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Department of Energy

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SEP 19 1997

DOE-1447-97

Mr. James A. Saric, Remedial Project Manager
U.S. Environmental Protection Agency
Region V-SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF: 1) THE DRAFT FINAL OPERATIONS AND MAINTENANCE MASTER PLAN FOR THE AQUIFER RESTORATION AND WASTEWATER TREATMENT PROJECT AND 2) RESPONSES TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT "OPERATIONS AND MAINTENANCE MASTER PLAN FOR THE AQUIFER RESTORATION AND WASTEWATER TREATMENT PROJECT"

Reference:

1) Letter, DOE-1139-97, J. Reising to J. Saric, U.S. EPA and T. Schneider, OEPA, "Transmittal of Draft Operations and Maintenance Master Plan for the Aquifer Restoration and Wastewater Treatment Project," dated June 30,1997.

2) Letter, J. Saric to J. Reising, "O&M Master Plan," dated August 20, 1997.

3) Letter, T. Schneider to J. Reising, "DOE FEMP Comments: O&M Plan for ARP," dated September 4, 1997.

Enclosed is the Draft Final Operations and Maintenance Master Plan (OMMP) for the Aquifer Restoration and Wastewater Project and associated comment response document. The OMMP fulfills Task 2 of the Operable Unit 5 (OU5) Remedial Design (RD) Work Plan. The Draft OMMP (Reference 1) was submitted to the U.S Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) on June 30, 1997, and has been

revised to incorporate actions resulting from U.S. EPA and OEPA comments (References 2 and 3, respectively). A Foreword has been added to the document which provides additional detail on how the Draft Final OMMP differs from the Draft OMMP.

The Department of Energy (DOE) looks forward to the finalization of this plan, the successful construction and operation of the Great Miami Aquifer groundwater remedy, and the continued operation of the Fernald Environmental Management Project's (FEMP) wastewater treatment systems in accordance with the protocols outlined in this document.

If you have any questions regarding the OMMP, please contact John Kappa (513) 648-3149, or Robert Janke at (513) 648-3124.

Sincerely,

Johnny Reising

FEMP:Kappa

Johnny W. Reising
Fernald Remedial Action
Project Manager

Enclosure: As Stated

cc w/enc:

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RESPONSES TO U.S. EPA AND OEPA COMMENTS ON THE DRAFT OPERATIONS & MAINTENANCE MASTER PLAN, REVISION C JUNE 1997

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

SEPTEMBER 1997

COMMENT CROSS REFERENCE LIST
SEPTEMBER 1997 DRAFT FINAL OMMP FOR THE AQUIFER RESTORATION AND WASTEWATER TREATMENT PROJECT

DOE No.	Commenting Organization	Commentor	Original Comment No. (E)ditoral (G)eneral (S)pecific	Section	Page No.	Line No.	New Page No.
1	U.S. EPA	Saric	1(G)	NA	NA	NA	3-13, 3-14, 3 -16, 5-1
2	U.S. EPA	Saric	2(G)	NA	NA	NA	3-2, 4-2, 4-3, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, B-7
3	U.S. EPA	Saric	1(S)	1.1	1-1	19-21	1-1
4	U.S. EPA	Saric	2(S)	2.1.1	2-2	11-13	2-2
5	U.S. EPA	Saric	3(S)	2.1.1	2-2	28-30	2-2
6	U.S. EPA	Saric	4(S)	2.1.1	2-2 & 2-3	44-48 & 1-9	2-3
7	U.S. EPA	Saric	5(S)	3.1.1.4	3-4	26	3-5
8	U.S. EPA	Saric	6(S)	3.1.2.1	3-5	32	3-6
9	U.S. EPA	Saric	7(S)	3.1.2.4	3-7 & 3-8	32 & 1-2	NA
10	U.S. EPA	Saric	8(S)	3.1.4	3-9	23-29	3-9
11	U.S. EPA	Saric	9(S)	3.2.2.2	3-11 & 3-12	30-32 & 1-4	3-12
12	U.S. EPA	Saric	10(S)	3.3.1.1	3-14	20-21	3-14
13	U.S. EPA	Saric	11(S)	3.3.1.2	3-15	10-11	3-15
14	U.S. EPA	Saric	12(S)	3.3.3	3-16	13	3-16
15	U.S. EPA	Saric	13(S)	4.2.1	4-3	35-36	4-4
16	U.S. EPA	Saric	14(S)	4.3.2	4-7	6	4-7
17	U.S. EPA	Saric	15(S)	4.3.4	4-9	6 & 8	4-8
18	U.S. EPA	Saric	16(S)	4.3.5	4-10	19-20	4-9
19	U.S. EPA	Saric	17(S)	5.2	5-2	30-31	5-2
20	U.S. EPA	Saric	18(S)	5.8	5-12	2	5-12
21	U.S. EPA	Saric	19(S)	5.9	5-12	14	5-13
22	U.S. EPA	Saric	20(S)	5-7	NA	NA	5-8
23	U.S. EPA	Saric	21(S)	6.2.1	6-7	9	6-7
24	U.S. EPA	Saric	22(S)	6.2.2	6-7	31	6-8
25	U.S. EPA	Saric	23(S)	Appendix A, Section 5.1	18	13-17	18
26	U.S. EPA	Saric	24(S)	Appendix A, Section 6.0	26	5	26
27	Ohio EPA	HSI GeoTrans, Inc.	1	3.0	3-4	23	3-4
28	Ohio EPA	HSI GeoTrans, Inc.	2	3.0	3-5	24-26	Figure 3-3

