Appendix G: Public Comment Response Summary

The draft Black River Watershed Total Maximum Daily Load report was available for public comment from February 18 through March 17, 2008. Three sets of comments were received:

- Republic Engineered Products, Inc.
- Northeast Ohio Regional Sewer District
- A. Klein and T. Korzan

This appendix contains the comments and the responses to those comments. Please note that references to report content from the draft document may not correspond to the same page in the final report.

Republic Engineered Products, Inc.

REP Comment #1
In the TMDL report Republic's Lorain Plant is mentioned in a few locations and is sometimes referred to as Republic Technologies, the current name for the Lorain plant is Republic Engineered Products, Inc. and should be reflected. Aside from commenting on the proper name for Republic Engineered Products, Inc., we see no need to provide additional comments to Ohio EPA.

Response
Ohio EPA has made the facility name changes in the final document.

Northeast Ohio Regional Sewer District (NEORSD)

NEORSD Comment #1
The NEORSD believes that the draft TMDL report's approach for calculating fecal coliform allocations is questionable. The approach that is used compares individual samples, instead of the 30-day geometric mean, to the primary contact fecal coliform criterion of 1,000 cfu/100 mL. It also fails to provide that, according to existing State standards, up to ten percent of the fecal coliform values in the representative monthly data set may exceed 2,000 cfu/100 mL. It is written that this approach is taken in order to provide for an additional, implicit margin of safety. However, a 5% explicit margin of safety is already used in the TMDL as well as a 5% reserve allocation for future growth. Inclusion of yet another margin of safety results in a gross overestimation of the fecal coliform load reductions required to meet applicable water quality standards. We do not believe that misapplying the water quality standards constitutes an appropriate margin of safety – especially where an explicit margin of safety has already been incorporated.

Other analyses, including those which account for the statistical basis of water quality criteria, are available. We suggest the following, more appropriate approach that utilizes the draft report's flow and load duration curves, but correctly applies the state water quality criteria:

1. A representative distribution of river flow-associated fecal coliform loads can be determined from the Fecal Coliform vs. Flow regression and Load Exceedance Analysis curves displayed in Appendix A of the draft report. *(We selected, for illustration, each load in five-percent increments from 5% to 95% of the "Observed Flow Exceedance" for the sampling station at French creek, the site that required the greatest percentage of reduction. This was done to provide equal weighting for each flow exceedance in the calculation of the geometric mean. See the attachment.)*

2. The fecal coliform density associated with each of these loads can be calculated using each of the associated river flows displayed in the Fecal Coliform vs. Flow regression for the same location. *(See the Attachment.)*

3. The geometric mean of these representatively distributed, flow-associated densities can be determined and compared with the state's geometric mean criterion of 1,000 cfu/mL. *(We calculate a geometric mean of 727 cfu/100mL, which is well below the applicable criterion. See the attachment.)*

4. Various percentile fecal coliform densities can be determined from this data set. *(We determine the 50th and 90th percentile densities to be 695 and 1,292 cfu/100 mL, respectively. See the attachment.)*

5. The water quality criteria indicate that the 90th percentile and greater of these densities may exceed 2,000 cfu/100 mL, but the densities lower than the 90th percentile may not. The differences between 2,000 cfu/100mL and the densities lower than the 90th percentile can be used to calculate the fecal coliform load reduction percentages required at the respective densities. *(We calculate that, at both the 50th percentile and immediately below the 90th percentile, no fecal coliform load reductions would be required to attain the water quality criteria. See the attachment.)*

6. A 5% Margin of Safety and 5% reserved for Future Growth can be incorporated by subtracting 10% from the water quality criterion, resulting in a value of 1,800 cfu/100mL. Fecal coliform load reduction percentages required to meet this value can then be calculated. *(We calculate that, with a 5% Margin of Safety and 5% reserved for Future Growth, no fecal coliform load reductions would be required at the 50th percentile and immediately below the 90th percentile. See the attachment.)*

The NEORSD understands the complexity of determining attainment of bacterial water quality standards. In the draft *Ohio 2008 Integrated Water Quality Monitoring and Assessment Report*, it is anticipated that revisions to the applicable recreation criteria are anticipated to be completed by the time the 2010 Integrated Report is prepared. If the alternative approach to determine fecal coliform loads as detailed above or a similar method is not used, it is recommended that the Ohio EPA wait to finish the bacterial portion of the Black River TMDL until the new criteria are finalized.

[The attachment from the NEORSD comments is shown below.]

