CHAPTER 6

RESTORATION STRATEGIES IN THE OBEY RIVER WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 storm water rules (implemented under the NPDES program) have transitioned from Phase 1 to Phase 2. More information on storm water rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Tennessee portion of the Obey River Watershed.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/watershed/public.shtml.

6.2.A. Year 1 Public Meeting. The first Obey River Watershed public meeting was held as a joint meting with the Cordell Hull Lake Watershed September 7, 1999 at Tennessee Technological University. The goals of the meeting were to: (1) present, and review the objectives of, the Watershed Approach, (2) introduce local, state, and federal agency and nongovernmental organization partners, (3) review water quality monitoring strategies, and (4) solicit input from the public.

Major Concerns/Comments

- East and West Forks Obey River need protection
- Dale Hollow Lake is a discharge lake (from houseboats)
- Increased sediment from streams after a rain
- Water taste from tap has gotten worse
- Effects of unplanned growth
- Effects of factory chicken houses coming to the Dale Hollow area
- Effects of abandoned mines and wells
- Increased nutrients on West Fork Obey River from agricultural feedlots

6.2.B. Year 3 Public Meeting. The second Obey River Watershed public meeting was held as a joint meeting with the Cordell Hull Lake Watershed November 15, 2001 in the Livingston Chamber of Commerce building. The goals of the meeting were to: (1) provide an overview of the watershed approach, (2) review the monitoring strategy, (3) summarize the most recent water quality assessment, (4) discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and (5) discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

Major Concerns/Comments

- Decreased dissolved oxygen in Dale Hollow Lake
- Gravel removal from lower Blackburn Fork and Roaring River
- Cumulative effects of non-BMP agricultural resources
- Agriculture (cattle) too close to Livingston water supply
- Roaring River state scenic river designation is not known or appreciated by landowners
- Silt in East Fork Obey River drainage where people go four-wheeling
- TDOT projects should trigger sites to be monitored because of construction and the ensuing development

6.2.C. Special Meeting Held at Citizens' Request. An additional meeting (East Fork Obey Summit) was held on September 25, 2007 in the Cookeville Environmental Field Office at the request of local citizens.

6.2.D. Year 5 Public Meeting. The third scheduled Obey River Watershed public meeting was held October 4, 2007 at the York Institute in Jamestown. The meeting was held jointly with the South Fork Cumberland River and Clear Fork Cumberland River Watersheds and featured seven educational components:

- Overview of watershed approach flash video
- Benthic macroinvertebrate specimens and interpretation
- SmartBoard™ with interactive GIS maps
- "Is Your Stream Healthy" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show
- Water supply and ground water protection educational display
- Water quality and land use maps

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan.

