TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating form)*	DATE August 7, 2013	TRANSMITTAL NO. 019

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE:
U.S. Army Corps of Engineers Buffalo District 1776 Niagara Street Buffalo, NY 14207	Shaw Environmental & Infrastructure, Inc. 5050 Section Avenue Cincinnati, OH 45212	[redacted] TASK ORDER NO. DN03	☒ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF SUBMITTAL

SPECIFICATION SEC. NO. (Cover only one section with each transmittal) Former Guterl Scope of Work	PROJECT TITLE AND LOCATION Former Guterl Specialty Steel Corporation, Lockport, NY

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED (Type size, model number/etc.)	MFG OR CONTR. CAT. CURVE / DRAWING OR BROCHURE NO.	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT: SPEC. PARA. NO.	CONTRACT REFERENCE DOCUMENT: DRAWING SHEET NO.	FOR CONTRACTOR USE CODE	VARIATION (See Instruction No. 6)	FOR CE USE CODE
a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*j.*
1	Electronic Copy of Final Supplemental Sampling Technical Memorandum, dated 26 July 2013	Guterl SOW, March 2011	6	Sect. 3.2	-			
2	Printed copy of Final Supplemental Sampling Technical Memorandum, dated 26 July 2013	Guterl SOW, March 2011	2	Sect. 3.2	-			

REMARKS

Please acknowledge receipt.

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and

[redacted]

Quality Control Manager
Shaw Environmental & Infrastructure, Inc.

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

Final
Supplemental Sampling Technical Memorandum

Former Guterl Specialty Steel Corporation
Formerly Utilized Sites Remedial Action Program (FUSRAP) Site
Lockport, New York

Contract Number W912QR-08-D-0013
Delivery Order DN03

Prepared for:

U.S. Army Corps of Engineers
Buffalo District

Prepared by:

Shaw Environmental & Infrastructure, Inc.
5050 Section Avenue
Cincinnati, OH 45212

Shaw Project Number 140416
26 July 2013

COMPLETION OF INDEPENDENT TECHNICAL REVIEW

The Contractor has completed the **Supplemental Sampling Technical Memorandum** for the **Former Guterl Specialty Steel Corporation.** Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

[redacted] Date: 1 March 2013
Design Team Leader

[redacted] Date: 28 February 2013
Independent Technical Review Team Leader

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:
No significant technical concerns were identified.

As noted above, all concerns resulting from independent technical review of the project have been considered.

[redacted] Date: 1 March 2013
Principal
Shaw Environmental & Infrastructure, Inc.

Table of Contents

List of Tables

(presented after Text)

List of Figures

(presented after Tables)

List of Figures (continued)

List of Appendices

Acronyms and Abbreviations

1,1,1-TCA	1,1,1- trichloroethane
µg/L	micrograms per liter
µm	micrometer
mS/cm	millisiemens per centimeter
bgs	below ground surface
DGI	Data Gap Investigation
DO	dissolved oxygen
DQCRs	Daily Quality Control Reports
DQOs	data quality objectives
EM	Engineer Manual
Fe	iron
FS	Feasibility Study
FSP	Field Sampling Plan
ft	feet or foot
FUSRAP	Formerly Utilized Sites Remedial Action Program
Guterl Steel Site	Guterl Specialty Steel Corporation Site
IDW	Investigation Derived Waste
MCL	maximum contaminant level
Mn	manganese
mg/L	milligrams per liter
msl	mean sea level
mV	millivolts
ORP	oxidation reduction potential
QAPP	Quality Assurance Project Plan
redox	oxidation reduction
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
Shaw	Shaw Environmental & Infrastructure, Inc.
Simonds	Simonds Saw and Steel Company
Site	Guterl Steel Site
SU	Standard Units
SW	surface water
TAL	Target Analyte List
TCE	trichloroethene
USACE	United States Army Corps of Engineers
VC	vinyl chloride
VOCs	volatile organic compounds

Executive Summary

ES.1 Introduction

This Supplemental Sampling Technical Memorandum has been prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Guterl Steel Site) in Lockport, New York (Figure 1-1).

The purposes of this investigation were to:

- Evaluate the stability of the uranium plume and the effect of seasonal groundwater fluctuation on total uranium concentrations and mobility in groundwater.
- Provide a continuous data set that will record the changes in geochemical parameters that affect the mobility of uranium in groundwater as the water level rises or falls.

ES.2 Scope

High frequency monitoring was performed at 10 key monitoring wells (shown on Figure 2-1), which were selected based on the results of August 2011 groundwater sampling and analysis conducted for the Data Gap Investigation (DGI) conducted at the Guterl Steel Site; these locations included monitoring wells that are located along the plume axis where uranium exceeds the maximum contaminant level (MCL). The high frequency monitoring included continuous monitoring of water levels, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) to help determine the stability of oxidation reduction (redox) conditions and the effect of seasonal water level changes on redox and uranium concentrations.

In addition, the 10 monitoring wells were sampled for total and isotopic uranium (filtered and unfiltered) on a quarterly basis. The correlation of the uranium concentration over time, with the redox indicator parameters over a period of a year, will help establish the impact of redox on uranium mobility.

ES.3 Hydrogeological and Analytical Results

This section provides a discussion of the results of the supplemental sampling program, including groundwater elevations, in-situ monitoring results, uranium concentrations, other analytical results, and parameter correlations.

Groundwater Flow

The shallow groundwater potentiometric surface maps (Figures 3-1A through 3-1E) show a generally southward flow direction with the highest groundwater elevations in the northern area of the Guterl Steel Site. A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Guterl Steel Site is apparent on the potentiometric maps. West of the divide, the groundwater flow direction is towards the quarry; whereas south and east of the divide, groundwater flow is to the southeast towards the canal. In the area of the former facility buildings, the horizontal gradient is relatively low.

The deep groundwater potentiometric surface maps (Figures 3-2A through 3-2E) show similar patterns to the shallow groundwater contours with an apparent general groundwater flow direction to the southeast towards the canal. The groundwater elevation at MW-707DD, located near the center of the Guterl Steel Site, was not used in contouring due to an anomalously low water level gauged in that well. Similar to the shallow groundwater potentiometric surface, the horizontal gradient is relatively low in the area of the former facility buildings.

The vertical gradient at most locations shows a slight downward flow component or is near coincident (magnitude less than 0.01 can be considered near coincident). An upward gradient greater than 0.01 is indicated at one location, the MW-713D/MW-708DD area. The strongest downward gradients (-0.4 to -1.4) are indicated at the MW-26/MW-707DD, MW-710D/ MW-710DD, and the MW-712D/MW-712DD locations. It should be noted that no water has been measured in shallow well MW-712D (the well is dry).

Quarterly Field Parameter and High Frequency Monitoring Results

The following observations are apparent from an evaluation of the quarterly field parameter and the high frequency monitoring data:

- Depth to water/groundwater elevation: based on the quarterly monitoring and high frequency monitoring data, there does not appear to be any significant seasonal variation.
- Specific conductance/conductivity: based on the quarterly monitoring and high frequency monitoring data, there does not appear to be any systematic seasonal variation.
- pH: based on the quarterly monitoring, there does not appear to be any systematic seasonal variation. The high frequency monitoring data were deemed to be less indicative than the quarterly data.
- DO: the significant difference between the quarterly DO data and the high frequency DO data suggest that the latter are of limited usability. However, no discernable seasonal variation is apparent in either dataset.
- ORP: the quarterly ORP data indicate an increase in ORP during the summer (May sampling), but this is not reflected in the ORP readings from the high frequency

sampling. The high frequency monitoring data indicate that the ORP is fairly stable during the monitoring period, with a consistent decrease in the readings from July to October 2012.

Overall, the high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations that were consistent between wells. In addition, the ORP and DO results indicate that a range of redox conditions exist at the sampled locations.

Uranium Concentrations

Uranium concentrations greater than 90 micrograms per liter (µg/L) were detected in the shallow groundwater north of Buildings 14 and 47, and appear to trend in a northwest to southeast direction across the Guterl Steel Site towards the canal. Concentrations ranging from 49.5 µg/L to 66.8 µg/L were present in the furthest existing downgradient monitoring well (MW-710D). The highest concentration (304 µg/L) was detected in MW-605D, located near the center of the Guterl Steel Site. The distribution of uranium in deep groundwater appears in a similar orientation as the shallow groundwater; however, the plume is much smaller in areal size as well as concentrations.

Isoconcentration maps of dissolved uranium were prepared using the January, May, August, and October 2012 analytical data; these maps (Figures 3-3A through 3-3E, and (Figures 3-4A through 3-4E) were compared to similar maps in the DGI Report that presented the September 2009, September 2010, and August 2011 analytical results. A comparison of these figures suggests that the size and shape of the plume has remained stable. This is supported by a time-trend analysis performed for dissolved uranium summarized below.

Trends at 30 wells that have been sampled four or more times since 2007 were evaluated using the Kendall-Tau test; of those 30, 12 had an average concentration less than 10 µg/L, which most likely represent background concentrations. Only one of the 18 wells that had one or more samples above 10 µg/L showed a statistically significant trend in uranium concentrations over the 5-year monitoring period; that well, MW-602D, is an impacted well and it showed a significant downward trend [significant from the standpoint that there is a high confidence level that the trend is downward; however, the concentration decreased by only 17% (from 131.8 µg/L to 110 µg/L) over a 3-year period from September 2009 to October 2012].

Three of the seep samples exceeded the uranium MCL of 30 µg/L; all three of these samples were collected approximately 300 ft upstream of the emergency water intake.

Volatile Organic Compounds (VOCs)

The October 2012 VOC data were similar to the August 2011 data (see Figures 3-5A, 3-5B, 3-6A, and 3-6B) and show that samples from several of the wells have detectable concentrations of the chlorinated solvents 1,1,1-trichloroethane; 1,1-dichlororethane; 1,1-dichlororethene; chloroethane; chloroform; tetrachloroethene; 1,2-dichlororethene; trichloroethene; and vinyl chloride. Vinyl chloride (VC) and the *cis* isomer of 1,2-dichlororethene are microbial degradation products of trichloroethene (TCE), and their presence usually indicates reducing conditions.

Metals and Anions

Sulfate concentrations in August 2011 ranged from 21.1 milligrams per liter (mg/L) to 2,170 mg/L, and in October 2012 ranged from not detected (less than 2.4 mg/L) to 2,900 mg/L. These results suggest that anaerobic sulfate-reducing conditions do not exist at several sampling locations in the groundwater; however, there are reductive areas where sulfate is low (<50 mg/L), such as in the landfill area and the Excised Area.

Reducing Conditions Evaluation

The presence of reducing conditions in the groundwater was evaluated by plotting the spatial distributions of TCE, VC, filtered/unfiltered manganese and iron ratios, and sulfate concentrations. In the shallow aquifer, the August 2011 and October 2012 (Figures 3-7A and 3-7B) data indicate a reducing area is present in the vicinity of the Excised Area, corresponding with the VC plume. In addition, a second reductive area is present in the vicinity of the landfill. In the deep aquifer: the August 2011 data (Figure 3-8A) show a VC area southwest of the Excised Area and a reductive area northeast of the Excised Area. The VC area was also present in the data from the October 2012 sampling event (Figure 3-8B); the presence of the reductive area northeast of the Excised Area could not be confirmed due to the limited number of wells that were sampled in October 2012.

Uranium can be reduced from a soluble hexavalent form to an insoluble tetravalent form under fairly low redox conditions. These redox conditions are below the conditions required for reductive dechlorination of TCE and DCE to VC, so it is possible for soluble uranium and VC to coexist. This can be seen from the data on Figure 3-7A, which shows wells within the VC plume that have high dissolved uranium concentrations (e.g., MW-25 at 171 µg/L, MW-26 at 94.6 µg/L, MW-604D at 101 µg/L, and MW-710D at 66 µg/L). These wells are located along the central axis of the uranium plume (i.e., MW-26 and MW-604D) or near that axis (for wells MW-25 and MW-710D), suggesting that the uranium is in the mobile hexavalent form despite the presence of VC. The dissolved uranium concentrations for the wells located in the center of the reducing area are, in general, less than 10 µg/L.

ES.4 Conclusions

Based on the results of the supplemental sampling, the following conclusions are drawn:

- The supplemental sampling results are consistent with the data obtained as part of the DGI.
- Groundwater flow directions in the first main fracture zone (deep groundwater) are generally consistent with groundwater flow in the shallow weathered bedrock (shallow groundwater). Groundwater flow in both zones is generally to the south; however it flows to the southeast toward the Erie Canal on the eastern part of the site, and to the southwest toward the quarry on the western part of the site.
- Comparison of filtered and unfiltered total uranium results indicates most of the uranium present is in dissolved form.
- Total uranium is present at concentrations exceeding the MCL in the deep groundwater flowing through the first main fracture zone of the competent dolostone, located between 30 ft and 40 ft deep and corresponds with the screened locations of the deep monitoring wells.
- The horizontal extent of groundwater with total uranium concentrations exceeding the MCL in the first main fracture zone (deep groundwater) covers approximately one-third of the area exceeding the MCL in the shallow weathered bedrock (shallow groundwater). The areas exceeding the MCL are primarily near the buildings in both zones.
- Groundwater with uranium concentrations exceeding MCL is discharging to the Erie Canal.
- The high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations.
- Reducing conditions are present in the vicinity of the Excised Area that apparently degrade TCE to VC.

Groundwater flow was observed to discharge at several locations along the northern rock face of the Erie Canal. This discharge represents a fraction of the groundwater flow that exits the shallow and the deep groundwater units underneath the site. The flow paths for the remainder of groundwater have not been documented; potential pathways include flow to the deep bedrock rock formations overlying the Rochester Shale Formation, flow into the Erie Canal (both above and below the water line), and/or flow underneath the Erie Canal into the shallow and deep groundwater across the Erie Canal.

1.0 Introduction

This Supplemental Sampling Technical Memorandum has been prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Guterl Steel Site) in Lockport, New York (Figure 1-1).

1.1 Purpose and Scope

In accordance with the United States Army Corps of Engineers (USACE), Buffalo District Contract Number W912QR-08-D-0013, Delivery Order No. DN03, Shaw has prepared this Supplemental Sampling Technical Memorandum to document the collection of additional data to supplement the Data Gap Investigation (DGI) and to be used in the preparation of the Feasibility Study (FS) for the Guterl Steel Site, previously known as the Simonds Saw and Steel Company (Simonds).

The focus of this Supplemental Sampling Technical Memorandum is to gather additional information to support the evaluation and selection of a remedial action for impacted media at the Guterl Steel Site. Specifically, the purposes of the supplemental sampling were to:

- Evaluate the stability of the uranium plume and the effect of seasonal groundwater fluctuation on total uranium concentrations and mobility in groundwater.
- Provide a continuous data set that will record the changes in geochemical parameters that affect the mobility of uranium in groundwater as the water level rises or falls.

To achieve these purposes, 10 monitoring wells were identified for high frequency monitoring and quarterly sample collection; these wells included wells that are located along the plume axis where uranium exceeds the maximum contaminant level (MCL). The high frequency monitoring included continuous monitoring of water levels, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) to help determine the stability of oxidation reduction (redox) conditions and the effect of seasonal water level changes on redox and uranium concentrations. In addition, the 10 monitoring wells were sampled for total and isotopic uranium (filtered and unfiltered) on a quarterly basis. The correlation of the uranium concentration over time, with the redox indicator parameters over a period of a year, will help establish the impact of redox on uranium mobility.

Sampling and analysis activities were conducted in accordance with the USACE, Buffalo District, Scope of Work, Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York, dated March 2011.

1.2 Project Specific Data Quality Objectives

The following data quality objective addresses the purpose of the supplemental sampling:

- DQO 8 – Determine the effects of seasonal changes in groundwater levels on the mobility of uranium in groundwater.

1.3 Field Project Personnel/Organization

Staff responsibilities were generally consistent with those provided in Section 2 of the Addendum to the Field Sampling Plan (FSP) (USACE, 2011a) and the Remedial Investigation (RI) FSP (2007) (USACE, 2007). Mr. Kevin Cronin served as the Site Supervisor and Mr. Jeffery Smith served as the Sampling Technician. Mr. Cronin is a geologist and is Site Safety and Health Officer trained.

1.4 Document Organization

The following sections are provided in this Supplemental Sampling Technical Memorandum:

Section 1.0 Introduction

Section 2.0 Methods and Procedures

Section 3.0 Hydrogeological and Analytical Results

Section 4.0 Summary and Conclusions

Section 5.0 References

In addition, the findings in this document are supported by information in the following appendices:

Appendix A Daily Reports and Field Notes

Appendix B Sample Collection Logs

Appendix C Analytical Data

Appendix D Data Validation Reports

Appendix E Investigation Derived Waste (IDW) Bill of Lading

Appendix F Evaluation of High Frequency Monitoring Data

Appendix G Evaluation of Uranium Concentration Trends

2.0 Methods and Procedures

Information presented in this section pertains to field activities conducted from August 2011 to October 2012. Field activities and analytical procedures were performed in accordance with the *Sampling and Analysis Plan Addendum* (USACE, 2011 a,b,c), which includes:

- Volume 1 – FSP
- Volume 2 – Quality Assurance Project Plan (QAPP)
- Volume 3 – Accident Prevention Plan

These documents incorporate applicable sections of the RI FSP (USACE, 2007). Field procedures are discussed in the following sections.

2.1 Sampling

The following section presents information on groundwater and seep sampling. Figure 2-1 shows the locations of monitoring wells and seeps sampled for the supplemental sampling program.

2.1.1 Groundwater

Groundwater samples were collected during five sampling rounds:

- August 4 through 23, 2011: full round (51 wells); the results of this sampling effort are presented in the *Final Technical Memorandum, Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York* (USACE, 2012)
- January 30 through February 2, 2012: the 10 wells on Figure 2-1 that were selected for quarterly monitoring based on the results of the August 2011 groundwater sampling and analysis
- May 3 and 4, 2012: the 10 quarterly monitoring wells
- August 3 through 6, 2012: the 10 quarterly monitoring wells
- October 22 through 25, 2012: the 10 quarterly monitoring wells plus 24 wells sampled by the USACE Buffalo District

Collection of groundwater samples from monitoring wells involved three general steps:

1. Well purging
2. Measurement and stabilization of field parameters
3. Groundwater sample collection.

These are the three steps of sample collection that were consistently used at each well with adequate yield. However, at wells that purged dry, samples were collected after sufficient volume had recharged. Groundwater sampling activities followed the requirements of *USACE Engineer Manual (EM) 200-1-3 Engineering Design – Requirements for the Preparation of Sampling and Analysis Plans, Appendix C.2, Groundwater Sampling* (USACE, 2001).

A headspace reading was collected from each well prior to sample collection. Purging of monitoring wells was accomplished using a peristaltic pump, a disposable bailer, or a low-flow submersible pump. The use of a peristaltic pump with Teflon® tubing was the preferred method (i.e., down-hole Teflon® line, flexible pump roller tube, and Teflon® outflow tube). A bailer was used only if attempts to use a submersible pump were unsuccessful (that is, insufficient recharge).

In order to minimize the quantity of liquid IDW generated as a result of well purging, wells were micro-purged where conditions permitted, in accordance with EM 200-1-3 C.2 (USACE, 2001) as follows:

- A submersible pump or peristaltic pump was used for purging.
- Pump intake or tubing was located within the well screened interval.
- Purge rate did not exceed 100 milliliters per minute unless it was shown that higher rates would not disturb the stagnant water column above the well screen (that is, would not result in drawdown).
- Volume purged was based on the stabilization of the following required water quality parameters for three consecutive readings (measured at minimum 5-minute intervals) for:
  - pH: variation ± 0.2 standard units (SUs)
  - DO: variation ± 10 percent
  - Specific conductivity: variation ± 3 percent
  - Temperature: variation ± 1 degree Centigrade
  - Turbidity: variation ± 10 percent
  - ORP: for data needs, not as a stabilization parameter.
- Sample collection occurred immediately after micro-purging.

Water quality parameters were measured using a YSI™ 6920 V2 multi-parameter water quality meter and are summarized in Table 2-1.

Filtered and unfiltered groundwater samples were collected for the supplemental sampling program. Filtered samples were collected using 0.45 micrometer (µm) disposable in-line pore

filter attached to the discharge line of the pump. Filters were replaced between sample locations and, if needed, as they became restricted by solids buildup at any one location.

Daily Reports and Field Notes are located in Appendix A. Sample collection logs are located in Appendix B. Section 2.3 summarizes the analyses that were conducted on the samples.

2.1.2 Seeps and Surface Water

Seep and/or surface water (SW) samples were collected by USACE Buffalo District personnel at the following locations shown on Figure 2-1:

- August 2011: Seep-1108-01 and Seep-1108-02
- December 2011: Seep-1112-01, Seep-1112-02, Seep-1112-03, Seep-1112-04, Seep-1112-05, and Seep-1112-06
- January 2012: SW-1201-01
- May 2012: Seep-1205-01, Seep-1205-02, Seep-1205-03, SW-1205-01, and SW-1205-02
- October 2012: Seep-1210-01, Seep-1210-02, Seep-1210-03, and SW-1210-01

The sample identification nomenclature was AAAA-XXYY-ZZ, where:

- AAAA denotes sample medium (Seep or SW)
- XX denotes year
- YY denotes month
- ZZ denotes the sample number for the sampling event

The samples were collected using disposable sample containers provided by the laboratory. Samples were collected by placing a stainless steel container underneath the seep and letting the water accumulate until the desired volume was collected. The water was then transferred to the individual sample containers that were pre-filled with the required preservatives, after performing field filtration, if required for the parameter of interest.

Filtered samples were collected using a 0.45 µm disposable in-line pore filter attached to the discharge line of a peristaltic pump. Filters were replaced between seep sample locations. With the exception of the filters, no wastes were generated during the sampling process.

2.2 High Frequency Monitoring

As noted in Section 1.1, 10 key monitoring wells were selected for 1 year of high frequency monitoring based on the results of the August 2011 sampling; the monitoring wells that were selected for further sample collection include wells that are located along the plume axis where

uranium exceeds the MCL. The wells that were included in these sampling events were shallow/deep well pairs MW-26/MW-707DD, MW-604D/MW-709DD, MW-605D/MW-704DD, MW-710D/MW-710DD, and MW-713D/MW-708DD. These wells included seven wells installed during the DGI field work (the 700-series wells) and three wells installed during previous investigations (MW-26, MW-604D, and MW-605D).

Each selected well was equipped with a pressure transducer (Troll 500, manufactured by In-Situ™) and a multi-parameter water quality meter (MP Troll 9500, manufactured by In-Situ™), with data logging capabilities. The Troll 500 and the MP Troll 9500 meters were configured so that they logged a reading every 4 hours (six times per day). The Troll 500 monitored depth to water, whereas the MP Troll-9500 monitored the following water quality parameters:

- Specific conductance
- Temperature
- pH
- DO
- ORP

The data logged by the meters was retrieved using a laptop computer. Any necessary cleaning, maintenance, and calibration was performed using the procedures identified in the MP Troll 9500 Operators Manual.

2.3 Analytical Program

Following collection, the samples were sent to Test America-St. Louis, in Earth City, Missouri. Courier and shipping services were provided by Test America-Buffalo, New York. Analytical methods were consistent with the methods provided in the QAPP (USACE, 2011b). Analytical data are presented in Appendix C.

Groundwater samples were analyzed for the following parameters:

- August 2011 (51 monitoring wells):
  - Unfiltered samples: anions (chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate); general chemistry (alkalinity, total dissolved solids); and VOCs
  - Filtered and unfiltered samples: total and isotopic analyses for uranium and Target Analyte List (TAL) metals
- January/February 2012, May 2012, and August 2012 (10 quarterly monitoring wells):
  - Filtered and unfiltered samples for total and isotopic analyses for uranium.

- October 2012:
  - The 10 quarterly monitoring wells: filtered and unfiltered samples for total and isotopic analyses for uranium
  - The 24 wells sampled by USACE Buffalo District personnel: the August 2011 analytical suite.

Seep and/or surface water samples were analyzed for the following parameters:

- August 2011: unfiltered samples for anions, general chemistry, and VOCs; filtered and unfiltered samples for total and isotopic uranium and TAL metals
- December 2011: unfiltered samples for total uranium, TAL metals, anions, general chemistry and VOCs
- January 2012: filtered and unfiltered samples for total and isotopic uranium
- May 2012: filtered and unfiltered samples for total and isotopic uranium and TAL metals
- October 2012: unfiltered samples for anions, general chemistry, and VOCs; filtered and unfiltered samples for total and isotopic uranium and TAL metals

It should be noted that no seep or surface water samples were collected in August 2012 because due to dry weather conditions there were no visible seeps in the canal walls.

2.4 Data Quality

2.4.1 Field Data Quality

Daily Quality Control Reports (DQCRs) were prepared consistent with the procedures in Section 6.2 of the RI FSP (USACE, 2007).

During the field investigation activities performed for this project DQCRs were prepared, signed, and dated by the Field Geologist; DQCRs are compiled in Appendix A. These reports were completed each day that work activities were performed on site and filed in the field office. A copy of the DQCRs were submitted to the USACE Project Manager on a weekly basis (or as otherwise agreed to) during field operations. Each DQCR included a summary of activities performed at the site, weather conditions, results of the field activities performed including departures from the approved Sampling and Analysis Plan (SAP), problems encountered during field activities, and any instructions received from USACE personnel.

2.4.2 Laboratory Data Quality and Validation

Radiological groundwater data validation for sample data obtained by Shaw was conducted by a third party validator, Kestrel Environmental Technologies, Inc. The data validation reports are presented in Appendix D.

Data validation for sample data obtained by USACE was conducted by USACE personnel.

2.5 Investigation Derived Waste Disposition

IDW generated during the supplemental sampling program consisted of liquids (e.g., water from decontamination, well development, and well purging operations). The IDW was sampled and analyzed, then transported to a properly licensed facility for disposal (Cycle Chem, Inc., New Jersey).

The bill of lading for the IDW is presented in Appendix E.

3.0 Hydrogeological and Analytical Results

This section provides a discussion of the results of the supplemental sampling program, including groundwater elevations; quarterly sampling field monitoring and high frequency monitoring results; and uranium, VOCs, metals, and anions analytical results.

3.1 Groundwater Elevations

A summary of the monitoring well gauging data for the August 2011, January 2012, May 2012, August 2012, and October 2012 sampling events is presented in Table 3-1. The following sections discuss the data for the shallow and deep ground water wells, respectively.

3.1.1 Shallow Groundwater Wells

Shallow bedrock groundwater elevation data from wells screened within the upper 23 feet (ft) of bedrock were used to generate the potentiometric surface contours on Figures 3-1A through 3-1E for the August 2011 to October 2012 sampling events. These maps include data from the existing shallow bedrock wells and the five shallow bedrock wells installed in 2011.

Depths to water in the shallow bedrock wells (MW-26, 604D, 605D, 710D, and 713D) showed the following ranges during the August 2011 to October 2012 gauging events:

- August 2011: 3.21 ft below ground surface (bgs) to 12.20 ft bgs
- January 2012: 0.8 ft bgs to 11.48 ft bgs
- May 2012: 1.21 ft bgs to 11.52 ft bgs
- August 2012: 4.22 ft bgs to 13.09 ft bgs
- October 2012: 2.00 ft bgs to 12.62 ft bgs

In addition to the data from the five monitoring wells listed above, 37 additional monitoring wells were gauged during the August 2011 and October 2012 annual sampling events. A review of the entire data set (annual and quarterly data) excluding the dry wells MW-600S and MW-712S indicates that the variation in depth to groundwater at individual monitoring wells ranged from a low of 0.23 ft at MW-17 to a high of 3.87 ft at MW-604D, with the average variation per monitoring well being 1.26 ft.

The shallow groundwater potentiometric surface maps show a generally southward flow direction with the highest groundwater elevations in the northern area of the Guterl Steel Site. A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Guterl Steel Site is apparent on the potentiometric maps. West of the divide, the groundwater flow direction is towards the quarry; whereas south and east of the divide, groundwater flow is to

the southeast towards the canal. In the area of the former facility buildings, the horizontal gradient is relatively low.

3.1.2 Deep Groundwater Wells

Deep bedrock groundwater elevation data from the 12 wells installed in 2011 and screened within the 29- to 40-ft interval in the first main fracture zone were used to generate the potentiometric surface contours on Figures 3-2A through 3-2E for the August 2011 to October 2012 sampling events.

Depths to water in the deep bedrock wells (704DD, 707DD, 708DD, 709DD, and 710DD) showed the following ranges during the August 2011 to October 2012 gauging events:

- August 2011: 3.10 ft bgs to 35.10 ft bgs
- January 2012: 0.64 ft bgs to 30.58 ft bgs
- May 2012: 0.9 ft bgs to 23.41 ft bgs
- August 2012: 4.60 ft bgs to 21.93 ft bgs
- October 2012: 2.39 ft bgs to 23.43 ft bgs

In addition to the data from the five monitoring wells listed above, seven additional monitoring wells were gauged during the August 2011 and October 2012 annual sampling events. A review of the entire data set (annual and quarterly data) indicates that the variation in depth to groundwater at individual monitoring wells ranged from a low of 0.03 ft at MW-711DD to a high of 18.85 ft at MW-707DD, with average variation per monitoring well being 5.56 ft. If data from monitoring wells MW-707DD, MW-703DD, and MW-710DD (January 2012 only) are excluded due to anomalously large variations, the average variation per monitoring well is 1.98 ft with a maximum variation of 3.96 ft in monitoring well MW-704DD.

The deep groundwater potentiometric surface maps show similar patterns to the shallow groundwater contours with an apparent general groundwater flow direction to the southeast towards the canal. The groundwater elevation at MW-707DD, located near the center of the Guterl Steel Site, was not used in contouring due to an anomalously low water level (August 2011 - 561.22 ft mean sea level [msl], January - 580.07 ft msl, May - 574.98 ft msl, August - 574.39 ft msl, and October - 578.07 ft msl) gauged in that well. Similar to the shallow groundwater potentiometric surface, the horizontal gradient is relatively low in the area of the former facility buildings.

