

**Arkansas Department of Environmental Quality
Water Quality Management Plan Update Summary Sheet**

Date: 7/15/2015

New Permit

Renewal Permit

Amended Permit

Type of Discharge: Municipal Wastewater

Facility Name: City of Melbourne

Permit No.: AR0020036

Design Flow Rate (MGD): 0.41

Receiving Stream: Mill Creek

HUC + Reach Code: 11010004+0409

7Q10: 0 cfs

Planning Segment: 4F

County: Izard

Proposed Effluent Limits in mg/L (BOD5/TSS/DO):

No changes from current effluent limits shown below.

Current Effluent Limits in mg/L (CBOD5/TSS/NH3-N/DO):

May-October: 10/15/3.9/6
November-March: 25/30/10.3/6
April: 25/30/3.9/6

Justification (Sag = Minimum Modeled Value ≠ Difference in Value):

| Reach No. | Length (miles) | DO _C (mg/L) | Sag _C (mg/L) | Distance to Sag _C (miles) | DO _P (mg/L) | Sag _P (mg/L) | Distance to Sag _P (miles) |
|-----------|----------------|------------------------|-------------------------|--------------------------------------|------------------------|-------------------------|--------------------------------------|
| 1 | 0.8 | 2.0 | 5.8 | 0.34 | 6.0 | 6.2 | 0.42 |
| 2 | 2.0 | 5.0 | 5.9 | 0.0 | 6.0 | 6.3 | 0.0 |

Values in above table are from a modeling analysis dated 4/19/2010.

Outfall Location (Lat/Long): 36° 03' 33.7" N; 91° 55' 37.4" W

Remarks: This is for the reissuance of the discharge permit for this existing facility. No changes to the 208 Plan are being made with this permit renewal.

Ammonia Calculations

Facility Name City of Melbourne
 Major or Minor Minor
 Permit Number AR0020036
 Receiving Stream Mill Creek

7Q10, cfs 0
 0.25/0.67 multiplier 0.67
 Qb, cfs 0.00
 Qe, MGD 0.41
 Qe, cfs 0.63
 Cb, mg/l 0.05

Ecoregion or River name Ozark Highlands
 Watershed area (mi²) 6.38 (USGS StreamStats)
 Regulation No. 2 Chronic Toxicity Criteria (Instream Concentration)
 AML, mg/l DML, mg/l
 April 3.9 3.9
 May - October 3.9 3.9
 November - March 10.3 10.3

Allowable Effluent Conc., mg/l

$$(Q_e * C_e) + (Q_b * C_b) = (Q_e + Q_b) * IWC$$

Qe Effluent Flow
 Ce Allowable Effluent Concentration
 Qb % of Low Flow of Receiving Stream
 Cb Background Concentration
 IWC Instream Waste Concentration Chronic Toxicity Criteria

Allowable Effluent Conc. (Ce), mg/l

$$C_e = (IWC (Q_e + Q_b) - C_b \times Q_b) / Q_e$$

| | Monthly Avg.,mg/l | Daily Max, mg/l |
|------------------|-------------------|-----------------|
| April | 3.90 | 3.90 |
| May - October | 3.90 | 3.90 |
| November - March | 10.30 | 10.30 |

Chronic Toxicity Criteria vs. D.O. Model Limits

| Month | Monthly Average, mg/l | | Permit Limits | Daily Maximum,mg/l | | Permit Limits |
|------------------|-----------------------|------------|---------------|--------------------|------------|---------------|
| | Toxicity limit | D.O. limit | | Toxicity limit | D.O. limit | |
| April | 3.90 | 15 | 3.9 | 3.90 | 22.5 | 3.9 |
| May - October | no fishery | 3.9 | 3.9 | no fishery | 5.85 | 5.9 |
| November - March | 10.30 | 15 | 10.3 | 10.30 | 22.5 | 10.3 |

Minor Permits

Fish Early Life Stages Absent - Primary Season (November - March), mg/L

| Ecoregion | Temperature | pH | 4-day average | 30-day average |
|----------------------------------|-------------|-----|---------------|----------------|
| Arkansas River | 14 | 7.6 | 10.3 | 10.3 |
| Arkansas River Valley | 14 | 6.7 | 16.7 | 16.7 |
| Boston Mountains | 14 | 6.9 | 15.8 | 15.8 |
| Delta | 14 | 7.1 | 14.7 | 14.7 |
| Gulf Coastal Plains | 14 | 6.6 | 17 | 17 |
| Ouachita Mountains | 14 | 7.1 | 14.7 | 14.7 |
| Ouachita River (L. Mo. to Mouth) | 14 | 6.7 | 16.7 | 16.7 |
| Ozark Highlands | 14 | 7.6 | 10.3 | 10.3 |
| Red River | 14 | 7.5 | 11.3 | 11.3 |
| White River (Dam #10 Mouth) | 14 | 7.7 | 9.3 | 9.3 |

