Stoller

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Task Order LM00-502
Control Number 14-0195

December 16, 2013

U.S. Department of Energy
Office of Legacy Management
ATTN: Gwendolyn N. Hooten
Site Manager
10995 Hamilton-Cleves Hwy.
Harrison, OH 45030

SUBJECT: Contract No. DE-AM01-07000LM00060, S.M. Stoller Corporation (Stoller) Transmittal of Responses to Ohio Environmental Protection Agency Comments on Comprehensive Legacy Management and Institutional Controls Plan, Revision 7, Draft

REFERENCE: 1) Task Order LM00-502-06-506, ODA CERCLA/RCRA Site, Fernald, OH

2) Letter, T. Schneider to J. Powell, "Re: Comments - Comprehensive Legacy Management and Institutional Controls Plan, Volumes I and II, September 2013," dated October 30, 2013

3) Electronic mail, D. Bohannon to W. Hertel, "Re: Cmts on the LMICP 2013," dated November 19, 2013

4) Electronic mail, T. Fischer to J. Powell, "Re: LMIC Comments," dated October 17, 2013

Dear Ms. Hooten:

This letter transmits the Responses to Ohio Environmental Protection Agency (Ohio EPA) Comments (References 2 and 3) for the Fernald Preserve Comprehensive Legacy Management and Institutional Controls Plan (LMICP), Revision 7, Draft for submittal to the United States Environmental Protection Agency (EPA), Ohio EPA and U. S. Fish and Wildlife Service. Because no comments have been received from the EPA, upon agency approval of the responses to comments, it is anticipated that this revision to the LMICP will be final by January to correspond with calendar year monitoring and reporting.

Please contact me at (513) 648-3894 if you have any questions.

Sincerely,

William A. Hertel
Stoller Site Manager

WAH/KV:dsm

Enclosures

cc: (electronic)
Karen Voisard, Stoller
Chuck White, Stoller
rc-ohio
File: FER030.1(A)
Administrative Records (Thru B. Irvine)

Responses to Ohio EPA Comments on
Comprehensive Legacy Management and Institutional Control Plan
Volumes I and II

September 2013

Volume II

1. Commenting Organization: Ohio EPA
   Section #: 2.1.1 Pg #: 11 & 12
   Comment: Due to DOE's decision regarding "no pets" onsite, please make sure the appropriate text is kept in the LMICP.

   Response: Agree

   Action: "Pets of any kind" will be restored to the prohibited items list and the paragraph following the list of prohibited items explaining the pet policy change will be removed.

2. Commenting Organization: Ohio EPA
   Section #: 2.1.3.3, 3.1.1 & Appendix D Pg #: 17
   Comment: Ohio EPA strongly supports the creation of an electronic database for tracking inspection findings, however we believe it is important to maintain the forms used in inspections as part of the LMIC. For consistency in these sections, the discussions regarding inspections, inspection forms, and revisions to this process should remain in the 2013 document. Any revisions to the forms should be included in the 2014 LMICP.

   Response: Agree

   Action: Appendix D will be maintained and text in Sections 2.1.3.3 and 3.1.1 will be revised accordingly.

   The references to Appendix D will remain in the text. Text included in Section 2.1.3.3 is as follows:

   "For 2014, the maintenance action item list will be incorporated into an electronic database. Minor modifications to the format of the inspection forms and maintenance log will be required. Revised forms will be introduced during the 2014 inspection year and finalized prior to the next LMICP revision."

3. Commenting Organization: Ohio EPA
   Section #: 5.1.1 Pg #: 35
   Comment: Ohio EPA strongly supports the creation of an electronic database for tracking inspection findings, however we believe it is important to maintain the forms used in inspections as part of the LMIC. Please leave in the text, the reference made to Appendix D for consistency.

Response: Agree

Action: Appendix D will be maintained and text in Sections 5.1.1 will be revised accordingly.

The reference to Appendix D will remain in the text. Text included in Section 5.1.1 is as follows:

"As discussed in Section 2.1.3.3, inspection forms will be modified to accommodate use of an electronic database to track inspection findings and resolution of the findings. Revised inspection forms will be introduced during the 2014 inspection year and finalized prior to the next LMICP revision."