River Flow Percentile	**Est. Fecal Coliform[1] Million/Day**	**Est. River Flow[2] cfs**	**Fecal Coliform[3] cfu/100 mL**	**WQ Criterion[4] cfu/100 mL**	**Reduction Required to attain WQ Criterion**	**Reduction Required with 5% MOS & 5% Future Growth**
5th	6611	0.7	386			
10th	9276	0.9	421			
15th	12158	1.1	452			
20th	16023	1.4	485			
25th	19302	1.6	509			
30th	21862	1.7	526			
35th	27216	2.0	556			
40th	38762	2.6	609			
45th	51280	3.2	655			
50th	64647	3.8	695			

River Flow Percentile	Est. Fecal Coliform[1] Million/Day	Est. River Flow[2] cfs	Fecal Coliform[3] cfu/100 mL	WQ Criterion[4] cfu/100 mL	Reduction Required to attain WQ Criterion	Reduction Required with 5% MOS & 5% Future Growth
55th	78771	4.4	732			
60th	98664	5.2	776			
65th	119654	6.0	815			
70th	176333	8.0	901			
75th	238209	10.0	974			
80th	411446	15.0	1,121			
85th	606341	20.0	1,239			
90th	1289164	35.0	1,506			
95th	3093322	67.0	1,887			
Geometric	**Mean**	**FC =**	**727**	**1,000**	**0%**	**0%**
50th	**Percentile**	**FC =**	**695**	**2,000**	**0%**	**0%**
75th	**Percentile**	**FC =**	**937**	**2,000**	**0%**	**0%**
90th	**Percentile**	**FC =**	**1,292**	**2,000**	**0%**	**0%**
95th	**Percentile**	**FC =**	**1,544**	**N/A**	**0%**	**0%**

[1] Fecal coliform loads calculated from Best-Fit line equation for Fecal Coliform vs. Flow Regression for French creek in Appendix A of the Draft February 2008 *Total Maximum Daily Loads for the Black River Watershed*

[2] River flows estimated from Fecal Coliform vs. Flow Regression and Load Exceedance Analysis Curve for French Creek in Appendix A of the Draft February 2008 *Total Maximum Daily Loads for the Black River Watershed*

[3] Fecal coliform density calculated as estimated fecal coliform load divided by estimated river flow.

[4] Primary contact recreational use criteria from Ohio Administrative Code Rule 3745-1-07, Table 7-13.

Response

The geometric mean component of the fecal coliform criteria (1,000 counts/100 mL) was used to calculate the daily allowable loads to ensure that both components of the fecal coliform criteria would be met. Calculating daily allowable loads using the instantaneous criterion (2,000 counts/100 mL) would not ensure that the geometric mean criterion would be met. This approach is consistent with EPA guidance on this topic.

The difficulty arises in calculating an observed load to use to compare to the allowable loads. Ohio EPA acknowledges that the approach used for the Black River TMDL is conservative in that (1) individual loads are used to compare to geometric mean allowable loads and (2) it does not account for the 10% of samples that may exceed 2000 counts/100 mL. However, Ohio EPA disagrees that this results in "a gross overestimation of the fecal coliform load reductions required to meet applicable water quality standards." The table below shows the actual fecal coliform sampling results for French Creek, and indicates that the 90th percentile of the observed data is 3,020. This indicates that reductions are indeed needed to meet water quality standards. As demonstrated by the load duration analysis, the greatest reductions are needed for high flow periods.

Fecal coliform samples available for French Creek at river mile 2.8 (upstream of the French Creek WWTP).

Date	Fecal Coliform (#/100 mL)	Percentile	WQ Criterion	Reduction Required to attain WQ Criterion
6/8/2000	2033	81.5%		
7/11/2000	2500	84.2%		
8/8/2000	4000	94.7%		
9/6/2000	400	31.5%		
10/4/2000	4200	97.3%		
5/8/2001	750	60.5%		
6/5/2001	645	54.0%		
7/2/2001	830	66.6%		
8/7/2001	400	33.3%		
9/11/2001	330	13.8%		
10/3/2001	210	2.7%		
5/6/2002	320	8.3%		
6/4/2002	830	66.6%		
7/9/2002	460	30.5%		
8/7/2002	800	61.1%		
9/4/2002	360	17.1%		
5/5/2003	500	32.3%		
7/21/2003	2500	84.8%		
8/4/2003	830	68.7%		
9/8/2003	550	41.9%		
10/6/2003	370	20.0%		
5/4/2004	8000	100.0%		
6/8/2004	380	21.4%		
7/6/2004	400	22.2%		
8/3/2004	500	30.7%		
9/7/2004	330	12.0%		
10/5/2004	250	4.1%		
5/3/2005	350	8.6%		
6/7/2005	250	4.5%		
7/6/2005	1900	71.4%		
8/23/2005	3000	85.0%		
9/7/2005	1200	68.4%		
10/4/2005	350	5.5%		
5/2/2006	208	0.0%		
6/6/2006	3100	93.7%		
7/10/2006	1930	80.0%		
8/8/2006	800	64.2%		
9/6/2006	410	0.0%		
10/3/2006	740	41.6%		
Geometric Mean	742		1000	0.0%
50th Percentile	550		2000	0.0%
75th Percentile	1550		2000	0.0%
90th Percentile	3020		2000	-33.8%
95th Percentile	4020		N/A	0.0%