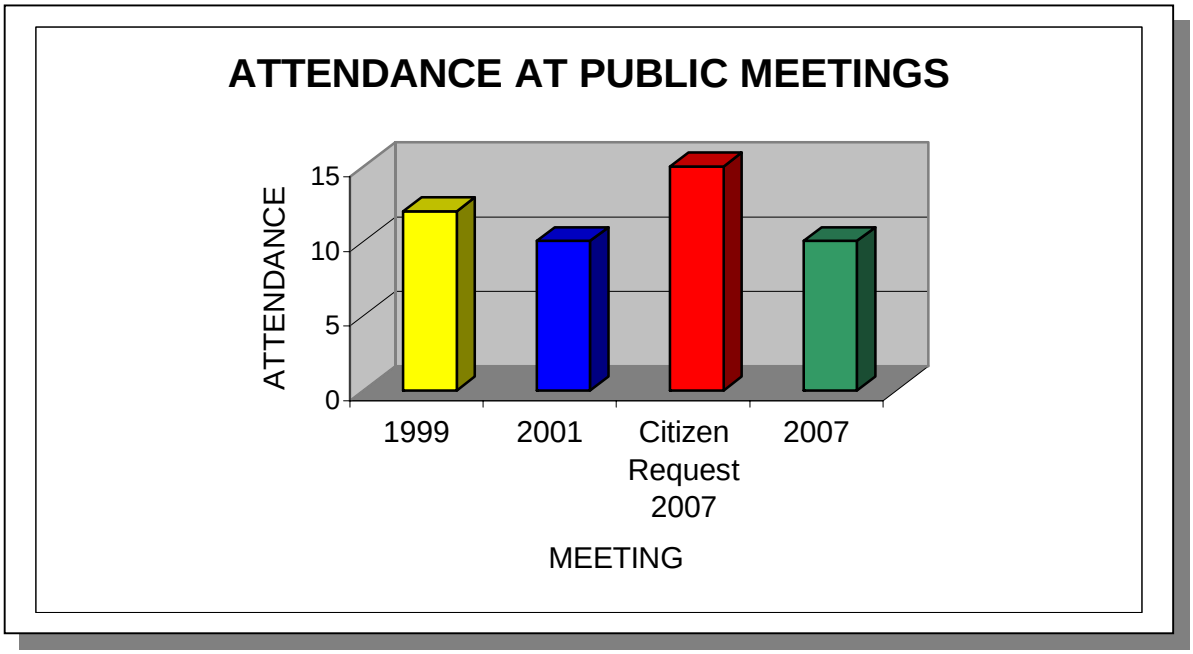

Figure 6-1. Attendance at the Obey Watershed Public Meetings. *Attendance numbers do not include TDEC personnel. Meetings in 1999 and 2001 represent Obey River and Cordell Hull Lake Watersheds joint public meetings. Citizen request 2007 meeting is East Fork Obey Summit (9/25/2007) requested by Tennessee Citizens for Wilderness Planning. Meeting in 2007 represents Obey River, South Fork Cumberland, and Clear Fork Cumberland River Watersheds joint public meeting.*

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at: http://www.state.tn.us/environment/wpc/tmdl/.

TMDLs are prioritized for development based on many factors.

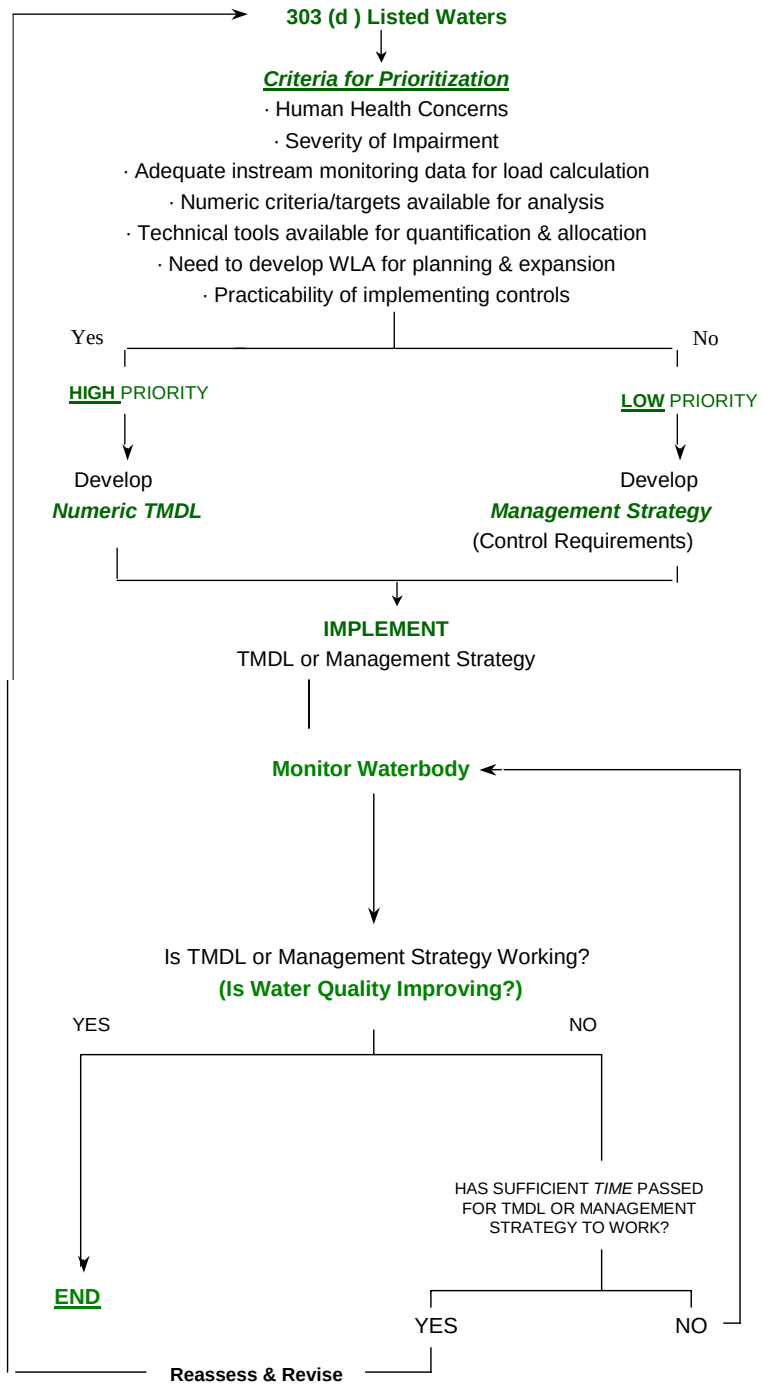

Figure 6-2. Prioritization Scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution in the Obey River Watershed include urban storm water runoff, riparian vegetation removal and other habitat alterations, as well as inappropriate land development, road construction, and agricultural practices. Since nonpoint pollution exists essentially everywhere rain falls, existing point source regulations can have only a limited effect. Other measures are, therefore, necessary.

