U.S. Department of Energy · Office of Environmental Management

Technical Assistance Report

Evaluation of Proposed Modular Waste Water Treatment Plant

November 21, 2002

Prepared by

The Office of Science and Technology (EM-50)
Technical Assistance Team

October 29-30, 2002

.

Draft Final 11-20-02

List of Acronyms

AEMP	Ashtabula Environmental Management Project
ASHCO	Ashtabula County water supply from Lake Erie
CAMU	Continuous Active Management Unit
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOE-OH	U.S. Department of Energy Ohio Field Office
EM	DOE Office of Environmental Management
EM-50	DOE Office of Science and Technology
EPA	U.S. Environmental Protection Agency
GPM	Gallons per minute
NPDES	National Pollution Discharge Elimination System
RMIES	RMI Environmental Services
SOP	Standard Operating Procedures
TAT	Technical Assistance Team
TCE	Trichloroethylene
WWT	Wastewater Treatment
WWTP	Wastewater Treatment Plant

Acknowledgements

The Technical Assistance Team appreciates the outstanding support provided by the site. All persons contacted were always professional, readily available to answer questions, and consistently helpful. Especially helpful to the Team were Tom Williams, John Ganz, John Hughes, Rodney Shimko and Marian Heffner.

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EXECUTIVE SUMMARY

A Technical Assistance Team visited the AEMP site on October 29-30, 2002 to evaluate the proposed wastewater treatment plant design submitted by the site contractor, RMIES. Prior to arriving on the site, the TAT members were provided information on the existing and proposed plants. Upon arrival at the site, a briefing was provided on the existing and proposed plant designs followed by a tour of the existing site.

The TAT developed a diagram of the sources and disposition of wastewater shown in Figure 1. The TAT evaluated the current capabilities and operating history of the existing plant and developed a strawman strategy for minimizing the volume of wastewater requiring treatment in the future. The merits of the proposed plant were compared with the existing design to look for specific advantages for either approach.

An exit briefing was provided to approximately 15 people from the site and Ohio Field Office at the end of the visit to provide findings of the TAT and to obtain feedback for final preparation of this report.

The following findings were presented to the site during the out briefing and are discussed further in the body of this report.

1. The WWTP plays an important role in enabling the site to complete closure and should be managed carefully to allow for the capture, storage, treatment and release of wastewater.
2. An incomplete characterization exists for sources and volumes of wastewater that may be sent to the WWTP and should be addressed to assure reliable operation.
3. The current precipitation-based WWTP combined with flow augmentation is adequate to treat current and anticipated future wastewater needs.
4. No significant operations or economic advantages were identified for replacing the existing plant with the proposed modular design.
5. Issues that can adversely impact the operation of the WWTP such as adoption of a wastewater minimization strategy were recommended and are discussed in the report.

1. BACKGROUND AND OBJECTIVE OF VISIT

A Technical Assistance Team (Appendix C) visited the Ashtabula Environmental Management Project on October 29-30, 2002. The objective of the TAT was to evaluate the merits of replacing the existing wastewater treatment plant with a modular design developed by the AEMP site contractor. A Scope of Work (Appendix A) and Visit Agenda (Appendix B) were prepared in advance of the visit and submitted and approved by the AEMP site DOE and contractor, RMIES.

Key questions to be addressed during the visit were identified.

- Does the AEMP site need a WWTP now? Will the need for a WWTP continue through completion of site closure?

- Can the existing WWTP satisfy the wastewater treatment needs of the AEMP site through completion of cleanup?
- Does the proposed WWTP alternative provide significant operational and/or economic advantages over the existing plant?
- Are there other alternatives or significant issues impacting wastewater treatment that should be addressed?

The TAT was invited by the AEMP site to provide additional observations and recommendations relevant to wastewater treatment gained during the visit.

2. THE TECHNICAL ASSISTANCE TEAM'S APPROACH

The approach used by the Technical Assistance Team is described below.