3.1.3 Vertical Gradients

Vertical gradients have been calculated using the groundwater elevation data from nested shallow and deep bedrock wells (or shallow and deep wells located in close proximity). Results presented on Table 3-2 show whether an upward (positive values) or downward (negative values) flow component is indicated and the magnitude. Most locations show a slight downward flow component or are near coincident (magnitude less than 0.01 can be considered near coincident). An upward gradient greater than 0.01 is indicated at one location, the MW-713D/MW-708DD area; it should be noted that these wells are relatively far apart and are in an area with a steep horizontal gradient. The strongest downward gradients (-0.4 to -1.4) are indicated at the MW-26/MW-707DD, MW-710D/MW-710DD, and the MW-712D/MW-712DD locations. It should be noted that no water has been measured in shallow well MW-712D (the well is dry), so the inferred downward gradient is based upon the elevation of the well bottom.

3.2 Quarterly Sampling Field Parameter Results

Monitoring well field parameter data for the high frequency wells are presented in Table 2-1 and summarized below.

3.2.1 pH Results

The mean pH reading from the shallow wells is 7.25 SU and in the deep wells is 7.32 SU. Of the 48 measurements, 43 were in the range of 7.03 SU to 7.8 SU, 4 were below 7 SU (between 6.48 SU and 6.98 SU), and 1 was above 8 SU. The lone value above 8 SU – 8.72 SU in MW-707DD in August 2011 – was not repeated in any other sampling event and the highest subsequent reading was 7.4 SU.

3.2.2 Specific Conductivity Results

The mean specific conductivity reading from the shallow wells is 1.39 millisiemens per centimeter (mS/cm) and in the deep wells is 3.9 mS/cm. With the exception of well MW-707DD, the 48 specific conductivity measurements range from 0.6 to 2.88 mS/cm. The four specific conductivity measurements for well MW-707DD ranged from 10.18 to 19.04 mS/cm; well MW-707DD exhibits high total dissolved solids derived from high cation and anion concentrations unique to this well.

3.2.3 DO and ORP Results

The mean DO reading from the shallow wells is 2.37 milligrams per liter (mg/L) and in the deep wells is 3.47 mg/L. The 48 DO measurements range from 0.18 to 8.15 mg/L.

The mean ORP reading from the shallow wells is 12.51 millvolts (mV) and in the deep wells is 49.47 mV. Of the 48 ORP readings, 32 (67%) were positive, with the highest reading being

326.7 mV. Twelve of the 16 negative measurements were distributed among eight wells, with readings ranging from -4.6 mV to -143.6 mV. Well MW-713D was the only well that consistently had negative ORP, with the readings ranging from -175.6 mV to -254.2 mV; this well is not impacted with VOC contamination yet is downgradient of the VOC plume, thus impacted by the reduced conditions in the plume.

Table 2-1 shows some minor seasonal ORP trends that appear to increase during recharge periods (December-May) and decline during summer to early fall periods when evapotranspiration limits recharge; this is most apparent in wells MW-26, MW-604D, MW-605D, MW-704DD, and MW-710DD. The other "DD" wells show a possible lag in these data or are not definitive.

The ORP and DO data indicate that a range of redox conditions exist at the sampled locations.

3.3 High Frequency Monitoring Results

As noted in Section 2.2, 10 wells were equipped with In-Situ™ Troll 500 and MP Troll 9500 meters to monitor depth to water and the following water quality parameters:

- Specific conductance
- Temperature
- pH
- DO
- ORP

An evaluation of the high frequency monitoring data is presented in Appendix F and summarized below:

- Depth to water/groundwater elevation: based on the quarterly monitoring (Table 2-1) and high frequency monitoring data, there does not appear to be any significant seasonal variation.
- Specific conductance/conductivity: based on the quarterly monitoring (Table 2-1) and high frequency monitoring data, there does not appear to be any systematic seasonal variation; however, the data show short-term reactions to precipitation events, which is indicative of ion loading of recharge through the site soils.
- pH: based on the quarterly monitoring (Table 2-1), there does not appear to be any systematic seasonal variation. The high frequency monitoring data showed a broader range than the quarterly data and, hence, were deemed to be less indicative than the quarterly data.

- DO: the significant difference between the quarterly DO data (in Table 2-1) and the high frequency DO data suggest that the latter are of limited usability. However, no discernable seasonal variation is apparent in either dataset.
- ORP: the quarterly ORP data (in Table 2-1) indicate an increase in ORP during the summer (May sampling), but this is not reflected in the ORP readings from the high frequency sampling. The high frequency monitoring data indicate that the ORP is fairly stable during the monitoring period, with a consistent decrease in the readings from July to October 2012.

Overall, the high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations that were consistent between wells.

3.4 Uranium Analytical Results

The following sections discuss uranium data for groundwater and seep/surface water samples collected from August 2011 through October 2012 and presented in the following tables and figures:

- Table 3-3 Total Uranium (Unfiltered and Filtered) – Groundwater Monitoring Wells, August 2011 and October 2012
- Table 3-4a Isotopic Uranium – Quarterly Groundwater Monitoring Wells
- Table 3-4b Isotopic Uranium – Annual Groundwater Monitoring Wells
- Table 3-4c Isotopic Uranium – Seeps and Surface Water
- Figure 3-3A Total Uranium in Shallow Groundwater and Seeps (August 2011)
- Figure 3-3B Total Uranium in Shallow Groundwater and Seeps (January 2012)
- Figure 3-3C Total Uranium in Shallow Groundwater and Seeps (May 2012)
- Figure 3-3D Total Uranium in Shallow Groundwater and Seeps (August 2012)
- Figure 3-3E Total Uranium in Shallow Groundwater and Seeps (October 2012)
- Figure 3-4A Total Uranium in Deep Groundwater (August 2011)
- Figure 3-4B Total Uranium in Deep Groundwater (January 2012)
- Figure 3-4C Total Uranium in Deep Groundwater (May 2012)
- Figure 3-4D Total Uranium in Deep Groundwater (August 2012)
- Figure 3-4E Total Uranium in Deep Groundwater (October 2012)

3.4.1 Groundwater

The following sections present the following:

- Comparison of the filtered and unfiltered data

- Presentation of the data for the wells sampled on a quarterly and annual basis, broken down by shallow and deep groundwater wells
- Evaluation of the plume orientation trends

3.4.1.1 Filtered and Unfiltered Data

Table 3-3 contains results for unfiltered groundwater samples and filtered sample results and a comparison of the results (unfiltered versus filtered) for total uranium in mass units of micrograms per liter (µg/L). There is a relatively small difference between unfiltered and filtered concentrations; the following observations are made for the ratios of filtered to unfiltered results for the August 2011 data:

- Of the 56 comparisons, 34 were less than 1 (higher unfiltered results), 4 were equal to 1, and 18 were greater than 1 (higher filtered results)
- 41 of the ratios were between 0.9 and 1.1, and 33 were between 0.95 and 1.05
- The average ratio of filtered:unfiltered was 1.05 and the median ratio was 0.98

The unfiltered and filtered results were also similar in the October 2012 data; the following observations are made for the ratios of filtered to unfiltered results for the August 2011 data:

- Of the 41 comparisons, 14 were less than 1 (higher unfiltered results), 2 were equal to 1, and 20 were greater than 1 (higher filtered results)
- 31 of the ratios were between 0.9 and 1.1, and 27 were between 0.95 and 1.05
- The average ratio of filtered:unfiltered was 1.06 and the median ratio was 1.01

In light of the similarities between the filtered and unfiltered data, the remainder of discussion on the extent of uranium in groundwater will reference filtered (dissolved) concentrations of total uranium.

3.4.1.2 Quarterly Sampling Data

Table 3-4a presents the results of the monitoring wells that were sampled on a quarterly basis from August 2011 through October 2012. The following is a summary of the results:

- Shallow wells: the total uranium concentrations in groundwater samples from the shallow wells (MW-26, MW-604D, MW-605D, MW-710D, and MW-713D) ranged from 0.25 µg/L (MW-713D in May 2012) to 304 µg/L (MW-605D – Duplicate in January 2012). With the exception of MW-26 – which increased from 94.6 µg/L in August 2011 to 260 µg/L in October 2012 – the data for the other four shallow wells were consistent

over the five sampling events. It should be noted that MW-26 is located near the center of the plume.

The uranium data from wells MW-605D to MW-26 to MW-604D may show a progression of concentrations through the groundwater system along the center axis of the shallow groundwater plume. Well MW-605D shows a high point in January 2012, which then appears in MW-26 in August-October 2012 and then in MW-604D in October 2012, thus possibly indicating a 8 to 10 month lag in transport. The data for MW-605D and MW-26 also may suggest that, with the exception of the last sampling event in October 2012, uranium concentrations in these two wells more or less increase or decrease in unison rather than having a lag.

- Deep wells: the total uranium concentrations in groundwater samples from the deep wells (MW-704DD, MW-707DD, MW-708DD, MW-709DD, and MW-710DD) ranged from 8.3 µg/L (MW-707DD in August 2012) to 88.5 µg/L (MW-709DD in January 2012). The uranium concentrations in wells MW-704DD (upgradient side of the plume) and MW-709DD (center of the plume) increased between the August 2011 and January 2012 sampling events (from 26.3 µg/L to 80.2 µg/L and from 55.4 µg/L to 88.5 µg/L, respectively) but were relatively consistent over the last four events. The uranium concentrations in wells MW-707DD (center of the plume) and MW-710DD (downgradient side of the plume) decreased over the five sampling events (from 33.9 µg/L to 8.4 µg/L and 67 µg/L to 28.3 µg/L, respectively). The uranium concentration in well MW-708DD, which is located on the side of the plume, was relatively consistent over the five sampling events (ranged from 18.3 µg/L to 23.2 µg/L).

3.4.1.3 Annual Sampling Data

Table 3-4b presents the results of the monitoring wells that were sampled on an annual basis: August 2011 and October 2012. The following is a summary of the results:

- Shallow wells: the total uranium concentrations in groundwater samples from the 22 shallow wells ranged from 1.54 µg/L (MW-600D in October 2012) to 174 µg/L (MW-25 – Duplicate in August 2011). The data for 15 of the shallow wells were consistent between the two sampling events, with three wells (MW-2, MW-22, and MW-24) decreasing slightly and four wells (MW-9, MW-11, MW-13D, and MW-18) showing slight increases. Wells MW-9 and MW-11 are located on the southeast end of the property, near well MW-2 (which showed a decrease); thus, there is no apparent conclusion from the slight changes in the shallow well data.
- Deep wells: the total uranium concentrations in groundwater samples from the two deep well (MW-711DD and MW-712DD) ranged from 1.63 µg/L (MW-711DD in October

2012) to 38.8 µg/L (MW-712DD in August 2011). The data were relatively consistent between the two sampling events.

3.4.1.4 Plume Orientations and Trends

Uranium concentrations greater than 90 µg/L were detected in the shallow groundwater north of Buildings 14 and 47, and appear to trend in a northwest to southeast direction across the Guterl Steel Site towards the canal. Concentrations ranging from 49.5 µg/L to 66.8 µg/L were present in the furthest existing downgradient monitoring well (MW-710D). The highest concentration (304 µg/L) was detected in MW-605D, located near the center of the Guterl Steel Site. The distribution of uranium in deep groundwater appears in a similar orientation as the shallow groundwater; however, the plume is much smaller.

As noted above, isoconcentration maps of dissolved uranium were prepared using the January, May, August, and October 2012 analytical data; these maps were compared to similar maps in the DGI Report that presented the September 2009, September 2010, and August 2011 analytical results. A comparison of these figures suggests that the size and shape of the plume has remained stable. This is supported by a time-trend analysis performed for dissolved uranium provided in Appendix G and summarized herein.

Trends at 30 wells that have been sampled four or more times since 2007 were evaluated using the Kendall-Tau test; of those 30, 12 had an average concentration less than 10 µg/L, which most likely represent background concentrations. Test results are shown in Table 1 in Appendix G. Only one of the 18 wells that had one or more samples above 10 µg/L showed a statistically significant trend in uranium concentrations over the 5-year monitoring period; that well, MW-602D, is an impacted well and it showed a significant downward trend [significant from the standpoint that there is a high confidence level that the trend is downward; however, the concentration decreased by only 17% (from 131.8 µg/L to 110 µg/L) over a 3-year period from September 2009 to October 2012]. Additional information is provided in Appendix G.

3.4.2 Seeps and Surface Water Data

As noted in Section 2.1.2, seep and surface water samples were collected in August 2011, December 2011, January 2012, May 2012, and October 2012; isotopic and total uranium data from these events are presented on Table 3-4c.

The 18 seep and surface water samples may be separated into the following intervals (total dissolved uranium data in parentheses):

- Downstream of site (one sample): SEEP-1210-02 (0.913 µg/L)

- Downstream of and near the emergency water intake (one seep and three surface water samples): SEEP-1112-06 (23.2 µg/L), SW-1201-01 (0.587 µg/L), SW-1205-02 (0.49J µg/L)
- Upstream/within 500 ft of emergency water intake (nine seep and one surface water samples): SEEP-111205 (24.9 µg/L), SEEP-1112-04 (25.9 µg/L), SEEP-1210-03 (36.8 µg/L), SEEP-1112-03 (24.8 µg/L), SEEP-1210-01 (33 µg/L), SEEP-1108-01 (44.3 µg/L), SEEP-1205-03 (20.8 µg/L), SW-1205-01 (0.51J µg/L), SEEP-1112-02 (3.47 µg/L), SEEP-1112-01 (5.85 µg/L), SW-1210-01 (0.595 µg/L)
- Upstream/more than 500 ft of emergency water intake (three seep samples): SEEP-1205-02 (5.9 µg/L), SEEP-1205-01 (5.3 µg/L), and SEEP-1108-02 (6.2 µg/L)

It should be noted that samples collected December 2011 (the 1112 set) were not filtered; thus, the data are for unfiltered (total) uranium as opposed to filtered (dissolved) uranium.

Based on the data presented in Table 3-4c and summarized above, the following observations may be made:

- Three of the seep samples exceeded the uranium MCL of 30 µg/L; all three of these samples were collected approximately 300 ft upstream of the emergency water intake
- The three seep samples exceeding the uranium MCL were collected in August 2011 and October 2012; samples collected in the same vicinity in December 2011 and May 2012 did not exceed the MCL
- The three seep samples collected more than 500 ft upstream of the emergency water intake showed similar uranium concentrations (from 5.3 µg/L to 6.2 µg/L)
- The four surface water samples all had uranium concentrations less than 1 µg/L

3.5 VOCs

Tables 3-5a and 3-5b present the analytical results for VOCs for the August 2011 (33 wells, 2 seeps, and 5 duplicate samples) and October 2012 (20 wells, 3 seeps, and 1 surface water location) sampling events, respectively. Figures 3-5A and 3-5B show the spatial distributions of VOCs and trichlorothene (TCE) and vinyl chloride contours (VC) in the shallow groundwater units for the August 2011 and October 2012 sampling events, respectively; while Figures 3-6A and 3-6B show the spatial distributions of VOCs and TCE/VC contours in the deep groundwater units for the August 2011 and October 2012 sampling events, respectively. Similar to the August 2011 data, the October 2012 data show that samples from several of the wells have detectable concentrations of the chlorinated solvents 1,1,1-trichloroethane (1,1,1-TCA); 1,1-

dichlororethane; 1,1-dichlororethene; chloroethane; chloroform; tetrachloroethene; 1,2-dichlororethene; TCE; and VC.

Vinyl chloride and the *cis* isomer of 1,2-dichlororethene are microbial degradation products of TCE, and their presence usually indicates reducing conditions. As shown in Figures 3-5A and 3-5B (shallow groundwater unit, August 2011 and October 2012 sampling), the area inscribed by the 1 µg/L VC contour is smaller than the area inscribed by the 1 µg/L TCE contour; however, both parameters showed similar locations of elevated results. In the deep groundwater unit for the August 2011 and October 2012 sampling (Figures 3-6A and 3-6B), the 1 µg/L contour areas for VC and TCE are similar in size and location.

In the shallow groundwater unit, 1,1,1-TCA was detected at concentrations in excess of 200 µg/L in closely spaced wells installed along the western side of the Excised Area (e.g. wells MW-23, MW-4, MW-25 and MW-26). In general, the 1,1,1-TCA concentrations were less than 10 µg/L near the site boundary. In the deep groundwater unit, the highest 1,1,1-TCA concentrations (ranging from 13 µg/L to 28 µg/L) were found in wells MW-709DD and MW-710DD, near the downgradient site boundary. No other deep well had a 1,1,1-TCA concentration over 3 µg/L.

3.6 Metals and Anions

Tables 3-6a and 3-6b present the analytical results for metals for the August 2011 (51 wells and 6 duplicate samples) and October 2012 (25 wells, 3 seeps, and 1 surface water location) sampling events, respectively; while Tables 3-7a and 3-7b present the analytical results for anions for the August 2011 and October 2012 sampling events, respectively. The analytical data for the October 2012 event was provided by USACE Buffalo District and is included here for completeness.

Sulfate concentrations in August 2011 ranged from 21.1 mg/L to 2,170 mg/L, and in October 2012 ranged from not detected (less than 2.4 mg/L) to 2,900 mg/L. These results suggest that anaerobic sulfate-reducing conditions do not exist at several locations in the groundwater; however, there are reductive areas where sulfate is low (<50 mg/L), such as in the landfill area and the Excised Area.

3.7 Reducing Conditions Evaluation

As noted in Section 3.5, the presence of VC in the groundwater usually indicates reducing conditions. Figures 3-7A and 3-7B show the spatial distributions of TCE, VC, manganese (Mn) filtered/unfiltered ratio, iron (Fe) filtered/unfiltered ratio, sulfate, and dissolved uranium in the shallow groundwater units for the August 2011 and October 2012 sampling events, respectively; while Figures 3-8A and 3-8B show the same information in the deep groundwater units for the August 2011 and October 2012 sampling events, respectively. The filtered/unfiltered

concentration ratios for Fe and Mn are very effective indicators of redox conditions. Under oxic conditions, both metals are mostly present as suspended oxide particulates that are partially or completely removed by filtration, so the filtered/unfiltered ratios are much less than 1.0. Under reducing conditions, both metals convert to lower valence states that are soluble. If they are soluble, then filtration will have no effect, so their filtered/unfiltered ratios will be close to 1.0. The difference between Mn and Fe is that Mn converts to a soluble form at a higher redox potential than Fe does, so Mn is a more sensitive indicator of slight redox depressions. Low sulfate concentrations (e.g., less than 50 mg/L) also may indicate that conditions are present to reduce sulfate to sulfide.

An advantage of using sulfate as a redox indicator at a uranium-contaminated site is that the redox potential required for sulfate reduction is similar to the potential required for uranium reduction, so it is directly relevant to the behavior of uranium. Manganese will reduce at much higher potentials, and Fe is slightly below Mn on the redox scale but still higher than the uranium and sulfate/sulfide transitions. In other words, if sulfate is being reduced then uranium is also likely to get reduced to an insoluble form. If Mn or Fe is reduced, then uranium can still remain mobile because uranium requires lower redox potentials to reduce relative to Mn and Fe.

The following observations may be made from the plots on Figures 3-7A, 3-7B, 3-8A, and 3-8B:

- Shallow aquifer: in the vicinity of the Excised Area, the VC area and reductive area correspond well, especially in the August 2011 data; the October 2012 data show the reductive area generally upgradient of the VC area. For both the August 2011 and October 2012 sampling events, a second reductive area is present in the vicinity of the landfill; however, no VOCs are present in the area, thus indicating that other reductive mechanisms may be present.
- Deep aquifer: the August 2011 data show a VC area southwest of the Excised Area and a reductive area northeast of the Excised Area. The VC area was also present in the data from the October 2012 sampling event; the presence of the reductive area northeast of the Excised Area could not be confirmed due to the limited number of wells that were sampled in October 2012.

Uranium can be reduced from a soluble hexavalent form to an insoluble tetravalent form under fairly low redox conditions. These redox conditions are below the conditions required for reductive dechlorination of TCE and DCE to VC, so it is possible for soluble uranium and VC to coexist. This can be seen from the data on Figure 3-7A, which shows wells within the VC plume that have high dissolved uranium concentrations (e.g., MW-25 at 171 µg/L, MW-26 at 94.6 µg/L, MW-604D at 101 µg/L, and MW-710D at 66 µg/L). These wells are located along the central axis of the uranium plume (i.e., MW-26 and MW-604D) or near that axis (for wells MW-

25 and MW-710D), suggesting that the uranium is in the mobile hexavalent form despite the presence of VC. The dissolved uranium concentrations for the wells located in the center of the reducing area are, in general, less than 10 μg/L.

4.0 Summary and Conclusions

Based on the results of the supplemental sampling, the following conclusions are drawn:

- The supplemental sampling results are consistent with the data obtained as part of the DGI.
- Groundwater flow directions in the first main fracture zone (deep groundwater) are generally consistent with groundwater flow in the shallow weathered bedrock (shallow groundwater). Groundwater flow in both zones is generally to the south; however it flows to the southeast toward the Erie Canal on the eastern part of the site, and to the southwest toward the quarry on the western part of the site.
- Comparison of filtered and unfiltered total uranium results indicates most of the uranium present is in dissolved form.
- Total uranium is present at concentrations exceeding the MCL in the deep groundwater flowing through the first main fracture zone of the competent dolostone, located between 30 ft and 40 ft deep and corresponds with the screened locations of the deep monitoring wells.
- The horizontal extent of groundwater with total uranium concentrations exceeding the MCL in the first main fracture zone (deep groundwater) covers approximately one-third of the area exceeding the MCL in the shallow weathered bedrock (shallow groundwater). The areas exceeding the MCL are primarily near the buildings in both zones.
- Groundwater with uranium concentrations exceeding MCL is discharging to the Erie Canal.
- The high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations.
- Reducing conditions are present in the vicinity of the Excised Area that apparently degrade TCE to VC.

Groundwater flow was observed to discharge at several locations along the northern rock face of the Erie Canal. This discharge represents a fraction of the groundwater flow that exits the shallow and the deep groundwater units underneath the site.

5.0 References

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TABLES

Table 2-1

Field Parameters

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Location	Sample Date	Static DTW (ft bgs)	pH	Temperature (^{o}C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
MW-26	10-Aug-2011	3.25	7.37	16.88	2.258	0.26	11.9	-29.5
	31-Jan-2012	1.62	7.50	9.73	1.790	0.31	120.2	7.4
	4-May-2012	1.94	7.55	11.89	1.570	2.16	113.2	1.9
	6-Aug-2012	4.22	7.56	16.64	1.622	0.64	-4.6	24.7
	24-Oct-2012	2.00	7.46	16.46	1.129	3.55	-62.1	8.7
MW-604D	10-Aug-2011	7.30	7.23	16.89	2.379	0.68	66.8	16.2
	31-Jan-2012	4.28	7.27	8.35	1.378	2.96	100.0	22.7
	4-May-2012	7.90	6.98	10.22	1.740	1.43	200.6	24.2
	6-Aug-2012	8.15	7.42	17.90	1.865	2.79	94.1	-1.7
	23-Oct-2012	6.28	7.15	15.42	1.647	3.70	-69.6	40.7
MW-605D	10-Aug-2011	3.34	7.29	16.18	0.861	0.30	-3.4	106.7
	31-Jan-2012	0.80	7.21	10.04	0.934	0.32	121.0	30.8
	3-May-2012	1.21	6.83	10.95	0.600	0.35	225.0	9.1
	6-Aug-2012	4.42	7.49	17.15	0.632	0.43	63.1	29.0
	24-Oct-2012	1.81	7.23	15.85	0.691	3.56	-13.9	133.5
MW-704DD	10-Aug-2011	3.30	7.80	13.19	2.552	0.18	72.8	-4.1
	31-Jan-2012	0.64	7.24	10.09	2.880	5.16	147.8	23.7
	3-May-2012	0.90	6.48	12.12	2.349	7.03	326.7	208.0
	6-Aug-2012	4.60	7.47	13.09	1.857	1.02	83.9	18.5
	22-Oct-2012	2.39	7.17	14.61	2.172	3.56	-7.3	53.1
MW-707DD	18-Aug-2011	33.62	8.72	13.87	18.510	6.28	117.1	168.2
	31-Jan-2012	16.25	--	--	--	--	--	--
	4-May-2012	21.34	7.32	11.64	19.040	5.05	-67.7	428.0
	6-Aug-2012	21.93	7.40	20.15	10.450	4.56	114.9	-4.8
	23-Oct-2012	18.25	7.15	13.21	10.180	6.13	6.0	9.0
MW-708DD	11-Aug-2011	8.24	7.42	13.63	1.857	0.23	-1.6	20.4
	30-Jan-2012	6.51	7.28	11.37	1.666	6.82	-52.5	411.9
	3-May-2012	6.83	7.03	12.31	1.191	0.60	36.3	16.9
	4-Aug-2012	8.59	7.10	13.37	1.175	0.32	31.8	3.4
	22-Oct-2012	7.80	7.19	15.40	1.383	3.59	47.3	-3.8
MW-709DD	10-Aug-2011	8.07	7.35	13.00	2.071	0.38	47.8	-1.7
	31-Jan-2012	5.76	7.49	10.49	1.698	3.86	17.4	17.2
	4-May-2012	9.42	7.40	11.31	1.343	3.79	25.8	25.5
	6-Aug-2012	8.79	7.44	12.98	1.453	0.37	-22.9	-5.4
	23-Oct-2012	7.44	7.27	13.56	1.521	3.67	-143.6	1.6
MW-710D	15-Aug-2011	12.20	7.21	12.87	1.828	0.66	10.7	-2.1
	30-Jan-2012	11.48	7.18	10.34	1.562	7.51	87.2	30.5
	3-May-2012	11.49	7.22	10.43	1.243	3.71	65.0	1.2
	4-Aug-2012	12.49	7.58	14.71	1.200	3.65	51.5	1.2
	22-Oct-2012	11.79	7.12	14.53	1.675	3.70	-29.5	-4.2
MW-710DD	18-Aug-2011	20.74	7.14	12.52	2.303	1.90	52.6	6.0
	30-Jan-2012	30.58	7.29	11.01	1.721	6.76	112.4	31.4
	3-May-2012	23.41	7.12	11.44	1.425	3.70	117.8	17.6
	4-Aug-2012	25.26	7.34	15.06	1.506	4.21	85.8	42.0
	22-Oct-2012	23.43	7.06	13.54	1.256	4.03	38.7	0.7
MW-713D	4-Aug-2011	12.23	7.24	13.47	1.534	0.72	-175.6	16.8
	30-Jan-2012	11.10	7.03	8.57	1.388	8.15	-222.1	30.9
	3-May-2012	11.52	6.55	11.56	0.885	1.32	-254.2	6.5
	4-Aug-2012	13.09	7.21	15.04	0.963	4.10	-195.1	2.7
	23-Oct-2012	12.62	--	--	--	--	--	--

DTW = depth to water
ft bgs = feet below ground surface
^{o}C = degrees Celsius
mS/cm = millisiemens per centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
ORP = oxidation reduction potential
mV = millivolts
NTU = nephelometric turbidity units
-- = not measured

Table 3-1

Monitoring Well Gauging Data Summary

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Total Boring Depth (ft bgs)	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Well Gauging Data									
				August 2011		January 2012		May 2012		August 2012		October 2012	
				Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)
MW-1	15.0	598.18	599.92	7.02	592.90	NM	NA	NM	NA	NM	NA	6.11	593.81
MW-2	14.5	596.86	598.78	8.59	590.19	NM	NA	NM	NA	NM	NA	8.11	590.67
MW-3	14.4	597.27	599.03	5.68	593.35	NM	NA	NM	NA	NM	NA	4.30	594.73
MW-4	14.4	597.70	599.52	5.34	594.18	NM	NA	NM	NA	NM	NA	4.00	595.52
MW-5	15.5	596.68	598.52	5.50	593.02	NM	NA	NM	NA	NM	NA	4.70	593.82
MW-6	15.7	597.59	600.68	7.68	593.00	NM	NA	NM	NA	NM	NA	6.66	594.02
MW-7	16.7	598.19	601.32	7.74	593.58	NM	NA	NM	NA	NM	NA	6.29	595.03
MW-8	16.9	598.31	601.37	9.14	592.23	NM	NA	NM	NA	NM	NA	8.62	592.75
MW-9	16.0	596.49	599.70	8.38	591.32	NM	NA	NM	NA	NM	NA	8.05	591.65
MW-10	16.9	599.06	601.92	8.54	593.38	NM	NA	NM	NA	NM	NA	7.50	594.42
MW-11	17.8	596.77	599.79	9.56	590.23	NM	NA	NM	NA	NM	NA	8.85	590.94
MW-12	17.0	596.88	600.01	6.43	593.58	NM	NA	NM	NA	NM	NA	5.20	594.81
MW-13D	16.0	600.15	603.47	7.85	595.62	NM	NA	NM	NA	NM	NA	7.11	596.36
MW-14	16.0	598.90	602.36	8.24	594.12	NM	NA	NM	NA	NM	NA	6.78	595.58
MW-15	20.0	604.42	608.09	10.70	597.39	NM	NA	NM	NA	NM	NA	11.62	596.47
MW-16	17.0	601.41	604.37	8.54	595.83	NM	NA	NM	NA	NM	NA	8.00	596.37
MW-17	16.8	603.79	606.97	8.92	598.05	NM	NA	NM	NA	NM	NA	9.15	597.82
MW-18	13.9	599.48	602.36	7.42	594.94	NM	NA	NM	NA	NM	NA	5.78	596.58
MW-19	20.0	598.29	601.36	10.13	591.23	NM	NA	NM	NA	NM	NA	7.89	593.47
MW-20	17.0	600.50	603.62	9.18	594.44	NM	NA	NM	NA	NM	NA	8.82	594.80
MW-21	21.0	605.41	608.46	12.73	595.73	NM	NA	NM	NA	NM	NA	13.15	595.31
MW-22	17.0	598.09	601.35	7.16	594.19	NM	NA	NM	NA	NM	NA	5.76	595.59
MW-23	16.0	597.58	600.50	5.96	594.54	NM	NA	NM	NA	NM	NA	4.55	595.95
MW-24	16.4	597.27	NM	4.02	593.25	NM	NA	NM	NA	NM	NA	3.05	594.22
MW-25	17.0	597.22	NM	2.66	594.56	NM	NA	NM	NA	NM	NA	1.22	596.00
MW-26	17.0	596.93	NM	3.27	593.66	1.62	595.31	1.94	594.99	4.22	592.71	2.00	594.93
MW-600S	8.0	610.54	613.45	9.86	603.59	NM	NA	NM	NA	NM	NA	Dry	NA
MW-600D	23.4	610.54	613.29	11.16	602.13	NM	NA	NM	NA	NM	NA	10.10	603.19
MW-601D	20.0	602.42	604.85	10.17	594.68	NM	NA	NM	NA	NM	NA	9.80	595.05
MW-602D	20.5	601.14	604.01	9.47	594.54	NM	NA	NM	NA	NM	NA	8.91	595.10
MW-603D	20.0	597.69	600.43	7.22	593.21	NM	NA	NM	NA	NM	NA	6.32	594.11
MW-604D	19.0	596.25	595.98	7.06	588.92	4.28	591.70	7.90	588.08	8.15	587.83	6.28	589.70
MW-605D	18.5	598.50	598.11	3.21	594.90	0.80	597.31	1.21	596.90	4.42	593.69	2.33	595.78
MW-606D	20.5	598.91	601.49	7.77	593.72	NM	NA	NM	NA	NM	NA	NM	NA

Table 3-1

Monitoring Well Gauging Data Summary

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Total Boring Depth (ft bgs)	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Well Gauging Data									
				August 2011		January 2012		May 2012		August 2012		October 2012	
				Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)
MW-606DR	21.0	599.49	602.21	7.79	594.42	NM	NA	NM	NA	NM	NA	6.59	595.62
MW-607D	17.9	597.93	600.38	7.83	592.55	NM	NA	NM	NA	NM	NA	6.15	594.23
MW-701DD	80.0	604.47	607.22	11.06	596.16	NM	NA	NM	NA	NM	NA	11.75	595.47
MW-702DD	40.0	600.68	602.84	9.14	593.70	NM	NA	NM	NA	NM	NA	8.15	594.69
MW-703DD	40.0	597.55	599.15	24.76	574.39	NM	NA	NM	NA	NM	NA	7.90	591.25
MW-704DD	40.0	598.21	597.97	3.10	594.87	0.64	597.33	0.90	597.07	4.60	593.37	2.39	595.58
MW-705D	20.0	597.09	598.85	7.56	591.29	NM	NA	NM	NA	NM	NA	5.55	593.30
MW-705DD	40.0	597.06	598.88	7.41	591.47	NM	NA	NM	NA	NM	NA	5.23	593.65
MW-706DD	50.0	598.24	600.61	9.62	590.99	NM	NA	NM	NA	NM	NA	6.25	594.36
MW-707DD	40.0	596.60	596.32	35.10	561.22	16.25	580.07	21.34	574.98	21.93	574.39	18.25	578.07
MW-708DD	40.0	597.75	597.61	8.16	589.45	6.51	591.10	6.83	590.78	8.59	589.02	7.80	589.81
MW-709DD	80.0	595.92	595.61	8.07	587.54	5.76	589.85	9.42	586.19	8.79	586.82	7.44	588.17
MW-710D	20.0	596.31	598.19	12.17	586.02	11.48	586.71	11.49	586.70	12.49	585.70	11.79	586.40
MW-710DD	42.0	596.38	598.00	22.62	575.38	30.58	567.42	23.41	574.59	25.26	572.74	23.43	574.57
MW-711D	20.0	593.07	595.09	12.55	582.54	NM	NA	NM	NA	NM	NA	10.49	584.60
MW-711DD	40.0	593.01	595.05	11.37	583.68	NM	NA	NM	NA	NM	NA	11.40	583.65
MW-712D	20.0	594.24	596.48	DRY	<574.24	NM	NA	NM	NA	NM	NA	Dry	<574.24
MW-712DD	40.0	593.99	596.33	30.18	566.15	NM	NA	NM	NA	NM	NA	30.33	566.00
MW-713D	20.0	597.31	599.54	12.20	587.34	11.10	588.44	11.52	588.02	13.09	586.45	12.62	586.92

Notes:

ft bgs = feet below ground surface
ft msl = feet above mean sea level
ft toc = feet below top of riser casing
NM = not measured
NA = not applicable
TOC elevation data not available for MW-24, MW-25, and MW-26. These wells are flush-mounted (below grade). Water level elevations are referenced from ground surface.