NEORSD Comment #2
On page 17 of the draft report, it is written in regard to loading curves that "Points plotting above the curve represent deviations from water quality standard/target and the daily allowable load. Those plotting below the curve represent compliance with standards and the daily allowable load. Further, it can be determined which locations contribute loads above or below the water quality standard/target." These statements are not accurate. As mentioned in the draft report, the water quality standard is based on a 30-day geometric mean, while the loading curve is based on a daily value. Therefore, points above the curve may not necessarily mean that the water quality standard is not being met. It is recommended that these statements be changed to state that only the target, instead of the water quality standard, is or is not being met when points are below or above the curve.

Response
This section has been re-written to the following:

> "Points plotting above the curve represent individual samples that exceed the TMDL target of 1,000 counts/100 mL. Those plotting below the curve represent compliance with the target and the daily allowable load. Further, it can be determined which locations contribute loads above or below the target."

NEORSD Comment #3
In the draft report, there is inconsistency in determining the wasteload allocation (WLA) when wastewater treatment plants are upstream of two different sampling stations. For example, in Table 4-4, *Loading Statistics for site 501510,* Brentwood Lake WWTP is allocated 1000 cfu/100 mL across all flow conditions. However, in Table 4-15, *Loading Statistics for the Brentwood Lake tributary* (CARL99-07), Brentwood Lake WWTP is only allocated 400 cfu/100 mL under dry conditions if design flow is used. It is stated that the Brentwood Lake WWTP is allocated less because they are operating well below design flows and also to allow for a load reduction. This is contrary to the statements on page 25 that "The WLAs for individual facilities are summarized in the subsections below and were established based on each plant's design flow and permit limits" and on page 45 that "The allocation of point source loads (i.e., the WLA) also takes into account critical conditions by assuming the facilities will always discharge at their maximum design flows." Since NPDES permits, which are recommended in the draft TMDL to be changed according to the limits proposed in the allocations, are usually based on design flows, it is recommended that the same be done in the TMDL. Doing so will also eliminate all differences in allocations when WWTPs are upstream of two sampling stations.

Response
Thank you for this comment. The allowable loads for this site have been adjusted to account for the design flow from the Brentwood Lake WWTP. The estimated flows were less than the design flow from the WWTP during the low flow zone, which caused the WLA to exceed the allowable load. In the final report the estimated flows from this site were adjusted by adding the design flow from the WWTP. This ensures the loading capacity of the stream takes into account the potential for the WWTP to discharge at its design flow. A revised Table 4-15 is shown below.

Table 4-15 (Revised). Loading Statistics for the Brentwood Lake tributary (CARL99-07).

Brentwood Lake Tributary TMDL		High Flows	Moist Conditions	Mid-Range Flows	Dry Conditions	Low Flows
Pollutant	**TMDL Component**	**0-10**	**10-40**	**40-60**	**60-90**	**90-100**
Fecal Coliform (Million/day)	Current Load	144,242	39,929	28,610	3,133	686
	TMDL= LA+WLA+MOS	269,535	44,457	18,706	10,337	6,990
	LA	211,384	31,840	11,299	5,215	2,204
	Future Growth Reserve (5%)	13,250	1,996	708	290	122
	WLA: Brentwood Lake WWTP	4,542	4,542	4,542	4,542	4,542
	WLA: MS4	27,109	4,083	1,449	0	0
	MOS (5%)	13,250	1,996	708	290	122
	TMDL Reduction (%)	0%	0%	34%	0%	0%

NEORSD Comment #4
For nutrient WLAs, limits of 0.5 mg/L for total phosphorus and 10 mg/L for total nitrogen were evaluated in the point source control scenario described in Appendix B. In the final allocations for POTWs, however, many of the concentrations that are needed to meet the daily allocations are lower than these limits, and in some cases, significantly so. It is unclear whether a sufficient database was used to determine that these POTWs are capable of consistently meeting these lower limits. This should be demonstrated before these POTWs are given discharge limits lower than either 0.5 mg/L for total phosphorus or 10 mg/L for total nitrogen.

