Velocity _____
4. Flow 0.012 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes / no)		Roll#/Pic# 16	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	(Trash)	(Bubbles)	~~None/Other~~ as it reaches channel
Vegetation	Limited	~~Extensive~~		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
30 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: ~~NS~~
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 23.3
pH (pH units) 8.127
Conductivity 590 mS (uS) (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
~~Total~~ Coliform_____(MPN)
Stat

Lab Samples taken (Yes) / No **Bottle ID#'s** 05 _____ _____

Comments Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: _____ W
_____ N

Site ID: 7.7

Date/Time: Oct 4 03 13:40

Field Crew: L. Carlson A Martin

Weather Information:

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: **Location:** 603 +57 - 72.4

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other RCP

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no	2 Roll#/Pic# 17/18		
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50% Plastics (cups, straws, bags, wrappers, bottles, junk)
20% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae
MOSS

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations GRASS

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: _____ W
_____ N

Site ID: 10

Date/Time: Oct 1, 03 1550

Weather Information:

Field Crew: G Carson A. Martin

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: **Location:** 630 + 61 – 65 n

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other RCP

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:

Photo Taken: yes / no Roll#/Pic# 19

Draw sample location if no photo:

Odor	Chemical	Sewage	Rotten Eggs	None/Other NA
Color	Greyish	Greenish	Browish	None/Other NA
Clarity	Clear	Cloudy		Other NA
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other NA
Vegetation	Limited	Extensive		None/Other NA
Biology	Mosquitos	Algae	Snails / Fish	None/Other _____

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
_____% Organic (food)
40 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)
Leaves, yard waste

Drain Assocaited Algae:

Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**
Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis**
Fecal Coliform_____ (MPN) E.Coli_____ (MPN)
Enterococcus_____ (MPN) Total Coliform_____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations Dead Rats on opposite side

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.059 W
33° 52.686 N

Site ID: 11

Date/Time: Oct 31, 03 @ 1605

Weather Information:

Field Crew: L. Carlson / A. Mastin

Light Conditions: Sunny / Overcast / Partly Cloudy
Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: 64+29 – 66'
Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other RCP

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 300 (mL) - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time 1 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	2" / 12"	3. Velocity _____
4. Flow 0.06 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 20	
Odor	Chemical	Sewage	Rotten Eggs	None/Other
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other
Biology	Mosquitos	Algae	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
___% Organic (food)
30 %Plastics (cups, straws, bags, wrappers, bottles, junk)
5 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)
yard waste

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
___% film algae
100 % turf algae
___%macroalgae

Other Observations:
Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: ND
Evidence of dumping: yes / no

*Field Screening
Water Temp (°C) 21.7
pH (pH units) 8.76
Conductivity 1280 mS / µS (Circle appropriate units)

*Laboratory Analysis
Fecal Coliform 8,700 (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No
Bottle ID#'s 11 _____ _____

Comments
Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.069 W
33° 52.684 N

Site ID: 12

Date/Time: Oct 6 03 16:08

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: (Sunny) Overcast Partly Cloudy
Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Under bridge, North of Sitell
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other RCP

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 300 (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time <1 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	2in 2 1/4 1/4" deep	3. Velocity _____
4. Flow 0.11 ft3/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no	2 Roll#/Pic# 21/2-6867	Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other _____
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	Clear	(Cloudy)		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other foam where it meets the channel
Vegetation	Limited	Extensive		(None)/Other _____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other _____

Trash In Vicinity of Drain (Circle):
0. None
(1.) Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
25 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)
Yard Waste

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
(5.) > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening
Water Temp (°C) 21.6
pH (pH units) 8.29
Conductivity 837 mS / (uS) (Circle appropriate units)

*Laboratory Analysis
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#: 12 _____ _____

Comments Observations
Grass growing in water

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: ~~33°~~ 118° 19.267 W
33° 52.172 N

Site ID: 13

Date/Time: Oct 1, 03 / 0829

Weather Information:

Field Crew: C. Carlson / A. Martin

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: **Location:** In Channel

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other_____

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - (ft) - in) ~~90~~ 11	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - (ft) - in) 1	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - (ft) - in / sec) 2.12		3. Velocity _____
4. Flow 18.67 ft³/sec	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 23 (66)	
Odor	Chemical	Sewage	Rotten Eggs	(None) / Other_____
Color	Greyish	(Greenish)	Browish	None/Other_____
Clarity	Clear	(Cloudy)		Other_____
Floatables	Oily / Rainbow	(Trash)	Bubbles	None/Other (leaves)
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
(1.) Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires) Yard waste

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
(4.) 50-75%
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type: long grassy algae
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: NB
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 26.9
pH (pH units) 10.52
Conductivity 557 mS / (uS) (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 13 _____ _____

Comments Observations Note High pH

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: _____ W
_____ N

Site ID: 14

Date/Time: Oct 1, 03 1631

Field Crew: L. Carlson / A. Martin

Weather Information:

Light Conditions: Sunny | Overcast | Partly Cloudy

Last Rain: > 72 hours | < 72 hours | < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** In Channel, Drop for Sample 13

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other _____

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	**Photo Taken:** yes / no	Roll#/Pic# _____		
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 14 _____ _____

Comments
Observations _____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 19.609 W
33.52.798 N

Site ID: 15

Date/Time: Oct 8 03 1667 / 1657

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny | Overcast | Partly Cloudy
Last Rain: > 72 hours | < 72 hours | < 3 hours

Precipitation: > 0.1" | < 0.1"

Site Description: **Location:** DC N. of Crenshaw
Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other Box Culvert

Flow Estimation: Flow Yes / No / Ponded / Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)
1. Width (cm - ft - in) 1.5
2. Depth (cm - ft - in) _____
3. Velocity (cm / ft / in / sec) 61
4. Flow 13.5 ft³/sec

10 ft / 61 sec

***See formula on back

Filling a Bottle
1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

Area X Velocity (pipe)
1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** yes / no		Roll#/Pic# 24	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____ Birds, insects

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
20 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)
Yard waste

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: yes / no

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes / no
Snails: yes / no
Birds: yes / no pidgeon
Other: Worm
Number of homeless: 0
Evidence of dumping: yes / no

***Field Screening**
Water Temp (°C) 20.8
pH (pH units) 8.44
Conductivity 1475 mS / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 15 _____ _____

Comments Observations Grass growing in flow 2 Racoons downstream on cement - out of water.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.818 W
33° 52.838 N

Site ID: 16

Date/Time: Oct 4 03 1711

Field Crew: L. Caston A. Martin

Weather Information:

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: 683423 - 75' DC N. of Crenshaw

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other RCP

Flow Estimation: Flow Yes / No / (Ponded/Trickle)

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow [ ]

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 25	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

leaves

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: _____
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)

pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

lb Samples taken Yes / (No) **Bottle ID#'s** _____ _____ _____

Comments Observations _____

_____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.870 W
33° 52.872 N

Site ID: 18

Date/Time: Oct 1, 03 1717

Weather Information:

Field Crew: L. Carlson / A. Mastin

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: In channel Before tunnel

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in) 11'
2. .9' Depth (cm - ft - in) 0.9' 11"
3. Velocity (cm - ft - in / sec) 1.71
4. Flow 15.2 ft³/sec

***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 26	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other
Color	Greyish	Greenish	(Browish)	None/Other
Clarity	Clear	(Cloudy)		Other
Floatables	Oily / Rainbow	(Trash)	Bubbles	None/Other
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. (Light (<5))
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
(100)% Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes / (no))

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening

Water Temp (°C) 24.9
pH (pH units) 10.34
Conductivity 571 mS / (uS) (Circle appropriate units)

*Laboratory Analysis

Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s 18 _____ _____

Comments Observations

Flow Where last Site 18 taken. This Sample taken upstream of flow, Grass growing downstream, from RCP

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 20.102 W / 33° 53.229 N **Site ID:** 23

Date/Time: Oct 1, 03 1732 **Field Crew:** L. Carlson / A. Mastor

Weather Information:

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** In channel, where channel deepens, below wide part.

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 10.5	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 10	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) 2.44		3. Velocity _____
4. Flow 18.4 CFS	***See formula on back	***See formula on back

Visuals:

Photo Taken:	yes / no	Roll#/Pic# 26		**Draw sample location if no photo:**
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other
Biology	Mosquitos	Algae	Snails / Fish	None/Other

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no) some long floating

Main algae type:

____% film algae much on
____% turf algae bottom
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**

Water Temp (°C) 23.4 Conductivity 74.1 mS / uS (Circle appropriate units)

pH (pH units) 10.08

***Laboratory Analysis**

Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 23 _____ _____

Comments Observations Site 25

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: _____ W
_____ N

Site ID: 22

Date/Time: Oct 4, 2003 1734

Field Crew: L. Carlson / A. Mastin

Weather Information:

Light Conditions: Sunny Overcast Partly Cloudy
Last Rain: > 72 hours < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** Drop for 23 in channel
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other_____

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening** Water Temp (°C)_____ Conductivity_____ mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** 22 _____ _____

Comments
Observations _____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: _____ W
_____ N

Site ID: 21

Date/Time: Oct 1, 03 17:37

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny | Overcast | Partly Cloudy

Last Rain: > 72 hours | < 72 hours | < 3 hours

Precipitation: > 0.1" | < 0.1"

Site Description: **Location:** Blank for Sample 23

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other_____

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow [ ]	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**
Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____

***Laboratory Analysis**
Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 21 _____ _____

Comments Observations _____

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 20.103 W
33° 53.238 N

Site ID: ~~DC~~ 24

Date/Time: Oct 1, 2003 1740

Field Crew: L. Carlson / A. Mastin

Weather Information:

Light Conditions: ~~Sunny~~ Partly Cloudy

Last Rain: > 72 hours | < 72 hours | < 3 hours

Precipitation: > 0.1" | < 0.1"

Site Description: Location: DC – Ea Westside – South Culvert

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other Box Culvert

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow 0.50 ft³/sec

Filling a Bottle

1. Volume 900 (mL) - L - oz)
2. Time 1.87 (sec)

5'11 / 12'54

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** yes / no		Roll#/Pic# 27		**Draw sample location if no photo:**
Odor	Chemical	(Sewage)	Rotten Eggs	None/Other Musty	
Color	Greyish	Greenish	(Brownish) / yellowish	None/Other_____	
Clarity	(Clear)	Cloudy		Other_____	
Floatables	Oily / Rainbow	(Trash)	Bubbles	None/Other_____	
Vegetation	Limited	Extensive		(None)/Other_____	
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other_____	

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
25 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no)

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: _____
Evidence of dumping: yes (no)

***Field Screening**

Water Temp (°C) 21.9
pH (pH units) 8.91
Conductivity 1393 mS / (uS) (Circle appropriate units)

***Laboratory Analysis**

Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken (Yes) / No Bottle ID#'s 24 _____ _____

Comments
Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

PS Coordinates: 118° 20.290 W
33° 55.724 N

Site ID: S1

Date/Time: Oct 1 03 1825

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny / Overcast / (Partly Cloudy)

Last Rain: (>72 hours) / <72 hours / <3 hours

Precipitation: >0.1" / <0.1"

Site Description: **Location:** Headwaters - West side of basin

Earthen Drainage / (Concrete Channel) / Outfall / Manhole / Catchbasin / Other ____

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 7'2" 7.166	1.	Volume ____ (mL - L - oz)	1.	Pipe Diameter ____ (ft/in)
2.	Depth (cm - ft - (in)) 1.5" .125	2.	Time ____ (sec)	2.	Depth ____
3.	Velocity (cm - ft - in / sec) .322 10ft/31s			3.	Velocity ____
4.	Flow 0.25 ft³/sec		***See formula on back		***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 28	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other ~~Musty~~
Color	Greyish	Greenish	Browish	(None)/Other ____
Clarity	(Clear)	Cloudy		Other ____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other ____
Vegetation	Limited	Extensive		(None)/Other ____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other ____

leaves

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / (no))

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: ____
Number of homeless: ~~1~~ 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 22.5 Conductivity 7.31 mS / uS (Circle appropriate units)
pH (pH units) 8.41

***Laboratory Analysis** Fecal Coliform ____ (MPN) E:Coli ____ (MPN)
Enterococcus ____ (MPN) Total Coliform ____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** 51 ____ ____

Comments
Observations

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 20.257 W
33° 55.659 N

Site ID: 50

Date/Time: Oct 1, 2003 ~~1838~~ 1836

Weather Information:

Field Crew: L. Carlson / A. Martin

Light Conditions: Sunny / Overcast / Partly Cloudy
Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Location: box Culvert - where water from 2 culverts mix

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. 23.6 Width (cm - ft - in) 23' 8"
2. .25' Depth (cm - ft - in) 3
3. 1.47 Velocity (cm - ft - in / sec) 1.47
4. Flow 7.59 ft³/sec

***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 29	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	(Trash)	Bubbles	None/Other
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
40% Plastics (cups, straws, bags, wrappers, bottles, junk)
10% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**

Water Temp (°C) 21.8
pH (pH units) 8.27
Conductivity 701 mS / (uS) (Circle appropriate units)

***Laboratory Analysis**

Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s 50 _____ _____

Comments Observations

Sample composited / put into bag in 2 or 3 grabs
Flow increased at end of dupe samp.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: _____ W
_____ N

Site ID: 16 48

Date/Time: Oct 4, 2023 1648

Weather Information:

Field Crew: L. Carlson / A. Martz

Light Conditions: Sunny Overcast Partly Cloudy

Last Rain: > 72 hours < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Dupe for 50

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other_____

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____		3. Velocity _____
4. Flow	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# _____	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening: Water Temp (°C)_____ Conductivity_____mS / uS (Circle appropriate units)
pH (pH units)_____

*Laboratory Analysis: Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments Observations: Dupe for Sng 50.