Fish Early Life Stages Present - Critical Season (April - October), mg/L

| Ecoregion | Temperature | pH | 4-day average | 30-day average |
|----------------------------------|-------------|-----|---------------|----------------|
| Arkansas River | 32 | 7.6 | 3.2 | 3.2 |
| Arkansas River Valley | 31 | 6.7 | 5.6 | 5.6 |
| Boston Mountains | 31 | 6.9 | 5.3 | 5.3 |
| Delta | 30 | 7.1 | 5.2 | 5.2 |
| Gulf Coastal Plains | 30 | 6.6 | 6.1 | 6.1 |
| Ouachita Mountains | 30 | 7.1 | 5.2 | 5.2 |
| Ouachita River (L. Mo. to Mouth) | 32 | 6.7 | 5.2 | 5.2 |
| Ozark Highlands | 29 | 7.6 | 3.9 | 3.9 |
| Red River | 32 | 7.5 | 3.5 | 3.5 |
| White River (Dam #10 Mouth) | 32 | 7.7 | 2.9 | 2.9 |

Major Permits

Fish Early Life Stages Absent - Primary Season (November - March), mg/L

| Ecoregion | Temperature | pH | 4-day average | 30-day average |
|----------------------------------|-------------|-----|---------------|----------------|
| Arkansas River | 14 | 7.6 | 10.3 | 4.1 |
| Arkansas River Valley | 14 | 6.7 | 16.7 | 6.7 |
| Boston Mountains | 14 | 6.9 | 15.8 | 6.3 |
| Delta | 14 | 7.1 | 14.7 | 5.9 |
| Gulf Coastal Plains | 14 | 6.6 | 17 | 6.8 |
| Ouachita Mountains | 14 | 7.1 | 14.7 | 5.9 |
| Ouachita River (L. Mo. to Mouth) | 14 | 6.7 | 16.7 | 6.7 |
| Ozark Highlands | 14 | 7.6 | 10.3 | 4.1 |
| Red River | 14 | 7.5 | 11.3 | 4.5 |
| White River (Dam #10 Mouth) | 14 | 7.7 | 9.3 | 3.7 |

Fish Early Life Stages Present - Critical Season (April-October), mg/L

| Ecoregion | Temperature | pH | 4-day average | 30-day average |
|----------------------------------|-------------|-----|---------------|----------------|
| Arkansas River | 32 | 7.6 | 3.2 | 1.3 |
| Arkansas River Valley | 31 | 6.7 | 5.6 | 2.2 |
| Boston Mountains | 31 | 6.9 | 5.3 | 2.1 |
| Delta | 30 | 7.1 | 5.2 | 2.1 |
| Gulf Coastal Plains | 30 | 6.6 | 6.1 | 2.4 |
| Ouachita Mountains | 30 | 7.1 | 5.2 | 2.1 |
| Ouachita River (L. Mo. to Mouth) | 32 | 6.7 | 5.2 | 2.1 |
| Ozark Highlands | 29 | 7.6 | 3.9 | 1.6 |
| Red River | 32 | 7.5 | 3.5 | 1.4 |
| White River (Dam #10 Mouth) | 32 | 7.7 | 2.9 | 1.2 |

Model Input Data

Facility Name: City of Melbourne

Permit Number: AR0020036

Outfall Lat./Long.: 36° 03' 33" N; 91° 55' 39" W

W.S. Drainage Area (mi²): < 10 Ecoregion: Ozark Highlands

| | Critical Season (May-Oct.) | | Primary Season (Nov.-Apr.) |
|-----------------------|----------------------------|-----|----------------------------|
| D.O. Standard (mg/L) | 2.0 | 5.0 | 6.0 |
| Temp. Standard (°C) | 29 | | 22 |
| Q stream (cfs) | 0.63 | | 1.0 |
| Velocity stream (fps) | 0.2 | | 0.2 |
| Depth stream (ft) | 0.5 | | 0.5 |

Q_{DESIGN} (MGD): 0.41 Planning Seg.: 4F

Receiving Stream: Mill Creek, then to Piney Creek, & then to the White River

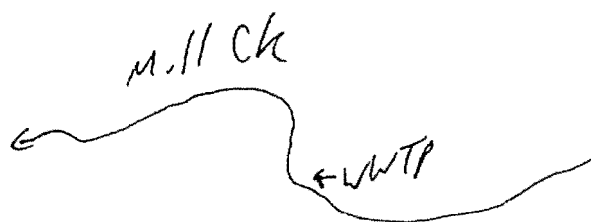
HUC + Reach Code:¹ 11010004+0409 Permit Type: Municipal

Other Facilities:

7Q10: 0 cfs

| <u>Name</u> | <u>Permit#</u> | <u>Coord.</u> | <u>Q (MGD)</u> | <u>Limits</u> |
|-------------|----------------|---------------|----------------|---------------|
| None | | | | |

Flow Diagram:



¹ The reach is from medium resolution NHD. The closest numbered reach downstream in the ADEQ's 2008 305(b) Report is 007 (Piney Creek).