Table 3-2

Monitoring Well Vertical Gradients

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well Pair (Shallow above Deep)	Total Boring Depth (ft bgs)	Well Construction Screen Mid-Point (ft msl)	Water Level Elevation (ft msl)					Vertical Gradient				
			August 2011	January 2012	May 2012	August 2012	October 2012	August 2011	January 2012	May 2012	August 2012	October 2012
MW-13D	16.0	589.15	595.62	--	--	--	596.36	0.027	--	--	--	-0.045
MW-701DD	80.0	569.47	596.16	--	--	--	595.47	slight up	--	--	--	slight down
MW-19	20.0	583.29	591.23	--	--	--	593.47	-0.012	--	--	--	0.044
MW-706DD	50.0	563.24	590.99	--	--	--	594.36	slight down	--	--	--	slight up
MW-26	17.0	584.93	593.66	595.31	594.99	592.71	594.93	-1.390	-0.653	-0.858	-0.785	-0.723
MW-707DD	40.0	561.60	561.22	580.07	574.98	574.39	578.07	downward	downward	downward	downward	downward
MW-602D	20.5	586.14	594.54	--	--	--	595.10	-0.041	--	--	--	-0.020
MW-702DD	40.0	565.68	593.70	--	--	--	594.69	slight down	--	--	--	slight down
MW-604D	19.0	583.05	588.92	591.70	588.08	587.83	589.70	-0.062	-0.084	-0.085	-0.046	-0.069
MW-709DD	80.0	560.92	587.54	589.85	586.19	586.82	588.17	slight down	slight down	slight down	slight down	slight down
MW-605D	18.5	585.50	594.90	597.31	596.90	593.69	595.78	-0.001	0.001	0.008	-0.015	-0.009
MW-704DD	40.0	564.21	594.87	597.33	597.07	593.37	595.58	neutral	neutral	neutral	slight down	neutral
MW-607D	17.9	585.53	592.55	--	--	--	594.23	-0.790	--	--	--	-0.130
MW-703DD	40.0	562.55	574.39	--	--	--	591.25	downward	--	--	--	slight down
MW-705D	20.0	582.09	591.29	--	--	--	593.30	0.009	--	--	--	0.017
MW-705DD	40.0	562.06	591.47	--	--	--	593.65	neutral	--	--	--	slight up
MW-710D	20.0	581.31	586.02	586.71	586.70	585.70	586.40	-0.534	-0.968	-0.608	-0.650	-0.594
MW-710DD	42.0	561.38	575.38	567.42	574.59	572.74	574.57	downward	downward	downward	downward	downward
MW-711D	20.0	578.07	582.54	--	--	--	584.60	0.057	--	--	--	-0.047
MW-711DD	40.0	558.01	583.68	--	--	--	583.65	slight up	--	--	--	slight down
MW-712D	20.0	579.24	<574.24	--	--	--	<574.24	<-0.400	--	--	--	<-0.407
MW-712DD	40.0	558.99	566.15	--	--	--	566.00	downward	--	--	--	downward
MW-713D	20.0	582.31	587.34	588.44	588.02	586.45	586.92	0.108	0.136	0.141	0.131	0.148
MW-708DD	40.0	562.75	589.45	591.10	590.78	589.02	589.81	upward	upward	upward	upward	upward

Notes:
ft bgs = feet below ground surface
ft msl = feet above mean sea level
-- = not measured

Table 3-3

Total Uranium (Filtered vs. Unfiltered) - Groundwater Monitoring Wells, August 2011 and October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	August 2011					October 2012				
Well ID	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**
MW-1	4	J	3.5	J	0.88	3.44		3.29		0.96
MW-2	41.3	J	39.7	J	0.96	23.8		24		1.01
MW-2 Dup	40.1	J	39.5	J	0.99	--		--		NA
MW-3	2.6		2.5		0.96	--		--		NA
MW-4	48		46		0.96	39.6		41.2		1.04
MW-4 Dup	--		--		NA	40.3		41.9		1.04
MW-5	6.1		6.2		1.02	--		--		NA
MW-6	3.6		3.6		1.00	--		--		NA
MW-7	33.4		32.4		0.97	37.4		36.6		0.98
MW-8	1.1	J	1.1	J	1.00	--		--		NA
MW-9	21.8	J	21.1	J	0.97	41		41.1		1.00
MW-10	1.6		1.5		0.94	--		--		NA
MW-11	17.7	J	14.5	J	0.82	32.1		33		1.03
MW-12	3.9		3.8		0.97	--		--		NA
MW-13D	79.8		80.2		1.01	109		107		0.98
MW-14	8		8		1.00	--		--		NA
MW-15	2		1.5		0.75	--		--		NA
MW-16	29.3		27.7		0.95	27.1		28.1		1.04
MW-16 Dup	28.4		28.2		0.99	--		--		NA
MW-17	8.5		8.3		0.98	--		--		NA
MW-18	123	J	125	J	1.02	146		149		1.02
MW-19	16.4	J	12.9	J	0.79	18.9		18.8		0.99
MW-20	13.5		13.3		0.99	9.57		9.98		1.04
MW-21	3.1		3.2		1.03	5.4		5.2		0.96
MW-22	73.6	J	65.1	J	0.88	12.9		12.3		0.95
MW-23	6.7	J	6.3	J	0.94	8.72		8.46		0.97
MW-24	39.8	J	42.7	J	1.07	8.02		11.9		1.48
MW-24 Dup	--		--		NA	4.16		10.4		2.50
MW-25	175		171		0.98	166		162		0.98
MW-25 Dup	176		174		0.99	--		--		NA
MW-26	107		94.6		0.88	243		260		1.07
MW-600D	2.4		2.5		1.04	1.41		1.54		1.09
MW-601D	9.6		10.6		1.10	7.3		8.17		1.12
MW-602D	113		112		0.99	110		110		1.00
MW-603D	11.1	J	8.2	J	0.74	6.58		6.71		1.02
MW-604D	103		101		0.98	112		111		0.99
MW-604D Dup	--		--		NA	111		114		1.03
MW-605D	214		209		0.98	270		266		0.99
MW-605D Dup	210		212		1.01	--		--		NA
MW-606D	7.5		7.4		0.99	--		--		NA
MW-606DR	12.8		12.4		0.97	--		--		NA
MW-607D	19.5		12.3		0.63	13.9		12.2		0.88
MW-701DD	1.4		1.5		1.07	--		--		NA
MW-702DD	4.5		5.8		1.29	--		--		NA
MW-703DD	0.28		1	U	3.57	--		--		NA
MW-704DD	23.5		26.3		1.12	72.4		73.4		1.01
MW-705D	0.89	J	2.8	J	3.15	--		--		NA
MW-705DD	1.7		0.37	J	0.22	--		--		NA
MW-706DD	1.8		1.7		0.94	--		--		NA

Table 3-3

Total Uranium (Filtered vs. Unfiltered) - Groundwater Monitoring Wells, August 2011 and October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	August 2011					October 2012				
Well ID	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**
MW-707DD	34.5		33.9		0.98	9.4		8.4		0.89
MW-708DD	22.4		23		1.03	20		20.1		1.01
MW-708DD Dup	22.5		23.2		1.03	--		--		NA
MW-709DD	52.8		55.4		1.05	85.9		83.8		0.98
MW-710D	67.5		66.1		0.98	66		66.8		1.01
MW-710DD	60.8		67		1.10	28.6		28.3		0.99
MW-711D	9		7.4		0.82	4.02		4.09		1.02
MW-711DD	1.7	J	2.9	J	1.71	1.49		1.63		1.09
MW-712DD	38.7		38.8		1.00	28.3		30.8		1.09
MW-713D	5.1	J	4.7	J	0.92	1	U	1	U	NA
				Average	1.05				Average	1.06
				Median	0.98				Median	1.01

Dup - Duplicate
J - Estimated Value
U - Not detected

Table 3-4a

Isotopic Uranium - Quarterly Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-26	10-Aug-2011	34.7		32.1		1.97		1.62		35		32.7		107		94.6	
	1-Feb-2012	39.7	J	48.4	J	1.62		2.1		38.3	J	48.4	J	145	J	152	J
	4-May-2012	52.7		54.5		2.36		2.62		54.4		55.7		145		139	
	6-Aug-2012	49		46.6		2.48		1.87		47.6		46.3		155		147	
	24-Oct-2012	77.3		69.8		3.86		3.66		76.9		70.5		243		260	
MW-604D	10-Aug-2011	37.1		31.4		1.79		1.52		37		30.4		103		101	
	1-Feb-2012	23.1		22		1.05		1.28		21.9		23.1		76.7	J	76.4	J
	4-May-2012	29.2		31		1.28		1.52		28.8		29.9		86.5		76.4	
	6-Aug-2012	35.1		34.5		1.5		1.57		35.2		33.5		108		105	
	23-Oct-2012	36.1		32.2		1.65		1.71		35.4		32.6		112		111	
	Duplicate	33.6		34.7		2.08		1.77		34.5		34.3		111		114	
MW-605D	10-Aug-2011	67.5		68.6	J	3.43		3.38	J	65.8		67.1	J	214		209	
	Duplicate	69.2	J	70	J	3.13	J	3.67	J	68.1	J	67.5	J	210		212	
	1-Feb-2012	87.3		92.9		3.59		3.99		91		91.2		299	J	302	J
	Duplicate	101		90.6		5.3		4.67		99.8		90.6		300	J	304	J
	4-May-2012	86.2		90.2		4.09		4.37		87.8		89.6		265		256	
	Duplicate	87.9		80.6		4.51		3.63		89.5		77.9		266		262	
	6-Aug-2012	85.8		78.7		3.75		3.67		82.6		77.5		259		251	
	Duplicate	80.5		91.3		3.88		4.58		78.7		89.8		254		251	
	24-Oct-2012	79.7		85.2		3.59		4.75		79.1		84		270		266	
MW-704DD	10-Aug-2011	9.35		10.8		0.38		0.46		7.31		8.36		23.5		26.3	
	Duplicate	9.54		10.8		0.3		0.41		7.26		8.77		--		--	
	1-Feb-2012	29.8		26.3		1.2		1.15		23.8		22.6		81.3	J	80.2	J
	Duplicate	25.9		30		1.26		1.26		21.5		24.1		--		--	
	4-May-2012	25.3		27.8		0.99		1.15		20.4		21.1		67		65.8	
	6-Aug-2012	32.7		27.6		0.96		0.81		26.1		22.3		102		68.1	
	22-Oct-2012	26		27.9		0.95		1.2		21.5		22.6		72.4		73.4	
MW-707DD	18-Aug-2011	NM		NM		NM		NM		NM		NM		34.5		33.9	
	31-Jan-2012	7.76	J	14.5	J	0.14		0.23		5.14		4.32		13.6	J	14.1	J
	4-May-2012	12.8		12.3		0.28		0.18		3.54		3.51		10.8		10.6	
	6-Aug-2012	14.8		9		0.108		0.129		3.55		2.73		11.2		8.3	
	23-Oct-2012	14.7		12.2		0.24		0.128		3.32		2.49		9.4		8.4	
MW-708DD	11-Aug-2011	7.18		7.19		0.31		0.3		7.03		6.9		22.4		23	
	Duplicate	7.03		7.51		0.5		0.43		7.39		7.06		22.5		23.2	
	30-Jan-2012	7.1		7.99		0.29		0.49		7.2		7.76		24.7	J	22.3	J
	4-May-2012	6.97		7.37		0.2		0.26		6.72		7.35		18		18.3	
	3-Aug-2012	7.04		7.26		0.4		0.27		7.12		6.68		20.2		19.3	
	22-Oct-2012	6.59		7.02		0.29		0.35		5.72		6.41		20		20.1	

Table 3-4a

Isotopic Uranium - Quarterly Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-709DD	10-Aug-2011	16.8		18.5		0.71		0.7		16		17.4		52.8		55.4	
	1-Feb-2012	25.5		27.5		1.48		1.01		26.3		25.5		88.3	J	88.5	J
	4-May-2012	27.7		27.2		1.05		1.23		28.7		25.9		80		80.4	
	6-Aug-2012	28.4		28.7		1.83		1.66		28.6		29.4		82.7		84.3	
	23-Oct-2012	27.6		28.2		1.41		1.26		27.8		27.1		85.9		83.8	
MW-710D	15-Aug-2011	19.1		24		1.02		1.2		19.9		23.8		67.5		66.1	
	30-Jan-2012	16.6		17.3		0.81		0.9		16.8		17.5		59.1	J	57.8	J
	4-May-2012	18.3		18.7		0.99		0.91		17.6		19.4		52.5		49.5	
	6-Aug-2012	18.8		19.9		1.12		1.08		18.2		20		53.8		52.3	
	22-Oct-2012	19.9		20.3		1.13		1.07		19.7		20.1		66		66.8	
MW-710DD	18-Aug-2011	18.6		21		1.02		1.38		19.1		21.3		60.8		67	
	30-Jan-2012	19.6		20		0.93		1.17		21.3		20.4		71.4	J	71.9	J
	4-May-2012	21.7		19		0.96		1		22.1		19.1		59.1		56.6	
	6-Aug-2012	8.79		9.28		0.59		0.43		9.6		9.5		29.6		28.9	
	22-Oct-2012	8.85		9.34		0.36		0.47		8.82		9.06		28.6		28.3	
MW-713D	4-Aug-2011	2.62		2.67		0.061		0.076		1.26		1.4		5.1	J	4.7	J
	30-Jan-2012	0.32		0.19		0.1	U	0.1	U	0.23		0.071		1	J	0.25	J
	3-May-2012	0.081		0.103		0.1	U	0.1	U	0.122		0.075		0.33	J	1	U
	4-Aug-2012	0.127		0.133		0.1	U	0.1	U	0.093		0.1	U	1	U	1	U
	23-Oct-2012	0.066		0.1	U	0.1		0.1		0.081		0.02		1	U	1	U

NOTE: Qualifier varies by analytical method - analytical method is noted in the description of the qualifier.
pCi/L = picoCuries per Liter
ug/L = micrograms per Liter
ValQual = Validation Qualifier
J - A-01-R MOD = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J - SW6020 = The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
U = Analyte analyzed for, but was not detected.

Table 3-4b

Isotopic Uranium - Annual Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-1	23-Aug-2011	1.86		1.32		0.02	U	-0.008	U	1.22		1.24		4	J	3.5	J
	24-Oct-2012	1.11		1.15		0.100	J	-0.015		1.05		0.799		3.44		3.29	
MW-2	23-Aug-2011	12		9.68		0.62		0.36		12.9		10.4		41.3	J	39.7	J
	Duplicate	10.9		10.3		0.58		0.49		12		10.8		40.1	J	39.5	J
	24-Oct-2012	7.40		7.21		0.472		0.279		7.97		7.58		23.8		24.0	
MW-4	19-Aug-2011	14.9		16.1		0.87		0.8		14.4		16.7		48		46	
	24-Oct-2012	15.5		14.0		0.748		0.500		13.9		13.0		39.6		41.2	
	Duplicate	13.9		13.7		0.876		0.675		13.5		13.8		40.3		41.9	
MW-7	12-Aug-2011	11.8		10.5		0.67		0.54		12.1		10.6		33.4		32.4	
	23-Oct-2012	12.9		12.4		0.620		0.612		12.3		12.3		37.4		36.6	
MW-9	8-Aug-2011	6.07		6.26		0.32		0.28		6.48		6.7		21.8	J	21.1	J
	24-Oct-2012	11.3		12.5		0.427		0.745		13.7		13.8		41.0		41.1	
MW-11	8-Aug-2011	4.13		4.75		0.26		0.22		4.56		4.65		17.7	J	14.5	J
	24-Oct-2012	10.1		10.8		0.521		0.741		10.6		12.0		32.1		33.0	
MW-13D	11-Aug-2011	23.9		22.6		1.13		1.13		24.6		23.6		79.8		80.2	
	25-Oct-2012	35.2		35.2		1.86		1.47		35.5		36.1		109		107	
MW-16	19-Aug-2011	8.8		8.9		0.44		0.45		9.7		10.2		29.3		27.7	
	Duplicate	8.38		9.2		0.42		0.58		8.88		10.1		28.4		28.2	
	22-Oct-2012	8.54		9.19		0.382		0.318		9.42		9.86		27.1		28.1	
MW-18	5-Aug-2011	38.8		37.7		1.72		1.79		39.6		36.6		123	J	125	J
	25-Oct-2012	48.0		47.3		2.56		2.87		49.0		46.8		146		149	
MW-19	4-Aug-2011	4.52		4.34		0.27		0.19		4.77		4.27		16.4	J	12.9	J
	22-Oct-2012	6.30		6.03		0.270		0.377		6.36		6.03		18.9		18.8	
MW-20	18-Aug-2011	4.5		3.89		0.23		0.24		4.27		3.82		13.5		13.3	
	23-Oct-2012	3.57		3.13		0.222		0.176		2.99		3.67		9.57		9.98	
MW-21	18-Aug-2011	0.73		1.03		0.05		0.03	U	0.79		0.93		3.1		3.2	
	25-Oct-2012	1.80		1.65		0.092		0.139		1.93		1.91		5.40		5.20	
MW-22	5-Aug-2011	24.3		21.6		1.03		1.05		24.8		21.2		73.6	J	65.1	J
	23-Oct-2012	4.31		4.38		0.294		0.251		3.99		4.45		12.9		12.3	
MW-23	4-Aug-2011	1.79		1.74		0.11		0.13		1.73		1.64		6.7	J	6.3	J
	24-Oct-2012	2.88		2.46		0.108		0.162		3.07		2.64		8.72		8.46	
MW-24	4-Aug-2011	13.1		12.5		0.43		0.51		12.6		11.6		39.8	J	42.7	J
	24-Oct-2012	2.78		4.12		0.107		0.178		2.75		4.39		8.02		11.9	
	Duplicate	1.56		3.98		0.035		0.158		1.31		3.92		4.16		10.4	
MW-25	12-Aug-2011	55.7	J	58.5	J	3.22	J	3.28	J	56.4	J	60.5	J	175		171	
	Duplicate	49.9		55.2		2.69		2.96		50.5		56.6		176		174	
	24-Oct-2012	68.8		53.0		3.21		2.25		63.4		60.9		166		162	
MW-600D	22-Aug-2011	0.92		1.28		0.03	U	0.05	U	0.78		0.93		2.4		2.5	
	22-Oct-2012	0.715		0.761		0.040		0.006		0.616		0.635		1.41		1.54	
MW-601D	18-Aug-2011	2.54		2.56		0.1		0.13		2.66		2.61		9.6		10.6	
	23-Oct-2012	2.66		2.82		0.077		0.244		2.36		2.83		7.30		8.17	

Table 3-4b

Isotopic Uranium - Annual Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-602D	11-Aug-2011	36.5		36.9		1.84		2.08		36		36.8		113		112	
	23-Oct-2012	37.2		36.3		1.95		1.70		35.7		36.5		110		110	
MW-603D	5-Aug-2011	2.86		3.01		0.1		0.19		2.76		2.97		11.1	J	8.2	J
	23-Oct-2012	2.51		2.64		0.115		0.090		2.23		2.15		6.58		6.71	
MW-607D	19-Aug-2011	5.35		3.88		0.24		0.11		4.99		4.04		19.5		12.3	
	22-Oct-2012	4.86		3.62		0.133		0.316		5.05		4.74		13.9		12.2	
MW-711D	9-Aug-2011	2.78		2.7		0.09		0.16		2.68		2.3		9		7.4	
	23-Oct-2012	1.54		0.984		0.125		0.079		1.36		1.05		4.02		4.09	
MW-711DD	15-Aug-2011	0.8	J	1.29		-0.007	UJ	0.11	U	0.71	J	0.55		1.7	J	2.9	J
	23-Oct-2012	1.02		1.41		0.039		-0.020		1.03		0.830		1.49		1.63	
MW-712DD	18-Aug-2011	13.2		14		0.59		0.63		12.7		12.4		38.7		38.8	
	22-Oct-2012	9.92		9.97		0.590		0.577		10.3		10.2		28.3		30.8	

NOTE: Qualifier varies by analytical method - analytical method is noted in the description of the qualifier.
pCi/L = picoCuries per Liter
ug/L = micrograms per Liter
ValQual = Validation Qualifier
J - A-01-R MOD = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J - SW6020 = The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
U = Analyte analyzed for, but was not detected.

Table 3-4C

Isotopic Uranium - Seeps and Surface Water

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A or D5174			
		Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				TOTAL URANIUM			
		Units	pCi/L				pCi/L				pCi/L				ug/L			
Sample Date	**Location**	**Sample ID**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
8-Aug-11	SEEP-1108-01	Seep-08082011-01	0.72		0.67		13.2		15.4		13.2		15.3		44.9		44.3	
	SEEP-1108-02	Seep-08082011-02	0.028	U	0.088		2.09		1.89		1.59		2.13		6.3		6.2	
12/8/2011	SEEP-1112-01	Seep-12082011-01	--		--		--		--		--		--		5.85		--	
	SEEP-1112-02	Seep-12082011-02	--		--		--		--		--		--		3.47		--	
	SEEP-1112-03	Seep-12082011-03	--		--		--		--		--		--		24.8		--	
	SEEP-1112-04	Seep-12082011-04	--		--		--		--		--		--		25.9		--	
	SEEP-1112-05	Seep-12082011-05	--		--		--		--		--		--		24.9		--	
	SEEP-1112-06	Seep-12082011-06	--		--		--		--		--		--		23.2		--	
1/25/2012	SW-1201-01	SW-01252012-01	0.174		0.241		-0.028	U	0.034	U	0.234		0.174		0.609		0.587	
5/7/2012	SEEP-1205-01	Seep-05072012-01	1.88		1.9		0.084		0.171		1.99		2.04		5.3		5.3	
	SEEP-1205-02	Seep-05072012-02	2.34		2.56		0.048		0.22		2		2.28		5.8		5.9	
	SEEP-1205-03	Seep-05072012-03	7.3		6.88		0.36		0.37		7.25		7.44		20.7		20.8	
	SW-1205-01	SW-05072012-01	0.31		0.184		0.1	U	0.1	U	0.217		0.171		0.52	J	0.51	J
	SW-1205-02	SW-05072012-02	0.24		0.34		0.1	U	0.1	U	0.221		0.15		0.5	J	0.49	J
10/25/2012	SEEP-1210-01	Seep-1012-1	10.6		11.1		0.547		0.66		10.7		12.5		35.4		33	
	SEEP-1210-02	Seep-1012-2	0.272	J	0.161	J	0.027	U	-0.046	U	0.198	J	0.38		0.895		0.913	
	SEEP-1210-03	Seep-1012-3	12.3		11.7		0.571		0.75		12.3		13		36.2		36.8	
	SW-1210-01	Surface-1012	0.358	J	0.24	J	0.117	J	0	U	0.316		0.088	J	0.599		0.595	

pCi/L = picoCuries per Liter
ug/L = micrograms per Liter
ValQual = Validation Qualifier
J = The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
U = Analyte analyzed for, but was not detected.