- 2.1 Prior to the site visit, obtain and review information on the existing and proposed WWTP.
- 2.2 Upon arrival at site, receive a briefing by key site personnel on both the existing and proposed WWTP designs and capabilities.
- 2.3 Tour the existing WWTP and site to understand sources and disposition of wastewater that could require treatment.
- 2.4 Develop a diagram of the sources and disposition of wastewater.
- 2.5 Evaluate the capabilities and historical performance of existing WWTP to understand weaknesses, areas for improvement and limitations.
- 2.6 Determine the relevant merits of using the existing versus the proposed WWTP approaches to meet present and future site WWT needs.
- 2.7 Develop a strawman strategy for minimizing the volume of wastewater requiring treatment in the future.
- 2.8 Conduct an exit briefing at the end of the visit to obtain input and feedback from the site on the TAT conclusions and recommendations.
- 2.9 Prepare a draft written report on the findings and submit to site for comment.
- 2.10 Submit a final technical assistance report.

3. CHARACTERIZATION OF WASTEWATER STREAMS

The WWTP plays a significant role that will continue until completion of the AEMP site closure. Because of this role, a good understanding is required of the existing and potential wastewater streams that may be sent to the WWTP. A review of sampling data from the WWTP, NPDES combined outfall, sanitary batch reactor, and French drains and manholes was conducted by the TAT leading to the following conclusion. **Incomplete characterization exists of sources of wastewater that may be sent to the WWTP and this issue should be addressed.**

As the remedial activities of the site proceed toward closure, the requirements for WWT should be expected to evolve toward smaller volumes and simpler combinations of contaminants as contamination sources are eliminated. To enable this to happen, however, key activities are needed to enable the WWTP operation to be able to support site closure activities.

The following recommendations are provided:

- 3.1 A more rigorous characterization effort is needed for individual waste stream sources. A more complete understanding of the sources (volume, contaminants, concentrations, etc) should be completed and maintained to assure that the WWTP operation will be able to respond to WWT requirements of cleanup operations.
- 3.2 A mass balance of contaminant and water flow should be established and maintained until WWT needs are permanently eliminated. This will enable the site to make timely changes and adjustments in site capabilities in management, storage and treatment of wastewater.
- 3.3 A program should be established that monitors the effects of field activities such as building D&D, soil pile removal, CAMU remediation, etc on WWTP operations as well as the mass balance baseline.
- 3.4 The sanitary waste treatment plant could be replaced with a waste storage tank. The collected sewage could be trucked to the local sewage treatment plant to eliminate the major source of copper in the water being discharged to Fields Brooke.
- 3.5 Closure activities that are potential sources of wastewater should be prioritized to evolve toward smaller volumes of wastewater requiring storage and treatment. **A wastewater minimization management strategy should be established and maintained to enable continued wastewater source elimination.**

4. UNDERSTANDING EXISTING WASTEWATER SOURCES

A simple line diagram of current sources and destinations of wastewater, presented in Figure 1 below, was prepared to aid in the evaluation of current and future WWTP requirements. The diagram shows sources coming from the west side of the site on the left side of the chart that are treated in the WWTP[1]. Wastewater sources being treated in the wastewater treatment plant principally originate from rainfall on the soil staging cleaning pad, transfer from active sumps associated with concrete pads and RF-3, as well as small quantities of analytical laboratory water and portal sinks. Water from the truck ramp is sampled prior to transfer to Manhole #1. If treatment is required, this wastewater is transferred to the WWTP for treatment. If treatment is not required, this wastewater is transferred directly to Manhole #1.

[1] Note: This figure is offered as a preliminary draft. A conceptual model of the flow of contaminants in the waste water system can be built as more definitive characterization data for the flows, concentrations, and interconnections of sources are available.

The volume of water sent to the WWTP is dominated by contaminated water that has fallen on contaminated pads and is collected. This volume is expected to be reduced as the surface areas of contaminated pads are reduced. The wastewater treatment plant processes batches of approximately 8000 gallons that are sampled for compliance, sent by hose to Manhole #1, then to flow augmentation and discharge to Manhole #6 as shown on the right side of the diagram. (Note: Treated wastewater transfer was originally accomplished using the buried 18" line that has since been plugged because of infiltration of TCE from the CAMU.)