Engineer: car
Date: 4/19/10

Input Model Coefficients

Reach 1

| Coefficient – at 20° C | Input Value | Justification |
|--------------------------------------|-------------|------------------|
| BOD _{ult} /BOD ₅ | 2.3 | EPA Guidance |
| K _d (1/day) | 0.4 | Draft EPA MOA |
| K _n (1/day) | 0.4 | Draft EPA MOA |
| SOD (g/m ² /day) | 0.8 | Draft EPA MOA |
| K _a (1/day) | Model | O'Connor-Dobbins |

Reach 2

| Coefficient – at 20° C | Input Value | Justification |
|--------------------------------------|-------------|------------------|
| BOD _{ult} /BOD ₅ | 2.3 | EPA Guidance |
| K _d (1/day) | 0.4 | Draft EPA MOA |
| K _n (1/day) | 0.4 | Draft EPA MOA |
| SOD (g/m ² /day) | 0.5 | Draft EPA MOA |
| K _a (1/day) | Model | O'Connor-Dobbins |

Recommendations:

Based on the current permit, the attached models, and the attached toxicity spreadsheet, the following are the proposed monthly average effluent limits (in mg/L) (CBOD5/NH3-N/DO):

May – October:² 10/3.9/6.0
 November – March: 25/10.3/6.0
 April:³ 25/3.9/6.0

² Per Reg. 2.106, the Critical Season is temperature dependent and tends to be from mid-May to mid-September.

³ The proposed NH3-N limit in April is based on Reg. 2.512.

Engineer:
 Date: 4/19/10

BVC

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*                               SIMPLIFIED METHOD PROGRAM                               *
*                               COMPLETE INPUT LISTING                               *
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20036-C, SMP

--*-*-* Run Information *-*-*-*-*

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Name of receiving stream ----- Mill Creek
Number of discharges ----- 1
Number of reaches ----- 2
Reaeration type ----- O'Connor-Dobbins
Run title ----- Melbourne - Critical

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--*-*-* Upstream Parameters *-*-*-*-*

| Parameter | Value | Comment |
|-------------------------|--------|-----------------|
| Flow (cfs) | 0.000 | 7Q10 |
| Temperature (°C) | 29.000 | Reg. 2 Critical |
| Dissolved Oxygen (mg/l) | 0.000 | |
| 5-Day BOD (mg/l) | 0.000 | |
| Ult. CBOD / 5-Day BOD | 2.300 | EPA Guidance |
| pH (su) | -0.000 | |
| Ammonia (mg/l) | 0.000 | |
| Alkalinity (mg/l) | -0.000 | |

--*-*-* Effluent Parameters *-*-*-*-*

Number of Discharges = 1

For Discharge Number 1 (CityofMelbourne)

| Parameter | Value | Comment |
|---------------------------|--------|-----------------|
| Flow (MGD) | 0.410 | DesignFlowRate |
| Temperature (°C) | 29.000 | Reg. 2 Critical |
| Dissolved Oxygen (mg/l) | 6.000 | Previous Permit |
| 5-Day BOD (mg/l) | 10.000 | Previous Permit |
| Ult. CBOD / 5-Day BOD | 2.300 | EPA Guidance |
| pH (su) | -0.000 | |
| Ammonia (mg/l) | 3.900 | Previous Permit |
| Alkalinity (mg/l) | -0.000 | |
| Beginning of Reach Number | 1.000 | |