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-2		MW-2		MW-3		MW-4		MW-5		MW-9	
Field Sample ID		A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001		A02MW090001	
Sample Date		8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011		8/8/2011	
Purpose		Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	1	U	1	U	2.5		500	D	71	D	0.24	J
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,1-DICHLOROETHANE	ug/L	6.1		5.7		16		110	D	560	D	12	
1,1-DICHLOROETHENE	ug/L	1.5		1.5		4.8		51	D	20	D	2.9	
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,3-DICHLOROBENZENE	ug/L	0.21	J	0.21	J	1	U	10	U	10	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	0.21	J	1	U	10	U	10	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
ACETONE	ug/L	2	U	2	U	2	U	20	U	20	U	2	
BENZENE	ug/L	1	U	1	U	1	U	10	U	3.2	JD	0.1	J
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	20	U	20	U	2	U
CARBON DISULFIDE	ug/L	2	U	2	U	2	U	20	U	20	U	0.39	J
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	0.24	J	20	U	20	U	2	U
CHLOROETHANE	ug/L	24		12		2	U	20	U	130	D	14	
CHLOROFORM	ug/L	1	U	1	U	1	U	10	U	7	JD	1	U
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
METHYLENE CHLORIDE	ug/L	1	U	1	U	1	U	10	U	10	U	0.92	JB
STYRENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	10	U	1.9	JD	1	U
TOLUENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	4.8		4.5		2.3		26	D	17	JD	6.8	
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	0.77	J	80	D	12	D	0.79	J
VINYL CHLORIDE	ug/L	9.2		8.4		0.47	J	1.1	JD	7.5	JD	2.7	
XYLENES, TOTAL	ug/L	5	U	5	U	5	U	50	U	50	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-11		MW-12		MW-22		MW-23		MW-24		MW-25	
Field Sample ID		A02MW110001		A02MW120001		A04AMW220001		A04DMW230001		A04DMW240001		A04BMW250001	
Sample Date		8/8/2011		8/22/2011		8/5/2011		8/4/2011		8/4/2011		8/12/2011	
Purpose		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	0.23	J	60	D	29		1100	D	41	E		
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1.9	JD	1	U	1.3	JD
1,1-DICHLOROETHANE	ug/L	5.9		18		17		650	D	52	E	190	D
1,1-DICHLOROETHENE	ug/L	8.7		2.6		5		50	D	21		44	D
1,2-DICHLOROBENZENE	ug/L	1	U	0.83	J	1	U	5	U	1	U	5	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
2-HEXANONE	ug/L	5	U	5	U	5	U	25	U	5	U	25	U
ACETONE	ug/L	3.2		2	U	2	U	10	U	2	U	10	U
BENZENE	ug/L	1	U	0.13	J	1	U	5	U	0.41	J	5	U
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
BROMOFORM	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	10	U	2	U	10	U
CARBON DISULFIDE	ug/L	2	U	2	U	2	U	10	U	2	U	10	U
CARBON TETRACHLORIDE	ug/L	1	U	85	D	1	U	5	U	1	U	5	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	10	U	2	U	10	U
CHLOROETHANE	ug/L	12		2	U	1	J	82	D	15		17	D
CHLOROFORM	ug/L	1	U	38		1	U	1.4	JD	1	U	5	U
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	25	U	5	U	25	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	25	U	5	U	25	U
METHYLENE CHLORIDE	ug/L	0.97	JB	1	U	0.51	JB	3.2	JBD	1	U	5	UD
STYRENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
TETRACHLOROETHYLENE(PCE)	ug/L	0.25	J	110	D	3	B	8.5	D	1	U	3.4	JD
TOLUENE	ug/L	1	U	4.1		1	U	0.53	JD	1	U	1.3	JD
TOTAL 1,2-DICHLOROETHENE	ug/L	19		130	D	1.4	J	160	D	24		1600	D
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	0.59	J	20		2.2		190	D	17		150	D
VINYL CHLORIDE	ug/L	1.3	J	6.2		2	U	17	D	6.1		770	D
XYLENES, TOTAL	ug/L	5	U	130	D	5	U	25	U	5	U	25	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-25		MW-26		MW-602D		MW-603D		MW-604D		MW-605D	
Field Sample ID		A04BMW9003		A04BMW260001		A04MW602D0001		A04AMW603D0001		A04MW604D0001		A04BMW605D0001	
Sample Date		8/12/2011		8/10/2011		8/11/2011		8/5/2011		8/10/2011		8/10/2011	
Purpose		Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	600	D	290	D	0.15	J	1	U	42		3.1	
1,1,2,2-TETRACHLOROETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1.6	JD	5	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	190	D	56	D	1	U	0.95	J	18		2.2	
1,1-DICHLOROETHENE	ug/L	40	D	21	D	1	U	1	U	3.9		0.16	J
1,2-DICHLOROBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	25	U	25	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
BENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
BROMODICHLOROMETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
BROMOFORM	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
CARBON TETRACHLORIDE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	17	D	10	U	2	U	2	U	2	U	2	U
CHLOROFORM	ug/L	5	U	5	U	0.17	J	1	U	0.41	J	0.2	J
CIS-1,3-DICHLOROPROPENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	25	U	25	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	25	U	25	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	2.4	JD	1.8	JD	1	U	0.34	JB	1	U	1	U
STYRENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	3.4	JD	5	U	1	U	0.82	JB	0.42	J	1	U
TOLUENE	ug/L	1.6	JD	5	U	1	U	1	U	1	U	1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	1600	D	64	D	2	U	0.18	J	21		0.34	J
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	160	D	44	D	1	U	1	U	16		2.4	
VINYL CHLORIDE	ug/L	680	D	6	JD	2	U	2	U	1.2	J	2	U
XYLENES, TOTAL	ug/L	25	U	25	U	5	U	5	U	5	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-605D		MW-606D		MW-701DD		MW-702DD		MW-703DD		MW-704DD	
Field Sample ID		A04BMW9000		A03MW606D0001		A04AMW701DD0001		A04MW702DD0001		A03MW703DD0001		A04BMW9001	
Sample Date		8/10/2011		8/16/2011		8/19/2011		8/11/2011		8/19/2011		8/10/2011	
Purpose		Field Duplicate		Original Data		Original Data		Original Data		Original Data		Field Duplicate	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	2.8		1	U	1	U	1	U	1	U	2.3	
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	2		1	U	1	U	1	U	1	U	2.8	
1,1-DICHLOROETHENE	ug/L	0.14	J	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
BENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	0.18	J
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	2	U	2	U	0.4	J	0.2	J	2	U	2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROFORM	ug/L	0.2	J	1	U	0.42	J	0.18	J	1	U	2.7	
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.3	J	0.51	J	1	U	0.35	J	1	U	0.67	J
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TOLUENE	ug/L	1	U	1	U	1	U	1	U	1	U	0.41	J
TOTAL 1,2-DICHLOROETHENE	ug/L	0.25	J	2	U	2	U	2	U	2	U	2	U
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	2.2		1	U	1	U	1	U	1	U	1	U
VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
XYLENES, TOTAL	ug/L	5	U	5	U	5	U	5	U	5	U	0.49	J

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-704DD		MW-705D		MW-705DD		MW-706DD		MW-707DD		MW-708DD	
Field Sample ID		A04DMW704DD0001		MW705D0001		MW705DD0001		A04BMW706D0001		A04BMW707DD0001		A04DMW708DD0001	
Sample Date		8/10/2011		8/9/2011		8/9/2011		8/15/2011		8/18/2011		8/11/2011	
Purpose		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	2.4		1	U	1	U	0.12	J	2.4		1	U
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	2.9		1	U	1	U	0.38	J	1.5		8.7	
1,1-DICHLOROETHENE	ug/L	1	U	1	U	1	U	1	U	1	U	30	
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	2	U	6.3		2	U	2	U	17		2	U
BENZENE	ug/L	0.19	J	1	U	0.5	J	1	U	4		1	U
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1		1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	2	U	1.3	J	4.4		2	U	2		2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2.5	
CHLOROFORM	ug/L	2.9		0.13	J	0.71	J	0.32	J	6.2		0.34	J
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	0.34	J	1	U
ETHYLBENZENE	ug/L	1	U	1	U	0.76	J	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.75	J	0.61	JB	0.82	JB	0.55	J	1	U	0.37	J
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TOLUENE	ug/L	0.43	J	0.13	J	2.1		0.12	J	8.3		1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	2	U	2	U	2	U	2	U	0.56	J	83	D
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U	3.4	
XYLENES, TOTAL	ug/L	0.28	J	5	U	4.2	J	5	U	9.8		5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-708DD		MW-709DD		MW-710D		MW-710DD		MW-711D	
Field Sample ID		A04DMW9002		A04DMW709DD0001		A04DMW710D0001		A04DMW710DD0001		A04DMW711D0001	
Sample Date		8/11/2011		8/10/2011		8/15/2011		8/18/2011		8/9/2011	
Purpose		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	1	U	19		10		13		0.74	J
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	8.7		33		23		19		2.8	
1,1-DICHLOROETHENE	ug/L	37		13		9.8		10		0.31	J
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	2	U	2	U	2	U	2	U	12	
BENZENE	ug/L	1	U	0.13	J	1	U	1	U	1	U
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	2	U	0.18	J	2	U	2	U	2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2.6		0.13	J	1.1	J	2	U	2	U
CHLOROFORM	ug/L	0.32	J	0.49	J	1	U	1	U	0.62	J
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.38	J	1	U	0.51	J	1	U	0.69	JB
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	0.25	J	0.21	J	1	U	1	U
TOLUENE	ug/L	0.1	J	0.32	J	1	U	1	U	0.12	J
TOTAL 1,2-DICHLOROETHENE	ug/L	79	D	31		20		29		0.77	J
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	16		12		8.4		0.83	J
VINYL CHLORIDE	ug/L	3.5		1.3	J	0.86	J	0.86	J	2	U
XYLENES, TOTAL	ug/L	5	U	0.47	J	5	U	5	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-711DD		MW-712DD		MW-713D		SEEP-1108-01		SEEP-1108-02	
Field Sample ID		A04DMW711DD0001		A04DMW712DD0001		A04DMW713D0001		Seep-08082011-01		Seep-08082011-02	
Sample Date		8/15/2011		8/18/2011		8/4/2011		8/8/2011		8/8/2011	
Purpose		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	1	U	2		1	U	2.2		1	U
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	1	U	5.7		0.71	J	2.5		1	U
1,1-DICHLOROETHENE	ug/L	1	U	3.5		2.2		0.41	J	1	U
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	5.4		2	U	4.2		2	U	2.7	
BENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
BROMODICHLOROMETHANE	ug/L	1	U	0.41	J	1	U	1	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	0.64	J	2	U	1	J	0.23	J	2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2	U	2	U	0.23	J	2	U	2	U
CHLOROFORM	ug/L	0.33	J	0.27	J	2.5		1	U	1	U
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	0.1	J	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.5	J	1	U	0.92	JB	0.67	JB	0.83	JB
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U
TOLUENE	ug/L	0.16	J	1	U	0.18	J	1	U	1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	2	U	14		3.4		1.8	J	2	U
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	1.9		1	U	0.9	J	1	U
VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U
XYLENES, TOTAL	ug/L	5	U	5	U	1	J	5	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-1			MW-2			MW-4			MW-9			MW-11		
Field Sample ID		MW-1F-1210			MW-2-1210			MW-04-1210			MW-9-1210			MW-11-1210		
Sample Date/Time		10/24/12			10/24/12			10/24/12			10/24/12			10/24/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	1	U		1	U		510			1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	1	U		0.56	J		130			6.3			0.82	J	
1,1-DICHLOROETHENE	ug/l	1	U		0.88	J		54			3.4			0.86	J	
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		0.24	J		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	1	U		1	U		1	U		0.22	J		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		2	U		2.7			12			2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	1	U		3.5			33			5.9			1.8		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	2	U		0.32	J	U	0.27	J	U	0.33	J	U	0.31	J	U
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		1	U		1.2			1	U		1.8		
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	1	U		1	U		1.2			1			1	U	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	1	U		1	U		96			1.3			0.52	J	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		8.5			2.3			5			1	U	
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-22			MW-23			MW-24			MW-25			MW-26		
Field Sample ID		MW-22-1210			MW-23-1210			MW-24-1210			MW-25-1210			MW-26-1210		
Sample Date/Time		10/23/12			10/24/12			10/24/12			10/24/12			10/24/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	1	U		740			0.49	J		330			260		
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1.7			1	U		0.71	J		1	U	
1,1-DICHLOROETHANE	ug/l	3.9			600			2.3			81			60		
1,1-DICHLOROETHENE	ug/l	0.32	J		45			0.88	J		17			20		
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	0.18	J		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		0.59	J		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	0.79	J		2.2			1	U		0.5	J		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	0.24	J		0.56	J		1	U		0.24	J		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		59			1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		170			4			4.2			2	U	
CHLOROFORM	ug/l	1	U		1.2			1	U		0.35	J		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	0.29	J		110			1			440			58		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		0.21	J		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	0.31	J	U	1.4	J		2	U		2	U		2	U	
NAPHTHALENE	ug/l	0.31	J		3.2			1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		0.72	J		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		9.7			1	U		1.9			1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	0.21	J		2.8			0.22	J		2.2			0.52	J	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	0.57	J		170			0.98	J		73			65		
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		23			1.7			240			5.2		
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		0.72	J		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-603D			MW-604D			MW-605D			MW-707DD			MW-708DD		
Field Sample ID		MW-603D-1210			MW-604D-1210			MW-605D-1210			MW-707DD-1210			MW-708DD-1210		
Sample Date/Time		10/23/12			10/24/12			10/24/12			10/23/12			10/22/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	1	U		34			3.3			1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	1.1			16			2.9			1	U		6.6		
1,1-DICHLOROETHENE	ug/l	0.36	J		2.9			1	U		1	U		44		
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		2	U		2	U		2	U		2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	1	U		18			0.32	J		0.35	J		74		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	0.3	J	U	2	U		2	J	U	2	U		0.33	U	
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		1	U		1	U		1	U		1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	1	U		0.42	J		1	U		1	U		0.47	J	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	1	U		16			2.8			1	U		0.28	J	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		2			1	U		1	U		5.9		
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-709DD			MW-710D			MW-711D			MW-712DD			MW-713D		
Field Sample ID		MW-709DD-1210			MW-710D-1210			711D-1210			MW-712DD-1210			MW-713D-1210		
Sample Date/Time		10/23/12			10/22/12			10/23/12			10/22/12			10/23/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	28			20			6.2			2.6			1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	37			34			5.6			5.6			0.84	J	
1,1-DICHLOROETHENE	ug/l	14			13			0.83	J		3.9			3.7		
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.49	J	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	1	U		1	U		1	U		1	U		0.21	J	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		0.9	J		2	U		2	U		2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	39			24			2.4			12			6.1		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U		0.41	J	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	2	U		2	U		0.39	J	U	0.31	J	U	0.34	J	U
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U		0.3	J	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.34	J	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.22	J	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.18	J	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		0.68	J		1	U		1	U		1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	0.6	J		0.37	J		1	U		0.43	J		1	U	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	21			18			2.8			2.8			1	U	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	9.5			4.4			1	U		1	U		1	U	
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		0.66	J	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

Lab Qual = Laboratory Qualifier

Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		SEEP-1210-1			SEEP-1210-2			SEEP-1210-3			SURFACE-1210-1		
Field Sample ID		Seep-1210-1			Seep-1210-2			Seep-1210-3			Surface-1210-1		
Sample Date/Time		10/25/12			10/25/12			10/25/12			10/25/12		
Purpose		original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	0.68	J		1	U		1.9			1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	0.89	J		1	U		2.5			1	U	
1,1-DICHLOROETHENE	ug/l	1	U		1	U		0.39	J		1	U	
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		1.7	J		2.5	J	
BENZENE	ug/l	1	U		1	U		1	U		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		2	U		2	U		2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	0.87	J		1	U		1.7			1	U	
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	2	U		2	U		2	U		2	U	
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		1	U		1	U		1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	0.33	J		1	U		0.86	J		1	U	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		1	U		1	U		1	U	
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-1		MW-2		MW-2		MW-3		MW-4	
	Field Sample ID	A02MW010001		A02MW020001		A02MW9005		A02MW30001		A02MW40001	
	Sample Date	8/23/2011		8/23/2011		8/23/2011		8/22/2011		8/19/2011	
	Purpose	Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	113	J	93.6	J	82.7	J	200	U	200	U
ALUMINUM	ug/L	Dissolved	194	J	139	J	93.3	J	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	3.4	J	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	64.4		56.5		55.5		80.5		39.4	J
BARIUM	ug/L	Dissolved	60.9		55.1		55.3		81.1		34.3	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	216000		91600		93700		102000		61900	
CALCIUM	ug/L	Dissolved	206000		87400		89500		103000		66000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	5.3	J	50	U	50	U	21.1	J	50	U
COBALT	ug/L	Dissolved	4.6	J	50	U	50	U	20.6	J	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	1450		100	U	100	U	5880		100	U
IRON	ug/L	Dissolved	126		100	U	100	U	3330		100	U
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	35800		20200		20000		26100		23000	
MAGNESIUM	ug/L	Dissolved	35500		19800		20000		26900		22800	
MANGANESE	ug/L	Total	348		155		152		349		172	
MANGANESE	ug/L	Dissolved	317		151		152		348		79.8	
NICKEL	ug/L	Total	118		40	U	40	U	1000		40	U
NICKEL	ug/L	Dissolved	107		40	U	40	U	954		40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	445000		20800		20600		10500	E	25500	
SODIUM	ug/L	Dissolved	424000		20900		21000		10200	E	25400	
STRONTIUM	ug/L	Total	750		356		374		289		169	
STRONTIUM	ug/L	Dissolved	708		330		344		236		207	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	410		20	U	20	U	29.9		83.7	
ZINC	ug/L	Dissolved	348		20	U	20	U	26.4		73	

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-5		MW-6		MW-7		MW-8		MW-9	
	Field Sample ID		A02MW50001		A02MW060001		A02MW070001		A02MW080001		A02MW090001	
	Sample Date		8/22/2011		8/12/2011		8/12/2011		8/8/2011		8/8/2011	
	Purpose		Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U	94.3	J
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	53.7		23.3	J	97.3		48.8	J	31.8	J
BARIUM	ug/L	Dissolved	54.6		19.2	J	100		47	J	31.4	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	96400		116000		92000		198000		85900	
CALCIUM	ug/L	Dissolved	95200		114000		96300		191000		85400	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	5.5	J	4.4	J	7	J	50	U	50	U
COBALT	ug/L	Dissolved	5.6	J	50	U	7.1	J	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	2840		53.6	J	2880		207		1730	
IRON	ug/L	Dissolved	2970		100	U	1080		140		1600	
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	2.2	J
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	21500		47200		27300		48600		23700	
MAGNESIUM	ug/L	Dissolved	21600		46500		28600		47700		23800	
MANGANESE	ug/L	Total	288		673		387		245		304	
MANGANESE	ug/L	Dissolved	292		305		379		236		303	
NICKEL	ug/L	Total	534		259		237		40	U	40	U
NICKEL	ug/L	Dissolved	524		223		238		40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	10800	E	16900	B	49400	B	185000	B	19300	B
SODIUM	ug/L	Dissolved	10600	E	17400	B	49700	B	178000	B	19300	B
STRONTIUM	ug/L	Total	212		347	B	325	B	892		272	
STRONTIUM	ug/L	Dissolved	269		338	B	340	B	845		268	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	8.6	J	425		35.3		20	U	18.9	J
ZINC	ug/L	Dissolved	7.8	J	382		22		20	U	20	U

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-10		MW-11		MW-12		MW-13D		MW-14	
	Field Sample ID	A02MW100001		A02MW110001		A02MW120001		A03AMW13D0001		A03MW14D0001	
	Sample Date	8/12/2011		8/8/2011		8/22/2011		8/11/2011		8/16/2011	
	Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	4	J
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	52		65.2		77		61.8		152	
BARIUM	ug/L	Dissolved	54.6		68.4		76.4		61.3		151	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	124000		114000		62100		50400		39300	
CALCIUM	ug/L	Dissolved	128000		112000		62400		50300		41900	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	13.9	J	50	U	4.2	J	50	U	50	U
COBALT	ug/L	Dissolved	14.6	J	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	3710		2120		802		80.6	J	1610	
IRON	ug/L	Dissolved	3600		2250		217		61.8	J	1260	
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	25800		34000		14300		17600		136000	
MAGNESIUM	ug/L	Dissolved	27200		34100		14200		17600		144000	
MANGANESE	ug/L	Total	955		119		348		183		224	
MANGANESE	ug/L	Dissolved	998		126		344		189		223	
NICKEL	ug/L	Total	566		40	U	246		40	U	40	U
NICKEL	ug/L	Dissolved	577		40	U	227		40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	7070	B	49900	B	2070	E	217000	B	98000	
SODIUM	ug/L	Dissolved	7270	B	47500	B	1960	E	208000	B	105000	
STRONTIUM	ug/L	Total	475	B	492		206		177	B	182	
STRONTIUM	ug/L	Dissolved	479	B	496		183		176	B	193	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	207		7.3	J	46.4		166		273	
ZINC	ug/L	Dissolved	208		20	U	42		168		264	

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-15		MW-16		MW-16		MW-17		MW-18	
		Field Sample ID	A03MW15D0001		A03MW16D0001		A03MW9004		A03MW17D0001		A04BMW180001	
		Sample Date	8/16/2011		8/19/2011		8/19/2011		8/16/2011		8/5/2011	
		Purpose	Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	313		200	U	200	U	200	U	200	U
ALUMINUM	ug/L	Dissolved	121	J	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	4.1	J	10	U	10	U	10	U
ARSENIC	ug/L	Total	6	J	10	U	10	U	3.4	J	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	26.8	J	118		119		78.8		68.3	
BARIUM	ug/L	Dissolved	23	J	116		119		80.8		67.6	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	7090		58400		54900		66400		64200	
CALCIUM	ug/L	Dissolved	6410		52800		56000		69400		63800	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	7.4	J	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	283		1590		1590		1050		37.4	J
IRON	ug/L	Dissolved	36.3	J	1490		1540		293		100	U
LEAD	ug/L	Total	10	U	10	U	10	U	1.6	J	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	2000		63800		62400		20300		37200	
MAGNESIUM	ug/L	Dissolved	1290		59400		63100		20500		37400	
MANGANESE	ug/L	Total	3.8	J	808		811		11.2	J	396	
MANGANESE	ug/L	Dissolved	15	U	774		796		11	J	393	
NICKEL	ug/L	Total	14.7	J	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	11.2	J	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	16.2		15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	143000		154000		153000		301000		122000	
SODIUM	ug/L	Dissolved	151000		147000		155000		314000		124000	B
STRONTIUM	ug/L	Total	59		264		162		311		187	
STRONTIUM	ug/L	Dissolved	61.8		207		202		316		193	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	18.3	J	24.3		24		17.2	J	177	
ZINC	ug/L	Dissolved	20	U	22.8		23.3		17.8	J	180	

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-19		MW-20		MW-21		MW-22		MW-23	
		Field Sample ID	A04BMW190001		A04AMW200001		A04AMW210001		A04AMW220001		A04DMW230001	
		Sample Date	8/4/2011		8/18/2011		8/18/2011		8/5/2011		8/4/2011	
		Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	3150		369		93.9	J	200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	59.6		59.5		72		26.2	J	58.8	
BARIUM	ug/L	Dissolved	43.8	J	57.4		72		36.4	J	54.5	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	1.1	J	5	U	5	U	5	U
CALCIUM	ug/L	Total	152000		91800		80100		69700		88200	
CALCIUM	ug/L	Dissolved	65300		91900		110000		74200		92800	
CHROMIUM, TOTAL	ug/L	Total	8	J	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	12.2	J	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	3800		250		64.9	J	556		928	
IRON	ug/L	Dissolved	100	U	28.7	J	100	U	962		679	
LEAD	ug/L	Total	8.7	J	2.1	J	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	64700		20900		25500		24800		22400	
MAGNESIUM	ug/L	Dissolved	29300		20300		36500		24800		21800	
MANGANESE	ug/L	Total	351		22.5		4.3	J	90.9		804	
MANGANESE	ug/L	Dissolved	15	U	15	U	5.1	J	117		728	
NICKEL	ug/L	Total	19.6	J	40	U	40	U	190		20.6	J
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	132		22.1	J
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	63400		46500		207000		39900		19300	
SODIUM	ug/L	Dissolved	62000		46200		223000		36000	B	18100	
STRONTIUM	ug/L	Total	409		195		177		350		341	
STRONTIUM	ug/L	Dissolved	326		206		608		384		364	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	4.7	J	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	70.9		265		64.9		10.7	J	117	
ZINC	ug/L	Dissolved	20	U	251		20	U	20	U	104	

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-24		MW-25		MW-25		MW-26		MW-600D	
	Field Sample ID		A04DMW240001		A04BMW250001		A04BMW9003		A04BMW260001		A02MW600D0001	
	Sample Date		8/4/2011		8/12/2011		8/12/2011		8/10/2011		8/22/2011	
	Purpose		Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	67.9		109		110		54.5		192	
BARIUM	ug/L	Dissolved	67.3		108		105		59.1		197	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	1.7	J	1.6	J	5	U	1.2	J
CADMIUM	ug/L	Dissolved	5	U	1.5	J	1.5	J	5	U	1.2	J
CALCIUM	ug/L	Total	104000		146000		145000		83000		380000	
CALCIUM	ug/L	Dissolved	110000		146000		143000		85500		369000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	767		61.6	J	54.3	J	166		648	
IRON	ug/L	Dissolved	612		72.9	J	58.6	J	52.9	J	322	
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	16.4	
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	1.5	J
MAGNESIUM	ug/L	Total	31700		47800		47100		22100		152000	
MAGNESIUM	ug/L	Dissolved	32500		48300		47300		23000		149000	
MANGANESE	ug/L	Total	110		863		856		145		353	
MANGANESE	ug/L	Dissolved	104		865		846		115		353	
NICKEL	ug/L	Total	15.8	J	103		103		40	U	40	U
NICKEL	ug/L	Dissolved	14.6	J	103		101		40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	77600		888000	B	885000	B	325000	B	1830000	E
SODIUM	ug/L	Dissolved	71300		836000	B	854000	B	321000	B	1840000	E
STRONTIUM	ug/L	Total	495		892	B	892	B	373		1280	
STRONTIUM	ug/L	Dissolved	522		868	B	841	B	382		1340	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	13.9	J	192		193		59.4		614	
ZINC	ug/L	Dissolved	11.3	J	196		190		57.5		611	

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-601D		MW-602D		MW-603D		MW-604D		MW-605D	
	Field Sample ID	A04AMW610D0001		A04MW602D0001		A04AMW603D0001		A04MW604D0001		A04BMW605D0001	
	Sample Date	8/18/2011		8/11/2011		8/5/2011		8/10/2011		8/10/2011	
	Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	432		791		200		725		937	
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	6.3	J	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	12.9		10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	17.6	J	29.2	J	73.6		78.7		53	
BARIUM	ug/L	Dissolved	19.1	J	26	J	30.7	J	74.3		46.5	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	3.8	J	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	101000		107000		125000		106000		85700	
CALCIUM	ug/L	Dissolved	84600		86100		129000		98600		68100	
CHROMIUM, TOTAL	ug/L	Total	5.8	J	10	U	11.3		10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	5.2	J	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	530		861		50700		552		957	
IRON	ug/L	Dissolved	74.7	J	57.5	J	932		100	U	132	
LEAD	ug/L	Total	5.5	J	10	U	10	U	2.5	J	5	J
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	38900		46200		47900		28400		40800	
MAGNESIUM	ug/L	Dissolved	32000		39500		46500		25800		34300	
MANGANESE	ug/L	Total	132		100		207		114		413	
MANGANESE	ug/L	Dissolved	76.3		8.4	J	125		33.6		278	
NICKEL	ug/L	Total	40	U	40	U	108		40	U	24.6	J
NICKEL	ug/L	Dissolved	40	U	40	U	70.8		40	U	19.3	J
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	125000		79100	B	30600		307000	B	62200	B
SODIUM	ug/L	Dissolved	119000		76300	B	30900		296000	B	60100	B
STRONTIUM	ug/L	Total	559		504	B	478		419		190	
STRONTIUM	ug/L	Dissolved	488		500	B	478		413		178	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	9.8	J	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	39.2		38.9		996		170		73.1	
ZINC	ug/L	Dissolved	14.8	J	20.5		134		118		22.5	

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-605D		MW-606D		MW-606DR		MW-607D		MW-701DD	
	Field Sample ID	A04BMW9000		A03MW606D0001		A03MW606DR0001		A03MW607D0001		A04AMW701DD0001	
	Sample Date	8/10/2011		8/16/2011		8/15/2011		8/19/2011		8/19/2011	
	Purpose	Field Duplicate		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	1620		200	U	200	U	15200		236	
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	2580		80.8	
ANTIMONY	ug/L	Total	10	U	10	U	10	U	5.8	J	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	4.4	J	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	9.2	J	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	57.7		158		74.4		132		26.1	J
BARIUM	ug/L	Dissolved	45.6	J	155		75.4		64.1		23.1	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	0.67	J	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	1	J	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	94900		45300		134000		719000		141000	
CALCIUM	ug/L	Dissolved	67200		44300		138000		159000		141000	
CHROMIUM, TOTAL	ug/L	Total	3.2	J	10	U	10	U	17.1		10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	6.5	J	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	6.4	J	25	U	25	U	21.6	J	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	1570		1570		727		16200		275	
IRON	ug/L	Dissolved	121		1420		584		2440		75.2	J
LEAD	ug/L	Total	8.6	J	10	U	10	U	41.8		10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	6	J	10	U
MAGNESIUM	ug/L	Total	44700		135000		83000		211000		60700	
MAGNESIUM	ug/L	Dissolved	34000		135000		84300		101000		58100	
MANGANESE	ug/L	Total	489		177		170		2380		20.6	
MANGANESE	ug/L	Dissolved	278		176		163		561		12.5	J
NICKEL	ug/L	Total	28.6	J	40	U	40	U	19.3	J	40	U
NICKEL	ug/L	Dissolved	19.8	J	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	60100	B	109000		197000		61600		254000	
SODIUM	ug/L	Dissolved	62400	B	109000		200000		60200		252000	
STRONTIUM	ug/L	Total	188		240		1740		830		2650	
STRONTIUM	ug/L	Dissolved	180		213		1830		412		2590	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	15.3	J	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	109		269		61		305		20	U
ZINC	ug/L	Dissolved	21.2		184		13.3	J	47.7		7.1	J

