



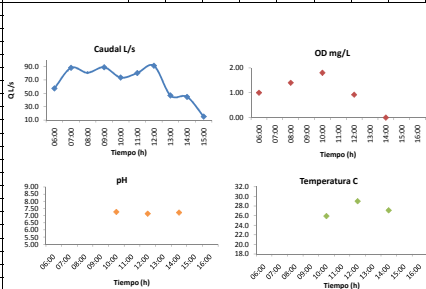
FICHA TÉCNICA
VERTIENTES DEL SISTEMA DE ALCANTARILLADO
BUACARAMANGA, FLORIDABLANCA Y GIRÓN



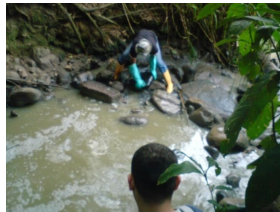
| | | | | | | | |
|---|------|---|-----------------------|--|---------------|---|------------|
| FUENTE RECEPTORA: RIO FRIO | | PUNTO DE AFORO: BY PASS PATAR RIO FRIO | | METODO DE AFORO: Volumentrico | | COORDENADAS Norte 1273164 Este 1106317 Elevación 765 m | |
| Identificación | | HORA Inicial 06:00 Final 15:00:00 a.m. | | ECUACION DEL MOLINETE | | | |
| No. 1 | | | | | | | |
| PARAMETROS IN SITU | | | | LOCALIZACIÓN AL PUNTO DE MUESTREO (Fuente) | | | |
| O.D (mg/L) | 1.02 | pH: 7.26 | Temperatura Agua (°C) | Max 29.0 | DISTANCIA (m) | Agua arriba | Agua abajo |
| | | 7.13 | | Min 25.8 | | | |
| CONDICIONES HIDRAULICAS DEL CAUDAL DESCARGADO | | | | GENERALIDADES DE LA ESTRUCTURA | | | |
| Q. promedio (L/s): | 66.9 | Q. día (L/s) | 66.9 | Q. noche (L/s) | 0.0 | DIMENSION: Ø (m) | ANCHO |
| | | | | | | | ALTO (m) |
| Velocidad media (m/s): | | | | Área sección (m ²): | | | |
| | | | | | | | |
| OBSERVACIONES GENERALES: el tiempo de estudio fue el periodo de by pass de la pTAR Rio Frío | | | | ESTADO DE LA ESTRUCTURA: | | | |
| | | | | | | | |

| HORA | Q (l/s) | O.D | pH | T w |
|----------|---------|------|------|------|
| 06:00 | 57.6 | 1.00 | | |
| 07:00 | 88.4 | | | |
| 08:00 | 80.9 | 1.40 | | |
| 09:00 | 89.2 | | | |
| 10:00 | 73.8 | 1.80 | 7.26 | 25.9 |
| 11:00 | 80.6 | | | |
| 12:00 | 91.4 | 0.92 | 7.13 | 29.0 |
| 13:00 | 46.8 | | | |
| 14:00 | 44.8 | 0.00 | 7.21 | 27.1 |
| 15:00 | 15.1 | | | |
| 16:00 | | | | |
| 17:00 | | | | |
| 18:00 | | | | |
| 19:00 | | | | |
| 20:00 | | | | |
| 21:00 | | | | |
| 22:00 | | | | |
| 23:00 | | | | |
| 00:00 | | | | |
| 01:00 | | | | |
| 02:00 | | | | |
| 03:00 | | | | |
| 04:00 | | | | |
| 05:00 | | | | |
| Promedio | 66.9 | 1.0 | | |
| Día | 66.9 | | | |
| Noche | | | | |

| | DBO | DOO | SST | COLL. T. | COLL. F. | N-NH3 | GAA | TENSOA. |
|----------------------|--------|--------|-------|----------|----------|-------|------|---------|
| Concentración (mg/L) | 386 | 672 | 190.4 | 2400X106 | 1100X105 | 88.5 | 32.2 | 2.63 |
| Día | | | | | | | | |
| Noche | | | | | | | | |
| Promedio | 386.0 | 672.0 | 190.4 | | | | | |
| Carga (Kg/d) | 3324.4 | 4046.6 | 965.9 | | | | | |