--*-*-* Reach Information *-*-*-*-*

Number of Reaches = 2
Reaeration Type is O'Connor-Dobbins

For Reach Number 1

| Parameter | Value | Comment |
|--------------------|--------|--------------|
| Length (mile) | 0.800 | Google Earth |
| Velocity (fps) | 0.200 | |
| Slope (ft/mile) | 22.500 | Google Earth |
| Average Depth (ft) | 0.500 | |
| Temperature (°C) | 29.000 | Calculated |

| | | | |
|----------------------------|-------------------------|--------|---------------|
| BOD Removal Rate | (1/day) | 0.400 | Draft EPA MOA |
| NH3 Decay Rate | (1/day) | 0.400 | Draft EPA MOA |
| Sediment Oxygen Demand | (g/m ² /day) | 1.350 | k20 = 0.8 |
| Photosynthesis/respiration | (mg/L/day) | -0.000 | |

| | | |
|----------------------------------------|---------|--------|
| Temperature-corrected BOD removal rate | (1/day) | 0.605 |
| Temperature-corrected NH3 decay rate | (1/day) | 0.800 |
| Calculated reaeration rate at 20° C | (1/day) | 16.317 |
| Temperature-corrected reaeration rate | (1/day) | 20.218 |
| Calculated reach-averaged width | (ft) | 6.339 |

For Reach Number 2

| Parameter | Value | Comment |
|------------------------------------------------|--------|-----------------|
| Length (mile) | 2.000 | Google Earth |
| Velocity (fps) | 0.200 | |
| Slope (ft/mile) | 22.500 | Google Earth |
| Average Depth (ft) | 0.500 | |
| Temperature (°C) | 29.000 | Reg. 2 Critical |
| BOD Removal Rate (1/day) | 0.400 | Draft EPA MOA |
| NH3 Decay Rate (1/day) | 0.400 | Draft EPA MOA |
| Sediment Oxygen Demand (g/m ² /day) | 0.840 | k20 = 0.5 |
| Photosynthesis/respiration (mg/L/day) | -0.000 | |

| | | |
|----------------------------------------|---------|--------|
| Temperature-corrected BOD removal rate | (1/day) | 0.605 |
| Temperature-corrected NH3 decay rate | (1/day) | 0.800 |
| Calculated reaeration rate at 20° C | (1/day) | 16.317 |
| Temperature-corrected reaeration rate | (1/day) | 20.218 |
| Calculated reach-averaged width | (ft) | 6.339 |

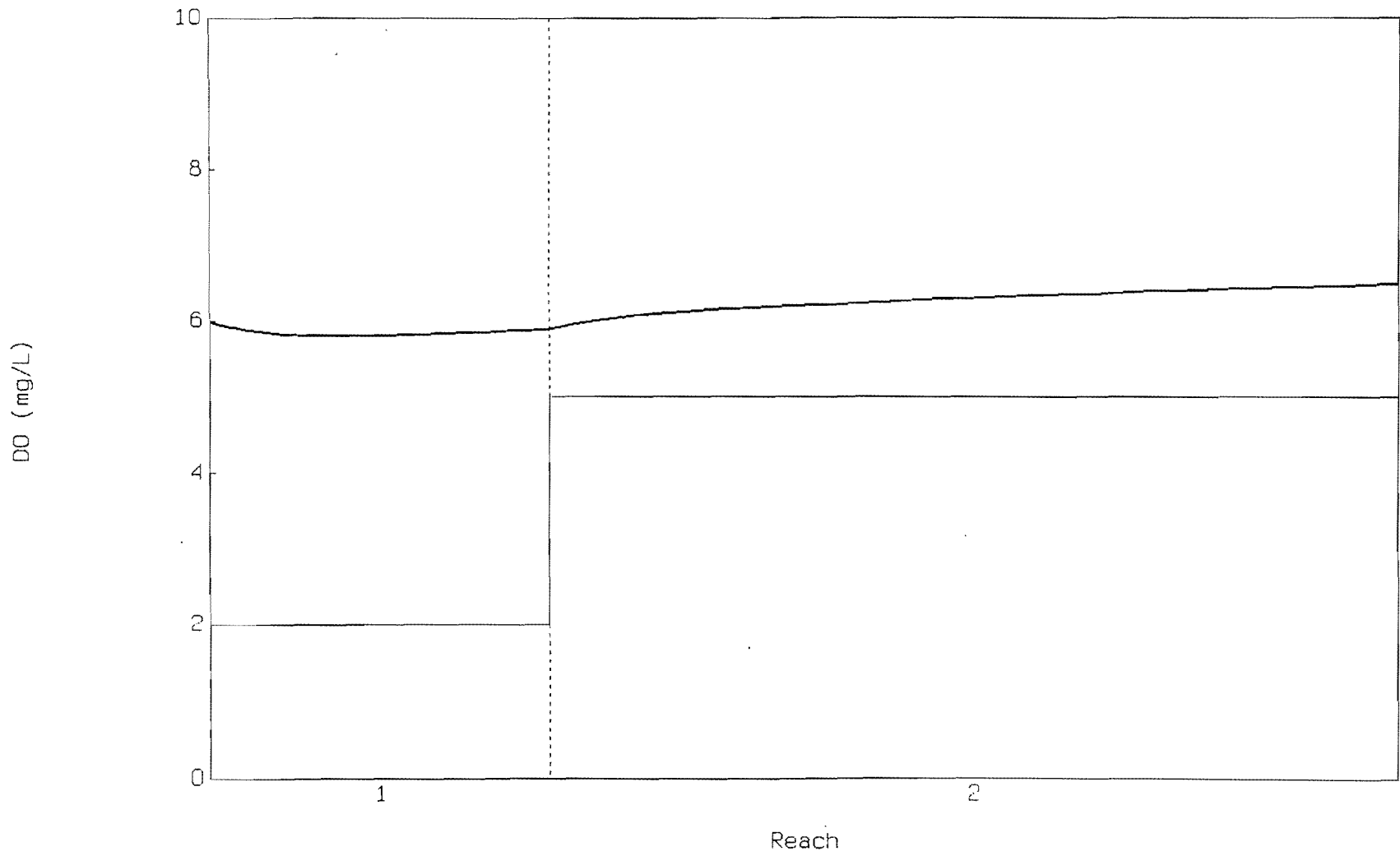
--*-*-* Results for Mill Creek *-*-*-*-*