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Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-702DD		MW-703DD		MW-704DD		MW-704DD		MW-705D	
		Field Sample ID	A04MW702DD0001		A03MW703DD0001		A04BMW9001		A04DMW704DD0001		MW705D0001	
		Sample Date	8/11/2011		8/19/2011		8/10/2011		8/10/2011		8/9/2011	
		Purpose	Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	2010		200	U	200	U	80.3	J
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	50	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	50	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	2.7	J	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	10.9	J	55		55.7		56.9		25.8	J
BARIUM	ug/L	Dissolved	11.4	J	45.7	J	55.4		55.8		26.9	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	468000		382000		271000		274000		125000	
CALCIUM	ug/L	Dissolved	473000		265000		273000		275000		94200	
CHROMIUM, TOTAL	ug/L	Total	10	U	11.5		10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	11.4	J	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	28.4	J	4210		100	U	30.2	J	48.2	J
IRON	ug/L	Dissolved	100	U	521		100	U	100	U	100	U
LEAD	ug/L	Total	10	U	10.8		10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	181000		110000		106000		106000		31000	
MAGNESIUM	ug/L	Dissolved	171000		76000		107000		107000		35200	
MANGANESE	ug/L	Total	54.2		462		65.5		69.4		9.5	J
MANGANESE	ug/L	Dissolved	52.4		18.7		68.8		66.7		20.6	
NICKEL	ug/L	Total	40	U	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	75	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	75	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	204000	B	191000		107000	B	105000	B	174000	
SODIUM	ug/L	Dissolved	176000	B	187000		109000	B	112000	B	194000	
STRONTIUM	ug/L	Total	9620	B	15200		4840		4990		1680	
STRONTIUM	ug/L	Dissolved	9540	B	15300		4730		4890		1310	
THALLIUM	ug/L	Total	4.4	J	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	13.1	J	41.9		20	U	20	U	20	U
ZINC	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-705DD		MW-706DD		MW-707DD		MW-708DD		MW-708DD	
		Field Sample ID	MW705DD0001		A04BMW706D0001		A04BMW707DD0001		A04DMW708DD0001		A04DMW9002	
		Sample Date	8/9/2011		8/15/2011		8/18/2011		8/11/2011		8/11/2011	
		Purpose	Original data		Original data		Original data		Original data		Field Duplicate	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	126	J	2320		89.5	J	151	J
ALUMINUM	ug/L	Dissolved	200	U	200	U	840		200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	12.5		10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	8	J	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	2.6	J	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	24.7	J	16	J	183		12.4	J	13.3	J
BARIUM	ug/L	Dissolved	23.9	J	15.4	J	172		11.6	J	11.6	J
BERYLLIUM	ug/L	Total	5	U	5	U	0.99	J	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	531000		520000		1200000	E	178000		187000	
CALCIUM	ug/L	Dissolved	372000		560000		1260000	E	182000		177000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	4.2	J	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	9.2	J	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	7.3	J	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	14.4	J	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	36.1	J	393		3710		234		268	
IRON	ug/L	Dissolved	100	U	340		1400		144		147	
LEAD	ug/L	Total	10	U	10	U	2	J	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	287000		112000		544000		52200		55600	
MAGNESIUM	ug/L	Dissolved	234000		127000		586000		51000		49400	
MANGANESE	ug/L	Total	14.5	J	105		862		19.4		21.4	
MANGANESE	ug/L	Dissolved	15	U	102		489		11	J	10.2	J
NICKEL	ug/L	Total	40	U	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	11.2	J	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	983000		166000		3700000		113000	B	115000	B
SODIUM	ug/L	Dissolved	449000		170000		4180000		114000	B	113000	B
STRONTIUM	ug/L	Total	13500		7350		19000	E	1890	B	1980	B
STRONTIUM	ug/L	Dissolved	8860		7700		21700	E	1970	B	1940	B
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	4.5	J	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	20	U	20	U	47.3		20	U	20	U
ZINC	ug/L	Dissolved	20	U	20	U	19.6	J	20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-709DD		MW-710D		MW-710DD		MW-711D		MW-711DD	
	Field Sample ID		A04DMW709DD0001		A04DMW710D0001		A04DMW710DD0001		A04DMW711D0001		A04DMW711DD0001	
	Sample Date		8/10/2011		8/15/2011		8/18/2011		8/9/2011		8/15/2011	
	Purpose		Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	102	J	200	U	346		200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	73.4		30.6	J	51.9		53.3		39.4	J
BARIUM	ug/L	Dissolved	68.5		47.6	J	51		56		32	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	125000		117000		195000		120000		455000	
CALCIUM	ug/L	Dissolved	121000		113000		203000		118000		483000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	121		7.6	J
COPPER	ug/L	Dissolved	25	U	25	U	25	U	104		25	U
IRON	ug/L	Total	239		94	J	300		93.2	J	81	J
IRON	ug/L	Dissolved	127		150		167		33.8	J	100	U
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	38500		32100		34000		39100		225000	
MAGNESIUM	ug/L	Dissolved	37800		31400		34100		38900		238000	
MANGANESE	ug/L	Total	35.7		25.2		29.4		55.7		11.7	J
MANGANESE	ug/L	Dissolved	25.6		26.4		26		59.6		6.2	J
NICKEL	ug/L	Total	40	U	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	203000	B	214000		198000		165000		673000	
SODIUM	ug/L	Dissolved	203000	B	205000		214000		164000		733000	
STRONTIUM	ug/L	Total	1270		615		1120		615		7690	
STRONTIUM	ug/L	Dissolved	1240		584		1130		572		8640	
THALLIUM	ug/L	Total	4.4	J	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	20	U	20	U	11.3	J	20	U	20	U
ZINC	ug/L	Dissolved	20	U	20	U	12.4	J	20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-712DD		MW-713D	
	Field Sample ID		A04DMW712DD0001		A04DMW713D0001	
	Sample Date		8/18/2011		8/4/2011	
	Purpose		Original data		Original data	
Parameter (Method 6010C)	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**
ALUMINUM	ug/L	Total	110	J	280	
ALUMINUM	ug/L	Dissolved	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U
ARSENIC	ug/L	Total	10	U	14.2	
ARSENIC	ug/L	Dissolved	10	U	9.3	J
BARIUM	ug/L	Total	62.4		217	
BARIUM	ug/L	Dissolved	60.8		221	
BERYLLIUM	ug/L	Total	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U
CALCIUM	ug/L	Total	169000		146000	
CALCIUM	ug/L	Dissolved	166000		141000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U
COBALT	ug/L	Total	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U
COPPER	ug/L	Total	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U
IRON	ug/L	Total	145		583	
IRON	ug/L	Dissolved	43.8	J	259	
LEAD	ug/L	Total	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U
MAGNESIUM	ug/L	Total	47600		60900	
MAGNESIUM	ug/L	Dissolved	47800		59200	
MANGANESE	ug/L	Total	15.3		134	
MANGANESE	ug/L	Dissolved	9.7	J	113	
NICKEL	ug/L	Total	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U
SILVER	ug/L	Total	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U
SODIUM	ug/L	Total	279000		74700	
SODIUM	ug/L	Dissolved	276000		73000	
STRONTIUM	ug/L	Total	887		1300	
STRONTIUM	ug/L	Dissolved	878		1270	
THALLIUM	ug/L	Total	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U
ZINC	ug/L	Total	84.4		8.8	J
ZINC	ug/L	Dissolved	79.3		20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-1			MW-2			MW-4			MW-7			MW-9		
		Field Sample ID	MW-1F-1210			MW-2-1210			MW-04-1210			MW-7-1210			MW-9-1210		
		Sample Date	10/24/12			10/24/12			10/24/12			10/23/12			10/24/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	4	J		25	J		4.3	J	J	3.3			10	J	
ALUMINUM	ug/l	Dissolved	50	U		7.9	J		50	U	U	50			2.1	J	
ANTIMONY	ug/l	Total	2.5	U		2.5	U		2.5	U	U	2.5			2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U	U	2.5			2.5	U	
ARSENIC	ug/l	Total	1.5	U		1.5	U		1	J	U	1.5			0.74	J	
ARSENIC	ug/l	Dissolved	1.5	U		1.5	U		1.2	J	J	0.64			1.5	U	
BARIUM	ug/l	Total	36			58			38			110			36		
BARIUM	ug/l	Dissolved	36			51			31			100			34		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U	U	1			1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U	U	1			1	U	
CADMIUM	ug/l	Total	0.32	J		1	U		1	U	J	0.66			1	U	
CADMIUM	ug/l	Dissolved	1	U		1	U		0.3	J	J	0.3			1	U	
CALCIUM	ug/l	Total	100000			80000			80000			120000			100000		
CALCIUM	ug/l	Dissolved	120000			74000			72000			110000			100000		
CHROMIUM, TOTAL	ug/l	Total	10	U		1.2	J		0.52	J	J	0.8			1	J	
CHROMIUM, TOTAL	ug/l	Dissolved	3.3	J		2.5	J		2	J	J	3			3.2	J	
COBALT	ug/l	Total	5.7			5.8			0.29	J		15			0.72	J	
COBALT	ug/l	Dissolved	5.8			0.34	J		1	J		14			0.78	J	
COPPER	ug/l	Total	2.8	J		2.8	J		0.88	J	J	0.94			1.1	J	
COPPER	ug/l	Dissolved	2.3	J		0.39	J		0.97	J	J	0.6			0.54	J	
IRON	ug/l	Total	200	U		130	J		200			3600			1300		
IRON	ug/l	Dissolved	300			250			200	U		2600			1400		
LEAD	ug/l	Total	1	U		1.2			0.27	J	U	1			0.36	J	
LEAD	ug/l	Dissolved	1	U		1	U		1	U	U	1			1	U	
MAGNESIUM	ug/l	Total	21000			20000			25000			38000			37000		
MAGNESIUM	ug/l	Dissolved	24000			19000			24000			35000			40000		
MANGANESE	ug/l	Total	260			160			120			660			290		
MANGANESE	ug/l	Dissolved	250			140			68			640			280		
MERCURY	ug/l	Total	0.2	U		0.037	J		0.051	J	U	0.2			0.072	J	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U	U	0.2			0.2	U	
NICKEL	ug/l	Total	80			17			5.4	J		400			7.9	J	
NICKEL	ug/l	Dissolved	87			2.3	J		3.5	J		410			9.5	J	
POTASSIUM	ug/l	Total	2700			4500			2900			2800			3200		
POTASSIUM	ug/l	Dissolved	2300			4200			5600			2600			3400		
SELENIUM	ug/l	Total	5	U		5	U		5	U	U	5			1.6	J	
SELENIUM	ug/l	Dissolved	5	U		5	U		5	U	U	5			5	U	
SILVER	ug/l	Total	0.23	J		1.5	U		1.5	U	U	1.5			1.5	U	
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U	U	1.5			1.5	U	
SODIUM	ug/l	Total	180000			15000			29000			39000			13000		
SODIUM	ug/l	Dissolved	210000			16000			31000			39000			19000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	1.2	J		2	U		2	U	J	0.66			1	J	
THALLIUM	ug/l	Dissolved	0.22	J		5	U		5	U	U	5			5	U	
VANADIUM	ug/l	Total	4	U		4	U		4	U	U	4			4	U	
VANADIUM	ug/l	Dissolved	4	U		4	U		0.55	J	U	4			0.54	J	
ZINC	ug/l	Total	280			11	J		74			55			56		
ZINC	ug/l	Dissolved	230			10	J		71		J	46			22	J	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-11			MW-13D			MW-16			MW-18			MW-19		
		Field Sample ID	MW-11-1210			MW-13D-1210			MW-16-1210			MW-18-1210			MW-19-1210		
		Sample Date	10/24/12			10/25/12			10/22/12			10/25/12			10/22/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	8	J		5	J		33	J		7	J		71		
ALUMINUM	ug/l	Dissolved	2.4	J		50	U		14	J		2	J		6.5	J	
ANTIMONY	ug/l	Total	2.5	U		0.94	J		2.5	U		1.5	J		2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U		0.6	J		2.5	U	
ARSENIC	ug/l	Total	1.4	J		0.82	J		1.1	J		2.2			1.5	U	
ARSENIC	ug/l	Dissolved	1.4	J		0.83	J		0.67	J		1.7			1.5	U	
BARIUM	ug/l	Total	86			100			190			90			37		
BARIUM	ug/l	Dissolved	79			90			140			82			33		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CADMIUM	ug/l	Total	1	U		1.8			2.1			1.3			0.89	J	
CADMIUM	ug/l	Dissolved	1	U		1.1			0.87	J		1			0.44	J	
CALCIUM	ug/l	Total	250000			78000			61000			120000			120000		
CALCIUM	ug/l	Dissolved	230000			78000			57000			120000			100000		
CHROMIUM, TOTAL	ug/l	Total	1.5	J		1.3	J		2.7	J		1.3	J		3.1	J	
CHROMIUM, TOTAL	ug/l	Dissolved	6.5	J		2.3	J		6	J		2.8	J		4.3	J	
COBALT	ug/l	Total	4.2	J		2.2	J		2.6	J		8.9			0.29	J	
COBALT	ug/l	Dissolved	3.7			2	J		2.2			8.3			0.34	J	
COPPER	ug/l	Total	1.2	J		3.6	J		5.2			1.3	J		6.8		
COPPER	ug/l	Dissolved	0.52	J		2.2	J		2.5	J		1.2	J		2.4	J	
IRON	ug/l	Total	4200			400			1200			340			190	J	
IRON	ug/l	Dissolved	4400			250			620			120	J		180	J	
LEAD	ug/l	Total	0.4	J		1.1			0.32	J		1	U		0.86	J	
LEAD	ug/l	Dissolved	1	U		1	U		1	U		1	U		0.34	J	
MAGNESIUM	ug/l	Total	59000			30000			76000			71000			44000		
MAGNESIUM	ug/l	Dissolved	62000			29000			71000			69000			36000		
MANGANESE	ug/l	Total	1400			310			1700			530			27		
MANGANESE	ug/l	Dissolved	1300			290			1100			490			11		
MERCURY	ug/l	Total	0.046	J		0.059	J		0.2	U		0.05	J		0.2	U	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	64			23			29			210			8.2	J	
NICKEL	ug/l	Dissolved	53			21			26			220			8	J	
POTASSIUM	ug/l	Total	2300			8200			5000			5100			3500		
POTASSIUM	ug/l	Dissolved	2400			8800			5000			5000			3500		
SELENIUM	ug/l	Total	5	U		2.7	J		5	U		9.4			1.7	J	
SELENIUM	ug/l	Dissolved	5	U		2.9	J		5	U		9.7			5	U	
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	23000			170000			150000			43000			160000		
SODIUM	ug/l	Dissolved	25000			180000			150000			45000			110000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	2	U		0.42	J		2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	5	U		0.17	J		5	U		5	U		5	U	
VANADIUM	ug/l	Total	4	U		4	U		3.6	J		0.73	J		0.54	J	
VANADIUM	ug/l	Dissolved	0.86	J		0.98	J		2.2	J		1.6	J		4	U	
ZINC	ug/l	Total	18	J		190			83			110			80		
ZINC	ug/l	Dissolved	9.2	J		160			52			110			51		

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Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
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Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-20			MW-21			MW-22			MW-23			MW-24		
		Field Sample ID	MW-20-1210			MW-21-1210			MW-22-1210			MW-23-1210			MW-24-1210		
		Sample Date	10/23/12			10/25/12			10/23/12			10/24/12			10/24/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	26	J		7.4	J		9.5	J		7.5	J		4.9	J	
ALUMINUM	ug/l	Dissolved	3.6	J		2	J		4.9	J		50	U		50	U	
ANTIMONY	ug/l	Total	2.5	U		2.5	U		2.5	U		2.5	U		2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U		2.5	U		2.5	U	
ARSENIC	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
ARSENIC	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
BARIUM	ug/l	Total	33			82			150			62			58		
BARIUM	ug/l	Dissolved	30			73			140			53			58		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CADMIUM	ug/l	Total	0.55	J		0.38	J		0.43	J		0.41	J		1	U	
CADMIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CALCIUM	ug/l	Total	90000			83000			110000			110000			76000		
CALCIUM	ug/l	Dissolved	84000			82000			98000			110000			86000		
CHROMIUM, TOTAL	ug/l	Total	1.6	J		0.45	J		0.74	J		0.5	J		0.7	J	
CHROMIUM, TOTAL	ug/l	Dissolved	3.3	J		2.2	J		4.1	J		1.5	J		1.7	J	
COBALT	ug/l	Total	0.27	J		0.28	J		0.65	J		2	J		0.25	J	
COBALT	ug/l	Dissolved	0.43	J		0.38	J		0.8	J		1.7	J		0.4	J	
COPPER	ug/l	Total	1.8	J		4.5	J		17			0.71	J		1.7	J	
COPPER	ug/l	Dissolved	1.7	J		3.5	J		12			5	U		0.76	J	
IRON	ug/l	Total	200	U		200	U		16000			810			1300		
IRON	ug/l	Dissolved	200	J		200	U		15000			700			1200		
LEAD	ug/l	Total	0.28	J		3.2			1	U		0.3	J		1	U	
LEAD	ug/l	Dissolved	1	U		0.56	J		1	U		1	U		1	U	
MAGNESIUM	ug/l	Total	22000			25000			29000			24000			20000		
MAGNESIUM	ug/l	Dissolved	19000			25000			25000			24000			22000		
MANGANESE	ug/l	Total	5.1			15			340			790			140		
MANGANESE	ug/l	Dissolved	4	J		17			340			740			130		
MERCURY	ug/l	Total	0.2	U		0.031	J		0.2	U		0.053	J		0.035	J	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	7.1	J		2.1	J		21			22			2.8	J	
NICKEL	ug/l	Dissolved	7.8	J		2.9	J		21			24			3.6	J	
POTASSIUM	ug/l	Total	2500			3100			3300			2200			2700		
POTASSIUM	ug/l	Dissolved	2400			3000			3300			2100			2800		
SELENIUM	ug/l	Total	5	U		5	U		5	U		5	U		5	U	
SELENIUM	ug/l	Dissolved	5	U		5	U		5	U		5	U		5	U	
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	15000			260000			13000			28000			110000		
SODIUM	ug/l	Dissolved	14000			250000			8900			27000			91000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	2	U		2	U		2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	5	U		5	U		5	U		5	U		5	U	
VANADIUM	ug/l	Total	4	U		4	U		4	U		4	U		4	U	
VANADIUM	ug/l	Dissolved	4	U		4	U		0.56	J		4	U		0.53	J	
ZINC	ug/l	Total	64			88			21	J		120			22	J	
ZINC	ug/l	Dissolved	53			65			15	J		100			16	J	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-25			MW-600D			MW-601D			MW-602D			MW-603D		
		Field Sample ID	MW-25-1210			MW-600D-1210			601D-1210			602D-1210			MW-603D-1210		
		Sample Date	10/24/12			10/22/12			10/23/12			10/23/12			10/23/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	13	J		3.7	J		6.5	J		60			4.1	J	
ALUMINUM	ug/l	Dissolved	50	U		1.7	J		50	U		2	J		50	U	
ANTIMONY	ug/l	Total	2.5	U		2.5	U		2.5	U		2.5	U		2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		0.64	J		2.5	U		2.5	U	
ARSENIC	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
ARSENIC	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
BARIUM	ug/l	Total	99			160			13	J		26			26		
BARIUM	ug/l	Dissolved	87			140			12	J		23	J		27		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CADMIUM	ug/l	Total	1.6			2			1	U		0.66	J		1		
CADMIUM	ug/l	Dissolved	1			1.1			1	U		1	U		1	U	
CALCIUM	ug/l	Total	120000			350000			100000			110000			130000		
CALCIUM	ug/l	Dissolved	130000			310000			97000			100000			120000		
CHROMIUM, TOTAL	ug/l	Total	1.1	J		1.2	J		1.5	J		1.1	J		0.76	J	
CHROMIUM, TOTAL	ug/l	Dissolved	3.1	J		5.6	J		3.9	J		3.6	J		3.9	J	
COBALT	ug/l	Total	1.1	J		0.96	J		0.62	J		0.28	J		1.8	J	
COBALT	ug/l	Dissolved	1.1	J		1.1	J		1.5	J		0.38	J		2.2		
COPPER	ug/l	Total	10			19			1.8	J		2.3	J		0.73	J	
COPPER	ug/l	Dissolved	8.3			14			1.3	J		1	J		0.47	J	
IRON	ug/l	Total	91	J		420			360			1100			1000		
IRON	ug/l	Dissolved	200	U		480			460			920			940		
LEAD	ug/l	Total	0.66	J		2.8			1	U		0.7	J		1	U	
LEAD	ug/l	Dissolved	0.3	J		2			1	U		1	U		1	U	
MAGNESIUM	ug/l	Total	37000			130000			41000			45000			50000		
MAGNESIUM	ug/l	Dissolved	38000			99000			36000			38000			42000		
MANGANESE	ug/l	Total	800			260			100			62			110		
MANGANESE	ug/l	Dissolved	760			250			95			32			120		
MERCURY	ug/l	Total	0.031	J		0.2	U		0.2	U		0.2	U		0.2	U	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	95			9.2	J		6.4	J		7	J		97		
NICKEL	ug/l	Dissolved	91			9.6	J		5.8	J		4	J		100		
POTASSIUM	ug/l	Total	3400			4000			5100			3700			3900		
POTASSIUM	ug/l	Dissolved	3400			3700			5100			3700			3700		
SELENIUM	ug/l	Total	5	U		5	U		5	U		5	U		5	U	
SELENIUM	ug/l	Dissolved	1.8	J		2	J		5	U		5	U		5	U	
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	0.2	J		0.26	J		1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	680000			2E+06			120000			50000			39000		
SODIUM	ug/l	Dissolved	760000			1E+06			120000			48000			35000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	2	U		0.43	J		2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	5	U		0.19	J		0.62	J		5	U		5	U	
VANADIUM	ug/l	Total	4	U		4	U		4	U		4	U		4	U	
VANADIUM	ug/l	Dissolved	4	U		4	U		4	U		4	U		0.62	J	
ZINC	ug/l	Total	140			460			13	J		49	J		96		
ZINC	ug/l	Dissolved	120			400			14	J		39	J		82		