FOTOGRAFIAS



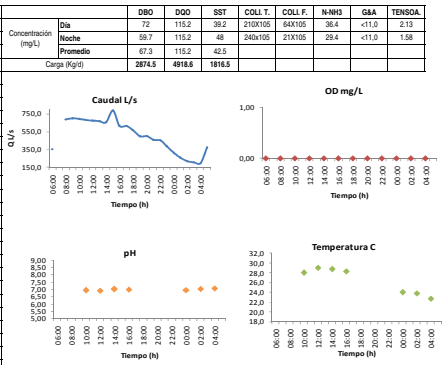


FICHA TÉCNICA
VERTIENTES DEL SISTEMA DE ALCANTARILLADO
BUACARAMANGA, FLORIDABLANCA Y GIRÓN



| | | | | | | | | |
|---|-------|--------------------------------|-----------------------|---|---------------|-------------------------------|------------|----------|
| FUENTE RECEPTORA: RIO FRIO | | PUNTO DE AFORO: PTAR RIO FRIO | | METODO DE AFORO: Vadeo | | COORDENADAS | | |
| Identificación No. 2 | | HORA Inicial 08:00 Final 05:00 | | EUCIACIÓN DEL MOLINETE | | Norte 1272999 Este 1104463 | | |
| PARAMETROS IN SITU | | | | LOCALIZACIÓN AL PUNTO DE MUESTREO (Fuentes) | | | | |
| O.D (mg/L) | 0.00 | pH: 7.08 8.91 | Temperatura Agua (°C) | Max 29.0 Min 22.7 | DISTANCIA (m) | Agua arriba | Agua abajo | |
| CONDICIONES HIDRAULICAS DEL CAUDAL DESCARGADO | | | | GENERALIDADES DE LA ESTRUCTURA | | | | |
| Q. promedio (L/s): | 502.7 | Q. día (L/s) | 647.5 | Q. noche (L/s) | 369.9 | DIMENSIÓN: Ø (m) | ANCHO | ALTO (m) |
| Velocidad media (m/s): | | | | Área sección (m²): | | TIPO DE MATERIAL: concreto | | |
| OBSERVACIONES GENERALES: | | | | ESTADO DE LA ESTRUCTURA: | | | | |

| HORA | Q (l/s) | O.D | pH | T w | DBO | DQO | SST | COLL. T. | COLL. F. | N-NH3 | GAA | TENSOA. |
|----------|---------|------|------|------|------|-------|------|----------|----------|-------|-------|---------|
| 06:00 | 353.0 | 0.00 | | | 72 | 115.2 | 39.2 | 210X105 | 64X105 | 36.4 | <11.0 | 2.13 |
| 07:00 | | | | | 59.7 | 115.2 | 48 | 340X105 | 21X105 | 29.4 | <11.0 | 1.58 |
| 08:00 | 689.0 | 0.00 | | | 67.3 | 115.2 | 42.5 | | | | | |
| 09:00 | 697.0 | | | | | | | | | | | |
| 10:00 | 692.0 | 0.00 | 6.93 | 28.0 | | | | | | | | |
| 11:00 | 683.0 | | | | | | | | | | | |
| 12:00 | 671.0 | 0.00 | 6.91 | 29.0 | | | | | | | | |
| 13:00 | 664.0 | | | | | | | | | | | |
| 14:00 | 655.0 | 0.00 | 7.01 | 28.7 | | | | | | | | |
| 15:00 | 788.0 | | | | | | | | | | | |
| 16:00 | 816.0 | 0.00 | 6.99 | 28.3 | | | | | | | | |
| 17:00 | 814.0 | | | | | | | | | | | |
| 18:00 | 570.0 | 0.00 | | | | | | | | | | |
| 19:00 | 500.0 | | | | | | | | | | | |
| 20:00 | 501.0 | 0.00 | | | | | | | | | | |
| 21:00 | 459.0 | | | | | | | | | | | |
| 22:00 | 451.0 | 0.00 | | | | | | | | | | |
| 23:00 | 387.0 | | | | | | | | | | | |
| 00:00 | 316.0 | 0.00 | 6.94 | 24.0 | | | | | | | | |
| 01:00 | 258.0 | | | | | | | | | | | |
| 02:00 | 219.0 | 0.00 | 7.02 | 23.8 | | | | | | | | |
| 03:00 | 208.0 | | | | | | | | | | | |
| 04:00 | 197.0 | 0.00 | 7.08 | 22.7 | | | | | | | | |
| 05:00 | 379.0 | | | | | | | | | | | |
| Promedio | 502.7 | 0.00 | | | | | | | | | | |
| Día | 647.5 | | | | | | | | | | | |
| Noche | 369.9 | | | | | | | | | | | |