There are several state and federal regulations that address contaminants impacting waters in the Obey River Watershed. Most of these are limited to point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include efforts by landowners and volunteer groups and the possible implementation of new regulations. Many agencies, such as the Tennessee Department of Agriculture (TDA) and the Natural Resources Conservation Service (NRCS), offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes types of impairments, possible causes, and suggested improvement measures. Restoration efforts should not be limited to only those streams and measures suggested below.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres were being disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites establishes conditions for maintenance of the sites to minimize pollution from storm water runoff, including requirements for installation and inspection of erosion prevention and sediment controls. Also, the general permit imposes more stringent inspection, design criteria, sediment control measures, and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation or are considered high quality. Examples of streams impaired by sediment and land development in the Obey River Watershed are East Fork and West Fork Obey River. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Beginning in 2003, the state began requiring some municipalities to obtain coverage under a permit designed to address nonpoint runoff issues: the General NPDES Municipal Separate Storm Sewer System Permit, commonly known as MS4. This permit requires the holder to develop a comprehensive storm water management program, including the adoption of local regulatory ordinances, regular inspection of construction sites and other discharges into their storm sewers, and a variety of educational, mapping, and monitoring activities. The state audits and oversees these local MS4 programs.

6.3.B.i.b. From Channel and/or Bank Erosion. Many streams within the Obey River Watershed suffer from varying degrees of streambank erosion. When steam channels are altered, banks can become unstable and highly erodable. Heavy livestock traffic can also severely disturb banks. When large tracts of land are cleared of vegetation (especially trees) and replaced with impermeable surfaces like asphalt and rooftops, the large increases in the velocities and volumes of storm water runoff can also overwhelm channel and bank integrity because destabilized banks contribute to sediment loadings and to the loss of beneficial riparian vegetation.

Some inappropriate agricultural practices and overzealous land development have impacted the hydrology and morphology of stream channels in this watershed, although none severely enough to cause a loss of use impairment at this time.

Several agencies such as the NRCS and TDA, as well as citizen watershed groups, are working to stabilize portions of stream banks using bioengineering and other techniques. Many of the affected streams, like East Fork and West Fork Obey River and Town Branch near Byrdstown, could benefit from these types of projects.

Some methods or controls that might be necessary to address common problems are:

Voluntary Activities

- Re-establish bank vegetation.
- Establish off-channel watering areas for livestock by moving watering troughs and feeders back from stream banks, or at least limit cattle access to restricted areas with armored bank entry (tributaries to the East Fork Obey River, Town Branch).
- Limit cattle access to streams and bank vegetation (Wolf River and its tributaries in Fentress and Picket Counties).

Regulatory Strategies

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices.
- Require post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion (East Fork and West Fork Obey River).
- Encourage or require strong local buffer ordinances.
- Implement additional restrictions on logging in streamside management zones.
- Limit clearing of stream and ditch banks or other alterations (East Fork and West Fork Obey River, Wolf River, Dale Hollow Lake). *Note: Permits may be required for any work along streams.*
- Limit road and utility crossings of streams through better site design.
- Restrict the use of off-highway vehicles on stream banks and in stream channels.

Additional Strategies

- Better community planning for the impacts of development on small streams, especially development in growing areas (tributaries to East Fork and West Fork Obey River, Dale Hollow Lake).

6.3.B.i.c. From Agriculture and Silviculture. The Water Quality Control Act exempts normal agricultural and silvicultural practices that do not result in a point source discharge. Nevertheless, efforts are being made to address impacts due to these exempted practices.

The Master Logger Program has been in place for several years to train loggers how to install Best Management Practices that lessen the impact of logging activities on streams. Recently, laws and regulations established the authority for the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop the logging operation that, upon failing to install these BMPs, is causing impacts to streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and water erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture are striving to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures.

Many sediment problems traceable to agricultural practices also involve riparian loss due to close row cropping or pasture clearing for grazing. Lack of any type of vegetated buffers along stream corridors is a major problem throughout the Obey River Watershed, due both to agricultural and residential/commercial land uses. Impacted streams that could benefit from the establishment of more extensive riparian buffer zones include tributaries to East Fork and West Fork Obey River and Town Branch near Byrdstown.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens in streams are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter from pets, livestock and wildlife washed into streams and storm drains. When fecal bacterial levels are shown to be consistently elevated to dangerously high levels, especially in streams with high potential for recreational uses, the division must post signage along the creek warning the public to avoid contact. Once pathogen sources have been identified and corrected, and pathogen level reductions are documented, the posting is lifted.

Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. The Division of Ground Water Protection within the Cookeville Environmental Field Office and delegated county health departments regulate septic tanks and field lines. In addition to discharges to surface waters, businesses may employ subsurface treatment for domestic wastewater or surface discharge of treated process wastewater. The Division of Water Pollution Control regulates surface water discharges and near-surface land application of treated wastewater.

Currently, 2 stream systems in the Tennessee portion of the Obey River Watershed are known to have excessive pathogen contamination. Town Branch near Byrdstown and Rockcastle Creek near Jamestown are impacted by urban areas, with contributions of

bacterial contamination coming from storm water runoff, sewage collection system leaks, and treatment plant operation failures.

Some measures that may be necessary to control pathogens are:

Voluntary Activities

- Clean up pet waste.
- Repair failed septic systems.
- Establish off-channel watering of livestock.
- Limit livestock access to streams and restrict stream crossings.
- Improve and educate on the proper management of animal waste from confined feeding operations.

Regulatory Strategies

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Determine timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identify Concentrated Animal Feeding Operations not currently permitted.
- Develop and enforce leash laws and controls on pet fecal material.
- Review the pathogen limits in discharge permits to determine the need for further restriction.

Additional Strategies

- Develop intensive planning in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces, from fertilized lawns and croplands, and faulty sewage disposal processes. Nutrients are often transported with sediment, so many of the measures designed to reduce sediment runoff will also aid in preventing organic enrichment of streams and lakes.

Dissolved oxygen depletion can also be due to the discharge of other biodegradable materials. These are limited in NPDES permits as ammonia and as either Biological Oxygen Demand (BOD) or Carbonaceous Oxygen Demand (CBOD).

Some sources of nutrients can be addressed by:

Voluntary Activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures. All streams within agricultural areas in the Obey River Watershed could benefit from these practices.
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.
- Develop management in urban and residential areas, including retrofitting existing commercial lots, homes, and roadways with storm water quality and quantity BMPs. This would especially improve the urban streams and lakes currently polluted by excessive nutrient inputs.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels suffer from some canopy removal. An intact riparian zone also acts as a buffer to filter out nutrient loads before they enter the water.
- Discourage impoundments. Ponds and lakes do not aerate water. Due to geologic concerns (sandstone), impoundments in the Obey River Watershed may create iron leachate in tail waters which would affect the East Fork and West Fork Obey River and their tributaries. *Note: Permits may be required for any work on a stream, including impoundments.*

Regulatory strategies.

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Impose more stringent permit limits for nutrients discharged from sewage treatment plants.
- Impose timely and appropriate enforcement for noncomplying sewage treatment plants, large and small, and their collection systems.
- Identify Concentrated Animal Feeding Operations (CAFO) not currently permitted.
- Identify any Animal Feeding Operations (AFO) that contribute to stream impacts and declare them as a CAFO requiring a permit.
- Require nutrient management plans for all golf courses.

Additional Strategies.

- Encourage TDA- and NRCS-sponsored educational programs targeted to agricultural landowners and aimed at better nutrient management, as well as information on technology-based application tools.

6.3.B.iv. Toxins and Other Materials.

Although some toxic substances are discharged directly into waters of the state from a point source, much of these materials are washed in during rainfalls from an upland location, or via improper waste disposal that contaminates groundwater. In the Tennesse portion of the Obey River Watershed, a relatively small number of streams are damaged by storm water runoff from industrial facilities or urban areas (Meadow Creek). In some areas, industrial activity related to historical coal mining, along with oil and gas drilling, has damaged tributaries to the East Fork and West Forks Obey River. More stringent inspection and regulation of permitted industrial facilities, and local storm water quality initiatives and regulations, could help reduce the amount of contaminated runoff reaching state waters.

Individuals may also cause contaminants to enter streams by activities that may be attributed to apathy or the lack of knowledge or civility. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all blatant examples of pollution in streams. To lessen the future impact to the waters of the state, each community can strive to raise its awareness for better conservation practices and prosecution of violators.

Some of these problems can be addressed by:

Voluntary Activities

- Provide public education.
- Paint warnings on storm drains that connect to a stream.
- Sponsor community clean-up days.
- Landscape public areas.
- Encourage public surveillance of their streams and reporting of dumping activities to their local authorities.

Regulatory Strategies

- Continue to prohibit illicit discharges to storm drains and to search them out.
- Strengthen litter law enforcement at the local level.
- Increase the restrictions on storm water runoff from industrial facilities.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

One large-scale stream habitat alteration that has created serious, long-term impacts is Dale Hollow dam, which impounds the Obey River. The dam causes unnatural temperature, dissolved oxygen, and flow fluctuations downstream.