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Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-607D			MW-711D			MW-711DD			MW-712DD			Seep-1205-01		
		Field Sample ID	MW-607D-1210			711D-1210			711DD-1210			MW-712DD-1210			Seep-1205-01		
		Sample Date	10/22/12			10/23/12			10/23/12			10/22/12			5/7/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	120			34	J		18	J		12	J		200		
ALUMINUM	ug/l	Dissolved	21	J		2.3	J		14	J		2.3	J		200		
ANTIMONY	ug/l	Total	2.5	U		0.94	J		0.53	J		2.5	U		10		
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U		2.5	U		10		
ARSENIC	ug/l	Total	1.5	U		0.96	J		10			1.5	U		10		
ARSENIC	ug/l	Dissolved	0.8	J		1.5	U		10			1.5	U		10		
BARIUM	ug/l	Total	67			44			31			58			53.7		
BARIUM	ug/l	Dissolved	61			39			27			51			54.3		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		5		
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1.2		
CADMIUM	ug/l	Total	1.3			1.5			0.74	J		0.77	J		1.3		
CADMIUM	ug/l	Dissolved	1.2			0.34	J		1	U		0.48	J		1.1		
CALCIUM	ug/l	Total	130000			120000			450000			170000			121000		
CALCIUM	ug/l	Dissolved	110000			100000			410000			170000			116000		
CHROMIUM, TOTAL	ug/l	Total	1.3	J		1.3	J		1.3	J		1.8	J		10		
CHROMIUM, TOTAL	ug/l	Dissolved	5.3	J		3.5	J		1.8	J		4.3	J		10		
COBALT	ug/l	Total	2.2	J		0.66	J		0.86	J		0.29	J		50		
COBALT	ug/l	Dissolved	3.1			0.94	J		1.2	J		0.85	J		50		
COPPER	ug/l	Total	4.8	J		360			11			6.8			232		
COPPER	ug/l	Dissolved	2	J		320			7.2			3.5	J		195		
IRON	ug/l	Total	480			860			150	J		240			51.9		
IRON	ug/l	Dissolved	350			340			240			340			28.5		
LEAD	ug/l	Total	0.84	J		0.45	J		1	U		1	U		1.9		
LEAD	ug/l	Dissolved	0.34	J		1	U		0.39	J		0.28	J		1.8		
MAGNESIUM	ug/l	Total	99000			35000			170000			49000			32000		
MAGNESIUM	ug/l	Dissolved	85000			27000			150000			43000			31600		
MANGANESE	ug/l	Total	510			100			94			7.1			19.2		
MANGANESE	ug/l	Dissolved	430			94			64			6			13.2		
MERCURY	ug/l	Total	0.2	U		0.2	U		0.2	U		0.2	U		0.2		
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2		
NICKEL	ug/l	Total	8.7	J		12			13			10	J		40		
NICKEL	ug/l	Dissolved	8.9	J		13			13			10			40		
POTASSIUM	ug/l	Total	7400			4400			25000			4400					
POTASSIUM	ug/l	Dissolved	7200			3900			25000			4400					
SELENIUM	ug/l	Total	5	U		5	U		22			5	U		15		
SELENIUM	ug/l	Dissolved	5	U		1.6	J		22			5	U		15		
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		10		
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		10		
SODIUM	ug/l	Total	100000			110000			650000			250000			268000		
SODIUM	ug/l	Dissolved	97000			89000			560000			300000			265000		
STRONTIUM	ug/l	Total													504		
STRONTIUM	ug/l	Dissolved													497		
THALLIUM	ug/l	Total	2	U		2	U		2	U		2	U		20		
THALLIUM	ug/l	Dissolved	5	U		5	U		5	U		5	U		20		
VANADIUM	ug/l	Total	0.56	J		4	U		4	U		4	U		50		
VANADIUM	ug/l	Dissolved	1	J		0.55	J		4	U		1.1	J		50		
ZINC	ug/l	Total	77			90			22	J		120			85.8		
ZINC	ug/l	Dissolved	23	J		75			17	J		100			74.4		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	Seep-1205-02			Seep-1205-03			SEEP-1210-1			SEEP-1210-2			SEEP-1210-3		
		Field Sample ID	Seep-1205-02			Seep-1205-03			Seep-1210-1			Seep-1210-2			Seep-1210-3		
		Sample Date	5/7/12			5/7/12			10/25/12			10/25/12			10/25/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	200			200			22	J		44	J		3.8	J	
ALUMINUM	ug/l	Dissolved	200			200			50	U		3.5	J		1.5	J	
ANTIMONY	ug/l	Total	10			10			2.5	U		2.5	U		2.5	U	
ANTIMONY	ug/l	Dissolved	10			10			2.5	U		2.5	U		2.5	U	
ARSENIC	ug/l	Total	10			10			1.5	U		1.5	U		1.5	U	
ARSENIC	ug/l	Dissolved	10			10			1.5	U		0.8	J		1.5	U	
BARIUM	ug/l	Total	38.3			31.7			45			29			52		
BARIUM	ug/l	Dissolved	38.1			31.8			43			25	J		45		
BERYLLIUM	ug/l	Total	5			5			1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	5			5			1	U		1	U		1	U	
CADMIUM	ug/l	Total	5			5			0.38	J		1	U		0.28	J	
CADMIUM	ug/l	Dissolved	5			5			1	U		1	U		1	U	
CALCIUM	ug/l	Total	86600			103000			120000			80000			120000		
CALCIUM	ug/l	Dissolved	87300			102000			120000			78000			120000		
CHROMIUM, TOTAL	ug/l	Total	10			10			0.55	J		0.42	J		0.45	J	
CHROMIUM, TOTAL	ug/l	Dissolved	10			10			2.3	J		1.9	J		1.8	J	
COBALT	ug/l	Total	50			50			0.29	J		0.26	J		0.36	J	
COBALT	ug/l	Dissolved	50			50			0.28	J		0.43	J		0.45	J	
COPPER	ug/l	Total	239			25			3.1	J		3.3	J		3.2	J	
COPPER	ug/l	Dissolved	206			25			2.8	J		5.3			3.2	J	
IRON	ug/l	Total	100			100			200	U		72	J		200	U	
IRON	ug/l	Dissolved	100			100			200	U		200	U		200	U	
LEAD	ug/l	Total	10			1.7			0.34	J		0.58	J		1	U	
LEAD	ug/l	Dissolved	10			1.6			1	U		1	U		1	U	
MAGNESIUM	ug/l	Total	23000			27700			32000			25000			33000		
MAGNESIUM	ug/l	Dissolved	22700			27700			33000			26000			31000		
MANGANESE	ug/l	Total	18			15			4.6	J		3.5	J		6.6		
MANGANESE	ug/l	Dissolved	18.4			15			3.8	J		1.1	J		6		
MERCURY	ug/l	Total	0.2			0.2			0.035	J		0.05	J		0.029	J	
MERCURY	ug/l	Dissolved	0.2			0.2			0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	40			40			16			3.6	J		19		
NICKEL	ug/l	Dissolved	40			40			15			3.6	J		19		
POTASSIUM	ug/l	Total							2100			2300			2100		
POTASSIUM	ug/l	Dissolved							2200			2300			2000	J	
SELENIUM	ug/l	Total	15			15			1.8	J		5	U		5	U	
SELENIUM	ug/l	Dissolved	15			15			5	U		1.9	J		5	U	
SILVER	ug/l	Total	10			10			1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	10			10			1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	154000			95400			110000			30000			130000		
SODIUM	ug/l	Dissolved	156000			95100			110000			16000			130000		
STRONTIUM	ug/l	Total	296			300											
STRONTIUM	ug/l	Dissolved	303			299											
THALLIUM	ug/l	Total	20			20			2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	20			20			5	U		5	U		5	U	
VANADIUM	ug/l	Total	50			50			4	U		4	U		4	U	
VANADIUM	ug/l	Dissolved	50			50			0.56	J		0.78	J		4	U	
ZINC	ug/l	Total	81.1			54.8			77			25	J		86		
ZINC	ug/l	Dissolved	78.4			56.7			70			15	J		71		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-1		MW-2		MW-2		MW-3		MW-4		MW-5		MW-6	
			Field Sample ID	A02MW010001		A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001		A02MW060001	
			Sample Date	8/23/2011		8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011		8/12/2011	
			Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		1540		342		344		410		352		400		641	
E300	CHLORIDE (AS CL)	mg/L		495		24.4		24.8		11.1		43.3		16.6		31.2	
E300	FLUORIDE	mg/L		0.77		1.2		1.2		4.4		1.2		2.9		2.9	
E300	NITRATE AS NITROUS OXIDE	mg/L		0.03		0.01	B	0.19		0.02	U	0.14		0.02	U	0.05	
E300	NITROGEN, NITRITE	mg/L		4	U	0.2	U	0.2	U	0.1	U	0.1	U	0.1	U	0.04	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		192		36.6		35.6		41.6		44.4	J	73.2		115	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		346		229		229		325		202		254		358	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13D	
			Field Sample ID	A02MW070001		A02MW080001		A02MW090001		A02MW100001		A02MW110001		A02MW120001		A03AMW13D0001	
			Sample Date	8/12/2011		8/8/2011		8/8/2011		8/12/2011		8/8/2011		8/22/2011		8/11/2011	
			Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		495		1260		398		529		626		233		719	
E300	CHLORIDE (AS CL)	mg/L		45.8		296		22.9		25.6		101		1.8		135	
E300	FLUORIDE	mg/L		2.3		0.75		1.9		1.4		0.69		1.5		3.6	
E300	NITRATE AS NITROUS OXIDE	mg/L		0.01	B	0.02	U	0.02	U	0.03		0.02	U	0.01	B	8.40E-03	B
E300	NITROGEN, NITRITE	mg/L		0.04	U	0.2	U	0.02	U	0.04	U	0.2	U	0.02	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		82.2		197		54.7		90.2		61.4		21.1		41.3	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		301		328		247		316		332		196		396	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-14		MW-15		MW-16		MW-16		MW-17		MW-18		MW-19	
			Field Sample ID	A03MW14D0001		A03MW15D0001		A03MW16D0001		A03MW9004		A03MW17D0001		A04BMW180001		A04BMW190001	
			Sample Date	8/16/2011		8/16/2011		8/19/2011		8/19/2011		8/16/2011		8/5/2011		8/4/2011	
			Purpose	Original Data		Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		833		405		744		747		975		619		500	
E300	CHLORIDE (AS CL)	mg/L		60.1		79.9		96		95.4		251		89.9		72.5	
E300	FLUORIDE	mg/L		15.6		13.6		7.1		7.1		0.19		2.6		1.4	
E300	NITRATE AS NITROUS OXIDE	mg/L		0.04		0.02	U	6.40E-03	B	0.1		0.1		7.60E-03	B	0.89	
E300	NITROGEN, NITRITE	mg/L		0.2	U	0.2	U	0.1	U	0.1	U	0.2	U	0.1	U	0.03	B
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		33.1		39.6		53.5	J	53.5	J	69.1		47.8		95	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		698		129		512		503		410		381		400	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-20		MW-21		MW-22		MW-23		MW-24		MW-25		MW-25	
			Field Sample ID	A04AMW200001		A04AMW210001		A04AMW220001		A04DMW230001		A04DMW240001		A04BMW250001		A04BMW9003	
			Sample Date	8/18/2011		8/18/2011		8/5/2011		8/4/2011		8/4/2011		8/12/2011		8/12/2011	
			Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Field Duplicate	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		461		913		387		411		633		3170		3020	
E300	CHLORIDE (AS CL)	mg/L		66.1		231		34.4		23.1		116		1490		1490	
E300	FLUORIDE	mg/L		0.58		0.24		1.5		0.92		0.89		2.1		2	
E300	NITRATE AS NITROUS OXIDE	mg/L		4.1		0.09		0.09		0.08		0.02	U	0.09		0.08	
E300	NITROGEN, NITRITE	mg/L		0.1	U	0.2	U	0.02	U	0.02	U	0.04	U	1	U	1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.06	BJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		25.7		88.1		40.7		52.4		99.1		82.9		83.6	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		270		377		252		252		248		255		254	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name		MW-26		MW-600D		MW-601D		MW-602D		MW-603D		MW-604D		MW-605D	
			Field Sample ID		A04BMW260001		A02MW600D0001		A04AMW610D000		A04MW602D0001		A04AMW603D0001		A04MW604D0001		A04BMW605D000	
			Sample Date		8/10/2011		8/22/2011		8/18/2011		8/11/2011		8/5/2011		8/10/2011		8/10/2011	
			Purpose		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1230		5400		678		645		692		1240		502	
E300	CHLORIDE (AS CL)	mg/L	530		2660		99.2		87.7		53.8		471		38.8	
E300	FLUORIDE	mg/L	1.7		0.13	B	0.66		2.1		1.9		1.2		3.3	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.06		0.2	U	0.64		0.01	B	0.09		0.04		0.57	
E300	NITROGEN, NITRITE	mg/L	0.2	U	40	U	0.1	U	0.1	U	0.1	U	0.2	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.16	BJ	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	63.2		209		90.3		122		125		50.2		89.6	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	159		524		383		320		350		323		354	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-605D		MW-606D		MW-606DR		MW-607D		MW-701DD		MW-702DD		MW-703DD	
	Field Sample ID	A04BMW9000		A03MW606D0001		A03MW606DR0001		A03MW607D0001		04AMW701DD000		04MW702DD000		A03MW703DD000	
	Sample Date	8/10/2011		8/16/2011		8/15/2011		8/19/2011		8/19/2011		8/11/2011		8/19/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	496		848		1200		754		1430		3720		1940	
E300	CHLORIDE (AS CL)	mg/L	38.4		69.3		326		101		488		179		455	
E300	FLUORIDE	mg/L	3.4		14.6		6.6		4.9		0.56		1.2		0.64	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.3		0.01	B	0.02	U	0.04		0.01	B	31.8		0.01	B
E300	NITROGEN, NITRITE	mg/L	0.1	U	0.2	U	0.2	U	0.1	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.12	BJ	0.5	U	0.5	U	0.07	BJ	0.5	U	0.5	U	0.08	BJ
E300	SULFATE (AS SO4)	mg/L	87.2		35.2		96.1		63.8	J	185	J	1960		413	J
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	354		688		405		1490		257		210		382	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-704DD		MW-704DD		MW-705D		MW-705DD		MW-706DD		MW-707DD		MW-708DD	
	Field Sample ID	A04BMW9001		04DMW704DD000		MW705D0001		MW705DD0001		A04BMW706D000		A04BMW707DD000		04DMW708DD000	
	Sample Date	8/10/2011		8/10/2011		8/9/2011		8/9/2011		8/15/2011		8/18/2011		8/11/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	2170		2130		1550		6720		2660		13500		1240	
E300	CHLORIDE (AS CL)	mg/L	206		206		108		2180		247		5750		211	
E300	FLUORIDE	mg/L	0.34		0.34		0.44		0.1	U	0.72		0.4	B	0.56	
E300	NITRATE AS NITROUS OXIDE	mg/L	43.8		44.8		0.01	B	0.02	U	0.02	U	0.44		0.02	U
E300	NITROGEN, NITRITE	mg/L	0.15	B	0.1	B	0.2	U	0.2	U	0.2	U	4	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.13	B	5	U	0.63	BJ	0.5	U
E300	SULFATE (AS SO4)	mg/L	787		782		748		1850		1200		1860	J	357	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	85.6		88.4		184		159		234		1750		231	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-708DD		MW-709DD		MW-710D		MW-710DD		MW-711D		MW-711DD		MW-712DD	
	Field Sample ID	A04DMW9002		04DMW709DD00		04DMW710D000		04DMW710DD00		A04DMW711D000		04DMW711DD00		04DMW712DD00	
	Sample Date	8/11/2011		8/10/2011		8/15/2011		8/18/2011		8/9/2011		8/15/2011		8/18/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1220		1100		960		1340		936		5030		1490	
E300	CHLORIDE (AS CL)	mg/L	207		346		314		352		199		806		463	
E300	FLUORIDE	mg/L	0.6		0.98		1		0.97		0.62		0.64	B	1.2	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.02	U	0.01	B	0.02	U	0.02		8.60E-03	B	0.02	U	0.15	
E300	NITROGEN, NITRITE	mg/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.28	BJ	0.5	U	5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	346		153		73.4		263		150		2170		220	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	232		256		272		270		302		34.4		321	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	**MW-713D**	
		Field Sample ID	04DMW713D000	
		Sample Date	**8/4/2011**	
		Purpose	**Original Data**	
Analytic Method	**Parameter**	**Units**	**Value**	**Lab Qual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	904	
E300	CHLORIDE (AS CL)	mg/L	173	
E300	FLUORIDE	mg/L	0.23	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.07	
E300	NITROGEN, NITRITE	mg/L	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U
E300	SULFATE (AS SO4)	mg/L	76.2	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	419	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-1			MW-2			MW-4			MW-4			MW-7		
Field Sample ID		MW-1F-1210			MW-2-1210			MW-04-1210			MW-04-DUP-1210			MW-7-1210		
Sample Date		10/24/12			10/24/12			10/24/12			10/24/12			10/23/12		
Purpose		original data			original data			original data			duplicate			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	970			320			370			370			570		
CHLORIDE (AS CL)	mg/l	240			18			58			43			66		
FLUORIDE	mg/l	0.84	J		1.1	J		1.5	J		1.8	J		5		
NITRATE AS NITROUS OXIDE	mg/l	1.2	U		1.2	U		1.2	UH	U	1.2	UH	UJ	0.25	UH	UJ
NITROGEN, NITRITE	mg/l	1.2	U		1.2	U		1.2	UH	U	1.2	UH	UJ	0.25	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	2.4	U		2.4	U		2.4	UH	U	2.4	UH	UJ	0.5	UH	UJ
SULFATE (AS SO4)	mg/l	2.4	U		2.4	U		2.4	U		42			110		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	360			230			190			190			300		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	360			230			190			190			300		
BROMIDE	mg/l	0.7	U		0.7	U		0.7	U		0.7	U		0.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-9			MW-11			MW-13D			MW-16			MW-18		
Field Sample ID		MW-9-1210			MW-11-1210			MW-13D-1210			MW-16-1210			MW-18-1210		
Sample Date		10/24/12			10/24/12			10/25/12			10/22/12			10/25/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	520			1100			760			800			720		
CHLORIDE (AS CL)	mg/l	16			32			72			130			40		
FLUORIDE	mg/l	1.5	J		0.53	J		4.9			5.2			2.6		
NITRATE AS NITROUS OXIDE	mg/l	1.2	U		1.2	U		1.2	U		0.3	U		3.6		
NITROGEN, NITRITE	mg/l	1.2	U		1.2	U		1.2	U		0.3	U		1.2	U	
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	2.4	U		2.4	U		2.4	U		0.6	U		2.4	U	
SULFATE (AS SO4)	mg/l	2.4	U		2.4	U		35			92			120		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	310			410			500			480			450		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	310			410			500			480			450		
BROMIDE	mg/l	0.7	U		0.7	U		1.7	U		0.42	U		1.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-19			MW-20			MW-21			MW-22			MW-23		
Field Sample ID		MW-19-1210			MW-20-1210			MW-21-1210			MW-22-1210			MW-23-1210		
Sample Date		10/22/12			10/23/12			10/25/12			10/23/12			10/24/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	610			340			960			410			520		
CHLORIDE (AS CL)	mg/l	100			9.2			240			8.6			54		
FLUORIDE	mg/l	1.6	J		4.8			2.4	U		3.9	H	J	1.5	J	
NITRATE AS NITROUS OXIDE	mg/l	3.7			4.8	H	J	1.2	U		0.22	JH	J	1.2	UH	UJ
NITROGEN, NITRITE	mg/l	0.3	U		0.25	UH	UJ	1.2	U		0.5	UH	UJ	1.2	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	0.6	U		0.5	UH	UJ	2.4	U		1	UH	UJ	2.4	UH	UJ
SULFATE (AS SO4)	mg/l	110			33			77			18			75	H	J
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	250			240			420			320			250		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	250			240			420			320			250		
BROMIDE	mg/l	0.42	U		0.7	U		1.7	U		0.7	U		1.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-24			MW-24			MW-25			MW-600D			MW-601D		
Field Sample ID		MW-24-1210			MW-24-DUP-1210			MW-25-1210			MW-600D-1210			601D-1210		
Sample Date		10/24/12			10/24/12			10/24/12			10/22/12			10/23/12		
Purpose		original data			duplicate			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	560			550			2600			5400			750		
CHLORIDE (AS CL)	mg/l	120			110			43			5100			120		
FLUORIDE	mg/l	2.1	J		1.5	J		2	J		10	U		0.8	JH	J
NITRATE AS NITROUS OXIDE	mg/l	1.2	UH	UJ	1.2	UH	UJ	0.62	JH	J	0.3	U		0.5	UH	UJ
NITROGEN, NITRITE	mg/l	1.2	UH	UJ	1.2	UH	UJ	1.2	UH	UJ	0.3	U	UJ	0.5	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	2.4	UH	UJ	2.4	UH	UJ	2.4	UH	UJ	0.6	U	UJ	1	UH	UJ
SULFATE (AS SO4)	mg/l	38			34			150			210			120		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	270			260			260			510			380		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20			20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	270			260			260			510			380		
BROMIDE	mg/l	1.7	U		1.7	U		1.7	U		0.42	U		1.9		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-602D			MW-603D			MW-607D			MW-711D			MW-711DD		
Field Sample ID		602D-1210			MW-603D-1210			MW-607D-1210			711D-1210			711DD-1210		
Sample Date		10/23/12			10/23/12			10/22/12			10/23/12			10/23/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	600			650			890			560			4500		
CHLORIDE (AS CL)	mg/l	38			76			160			110			910	H	J
FLUORIDE	mg/l	1.8	H	J	4.9			3.3			0.56	JH	J	1.2	JH	J
NITRATE AS NITROUS OXIDE	mg/l	0.5	UH	UJ	0.25	UH	UJ	1.3			0.42	JH	J	1.2	UH	UJ
NITROGEN, NITRITE	mg/l	0.5	UH	UJ	0.25	UH	UJ	0.3	U		1.2	UH	UJ	1.2	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	1	UH	UJ	0.5	UH	UJ	0.6	U		2.4	UH	UJ	2.1	JH	J
SULFATE (AS SO4)	mg/l	130			92			120			94			2900	H	J
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	340			350			440			250			76		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	340			350			440			250			76		
BROMIDE	mg/l	0.76			11			0.42	U		0.7	U		6.9		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

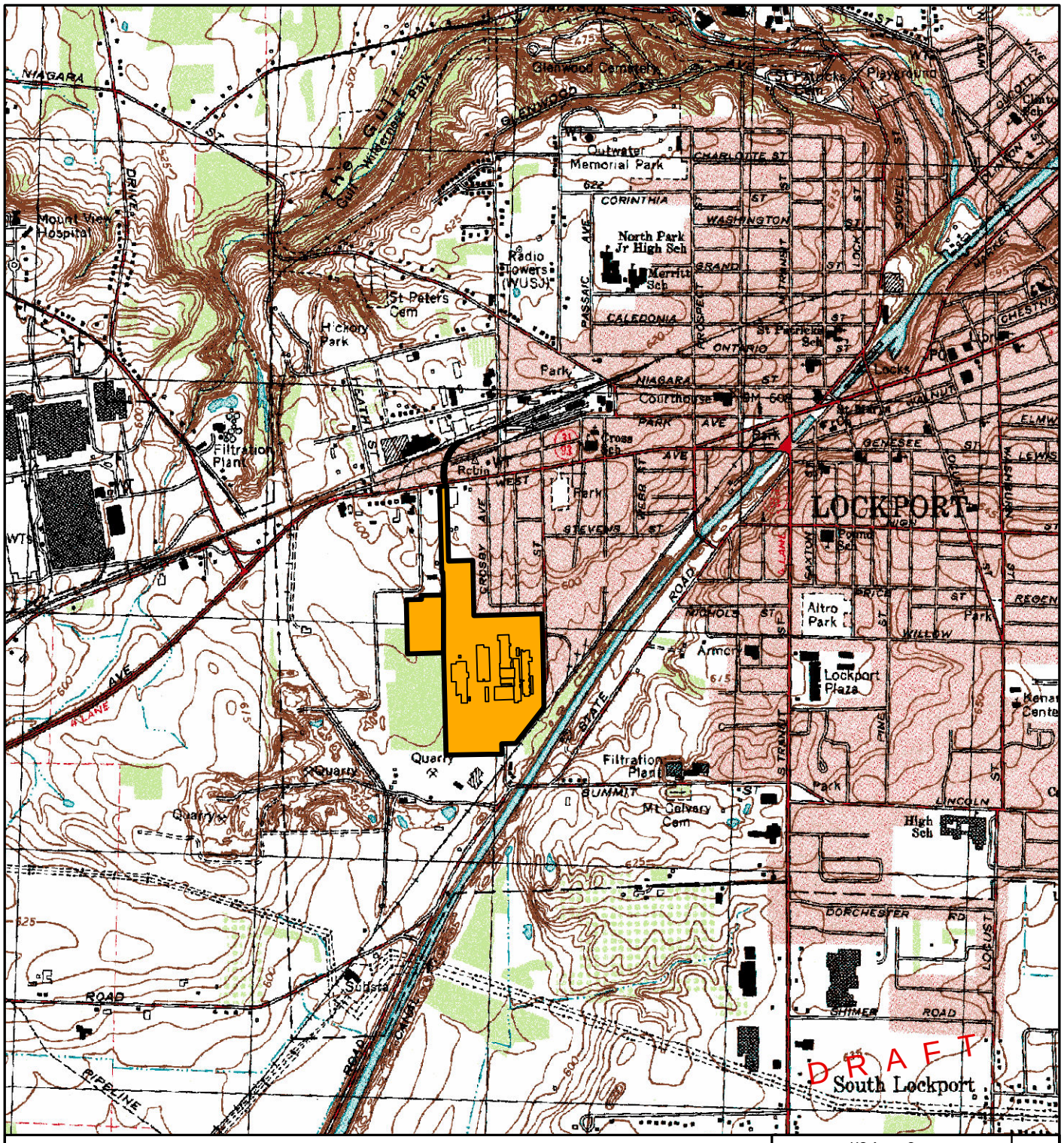
Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-712DD			SEEP-1210-1			SEEP-1210-2			SEEP-1210-3			SURFACE-1210-1		
Field Sample ID		MW-712DD-1210			Seep-1210-1			Seep-1210-2			Seep-1210-3			Surface-1210-1		
Sample Date		10/22/12			10/25/12			10/25/12			10/25/12			10/25/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	1400			760			310			810			360		
CHLORIDE (AS CL)	mg/l	440			170			1.4	J		180			34		
FLUORIDE	mg/l	1.9	J		1.9	J		2.4	U		1.9	J		2.4	U	
NITRATE AS NITROUS OXIDE	mg/l	0.87			0.64	J		1.2	U		0.71	J		1.2	U	
NITROGEN, NITRITE	mg/l	0.3	U		1.2	U		1.2	U		1.2	U		1.2	U	
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	0.6	U		2.4	U		2.4	U		2.4	U		2.4	U	
SULFATE (AS SO4)	mg/l	240			74			49			70			100		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	330			330			220			340			120		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	330			330			240			340			120		
BROMIDE	mg/l	0.42	U		1.7	U		1.7	U		1.7	U		1.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

FIGURES



LEGEND

GUTERL SITE BOUNDARY

0 500 1,000 2,000 Feet

US Army Corps of Engineers®
Buffalo District
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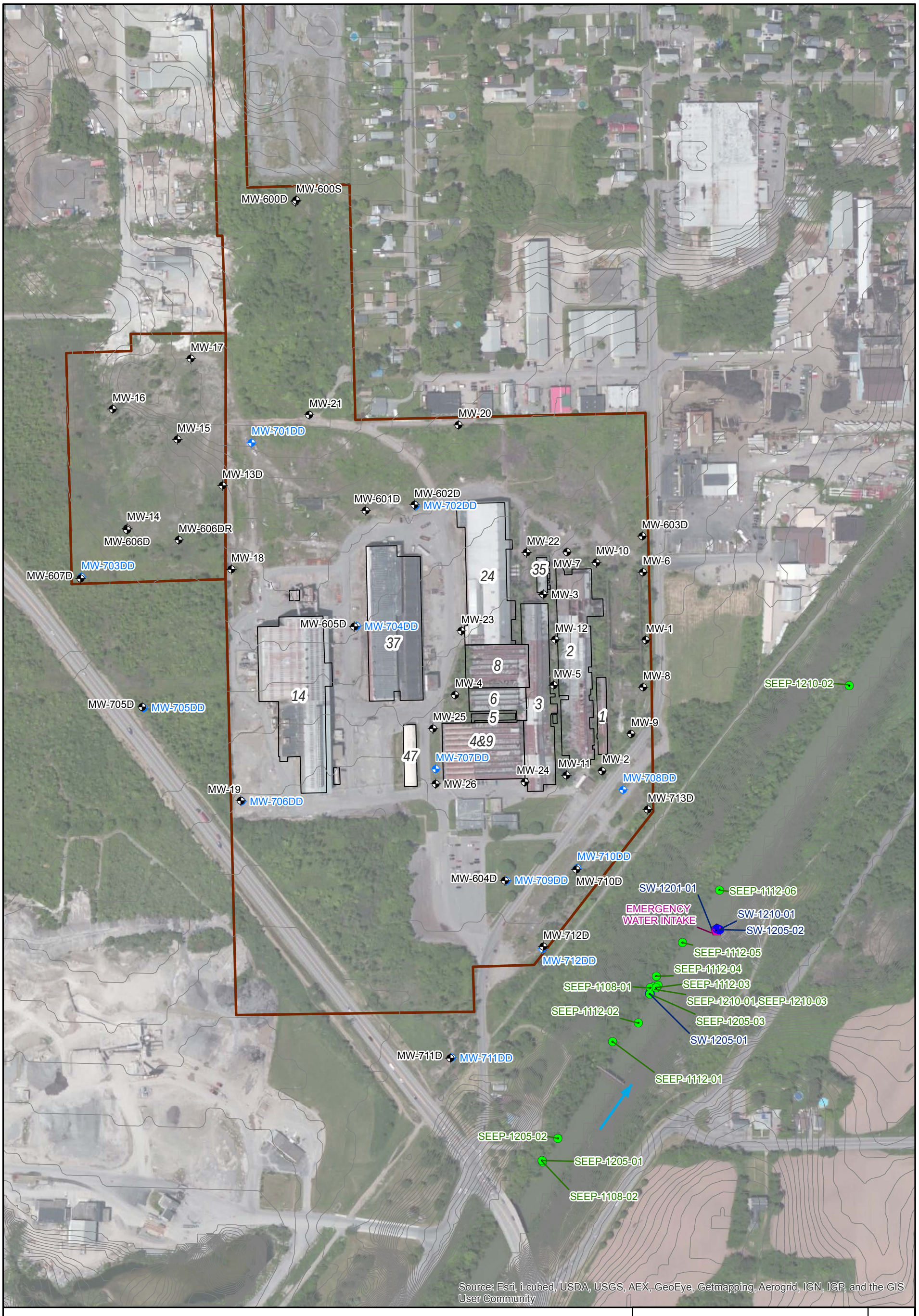
SITE LOCATION MAP

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
11/16/2012	1 inch = 2,000 feet	1-1

Filename: Fig1_Guterl_111_DGIR_Well_Research.pdf



LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- EMERGENCY WATER INTAKE
- SURFACE ELEVATION (1 FT CONTOUR)
- SURFACE WATER (CANAL) FLOW
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

SEEP AND SURFACE WATER (SW) SAMPLE IDENTIFICATION NOMENCLATURE (AAAA-XXYY-ZZ):
- AAAA DENOTES SAMPLE MEDIUM (SEEP OR SW)
- XX DENOTES YEAR
- YY DENOTES MONTH
- ZZ DENOTES THE SAMPLE NUMBER FOR THE SAMPLING EVENT

NOTES:
THE FOLLOWING 10 WELLS WERE SAMPLED ON A QUARTERLY BASIS IN 2012: MW-26, MW-604D, MW-605D, MW-704DD, MW-707DD, MW-708DD, MW-709DD, MW-710D, MW-710DD, AND MW-713D

US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

SITE PLAN WITH MONITORING WELL AND SEEP SAMPLING LOCATIONS (AUGUST 2011 – OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
5/29/2013	1 inch = 300 feet	2-1

File Name: Guterl_162_SSTM_Mon_Wells_2012 Date: 5/29/2013 Time: 9:26:17 AM

MW-600D (602.13)
MW-600S
MW-17 (598.05)
MW-16 (595.83)
MW-15 (597.39)
MW-13D (595.62)
MW-14 (594.12)
MW-606D (593.72)
MW-606DR (594.42)
MW-703DD
MW-607D (592.55)
MW-18 (594.94)
MW-705D (591.29)
MW-705DD
MW-19 (591.23)
MW-706DD
MW-21 (595.73)
MW-701DD
MW-20 (594.44)
(594.54) MW-602D
MW-702DD
MW-601D (594.68)
MW-605D (594.90)
MW-704DD
MW-23 (594.54)
MW-22 (594.19)
MW-7 (593.58)
MW-10 (593.38)
MW-603D (593.21)
MW-3 (593.35)
MW-6 (593.00)
MW-12 (593.58)
MW-1 (592.90)
MW-5 (593.02)
MW-4 (594.18)
MW-8 (592.23)
MW-25 (594.56)
MW-9 (591.32)
MW-707DD
MW-11 (590.23)
MW-2 (590.19)
MW-26 (593.66)
MW-24 (593.25)
MW-708DD
MW-713D (587.34)
MW-709DD
MW-710D
MW-710DD (586.02)
MW-604D (588.92)
MW-712D (574.46)
MW-712DD
SEEP-1108-01 (571.7)
MW-711DD
MW-711D (582.54)
SEEP-1108-02 (570.7)

602 601 600 599 598 597 596 595 594 593 592 591 590 589 588 587 586 585 584 583 582 580 578 576 574 572 581 579 577 575 573 571

0 75 150 300 Feet

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LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (583.68) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

NOTES:
1) CANAL WATER LEVEL WAS 565.7 FEET MSL AT 10:00 AM ON 8/8/2011. CANAL BOTTOM IS APPROXIMATELY 552.7 FEET MSL. CANAL WATER ELEVATION WAS REFERENCED FROM GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

United States Army Corps of Engineers
Buffalo District
BUILDING STRONG

N W E S

POTENTIOMETRIC SURFACE MAP SHALLOW WELLS (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/20/2013	1 inch = 333 feet	3-1A

File Name: Guterl_135_Shallow_GW_Contours_Aug2011 Date: 2/20/2013 Time: 4:25:10 PM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (597.31) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

US Army Corps of Engineers®
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N W E S

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1B

File Name: Guterl_136_Shallow_GW_Ctrs_Jan2012 Date: 2/22/2013 Time: 9:03:44 AM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (588.08) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

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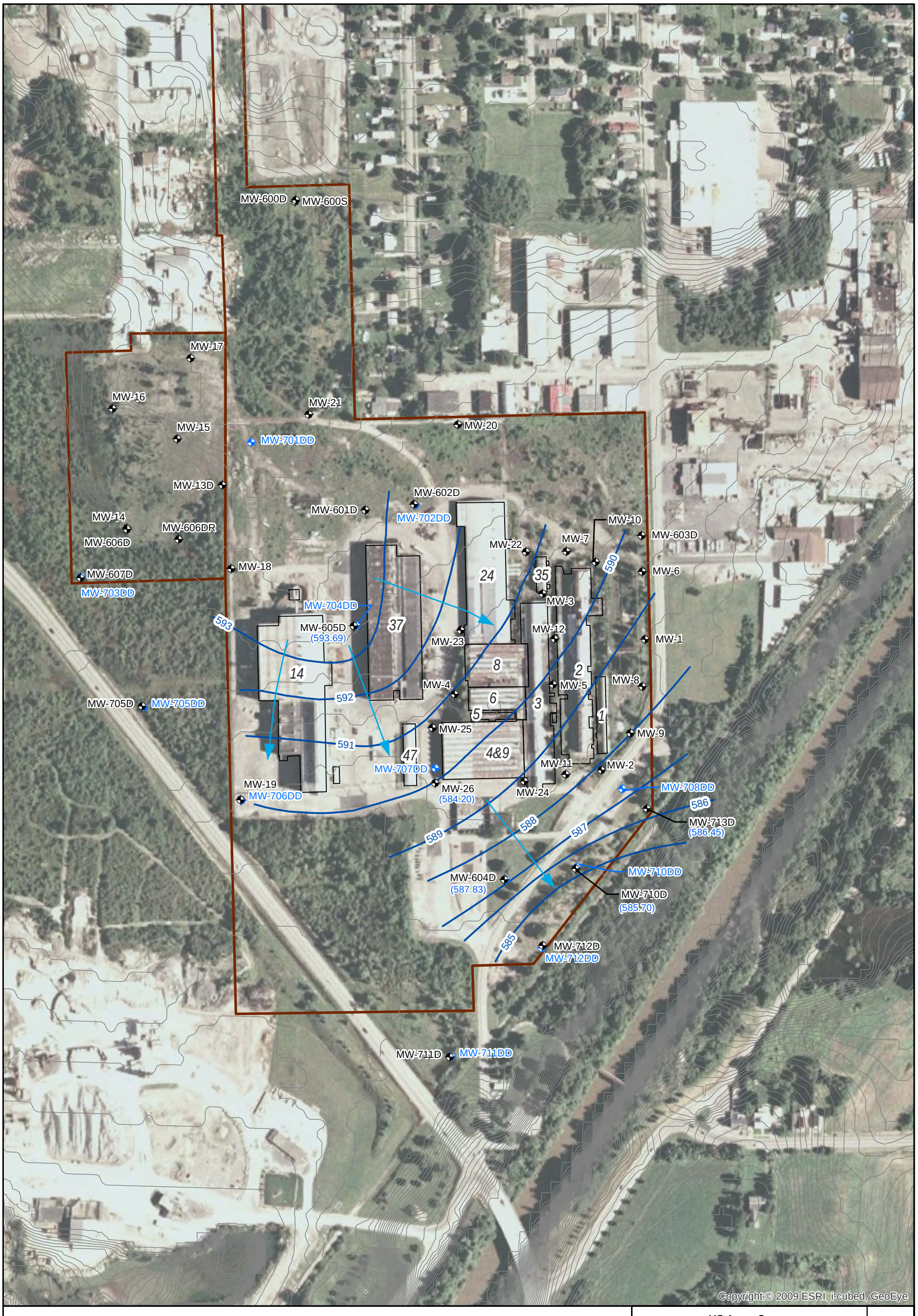
POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1C

File Name: Guterl_137_Shallow_GW_Ctrs_May2012 Date: 2/22/2013 Time: 9:13:43 AM



0 75 150 300 Feet

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (587.83) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

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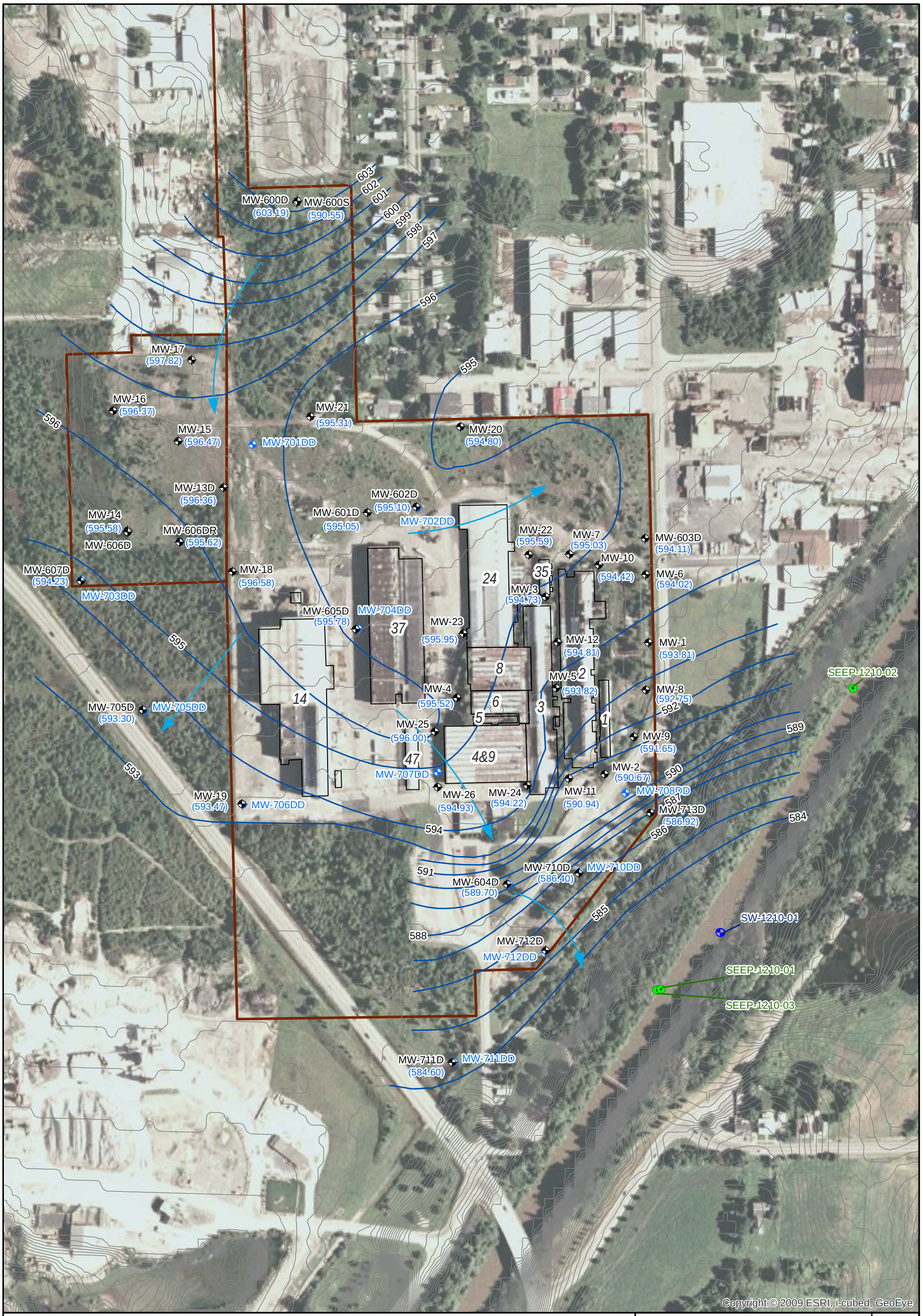
POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1D

File Name: Guterl_144_Shallow_GW_Ctrs_Aug2012 Date: 2/22/2013 Time: 9:24:39 AM



LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION WATER LEVEL
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (590.67) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

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POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1E

File Name: Guterl_138_Shallow_GW_Ctrs_Oct2012 Date: 2/22/2013 Time: 4:12:07 PM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL BUILDINGS
- GUTERL SITE BOUNDARY
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (589.45) DEEP GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

NOTES:
WELL MW-707DD WAS NOT USED FOR CONTOURING BECAUSE IT DOES NOT INTERSECT WATER PRODUCING FRACTURES.