Discharge is to -- Mill Creek
Run Title is -- Melbourne - Critical

| River Mile | DO Predicted | DO Observed | BOD Predicted | BOD Observed | NH3 Predicted | NH3 Observed |
|------------|--------------|-------------|---------------|--------------|---------------|--------------|
| 2.800 | 6.000 | | 23.000 | | 3.900 | |
| 2.780 | 5.967 | | 22.915 | | 3.881 | |
| 2.760 | 5.938 | | 22.831 | | 3.862 | |
| 2.740 | 5.913 | | 22.746 | | 3.843 | |
| 2.720 | 5.892 | | 22.662 | | 3.825 | |
| 2.700 | 5.874 | | 22.579 | | 3.806 | |
| 2.680 | 5.859 | | 22.496 | | 3.787 | |
| 2.660 | 5.846 | | 22.413 | | 3.769 | |
| 2.640 | 5.835 | | 22.330 | | 3.750 | |
| 2.620 | 5.827 | | 22.248 | | 3.732 | |
| 2.600 | 5.820 | | 22.165 | | 3.714 | |
| 2.580 | 5.814 | | 22.084 | | 3.696 | |
| 2.560 | 5.810 | | 22.002 | | 3.678 | |
| 2.540 | 5.807 | | 21.921 | | 3.660 | |
| 2.520 | 5.805 | | 21.840 | | 3.642 | |
| 2.500 | 5.804 | | 21.760 | | 3.624 | |
| 2.480 | 5.803 | | 21.679 | | 3.607 | |
| 2.460 | 5.803 | | 21.599 | | 3.589 | |
| 2.440 | 5.804 | | 21.520 | | 3.572 | |
| 2.420 | 5.806 | | 21.440 | | 3.554 | |
| 2.400 | 5.808 | | 21.361 | | 3.537 | |
| 2.380 | 5.810 | | 21.282 | | 3.520 | |
| 2.360 | 5.813 | | 21.204 | | 3.502 | |

| | | | |
|--------|-------|--------|-------|
| 2.340 | 5.816 | 21.126 | 3.485 |
| 2.320 | 5.819 | 21.048 | 3.468 |
| 2.300 | 5.823 | 20.970 | 3.452 |
| 2.280 | 5.826 | 20.893 | 3.435 |
| 2.260 | 5.830 | 20.816 | 3.418 |
| 2.240 | 5.834 | 20.739 | 3.401 |
| 2.220 | 5.839 | 20.662 | 3.385 |
| 2.200 | 5.843 | 20.586 | 3.368 |
| 2.180 | 5.847 | 20.510 | 3.352 |
| 2.160 | 5.852 | 20.435 | 3.335 |
| 2.140 | 5.857 | 20.359 | 3.319 |
| 2.120 | 5.861 | 20.284 | 3.303 |
| 2.100 | 5.866 | 20.209 | 3.287 |
| 2.080 | 5.871 | 20.135 | 3.271 |
| 2.060 | 5.876 | 20.060 | 3.255 |
| 2.040 | 5.881 | 19.986 | 3.239 |
| 2.020 | 5.885 | 19.913 | 3.223 |
| 2.000 | 5.890 | 19.839 | 3.208 |
| 1.900 | 5.991 | 19.476 | 3.130 |
| 1.800 | 6.057 | 19.119 | 3.055 |
| 1.700 | 6.103 | 18.769 | 2.981 |
| 1.600 | 6.139 | 18.426 | 2.909 |
| 1.500 | 6.169 | 18.088 | 2.839 |
| 1.400 | 6.196 | 17.757 | 2.770 |
| 1.300 | 6.220 | 17.432 | 2.703 |
| 1.200 | 6.243 | 17.113 | 2.638 |
| 1.100 | 6.266 | 16.800 | 2.574 |
| 1.000 | 6.287 | 16.492 | 2.512 |
| 0.900 | 6.308 | 16.190 | 2.452 |
| 0.800 | 6.328 | 15.894 | 2.392 |
| 0.700 | 6.348 | 15.603 | 2.335 |
| 0.600 | 6.368 | 15.317 | 2.278 |
| 0.500 | 6.387 | 15.037 | 2.223 |
| 0.400 | 6.405 | 14.761 | 2.170 |
| 0.300 | 6.423 | 14.491 | 2.117 |
| 0.200 | 6.441 | 14.226 | 2.066 |
| 0.100 | 6.459 | 13.965 | 2.016 |
| -0.000 | | | |
| -0.000 | 6.476 | 13.710 | 1.968 |