DOMINGUEZ CHANNEL BACTERIA TMDL STUDY

Prepared For:

Southern California Coastal Water Research Project
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And
Los Angeles Regional Water Quality Control Board
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Los Angeles, California 90013

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DOMINGUEZ CHANNEL
BACTERIA TMDL STUDY

Prepared For:

Southern California Coastal Water Research Project
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And
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Los Angeles, California 90013

Prepared By:

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July 2002

INTRODUCTION

During June 2002, MEC Analytical Systems (MEC) conducted bacteriological sampling along the Dominguez Channel in support of the Los Angeles County Regional Water Quality Control Board's (RWQCB) Total Maximum Daily Load (TMDL) program.

Dominguez Channel (Hydrologic Unit 405.12) is a large watershed in South Los Angeles County and covers approximately 110 square miles. Ninety-six percent of its total area is developed and the predominant land use within the watershed is transportation. The Dominguez Channel is on the 303d List of Impaired Water Bodies for high coliform bacteria counts. As a result of this the RWQCB is developing a TMDL for coliform bacteria for Dominguez Channel (above Vermont) and Dominguez Channel Estuary (below Vermont) (LA County 2002).

METHODS

On June 10, 2002 a field reconnaissance survey was conducted along the Dominguez Channel. The purpose of the field reconnaissance was to identify and locate flowing storm drains, identify site concerns and constraints, and plan sample collection activities. MEC scientists, along with regional board personnel, surveyed the channel from it flows above ground in the City of Hawthorne, downstream to its terminus at the East Basin. Crews were equipped with maps, digital cameras, and GPS units to log potential sampling locations.

Sample collection was conducted on June 17 and 18, 2002 using a team of two MEC scientists with regional board personnel present. Samples were collected from the channel center and from side channels and pipes.

The Dominguez Channel has two major sections: an upstream section that consists of a concrete channel (above Vermont) and a downstream section that is an estuary (below Vermont). There were a total of fifty-one samples collected over the two-day period. Fifteen samples were collected along the downstream estuary section of the channel and thirty-six samples were collected along the upstream section.

Samples collected along the downstream estuary section (below Vermont) included nine samples within the Dominguez Channel, two samples in the Torrance Lateral, and the remaining four samples from outfalls and/or laterals flowing into the channel. The samples taken from within the channel consisted of three cross-sectional areas, taken at three separate bridges. The cross-sections consisted of samples collected from both sides of the channel and from the channel center.

Samples collected along the upstream section of Dominguez Channel (above Vermont) included six samples collected from the channel center and thirty samples collected from side channels or pipes.

Field observations and measurements were recorded on field logsheets and are included in Appendix B. Observations included weather conditions, physical description of each site (location, type and size of pipe, GPS coordinates), visual water quality, flow estimation, field

measurements, and comments. For conveyances with low flows, flow was estimated by timing how long it took to fill a container of known volume. If this method was not an option, flow was estimated using the area velocity method. Flow within the channel was measured using a Marsh McBirney Flo-Mate Model 2000 portable flow meter.

Field crews documented site visits with photographs. Field crews were equipped with digital cameras and a white board was set up near each sampling location to visually document site ID, sample time and date, and conveyance type and location. A photo of each sampling location was taken and is included in Appendix A.

Field measurements were taken for pH, temperature and conductivity using an Oakton CON10 pH/conductivity/temperature meter. All field instruments were calibrated before each sampling event. If sufficient flow was present, measurements were taken from the horizontal and vertical center of flow. If low flow conditions existed, a clean HDPE sample container was used to collect the sample for measurement.

During all sampling operations extreme care was taken to minimize exposure of the sample to human, atmospheric, and other sources of contamination. In order to accomplish this, field crews employed clean sampling techniques for collecting bacteriological samples. Field crews were also careful when planning the sampling route. Sampling vehicles were driven in the upstream direction so that vehicles and sampling personnel did not disturb the channel prior to samples being taken.

Bacteriological samples were collected using pre-sterilized, EPA approved, Whirl-pac™ sampling bags containing sodium thio-sulfate. When sampling, sterile, powder-free latex gloves were worn at all times and were changed between each site. In addition, field crews frequently cleaned their hands using an antibacterial hand wash. Upon sampling, bags were closed tightly and kept in separate, sealed, zip-lock bags. Bags were placed in coolers on ice and samples were delivered to the laboratory at 4° C. In addition to keeping samples cool, sample containers were also kept in coolers to minimize exposure to sunlight. Chains of custody were filled out completely and accurately and were signed by the sampling and receiving technicians. To ensure holding times were met, technicians delivered samples to the laboratory throughout the day while field crews continued sampling.

All sample analyses were initiated within sample holding times for total coliform, fecal coliform, *E. coli*, and *Enterococcus* at MEC's microbiology laboratory in Carlsbad, California. Laboratory methods for each parameter are listed in Table 1.

RESULTS

Total coliform levels ranged from 42 MPN/100mL at Site 39 to 5,172,000 MPN/100mL at Site 50. Fecal coliform levels ranged from 45 CFU/100mL at Site 39 to 4,550,000 CFU/100mL at Site 50. *E. coli* levels ranged from 5 MPN/100mL at Site 6 to 262,000 MPN/100mL at Site 3. Enterococci levels ranged from 47 MPN/100mL at Site 43 to 410,600 MPN/100mL at Site 3. Table 1 presents the reported bacteria levels for each site listed from upstream to downstream and the type of laboratory tests performed.

Table 1: Bacterial Sampling Results

(Blue indicates in-channel samples; red indicates levels of potential concern)

		Lab Method:	Colilert 18	Membrane Filtration	Colilert 18	Enterolert
Client Sample ID	Miles Down	Sample Date	Total Coliform MPN/100 mL	Fecal Coliform CFU/100 mL	*E. coli* MPN/100 mL	Enterococci MPN/100 mL
51	0.00	6/18/2002	104,620	16,000	1,674	6,488
50	0.06	6/18/2002	5,172,000	4,550,000	7,701	21,870
48	0.27	6/18/2002	1,259	205	9	186
49	0.27	6/18/2002	1,300	150	29	86
47	0.34	6/18/2002	155,310	13,000	488	7,270
46	1.18	6/18/2002	64,880	8,900	866	3,873
45	1.65	6/18/2002	1,607	270	58	291
44	1.65	6/18/2002	10,462	110	13	6,867
43	1.90	6/18/2002	520	220	16	47
42	2.16	6/18/2002	54,750	1,950	365	1,597
41	2.81	6/18/2002	1,401,000	235,000	22,820	5,475
24	3.61	6/17/2002	22,240	2,250	488	823
25	3.61	6/17/2002	129,970	6,000	1,300	2,382
23	3.61	6/17/2002	6,488	435	120	365
22	3.66	6/17/2002	141,360	17,500	4,280	4,884
21	3.77	6/17/2002	57,940	2,600	579	1,211
20	3.90	6/17/2002	9,208	3,350	1,576	613
19	4.02	6/17/2002	6,867	1,150	980	770
18	4.07	6/17/2002	8,164	380	146	248
17	4.08	6/17/2002	14,210	1,900	50	291
16	4.14	6/17/2002	613,100	25,500	4,352	5,012
15	4.36	6/17/2002	261,300	4,700	291	3,654
14	4.38	6/17/2002	41,060	1,650	104	980
13	4.69	6/17/2002	27,550	1,200	980	461
11	4.90	6/17/2002	22,820	305	37	488
12	4.90	6/17/2002	43,520	4,900	365	816
10	5.15	6/17/2002	290,900	2,950	517	5,172
9	5.21	6/17/2002	579,400	155	128	6,131
7	5.67	6/17/2002	38,730	5,100	548	1,300
8	5.67	6/17/2002	51,720	1,050	770	1,081
6	6.24	6/17/2002	980	100	5	96
5	6.28	6/17/2002	111,990	63,000	1,904	1,918
4	6.47	6/17/2002	920,800	1,400	980	3,448
3	6.66	6/17/2002	1,106,000	375,000	262,000	410,600
2	6.75	6/17/2002	17,820	525	291	233
1	6.75	6/17/2002	48,840	2,350	1,236	650
29	7.51	6/18/2002	1,720,000	53,500	38,730	218
26	7.51	6/18/2002	43,520	3,000	1,076	259
27	7.51	6/18/2002	88,000	2,300	1,785	546
28	7.51	6/18/2002	129,970	5,750	3,255	1,120
30	8.75	6/18/2002	15,530	2,150	435	1,203
31	8.98	6/18/2002	71,500	535	59	345
32	9.32	6/18/2002	224,700	3,450	454	1,607

		Lab Method:	Colilert 18	Membrane Filtration	Colilert 18	Enterolert
Client Sample ID	Miles Down	Sample Date	Total Coliform MPN/100 mL	Fecal Coliform CFU/100 mL	*E. coli* MPN/100 mL	Enterococci MPN/100 mL
33	9.32	6/18/2002	172,700	23,000	550	2,098
37	10.83	6/18/2002	1,990	180	86	308
34	11.08	6/18/2002	6,830	590	475	836
35	11.08	6/18/2002	2,909	530	411	457
36	11.08	6/18/2002	1,120	245	205	1,203
38	14.95	6/18/2002	148	110	58	291
39	14.95	6/18/2002	42	45	40	186
40	14.95	6/18/2002	461	265	137	326

There were a total of fifty-one sampling locations. Figure 1 provides a visual display of all of the sampling locations. The two sampling points located where the channel daylights are labeled as headwater stations and are indicated by the color purple. Samples taken directly from Dominguez Channel are labeled channel stations and are indicated by the color green. All conveyances that emptied into Dominguez Channel are labeled outfalls and are indicated by the color red. In some areas the locations of the stations on the map have been offset slightly in order to differentiate between sampling points that were in close proximity to one another.

Figures 2 through 5 present the bacterial sampling results for total coliform (MPN/100mL), fecal coliform (CFU/100mL), *Enterococcus* (MPN/100mL), and *E. coli* (MPN/100mL). The bacteria levels are displayed spatially by sampling location and color-coded by intensity. Results falling in the lower ranges are indicated by blue to green dots. Results falling in the mid-range of the scale are indicated by white dots. Results at the higher end of the scale are indicated by pink to red dots. Figure 6 presents the ratio of fecal coliform to *Enterococcus* bacteria. The significance of this ratio is discussed in the next section.

DISCUSSION

Areas of Potential Concern

Sites that had elevated bacteria levels, in comparison to other sites, are highlighted in red in Table 1.

Sites 50 and 51 are two large double box-culverts with elevated levels of bacteria. The levels at Site 50 are indicative of sewage contamination entering the channel. Site 51 is just upstream of Site 50, but both are located where the channel daylights in the City of Hawthorne. This is the most upstream point that is accessible in the Dominguez Channel. The channel goes underground at Sites 50 and 51 (see Appendix A for individual site photos).

Sites 48 and 49 are separate channels within the same double box culvert on the west side of Dominguez Channel. Field crews noted a strong chlorine smell emanating from Site 49. Both sites had significant flow, but no chlorine odor was noted form Site 48.

Sites 46 and 47 are laterals with elevated bacteria levels. Although flow from Sites 46 and especially 47 may have some effect on dilution in the sample taken at Site 45, the presence of

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118°17.430' W
33°52.255' N

Site ID: 1 Center ~~(west)~~ Channel

Date/Time: 17 June 2002 / 0800hr

Weather Information:

Field Crew: L. Nguyen L. Carlson C. Warn J. Erickson

Light Conditions: (Sunny) Light Rain Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours Precipitation: > 0.1" < 0.1"

Site Description: Location: Start of Estuary near Artesia & Vermont Park & ride us of Lateral

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - (in)) 150 = 12.5ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - ft - (in)) 12.5 = 1.04ft	2. Time _____ (sec)		2. Depth	_____
3.	Velocity (cm (ft) in / sec) 0.9			3. Velocity	_____
4.	Flow 11.7 ft^3/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken: (yes) no	Roll#/Pic# 1/54		Draw sample location if no photo:
Odor	Chemical	Sewage	(Rotten Eggs)	None/Other
Color	Greyish	Greenish	(Browish)	None/Other
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/(Other) Suspended Solids
Vegetation	Limited	(Extensive)		None/Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other

Trash In Vicinity of Drain (Circle):

0. None
1. (Light (<5))
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

___% Organic (food)
95 %Plastics (cups, straws, bags, wrappers, bottles, junk)
5 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes) / no)

Main algae type:
___% film algae
100 % turf algae Filamentous in channel
___%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: (yes) no
Other: _____
Number of homeless: 0
Evidence of dumping (yes) no

*Field Screening: Water Temp (°C) 21.5 Conductivity 838 mS / uS (Circle appropriate units)
pH (pH units) 7.10

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118°17.416 W
33 52.271 N

Site ID: 2 (Center)

Date/Time: 06/702/08: 8:12

Weather Information:

Field Crew: L. [illegible] L. Carlson C. Warn J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy
Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: Location: East Lateral at Start of Estuary
Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes (No)

Area X Velocity (creek / channel)
1. Width (cm - ft - (in)) 19 = 1.58 ft
2. Depth (cm - ft - (in)) 2 1/8 = .18 Ft
3. Velocity (cm - (ft) - in / sec) 0.03
4. Flow .009 ft³/s

Filling a Bottle
1. Volume 600 (ml) - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)
1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 1/53	
Odor	Chemical	Sewage	(Rotten Eggs)	None/Other
Color	Greyish	Greenish	Browish Yellowish	None/Other
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	(Trash)	(Bubbles)	None/Other
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	Algae	Snails / Fish	None/Other tadpoles? / Larvi

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
(1.) Light (<5)
(2.) Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
___% Organic (food)
20 %Plastics (cups, straws, bags, wrappers, bottles, junk)
80 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
(5.) > 75%

Algae outside of flow?: (yes / no)

Main algae type:
100 % film algae
___% turf algae
___%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: larvi / tadpoles
Number of homeless: NO
Evidence of dumping: (yes) no

***Field Screening** Water Temp (°C) 22.2 Conductivity 870 mS / (uS) (Circle appropriate units)
pH (pH units) 7.23

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations White Stains on concrete, white stains on algae.