Although large-scale public projects such as highway construction can alter significant portions of streams, individual landowners and developers are responsible for the vast majority of stream alterations. Some measures that can help address these problems are:

Voluntary Activities

- Sponsor litter pickup days to remove litter that might enter streams
- Organize stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoid use of heavy equipment to "clean out" streams. Instream work other than debris removal will require an Aquatic Resource Alteration Permit (ARAP).
- Plant native vegetation along streams to stabilize banks and provide habitat.
- Encourage developers to avoid extensive use of culverts in streams.

Regulatory Strategies

- Restrict modification of streams by means such as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.
- Require permitting of all rock harvesting operations.
- Increased enforcement may be needed when violations of current regulations occur, especially for illicit gravel dredging.

6.3.B.vi. Acid Mine Drainage (AMD).

Another source of pollution comes from abandoned and active mines. To a smaller extent, road cuts through certain types of shale layers can also contribute to the pollution of waters of the state. These streams are impacted by AMD, which causes the pH to drop to below 6.0.

Orange flock in the water and an oily film on the surface of the water characterize these streams. The orange color comes from the iron in the water precipitating out when the water reaches the surface and starts to oxidize. Once the iron has precipitated out, then other metals will start to precipitate, like manganese and aluminum (manganese forms a hard black coating on the substrate and aluminum a fine white chalky layer). Examples of streams affected by AMD are Cub Creek, Big Laurel Creek, Little Laurel Creek, Big Piney Creek and the East and West Forks of the Obey River.

The means necessary to remove AMD from these streams is complicated and expensive. There are two types of treatment systems, Passive Treatment and Active Treatment. Passive Treatment uses man-made wetlands lined with limestone rock to precipitate the flocculants and stabilize the pH. Active Treatment systems collect the water or measure the flow of the water and actively drop lime into the water in order to stabilize the pH. Since these treatment systems will have to go on for many years, the most cost effective means to treat these streams is by Passive Treatment. In order to install these systems the landowners, stakeholders and Office of Surface Mining all have

to work together. Most of the streams in the Obey watershed are receiving very little treatment.

Some of these problems can be addressed by:

Voluntary Activities

- Provide public education.
- Get stakeholders involved in the construction and maintenance of the wetlands.

Regulatory Strategies

Mining (and some TDOT) activities covered by an NPDES or ARAP permit should have a longer period of post-termination monitoring and remediation as a requirement of permit issuance.

6.3.B.vii. Storm Water.

MS4 discharges are regulated through the Phase I or II NPDES-MS4 permits. These permits require the development and implementation of a Storm Water Management Program (SWMP) that will reduce the discharge of pollutants to the maximum extent practicable and not cause or contribute to violations of state water quality standards. The NPDES General Permit for Discharges from Phase I and II MSF facilities can be found at:

http://www.state.tn.us/environment/wpc/stormh2o/.

For discharges into impaired waters, the MS4 General Permit requires that SWMPs include a section describing how discharges of pollutants of concern will be controlled to ensure that they do not cause or contribute to instream exceedances of water quality standards. Specific measurements and BMPs to control pollutants of concern must also be identified. In addition, MS4s must implement the proposed waste load allocation provisions of an applicable TMDL (i.e., siltation/habitat alteration, pathogens) and describe methods to evaluate whether storm water controls are adequate to meet the waste load allocation. In order to evaluate SWMP effectiveness and demonstrate compliance with specified waste load allocations, MS4s must develop and implement appropriate monitoring programs.

Some storm sewer discharges are not regulated through the NPDES MS4 program. Strategies to address runoff from in these urban areas include adapting Tennessee Growth Readiness Program (TGRP) educational materials to the watershed. TGRP is a statewide program built on existing best management practices from the Nonpoint Education for Municipal Officials program and the Center for Watershed Protection. TGRP developed the program to provide communities and counties with tools to design economically viable and watershed friendly developments. The program assists community leaders in reviewing current land use practices, determining impacts of imperviousness on watershed functions, and allowing them to understand the economics of good watershed management and site design.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Obey River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between August 1, 2002 and July 31, 2007. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the Obey River Watershed.*

6.4.A. Municipal Permits

TN0062626 Byrdstown STP

Discharger rating: Minor
City: Byrdstown
County: Pickett
EFO Name: Cookeville
Issuance Date: 9/1/99
Expiration Date: 8/31/04
Receiving Stream(s): Cumberland River Mile 158.2
HUC-12: 051301050403
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Oxidation ditch activated sludge with chlorination