Dissolved Oxygen Profile
Melbourne - Critical



Max unionized ammonia = 0.0000 mg/L

BVC

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*                               SIMPLIFIED METHOD PROGRAM                               *
*                               COMPLETE INPUT LISTING                               *
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20036_P_SMP

--*-*-* Run Information *-*-*-*-*

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Name of receiving stream ----- Mill Creek
Number of discharges ----- 1
Number of reaches ----- 2
Reaeration type ----- O'Connor-Dobbins
Run title ----- Melbourne - Primary

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--*-*-* Upstream Parameters *-*-*-*-*

| Parameter | Value | Comment |
|-------------------------|--------|-----------------|
| Flow (cfs) | 0.365 | to = 1 cfs |
| Temperature (°C) | 22.000 | Reg. 2 Primary |
| Dissolved Oxygen (mg/l) | 7.400 | Assume 85% Sat. |
| 5-Day BOD (mg/l) | 1.000 | Assumed |
| Ult. CBOD / 5-Day BOD | 2.300 | EPA Guidance |
| pH (su) | -0.000 | |
| Ammonia (mg/l) | 0.050 | Assumed |
| Alkalinity (mg/l) | -0.000 | |

--*-*-* Effluent Parameters *-*-*-*-*

Number of Discharges = 1

For Discharge Number 1 (CityofMelbourne)

| Parameter | Value | Comment |
|---------------------------|--------|-----------------|
| Flow (MGD) | 0.410 | DesignFlowRate |
| Temperature (°C) | 22.000 | Reg. 2 Primary |
| Dissolved Oxygen (mg/l) | 6.000 | Previous Permit |
| 5-Day BOD (mg/l) | 25.000 | |
| Ult. CBOD / 5-Day BOD | 2.300 | EPA Guidance |
| pH (su) | -0.000 | |
| Ammonia (mg/l) | 15.000 | |
| Alkalinity (mg/l) | -0.000 | |
| Beginning of Reach Number | 1.000 | |

--*-*-* Reach Information *-*-*-*-*

Number of Reaches = 2
 Reaeration Type is O'Connor-Dobbins

For Reach Number 1

| Parameter | Value | Comment |
|--------------------|--------|--------------|
| Length (mile) | 0.800 | Google Earth |
| Velocity (fps) | 0.200 | |
| Slope (ft/mile) | 22.500 | Google Earth |
| Average Depth (ft) | 0.500 | |
| Temperature (°C) | 22.000 | Calculated |

| | | | |
|----------------------------|-------------------------|--------|---------------|
| BOD Removal Rate | (1/day) | 0.400 | Draft EPA MOA |
| NH3 Decay Rate | (1/day) | 0.400 | Draft EPA MOA |
| Sediment Oxygen Demand | (g/m ² /day) | 0.900 | k20 = 0.8 |
| Photosynthesis/respiration | (mg/L/day) | -0.000 | |

| | | |
|----------------------------------------|---------|--------|
| Temperature-corrected BOD removal rate | (1/day) | 0.438 |
| Temperature-corrected NH3 decay rate | (1/day) | 0.467 |
| Calculated reaeration rate at 20° C | (1/day) | 16.317 |
| Temperature-corrected reaeration rate | (1/day) | 17.113 |
| Calculated reach-averaged width | (ft) | 9.989 |