Text was also added to Section 5.1.2 regarding OSDF inspection forms and is as follows:

"As with the site inspection process, the OSDF inspection results will be incorporated into an electronic database in 2014. Revised inspection forms for the OSDF inspections will also be introduced during the 2014 inspection year and finalized prior to the next LMICP revision."

4. Commenting Organization: Ohio EPA
   Section # 5.1.3 Pg #: 36
   Comment: Ohio EPA recommends that the OSDF reporting plan be modified to ensure that temporal trend in volume of collected water be reported on an annual basis, for the leachate collection system, the leachate detection system, and the horizontal till wells. Insertion of a table or graphic representation is recommended in future SERs to track volume with time, and facilitate interpretation of water quality data.

   Response: Figures are already included in the SER that track LCS, LDS, and HTW volumes over time. The first figure of each subsection provides monthly accumulation volumes for the LCS. The second figure of each subsection provides monthly accumulation volumes for the LDS. The third figure of each subsection provides OSDF horizontal till well water yields.

   Action: No action required.

   <u>Attachment A</u>

5. Commenting Organization: Ohio EPA
   Section #: 3.1.1.4 Pg #: 16 Line#: last paragraph
   Comment: Please provide the justification behind suspending the supplemental pumping operation and why the current operation is no longer beneficial to the remedy. It was our understanding that removal of the weirs was aimed at improving infiltration and thus the benefit of the pumping operation.

Response: The benefit to be gained by the supplemental pumping operation was never considered to be significant. It was based on groundwater modeling presented in the *Groundwater Remedy Evaluation and Field Verification Plan* (DOE 2004). The modeling indicated that an infiltration rate of 500 gallons per minute (gpm) through the SSOD decreased the model predicted cleanup time estimate by one year. A field study was conducted in 2005 which concluded that the operation would not be cost effective. Subsequent discussions with EPA and Ohio EPA led to an agreement to continue the infiltration operation, which consisted of supplemental pumping into the SSOD until wells, pumps, or motors were no longer serviceable. At that time, operations would be suspended, pending a determination that the remedy was benefiting from the operation.

A determination was conducted in advance (i.e., while wells are still serviceable) for the purpose of determining what benefit would be gained by maintaining the flumes. It was reported in the *2012 Fernald Preserve Site Environmental Report* that the average infiltration rate measured in the metered portion of the SSOD during the duration of the project (2007 through 2012) was 109 gpm to 129 gpm. This rate is well below what the model predicted would be needed (500 gpm) to decrease the model predicted cleanup time estimate by one year. This indicates that the supplemental pumping operation was falling short of the objective of achieving an infiltration rate of 500 gpm and, therefore, provided negligible benefit to the groundwater remediation. This conclusion is supported by uranium concentration data collected in the South Field and used to construct uranium plume maps that indicate that the area beneath the SSOD where infiltration would be taking place does not appear to be cleaning up any faster than the surrounding areas.

Although removing the flumes may help increase infiltration through the SSOD, the data indicate that it is doubtful that the goal of 500 gpm will be achieved. With removal of the Former Production Area facilities and roads and restoration of that area to a tall grass prairie, the SSOD drainage basin runoff coefficients have been significantly reduced to conditions similar to what they were before the site infrastructure was constructed in the early 1950s. When pre-site construction aerial photos of the site are reviewed, it is apparent that much of the SSOD was cut out by erosion caused by increased runoff post-site construction. With the return to pre-site construction runoff conditions it is anticipated that the SSOD will tend toward being a depositional stream rather than erosional stream in the areas where infiltration would be beneficial to the aquifer cleanup. If sediment is deposited in the target infiltration areas then the infiltration rates will be further reduced. Therefore, DOE would like to continue pumping wells (when deemed necessary) to maintain the health of the Lodge Pond, but supplementing flow down the SSOD would no longer be an objective for the groundwater remedy.

Action: Upon concurrence from the Ohio EPA, the information provided in the responses will be presented in the 2013 Site Environmental Report as a follow up discussion on why pumping down the SSOD was discontinued.

6. Commenting Organization: Ohio EPA
Section #: 3.1.1.4 Pg #: 16
Comment: In response to Ohio EPA comment 5, additional justification for suspending pumping to the storm sewer outfall ditch (SSOD) is requested. In the case of monitoring wells located adjacent and immediately down gradient of the SSOD, a discussion of uranium trend should be provided, covering the period of supplemental pumping (2007-2012). An initial trend could provide indication of beneficial uranium soil desorption, resulting from enhanced infiltration. According to Table A.2-19 of the 2012 Site Environmental Report, an upward trend in excess of the FRL was observed in monitoring well 2387.