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POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-2A

File Name: Guterl_139_Deep_GW_Ctrs_Aug2011 Date: 2/22/2013 Time: 9:46:40 AM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (597.33) DEEP GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

NOTES:
WELL MW-707-DD WAS NOT USED FOR CONTOURING BECAUSE THIS WELL HAS HISTORICALLY PROVIDED ANOMALOUS WATER LEVEL MEASUREMENTS.

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POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-2B

File Name: Guterl_140_Deep_GW_Ctrs_Jan2012 Date: 2/22/2013 Time: 9:56:10 AM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (574.98) DEEP GROUNDWATER ELEVATION (FEET MSL)

NOTES:
WELL MW-707-DD WAS NOT USED FOR CONTOURING BECAUSE THIS WELL HAS HISTORICALLY PROVIDED ANOMALOUS WATER LEVEL MEASUREMENTS.

0 75 150 300 Feet

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POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/06/2013	1 inch = 300 feet	3-2C

File Name: Guterl_141_Deep_GW_Ctrs_May2012 Date: 2/6/2013 Time: 11:11:23 AM

0 75 150 300 Feet

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL BUILDINGS
- GUTERL SITE BOUNDARY
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (593.37) DEEP GROUNDWATER ELEVATION (FEET MSL)

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POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-2D

File Name: Guterl_145_Deep_GW_Ctrs_Aug2012 Date: 2/22/2013 Time: 5:06:07 PM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (595.47) DEEP GROUNDWATER ELEVATION (FEET MSL)

NOTES:
WELL MW-707-DD WAS NOT USED FOR CONTOURING BECAUSE THIS WELL HAS HISTORICALLY PROVIDED ANOMALOUS WATER LEVEL MEASUREMENTS.

0 75 150 300 Feet

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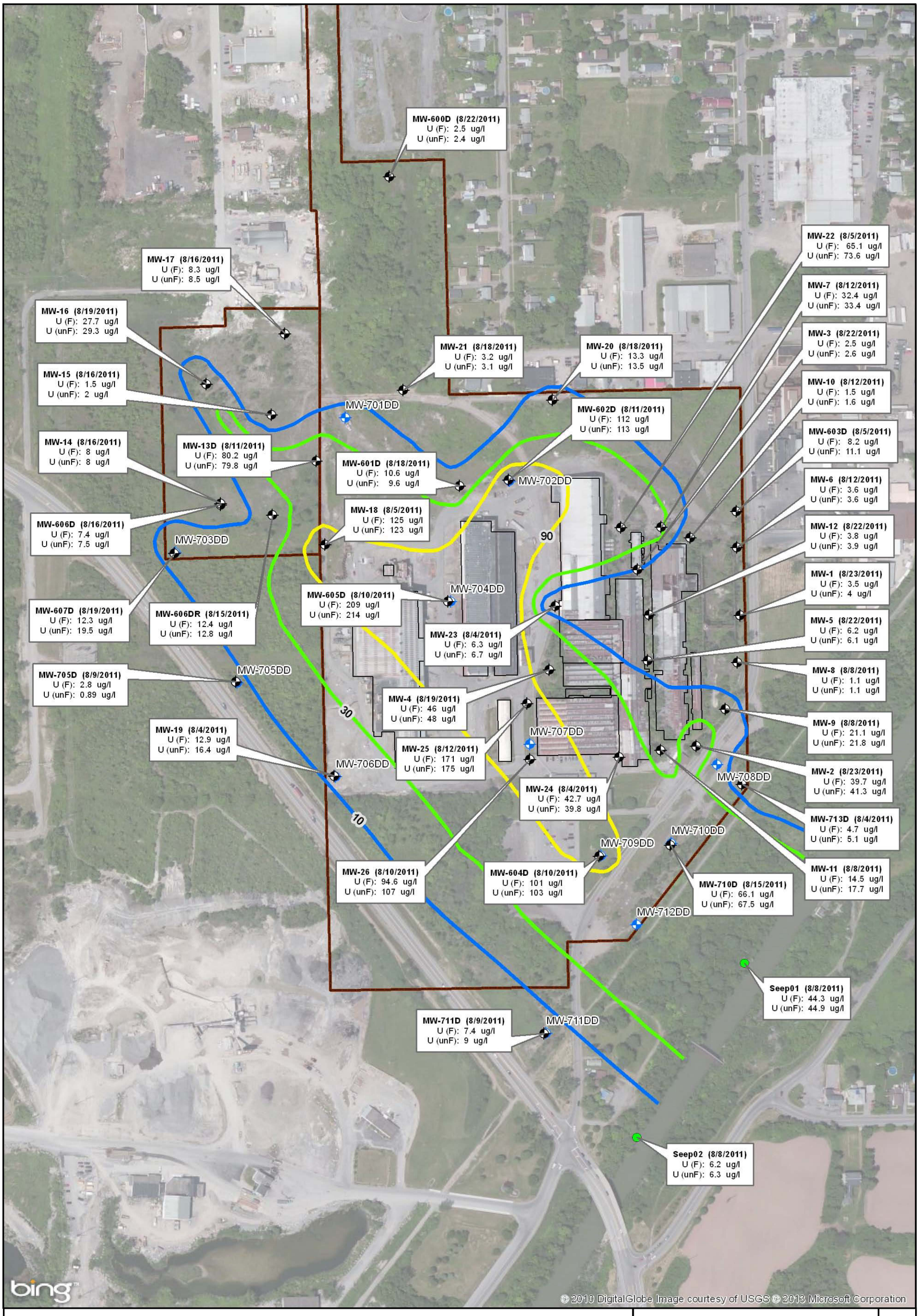
POTENTIOMETRIC SURFACE MAP DEEP WELLS (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/06/2013	1 inch = 300 feet	3-2E

File Name: Guterl_142_Deep_GW_Ctrs_Oct2012 Date: 2/6/2013 Time: 2:24:48 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP SAMPLE
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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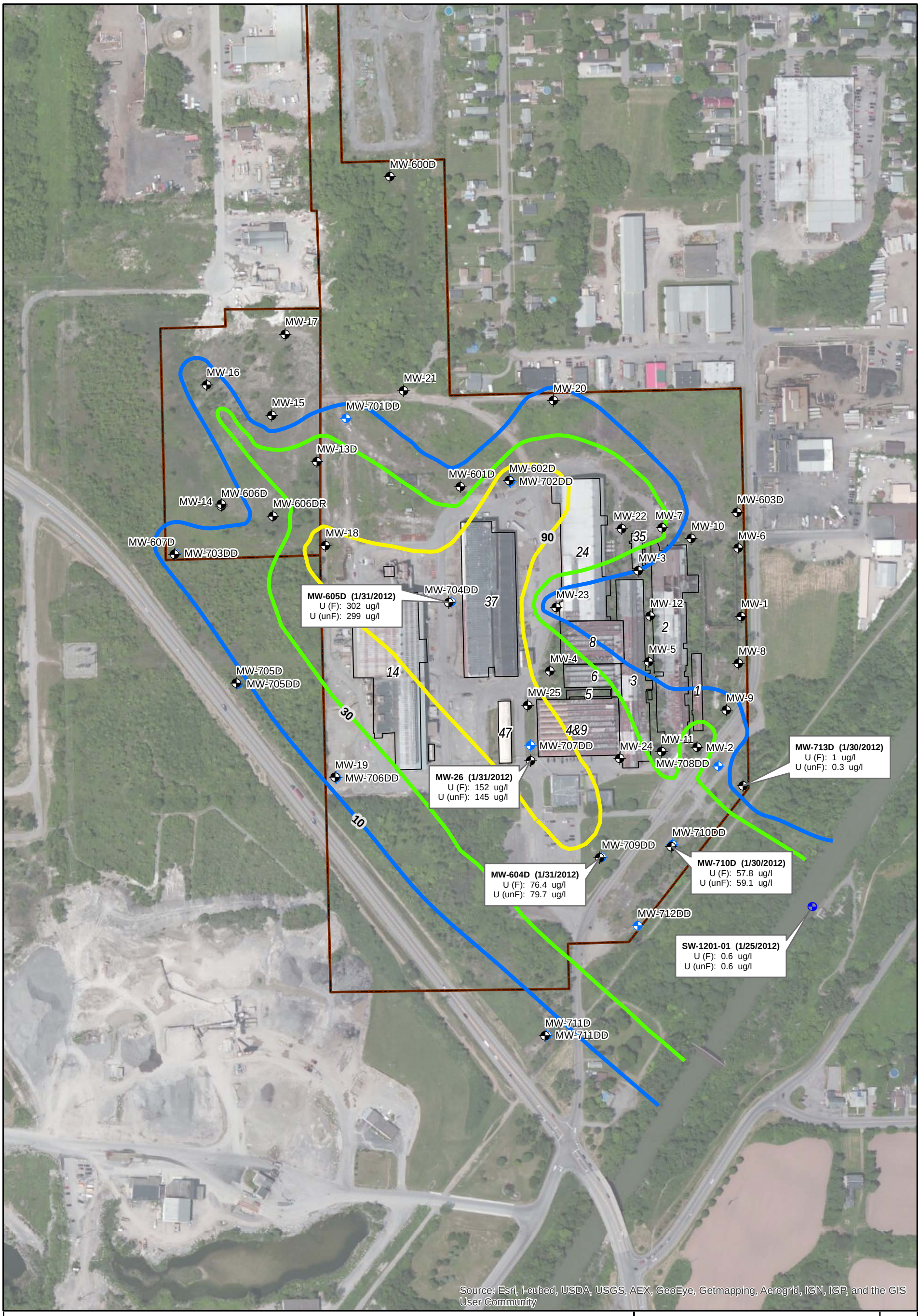
TOTAL URANIUM IN SHALLOW GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3A

File Name: Guterl_133_GWUr_Aug2011_Shallow_rev1 Date: 7/23/2013 Time: 4:04:34 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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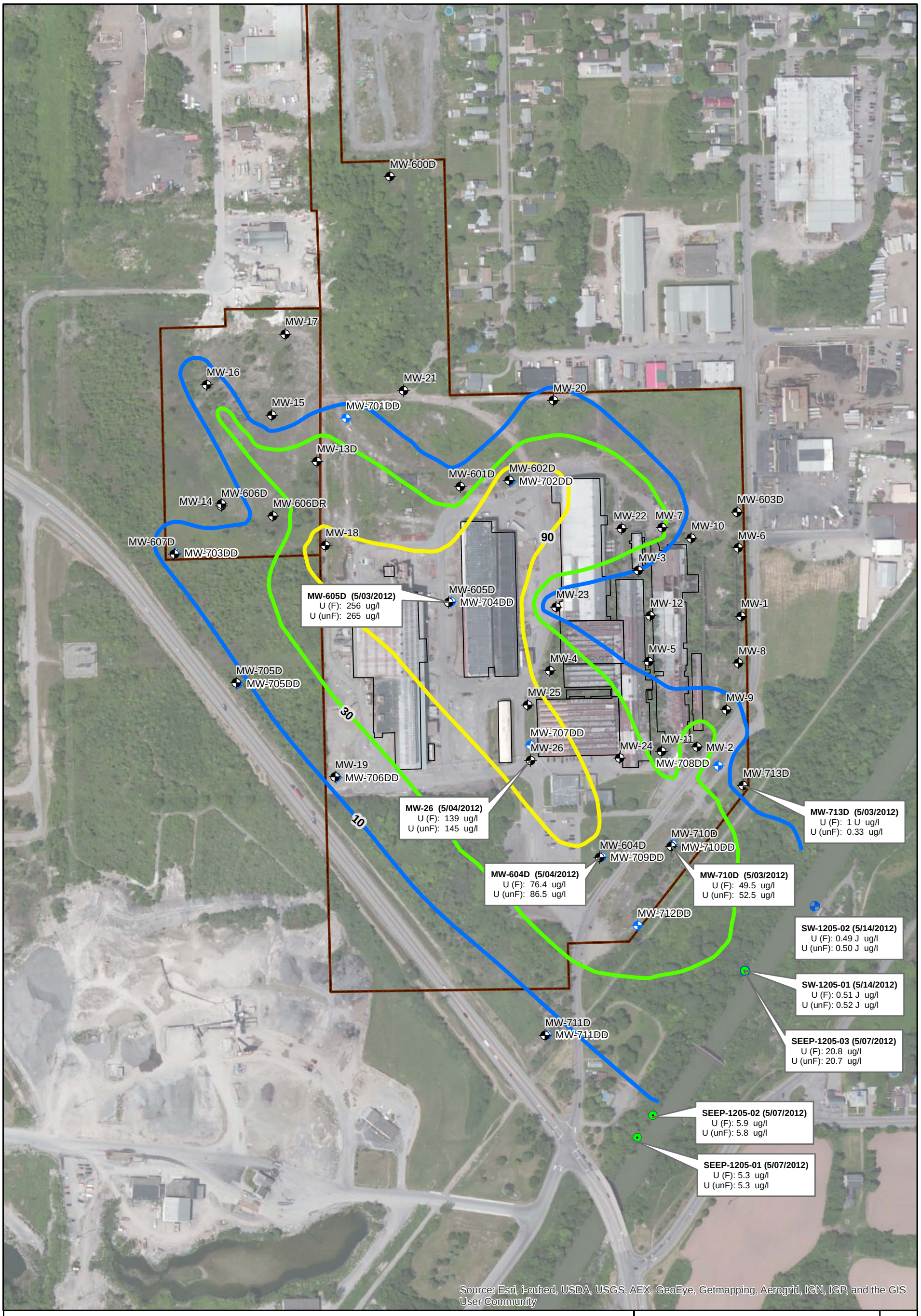
TOTAL URANIUM IN SHALLOW GROUNDWATER
(JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3B

File Name: Guterl_150_GWUr_Jan2012_Shallow_rev1 Date: 7/23/2013 Time: 12:28:04 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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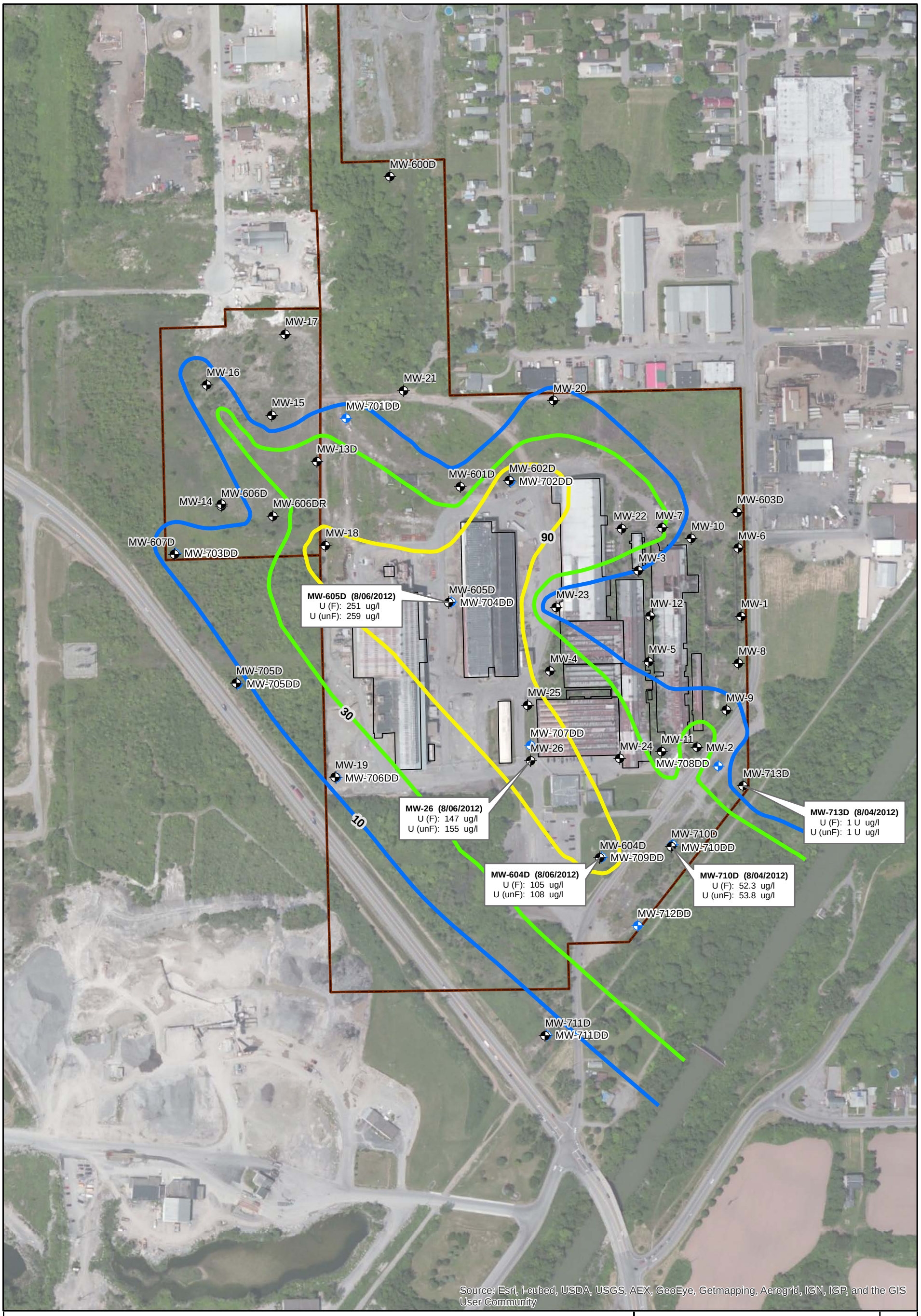
TOTAL URANIUM IN SHALLOW GROUNDWATER
(MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3C

File Name: Guterl_151_GWUr_May2012_Shallow_rev1 Date: 7/23/2013 Time: 12:29:14 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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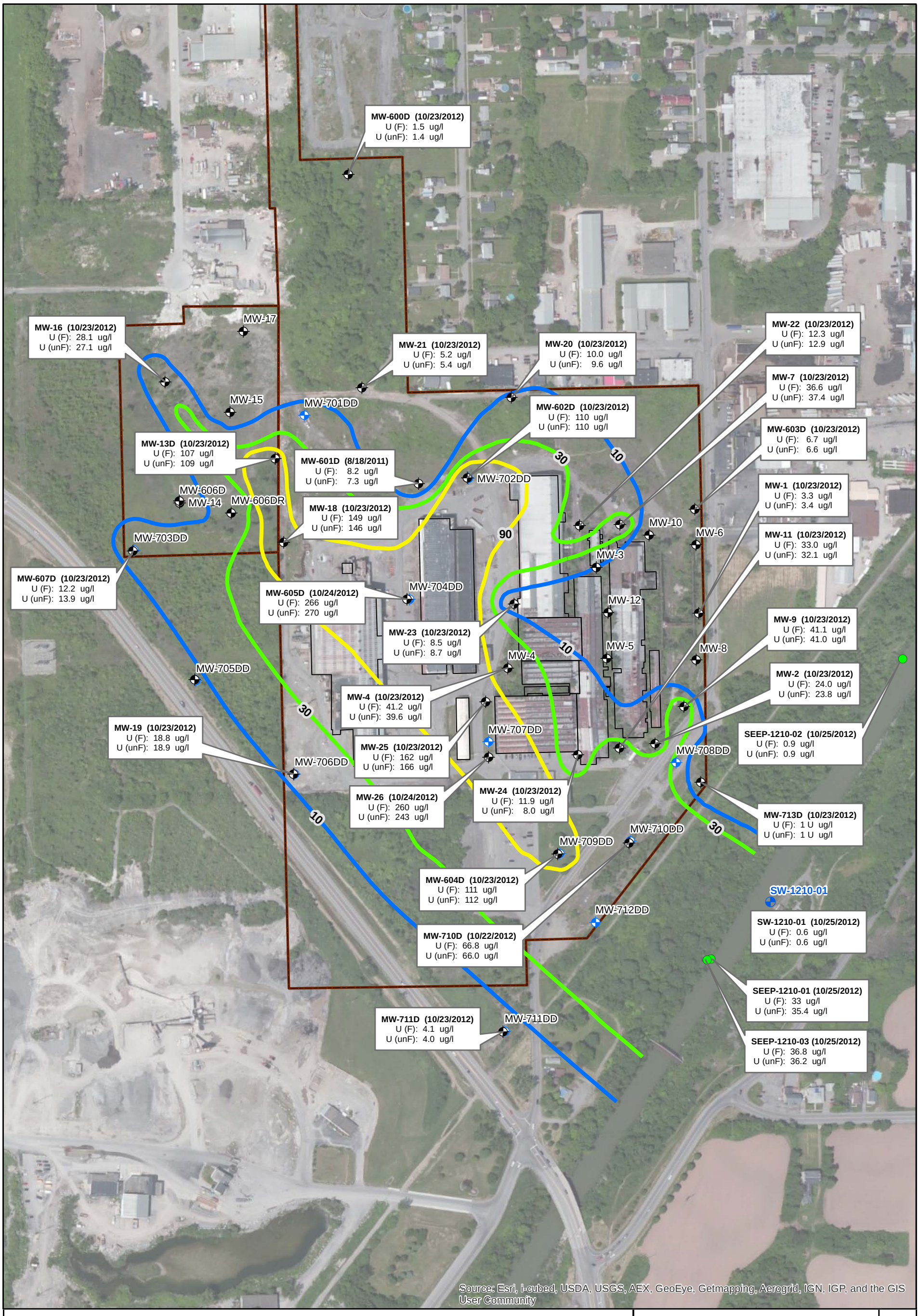
TOTAL URANIUM IN SHALLOW GROUNDWATER (AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3D

File Name: Guterl_152_GWUr_Aug2012_Shallow_rev1 Date: 7/23/2013 Time: 12:38:06 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP SAMPLE
- SURFACE WATER LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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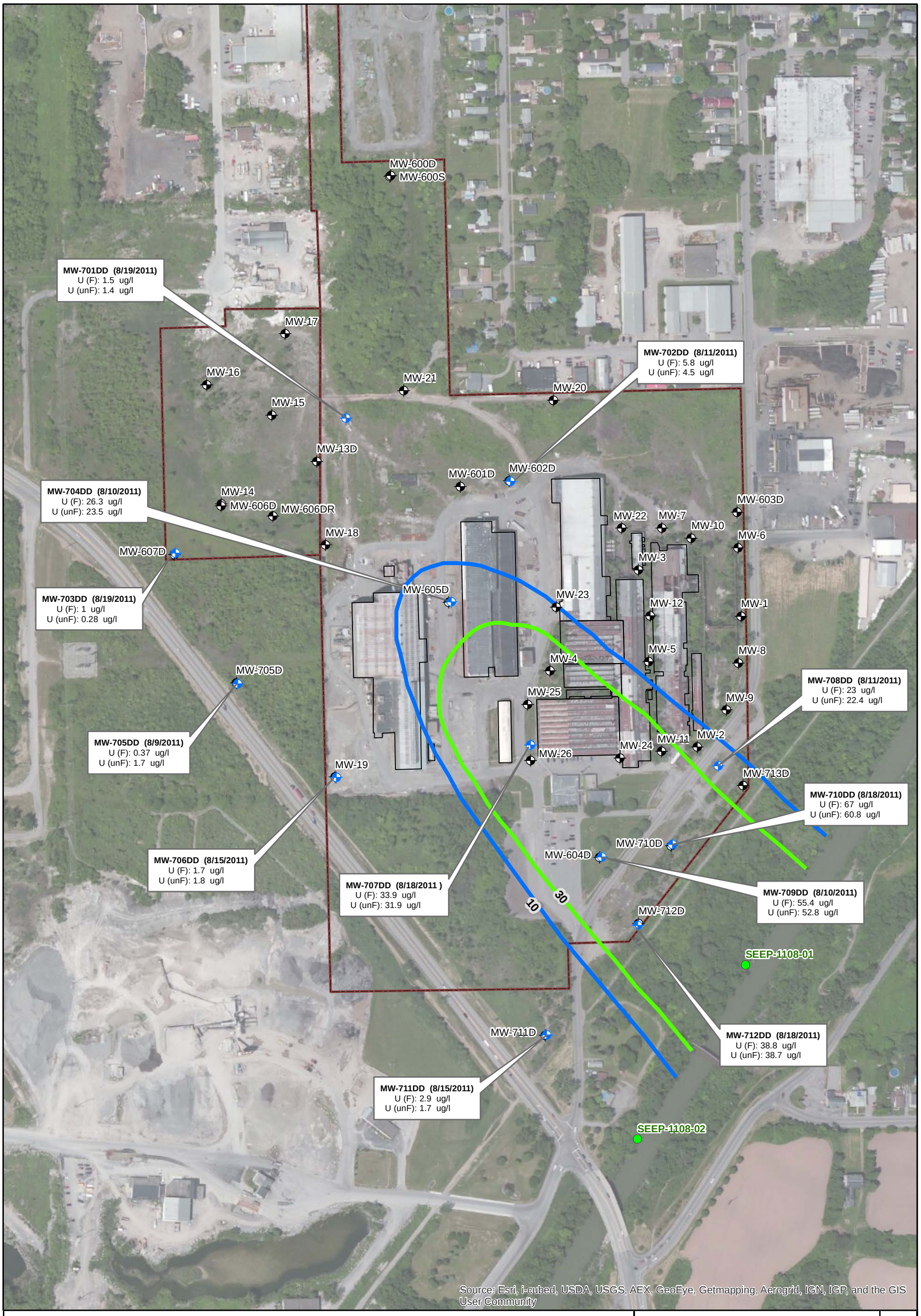
TOTAL URANIUM IN SHALLOW GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3E

File Name: Guterl_153_GWUr_Oct2012_Shallow_rev1 Date: 7/23/2013 Time: 12:41:51 PM



0 75 150 300 Feet

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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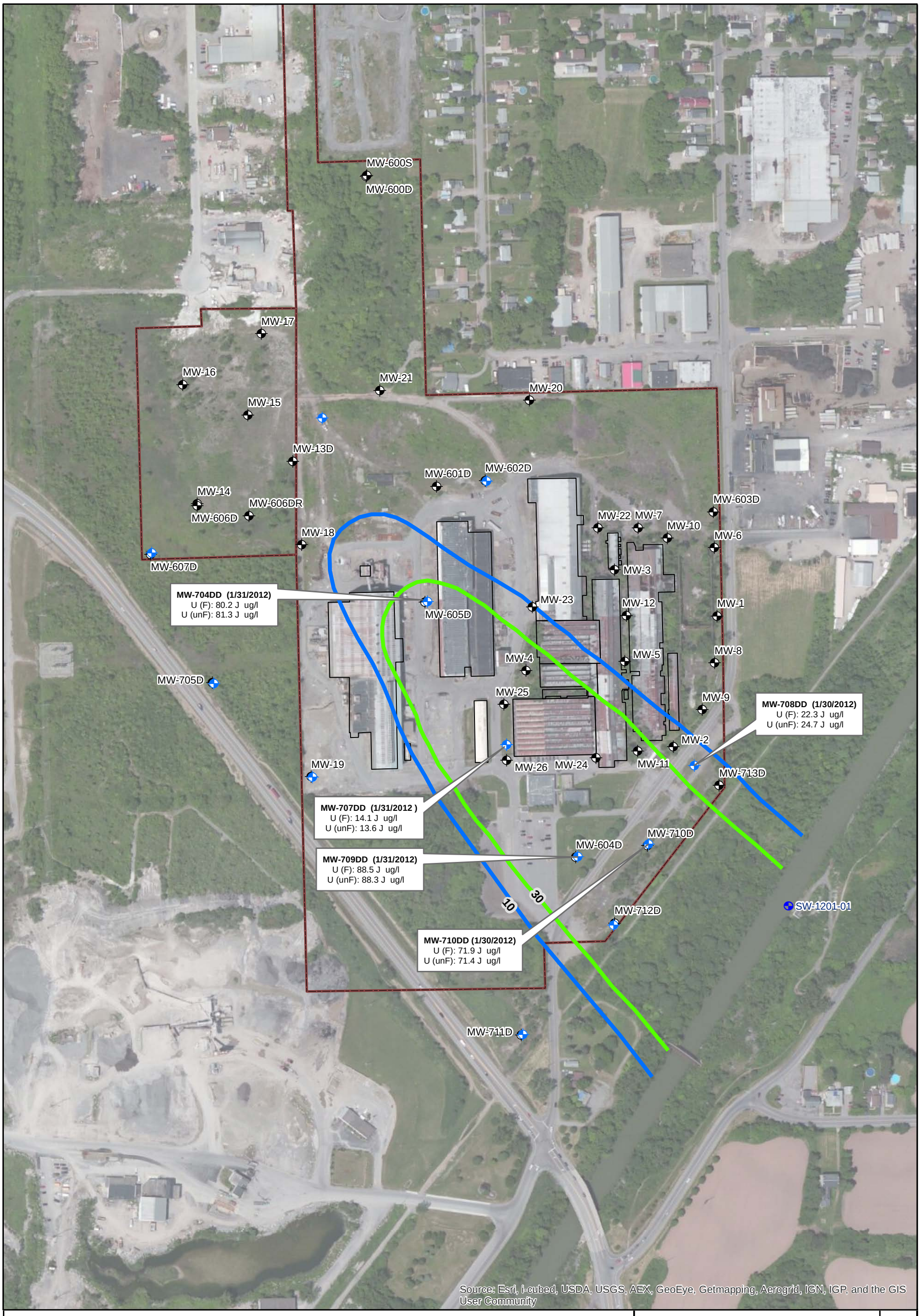
TOTAL URANIUM IN DEEP GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4A