FOTOGRAFÍAS





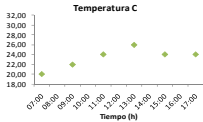
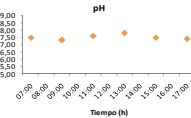
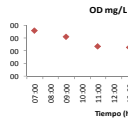
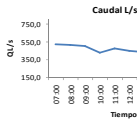
FICHA TÉCNICA
VERTIENTES DEL SISTEMA DE ALCANTARILLADO
BUACARAMANGA, FLORIDABLANCA Y GIRÓN



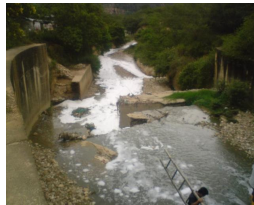
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|---|------|------------------------------------|--------------|-----------------------|------------------------|---|------------------|---------------|-------|------------|
| FUENTE RECEPTORA: Río De Oro | | PUNTO DE AFORO: QUEBRADA LA ROSITA | | | MÉTODO DE AFORO: Vadeo | | | COORDENADAS | | |
| Identificación | | HORA | | | Ecuación del Molinete | | | Norte 1276468 | | |
| No. 19 | | Inicial 08:00 Final 05:00 | | | | | | Este 1101780 | | |
| PARÁMETROS IN SITU | | | | | | LOCALIZACIÓN AL PUNTO DE MUESTREO (Fuentes) | | | | |
| O.D. (mg/L) | 2.65 | pH: | 7.80 | Temperatura Agua (°C) | Max | 28.0 | DISTANCIA (m) | Agua arriba | | Agua abajo |
| | | | 7.30 | | Min | 20.0 | | | | |
| CONDICIONES HIDRAULICAS DEL CAUDAL DESCARGADO | | | | | | GENERALIDADES DE LA ESTRUCTURA | | | | |
| Q. promedio (L/s): | | 443.3 | Q. día (L/s) | 443.3 | Q. noche (L/s) | | DIMENSIÓN: Ø (m) | | ANCHO | ALTO (m) |
| Velocidad media (m/s): | | | | | | TIPO DE MATERIAL: concreto | | | | |
| OBSERVACIONES GENERALES: | | | | | | ESTADO DE LA ESTRUCTURA: | | | | |

| HORA | Q (l/s) | O.D. (mg/L) | pH | T w |
|----------|---------|-------------|------|-------|
| 06:00 | | | | |
| 07:00 | 522.5 | 3.60 | 7.50 | 20.00 |
| 08:00 | 512.4 | | | |
| 09:00 | 500.7 | 3.12 | 7.30 | 22.00 |
| 10:00 | 428.6 | | | |
| 11:00 | 472.8 | 2.36 | 7.60 | 24.00 |
| 12:00 | 448.7 | | | |
| 13:00 | 435.4 | 2.28 | 7.80 | 26.00 |
| 14:00 | 431.4 | | | |
| 15:00 | 369.7 | 2.16 | 7.50 | 24.00 |
| 16:00 | 395.9 | | | |
| 17:00 | 358.1 | 2.40 | 7.40 | 24.00 |
| 18:00 | | | | |
| 19:00 | | | | |
| 20:00 | | | | |
| 21:00 | | | | |
| 22:00 | | | | |
| 23:00 | | | | |
| 00:00 | | | | |
| 01:00 | | | | |
| 02:00 | | | | |
| 03:00 | | | | |
| 04:00 | | | | |
| 05:00 | | | | |
| Promedio | 443.3 | 2.65 | | |
| Día | 443.3 | | | |
| Noche | | | | |

| | DBO | DQO | SST | COLL. T. | COLL. F. | N-NH3 | GAA | TENSOA. |
|----------------------|--------|--------|--------|----------|----------|-------|-------|---------|
| Concentración (mg/L) | 75 | 192 | 71.6 | 125*106 | 50*105 | 15 | <11.0 | 0.23 |
| Día | | | | | | | | |
| Noche | | | | | | | | |
| Promedio | 75.0 | 192.0 | 71.6 | | | | | |
| Carga (Kg/d) | 2871.9 | 7362.2 | 2741.7 | | | | | |



FOTOGRAFÍAS



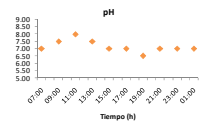
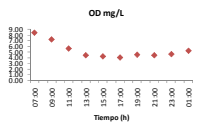
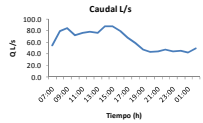