Segment	TN05130105033_1400
Name	Town Branch
Size	3.1
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Escherichia coli, Phosphate, Nitrates
Sources	Municipal Point Source Discharges, Source Unknown, Land Application of Wastewater Biosolids (Non-agricultural)

Table 6-1. Stream Segment Information for Byrdstown STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	2.6	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	4.2	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	2	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	1.3	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	2.7	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	30	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	20	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	31	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	All Year	15	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	All Year	42	lb/day	DMax Load	3/Week	Composite	Effluent
D.O.	All Year	5	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
IC25 7day Ceriodaphnia dubia	All Year	100	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Quarterly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	83	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	63	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-2. Permit Limits for Byrdstown STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

24 Overflows
8 Bypasses

Enforcement:
10/15/07 Notice of violation: The reported value of 0.085 mg/L resulted in a chronic and a technical review criteria (TRC) violation. Both, chronic and TRC violations constitute a significant non-compliance and require the pretreatment authority to publish the violation.

Comments:
10/2/07 Pretreatment Technical Assistance Visit.

The program received a preliminary approval for the revised plant Protection Criteria and Local Limits. Once Byrdstown completes the public notice process and submits the required documentation, the Division will issue final approval for the changes.

During a file review, an exceedance of Industrial User Cyanide standard was noted. The Monthly average of 0.058 mg/L was exceeded on May 23, 2007. The reported value of 0.085 mg/L resulted in a chronic and a technical review criteria (TRC) violation. Both, chronic and TRC violations constitute a significant non-compliance and require the pretreatment authority to publish the violation.

Re-sampling is required within 24 hours of receiving the sampling results. Due to a change in personnel at the industry and at the city, the result was overlooked during the report review and re-sampling was omitted. Hutchison Plant personnel Chris King, was notified during our pretreatment inspection of the need to re-sample and to review the monitoring reports more closely.

12/20/06 Compliance Evaluation Inspection: In compliance
Personnel from the Division of Water Pollution Control, (WPC), Cookeville Environmental Field office, conducted a compliance Evaluation Inspection of the City of Byrdstown Wastewater Treatment Plant, (12-20-06). The current permit allows the design flow (discharge) for 0.25 million gallons per day (MGD). Mr. Gerald Beaty, the licensed wastewater plant operator and the licensed collection system operator is the operator in charge. The application for the NPDES permit renewal has been received by the Division of Water Pollution Control. Issuance of the new NPDES permit is pending. A copy of the existing permit was on site.

The records at the plant were in good order. The information was being maintained for three years. The bench-sheets were in good order. The analytical bench-sheets were sampled and found to be consistent with the corresponding DMR/MOR. The head works grit removal was in working order. Flow measurement was operational. The SBR(s) were operational. The U.V. system was operational. Extra U.V. bulbs were available. Operation and Maintenance are adequate. Back up generator power and fuel were in order.

The discharge was clear. Some foam was present, possibly due to the highly aerated effluent. The foam was not excessive. The discharge at the receiving stream is inspected once per week. Flow measurement was in order and the instrumentation was operational.

TN0058033 Cedar Hill Resort

Discharger rating: Minor
City: Celina
County: Clay
EFO Name: Cookeville
Issuance Date: 1/1/05
Expiration Date: 11/30/09
Receiving Stream(s): Obey River (Dale Hollow Reservoir) at mile 10.3
HUC-12: 051301050501
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN05130105001_1000
Name	Obey River
Size	6.8
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Industrial Water Supply (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Supporting), Recreation (Supporting)
Causes	Oxygen, Dissolved, Low flow alterations
Sources	Upstream Impoundments (e.g., PI-566 NRCS Structures)

Table 6-3. Stream Segment Information for Cedar Hill Resort.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Ari Mean	Monthly	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Month	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-4. Permit Limits for Cedar Hill Resort.

Comments:
None.

TN0062634 Jamestown STP

Discharger rating: Major
City: Jamestown
County: Fentress
EFO Name: Cookeville
Issuance Date: 4/1/06
Expiration Date: 2/27/09
Receiving Stream(s): Rockcastle Creek at mile 4.75
HUC-12: 051301050107
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Sequencing batch reactor biological treatment with chlorine disinfecting, dechlorination, and step re-aeration. Sludge is aerobically digested for land application.