Other sources of wastewater that originate on the east side of the site may go directly to Manhole #1. Infiltration water containing TCE that originates in the CAMU appears to be following the 18" line to Manhole #1 where it currently can be sent through to discharge. Contaminated water from the French drains from the soil piles contains uranium contamination also currently goes directly to Manhole #1. At this time it appears to be impossible to quantify the magnitude of the impacts from these streams because flow and concentration data have not been correlated. Thus, the infiltrating TCE water and soil pile uranium wastewater sources are included in the areas requiring better characterization data.

Permitted flow augmentation using Lake Erie water from ASHCO occurs in the NPDES building. Flow augmentation ratios ranging from 3-1 to 7-1 are used on wastewater transferred by a 2" line (~45 GPM) from Manhole #1. This augmented wastewater is sent to Manhole #6 where it flows to the outfall. Water from significant rain events can either be pumped via a 6" line (~500 GPM) or overflow directly from Manhole #1 to Manhole #6, bypassing the flow augmentation process at the NPDES building.

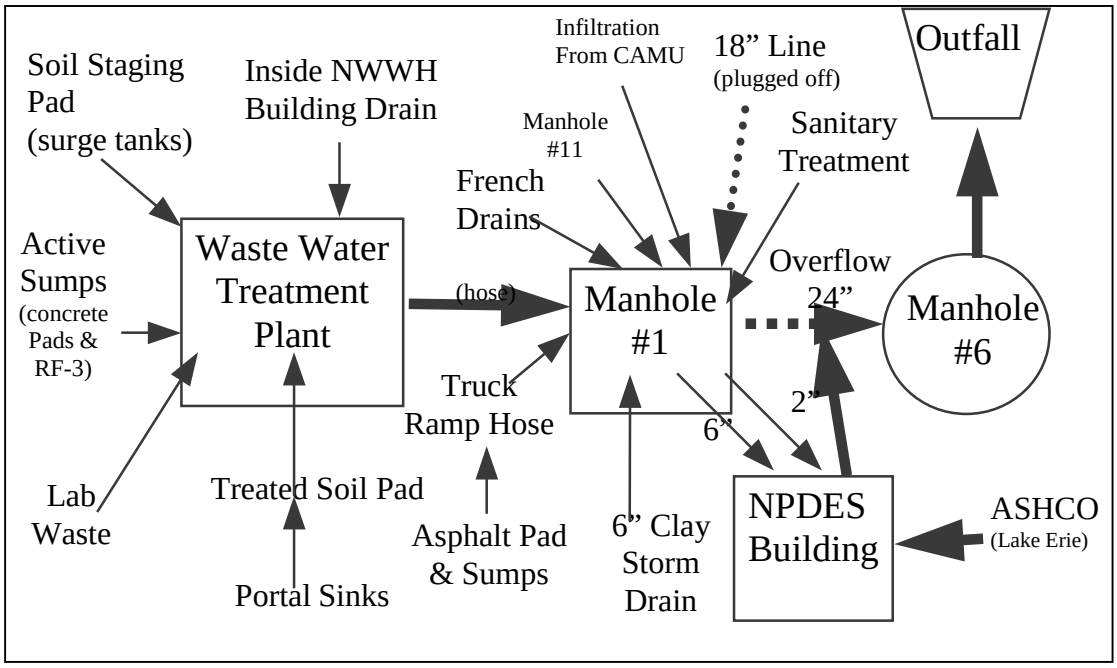

Figure 1: Current Wastewater Flow Management System

5. CURRENT WASTEWATER TREATMENT PLANT OPERATIONS

The Technical Assistance Team (TAT) reviewed available information relative to the existing WWTP located on the RMI site. In addition, the team had the opportunity to inspect the wastewater treatment plant and associated facilities. The following discussion is provided on current WWTP operations:

- **5.1 Current System Appears Adequate for Present and Future Site Needs** – The existing wastewater treatment plant is a batch-operation based, chemical precipitation system. It includes the following major system components:
  - Indoor influent wastewater retention tanks
  - Indoor chemical precipitation reaction tanks
  - Indoor pressure filtration system
  - Indoor sludge pumping and dewatering arrangements
  - Indoor chemical feed systems
  - Indoor transfer pumping arrangements
  - Outdoor backwash clear well and backwash pumping arrangement
  - Outdoor storm water retention tanks
  - Flow augmentation facility
  - Outfall and associated flow monitoring/sampling arrangement

  It is the opinion of the TAT that **the existing wastewater treatment system has a demonstrated history and, with proper operation, the capability to reliably treat both wastewater and contaminated storm water under current and anticipated future conditions.** As a flow augmented, batch chemical precipitation-based system, the existing WWTP has a high degree of operational flexibility. These types of systems are known for their reliability, flexibility and economy. The system can accommodate significant variation in both flows and constituent loadings. Due to their familiarity with the system, current plant personnel have successfully operated the existing WWTP.