Response: Attached, is a location map for the SSOD that shows the SSOD in relation to the 4th quarter 2012 groundwater elevation contours. These elevation contours are the most recent groundwater elevation contours reported in the 2012 Site Environmental Report. It should be noted though that the water level surface shown in this figure is representative of the water level surface that was present between 2007 and 2012, due to pumping in the South Field extraction wells. As shown in the figure, most of the south field extraction wells are located east of the SSOD; groundwater infiltrating into the aquifer from the SSOD would migrate to the east. The SSOD erodes through the glacial till just south of where Flume 6 was located; therefore, the potential for infiltration into the aquifer also begins just south of the former location of Flume 6.

Soil and sediment in the SSOD was certified clean prior 2007. The objective of the infiltration activity was to flush the dissolved uranium plume located beneath the SSOD. As shown in the attached figure, South Field extraction wells are located just east of the SSOD. The ground surface between the extraction wells and the SSOD is too steep to allow for the installation of monitoring wells. Therefore, the closest monitoring wells east of the SSOD are in line for the most part with the extraction wells and are under heavy influence from the extraction wells.

The two closest monitoring wells to the area of potential infiltration (east of the SSOD, and south of former Flume 6) are monitoring wells 2386 and 2387. Attached are time versus uranium concentration graphs for these two monitoring wells. For the time period 2007 through 2012, the Mann-Kendall statistic test indicates no statistically significant trend was present at either well. It should be noted that Table A.2-19 in the 2012 Site Environmental Report considers all data collected at monitoring wells, not just the time period between 2007 and 2012. If data prior to 2007 is considered at monitoring well 2387, the Mann-Kendall test indicates a statistically significant upward trend, as pointed out in the above comment.

Action: Upon concurrence from Ohio EPA, the information provided in response to Ohio EPA comments 5 and 6 will be presented in the 2013 Site Environmental Report as a follow up discussion on why pumping down the SSOD was discontinued.

Attachment D

7. Commenting Organization: Ohio EPA
Section #: 3.4.2 Pg #: 21
Comment: Contoured values in the Figure 4 Maximum Total Uranium Plume map for the second half of 2012 should be reviewed for accuracy. In the case of monitoring well 83337 for example, please check the channel 3 (C3) contoured concentration of 2.86 ug/L. According to Figure A.2-3B of the 2012 SER report, the maximum uranium concentration in well 83337 was in channel1 (C1), rather than C3, at 2,450 ug/L.

Response: Upon inspection, it appears that 2nd half 2011 values were incorrectly posted for the second half 2012 plume. The plume interpretation is correct, the values posted are incorrect, and were not used in the plume interpretation.

Action: Figure 4 will be corrected.

8. Commenting Organization: Ohio EPA
Section #: 3.7.2 Pg #: 61-62
Comment: Ohio EPA recommends that the integrated ground water reporting plan be modified to ensure that future SERs report the following additional information:

- Target year for uranium FRL attainment (30 ug/L)
- Total number of monitoring wells in compliance, and total number in excess of the FRL
- Total number of extraction wells in compliance, and total number in excess of the FRL
- Trend in uranium extraction well concentration, including linear trend where applicable.

Response: Agree, this information would add value; however, DOE would prefer to modify the second and third bullets to use "below the FRL" rather than" in compliance."

Action: The bullets listed in the comment will be added to Section 3.7.2 as follows:

- Target year for uranium FRL attainment (30 ug/L)
- Total number of monitoring wells below the groundwater FRL for uranium and total number in excess of the FRL
- Total number of extraction wells below the groundwater FRL for uranium

and total number in excess of the FRL
- Trend in uranium extraction well concentration including linear trend, where applicable.

The existing bullet "Regression curves of uranium concentration data at extraction wells" will be removed, as it will now be covered by the fourth bullet listed above.

9. Commenting Organization: Ohio EPA
Section #: 3.4.2.1 Pg #: 25 Line #: First Paragraph
Comment: See first comment in Attachment A.

Response: See response to first comment in Attachment A.

Action: See action to first comment in Attachment A.