For Reach Number 2

| Parameter | Value | Comment |
|------------------------------------------------|--------|----------------|
| Length (mile) | 2.000 | Google Earth |
| Velocity (fps) | 0.200 | |
| Slope (ft/mile) | 22.500 | Google Earth |
| Average Depth (ft) | 0.500 | |
| Temperature (°C) | 22.000 | Reg. 2 Primary |
| BOD Removal Rate (1/day) | 0.400 | Draft EPA MOA |
| NH3 Decay Rate (1/day) | 0.400 | Draft EPA MOA |
| Sediment Oxygen Demand (g/m ² /day) | 0.560 | k20 = 0.5 |
| Photosynthesis/respiration (mg/L/day) | -0.000 | |

| | | |
|----------------------------------------|---------|--------|
| Temperature-corrected BOD removal rate | (1/day) | 0.438 |
| Temperature-corrected NH3 decay rate | (1/day) | 0.467 |
| Calculated reaeration rate at 20° C | (1/day) | 16.317 |
| Temperature-corrected reaeration rate | (1/day) | 17.113 |
| Calculated reach-averaged width | (ft) | 9.989 |

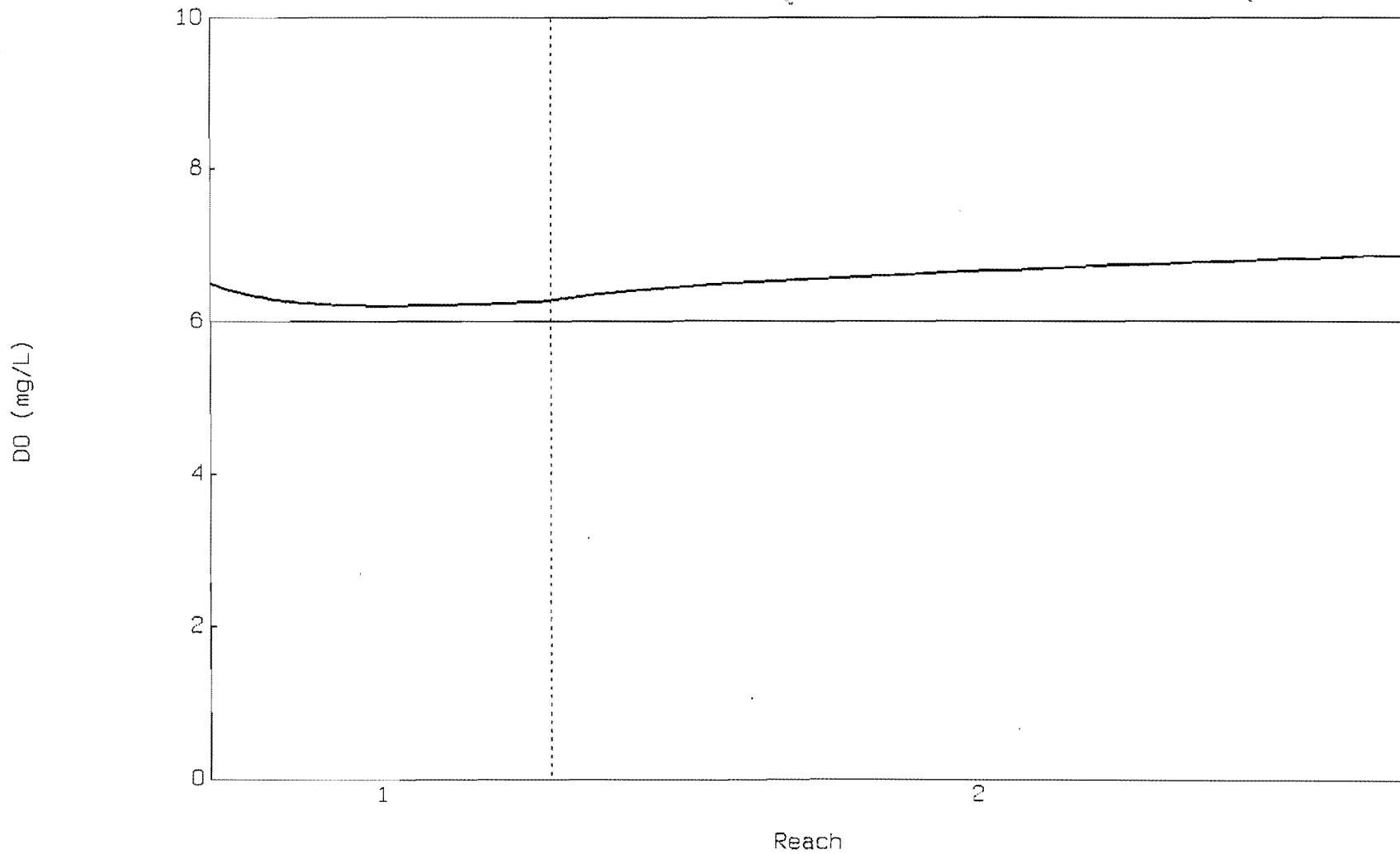
--*-*-* Results for Mill Creek *-*-*-*-*