FICHA TÉCNICA
VERTIENTES DEL SISTEMA DE ALCANTARILLADO
BUACARAMANGA, FLORIDABLANCA Y GIRÓN



| | | | | | | | |
|---|------|-------------------------------|---------------------------------|---|----------------|--------------|-------------|
| FUENTE RECEPTORA: Río De Oro | | PUNTO DE AFORO: QUEBRADA SECA | | MÉTODO DE AFORO: Vadeo | | COORDENADAS | |
| Identificación | | HORA | | Este | | 1277189 | |
| No. 21 | | Inicial 08:00 Final 05:00 | | Ecuación DEL MOLINETE | | Este 1102073 | |
| PARÁMETROS IN SITU | | | | LOCALIZACIÓN AL PUNTO DE MUESTREO (Fuentes) | | | |
| O.D. (mg/L) | 5.25 | pH: | 8.00 | Temperatura Agua (°C) | Max | 8.0 | Agua arriba |
| | | | 8.50 | | Min | 0.0 | Agua abajo |
| CONDICIONES HIDRAULICAS DEL CAUDAL DESCARGADO | | | | GENERALIDADES DE LA ESTRUCTURA | | | |
| Q. promedio (L/s): | | 63.2 | Q. día (L/s) | 76.7 | Q. noche (L/s) | 46.7 | |
| Velocidad media (m/s): | | | Área sección (m ²): | | | | |
| OBSERVACIONES GENERALES: | | | | ESTADO DE LA ESTRUCTURA: | | | |
| | | | | TIPO DE MATERIAL: concreto | | | |
| | | | | DIMENSIÓN: Ø (m) | | | |
| | | | | ANCHO | | | |
| | | | | ALTO (m) | | | |

| HORA | Q (l/s) | O.D. | pH | T w | Concentración (mg/L) | DBO | DQO | SST | COLL. T. | COLL. F. | N-NH3 | GAA | TENSOA. |
|-----------------|-------------|-------------|------|-----|----------------------|-------|-------|-------|----------|----------|-------|-----|---------|
| 06:00 | | | | | | 59 | 115.2 | 37.2 | 150*105 | 30*105 | 12.6 | <11 | 0.63 |
| 07:00 | 54.9 | 8.40 | 7.00 | | | 52 | 115.2 | 24.4 | 200*105 | 50*105 | 14 | <11 | 0.49 |
| 08:00 | 79.1 | | | | | 57.0 | 115.2 | 33.6 | | | | | |
| 09:00 | 84.5 | 7.20 | 7.50 | | | 307.8 | 621.9 | 181.2 | | | | | |
| 10:00 | 72.1 | | | | | | | | | | | | |
| 11:00 | 76.1 | 5.60 | 8.00 | | | | | | | | | | |
| 12:00 | 78.5 | | | | | | | | | | | | |
| 13:00 | 76.1 | 4.40 | 7.50 | | | | | | | | | | |
| 14:00 | 87.7 | | | | | | | | | | | | |
| 15:00 | 87.7 | 4.20 | 7.00 | | | | | | | | | | |
| 16:00 | 79.0 | | | | | | | | | | | | |
| 17:00 | 67.9 | 4.00 | 7.00 | | | | | | | | | | |
| 18:00 | 58.6 | | | | | | | | | | | | |
| 19:00 | 47.1 | 4.50 | 6.50 | | | | | | | | | | |
| 20:00 | 43.0 | | | | | | | | | | | | |
| 21:00 | 44.1 | 4.40 | 7.00 | | | | | | | | | | |
| 22:00 | 47.0 | | | | | | | | | | | | |
| 23:00 | 44.3 | 4.60 | 7.00 | | | | | | | | | | |
| 00:00 | 45.0 | | | | | | | | | | | | |
| 01:00 | 42.1 | 5.20 | 7.00 | | | | | | | | | | |
| 02:00 | 49.0 | | | | | | | | | | | | |
| 03:00 | | | | | | | | | | | | | |
| 04:00 | | | | | | | | | | | | | |
| 05:00 | | | | | | | | | | | | | |
| Promedio | 63.2 | 5.25 | | | | | | | | | | | |
| Día | 76.7 | | | | | | | | | | | | |
| Noche | 46.7 | | | | | | | | | | | | |