Attachment E

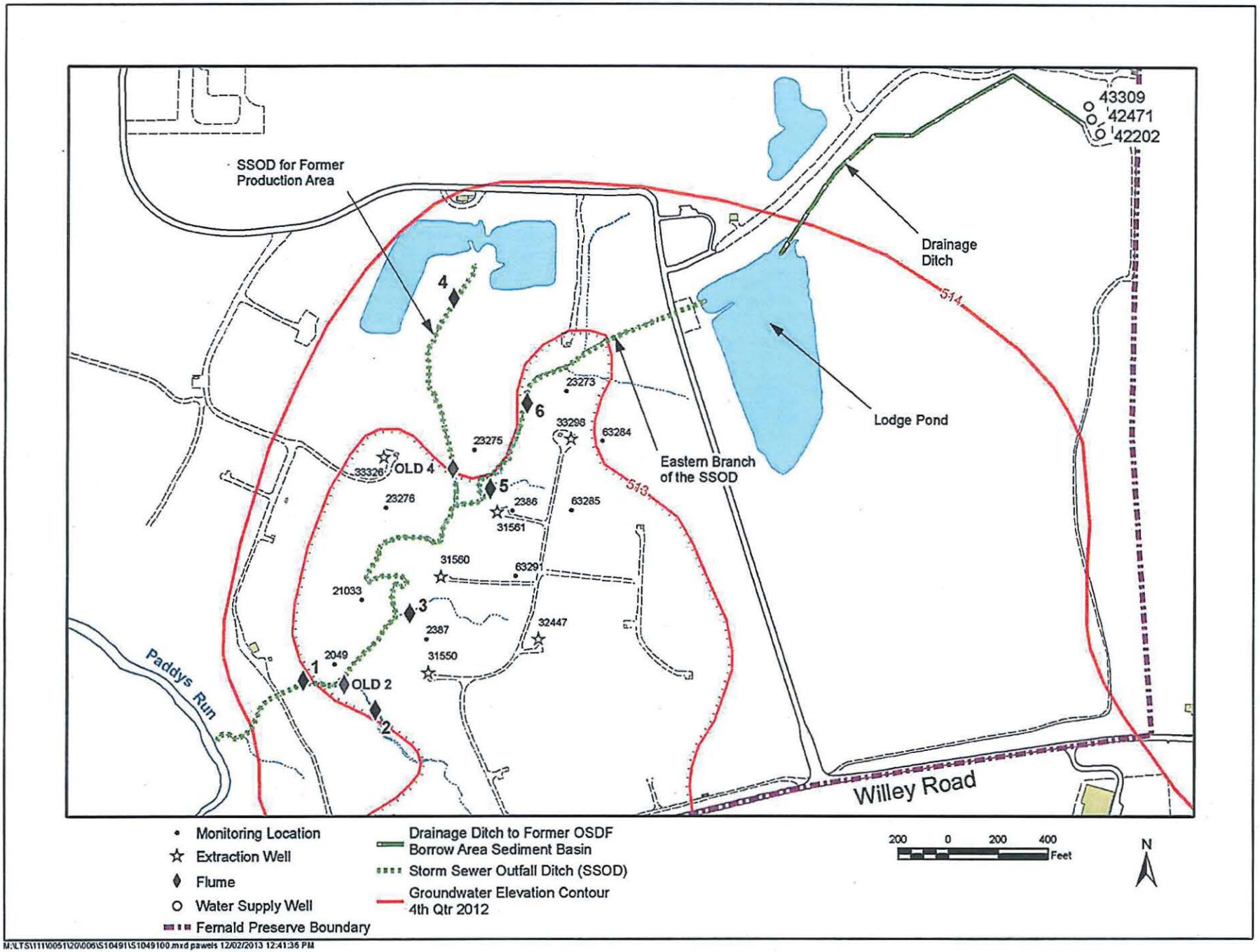
10. Commenting Organization: Ohio EPA
Section #: 4.0 Pg #: 8 Line #: Second Paragraph
Comment: Please correct the first red strike-out in the last sentence of the second paragraph to 2010, instead of 2012.

Response: Agreed. The text will be changed to read "In 2012, the population estimate was 370,589, which is up approximately 1 percent since 2010."

11. Commenting Organization: Ohio EPA
Section: Appendix A Pg #: 1
Comment: In the DOE block on this page, shouldn't Jane Powell's name be replaced by the new site manager?