4

DOE No.	Commenting Organization	Commentor	Original Comment No. (E)ditoral (G)eneral (S)pecific	Section	Page No.	Line No.	New Page No.
29	Ohio EPA	HSI GeoTrans, Inc.	3	3.0	3-6	NA	3-6
30	Ohio EPA	HSI GeoTrans, Inc.	4	3.0	3-25	4-6	3-25
31	Ohio EPA	HSI GeoTrans, Inc.	5	3.0	3-25	21-22	3-25
32	Ohio EPA	HSI GeoTrans, Inc.	6	5.0		Figure 5-2	5-3
33	Ohio EPA	HSI GeoTrans, Inc.	7	3.0	3-1	29	5-1
34	Ohio EPA	HSI GeoTrans, Inc.	8	3.0	3-19	30	3-20
35	Ohio EPA	HSI GeoTrans, Inc.	9	3.0	3-26	1	3-26
36	Ohio EPA	HSI GeoTrans, Inc.	10	3.0	3-26	4-20	3-26, 3-27
37	Ohio EPA	HSI GeoTrans, Inc.	11	4.0	Figure 4-2	NA	Figure 4-2
38	Ohio EPA	HSI GeoTrans, Inc.	12	4.0	Figure 4-5	NA	Figure 4-5
39	Ohio EPA	HSI GeoTrans, Inc.	13	5.0	Figure 5-2	NA	Figure 5-2

U.S. EPA COMMENTS ON THE DRAFT OPERATIONS AND MAINTENANCE MASTER PLAN FOR THE AQUIFER RESTORATION AND WASTEWATER TREATMENT PROJECT

GENERAL COMMENTS

1. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: Not Applicable (NA) Page #: NA — Line #: NA
Original General Comment #: 1

Comment: The document uses flow rates to describe the capacity of units. This approach makes it difficult to evaluate the capacity of the system. The capacity of units should be presented in gallons, cubic feet, or other units of measure. DOE should revise the plan to address this issue.

Response: Agree. The document will be revised to include treatment capacities as requested. However, capacities in gallons per minute (gpm) annual average are useful for evaluating treatment system limitations and are deemed useful to the operators who are used to discussing flows in gpm. Therefore, annual average flows in gpm will be retained also.

Action: Revisions will be made throughout the text to include both annual total flows and annualized flow rates in gallons per minute for treatment systems.

2. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: NA Page #: NA — Line #: NA
Original General Comment #: 2

Comment: The document uses flow rates and average flow rates to describe flows from various sources generating wastewater. In some cases the "yearly" average flow rate is given, in other cases the "instantaneous" flow rate is used, and in still others only the flow rate is given. To clearly describe the entire system, all flow rates should be presented as annual average flow rates. Maximum and minimum flow rates can also be given if required and if known.

Response: Agree. The document will be revised to include annual average flow rates as requested. However, annual average flow rates in gallons per minute (gpm) are useful for evaluation of treatment system limitations and are deemed useful to the operators who are used to discussing flows in terms of gpm. Therefore annual average flow rates in gpm will be retained also.

Action: Revisions will be made throughout the text to include both annual total flows and annualized average flow rates in gallons per minute for sources to treatment.

SPECIFIC COMMENTS

3. Commenting Organization: U.S. EPA — Commentor: Saric
Section: 1.1 Page #: 1-1 — Line #: 19-21
Original Specific Comment #: 1

Comment: The text states that "the plan also establishes the decision logic and priorities for the major flow and water treatment decision needed to maintain compliance with the FEMP's ROD-based surface water discharge limits." The text should also specify or refer to the National Pollutant Discharge Elimination System (NPDES) discharge limits.

Response: Agree. Text will be revised to also refer to the NPDES discharge limits.

Action: Add "NPDES Permit and" between "with the FEMP's" and "ROD-based surface water discharge limits" on line 20, pg. 1-1, Section 1.1.

4. Commenting Organization: U.S. EPA Commentor: Saric
Section: 2.1.1 Page #: 2-2 Line #: 11-13
Original Specific Comment #: 2

Comment: The text states that "groundwater remediation is expected to continue until all the constituent-specific final remediation levels (FRL) have been achieved (or, if necessary, until a technical impracticability (TI) waiver is justified in the event the FRLs cannot be achieved)." New technologies may become available that could lower the contaminant concentrations beyond the minimums achievable by pump-and-treat systems. The text should be revised to state that alternative, best available technologies will be considered before a TI waiver is applied for.

Response: Agree. Text will be revised to state that alternative best available technologies will be considered prior to applying for a TI waiver.

Action: Delete the parentheses around the phrase on lines 12-13, and add the following sentence after the sentence ending on line 13, pg. 2-2, Section 2.1.1: "Alternative best available technologies existing at that time will be considered prior to requesting a TI waiver."

5. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 2-2 Line #: 28-30
Original Specific Comment #: 3

Comment: The text states that "needed relief from discharge limits is also provided by the ROD to accommodate scheduled treatment plant maintenance." Treatment plant maintenance should be scheduled and performed during low-flow periods (that is, during dry weather) to avoid unnecessary discharge of pollutants. Typically a treatment plant is designed with an adequate number of standby units (that is, enough capacity) to allow proper treatment of wastewater during maintenance without overloading the treatment process and violating the discharge permit. DOE should make every attempt to limit bypassing of the treatment plant or discharge of untreated wastewater. The text should be revised to address this issue.

Response: Agree. Every reasonable effort will be made to avoid discharge of untreated water during treatment plant shutdowns for maintenance. As suggested in the above comment, treatment plant maintenance periods will be scheduled during low-flow periods, and the design includes an adequate number of standby units (see OMMP Section 6.3.2). The text in Section 2.1.1 will be revised to clarify that the precautionary measures suggested in the comment will be taken during maintenance activities.

The OU5 ROD requirement to receive approval from EPA prior to scheduled treatment plant maintenance periods will allow advance notice of any potential exceedances of the 20 ppb discharge limit. Note that the relief provided in the OU5 ROD (p. 9-14) pertains to only the 20 ppb discharge limit, not the 600 pound per year mass-based limits. Such relief of the more stringent monthly 20 ppb limit is necessary, regardless of the precautionary measures mentioned above, to accommodate potential bypasses during maintenance periods. Bypasses during maintenance shutdowns will be necessary if excessive precipitation occurs such that storm water storage and remaining treatment capacity is approached in order to limit the potential for overflowing the storm water retention basin and thereby discharging directly to Paddys Run .