  Provisions should be made within ongoing D&D operations to assure that adequate capacity and capability to capture and retain contaminated storm water is always provided. In addition, special emphasis should be placed on the pretreatment activities at the retention vessels and chemical treatment at the reaction vessels, as these areas are the keys to reliable WWTP performance.

- **5.2 Current Operations Can Be Maintained Throughout Most of Remaining D&D, Removal of Facilities and Waste Removal.** Given the physical location and size of the existing WWTP it should be possible to

schedule closure activities at the site to accommodate continued operations at the existing WWTP as D&D moves to completion.[2] **A wastewater minimization management plan should be implemented that schedules the D&D and other closure operations to track with this approach.**

- **5.3 Continuation of Current WWTP Operations Will Not Adversely Impact Closure.** The existing wastewater treatment plant should be the last building to be removed from the site. Adequate space exists to access other areas for building and materials removal. Given the relatively small footprint of the WWTP building, it is anticipated that the small quantities of wastewater generated during the demolition of the WWTP could be removed from the site for subsequent treatment. During this period, the only requirement should be for primary treatment to remove suspended solids, although additional wastewater treatment may be required if additional contamination is found under the WWTP.

- **5.4 Successful Site Operations Requires Minimizing Wastewater Inventory.** Storm water management during the D&D operations is critical to maintaining reliable treatment. Significant inventories of wastewater were observed during the TAT visit. This condition existed during a period in which wastewater inventories derived from rainfall should have been processed and discharged. As a result, the WWTP did not appear to have adequate remaining tank storage volume available to receive and hold anticipated volumes of contaminated storm water. Stringent SOP's should be developed and followed for the express purpose of treating and discharging collected storm water as soon as possible after a storm event occurs. NPDES permit requirements should be reviewed for possible modification to enable timely treatment of storm water.

- **5.5 Adequate Analytical Laboratory Capabilities are Needed to Support WWTP Operations –** The TAT was impressed by the analytical capabilities that exist in the onsite laboratory. These capabilities are an important asset that should be utilized to help provide recommended characterization of potential sources and volumes of wastewater. Analysis of the resulting data would be helpful to assist operators at the WWTP in planning for successful treatment and management wastewater generated in conjunction with both removal and D&D operations.

6. EVALUATION OF PROPOSED WASTEWATER TREATMENT PLANT

The TAT reviewed the proposed WWTP design[3] for merits as an alternative to continued operation of the existing WWTP. The evaluation considered the basis of design information provided by the site, the proposed layout of the facilities, and the potential for successful compliance with the NPDES permit. **No significant**

[2] The status of potential contamination under the existing WWTP falls within recommendation for completing additional characterization needs. This area does not appear to represent a significant potential source for wastewater during final closure.
[3] The Scope of Work for the TAT did not include consideration of other potential design approaches.

advantages were noted to replacing the existing plant with the proposed design. The following discussion is provided on the merits of the proposed design when compared to the existing plant:

- **6.1 The Proposed Design Satisfies the DOE Request For An NPDES Compliant WWTP Design Alternative**. The flow augmented, membrane based wastewater treatment system has the capability of producing treated wastewater that will comply with the requirements of the existing NPDES permit. This design was developed in compliance with a DOE "stretch goal" request.

  Membrane based treatment systems are not typically considered for intermittent flow applications. These systems usually operate best under conditions of steady state wastewater flow characteristics and extended run times. As the D&D operations progresses, it is anticipated that the wastewater flows will become more varied and intermittent. It is also anticipated that the associated wastewater characteristics can be expected to vary significantly as a direct result of D&D operations and storm water events.

  It is the experience of TAT members that intermittent flows would adversely impact both the performance and service life of the membranes. Furthermore, the TAT is concerned that limited equalization tank volume provided in advance of the membrane system could result in significant variability in influent feed water characteristics that will potentially impact on the performance of the system.