Response: The site manager information will be updated to Gwendolyn Hooten, (513) 648-3333, Gwen.Hooten@lm.doe.gov in Volume I, Appendix C and Volume II, Attachment E, Appendix A.

Additionally, in Volume II, Section 2.1.3.3, the first sentence of the ninth paragraph will be modified to read "The LM site manager is responsible for." The first sentence of Volume II, Attachment E, Section 5.1.1 will be removed and the first bullet in Volume II, Attachment E, Table 1 will be removed.



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SSOD Location Map

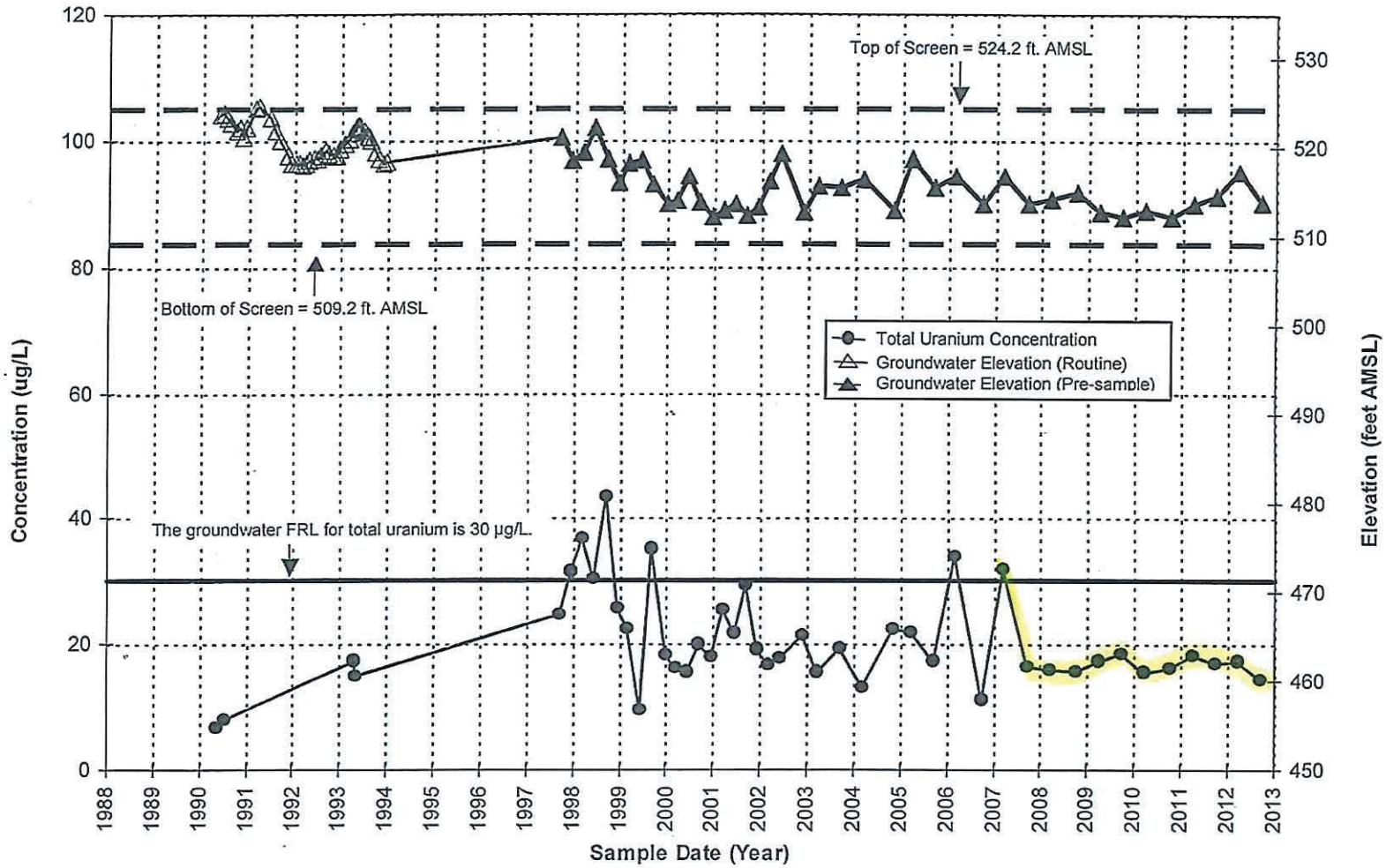

FIGURE A.2-26. TOTAL URANIUM CONCENTRATION VS. TIME PLOT FOR MONITORING WELL 2386

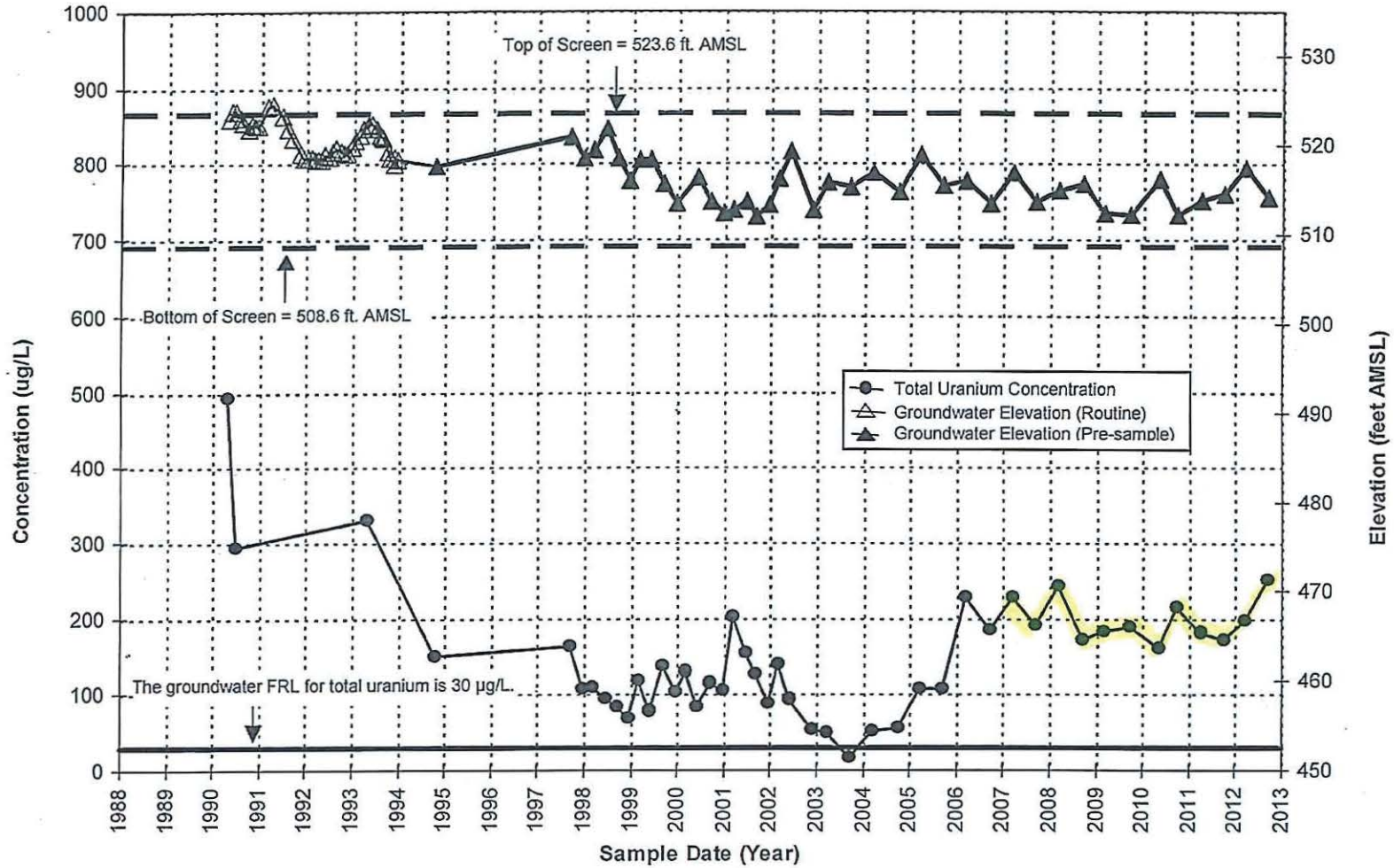

FIGURE A.2-27. TOTAL URANIUM CONCENTRATION VS. TIME PLOT FOR MONITORING WELL 2387