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 17.523 W
33.52.268 N

Site ID: 3/

Date/Time: 06 17 02 08:40

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Waca / B. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy
Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: Location 0.1 N. of Estuary Start South/west side From trickle on wall
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other 36" concrete pipe on side of channel

Flow Estimation: Flow Yes / No / Ponded / (Trickle) **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle = .018 ft³	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 500 (ml) - L - oz)	1. Pipe Diameter 36 (ft (in))
2. Depth (cm - ft - in)_____	2. Time 14 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	~20% of flow.	3. Velocity _____
4. Flow .006 ft³/s	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 1/52	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	None/Other Yellow
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
(2) Moderate (6-10)
3. High (11-25)
(4) Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
100 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
(5.) > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: ~20
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) ~~14.57~~ 23.9 Conductivity 1457 mS (uS) (Circle appropriate units)
pH (pH units) 7.37

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118°17.719' W
33°52.270' N

Site ID: 4

Date/Time: 06/17/02 8:50am

Field Crew: L Nguyen / L. Carlson / C. Weber / J. Erickson

Weather Information:

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: Location: 0.2 N of Estuary Start Southwest side - from truck on walk

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other 36" concrete pipe

Flow Estimation: Flow (Yes) / No / Ponded / Trickle TNO 6/17/02 **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle = .018 ft³	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 500 (mL) L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in)_____	2. Time 1.01' (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	~ 50% flow	3. Velocity _____
4. Flow ~~.0281 ft³/s~~ 5.9e-4 ft³/s	***See formula on back = .0006 ft³/s	***See formula on back

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 1/51		
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other Yellow
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		~~None~~/Other_____
Biology	Mosquitos	(Algae)	(Snails) / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
25 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: _____
Number of homeless: No
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 25.4°C Conductivity 678 ~~mS~~ / (uS) (Circle appropriate units)
pH (pH units) 7.70

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 17.918 W
33° 52.278 N

Site ID: 5

Date/Time: 06/702 - 09:06

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Wacker / S. Erickson

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: Box Culvert, NE Side of Channel

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other Box Culvert

Flow Estimation: Flow Yes / No / Ponded / Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in) 167 = 13.92 ft
2. Depth (cm - ft - in) 11 / full = ~~.92 ft~~ 1/4 inches
3. Velocity (cm / ft / in / sec) depth ~~2~~ 3sec — 1 ft / 3sec
4. Flow .09 ft³/s

***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 1/50 (Sh??)	
Odor	Chemical	Sewage	Rotten Eggs	None / Other_____
Color	Greyish	Greenish	Browish	None / Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None / Other_____
Vegetation	Limited	Extensive		None / Other_____
Biology	Mosquites	Algae	Snails / Fish	None / Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

50 % Organic ~~(food)~~ leaves
50 % Plastics (cups, straws, bags, wrappers, bottles, junk)
____ % Recyclables-not plastic (paper, glass bottles, metal)
____ % Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: yes / no

Main algae type:
____ % film algae
60 % turf algae
____ % macroalgae

Other Observations:

Fish: yes / no
Snails: yes / no Nearby in channel
Birds: yes / no Downstream from Sample
Other: _____
Number of homeless: NO
Evidence of dumping: yes / no

*Field Screening: Water Temp (°C) 23.5 Conductivity 677 mS / uS (Circle appropriate units)
pH (pH units) 7.82

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken: Yes / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 17.962 W
33° 52.273 N

Site ID: 6

Date/Time: 061702 0930

Field Crew: T. Nguyen / K. Carlson / C. Wasa / J. Erickson

Weather Information:

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** SW Side of Dominguez Channel / Normandy bridge

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other Drain

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow .015 ft³/s

Filling a Bottle = .04 ft3

1. Volume 1 (mL (L) oz)
2. Time 3 (sec) : .01 ft³/s

80% flow

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter 2.6 (ft (in))
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 4/5849	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	(Snails) / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no)

Main algae type:

____% film algae
~~100~~ % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: No
Evidence of dumping: yes (no)

***Field Screening**

Water Temp (°C) 25.9 Conductivity 476 (mS) / uS) (Circle appropriate units)

pH (pH units) 8.01

***Laboratory Analysis**

Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations Horses nearby - not necessarily influencing channel

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 18.540 W
33° 52.269 N

Site ID: 7

Date/Time: 061702 / 09:45

Weather Information:

Field Crew: T Nguyen / L Carlson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: **Location:** S. W. side of channel ~~8th~~ at Western.

Earthen Drainage | Concrete Channel | Outfall | (Manhole) | Catchbasin | Other RCP-72"

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

	Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1.	Width (cm - ft - (in)) 12 = 1 ft	1. Volume _____ (mL - L - oz)	1. Pipe Diameter 72 (ft/(in))
2.	Depth (cm - ft - (in)) 1/2 = .04 ft	2. Time _____ (sec)	2. Depth _____
3.	Velocity (cm - (ft) - in / (sec)) 2		3. Velocity _____
4.	Flow .08 ft3/s	***See formula on back	***See formula on back

Visuals:

	Photo Taken: (yes) / no	Roll#/Pic# 1/48	
Odor	Chemical	Sewage	Rotten Eggs	None/Other _____
Color	Greyish	Greenish	Browish	None/Other Clear
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other _____
Vegetation	Limited	Extensive		(None)/Other _____
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
(4) Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
(5.) > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: (yes) no — downstream
Other: NO
Number of homeless: NO
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 22.6 Conductivity 1661 mS / (uS) (Circle appropriate units)
pH (pH units) 8.3

***Laboratory Analysis**
Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 18.539 W
33° 52.281 N

Site ID: 8

Date/Time: 061702 / 10:00

Weather Information:

Field Crew: T.Nguyen / L. Carlson / C. Ward / B. Eviston

Light Conditions: (Sunny) / Overcast / Partly Cloudy

Last Rain: (> 72 hours) / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: **Location:** N.E. Side of Channel / at western

Earthen Drainage / Concrete Channel / Outfall / (Manhole) / pipe / Catchbasin / Other 42" pipe

Flow Estimation: Flow (Yes) / No / Ponded / (Trickle)

Evidence of overland flow near sampling location?: Yes / (No)

	Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - (in))	16 = 1.33 ft	1. Volume	_____ (mL - L - oz)	1. Pipe Diameter	42 (ft/(in))
2.	Depth (cm - ft (in))	3/4 = .06 ft	2. Time	_____ (sec)	2. Depth	_____
3.	Velocity (cm - (ft) - in / sec)	4			3. Velocity	_____
4.	Flow	.32 ft³/s	***See formula on back		***See formula on back	

Visuals:	**Photo Taken:** (yes) / no	Roll#/Pic# 1/47		**Draw sample location if no photo:**
Odor	Chemical / Sewage	Rotten Eggs	(None)/Other	
Color	Greyish / Greenish	Browish	None/Other Clear	
Clarity	(Clear) / Cloudy		Other	
Floatables	Oily / Rainbow / Trash	Bubbles	(None)/Other	
Vegetation	Limited / Extensive		(None)/Other	
Biology	Mosquitos / (Algae)	Snails / Fish	None/Other Ants	

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. (Somewhat Dense (26-50))
5. Dense (>50)

Type: (% of number not total volume of items):
___% Organic (food)
100 %Plastics (cups, straws, bags, wrappers, bottles, junk)
___% Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes / no)

Main algae type:
___% film algae
100 % turf algae
___%macroalgae

Other Observations:
Fish: yes / (no)
Snails: yes / (no)
Birds: yes / (no)
Other: Ants
Number of homeless: 20
Evidence of dumping: yes / (no)

***Field Screening** Water Temp (°C) 26.6 Conductivity 2.90 (mS) / uS (Circle appropriate units)
pH (pH units) 7.97

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 18,764 W
33° 52,587 N

Site ID: 9

Date/Time: 061702 / 1015

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Warn / J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: NE Side D.C.

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other Metal Pipe

Flow Estimation: Flow Yes / No / Ponded / (Trickle)

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)

1. Width (cm - ft - in)
2. Depth (cm - ft - in)
3. Velocity (cm - ft - in / sec)
4. Flow .003 ft³/s

Filling a Bottle = .02 ft³

1. Volume 500 (mL) - L - oz)
2. Time 12 (sec) = .001 ft³/s

50%

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter 24 (ft / in)
2. Depth
3. Velocity

***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1/46	
Odor	Chemical	Sewage	Rotten Eggs	(None) / Other
Color	Greyish	Greenish	(Browish)	None / Other Yellow
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	(None) / Other
Vegetation	Limited	Extensive		(None) / Other
Biology	(Mosquitos larvi)	Algae	Snails / Fish	None / Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. (None)
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____% Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

(0) None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / (no))

Main algae type:

____% film algae
____% turf algae
____% macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other:
Number of homeless: 1
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 28.9 Conductivity 805 mS / (uS) (Circle appropriate units)

pH (pH units) 7.98

*Laboratory Analysis: Fecal Coliform (MPN) E.Coli (MPN)

Enterococcus (MPN) Total Coliform (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s

Comments Observations: Industrial Neighborhood

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 18.80 W
33°52.620 N

Site ID: 10

Date/Time: 061702 10:20

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Waca / D. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy
Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** NE Side of DC at Gramercy
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other RCP

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)
1. ~~.92 ft~~ Width (cm - ft - (in)) 11
2. ~~.13 ft~~ Depth (cm - ft - in) 1/4
3. ~~0 ft~~ Velocity (cm - ft - in / sec) 2sec/3ft . (1.5ft/s.)
4. Flow ~~.08 ft3/s~~ .18ft3/s

***See formula on back

Filling a Bottle
1. Volume _____ (mL - L - oz)
2. Time 2 (sec)

***See formula on back

Area X Velocity (pipe)
1. Pipe Diameter 6.4 (ft (in)) RCP
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 1/45	
(Odor)	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other Slight yellow
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)
25% other

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / (no))

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 20
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 23.1 Conductivity 514 mS / (uS) (Circle appropriate units)
pH (pH units) ~~8.02~~

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.058 W / 33° 52.683 N **Site ID:** 11

Date/Time: 061702 : 10:35

Weather Information: **Field Crew:** L. Nguyen / K. Carlson / C. Waara / S. Erickson

Light Conditions: Sunny > 72 hours | Overcast < 72 hours | Partly Cloudy < 3 hours

Last Rain: **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** NE Side of Channel / Van Ness

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other

Flow Estimation: Flow Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)	Filling a Bottle .018 ft³	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 500 (mL) - L - oz)	1. Pipe Diameter 66 (ft/in)
2. Depth (cm - ft - in)_____	2. Time 20 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	50%	3. Velocity _____
4. Flow .002 ft³/s	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes / no)		Roll#/Pic# 1/45&47	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish yellow	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other Moth

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
95 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100% turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: Moth
Number of homeless: N
Evidence of dumping: yes no

***Field Screening** Water Temp (°C) 22.4 Conductivity 815 mS uS (Circle appropriate units)
pH (pH units) 7.94

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: ~118° 19.058 W
~33°52.683 N

Site ID: 12

Date/Time: 061702 10:45

Weather Information:

Field Crew: C. Nguyen / L. Carlson K. Van B. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** NE D.C Channel ~~Outfall~~ Under Van Ness

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Pipe (RCP)

Flow Estimation: **Flow** Yes / No / Ponded / (Trickle) **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle = .018 ft³	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 500 (mL - L - oz)	1. Pipe Diameter 8.2 (ft/in)
2. Depth (cm - ft - in)_____	2. Time 10 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	* 50%	3. Velocity _____
4. Flow .003 ft³/s	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1/43	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish Yellow	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	(Snails) Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
75% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
(0) None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / (no))

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: _____
Number of homeless: ~2
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 21.6 Conductivity 732 mS / (µS) (Circle appropriate units)
pH (pH units) 8.03

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations White chemical deposit (calcium?)