Action: Add the following sentence after the sentence ending on line 34, pg. 2-2, Section 2.1.1: "The FEMP will make every reasonable effort to prevent bypass of storm water during treatment plant shutdowns for maintenance including scheduling maintenance shutdowns during the times when dry weather is expected".

6. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 2-2 and 2-3 Line #: 44-48 and 1-9
Original Specific Comment #: 4

Comment: The text states that provisions were made to discharge groundwater from the recovery well system either to the treatment facility or directly to the discharge outfall. It is not clear whether untreated water discharged directly to the outfall will be monitored for total uranium. It is also not clear whether total uranium concentrations measured at the outfall will be used in monthly average concentration calculations or only in annual discharge mass calculations. In addition, the need to extract groundwater volumes beyond the treatment capacity is unclear. The text should be revised to clarify these issues.

Response: This comment raises the following 3 questions which require clarification:

1) Where is untreated groundwater monitored for total uranium?

Untreated groundwater will be monitored at 2 locations; at the wellhead and in the combined site effluent (treated and untreated). As noted on lines 1-3 of page 2-3, treatment or discharge decisions for all new well systems (excluding the combined South Plume Optimization and the existing South Plume recovery wells) will be made on a well by well basis, therefore uranium concentrations of each extraction well will be measured. The combined effluent (treated and untreated) from the site is monitored for uranium to assure compliance with discharge limits described on page 2-2.

2) Are the total uranium concentrations measured at the outfall used in the calculation of the monthly average?

Yes, the total uranium concentrations measured at the outfall (total combined flow of treated and untreated wastewater from entire site) are utilized to calculate the monthly average as well as the annual mass.

3) What is the driver for extracting groundwater at volumes that are greater than treatment capacity?

The need to extract groundwater volumes beyond the treatment capacity was identified in Section 3.1.4 of the approved Final Baseline Remedial Strategy Report (BRSR) Remedial Design for Aquifer Restoration (DOE, June 1997). The groundwater extraction volumes and rates for the final strategy were established in the BRSR to meet the aquifer restoration performance goals within the accelerated time frame. The performance measures for the final strategy predict that the treatment capacity is sufficient to treat extracted groundwater containing more than 20 ppb uranium (BRSR, Table 5-2). The combined site discharge (treated and untreated), is required to comply with the 20 ppb uranium discharge limit to the Great Miami River as presented on page 2-2, Discharge Limits .

The text will be revised to reference the BRSR in defining the need for groundwater extraction volumes to exceed treatment capacity.

Action: Modify the sentence that begins on page 2-3, line 5 as follows: "As identified in the Final Baseline Remedial Strategy Report, Remedial Design for Aquifer Restoration (DOE1997a), when extracted groundwater flow exceeds the treatment capacity, ..."

Modify the sentence that begins on page 2-3, line 7 by ending the sentence after the word "discharged" on line 8 and deleting the remainder of the sentence. Add the

following new sentence: "The combined treated and untreated discharge will comply with the 20 ppb discharge limit and the 600 pound per year mass-based limit as described above under Discharge Limits."

7. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.1.1.4 Page #: 3-4 Line #: 26
Original Specific Comment #: 5
Comment: The text refers to "two 100-horsepower pumps." Typically the size of a pump is given as its discharge rate in gallons per minute (gpm) or million gallons per day (mgd) at the design total discharge head, in feet, or as gauge pressure. The text should be revised accordingly.
Response: Agree. The description of the pumps to be used in the injection demonstration will be modified to reflect their specified flow and discharge head.
Action: Page 3-4, line 26. Delete "...two 100 horsepower pumps...", and replace with the following text:"...two pumps, individually rated at 1000 gpm @ 200 feet of Total Dynamic Head (TDH).."

8. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.1.2.1 Page #: 3-5 Line #: 32
Original Specific Comment #: 6
Comment: The text refers to "a 100-horsepower pump." Original Specific Comment 5 applies here and should be addressed.
Response: Agree. The description of the pump proposed to be used in the South Field Injection System will be modified to reflect the specified flow and discharge head.
Action: Page 3-5, line 33. Revise the second sentence of this paragraph to read as follows: "Construction of this module also includes the installation of one additional pump rated at 1000 gpm @ 200 feet TDH at the previously installed injection water surge tank, approximately 4000 feet of trenching and placement of high density polyethylene piping, instrumentation, and controls."

9. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.1.2.4 Page #: 3-7 and 3-8 Line #: 32 and 1-2
Original Specific Comment #: 7
Comment: The text states that the Plant 6 Area Extraction System will have two discharge headers that will either convey contaminated groundwater to treatment or discharge untreated groundwater. It is not clear whether untreated groundwater discharged directly will be monitored for total uranium. It is also not clear whether total uranium concentrations measured at the discharge point will be used in monthly average concentration calculations or only in annual discharge mass calculations. The text should be revised to clarify these issues.
Response: This comment is similar to Comment 6. Please refer to the response to Comment 6.
Action: Please see Action for Comment 6.

10. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.1.4 Page #: 3-9 Line #: 23-29
Original Specific Comment #: 8
Comment: The text states that the individual groundwater extraction system module startup plans will provide specifics on the frequency of water level and water quality data collection activities during each startup. It is not clear, however, whether water level and water quality data for the entire Great Miami Aquifer will be used to evaluate the impact of each module that will be placed in service. Additionally, the text does not clearly state whether the water level and water quality data collected during each module startup will

be collected at the same time as water level and water quality data collected for the entire Great Miami Aquifer. The text should be revised to clarify these issues.

Response: This comment raises the following 2 questions which require clarification:

1) Will site-wide Great Miami Aquifer water level and water quality data be used to evaluate the impact of each module that will be placed in service?

Yes. As described in Section 3 if the IEMP, site-wide groundwater data will be utilized to assess the performance of the site-wide groundwater remedy which is comprised of several individual modules. The intention of this Section was to identify that Remedy Performance Groundwater Monitoring is being addressed as part of the IEMP and to acknowledge that the IEMP may be modified in the future as a result of the more intensive, module-specific monitoring that is conducted in accordance with the start-up monitoring plans. Therefore, details such as data evaluation techniques were not provided.