Response
The modeled flows and concentrations for the point sources in the Black River watershed were based on data from Ohio EPA's Surface Water Information System (SWIMS) database. These data suggest that many (although not all) of the facilities are already consistently discharging total phosphorus and nitrate concentrations below the proposed permit limits. Ohio EPA uses compliance schedules, monitoring requirements and other tools within the National Pollutant Discharge Elimination System to arrive at permit conditions for point sources. Permits are issued in draft form with a public review period, followed by issuance as a final permit.

NEORSD Comment #5
Finally, according to OAC 3745-4-01 (C)(3), level three credible data is necessary for the regulatory purposes specified in 6111.52 of the Ohio Revised Code. These purposes include, at 611.52 (E), "Establishing a total maximum daily load for a water of the state." Therefore, all data used in this report is required to be level three credible. It is understood that much of the data used in the report was collected as part of NPDES permits and is, by default, "credible." However, it is not clear whether this is

true for all of the data that was used. We suggest that the Ohio EPA provide clarification of the credibility of the data used in the report.

Response
The Ohio General Assembly passed Amended House Bill 43 in 2003. A primary reason for the legislation was that the State should have as much good scientific information about Ohio's surface waters as possible in order to properly manage those waters. Ohio EPA, using the framework established by this legislation, adopted rules for the surface water monitoring program designed to encourage and oversee the collection, analysis and use of data collected by volunteer individuals and organizations. To promote scientific validity, Ohio EPA has established specific requirements to participate in the program and to collect data using approved study plans. The administrative rules became effective on March 24, 2006.

All flow and water quality data used to calculate allowable daily loads and to make allocations in the Black River watershed were based on data collected by Ohio EPA, NPDES permittees, or the U.S. Geological Survey and thus are valid sources of credible data and the data were deemed acceptable at level three. As noted previously, fecal coliform data collected by the Lorain County Health Department were used to estimate observed loads at several locations in the watershed. These data were collected in 1999 and 2000 and contribute valuable information about the watershed. While we cannot document the credible data level of the Lorain County data, our best professional judgment is that the data are acceptable.

The Black River TMDL project was initiated and the data were used for the loading analysis some time before the passage of the law. The project has taken longer than anticipated to be completed, but redoing the loading analysis is not an option because of resource constraints. As the project is revisited in the future, data will be updated accordingly.

A. Klein and T. Korzan

Klein/Korzan Comment #1
Section 2.4.2 indicates that "the state is currently considering changing the standard." If this is the case, why not wait to release the final version of the report until a decision is made?

Response
The standards used in the TMDL are in place and enforceable. A new rule, if enacted, would not become enforceable for at least a year. If the Black River TMDL needs to be recalculated based on new rules or any other factors, Ohio EPA will reissue a new TMDL, complete with an opportunity for public review.

Klein/Korzan Comment #2
It is evident in Section 3.2.1 that there is insufficient rainfall data within the watershed. We don't believe enough data was collected to effectively demonstrate how rainfall varies throughout the watershed. Precipitation amounts vary daily within a community, let alone a whole watershed.

As we all know, obtaining rain gauge data for one event doesn't predict how future events will occur, but we understand that significant data could be a helpful tool to aide in hydrologic evaluations or even predictions. The problem lies in that the entire study seems to be based on very limited rainfall data. This is very risky and in our opinion it affects the TMDL calculations. An example:

It is our understanding that the watershed was divided into sub-watersheds and that flows throughout the watershed were based on the gathered rainfall data. That makes sense. However, when looking at

particular sub-watersheds like Schroeder Ditch in Table 4-10, it is listed that 19.88% of the Drainage Area is occupied by the City of Elyria. This value is set. Basing calculations on this percentage, which is a percent of geographical area, completely eliminates any rainfall variability within a sub-watershed. The calculations seem to be stating that the rainfall is constant throughout each sub-watershed. This can not be possible and it is our belief that more rainfall data should be obtained.

Response

The allowable loads of fecal coliform within the watershed were calculated based on USGS reported flows as explained in Section 3 of the draft report. No rainfall data were used to estimate these flows, and thus the potential lack of rainfall data does not affect the fecal coliform TMDLs (including the one for Schroeder Ditch).