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.272' W
33° 52.709' N

Site ID: 13

Date/Time: 06/17/02 1100

Field Crew: Same/See Previous Site

Weather Information:

Light Conditions: Sunny | Overcast | Partly Cloudy

Last Rain: > 72 hours | < 72 hours | < 3 hours

Precipitation: > 0.1" | < 0.1"

Site Description: Location: Before Redondo Beach Blvd. Channel Center

Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel) = 10.17 ft

1. Width (cm - ft - in) 122 inches
2. = .75 ft Depth (cm - ft - in) 9 inches
3. Velocity (cm - ft / in / sec) 1.6 feet/s
4. Flow ~~10.15 ft³/s~~ = 12.20 ft³/s ***See formula on back

Filling a Bottle TN

1. Volume ~~1/300~~ (mL) - L - oz)
2. Time _____ (sec)

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 1/42	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other None
Color	Greyish	Greenish	Browish	None/Other Clear
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other None
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**

Water Temp (°C) 27.5°C Conductivity 654 mS / (µS) (Circle appropriate units)
pH (pH units) 9.22

***Laboratory Analysis**

Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations Trash on the site near drain

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: ~1180 19.579 W
~33°52.777 N

Site ID: 14

Date/Time: 06/02/11:30

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Wacn / J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: NE Side of Dominguez Channel / Crenshaw

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other RCP

Flow Estimation: Flow Yes / No / Ponded / (Trickle)

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow .002 ft3/s

Filling a Bottle .018 ft3

1. Volume 500 (mL - L - oz)
2. Time 18 (sec)

65%

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter 4.5 (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 11 41	
Odor	Chemical	Sewage	Rotten Eggs (None)/Other_____
Color	Greyish	Greenish	Browish Yellow None/Other_____
Clarity	(Clear)	Cloudy	Other_____
Floatables	Oily / Rainbow	Trash	Bubbles None/Other_____
Vegetation	Limited	Extensive	None/Other_____
Biology	Mosquitos	Algae	(Snails) / Fish "Jellyfish" None/Other Ants

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
60 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

____% film algae
10 % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: "Jellyfish!!"
Number of homeless: N
Evidence of dumping: yes (no)

*Field Screening

Water Temp (°C) 24.5 Conductivity 892 mS / (uS) (Circle appropriate units)

pH (pH units) 7.94

*Laboratory Analysis

Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY
(CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME
(FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY
(PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.601' W
33° 52.781' N

Site ID: 15

Date/Time: 06/17/02 (1200)

Weather Information:

Field Crew: _____

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Dominguez Channel - Crenshaw (SW) JW

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other ~~Double~~ box Cover

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel) = 14.75ft

1. Width (cm - ft - in) 177 inches
2. =.02 ft Depth (cm - ft - in) 138 inches 1/2 depth of water
3. =.14 ft Velocity (cm - ft - in / sec) 1 ft / 7 sec
4. Flow .04 ft³/s ***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken:		Roll#/Pic# 1/40	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other 1
Color	Greyish	Greenish	Browish	None/Other Clear
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	(Trash)	Bubbles	None/Other _____
Vegetation	Limited	Extensive		(None)/Other _____
Biology	Mosquitos	Algae	Snails / Fish	None/(Other) Dead plant

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

10 % Organic (food)
30 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
1 % Large items (appliances, cars, tires) 1 Large tire

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening: Water Temp (°C) 22.3°C Conductivity 2.40 (mS) / uS (Circle appropriate units)

pH (pH units) 8.45

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments Observations: Composite Sample

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

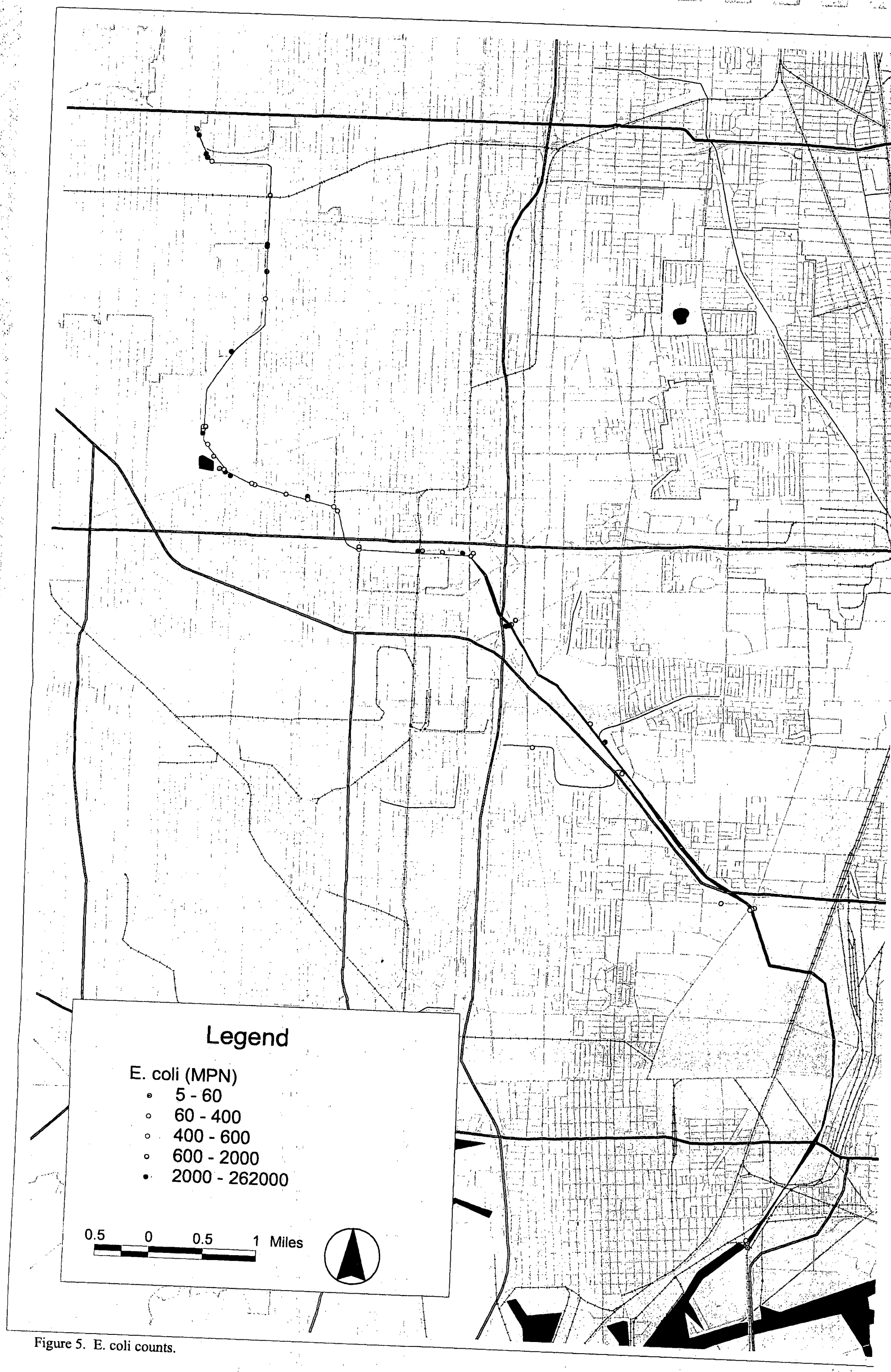

Figure 5. E. coli counts.

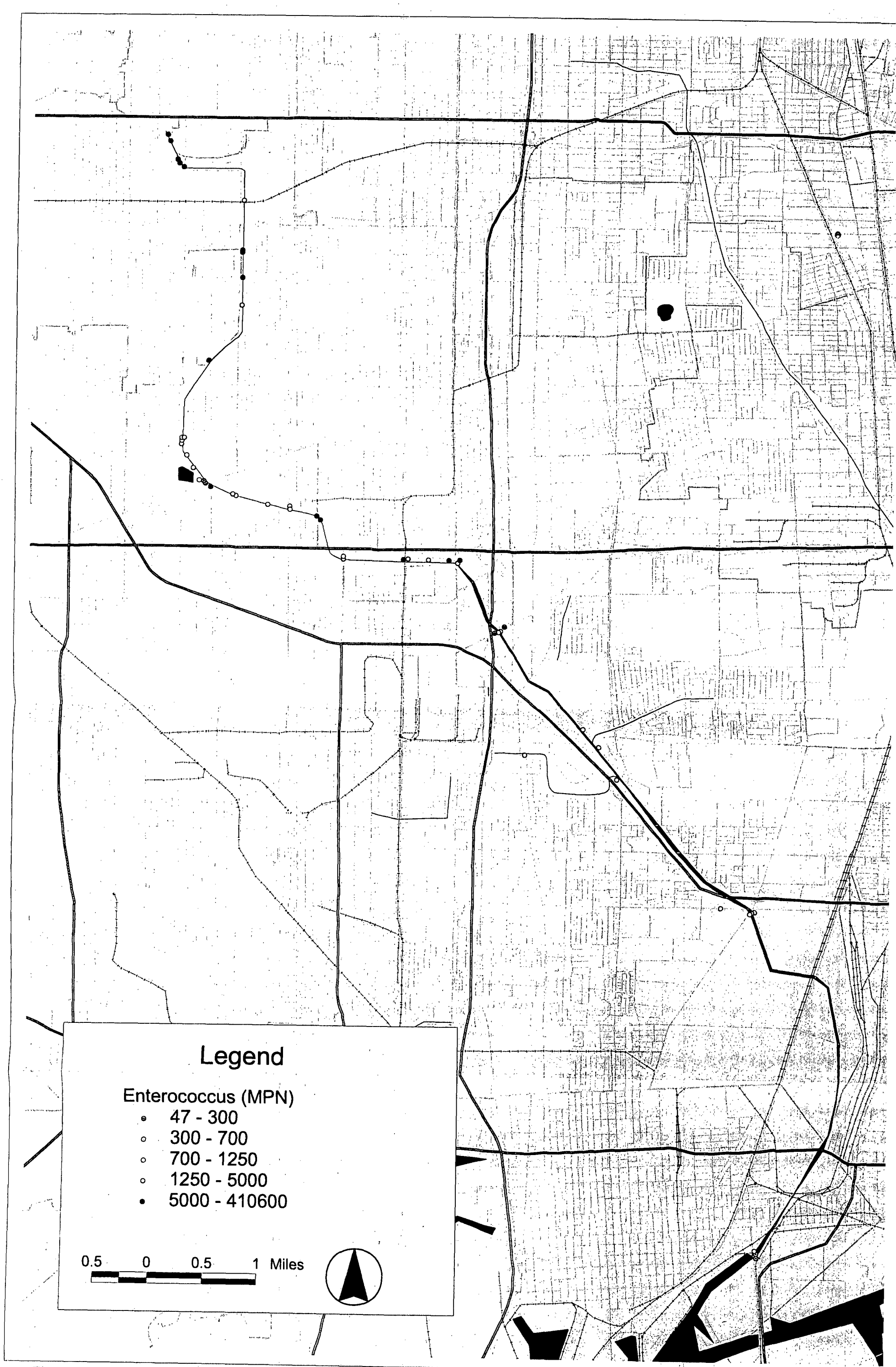

Figure 4. Enterococcus counts.

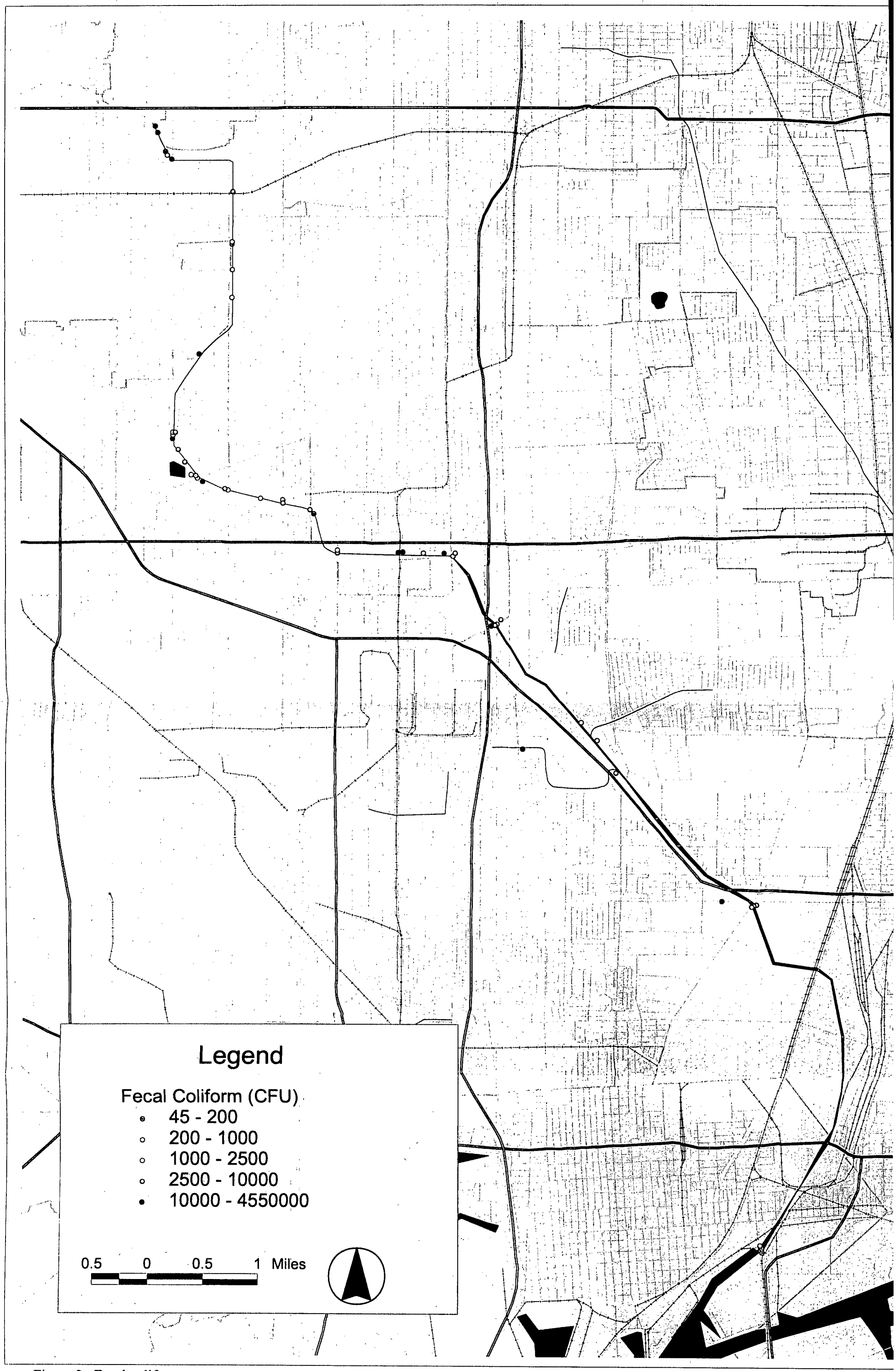

Figure 3. Fecal coliform counts.