2) Will module-specific start-up monitoring data (water levels and water quality) be collected at the same time as site-wide groundwater monitoring data?

Yes, module-specific start-up monitoring data (water levels and water quality) will be collected at the same time as the site-wide groundwater monitoring data. Groundwater levels are measured and water quality data is collected quarterly for the IEMP. This quarterly IEMP activity is site-wide and does include all the active groundwater restoration modules. Coordination of module-specific start-up monitoring and the IEMP will be identified in the start-up monitoring plans.

Action: Add the following text after the sentence ending on line 26 of page 3-9: "The site-wide groundwater data will be utilized to assess the performance of the site-wide groundwater remedy which is comprised of several individual modules. The module-specific start-up monitoring data (water levels and water quality) will be collected at the same time as the site-wide groundwater monitoring data. The start-up monitoring will be integrated with the IEMP groundwater monitoring such that area-wide interpretations can be made."

11. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2.2.2 Page #: 3-11 and 3-12 Line #: 30-32 and 1-4
Original Specific Comment #: 9

Comment: The text states that only the flow of wastewater to the treatment facility will be monitored. Typically monitoring of flow rates and concentrations of contaminants is required as part of the operation of a wastewater treatment system. The text should be revised to address this issue.

Response: Agree. The text already addresses the requirement for each contributing source project to monitor its flow. The first sentence of the paragraph was intended to address monitoring of concentrations. Contaminants to be monitored will vary depending on the source (project). Only those projects which are deemed to require pretreatment will normally be monitored for contaminant concentrations. For example, as discussed in Section 4, the Waste Pits Remediation Project (WPRAP), will require pretreatment of some streams to address heavy metals which are not specifically targeted for treatment, at the AWWT. Monitoring of their pretreatment will be preformed by WPRAP. The ARWWP will periodically review their monitoring to verify adequacy of their pretreatment.

Action: Delete first sentence in Section 3.2.2.2 and add new lead sentence "All projects that require pre-treatment for remediation wastewater will require personnel to

monitor discharges sent to the headworks of the ARWWP wastewater treatment facilities. For example, as discussed in Section 4, the Waste Pits Remediation Project (WPRAP), will require pretreatment of some streams to address heavy metals which are not specifically targeted for treatment, at the AWWT. Monitoring of their pretreatment will be preformed by WPRAP. The ARWWP will periodically review their monitoring to verify adequacy of their pretreatment." Revise second sentence "Each contributing project will be required..."

12. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.3.1.1 Page #: 3-14 Line #: 20-21
Original Specific Comment #: 10
Comment: The text states that the recently completed installation of multimedia filters to replace previously used multitubular filters is expected to provide an average annual treatment capacity of about 600 gpm. Average annual capacity is usually expressed in gallons, cubic feet, or other units of measure; flow rate is expressed in gallons per minute. The text should be revised accordingly.
Response: Agree. The text will be modified to reflect the total anticipated annual volume in millions of gallons along with the rate that this total flow is based on. Also, see response to Comment #1.
Action: This section will be revised to read as follows:

"The recently completed installation of multimedia filters to replace previously used multi-tubular filters is expected to allow for an average annual treatment capacity of approximately 315 million gallons per year. This is based on an anticipated throughput of 600 gallons per minute."

13. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.3.1.2 Page #: 3-15 Line #: 10-11
Original Specific Comment #: 11
Comment: The text presents the average annual treatment capacity in gallons per minute. Original Specific Comment 11 should be addressed.
Response: Agree. The text will be modified to reflect the total anticipated annual volume in millions of gallons along with the rate that this total flow is based on. Also, see response to Comment #1.
Action: This section will be revised to read as follows:

"The recently completed installation of multimedia filters to replace previously used multi-tubular filters is expected to allow for an average annual treatment capacity of approximately 158 million gallons per year. This is based on an anticipated throughput of 300 gallons per minute."

14. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.3.3 Page #: 3-16 Line #: 13
Original Specific Comment #: 12
Comment: The text presents the average annual treatment capacity in gallons per minute. Original Specific Comment 11 applies here and should be addressed.
Response: Agree. The text will be modified to reflect the total anticipated annual volume in millions of gallons along with the rate that this total flow is based on.

Action: The first sentence of this paragraph will be revised to read as follows:

"The SPIT system was installed to provide treatment of approximately 92 million gallons per year of South Plume Groundwater. This is based on an anticipated throughput of 175 gallons per minute."

Also, the last sentence of this paragraph will be revised to read as follows:

"The SPIT system will remain dedicated to the treatment of extracted groundwater at the above stated capacity."

15. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.2.1 Page #: 4-3 Line #: 35-36
Original Specific Comment #: 13
Comment: The text discusses "average yearly quantities of storm water; however, the related summary on Page 4-4 lists flow rates. The summary on Page 4-4 should be revised to list "average yearly quantities," not flow rates.
Response: Agree. The table on page 4-4 will be revised to reflect Average annual flows in Million Gallons (MG) as well as an average flow rate in gallons per minute. Also, see response to General Comment 2.

Action: Revise table on page 4-4 to add Million Gallons as follows:

SUMMARY OF ESTIMATED AVERAGE YEARLY QUANTITIES OF STORM WATER RUNOFF

	Projected Average Annual Flow	
Area	**Million Gallons**	**GPM**
SWRB 165 acre collection area	142	270
- Removal of Parking Lot	11	20
- Net collection area remaining	131	100
• Sub-Area 4	32	60
• Sub-Area 5	47	90
A1PI stockpiles area	5	10
Southern Waste Units	8	15

16. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.3.2 Page #: 4-7 Line #: 6
Original Specific Comment #: 14
Comment: The text states that the transfer pumps are sized at 250 gpm and that the predicted flow rates average 30 gpm. This does not appear to be possible, unless the predicted flow rate average of 30 gpm is over a day, month, or year, or unless the pumps are of a variable speed type. The text should be revised to clarify this issue.
Response: Agree. The text will be modified for clarification. Also, see response to General Comment #2.
Action: Revise the text in line 6, page 4-7 as follows:

"Flow: Storm water flow to this sump is anticipated to average approximately 7 million gallons per year. Averaged over the year, this is approximately 13 gpm. The sump transfer pumps will pump intermittently at a rate of 250 gpm."

17. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.3.4 Page #: 4-9 Line #: 6 and 8
Original Specific Comment #: 15
Comment: The text reads as follows: "5 gpm average flow - pumping rate is 50 gpm." It is not clear whether the 5-gpm average flow is annual, monthly, or daily. The text should be revised to clarify this issue.
Response: Agree. The text will be modified for clarification. Also, see response to General Comment #2.
Action: Delete line 6, page 4-9 and revise the text in line 8 as follows:

"Flow: Flow from this sump is anticipated to average approximately 2.6 million gallons per year. Averaged over the year, this is approximately 5 gpm. The sump transfer pumps will pump intermittently at a rate of 50 gpm."

18. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 4.3.5 — Page #: 4-10 — Line #: 19-20
Original Specific Comment #: 16
Comment: The text does not list the flow rate. If 6,000 to 10,000 gallons of water will be received in each batch, an average flow rate can be calculated for a given period of time just as is done for the other systems. The text should be revised to present an average annual flow rate as is done in Section 4.3.6.
Response: Agree. The text will be revised.
Action: Revise the text of lines 19 and 20 as follows:

"Flow: Batches. Anticipated to average 0.5 mgy (1 gpm)"

19. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 5.2 — Page #: 5-2 — Line #: 30-31
Original Specific Comment #: 17
Comment: The text states that "All additional groundwater flows will be discharged without treatment." The text should be revised to specify that all groundwater exceeding the treatment system's capacity will be discharged without treatment.
Response: Agree.
Action: Reword the last sentence on page 5-2 to read: "All groundwater flows exceeding treatment system's capacity will be discharged without treatment."

20. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 5.8 — Page #: 5-12 — Line #: 2
Original Specific Comment #: 18
Comment: The sentence on Line 2 appears to be incomplete. The text should be revised to present a complete sentence.
Response: Agree.
Action: Replace the first two sentences on page 5-12 with: "The operations manager issues daily and monthly operations reports that summarize flow rates and flow totals as well as uranium concentrations form each wastewater treatment system."

21. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 5.9 — Page #: 5-12 — Line #: 14
Original Specific Comment #: 19
Comment: The phrase "the SDF filter press" should be revised to read "the filter cake from the SDF filter press."
Response: Agree.
Action: Reword the beginning of line 14 on page 5-12 to read: "The filter cake produced by the SDF filter press is unloaded in metal boxes of about 50 cubic foot capacity."

22. Commenting Organization: U.S. EPA — Commentor: Saric
Figure #: 5-7 — Page #: NA — Line #: NA
Original Specific Comment #: 20
Comment: First, the figure implies that the injection water flow rate can decrease to below 600 gpm. It is not clear how this can occur. The injection water pump is a constant- speed, 1,000-gpm pump, and a standby pump of the same capacity is provided. If the flow rate for some reason drops below 600 gpm, the injection water pump should be taken out of service, and the standby pump should be used to supply injection water. If the injection rate is also below 600 gpm with the standby pump, clogging of the aquifer matrix surrounding the injection wells should be investigated. Second, it is not clear whether the injection wells will work properly at a flow rate of 120 gpm per well. Third, it is not

clear what would cause an injection well "outage." The figure, the related text, or both should be revised to clarify these issues.

Response: This table and the text in Section 3.1.1.4 are not intended to provide detailed descriptions of the instrumentation and controls for the injection demonstration design. However, it should be noted that the injection demonstration system is designed such that each injection well has it's own flow control system that allows the flow of injectate to be varied individually. Additionally, controls are being provided that allow less than a total of 1000 gpm to be injected. These controls will allow the fixed speed pumps discharge to be split between injection and recycled to the injection supply tank. Therefore, the discharge from the pumps remains relatively constant while the flow to the injection wells can be reduced.

Reference is made to investigation of injection well clogging if the injectate flow is reduced. Instrumentation on the individual injection wells is being provided such that the water levels within each injection well can be monitored. Clogging of the injection wells will be indicated by rising waters levels at constant flows. The injection wells are also being instrumented such that flow to the well is automatically stopped if excessively high levels are reached.

Injection well outages may be caused by maintenance activities or equipment outages associated with the injection wells.

Action: A Section 5.4.3.2 Re-Injection of Treated Groundwater will be added as follows:

"5.4.3.2 Re-Injection of Treated Groundwater

The water for the re-injection demonstration will be obtained from the discharge of the AWWT Expansion System as shown on Figure 5-2. In the future, if the Injection Demonstration Project is successful, effluent from the SPIT system will be piped to allow routing to the 50,000 gallon surge tank (see Section 3.1.1.4). The quantity of flow which is transferred to the surge tank is controlled automatically by level control at the surge tank.

The specific details for operating of the individual injection wells will be addressed in future SOP's. However, it should be noted that the injection demonstration system is designed such that each injection well has it's own flow control system that allows the flow of injectate to be varied individually. The nominal flow of 1000 gpm to the Injection Demonstration Wells will be supplied by a single pump (with backup spare provided). Additionally, controls are being provided that allow less than a total of 1000 gpm to be injected. These controls will allow the fixed speed pumps discharge to be split between injection and recycled to the injection supply tank. Therefore, the discharge from the pumps remains relatively constant while the flow to the injection wells can be varied.

Similarly, in the future, when the re-injection flow increases above 1000 gpm, a third pump will be added as discussed in Section 3.1.2.1. The third pump will provide standby and the two operating pumps will be controlled in the same manner as described above to provide a varying demand.

In addition, instrumentation on the individual injection wells is being provided such that the water levels within each injection well can be monitored. Clogging of the injection wells will be indicated by rising waters levels at constant flows. The injection wells are

also being instrumented such that flow to the well is automatically stopped if excessively high levels are reached."

23. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 6.2.1 — Page #: 6-7 — Line #: 9
Original Specific Comment #: 21
Comment: The phrase "The amperage draw of the well a various flows" should be revised to read "the amperage draw of the well's pump motor at various flows."
Response: Agree, the text will be revised as noted.
Action: Page 6-7, line 9. The third sentence of this paragraph will be revised to read as follows:

"The amperage draw of the well's pump motor at various flows will also be compared to previous readings and pump/motor manufacturer published information."

24. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 6.2.2 — Page #: 6-7 — Line #: 31
Original Specific Comment #: 22
Comment: The text states that the procedure for routine well maintenance will include "removal of the pitless adapter." It is not clear why the pitless adapter is to be removed, as it is typically welded onto the well casing. The text should be revised to explain why the pitless adapter is to be removed.
Response: Agree. The statement should read "...removal of pitless adapter cover,...". The cover of the pitless adapter must be removed in order to gain access to the tubing that is installed through the cable chase to facilitate the addition of sodium hypochlorite.
Action: The text will be revised such that the first sentence of this paragraph reads as follows:

"The basic procedure includes well shutdown, removal of the pitless adapter cover, feed of a calculated quantity of sodium hypochlorite, well surging by pump stop and start, and a hold time to allow the sodium hypochlorite to react and dissipate."

25. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: Appendix A, Section 5.1 — Page #: 18 — Line #: 13-17
Original Specific Comment #: 23
Comment: The text states that back-surging of the chlorinated water into the gravel pack and aquifer will be done by starting a pump and pumping until water reaches the pitless adapter. It is not clear, however, which pump will be used to accomplish this. The text should be revised to clarify this matter.
Response: Agree. The pump that is being referred to is the installed recovery well submersible pump.
Action: The text will be revised such that the first sentence of this paragraph reads as follows:

"Back surge the chlorinated water into the gravel pack and aquifer by starting the installed recovery well submersible pump and pumping until the water reaches the pitless adapter."

26. Commenting Organization: U.S. EPA — Commentor: Saric
Section #: Appendix A, Section 6.0 — Page #: 26 — Line #: 5
Original Specific Comment #: 24
Comment: The text states that sodium hypochlorite and hydrochloric acid will be used for well screen maintenance. Section 5.1 of Appendix A, however, does not include procedures for use of hydrochloric acid. Section 5.1 should be revised to include procedures for use of hydrochloric acid in well screen maintenance.

Response: Sodium hypochlorite is used for the routine well screen maintenance that is specifically discussed in Section 5.1. Non-routine major well rehabilitation efforts require the use of both sodium hypochlorite and hydrochloric acid. As indicated in Section 1.0 of the South Plume Performance Monitoring and Maintenance Plan, the Plan is not intended to provide specific details for the major rehabilitation efforts as its' focus is on *routine* maintenance activities. Procedures for use of hydrochloric acid during major rehabilitation efforts will be addressed in activity specific SOPs.

Action: In Appendix A, delete the sentence beginning on line 5, of page 26 and replace with the following: "The sodium hypochlorite is used for routine well screen maintenance to disinfect the well and inhibit the growth of iron-fouling bacteria. Non-routine, major well rehabilitation efforts require the use of both sodium hypochlorite and hydrochloric acid."

OEPA COMMENTS ON
THE DRAFT OPERATIONS AND MAINTENANCE MASTER PLAN
FOR THE AQUIFER RESTORATION AND WASTEWATER TREATMENT PROJECT

27. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-4 Line#: 23 Code: C
Original Comment#: 1
Comment: The text should state how it will be determined if the injection system is viable.
Response: Agree. The viability of re-injection will be determined based on criteria presented in Section 1.3 of the Re-injection Demonstration Test Plan (DOE 1997d)
Action: Add the following text after the sentence that ends on line 23 of page-4: "The decision criteria for evaluating the viability of re-injection technology at the FEMP on a field scale focus on:

- Maintenance and operational costs of re-injection
- Vertical and horizontal expansion of the 20 µg/L total uranium plume
- Effectiveness in shortening the remedy
- Creation of a hydraulic barrier at the southern FEMP property boundary

Section 1.3 of the Re-injection Demonstration Test Plan (DOE 1997d) provides further details on these criteria."

28. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-5 Line#: 24-26 Code: C
Original Comment#: 2
Comment: The total number of planned injection wells for the South Field Injection System is not apparent. It appears that the text indicates that the South Field Injection System will include five newly installed injection wells and three injections wells converted from the South Field Extraction System Module for a total of nine injection wells. Figure 3-3 and the text found in RAWP-3 Final, Revision 0, June 24, 1997, pg 18, first paragraph both describe the conversion of four extraction wells to injection wells. Please clarify whether three or four wells will be converted from extraction to injection. Additionally, it would be useful to identify these by well ID in Section 4.
Response: The text is correct, Figure 3-3 needs to be revised. The South Field Injection System Module will consist of eight injection wells, five newly installed and three converted extraction wells. Extraction Wells #13, #14, and #16 will be the ones converted.
Action: Revise the note in Figure 3-3 to read three wells instead of four.

29. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-6 Line#: Code: C
Original Comment#: 3
Comment: Sections 3.1.2.1 and 3.1.2.2 should include the anticipated extraction and injection rates or reference a specific table that includes these values.
Response: Projected flows are presented in Section 4. Table 4-1 presents anticipated extraction and injection rates.
Action: The following sentence will be added to line 16 on page 3-6: "Table 4-1 presents extraction/injection rates for the planned aquifer restoration."

30. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-25 Line#: 4-6 Code: C
Original Comment#: 4

Comment: The radionuclides to be analyzed for should be specified or reference to the appropriate document provided.

Response: Since the time that the draft OMMP (June 30, 1997) was submitted, the IEMP has been approved (July 10,1997). Therefore the approved IEMP surface water sampling scope will now be implemented. The IEMP scope does not require the collection of monthly or quarterly composite samples. However, the IEMP does provide for the collection of monthly and quarterly grab samples of the site effluent to be analyzed for site-specific radionuclides of concern as defined in Section 4 of the IEMP.