Segment	TN05130105019_0300
Name	Rockcastle Creek
Size	8.9
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Recreation (Non-Supporting), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli, Oxygen, Dissolved, Temperature, water, Nutrient/Eutrophication Biological Indicators
Sources	Municipal (Urbanized High Density Area), Municipal Point Source Discharges

Table 6-5. Stream Segment Information for Jamestown STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	2.2	mg/L	DMax Conc	Weekdays	Composite	Effluent
Ammonia as N (Total)	Summer	14	lb/day	DMax Load	Weekdays	Composite	Effluent
Ammonia as N (Total)	Summer	1.7	mg/L	MAvg Conc	Weekdays	Composite	Effluent
Ammonia as N (Total)	Summer	1.1	mg/L	WAvg Conc	Weekdays	Composite	Effluent
Ammonia as N (Total)	Summer	9	lb/day	MAvg Load	Weekdays	Composite	Effluent
Ammonia as N (Total)	Winter	4.2	mg/L	DMax Conc	Weekdays	Composite	Effluent
Ammonia as N (Total)	Winter	3.2	mg/L	MAvg Conc	Weekdays	Composite	Effluent
Ammonia as N (Total)	Winter	18	lb/day	MAvg Load	Weekdays	Composite	Effluent
Ammonia as N (Total)	Winter	2.1	mg/L	WAvg Conc	Weekdays	Composite	Effluent
Ammonia as N (Total)	Winter	27	lb/day	DMax Load	Weekdays	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences / Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	Weekdays	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	Weekdays	Calculated	% Removal
CBOD5	All Year	40	mg/L	DMax Conc	Weekdays	Composite	Effluent
CBOD5	All Year	25	mg/L	DMin Conc	Weekdays	Composite	Effluent
CBOD5	All Year	35	mg/L	MAvg Conc	Weekdays	Composite	Effluent
CBOD5	All Year	292	lb/day	DMax Load	Weekdays	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	Weekdays	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	MAvg Conc	Weekdays	Composite	Influent (Raw Sewage)
CBOD5	All Year	209	lb/day	MAvg Load	Weekdays	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Hg (T)	All Year	4.6E-05	mg/L	DMax Conc	Annually	Composite	Effluent
IC25 7day Ceriodaphnia dubia	All Year	100	Percent	DMin Conc	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Monthly	Composite	Effluent
NOEL 7day Ceriodaphnia dubia	All Year	100	Percent	DMin Conc	Continuous	Composite	Effluent
NOEL 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Continuous	Composite	Effluent
Overflow Use Occurrences	All Year		Occurrences /Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurrences	All Year		Occurrences /Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Weekdays	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Weekdays	Composite	Influent (Raw Sewage)
TSS	All Year	334	lb/day	DMax Load	Weekdays	Composite	Effluent

Table 6-6a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	40	mg/L	MAvg Conc	Weekdays	Composite	Effluent
TSS	All Year	250	lb/day	MAvg Load	Weekdays	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Weekdays	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	WAvg Conc	Weekdays	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Weekdays	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Weekdays	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-6b.

Tables 6-6a-b. Permit Limits for Jamestown STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

2 Overflows
3 Bypasses
2 Total Suspended Solids
1 Ammonia

Comments:
11/30/06 Compliance Sampling Inspection:
Laboratory Bench Sheets need improvement. Filing system needs improvement. Technical Assist visits will follow to address the Bench Sheet set up & Laboratory Filing system.

6/1/06 Compliance Evaluation Inspection:
The city is in process of upgrading the electrical panels on the pump stations with a menu driven programmable system. Ammonia comparability study requested. Laboratory performance audit conducted. Recommendations noted.

TN0021377 Obey River Recreation Area "A", Recreation Area "B" and Recreation Area "C"

Discharger rating: Minor
City: Monroe
County: Pickett
EFO Name: Cookeville
Issuance Date: 10/1/04
Expiration Date: 8/31/10
Receiving Stream(s): Obey River at mile 45.9, 45.9 and 45.5 (Outfalls 001, 002 and 003)
HUC-12: 051301050301
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Oxidation ditch activated sludge with chlorination

Segment	TN05130105002_1000
Name	Dale Hollow Reservoir
Size	22000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-7. Stream Segment Information for Obey River Recreation Areas A, B, & C.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	2/Week	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-8. Permit Limits for Outfall 001 & 003 at Obey River Recreation Areas A, B, & C.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	2/Week	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Settleable Solids	All Year	45	mL/L	DMax Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	30	mL/L	MAvg Conc	Monthly	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-9. Permit Limits for Outfall 002 at Obey River Recreation Areas A, B, & C.

Comments:
None.

TN0026085 Star Point Resort

Discharger rating: Minor
City: Byrdstown
County: Pickett
EFO Name: Cookeville
Issuance Date: 4/1/04
Expiration Date: 2/28/09
Receiving Stream(s): Jouette Creek Embayment at mile 1.4 to Dale Hollow Reservoir (Obey River) at mile 34.1
HUC-12: 051301050303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Activated sludge

Segment	TN05130105002_1000
Name	Dale Hollow Reservoir
Size	22000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-10. Stream Segment Information for Star Point Resort.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	20	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-11. Permit Limits for Star Point Resort.