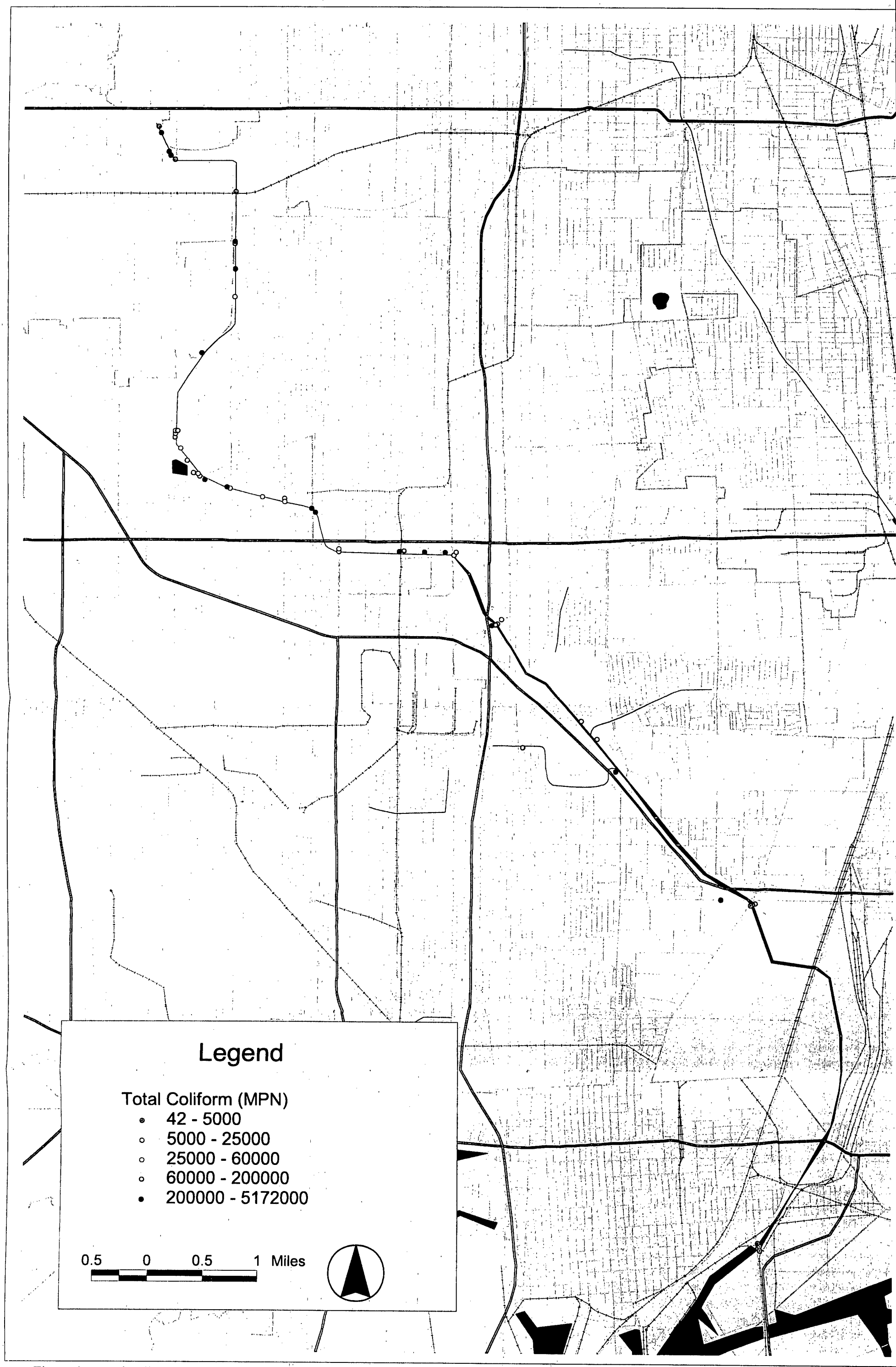

Figure 2. Total coliform counts.

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118°19.821 W
33°52.845 N

Site ID: 16

Date/Time: 061702 / 12:40

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Wara / J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: W. Side Dominguez Channel S. of El Camino College

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other 74" RCP

Flow Estimation: Flow Yes / No / Ponded/(Trickle)

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow .002 ft³/s

Filling a Bottle = .014 ft³

1. Volume 400 (mL) L - oz)
2. Time 20 (sec)

409

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter 7.4 (ft/(in))
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes)/ no		Roll#/Pic# 1/39	
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty
Color	Greyish	Greenish	Browish yellow	None/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos larvae	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. (Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
25 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes)/ no)

Main algae type:

____% film algae
100% turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: Mosquito Larvae
Number of homeless: 2
Evidence of dumping: yes (no)

***Field Screening**

Water Temp (°C) 23.2
pH (pH units) 8.15
Conductivity 1122 mS (uS) (Circle appropriate units)

***Laboratory Analysis**

Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken (Yes) No **Bottle ID#'s** _____ _____ _____

Comments Observations 100 yds S. of tunnel under Campus

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.873 W
33° 52.874 N

Site ID: 17

Date/Time: 061702 / 12:45

Weather Information:

Field Crew: L. Nguyen / C. Carlson / K. Ward / B. Erickson

Light Conditions: Sunny | Overcast | Partly Cloudy
Last Rain: > 72 hours | < 72 hours | < 3 hours
Precipitation: > 0.1" | < 0.1"

Site Description: **Location:** W. Dominguez Channel just before bridge before tunnel
Earthen Drainage | Concrete Channel | Outfall | Manhole | Catchbasin | Other 48" RCP

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 12 = 1 ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter 48 (ft/in)	
2.	Depth (cm - ft - in) ½ = .02 ft	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm - ft / in - sec) 1			3. Velocity _____	
4.	Flow .02 ft³/s	***See formula on back		***See formula on back	

Visuals:	**Photo Taken:** yes / no		Roll#/Pic# 138, 37		**Draw sample location if no photo:**
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty / Sewage	
Color	Greyish	Greenish	Browish	None/Other	
Clarity	Clear	Cloudy		Other	
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other	
Vegetation	Limited	Extensive		None/Other	
Biology	Mosquitos	Algae	Snails / Fish	None/Other Ants	

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: Ants
Number of homeless: 0
Evidence of dumping: yes / no

***Field Screening** Water Temp (°C) 25.3 Conductivity 1150 mS / uS (Circle appropriate units)
pH (pH units) 8.04

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations Rust ~~Color~~ Color under algae

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 19.869' W
33° 52.874' N

Site ID: 18

Date/Time: 06/17/02

Weather Information:

Field Crew: _____

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** 1760 Channel Center - Before the tunnel

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other _____

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel) = 9.83 ft

1. Width (cm - ft - in) 118 inches
2. Depth (cm - ft - in) 7 inches = .58 ft
3. Velocity (cm - ft / in / sec) 1.3 ft/s
4. Flow 7.41 ft³/s

***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	**Photo Taken:** yes / no		Roll#/Pic# 1136	
Odor	Chemical	Sewage	Rotten Eggs	None/Other _____
Color	Greyish	Greenish	Browish	None/Other Clear
Clarity	Clear	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other _____
Vegetation	Limited	Extensive		None/Other _____
Biology	Mosquitos	Algae	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**

Water Temp (°C) 32.9
pH (pH units) 9.73
Conductivity 580 mS / uS (Circle appropriate units)

***Laboratory Analysis**

Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments
Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19.861 W / 33° 52.874 N } N 33° 52.9001 / W 118° 19.930' } estimated GPS Notaf

Site ID: 19

Date/Time: 061702 1310

Weather Information:

Field Crew: L. Cerda / L. Nguyen / C. Wagner / D. Eccles

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: E. Dominguez Channel / 100yds N. of Tunnel entrance

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other RCP

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle .018 ft³	Area X Velocity (pipe)
1. Width (cm - ft - in)_____	1. Volume 500 (mL) L - oz)	1. Pipe Diameter 28 (ft/in)
2. Depth (cm - ft - in)_____	2. Time 9 (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec)_____	909	3. Velocity _____
4. Flow .002 ft³/s	***See formula on back	***See formula on back

Visuals: **Photo Taken:** (yes) / no Roll#/Pic# 1/35

Draw sample location if no photo:

Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	~~Oily~~ / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other_____

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)

50 %Plastics (cups, straws, bags, wrappers, bottles, junk)

25 % Recyclables-not plastic (paper, glass bottles, metal)

____% Large items (appliances, cars, tires)

Tennis Balls

Drain Assocaited Algae:

Algae coverage (circle):

(0.) None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / (no)

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: Graffiti! Graffiti!
Number of homeless: ~~1~~
Evidence of dumping: yes (no)

***Field Screening**

Water Temp (°C) 25.2 Conductivity 1370 mS (uS) (Circle appropriate units)

pH (pH units) 8.24

***Laboratory Analysis**

Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations Rust colored like #18

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: (est) 118° 19.990' W 100yds N. of Sample #2
33° 53.000' N

Site ID: 20

Date/Time: 061702 13:20

Weather Information:

Field Crew: L. Carlson / K. Nguyen / C. Warn / S. Encka

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: 200 yds N. of tunnel entrance, E. side Dominguez channel

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other RCP

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow 9.1 e-4 ft3/s

Filling a Bottle = .018 ft3

1. Volume 500 (mL - L - oz)
2. Time 22 (sec)

90%

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter 2 (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 1/34	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other_____
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
100 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: Graffiti!
Number of homeless: N
Evidence of dumping: yes / no

***Field Screening**

Water Temp (°C) 23.6
pH (pH units) 8.14
Conductivity 1394 mS / uS (Circle appropriate units)

***Laboratory Analysis**

Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations Rust colored stains on cement; Spider webs

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: (est) 118° 20.050' W 300 yds N of tunnel entrance
33° 53.100' N
Site ID: 21
Date/Time: 061702 13:34
Weather Information:
Field Crew: L. Carlson/K. Nguen/C. Worn/J. Snider

Light Conditions: Sunny / Overcast / Partly Cloudy
Last Rain: > 72 hours / < 72 hours / < 3 hours
Precipitation: > 0.1" / < 0.1"

Site Description: Location W. side under tunnel D.C. ~300 yds. north of South entrance.
Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other Box Culvert

Flow Estimation: Flow Yes / No / Ponded / Trickle
Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)
1. = 8 ft Width (cm - ft - in) 96 (4 feet)
2. = .005 ft Depth (cm - ft - in) 1/16
3. Velocity (cm - ft - in / sec) .5
4. Flow .02 ft3/s

Filling a Bottle
1. Volume _____ (mL - L - oz)
2. Time _____ (sec)
***See formula on back

Area X Velocity (pipe)
1. Pipe Diameter _____ (ft/in)
2. Depth 96
3. Velocity _____
***See formula on back

Visuals:	Photo Taken:		Roll#/Pic# 1/33		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty/Grass	
Color	Greyish	Greenish	Browish Yellow	None/Other	
Clarity	Clear	Cloudy		Other	
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other	
Vegetation	Limited	Extensive		None/Other	
Biology	Mosquitos	Algae	Snails / Fish	None/Other	

Photo Taken: yes / no

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: ~20
Evidence of dumping: yes / no

*Field Screening
Water Temp (°C) 21.6
pH (pH units) 8.36
Conductivity 7.38 2.25 (mS / uS) (Circle appropriate units)

*Laboratory Analysis
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken: Yes / No
Bottle ID#'s _____ _____ _____

Comments Observations: Grass Cuttings washed out

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz = 3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118°.20,103 W
33°.53,188 N

Site ID: 22

Date/Time: 06/702 1338 14:05

Weather Information:

Field Crew L. Nguyen / L. Carlson / C. Ware / J. Erickson

Light Conditions: Sunny (> 72 hours) Overcast (< 72 hours) Partly Cloudy (< 3 hours)

Last Rain: **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** W. Dominguez Channel East tunnel under E. Carson College.
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Box Culvert

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)
1. .92 ft Width (cm - ft - in) 108 11
2. .38 ft Depth (cm - ft - in) 78 3/8"
3. .13 ft Velocity (cm - ft - in / sec) 1/8
4. Flow .05 ft3/s

Filling a Bottle
1. Volume _____ (mL - L - oz)
2. Time _____ (sec)
***See formula on back

Area X Velocity (pipe)
1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____
***See formula on back

Visuals:	**Photo Taken:** (yes / no)		Roll#/Pic# 132	
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty Sewage
Color	Greyish	Greenish	Browish Yellow	None/Other _____
Clarity	Clear	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other _____
Vegetation	Limited	Extensive		None/Other _____
Biology	Mosquitos	Algae	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: No
Evidence of dumping: yes no

***Field Screening**
Water Temp (°C) 21.5
pH (pH units) 8.01
Conductivity 1567 mS / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations Bird Nest inside Culvert. Grass clippings.

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 20.099 W
33° 53.229 N

Site ID: 23

Date/Time: 061702 14:17

Weather Information:

Field Crew: L. Nguyen / L. Carlson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Dominguez Channel - in channel at Manhattan Beach Blvd

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 107 = 8.92ft	1.	Volume _____ (mL - L - oz)	1.	Pipe Diameter _____ (ft/in)
2.	Depth (cm - ft - in) 6 = .5 ft	2.	Time _____ (sec)	2.	Depth _____
3.	Velocity (cm / ft / in / sec) 1.25			3.	Velocity _____
4.	Flow 5.58 ft³/s		***See formula on back		***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1/31	
Odor	Chemical	Sewage	Rotten Eggs	(None) Other _____
Color	Greyish	Greenish	Browish (light yellow)	(None) Other _____
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	(None) Other _____
Vegetation	Limited	Extensive		(None) Other _____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. (Light (<5))
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____% Plastics (cups, straws, bags, wrappers, bottles, junk)
50% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes) (no)

Main algae type:
____% film algae
(100)% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: (yes) no
Birds: (yes) no
Other: Foam
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 31.9 Conductivity 651 mS (uS) (Circle appropriate units)
pH (pH units) 9.77

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) No **Bottle ID#'s** _____ _____ _____

Comments Observations Foam in water.