- **6.2 Startup and Shutdown Of Proposed Plant Will Be More Difficult than Current WWTP.** When operating a membrane based wastewater treatment system, a significant effort must be devoted to proper startup and shutdown procedures to insure proper system performance. Membranes must be monitored during startup to ensure that pretreatment of the wastewater is adequate, that flux rates are satisfactory, and that the rejection of the targeted constituents is being accomplished. Upon completion of a run, the membranes must be adequately cleaned and prepared for subsequent wastewater runs. It is expected that both the startup and shutdown operations associated with the membrane system will require more time and operator attention than would be required with the existing wastewater treatment system.

- **6.3 Pretreatment Requirements Are Significantly Greater than Current System.** Significant fouling of the membranes will occur if the pretreatment of the wastewater is inadequate. This fouling can compromise the performance of the system resulting in undesirable shutdowns during periods of increased treatment demands and increase operational costs. Given the nature of the contaminated soil piles, the mode of the D&D operations, and circumstances associated with storm water events, an increased level of pretreatment could be required for the proposed system than for the existing WWTP.

- **6.4 Operational and Maintenance Costs Can Be Expected to Be Significantly Higher.** Given the evaluation points discussed above, the TAT

expects that the O&M costs will be substantially greater that those associated with the existing chemical precipitation wastewater treatment process. The TAT anticipates that more labor will be required, that chemical costs will be increased, and that substantially more power will be needed. In addition, there is a high probability that significant operations and maintenance costs may be experienced due to the need for membrane replacement during the short life of the proposed plant.

7. OTHER ISSUES AND ALTERNATIVES

During the course of the two day TAT study, issues were identified that potentially could adversely impact future wastewater treatment plant operation. In addition, as the TAT gained familiarity with the project, alternative methods and means for approaching the wastewater treatment circumstances were considered. These issues and alternatives are presented for further consideration:

- **7.1 Minimize the Inventory of Wastewater in Storage.** To ensure the system has the capability to collect and retain contaminated storm water, it is important that the retention tanks be emptied as quickly as possible after an excess flow event occurs. Permit modifications should be sought that would allow the direct release of collected storm water that is determined to meet the NPDES requirements. The TAT is of the opinion that holding storm water in a tank affords a level of treatment and that additional treatment should not be required if the NPDES permit requirements are met.

- **7.2 Prioritize Activities that Impact Volume and Quality of Wastewater Requiring Treatment by WWTP**. As D&D progresses, emphasis should be placed on determining the potential impact of the D&D operations on the wastewater treatment operations and capabilities. The wastewater treatment facilities should not be overloaded thereby risking a noncompliance circumstance. The demolition of buildings, the removal of slabs, and the excavation of contaminated soils should be planned and scheduled considering impacts on the wastewater treatment facilities.

- **7.3 Minimize TCE Infiltration at Manhole #1**. TCE has been identified at the NPDES effluent that discharges into the Fields Brook Superfund site. A compliance schedule exists for reduction of this discharge. The CAMU is believed to be the source of the TCE and until recently, the TCE infiltrated into the 18-inch diameter sewer that flows from Manhole 11 to Manhole #1. Both the 18-inch lines from Manhole 11 and Manhole 2 have been subsequently plugged in an effort to prevent the introduction of TCE into Manhole #1.

  Unfortunately, Manhole #1 is of brick and mortar type construction and indications are that it is severely deteriorated. Due to the condition of the Manhole #1, TCE is able to migrate through the 18-inch line bedding material and infiltrate directly into the Manhole. It is also believed that the bedding is the conduit that causes the TCE to migrate into Manhole #2. The problem

increases as the pumps in Manhole #1 lower the water level in the manhole. When this occurs, it is believed that a hydraulic gradient is established which pushes TCE laden water from the 18-inch bedding up through the cracks into the bottom of Manhole #1.