Comments:
8/13/07 Compliance Evaluation Inspection: In compliance.
The facility was in excellent condition. Bio-solids are land applied. The restaurant is closed. Plans due not exist to re-open the restaurant.

TN0068802 TDEC Pickett State Park

Discharger rating: Minor
City: Jamestown
County: Pickett
EFO Name: Cookeville
Issuance Date: 10/1/04
Expiration Date: 8/31/09
Receiving Stream(s): Thompson Creek at mile 5.2
HUC-12: 051301040408
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Septic tank, recirculating sand filter and UV disinfection

Segment	TN05130104010_0100
Name	Thompson Creek
Size	12.2
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-12. Stream Segment Information for TDEC Pickett State Park.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	3	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	7.5	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	25	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	All Year	20	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-13. Permit Limits for TDEC Pickett State Park.

Comments:
None.

TN0021393 USA COE Dale Hollow Lake - Lillydale Recreation Area

Discharger rating: Minor
City: Allons
County: Clay
EFO Name: Cookeville
Issuance Date: 10/1/04
Expiration Date: 8/31/10
Receiving Stream(s): Obey River at mile 31.4
HUC-12: 051301050303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Septic tank, sand filter and post chlorination

Segment	TN05130105002_1000
Name	Dale Hollow Reservoir
Size	22000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-14. Stream Segment Information for USA COE Dale Hollow Lake - Lillydale Recreation Area.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	2/Week	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	2/Week	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	2/Week	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-15. Permit Limits for USA COE Dale Hollow Lake - Lillydale Recreation Area.

Comments:
None.

TN0021423 USA COE, Dale Hollow Dam Shop and Recreation Area

Discharger rating: Minor
City: Celina
County: Clay
EFO Name: Cookeville
Issuance Date: 10/1/04
Expiration Date: 8/31/09
Receiving Stream(s): Obey River at mile 7.0 for Outfall 001 and at mile 6.6 for Outfall 002
HUC-12: 051301050504
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Septic tank, sand filter and post chlorination

Segment	TN05130105001_1000
Name	Obey River
Size	6.8
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Industrial Water Supply (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Supporting), Recreation (Supporting)
Causes	Oxygen, Dissolved, Low flow alterations
Sources	Upstream Impoundments (e.g., PI-566 NRCS Structures)

Table 6-16. Stream Segment Information for USA COE, Dale Hollow Dam Shop and Recreation Area.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	2/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	2/Week	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	2/Week	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-17. Permit Limits for USA COE, Dale Hollow Dam Shop and Recreation.

Comments:
None.

6.4.B. Industrial Permits

TN0004332 USDI - FWS Dale Hollow National Fish Hatchery

Discharger rating: Minor
City: Celina
County: Clay
EFO Name: Cookeville
Issuance Date: 3/1/05
Expiration Date: 1/30/09
Receiving Stream(s): Dry Branch at mile 0.1 to the Obey River at mile 6.8
HUC-12: 051301050504
Effluent Summary: Industrial wastewater (water from a fish farm operation) through Outfall 001
Treatment system: None

Segment	TN05130105001_1000
Name	Obey River
Size	6.8
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Industrial Water Supply (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Supporting), Recreation (Supporting)
Causes	Oxygen, Dissolved, Low flow alterations
Sources	Upstream Impoundments (e.g., PI-566 NRCS Structures)

Table 6-18. Stream Segment Information for USDI - FWS Dale Hollow National Fish Hatchery.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia dubia	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
Ammonia as N (Total)	Summer	1.2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	2.4	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	15	mg/L	DMax Conc	2/Month	Calculated	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-19. Permit Limits for USDI - FWS Dale Hollow National Fish Hatchery.

Comments:
None.

TN0068098 Dale Hollow Hydro Power Plant

Discharger rating: Minor
City: Celina
County: Clay
EFO Name: Cookeville
Issuance Date: 2/1/05
Expiration Date: 12/31/09
Receiving Stream(s): Obey River at mile 7.3
HUC-12: 051301050504
Effluent Summary: Noncontact cooling waters, station sump wastewater from Outfall 001
Treatment system: None

Segment	TN05130105001_1000
Name	Obey River
Size	6.8
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Industrial Water Supply (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Supporting), Recreation (Supporting)
Causes	Oxygen, Dissolved, Low flow alterations
Sources	Upstream Impoundments (e.g., PI-566 NRCS Structures)

Table 6-20. Stream Segment Information for Dale Hollow Hydro Power Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Daily	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Estimate	Effluent
PCB Total Scan Effluent	All Year	0.01	mg/L	DMax Conc	Annually	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Daily	Grab	Effluent

Table 6-21. Permit Limits for Dale Hollow Hydro Power Plant.

Comments:
None.