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 20.099 W
33° 53.231 N

Site ID: 24

Date/Time: 06/13/22 14:30

Weather Information:

Field Crew: L. Nguyen / L. Carlson / C. Wasa & B. Erickson

Light Conditions: (Sunny) / Overcast / Partly Cloudy
Last Rain: (> 72 hours) / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: S. Box Culvert, W. side of Dom. Ch. at Manhattan Beach Blvd
Earthen Drainage / (Concrete Channel) / Outfall / Manhole / Catchbasin / Other Box Culvert

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. 11.67ft Width (cm - ft - (in)) 140" (11' 8")
2. .58/s Depth (cm - ft - (in)) 127 (22½")
3. 2.08ft/s Velocity (cm - (ft) - in / (sec)) 2/4 – 2½" deep
4. Flow 1.21ft³/s

***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1/3029	
Odor	Chemical	Sewage	Rotten Eggs	None/Other Slight musty
Color	Greyish	Greenish	Browish (Light yellow)	None/Other
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	(Trash)	Bubbles	(None)/Other
Vegetation	Limited	Extensive		None/Other
Biology	Mosquitos	(Algae)	(Snails) / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. (Moderate (6-10))
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes) / no)

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: _____
Number of homeless: 1
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 25.0 Conductivity 709 mS / (uS) (Circle appropriate units)
pH (pH units) 8.31

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 20.080 W
~ 33° 53.231 N

Site ID: 25

Date/Time: 061702 / 14:35

Weather Information:

Field Crew: C. Nguyen / L. Carlson / C. Wan / J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** N. Box Culvert W. Dominguez Channel at Manhattan Beach Blvd

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other Box Channel Culvert

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 139 = 11.58 ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - ft - in) 126 (7/8) .07ft	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm / ft / in / sec) 1	1 ft/s		3. Velocity _____	
4.	Flow .84 ft³/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 1/28		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty
Color	Greyish	Greenish	Browish (yellow)	None/Other _____
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other _____
Vegetation	Limited	Extensive		(None)/Other _____
Biology	Mosquitos	(Algae)	(Snails) / Fish	None/Other Ants

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. (Moderate (6-10))
3. ~~High~~ (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
25 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. (50-75%)
5. > 75%

Algae outside of flow?: (yes) / no)

Main algae type:

____% film algae
10 % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes ~~no~~ (no)
Other: _____
Number of homeless: 20
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 24.3 Conductivity 987 mS / (uS) (Circle appropriate units)
pH (pH units) 8.27

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 17. 025 W
33° 51. 706' N

Site ID: 26

Date/Time: 6/18/02 / 0830

Weather Information:

Field Crew: C. Warn, L. Nguyen, J. Erickson

Light Conditions: Sunny (Overcast) Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: 190th St. Bridge - South Side / Eastern

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm (ft) in) 83	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm (ft) in) 4	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm (ft) in / sec) 0.05 up		3. Velocity _____
4. Flow 16.6 ft³/s * Flow valid at this pt of creek only	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1 / 28	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other _____
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other _____
Vegetation	Limited	(Extensive)		None/Other _____
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

~~0 None~~

1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. (Dense (>50)) on banks

Type: (% of number not total volume of items):

____% Organic (food)

50 %Plastics (cups, straws, bags, wrappers, bottles, junk)

50 % Recyclables-not plastic (paper, glass bottles, metal)

0 % Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. (50-75%) on exposed rocks
5. > 75%

Algae outside of flow?: (yes) / no)

Main algae type:

____% film algae

____% turf algae

____%macroalgae

Other Observations: #Same

Fish: yes (no)

Snails: yes (no)

Birds: yes (no)

Other: _____

Number of homeless: 0

Evidence of dumping: yes (no)

*Field Screening

Water Temp (°C) 25.8

pH (pH units) 7.61

Conductivity _____ mS / uS (Circle appropriate units)

Saltwater - over limit

*Laboratory Analysis

Fecal Coliform _____ (MPN)

Enterococcus _____ (MPN)

E.Coli _____ (MPN)

Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments Observations: Sampled from Bridge

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 17.034' W
33° 51.700' N

Site ID: 27

Date/Time: 6/18/02 / 8:45

Weather Information:

Field Crew: C. Warn, L. Nguyen, J. Erickson

Light Conditions: Sunny (Overcast) Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: 190th St. Bridge - Center Channel

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - (ft) - in) 83 *	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - (ft) - in) 6	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - (ft) - in / sec) .105 up		3. Velocity _____
4. Flow 24.9 ft3/s	***See formula on back	***See formula on back

* Flow valid at this pt of creek only

Visuals:	Photo Taken: (yes) no	Roll#/Pic# 1/27	
Odor	Chemical	Sewage	Rotten Eggs	None/Other _____
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other _____
Vegetation	Limited	Extensive		None/Other _____
Biology	Mosquitos	(Algae) on banks	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
(5.) Dense (>50) on bank

Type: (% of number not total volume of items):
Ø % Organic (food)
10 % Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
Ø % Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
(4.) 50-75% on exposed banks
5. > 75%

Algae outside of flow?: (yes) / no

Main algae type:
___ % film algae
___ % turf algae
___ % macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: Ø
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 23.5 Conductivity — mS / µS (Circle appropriate units)
pH (pH units) 7.65 Saltwater - over limit

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118° 17.042' W
33° 51.698' N

Site ID: 28

Date/Time: 6/18/02 852

Field Crew: L. Nguyen, C. Warn, J. Erickson

Weather Information:

Light Conditions: Sunny (> 72 hours) (Overcast (< 72 hours) Partly Cloudy (< 3 hours)

Last Rain: **Precipitation:** > 0.1" < 0.1"

~~Site Description:~~ **Location:** 190 st Bridge - North Side / Western

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other

Flow Estimation: (Flow) (Yes) No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes (No)

	Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1.	Width (cm - (ft) in) 83	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2.	Depth (cm - (ft) in) 4	2. Time _____ (sec)	2. Depth _____
3.	Velocity (cm - (ft) in / sec) .05 up		3. Velocity _____
4.	Flow 16.6 ft³/s * Flow valid at this pt only	***See formula on back	***See formula on back

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 1/26	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other
Color	Greyish	Greenish	Browish	None/Other ye/brwish
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
(5.) Dense (>50) on banks

Type: (% of number not total volume of items):
___% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
(4.) 50-75% on banks
5. > 75%

Algae outside of flow?: (yes) / no)

Main algae type:
___% film algae
___% turf algae
___%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 23.4 Conductivity _____ mS / uS (Circle appropriate units)
pH (pH units) 7.93 saltwater - over limit

***Laboratory Analysis** Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 17.046 W
33 51.695 N

Site ID: 29

Date/Time: 6/18/02 905

Field Crew: C. Warn, L. Nguyen, J. Erickson

Weather Information:

Light Conditions: Sunny / Overcast / (Partly Cloudy)

Last Rain: (> 72 hours) / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** 190th St. - Southeast Lateral Box Culvert

Earthen Drainage / (Concrete Channel) / Outfall / Manhole / Catchbasin / Other

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - (ft) - in) 12	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - (ft) - in) 3	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm - ft - in / sec) 0.37 down			3. Velocity _____	
4.	Flow 13.32 ft³/s	***See formula on back		***See formula on back	

Visuals:	**Photo Taken:** (yes) / no	Roll#/Pic# 1/25		**Draw sample location if no photo:**
Odor	Chemical / Sewage	Rotten Eggs	(None) / Other _____	
Color	Greyish / Greenish	Browish	(None) / Other _____	
Clarity	(Clear) / Cloudy		Other _____	
Floatables	Oily / Rainbow / Trash	Bubbles	(None) / Other _____	
Vegetation	Limited / Extensive		(None) / Other _____	
Biology	Mosquitos / Algae	Snails / Fish	None / (Other) Burrudes	

Trash In Vicinity of Drain (Circle):
0. (None)
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. (5-25%)
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

***Field Screening**
Water Temp (°C) 25.2
pH (pH units) 7.36
Conductivity ____ mS / µS (Circle appropriate units)
Saltwater over limit

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations Lateral on Southeast bankat Dom. Channel

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 16 206 W
33 ~~51.777~~ 50.893 N

Site ID: 30

Date/Time: 6/18/02 1000

Weather Information:

Field Crew: C. Warn, L. Nguyen, J. Erickson

Light Conditions: Sunny / Overcast / (Partly Cloudy)

Last Rain: (> 72 hours) / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: **Location:** Main St. Bridge - Culvert on SE bank Lateral SW of main stand SE of

(Earthen Drainage) / ~~Concrete Channel~~ / Outfall / Manhole / Catchbasin / Other ~~Box Culvert~~

Flow Estimation: **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - (ft) - in) 5	1. Volume _____ (mL - L - oz)		1. Pipe Diameter ___ , ___ (ft/in)	
2.	Depth (cm - ~~ft~~ - (in)) 4 = .33 ft	2. Time _____ (sec)		2. Depth	
3.	Velocity (cm - (ft) - in / sec) 1			3. Velocity	
4.	Flow 1.65 ft^3/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 11/24	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	(Extensive) upstream		None/Other_____
Biology	Mosquitos	(Algae)	Snails (Fish)	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. (Dense (>50))

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. (50-75%)
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
— % turf algae
____%macroalgae

Other Observations:
Fish: (yes) no
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: Ø
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 24.6
pH (pH units) 8.30
Conductivity 1099 (mS) / uS (Circle appropriate units)

***Laboratory Analysis**
Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations
Lateral flowing through Victoria County Golf Course, between Main & Avalon, upstream of Del Amo Bridge Construction
Flow, running water concrete rip rap on side of Dom. Channel

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY
(CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME
(FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY
(PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 16,055 W
33 50.745 N

Site ID: 31

Date/Time: 6/18/02 1025

Weather Information:

Field Crew: L. Nguyen, C. Warn, J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy
Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** Lateral Downstream Del Amo Bridge Construction - Eastside
Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other_____

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 247 = 20.25 ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - ft - in) 3/4" = .0625ft	2. Time _____ (sec)		2. Depth	_____
3.	Velocity (cm - ft - in / sec) 0.5			3. Velocity	_____
4.	Flow .63 ft3/s	***See formula on back		***See formula on back	

Visuals:	**Photo Taken:** (yes) no	Roll#/Pic# 1/23		**Draw sample location if no photo:**
Odor	Chemical	Sewage	Rotten Eggs	(None) Other_____
Color	Greyish	Greenish	Browish	None/Other Yellow
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None) Other_____
Vegetation	Limited	Extensive		(None) Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None) Other_____

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
100% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 27.7 Conductivity 10.98 (mS) / uS (Circle appropriate units)
pH (pH units) 9.07

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) No **Bottle ID#'s** _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 16.055 W
33 50.745 N

Site ID: 31

Date/Time: 6/18/02 1025

Weather Information:

Field Crew: L. Nguyen, C. Warn, J. Erickson

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** Lateral Downstream of Del Amo Bridge Construction - East side

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other_____

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 247 = 20.25 ft	1.	Volume _____ (mL - L - oz)	1.	Pipe Diameter _____ (ft/in)
2.	Depth (cm - ft - in) 3/4" = .0625 ft	2.	Time _____ (sec)	2.	Depth _____
3.	Velocity (cm - ft - in / sec) 0.5			3.	Velocity _____
4.	Flow .63 ft3/s		***See formula on back		***See formula on back

Visuals:	**Photo Taken:** (yes) no		Roll#/Pic# 1123	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	None/Other Yellow
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
100% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 27.7 Conductivity 10.98 (mS) / uS (Circle appropriate units)
pH (pH units) 9.07

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) No **Bottle ID#'s** _____ _____ _____

Comments Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 11815.878 W
3350.486 N

Site ID: 32

Date/Time: ~~DRY~~ 6/18/02 1100

Weather Information:

Field Crew: J. Erickson, C. Warn, L. Nguyen

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Torrance Lateral at Dom. Channel

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - (ft) - in) 12
2. Depth (cm - ft - (in)) 7 = .58 ft
3. Velocity (cm - (ft) - in / sec) 1
4. Flow 6.96 ft3/s

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) no		Roll#/Pic# 11 22	
Odor	Chemical	Sewage	Rotten Eggs	None/(Other) musty
Color	Greyish	Greenish	Browish	(None)/Other
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	(Bubbles)	None/Other
Vegetation	(Limited)	Extensive		None/Other
Biology	Mosquitos	(Algae)	Snails / Fish	None/Other mollusks

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. (Dense (>50))

Type: (% of number not total volume of items):

___% Organic (food)
10 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
1 % Large items (appliances, cars, tires) shopping carts

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. (> 75%)

Algae outside of flow?: (yes / no)

Main algae type:

___% film algae
— % turf algae
___%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: mollusks
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening

Water Temp (°C) 27.2 Conductivity 11.22 (mS) / uS (Circle appropriate units)

pH (pH units) 8.37

*Laboratory Analysis

Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments Observations: Water flowing downstream sampled at riffle - may be old tidewater

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 16.766 W
33 56.674 N

Site ID: 33

Date/Time: 6/18/02 / 1125

Field Crew: C. Warn, L. Nguyen, J. Erickson

Weather Information:

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: **Location:** Torrance Lateral @ Main St

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other_____

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - (in)) 64 = 5.33ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - ft - (in)) 7/8 = .07 ft	2. Time _____ (sec)		2. Depth	_____
3.	Velocity (cm - ft - in / sec) 1			3. Velocity	_____
4.	Flow .37 ft3/s	***See formula on back		***See formula on back	

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 1/21	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other Yellowish
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. (Somewhat Dense (26-50))
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 29.8° Conductivity ~~6776~~ 1097 mS / (uS) (Circle appropriate units)
pH (pH units) ~~9.05~~ 9.05