The mass-flow of TCE into Manhole #1 should be characterized to determine if this source will have a significant impact on the NPDES discharge limits. If warranted by the characterization, steps should be taken to prevent this migration of TCE into Manhole #1. A straightforward way of accomplishing this would be to abandon Manhole #1 in place and install a new pumping station to introduce treated wastewater into the flow augmentation structure. This approach makes sense since both 18-inch sewers are plugged and no longer need to be accommodated. In addition, with the exception of the soil pile french-drains, all flows that currently enter Manhole #1 should be pumped.

A new in-ground sump or an above ground tank could be installed to receive discharge from these pumped lines. Water collected could then be pumped through the flow augmentation building. If an above ground tank were utilized, provisions for cold weather operations would need to be made. The french drain may need to be collected in a dedicated sump and pumped either to the outfall or back to the wastewater treatment plant.

As an alternative to abandoning Manhole #1, the granular bedding of the 18-inch line could be excavated and backfilled with clay thereby creating a dam that would prevent further TCE migration through the bedding. To minimize the excavation, it may be possible to inject bentonite or use a slurry wall approach to cut off the TCE contaminated flow.

- **7.4 Consider Using Tanks in Soil Washing Plant for Storage as an Alternative to Insulating Outside Tanks**. Without changing scheduled demolition plans in the D&D operations, the site could consider utilizing the available tank capacity in the soil washing building for interim storm water containment. The obvious advantage would be to have indoor facilities that would not be impacted by cold weather conditions. When demolition of the soil washing building begins, it may be necessary to change to alternative storm water storage arrangements if still needed. When this indoor storage capacity is eliminated under current demolition schedule, the storm water collection volumes should be reduced, and the schedule may be able to accommodate operation with less storage volume exposed to the weather.

- **7.5 Consider Using Existing Lamella Settler in Soil Washing Plant for Enhanced Clarification**. This equipment is an excellent tool for wastewater clarification. In the event there is an advantage or need to achieve a higher level of pretreatment performance it may be possible to incorporate the existing Lamella clarifier into the wastewater treatment train. This device may also have some application as a means for clarifying treated wastewater thereby potentially increasing the throughput capacity of the existing

wastewater treatment plant. This consideration should be made without impacting the demolition schedule for the soil washing plant and building.

8. ELEMENTS OF WASTEWATER MINIMIZATION MANAGEMENT STRATEGY

The TAT recommends that the AEMP site establish and maintain a wastewater minimization management strategy to enable a continue reduction in the volume and number of sources of wastewater potentially requiring treatment. The following are potential elements that could be included as part of that strategy.

- 8.1 Move decontamination activities from large pads where significant rainfall contact with contaminated media can occur to other covered areas such as the soil storage building. As an alternative, minimize the significant surface areas of existing decontamination pads that are routinely re-contaminated and are the source of the largest wastewater volumes.
- 8.2Gather and evaluate data from contamination sources with wastewater streams that can go directly to NPDES outfall.
- 8.3 Isolate Manhole #1 from infiltration of water from the plugged 18" line if necessary by installation of liner in Manhole or use of tanks and pumping as described in section 7.3.
- 8.4 Remediate the east area of the site to minimize wastewater received from RF-3 and related areas.
- 8.5 Remediate the CAMU to mitigate infiltration of TCE contaminated water into the plugged 18" lines that go from Manhole #11 to Manhole #1 and are potentially backing up toward Manhole #2 if warranted by characterizing the mass flow from these sources.
- 8.6 Remediate soil piles that are sources of uranium contamination from french drains if warranted by characterizing the mass flow from these sources.

9. CONCLUSIONS AND RECOMMENDATIONS

The WWTP has provided and will continue to play a significant role in completing the closure of the AEMP site and is an important consideration in setting schedules and priorities that impact the WWTP operation. The following conclusions and recommendations are made by the TAT on the merits of replacing the existing WWTP with the proposed WWTP design. The AEMP site should:

- **Action 1: Continue to use the existing WWTP for treating current and anticipated future wastewater streams.** The data provided by the site indicates that a WWTP is required and will continue to be required until it is decommissioned as one of the last activities on the site closure. The existing plant appears to be capable of meeting WWT needs throughout this period. No significant advantages exist for adopting the proposed WWTP over the existing plant.