Action: Revise Section 3.6.2 (Radionuclide and Uranium Monitoring) as follows to align with the IEMP scope: Delete the text beginning with the sentence that begins on line 1 of page 3-25 through the sentence ending on line 11 of page 3-25. Replace with the following: "Details of this program are provided in Section 4 of the IEMP. The program consists of uranium analysis of a daily flow-proportional composite sample of the site effluent and grab sampling at monthly and quarterly intervals. The monthly samples are analyzed for total uranium, radium-228 and technetium-99, while the quarterly samples are analyzed for lead-210 radium-226 and strontium-90."

31. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-25 Line#: 21-22 Code: C
Original Comment#: 5

Comment: The text should further define what excessive precipitation is or refer to another section that quantifies this factor. What determines when the precipitation is excessive?

Response: The storm water retention basin is designed to handle a 10 year, 24 hour storm event. Excessive precipitation is an amount of precipitation combined with the projected weather forecast, that causes water levels in the basin to threaten the limit of the holding capacity of the basin.

Action: The following text will be added to line 22 on page 3-25: "(Excessive precipitation is an amount of precipitation combined with the projected weather forecast, that causes water levels in the basin to threaten the limit of the holding capacity of the basin.)"

32. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 5.0 Operations Plan Pg.#: Line#: Figure 5-2 Code: C
Original Comment#: 6

Comment: The decision flow chart references numerous SOP's. Specifically where are these SOP's documented and how do the operations interface?

Response: A listing of the SOPs is provided in Appendix C. Operators are trained to the SOPs pertinent to the operations listed in Figure 5-2 and copies of the SOPs are provided to the operators. The various operations interface via a shift supervisor who is responsible for ensuring all operations are conducted in accordance with established SOPs and that decisions are made consistent with the logic established on Figure 5-2.

Action: Revise text in Section 5.3, Hierarchy of Decisions as follows to clarify the use of SOPs and the shift supervisor's role as the operations interface. Delete the sentence that begins on line 16 of page 5-3 and replace with the following: "As the supervisor of all operations and maintenance activities that occur on a particular shift, the shift supervisors are responsible for ensuring that treatment equipment is operated, maintained, and repaired as necessary so that maximum prioritized treatment capacity is available at all times. The operations activities are performed in accordance with the pertinent site

standard operating procedures (SOPs) listed in Appendix C. Maintenance is performed in accordance with the operations and maintenance specifications provided by the manufacturer."

33. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-1 Line#: 29 Code: E
Original Comment#: 7
Comment: The text "is provide" should be replaced with "are provided".
Response: Agree.
Action: On page 3-1, line 29, replace "is provide" with "are provided".

34. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-19 Line#: 30 Code: E
Original Comment#: 8
Comment: The word "allows" should be replaced with "allow".
Response: Agree.
Action: On page 3-19, line 30, replace "allows" with "allow".

35. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-26 Line#: 1 Code: E
Original Comment#: 9
Comment: The text should provide flow units (lb/gal) to allow for verification of the conversion factor 8.34.
Response: Agree.
Action: On page 3-26, line 1 add "(lb/gal)" after 8.34.

36. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 3.0 Desc. of Major ARWWP Components Pg.#: 3-26 Line#: 4-20 Code: E
Original Comment#: 10
Comment: The text should provide a reference for the adjusted average monthly uranium concentration calculation method specified, in particular the use to 10 allowable by-pass concentrations.
Response: A specific reference for the calculation method does not exist. The method presented is intended to provide specific details regarding the procedure by which the FEMP proposes to calculate the monthly uranium discharge concentrations to the Great Miami River (GMR) and the counting of the 10 allowable bypass days as specified in the Operable Unit 5 Record of Decision.

The FEMP Operable Unit 5 Record of Decision, section 9.1.5, states the following:

"The 20 ppb discharge limit for uranium will be based on a monthly average and will become effective January 1, 1998.

The FEMP will be allowed to by-pass storm water directly from the site's storm water retention basin to the river for up to 10 days per year to accommodate periods of significant precipitation. The intent of allowing the by-pass of these flows is to provide the relief needed during periods of excessive precipitation when the quantities of storm water exceed retention and treatment capacities. The uranium concentration in the blended discharge during these 10 days will be considered in the 600 pound per year mass-based limit, but will not be included in the monthly averaging for purposes of demonstrating compliance with the 20 ppb performance-based concentration limit."

This language is open to several interpretations, any of which could result in a slightly different calculation method regarding the monthly average concentration to the river, the counting of the 10 allowable bypass days, and ultimately the need to take corrective actions. Therefore, the method provided and illustrated through example in the OMMP is intended as the proposed method to be used in future reporting. This method considers the relative hierarchy of key decisions that occur during periods of heavy precipitation. This hierarchy places recharge of the aquifer with contaminated storm water (via overflow of the Storm Water Retention Basin [SWRB] to the Storm Sewer Outfall Ditch [SSOD]) above short-term exceedances of the 20 ppb discharge limit to the river. In other words, it is better to bypass untreated storm water to the GMR rather than letting the SWRB overflow to the SSOD.

Therefore, the decision to bypass flow from the SWRB directly to the GMR is not based on the average monthly concentration, but is based entirely on the elevation of the water in the basin and the possibility that if bypassing is not implemented, the chance that the SWRB may overflow to the SSOD is increased. This being the case, the number of actual bypass events will not be limited strictly to 10 events but will be whatever is necessary to follow the operational strategy as spelled out in this OMMP. What is limited however, is relief from including these events in the monthly calculation of average uranium concentrations to 10 days. Days where bypassing occurs for 12 hours or more will automatically be counted toward the ten day limit. Days when bypassing occurs for less than 12 hours are based on need and may not be counted toward the ten day limit. The decision to include or exclude particular bypass events of less than 12 hours per day in the monthly concentration calculation can only be made after the month has ended and an evaluation of the average concentration is performed.