Discharge is to -- Mill Creek
Run Title is -- Melbourne - Primary

| River Mile | DO Predicted | DO Observed | BOD Predicted | BOD Observed | NH3 Predicted | NH3 Observed |
|------------|--------------|-------------|---------------|--------------|---------------|--------------|
| 2.800 | 6.512 | | 37.329 | | 9.537 | |
| 2.780 | 6.470 | | 37.229 | | 9.510 | |
| 2.760 | 6.432 | | 37.129 | | 9.483 | |
| 2.740 | 6.399 | | 37.030 | | 9.456 | |
| 2.720 | 6.370 | | 36.931 | | 9.429 | |
| 2.700 | 6.345 | | 36.832 | | 9.402 | |
| 2.680 | 6.322 | | 36.734 | | 9.375 | |
| 2.660 | 6.303 | | 36.635 | | 9.349 | |
| 2.640 | 6.285 | | 36.537 | | 9.322 | |
| 2.620 | 6.271 | | 36.440 | | 9.295 | |
| 2.600 | 6.258 | | 36.342 | | 9.269 | |
| 2.580 | 6.247 | | 36.245 | | 9.243 | |
| 2.560 | 6.238 | | 36.148 | | 9.216 | |
| 2.540 | 6.230 | | 36.051 | | 9.190 | |
| 2.520 | 6.223 | | 35.955 | | 9.164 | |
| 2.500 | 6.218 | | 35.858 | | 9.138 | |
| 2.480 | 6.214 | | 35.762 | | 9.112 | |
| 2.460 | 6.211 | | 35.667 | | 9.086 | |
| 2.440 | 6.208 | | 35.571 | | 9.060 | |
| 2.420 | 6.207 | | 35.476 | | 9.034 | |
| 2.400 | 6.206 | | 35.381 | | 9.008 | |
| 2.380 | 6.206 | | 35.286 | | 8.983 | |
| 2.360 | 6.206 | | 35.192 | | 8.957 | |

| | | | |
|--------|-------|--------|-------|
| 2.340 | 6.207 | 35.098 | 8.932 |
| 2.320 | 6.209 | 35.004 | 8.906 |
| 2.300 | 6.210 | 34.910 | 8.881 |
| 2.280 | 6.213 | 34.817 | 8.856 |
| 2.260 | 6.215 | 34.724 | 8.830 |
| 2.240 | 6.218 | 34.631 | 8.805 |
| 2.220 | 6.221 | 34.538 | 8.780 |
| 2.200 | 6.224 | 34.446 | 8.755 |
| 2.180 | 6.228 | 34.353 | 8.730 |
| 2.160 | 6.232 | 34.262 | 8.705 |
| 2.140 | 6.235 | 34.170 | 8.681 |
| 2.120 | 6.239 | 34.078 | 8.656 |
| 2.100 | 6.244 | 33.987 | 8.631 |
| 2.080 | 6.248 | 33.896 | 8.607 |
| 2.060 | 6.252 | 33.806 | 8.582 |
| 2.040 | 6.257 | 33.715 | 8.558 |
| 2.020 | 6.261 | 33.625 | 8.533 |
| 2.000 | 6.266 | 33.535 | 8.509 |
| 1.900 | 6.343 | 33.089 | 8.389 |
| 1.800 | 6.400 | 32.648 | 8.270 |
| 1.700 | 6.444 | 32.214 | 8.153 |
| 1.600 | 6.480 | 31.785 | 8.037 |
| 1.500 | 6.512 | 31.362 | 7.924 |
| 1.400 | 6.541 | 30.945 | 7.812 |
| 1.300 | 6.568 | 30.533 | 7.701 |
| 1.200 | 6.594 | 30.126 | 7.592 |
| 1.100 | 6.619 | 29.725 | 7.484 |
| 1.000 | 6.644 | 29.330 | 7.379 |
| 0.900 | 6.668 | 28.939 | 7.274 |
| 0.800 | 6.691 | 28.554 | 7.171 |
| 0.700 | 6.714 | 28.174 | 7.070 |
| 0.600 | 6.737 | 27.799 | 6.970 |
| 0.500 | 6.759 | 27.429 | 6.871 |
| 0.400 | 6.781 | 27.064 | 6.774 |
| 0.300 | 6.803 | 26.704 | 6.678 |
| 0.200 | 6.825 | 26.349 | 6.583 |
| 0.100 | 6.846 | 25.998 | 6.490 |
| -0.000 | | | |
| -0.000 | 6.867 | 25.652 | 6.398 |

Dissolved Oxygen Profile
Melbourne - Primary



Max unionized ammonia = 0.0000 mg/L