- **Action 2: Develop and implement a site-wide wastewater minimization management plan that includes source characterization and monitoring activities.**
    - Complete and maintain an accurate picture of sources, volumes and characteristics of wastewater. Develop procedures or other operator aids to identify disposition for these wastewaters.
    - Include administrative and engineering controls to minimize generation of contaminated water at the site.
    - Prioritize closure of areas that collect wastewater (Example: RF-3 pad, soil staging pad, french drains, etc.
    - Screen sources of wastewater for potential direct release to flow augmentation and discharge without wastewater treatment.
    - Consider use of technical assistance available in the DOE complex to develop and implement this strategy.
- **Action 3: Minimize wastewater volumes associated with decontamination activities by minimizing the associated pad area that is exposed to rainwater, or by relocating the activity to areas that would minimize contact of rainwater with contaminated surfaces the result from decontamination.**
- **Action 4: Separate decontamination wastewater collection activities from storm water collection areas.**

A member of the TAT was from the Weldon Springs site. An invitation was extended to have a delegation of DOE and RMI technical personnel visit the Weldon Springs site for an in-depth examination of their experience and lessons learned. Members of the TAT and AEMP regulators were suggested as additional participants in this effort.

The TAT members are listed in Appendix C along with their contact information. Questions relating to this Report and possible follow-up actions should be addressed to Jack Craig, NETL.

Appendix A

Technical Assistance Scope of Work
AEMP Wastewater Treatment Plant Review

Purpose: The purpose of this effort would be to assemble a Technical Assistance Team (TAT) of personnel with relevant experience in waste water treatment to visit the Ashtabula Environmental Project (AEMP) site in Ashtabula, OH to evaluate a proposal to construct a modular waste water treatment plant (WWTP) to replace the existing WWTP. This effort is intended to confirm the merits of replacing the current WWTP with the proposed modular WWTP and the suitability of the selected design to satisfy this requirement.

Expected Outcome: The outcome could include: (1) a review of the merits to shutdown and dismantle the existing WWTP, (2) a determination of the ability of the existing WWTP to treat anticipated waste water during the remainder of the site closure schedule and potential modifications, if any, required to continue this role, (3) the suitability of the proposed WWTP to treat anticipated waste water (volume, concentrations, discharge limits, etc) during the remainder of the closure schedule, and (4) recommendations for changes to be made to the proposed WWTP (cost reduction, performance, etc.)

Background: The Ashtabula site Closure Schedule requires that the existing WWTP, with a design capacity of 84,000 GPD and current running at 24,000 GPD or 17-21 GPM, is anticipate to be decommissioned during 2003 to permit the demolition of the building in which it is located. Waste water requiring treatment will continue to be generated on the site through the completion of closure currently scheduled for the end of FY2003. A modular waste water treatment facility with a nominal “continuous” capacity of 10 GPM has been developed to replace the existing system.

Schedule: The TAT members will be finalized by week ending 10-18-02. Material on the existing and proposed WWTP will be sent to the members on the 18th. The TAT will arrive in the local area for a dinner meeting on 10-28-02 and will arrive at the site security gate before 8:00 AM on 10-29-02. After an out-briefing on the afternoon of 10-30-02 when a draft report is to be presented, the TAT members will depart the site. Upon receipt of comments by attendees requested within one week, a final Report will be submitted to the Ohio Field Office for distribution within two weeks.

Approach: A core TAT of 3-4 people would be assembled to meet at the Ashtabula site for a period of two days. At the end of the visit, the TAT will provide a visit debriefing and present a draft Recommendations Report summarizing their findings. Prior to the visit, information on the proposed WWTP and the existing WWTP will be provided to the TAT members for review prior to arriving at the site. During the visit, a presentation will be made on the proposed design and a briefing on the current WWTP will be provided followed by a tour of the existing plant. This will be followed by a question and answer session with the site DOE and contractor personnel responsible for the WWTP.

During the afternoon of the first day and the morning of the second day, site DOE and contractor personnel will be available to answer questions and provide insight to the TAT. It is assumed that the TAT will be able to meet in private except for observation by site and OFO DOE personnel. On the afternoon of 10-30-02, a debriefing will be provided along with a draft Recommendations Report. A final Report will be provided within two weeks after receipt of comments from interested parties.