The following examples are presented to demonstrate this process:

Example 1:
For a given month, the FEMP actual monthly discharge to the GMR is less than the 20 ppb monthly average discharge criteria. However, during this month, several bypass events occurred, one of which exceeded 12 hours.

Since the actual discharge concentration did not exceed the 20 ppb criteria, only one of the 10 allowable bypass days will be utilized to meet the criteria.

Example 2:
For a given month, the FEMP actual monthly discharge to the GMR is greater than 20 ppb and no bypass events occurred.

In this example the actual monthly average exceeds the 20 ppb discharge criteria, and no adjustments can be made since no bypass events occur during the month. Therefore the FEMP would be in violation of the 20 ppb discharge criteria.

Example 3:
For a given month, the actual monthly average exceeds the 20 ppb discharge criteria, however, several bypass events occurred during the month, one of which exceeded 12 hours.

By excluding the contribution from the single day of bypassing which exceeds 12 hours, the average concentration is less than the 20 ppb discharge criteria. In this example, 1 of the 10 available bypass days is used toward compliance with the discharge criteria.

Example 4:
For a given month, the actual monthly average exceeds the 20 ppb discharge criteria, and several storm water bypass events have occurred during the month. However, all 10 of the available bypass allowances have been used in previous months.

For this month the FEMP would be in violation of the 20 ppb criteria.

Note that the probability of this example occurring is remote. If the FEMP believes that the allotted 10 days is being used up too quickly, reduction of well pumping will be implemented as deemed necessary to address that trend. This may be especially the case toward the end of a calendar year during which excessive rainfall occurs (i.e., > the 40.4-inch annual average).

If a sequence of months (i.e., not a random occurrence) indicate an exceedance of the 20 ppb monthly average, or if the sum of well pumping has been reduced below that expected in order to achieve compliance with the 20 ppb monthly average and there has not been above average rainfall, then corrective measures will need to be evaluated. Depending on the reason for the sequence of exceedances, or if less than targeted recovery well pumping rates are required to maintain compliance with the 20 ppb limit, corrective actions could include: modifications to parts of the FEMP wastewater system as discussed in Section 3.5.4 or 5.4.1.2; continued reduction of groundwater extraction pumping rates until additional treatment can be installed; segregation of the South Plume Optimization wells discharge from the combined SPO/South Plume Recovery System header to reduce the concentration of uranium in flow bypassing treatment, or other such actions.

The need for corrective measures will be discussed with the U.S. EPA and Ohio EPA as part of the IEMP quarterly meetings/reports. (Summary reporting of how the FEMP is doing with respect to compliance with the 20 ppb uranium discharge limit and the use of bypass days will be included in the IEMP quarterly meetings/reports.) In the event that corrective measures are deemed necessary, the situation will be outlined to the EPAs in order to reach consensus regarding what action (if any) is required.

Action: On page 3-6, lines 4 through 16 modify the text as follows:

"After the average monthly uranium concentration has been calculated, the 10 allowable bypass concentrations will be accounted for as follows: If any by-pass days occur during a particular month which equal or exceed 12 hours in duration, the flow-weighted concentration for that day will be dropped and the average will be recalculated. If additional bypass days of less than 12 hours occur during a month, the highest flow-weighted concentration will be dropped and the average will be recalculated. This method will be repeated until the 20 ppb limit is achieved or all of the allowable bypass days have been expended.

EXAMPLE: Stormwater bypasses occurred on March 2, 3, and 4, 1997. The bypassing started at 12:00 AM on March 2 and ended at 9:30 AM on March 4. Therefore two days of equal to or greater than 12 hours of bypassing occurred. The flow-weighted average for the month was 33 ppb. By dropping the daily flow-weighted concentration of the two days when 12 or more hours of bypassing occurred, the average was reduced to 18 ppb. Thus, although there were three bypass days reported to the agencies, only two of the 10 allowable bypass days were expended to meet the 20 ppb limit."

On page 3-26 add the following text after the sentence ending on line 20:

"If a sequence of months (i.e., not a random occurrence) indicate an exceedance of the 20 ppb monthly average, or if the sum of well pumping has been reduced below that expected in order to achieve compliance with the 20 ppb monthly average and there has not been above average rainfall, then corrective measures will need to be evaluated. Depending on the reason for the sequence of exceedances, or if less than targeted recovery well pumping rates are required to maintain compliance with the 20 ppb limit, corrective actions could include: modifications to parts of the FEMP wastewater system as discussed in Section 3.5.4 or 5.4.1.2; continued reduction of groundwater extraction pumping rates until additional treatment can be installed; segregation of the South Plume Optimization wells discharge from the combined SPO/South Plume Recovery System header to reduce the concentration of uranium in flow bypassing treatment, or other such actions.

The need for corrective measures will be discussed with the US EPA and Ohio EPA as part of the IEMP quarterly meetings/reports. (Summary reporting of how the FEMP is doing with respect to compliance with the 20 ppb uranium discharge limit and the use of bypass days will be included in the IEMP quarterly meetings/reports.) In the event that corrective measures are deemed necessary, the situation will be outlined to the EPAs in order to reach consensus regarding what action (if any) is required."

37. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 4.0 Projected Flows Pg.#: Figure 4-2 Line#: Code: E
Original Comment#: 11
Comment: For clarity the title of the figure should be "Projected Yearly Average Total Groundwater Extraction Rate."
Response: Agree.
Action: Change the title of Figure 4-2 to read: "Projected Yearly Average Total Groundwater Extraction Rate."

38. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 4.0 Projected Flows Pg.#: Figure 4-5 Line#: Code: E
Original Comment#: 12
Comment: For clarity the title of the figure should be "Projected Yearly Average Stormwater Flow Rate."
Response: Agree.
Action: Change the title of Figure 4-5 to read: "Projected Yearly Average Stormwater Flow Rate."

39. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section#: 5.0 Projected Flows Pg.#: Figure 5-2 Line#: Code: E
Original Comment#: 13
Comment: Typo errors, "avaiable" should be "available".
Response: Agree.
Action: Correct the spelling of "available" on Figure 5-2.