FOTOGRAFÍAS



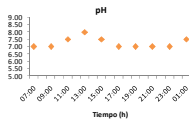
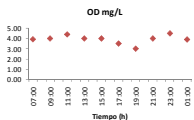
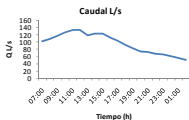


FICHA TÉCNICA
VERTIENTES DEL SISTEMA DE ALCANTARILLADO
BUACARAMANGA, FLORIDABLANCA Y GIRÓN



| | | | | | | | | |
|---|------|-----------------------------------|--------------|---|--------------------|--|---------------------------|----------|
| FUENTE RECEPTORA: RÍO DE ORO | | PUNTO DE AFORO: QUEBRADA LA JOYA | | MÉTODO DE AFORO: Vadeo | | COORDENADAS Norte 1277155 Este 1102429 | | |
| Identificación No. 20 | | HORA Inicial 08:00 Final 05:00 | | ECUACIÓN DEL MOLINETE | | Elevación 754m | | |
| PARÁMETROS IN SITU | | | | LOCALIZACIÓN AL PUNTO DE MUESTREO (Fuentes) | | | | |
| O.D. (mg/L) | 3.92 | pH: | 8.00 7.00 | Temperatura Agua (°C) | Max 8.0 Min 0.0 | DISTANCIA (m) | Agua arriba Agua abajo | |
| CONDICIONES HIDRAULICAS DEL CAUDAL DESCARGADO | | | | GENERALIDADES DE LA ESTRUCTURA | | | | |
| Q. promedio (L/s): | 96.4 | Q. día (L/s) | 118.8 | Q. noche (L/s) | 69.1 | DIMENSIÓN: Ø (m) | ANCHO | ALTO (m) |
| Velocidad media (m/s): | | Área sección (m ²): | | TIPO DE MATERIAL: concreto | | | | |
| OBSERVACIONES GENERALES: | | | | ESTADO DE LA ESTRUCTURA: | | | | |

| HORA | Q (l/s) | O.D. (mg/L) | pH | T w | Concentración (mg/L) | DBO | DQO | SST | COLL. T. | COLL. F. | N-NH3 | GAA | TENSOA. |
|----------|---------|-------------|------|-----|----------------------|-------|-------|--------|----------|----------|-------|-----|---------|
| 06:00 | | | | | Día | 37.7 | 80 | 356.4 | 550°105 | 49°105 | 22.4 | <11 | 0.44 |
| 07:00 | 102 | 3.92 | 7.00 | | Noche | 86.4 | 153.6 | 214 | 2400°106 | 1100°106 | 22.4 | <11 | 0.48 |
| 08:00 | 109 | | | | Promedio | 51.5 | 100.8 | 316.1 | | | | | |
| 09:00 | 117 | 4.00 | 7.00 | | Carga (Kg/d) | 433.7 | 849.4 | 2663.3 | | | | | |
| 10:00 | 128 | | | | | | | | | | | | |
| 11:00 | 134 | 4.40 | 7.50 | | | | | | | | | | |
| 12:00 | 133 | | | | | | | | | | | | |
| 13:00 | 119 | 4.00 | 8.00 | | | | | | | | | | |
| 14:00 | 124 | | | | | | | | | | | | |
| 15:00 | 124 | 4.00 | 7.50 | | | | | | | | | | |
| 16:00 | 112 | | | | | | | | | | | | |
| 17:00 | 103 | 3.50 | 7.00 | | | | | | | | | | |
| 18:00 | 92 | | | | | | | | | | | | |
| 19:00 | 82 | 3.00 | 7.00 | | | | | | | | | | |
| 20:00 | 75 | | | | | | | | | | | | |
| 21:00 | 72 | 4.00 | 7.00 | | | | | | | | | | |
| 22:00 | 67 | | | | | | | | | | | | |
| 23:00 | 65 | 4.50 | 7.00 | | | | | | | | | | |
| 00:00 | 61 | | | | | | | | | | | | |
| 01:00 | 56 | 3.90 | 7.50 | | | | | | | | | | |
| 02:00 | 51 | | | | | | | | | | | | |
| 03:00 | | | | | | | | | | | | | |
| 04:00 | | | | | | | | | | | | | |
| 05:00 | | | | | | | | | | | | | |
| Promedio | 96.4 | 3.92 | | | | | | | | | | | |
| Día | 118.8 | | | | | | | | | | | | |
| Noche | 69.1 | | | | | | | | | | | | |



FOTOGRAFÍAS