TAT Team Members: Dale Pflug, ANL, facilitator; Bruce Ballew, PAI; Dirk Gombert, INEEL; Raymond Iehl, consultant; Jack Craig, NETL

Resources Required: A working area with telephones with outside access, blackboards, easels, etc. should be provided for the team to meet in caucus to discuss the current and proposed WWTP approaches.

Contact: The technical assistance lead for this project is Dale Pflug, Argonne National Laboratory, Tel: 630-252-6682, E-Mail: dpflug@anl.gov

Appendix B

VISIT AGENDA

Technical Assistance Team (TAT)
For Ashtabula Waste Water Treatment Plant Review

October 29-30, 2002

Attendees:

TAT	Dale Pflug, ANL, Technical Lead, dpflug@anl.gov	630-252-6682
	Bruce Ballew, PAI, bballew@wssrap.com	636-926-7011
	Jack Craig, NETL, craig@netl.doe.gov	412-386-4754
	Dirk Gombert, INEEL, dg3@inel.gov	208-526-4624
	Raymond Iehl, Consultant, rbiehl@juno.com	815-455-5505
Site	Tom Williams, DOE Ashtabula, tom.e.williams@ohio.doe.gov	440-993-1944
	John Ganz, DOE Ashtabula, john.ganz@ohio.doe.gov	440-993-2017
	Doug Maynor, DOE Ohio, doug.maynor@ohio.doe.gov	937-865-4402
	Steve Foels, Earthline, steven.foels@earthlinetech.com	
	John Hughes, Earthline, john_hughes@earthlinetech.com	440-993-1968
	Eric Marsh, eric_marsh@earthlinetech.com	440-993-1909

Site Point of Contact: John Ganz, U.S. Department of Energy, (440) 993-

Date:	Start:	Stop:	Event	Location
10/28/02	7:00 PM	9:00 PM	TAT Team (Meet @ Comfort Inn Lobby for Dinner @ TBD)	Comfort Inn
10/29/02	7:30 AM	8:00 AM	Badging of TAT at Ashtabula Security Gate	AEMP site
	8:00 AM	9:00 AM	Introductions - Goals of TA - Pflug	
	9:00 AM	11:00 AM	Ashtabula Presentations – Hughes? - Existing WWTP - Proposed WWTP	Meeting Room
	11:00 AM	12:00 AM	Tour of Existing WWTP	
	12:00 PM	1:00 PM	Lunch	TBD
	1:00 PM	2:00 PM	Question and Answer for Site by TAT	Meeting Room
	2:00 PM	5:00 PM	TAT Working Session (Site DOE and Contractor available for questions)	Meeting Room
	7:00 PM	9:00 PM	TAT Dinner	TBD
10/30/02	8:00 AM	8:15 AM	TAT Progress Update to Site	Meeting Room
	8:15 AM	11:00 AM	TAT Working Session	
	10:00 AM	12:00 PM	TAT Summarize Conclusions & Recommendations	Meeting Room
	12:00PM	1:00 PM	Lunch	
	1:00 PM	3:00 PM	Prepare Out-Briefing Material	Meeting Room
	3:00 PM	4:00 PM	Out-Brief DOE and RMI Management	Meeting Room

	4:00 PM	5:00 PM	Question and Answer Session	Meeting Room
	5:00 PM	----------	Adjourn	

Key Issues to be Addressed by the TAT:

1. Does the site need a WWTP now? In the future?
2. Can the existing WWTP satisfy treatment needs through completion of cleanup?
3. Does the proposed alternative WWTP design provide significant advantages and benefits over existing plant?
4. Are there other alternatives or significant issues that should be addressed?

APPENDIX C

Technical Assistance Team Members

Name	Affiliation, Location	Telephone and E-mail Address
Dale Pflug	Facilitator and Team Leader Argonne National Laboratory	630-252-6682 dpflug@anl.gov
Jack Craig	National Energy Technology Laboratory	412-386-4754 jack.craig@netl.doe.gov
Bruce Ballew	Professonal Analysis, Inc DOE Weldon Springs site	636-926-7011 bballew@wassrap.com
Dirk Gombert	BBWI INEEL	208-526-4624 dg3@inel.gov
Raymond Iehl	Independent Consultant	815-455-5505 rbiehl@juno.com

APPENDIX D

AEMP Site Participation List

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