The allowable loads of TSS, phosphorus, and nitrate were calculated using the SWAT watershed model and thus are dependent on precipitation data. As explained in Appendix B, hourly precipitation and daily temperature data were obtained from the following four National Climatic Data Center stations: Cleveland WSFO Airport (331657), Chippewa Lake (331541), Elyria 3 E (332599), and the Oberlin (336156) climate stations (see Figure 3-1 of Appendix B). These data were used as inputs to the various SWAT subbasins depending on location and resulted in a relatively good hydrologic calibration as demonstrated in Section 3.1 of Appendix B. Although additional precipitation data might result in a slightly improved model, it is doubtful that there would be significant changes to the overall findings of the TMDL.

Klein/Korzan Comment #3

It is our belief that natural background levels should be considered when evaluating the Waste Load Allocations (or point sources) from the MS4's as well as the Load Allocations (or non-point sources) from the rural communities. It appears by the definitions under the first paragraph of Section 4.0 that the LA's for non-point sources would take this into consideration and may give an "out" for those non-point sources. No background samples were analyzed; nor were calculations performed.

Furthermore, WLA's are used synonymously throughout the report and even defined in Section 4.0 as point sources (not MS4 regulated storm water) and LA's are used synonymously with non-point sources (not unregulated storm water) and background levels. These definitions directly suggest that that there is no non-point sources or background levels within an MS4 and no point sources within non-MS4 areas. At a minimum, it isn't just to consider that natural background levels from wildlife should only be considered in the non-MS4 areas when MS4's obviously would have background levels as well.

We recommend considering changing the definitions or at least adding clarification of the exact content of WLA's and LA's.

Response

The definitions of WLAs and LAs are consistent with those used by the U.S. Environmental Protection Agency and the Clean Water Act. LAs are intended to include loads from both natural background as well as anthropogenic sources but there is no requirement to distinguish between the two and it is a very difficult task, especially for fecal coliform. Similarly, the use of the terms “point sources” and “nonpoint sources” are consistent with U.S. EPA policy. The term point source is generally used to refer to all “regulated sources” even for sources such as MS4s; nonpoint sources refer to all unregulated sources.

Klein/Korzan Comment #4

Under the second paragraph of Section 4.1.1, a series of fecal coliform sources is listed. We believe that the combined sewer overflows within the City of Elyria should be removed from the list. Extensive studies have been performed and much manpower has been consumed to ensure that this is not the case within the City of Elyria. We do agree that overflows in general could be a concern but singling out the City of Elyria is simply not right. Please consider revising the sentence to read, "...from both urban and rural areas, sewer overflows, and re-suspension of fecal coliform from the bottom of the river channel."

Response
Ohio EPA agrees with this comment and the sentence has been revised as suggested.

Klein/Korzan Comment #5
In summary, we think the report was good but some areas were a bit lacking. We're not convinced that the calculations were performed properly and that too many assumptions were used instead of obtaining the necessary data to perform more accurate calculations. We think it is important at this point to also point out that from Table 4-19 that 92.3% of Total Phosphorous, 88.8% of Nitrates and 88.5% of Total Suspended Solids are from the Load Allocation (or non-regulated) areas. It is our belief, and backed by these numbers, that the municipalities have been very diligent in reducing and minimizing the amounts of pollutants to the Black River Watershed and that it is now time to impose regulations on the rural community. The City of Elyria has spent millions upon millions of dollars over the past couple decades eliminating illicit discharges and eliminating/modifying sewer overflows and upgrading the Wastewater Pollution Control Plant and many other projects while agricultural practices have continued with minimal regulation. It is no longer time to keep squeezing the already small numbers from the municipalities; it is time to go after the larger contributors. Although we did not review the actual models in detail, it is our belief that riparian buffers and 15-foot filter strips may be the first step but they are not the solution. Other ideas need to be developed or considered when talking about the rural community.

Response
Ohio EPA agrees that in many areas of the watershed adequately sized and healthy riparian buffers will offer improvements to both water and habitat quality. Ohio EPA also agrees that minimum set backs from streams should be enacted locally to protect riparian function. Ohio EPA recommends working through local ordinances, zoning and other voluntary local effort to instate set back requirements in the watershed. These and other actions, some specifically addressing impacts from the rural and agricultural areas, have been offered in the Implementation Section of the report.

The Black River Remedial Action Plan (RAP) provides a forum for working toward effective water quality improvements in the watershed. Ohio EPA urges the citizens, industries and governments in the watershed to use the RAP to structure an adaptive management framework that will lend to an improved Black River watershed.