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14.536 W
33 49.444 N

Site ID: 34

Date/Time: 6/8/02 / 1144

Field Crew: L. Nguyen, J. Erickson, C. Warn

Weather Information:

Light Conditions: ~~Sunny~~ / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

~~Site Description:~~ **Location:** At Wilmington / 223rd St. Southeast

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

~~Flow Estimation:~~ **Flow** Yes / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / No

	Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1.	Width (cm - ft - in) 114	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2.	Depth (cm - ft - in) 8	2. Time _____ (sec)	2. Depth _____
3.	Velocity (cm - ft - in / sec) 0.15 up		3. Velocity _____
4.	Flow 136.8 ft³/s * Flow valid at this point only	***See formula on back	***See formula on back

Visuals:	Photo Taken: yes / no		Roll#/Pic# 1/20	
Odor	Chemical	Sewage	Rotten Eggs	None/Other rusty
Color	~~Greyish~~	Greenish	Browish tinge	None/Other _____
Clarity	Clear	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other Algal Scum
Vegetation	Limited	Extensive		None/Other _____
Biology	Mosquitos	Algae	Snails / Fish	None/Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50) along Shore

Type: (% of number not total volume of items):
___% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
5 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
10 % film algae
90 % turf algae
___%macroalgae

Other Observations:
Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: 0
Evidence of dumping: yes / no

***Field Screening**
Water Temp (°C) 28.2
pH (pH units) 8.08
Conductivity Saltwater mS / uS (Circle appropriate units)
out of Range

***Laboratory Analysis**
Fecal Coliform _____ (MPN)
Enterococcus _____ (MPN)
E.Coli _____ (MPN)
Total Coliform _____ (MPN)

Lab Samples taken Yes / No **Bottle ID#'s** _____ _____ _____

Comments Observations Sampling in estuary

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14,540 W
33 49,443 N

Site ID: 35

Date/Time: 6/18/02 1444 1200

Field Crew: J. Erickson, C. Warn, L. Nguyen

Weather Information:

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours **Precipitation:** > 0.1" < 0.1"

Site Description: Location: Wilmington / 223 St Bridge - Center Channel

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other _____

Flow Estimation: Flow (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - (ft) - in) 114	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - (ft) - in) 15	2. Time _____ (sec)		2. Depth	_____
3.	Velocity (cm - (ft) in / sec) 0.15 up			3. Velocity	_____
4.	Flow 256.5 ft3/s * flow valid at this point only	***See formula on back		***See formula on back	

Visuals:	**Photo Taken:** (yes) / no		Roll#/Pic# 1119	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	(Limited)	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. (Dense (>50)) on banks

Type: (% of number not total volume of items):
____% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. (5-25%)
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
10 % film algae
90 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 26.8 Conductivity OR mS / uS (Circle appropriate units) saltwater
pH (pH units) 7.94

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14.547 W
33 49.434 N

Site ID: 36

Date/Time: 6/18/02 ~~1200~~ 1205

Weather Information:

Field Crew: C. Warn, J. Erickson, T. Nguyen

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Wilmington / 223rd St Bridge - NW Channel

(Earthen Drainage) (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - (ft) - in) 114	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - (ft) - in) 9.5	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - (ft) - in / sec) 0.15' up		3. Velocity _____
4. Flow 162.45 ft3/s flow valid for this point only	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1/19	
Odor	Chemical	Sewage	Rotten Eggs	(None) Other_____
Color	Greyish	Greenish	Browish	(None) Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None) Other_____
Vegetation	(Limited)	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None) Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. (Dense (>50)) on banks

Type: (% of number not total volume of items):
____% Organic (food)
75 %Plastics (cups, straws, bags, wrappers, bottles, junk)
5 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
(2.) 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
10 % film algae
90 % turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 26.6 Conductivity OR mS / uS (Circle appropriate units) saltwater
pH (pH units) 8.00

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14.572 W / 33 49.454 N **Site ID:** 37

Date/Time: 6/18/02 1224

Weather Information: **Field Crew:** T. Nguyen, J. Erickson, C. Warn

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours **Precipitation:** > 0.1" / < 0.1"

Site Description: **Location:** Laterral on West side of Dom. Channel upstream of 34, 35, 36

Earthen Drainage / (Concrete Channel) / Outfall / Manhole / Catchbasin / Other

Flow Estimation: **Flow** (Yes) / No / Ponded/Trickle **Evidence of overland flow near sampling location?:** Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - (in)) 111 = 9.25 ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - ft - (in)) 3 = .25 ft	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm - (ft) - in / sec) 1.37			3. Velocity _____	
4.	Flow 3.17 ft³/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 1117	
Odor	Chemical	Sewage	Rotten Eggs	(None) / Other_____
Color	Greyish	Greenish	Browish	(None) / Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None) / Other_____
Vegetation	Limited	Extensive		(None) / Other_____
Biology	Mosquitos	Algae	Snails / Fish	(None) / Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
(0) None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
(0.) None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening** Water Temp (°C) 25.7 Conductivity 550 mS / (uS) (Circle appropriate units)
pH (pH units) 8.12

***Laboratory Analysis** Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments Observations Excessive flow - very fast

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14.459 W
33 46.628 N

Site ID: 38

Date/Time: 6/18/02 1200

Weather Information:

Field Crew: See previous

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

~~Site Description~~: Location: Henry Ford Bridge - South end above cut Basin

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 130	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 10	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) 0.6		3. Velocity _____
4. Flow 780ft3/s * Flow valid for this point only	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 11/16	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	Snails (Fish)	None/Other mollusks / Barnacles

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. (High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
90 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. (25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
10% film algae
~~10~~% turf algae
____%macroalgae

Other Observations:
Fish: (yes) ~~no~~
Snails: yes (no)
Birds: yes (no)
Other: mollusks / Barnacles
Number of homeless: 0
Evidence of dumping: yes (no)

***Field Screening**
Water Temp (°C) 24.9
pH (pH units) 7.69
Conductivity OR mS / uS (Circle appropriate units)
Saltwater

***Laboratory Analysis**
Fecal Coliform_____(MPN)
Enterococcus_____(MPN)
E.Coli_____(MPN)
Total Coliform_____(MPN)

Lab Samples taken (Yes) / No **Bottle ID#'s** _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14.461 W
3346.634 N

Site ID: 39

Date/Time: 1/30/02 1300

Weather Information:

Field Crew: Lee Graves

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (>72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Henry Ford Bridge - Center channel

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - (ft) - in) 30	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - (ft) - in) 6	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm - (ft) - in / sec) 0.60			3. Velocity _____	
4.	Flow 1248 ft3/s * flow valid at this point only	***See formula on back		***See formula on back	

Visuals:	Photo Taken:	(yes) / no	Roll#/Pic# 11/15		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other	
Color	Greyish	Greenish	Browish	(None)/Other	
Clarity	(Clear)	Cloudy		Other	
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other	
Vegetation	Limited	Extensive		(None)/Other	
Biology	Mosquitos	Algae	Snails / (Fish)	None/Other mollusks/Barnacles	

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
90 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50% banks
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

5 % film algae
10 % turf algae
____%macroalgae

Other Observations:

Fish: (yes) no
Snails: yes (no)
Birds: yes (no)
Other: mollusks/barnacles
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 24.9 Conductivity OR mS / uS (Circle appropriate units)
saltwater
pH (pH units) 7.68

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 14.459 W / 33 46.638 N Site ID: 40

Date/Time: 18 JUN 02 1300

Weather Information: Field Crew: see pg 1

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (>72 hours) < 72 hours < 3 hours Precipitation: > 0.1" < 0.1"

~~Site Description:~~ Location: Henry Ford Bridge - Northend

(Earthen Drainage) Concrete Channel Outfall Manhole Catchbasin Other

Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - (ft) - in) 30	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - (ft) - in) 7	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - (ft) - in / sec) 0.60		3. Velocity _____
4. Flow 546 ft3/s * flow valid at this point only	***See formula on back	***See formula on back

Visuals:	Photo Taken: (yes) no		Roll#/Pic# 1/14		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	(None) Other	
Color	Greyish	Greenish	Browish	(None) Other	
Clarity	(Clear)	Cloudy		Other	
Floatables	Oily / Rainbow	Trash	Bubbles	(None) Other	
Vegetation	Limited	Extensive		(None) Other	
Biology	Mosquitos	Algae	Snails / (Fish)	None/Other burrowing mollusks	

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
____% Organic (food)
50 %Plastics (cups, straws, bags, wrappers,
50 bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
50 % film algae
50 % turf algae
____%macroalgae

Other Observations:
Fish: (yes) no
Snails: yes (no)
Birds: yes (no)
Other: mollusks/Barnacles
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 22.7 Conductivity 0.0 mS / uS (Circle appropriate units) saltwater
pH (pH units) 7.78

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY
(CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME
(FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY
(PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19.853 W / 33 53.871 N Site ID: 41

Date/Time: 18 JAN 02 1440

Weather Information: Field Crew: See previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours Precipitation: > 0.1" < 0.1"

Site Description: Location: Between Maine St & 147st - side box culvert - NW side

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Box Culvert 101" x 114" H

Flow Estimation: Flow (Yes) / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 101 = 8.42 ft	1. Volume	500 (mL) L - oz)	1. Pipe Diameter	(ft/in)
2.	Depth (cm - ft - in) 0.5 = .04 ft	2. Time	24 (sec)	2. Depth	
3.	Velocity (cm - ft - in / sec) Trickle			3. Velocity	
4.	Flow .008 ft³/s	***See formula on back		***See formula on back	

1/10 flow = .018 f

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 1/12		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	(None) Other
Vegetation	Limited	Extensive		(None) Other
Biology	Mosquitos	Algae	(Snails) / Fish	None/Other

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. (High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

___% Organic (food)
50 %Plastics (cups, straws, bags, wrappers, bottles, junk)
50 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. (1.) < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

— % film algae
___% turf algae
___%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other:
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 23.1 Conductivity 999 mS / (uS) (Circle appropriate units)

pH (pH units) 8.14

*Laboratory Analysis: Fecal Coliform ___ (MPN) E.Coli ___ (MPN)

Enterococcus ___ (MPN) Total Coliform ___ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s ___ ___ ___

Comments Observations: Large box culvert emptying into Dom. Channel

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter.
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19.544 W
33 54.321 N

Site ID: 42

Date/Time: 1/9/JUN02 1455

Weather Information:

Field Crew: see previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Between Rosecrans & 135th St - ~~Std Box Culvert~~ Box Culvert-E

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Box Culvert

Flow Estimation: Flow (Yes) No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)

1. Width (cm - ft - (in)) 123 = 10.25ft
2. =.13ft Depth (cm - ft - (in)) (1/8) 76 = ~~6.33ft~~
3. Velocity (cm - (ft) - in / sec) 0.5
4. Flow ~~32.44 ft³/s~~ .67 ft³/s ***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 1/ 01	
Odor	Chemical	(Sewage)	Rotten Eggs	None/Other _____
Color	Greyish	Greenish	Browish	None/Other yellow
Clarity	(Clear)	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other _____
Vegetation	Limited	Extensive		(None)/Other _____
Biology	Mosquitos	Algae	(Snails) / Fish	None/Other larvae - insect

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. (Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
70 %Plastics (cups, straws, bags, wrappers, bottles, junk)
30 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. (25-50%)
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

50 % film algae
50% turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: larvae
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 23.8 Conductivity 866 mS / uS (Circle appropriate units)

pH (pH units) 7.94

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments _____

Observations _____

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19 541 W
3354.544 N

Site ID: 43

Date/Time: 1/25/02 1510

Weather Information:

Field Crew: See previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: SE Lateral @ 13th St

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other 32'W X 13'H

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) (in) 22 = 1.83ft	1. Volume _____ (mL - L - oz)		1. Pipe Diameter ____ (ft/in)	
2.	Depth (cm - ft - in) 1/8" = .01ft	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm - ft - in / sec) trickle			3. Velocity _____	
4.	Flow [ ]	***See formula on back		***See formula on back	

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 1/10		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	(Snails)/ Fish	None/Other insect larvae

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. (High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
80 %Plastics (cups, straws, bags, wrappers, bottles, junk)
20 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. (5-25%)
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

50% film algae
50% turf algae
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening: Water Temp (°C) 23.5 Conductivity 3.41 (mS) / uS (Circle appropriate units)
pH (pH units) 9.82

*Laboratory Analysis: Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19.547 W
33 54.760 N

Site ID: 44

Date/Time: See previous 19JUN02 1530

Weather Information:

Field Crew: _____

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: NW Lateral Between El Segundo & 135th St 12'W x 6'H

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other ~~Lateral~~ X

Flow Estimation: Flow (Yes) No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

	Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - (ft) - in)	94" = 7.83ft	1. Volume	_____ (mL - L - oz)	1. Pipe Diameter	_____ (ft/in)
2.	Depth (cm - (ft) - in)	1/8" = .01 ft	2. Time	_____ (sec)	2. Depth	_____
3.	Velocity (cm - (ft) in / sec)	0.5			3. Velocity	_____
4.	Flow	.04 ft3/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken: (yes) / no	Roll#/Pic# 11 9		Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	(None) Other_____
Color	Greyish	Greenish	Browish	(None)/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	(Snails) / Fish	None/Other_____

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
____%Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / (no))

Main algae type:
____% film algae
100 % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 30.1 Conductivity 1153 mS / uS (Circle appropriate units)
pH (pH units) 10.37

*Laboratory Analysis: Fecal Coliform_____(MPN) E.Coli_____(MPN)
Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19.545 W
33 54.768 N

Site ID: 45

Date/Time: 18 JUN 02 1550

Weather Information:

Field Crew: See previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Mid Channel between El Segundo & 175th St

Earthen Drainage (Concrete Channel) Outfall Manhole Catchbasin Other

Flow Estimation: Flow (Yes) No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - (ft) - in) 58	1. Volume _____ (mL - L - oz)		1. Pipe Diameter _____ (ft/in)	
2.	Depth (cm - ft - (in)) 3 4/8" = .26 ft	2. Time _____ (sec)		2. Depth _____	
3.	Velocity (cm - ft - in / sec) 0.7			3. Velocity _____	
4.	Flow 10.57 ft3/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken: (yes) / no		Roll#/Pic# 118	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other
Color	Greyish	Greenish	Browish	None/Other Yellow
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	(Trash)	(Bubbles)	None/Other
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
(3.) High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
___% Organic (food)
90 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
(4.) 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
100 % film algae
___% turf algae
___%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: Ø
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 24.9 Conductivity 538 mS / uS (Circle appropriate units)
pH (pH units) 8.98

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments Observations: Composite of 5 points along width of channel - entire channel flowing

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 19.539 W
33 55.171 N

Site ID: 46

Date/Time: 18 JUN 02 1605

Weather Information:

Field Crew: See previous

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: Eastside pipe under railroad bridge between 120th st & El Segundo

Earthen Drainage / Concrete Channel / Outfall / Manhole / Catchbasin / Other 76 RCP

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)

1. Width (cm - ft - in)_____
2. Depth (cm - ft - in)_____
3. Velocity (cm - ft - in / sec)_____
4. Flow .006 ft³/s

Filling a Bottle .018 ft

1. Volume 500 (mL) - L - oz)
2. Time 6 (sec)

50% = .003 ft³/s

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 117	
Odor	Chemical	Sewage	Rotten Eggs	(None)/Other_____
Color	Greyish	Greenish	Browish / Yellow	None/Other_____
Clarity	(Clear)	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other_____
Vegetation	Limited	Extensive		(None)/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
60 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

50 % film algae
50 % turf algae
____%macroalgae

Other Observations:

Fish: yes / no
Snails: yes / no
Birds: yes / no
Other: _____
Number of homeless: 0
Evidence of dumping: yes / no

***Field Screening**

Water Temp (°C) 25.1

Conductivity 1072 mS / uS (Circle appropriate units)

pH (pH units) 7.22

***Laboratory Analysis**

Fecal Coliform_____(MPN)

E.Coli_____(MPN)

Enterococcus_____(MPN)

Total Coliform_____(MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments
Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 20.119 W
33 55.438 N

Site ID: 47

Date/Time: 18 JUN 02 1625

Weather Information:

Field Crew: See previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (>72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: Box Culvert at end of Vulcan St

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Box Culvert

Flow Estimation: Flow (Yes) / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel) ~~6.5ft~~

1. ~~3.5ft~~ Width (cm - ft - in) 78 in 6 1/2
2. ~~.02ft~~ Depth (cm - ft - in) 3/16 1/2" w = flow
3. Velocity (cm - ft - in / sec) 0.5
4. Flow .035 ~~.005~~ ft3/s

***See formula on back

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 1/6	
Odor	Chemical	Sewage	Rotten Eggs	(None) Other
Color	Greyish	Greenish	Browish	None/Other yellowish
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	(None) Other
Vegetation	Limited	Extensive		(None) Other
Biology	Mosquitos	Algae	(Snails) Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. (High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
10 %Plastics (cups, straws, bags, wrappers, bottles, junk)
____% Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. (50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:

50 % film algae
50 % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: (yes) no
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 24.2 Conductivity 450 mS (uS) (Circle appropriate units)

pH (pH units) 8.01

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments Observations

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 11820.163 W / 3355.477 N Site ID: 48

Date/Time: 18JUN02 1630

Weather Information: Field Crew: see previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours Precipitation: > 0.1" < 0.1"

Site Description: Location: South Lateral of Double Box Culvert West side of Dam Channel

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Double Box Culvert

Flow Estimation: Flow (Yes) / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / (No)

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - in) 16'	1.	Volume _____ (mL - L - oz)	1.	Pipe Diameter _____ (ft/in)
2.	Depth (cm - ft - (in)) 1.75 = .15 ft	2.	Time _____ (sec)	2.	Depth _____
3.	Velocity (cm - (ft) - in / sec) 1.14			3.	Velocity _____
4.	Flow 2.66ft3/s		***See formula on back		***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 115	
Odor	Chemical	Sewage	Rotten Eggs	None/Other Musty
Color	Greyish	Greenish	Browish	(None)/Other
Clarity	(Clear)	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	(None)/Other
Vegetation	Limited	Extensive		(None)/Other
Biology	Mosquitos	Algae	Snails / Fish	(None)/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
90 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):
(0) None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:
Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: 0
Evidence of dumping: yes (no)

*Field Screening: Water Temp (°C) 24.0 Conductivity 577 mS / (uS) (Circle appropriate units)

pH (pH units) 7.91

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)

Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken (Yes) / No Bottle ID#'s _____ _____ _____

Comments Observations: 16' W x 89" H

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 20.164 W
33 55.480 N

Site ID: 49

Date/Time: 18JUN02 1640

Weather Information:

Field Crew: see previous

Light Conditions: (Sunny) Overcast Partly Cloudy

Last Rain: (> 72 hours) < 72 hours < 3 hours

Precipitation: > 0.1" < 0.1"

Site Description: Location: North Lateral of Double Box Culvert / west side of Dom. Channel

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Double Box Culvert

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)

1. Width (cm - ft - in) 16
2. Depth (cm - ft - in) 1 7/8 = .16 ft
3. Velocity (cm - ft - in / sec) 1.37
4. Flow 3.43 ft3/s

Filling a Bottle

1. Volume _____ (mL - L - oz)
2. Time _____ (sec)

***See formula on back

Area X Velocity (pipe)

1. Pipe Diameter _____ (ft/in)
2. Depth _____
3. Velocity _____

***See formula on back

Visuals:	Photo Taken:		Roll#/Pic# 1/4	
Odor	Chemical	Sewage	Rotten Eggs	None/Other Chlorine
Color	Greyish	Greenish	Browish	None/Other
Clarity	Clear	Cloudy		Other
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other
Vegetation	Limited	Extensive		None/Other
Biology	Mosquitos	Algae	Snails / Fish	None/Other

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
90 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
____% film algae
____% turf algae
____%macroalgae

Other Observations:

Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: 0
Evidence of dumping: yes no

*Field Screening: Water Temp (°C) 27.8 Conductivity 292 mS (uS) (Circle appropriate units)
pH (pH units) 7.80

*Laboratory Analysis: Fecal Coliform _____ (MPN) E.Coli _____ (MPN)
Enterococcus _____ (MPN) Total Coliform _____ (MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments Observations: 16'W X 89" H

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water a = area of water in partially filled pipe
d = diameter of the pipe Ta = Tabulated Value Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 20.207 W / 33 55.650 N Site ID: 50

Date/Time: 18 JUN 02 1650

Weather Information: Field Crew: See previous

Light Conditions: Sunny Overcast Partly Cloudy

Last Rain: > 72 hours < 72 hours < 3 hours Precipitation: > 0.1" < 0.1"

Site Description: Location: Beginning of Dom. Channel - Channel Center NE Lateral

Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Double Box Culvert

Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)	Filling a Bottle	Area X Velocity (pipe)
1. Width (cm - ft - in) 60" = 5ft	1. Volume _____ (mL - L - oz)	1. Pipe Diameter _____ (ft/in)
2. Depth (cm - ft - in) 1½" = .13f	2. Time _____ (sec)	2. Depth _____
3. Velocity (cm - ft - in / sec) 0.5		3. Velocity _____
4. Flow .33ft³/s	***See formula on back	***See formula on back

Visuals:	Photo Taken:	yes / no	Roll#/Pic# 1/2	
Odor	Chemical	Sewage	Rotten Eggs	None/Other_____
Color	Greyish	Greenish	Browish	None/Other Yellowish
Clarity	Clear	Cloudy		Other_____
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other_____
Vegetation	Limited	Extensive		None/Other_____
Biology	Mosquitos	Algae	Snails / Fish	None/Other_____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):
0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):
___% Organic (food)
90 %Plastics (cups, straws, bags, wrappers, bottles, junk)
10 % Recyclables-not plastic (paper, glass bottles, metal)
___% Large items (appliances, cars, tires)

Drain Assocaited Algae:
Algae coverage (circle):
0. None
1. < 5%
2. 5-25%
3. 25-50%
4. 50-75%
5. > 75%

Algae outside of flow?: (yes / no)

Main algae type:
50% film algae
50% turf algae
___%macroalgae

Other Observations:
Fish: yes no
Snails: yes no
Birds: yes no
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening: Water Temp (°C) 23.6 Conductivity 602 mS / uS (Circle appropriate units)

pH (pH units) 8.15

*Laboratory Analysis: Fecal Coliform_____(MPN) E.Coli_____(MPN)

Enterococcus_____(MPN) Total Coliform_____(MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments Observations: (2) (37" W X 108" H

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL

Dominguez Channel Bacterial Monitoring Data and Observation Sheet

GPS Coordinates: 118 20.275 W
33 55.700 N

Site ID: 57

Date/Time: 18 JUN 02 1700

Weather Information:

Field Crew: see previous

Light Conditions: Sunny / Overcast / Partly Cloudy

Last Rain: > 72 hours / < 72 hours / < 3 hours

Precipitation: > 0.1" / < 0.1"

Site Description: Location: Beginning of Dom. Channel - Channel Center

Earthen Drainage / (Concrete Channel) / Outfall / Manhole / Catchbasin / Other

Flow Estimation: Flow Yes / No / Ponded/Trickle

Evidence of overland flow near sampling location?: Yes / No

Area X Velocity (creek / channel)		Filling a Bottle		Area X Velocity (pipe)	
1.	Width (cm - ft - (in)) 68 = 5.67 ft	1. Volume _____	(mL - L - oz)	1. Pipe Diameter _____	(ft/in)
2.	Depth (cm - ft - (in)) 4 = .02 ft	2. Time _____	(sec)	2. Depth _____	
3.	Velocity (cm - ft - in / sec) 0.5			3. Velocity _____	
4.	Flow .06 ft³/s	***See formula on back		***See formula on back	

Visuals:	Photo Taken:	(yes) / no	Roll#/Pic# 1/1	
Odor	Chemical	Sewage	Rotten Eggs	(None) / Other _____
Color	Greyish	Greenish	Browish	None / Other Yellowish
Clarity	Clear	Cloudy		Other _____
Floatables	Oily / Rainbow	Trash	Bubbles	(None) / Other _____
Vegetation	Limited	Extensive		(None) / Other _____
Biology	Mosquitos	Algae	Snails / Fish	(None) / Other _____

Draw sample location if no photo:

Trash In Vicinity of Drain (Circle):

0. None
1. Light (<5)
2. Moderate (6-10)
3. High (11-25)
4. Somewhat Dense (26-50)
5. Dense (>50)

Type: (% of number not total volume of items):

____% Organic (food)
20 %Plastics (cups, straws, bags, wrappers, bottles, junk)
20 % Recyclables-not plastic (paper, glass bottles, metal)
____% Large items (appliances, cars, tires)

Drain Assocaited Algae:

Algae coverage (circle):

0. None
1. < 5%
2. 5-25% most channel
3. 25-50%
4. 50-75%
5. > 75% in areas

Algae outside of flow?: (yes) / no

Main algae type:

20 % film algae
20 % turf algae
____%macroalgae

Other Observations:

Fish: yes (no)
Snails: yes (no)
Birds: yes (no)
Other: _____
Number of homeless: _____
Evidence of dumping: yes no

*Field Screening

Water Temp (°C) 27

pH (pH units) 7.83

Conductivity 464 mS / (uS) (Circle appropriate units)

*Laboratory Analysis

Fecal Coliform _____ (MPN)

Enterococcus _____ (MPN)

E.Coli _____ (MPN)

Total Coliform _____ (MPN)

Lab Samples taken Yes / No Bottle ID#'s _____ _____ _____

Comments Observations: Sampled just downstream of Channel beginning at double 5x2 Culvert

Methods of Flow Measurement

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = Depth of water
d = diameter of the pipe
a = area of water in partially filled pipe
Ta = Tabulated Value
Then a = Ta*d2

D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840

AREA x VELOCITY (CREEK/CHANNEL METHOD)

a. Measure the width, depth, and velocity of the water.

b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).

c. Multiply the width * depth * velocity to determine flow.

d. Multiply the flow by 0.8 for creek measurements –or-- 0.9 for concrete channel measurements to account for channel roughness.

e. The results if measured in

- Ft = Ft^3/sec
- cm = cm^3/sec (mL/sec)
- in = in^3/sec

f. Convert to desired value.

TIME REQUIRED TO FILL A KNOWN VOLUME (FILL A BOTTLE METHOD)

1. Determine volume/capacity of the sample bottle.
2. Measure time required to fill the bottle.
3. Flow will be determined by initial volume units:
   - mL/s
   - oz/s
4. Convert to desired value.

AREA x VELOCITY (PARTIALLY FILLED PIPE)

1) All measurement must be converted to a common unit before calculation (ft, in, or cm).
2) Let D = water depth.
3) Let d = *inside* pipe diameter
4) Calculate D/d.
5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta =.1623).
6) Find the area using the formula $a = Ta*d^2$.
7) Multiply area (a) by the water velocity.
8) Convert to desired value.

SAE / Metric Unit Conversion				
0.083 ft	=	1 in	=	2.54 cm
0.1337 ft^3	=	1 gal	=	128 oz
			=	3.785 L
0.0078 gal	=	1 oz	=	0.0011 ft^3
1000 cm^3	=	1 L	=	1000mL