File Name: Guterl_134_GWTotUr_Aug2011_Deep Date: 7/23/2013 Time: 4:03:16 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTES: MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING.
SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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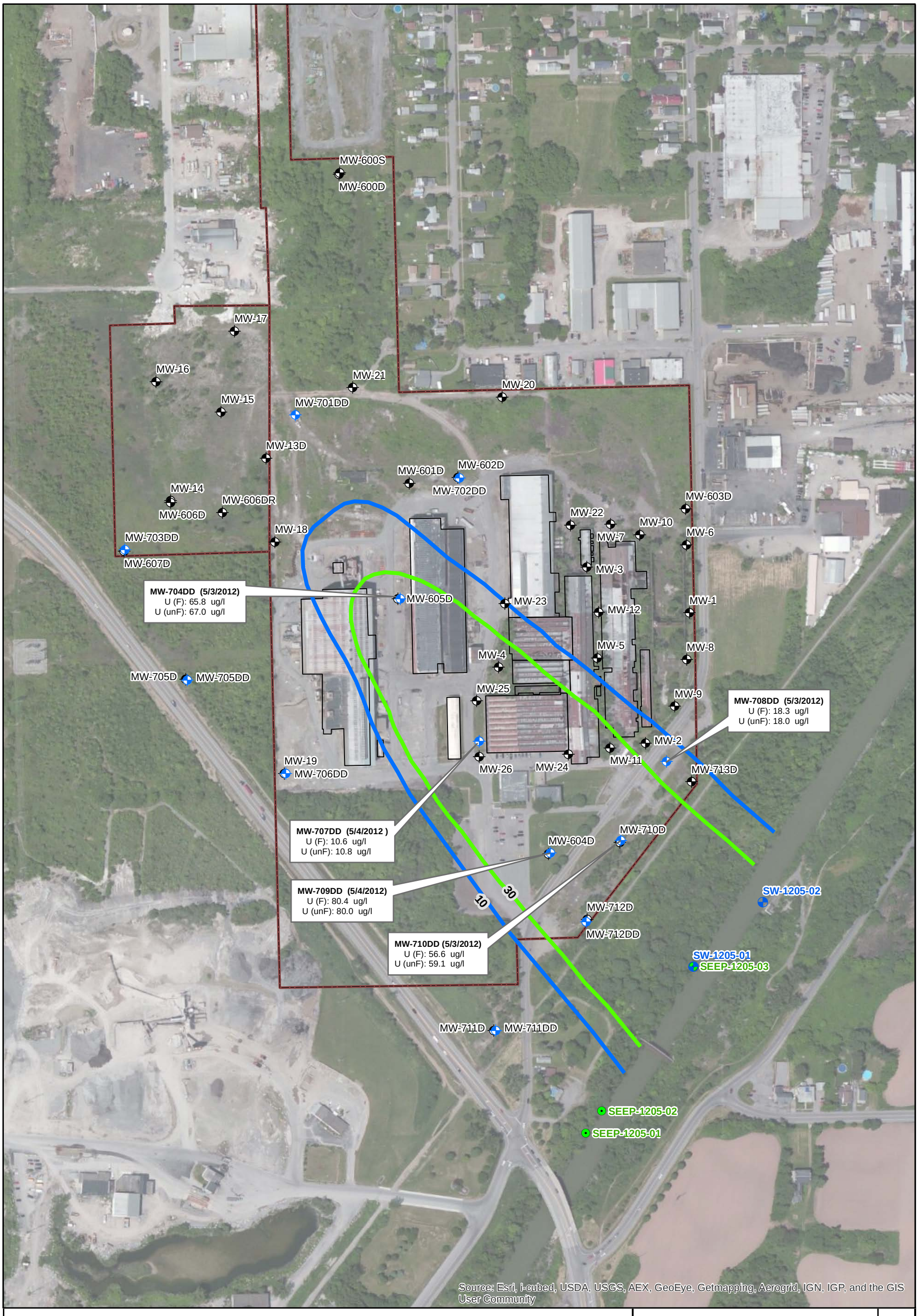
N W E S

TOTAL URANIUM IN DEEP GROUNDWATER (JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4B

File Name: Guterl_154_GWTotUr_Jan2012_Deep_rev1 Date: 7/23/2013 Time: 12:27:26 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTES: MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING.
SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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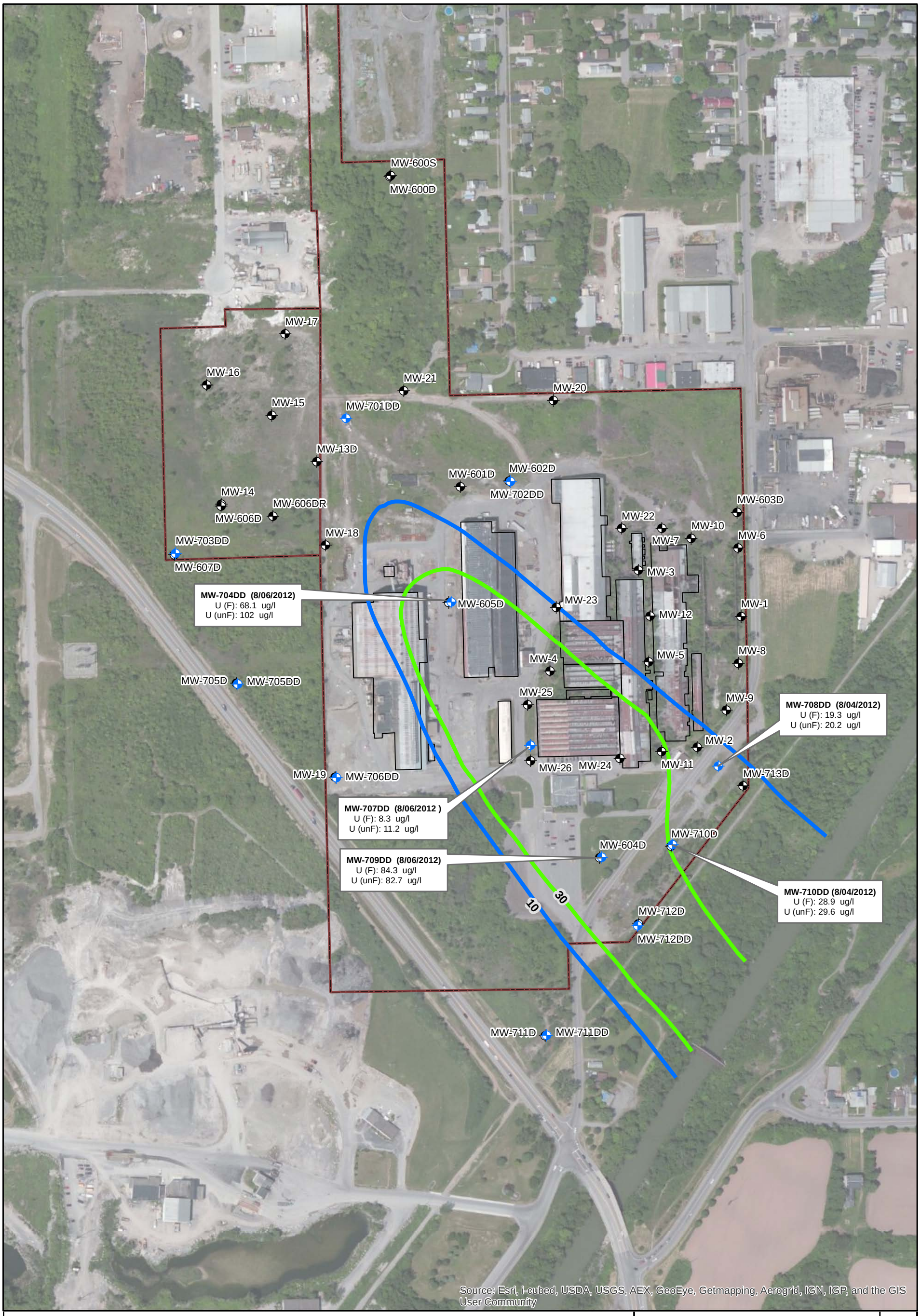
TOTAL URANIUM IN DEEP GROUNDWATER (MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4C

File Name: Guterl_155_GWTotUr_May2012_Deep_rev1 Date: 7/23/2013 Time: 12:56:19 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTES: MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING.
SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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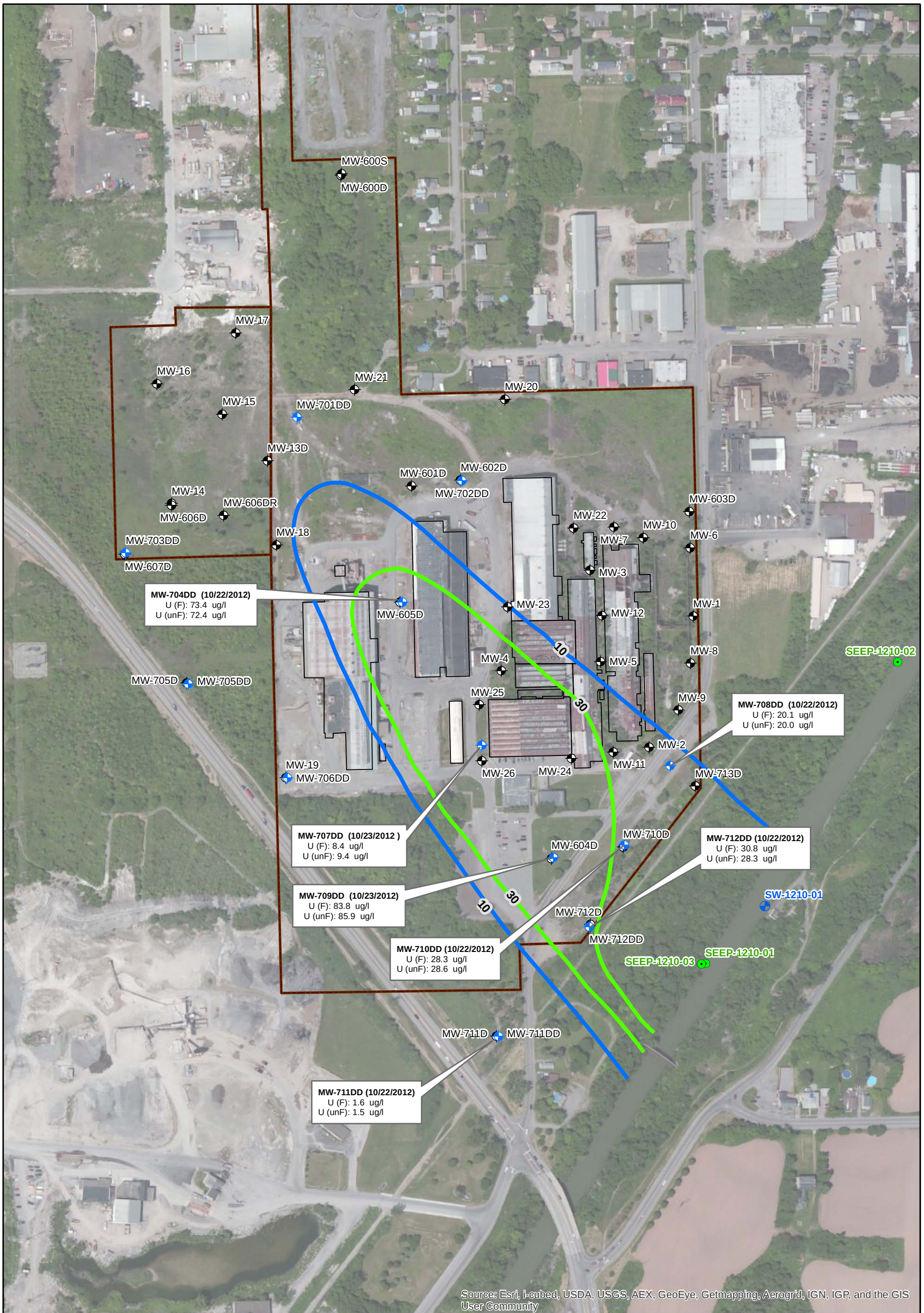
N W E S

TOTAL URANIUM IN DEEP GROUNDWATER
(AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4D

File Name: Guterl_156_GWTotUr_Aug2012_Deep_rev1 Date: 7/23/2013 Time: 12:37:27 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTES: MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

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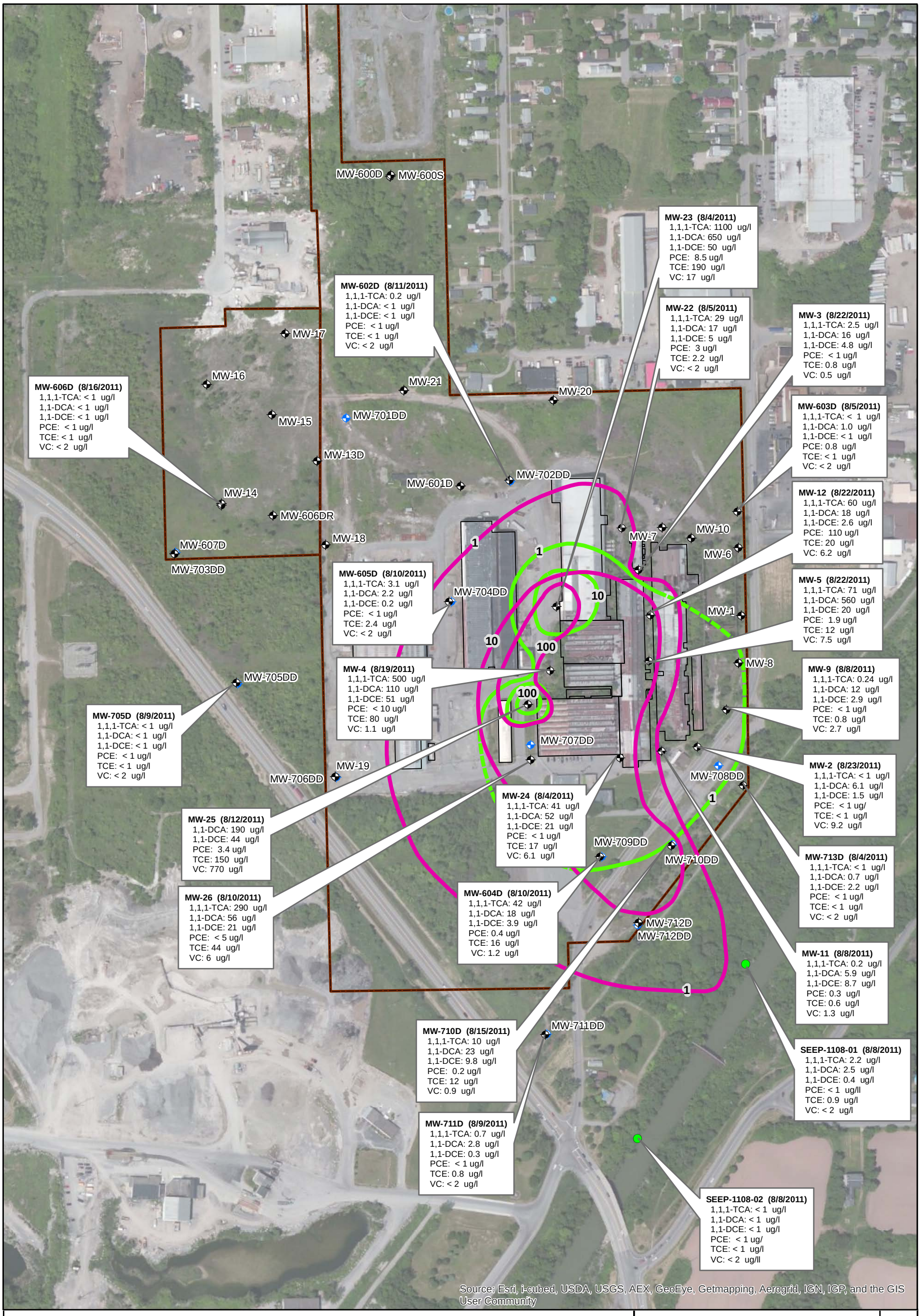
TOTAL URANIUM IN DEEP GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4E

File Name: Guterl_157_GWTotUr_Oct2012_Deep_rev1 Date: 7/23/2013 Time: 12:53:29 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- TCE CONCENTRATION CONTOUR
- VC CONCENTRATION CONTOUR
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

µg/l = MICROGRAMS PER LITER
TCE = TRICHLOROETHYLENE
VC = VINYL CHLORIDE
VOCS = VOLATILE ORGANIC COMPOUNDS

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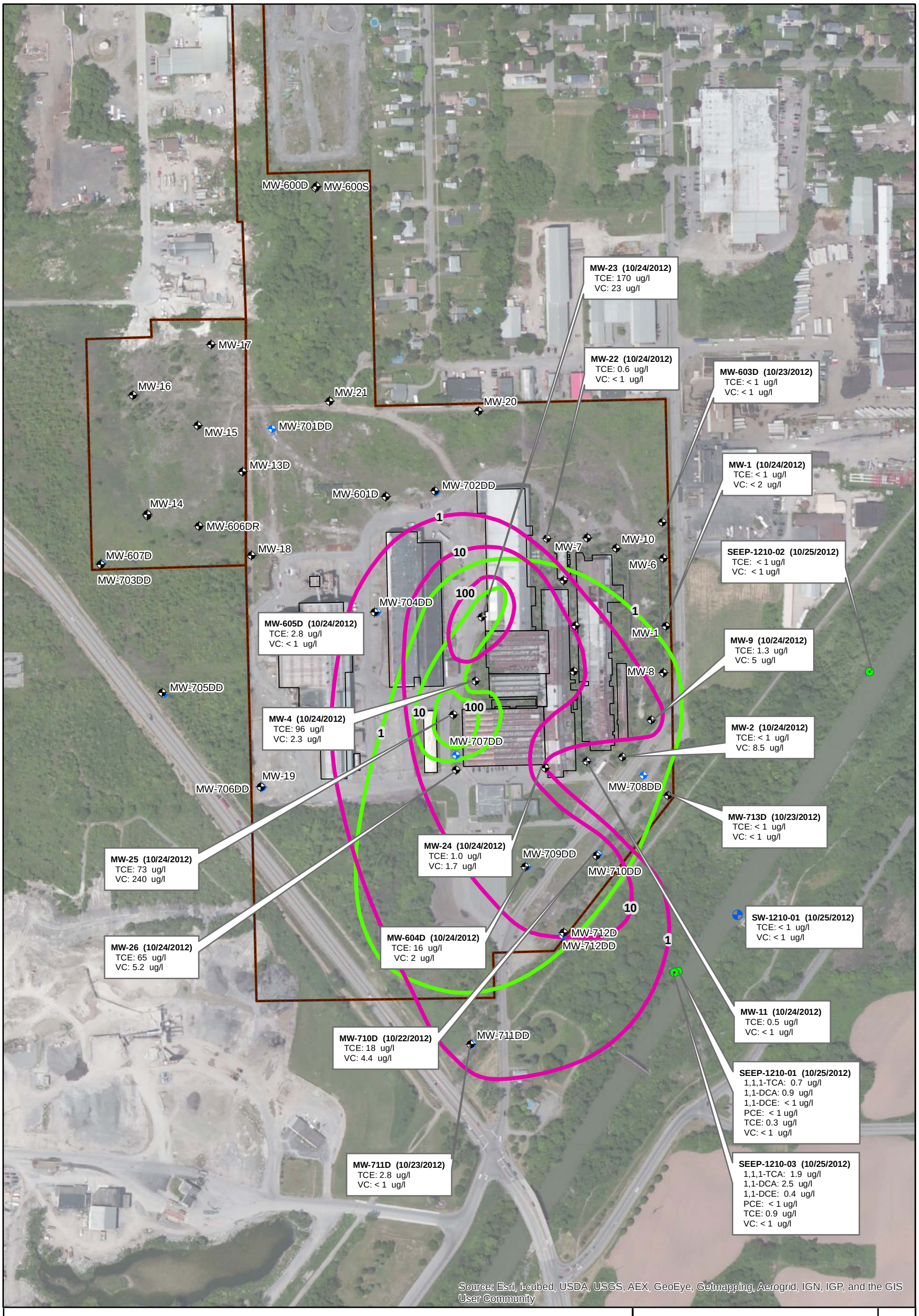
VOCS IN SHALLOW GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/28/2013	1 inch = 300 feet	3-5A

File Name: Guterl_147_GW_VOC_Aug2011_Shallow_r1 Date: 6/28/2013 Time: 2:20:13 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- TCE CONCENTRATION CONTOUR
- VC CONCENTRATION CONTOUR
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

µg/l = MICROGRAMS PER LITER
TCE = TRICHLOROETHYLENE
VC = VINYL CHLORIDE
VOCS = VOLATILE ORGANIC COMPOUNDS

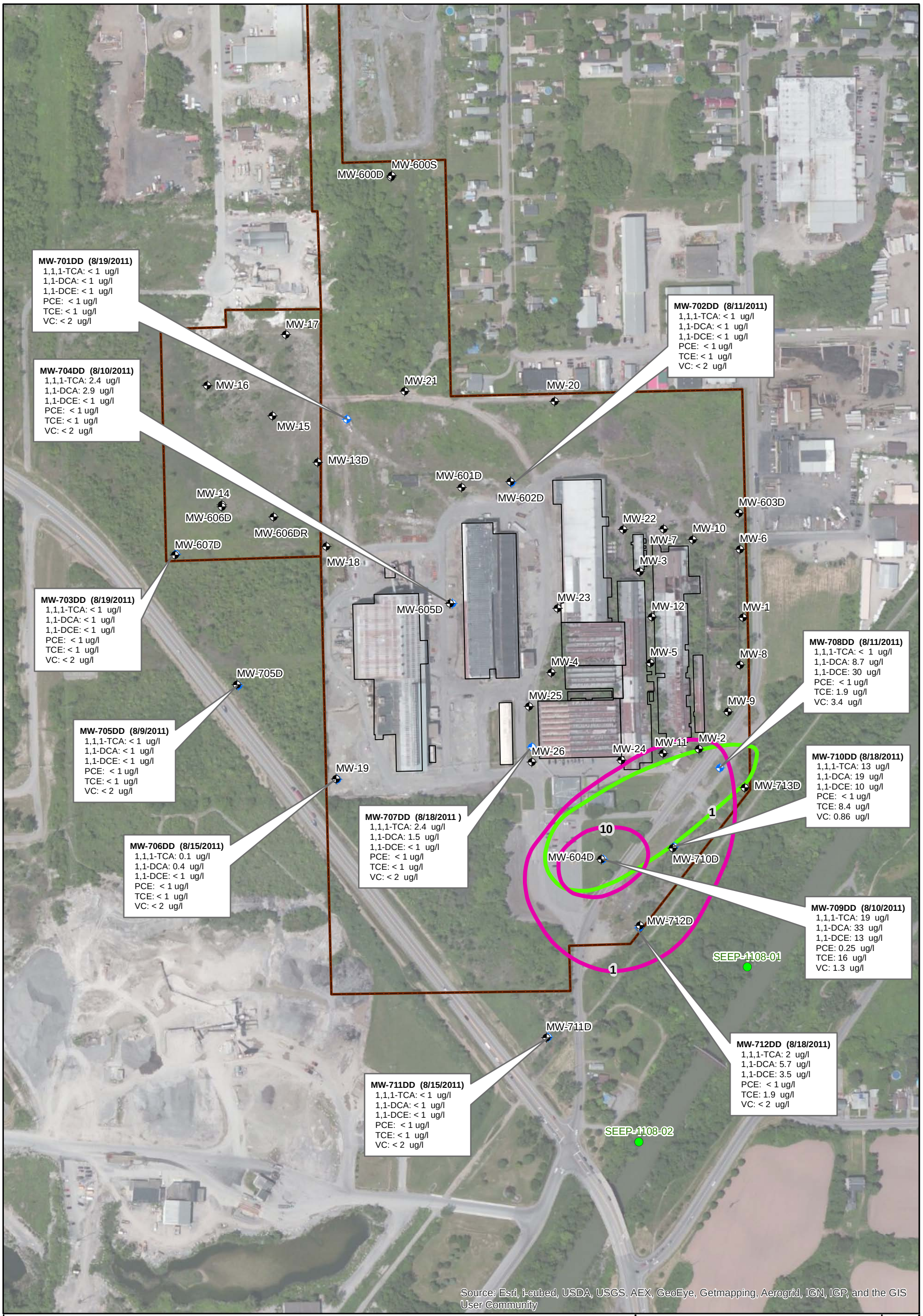
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

VOCS IN SHALLOW GROUNDWATER
(OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/28/2013	1 inch = 300 feet	3-5B

File Name: scratch_158_GW_VOC_Oct2012_Shallow_r1 Date: 6/28/2013 Time: 2:01:44 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- TCE CONCENTRATION CONTOUR
- VC CONCENTRATION CONTOUR
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

µg/l = MICROGRAMS PER LITER
TCE = TRICHLOROETHYLENE
VC = VINYL CHLORIDE
VOCS = VOLATILE ORGANIC COMPOUNDS

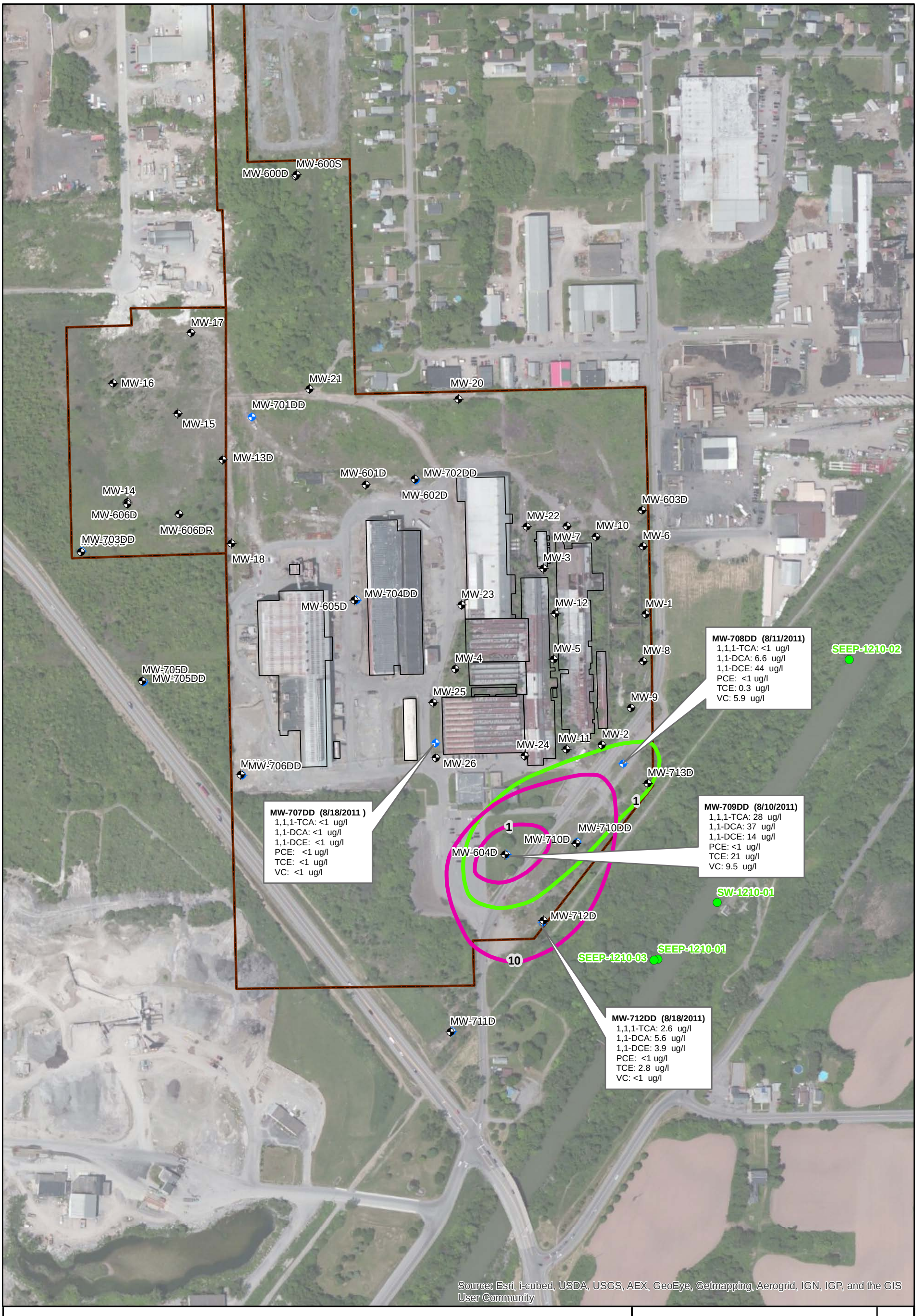
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

VOCS IN DEEP GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/28/2013	1 inch = 300 feet	3-6A

File Name: Guterl_148_GW_VOC_Aug2011_Deep_r1 Date: 6/28/2013 Time: 2:22:27 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- TCE CONCENTRATION CONTOUR
- VC CONCENTRATION CONTOUR
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

µg/l = MICROGRAMS PER LITER
TCE = TRICHLOROETHYLENE
VC = VINYL CHLORIDE
VOCS = VOLATILE ORGANIC COMPOUNDS

US Army Corps of Engineers ®
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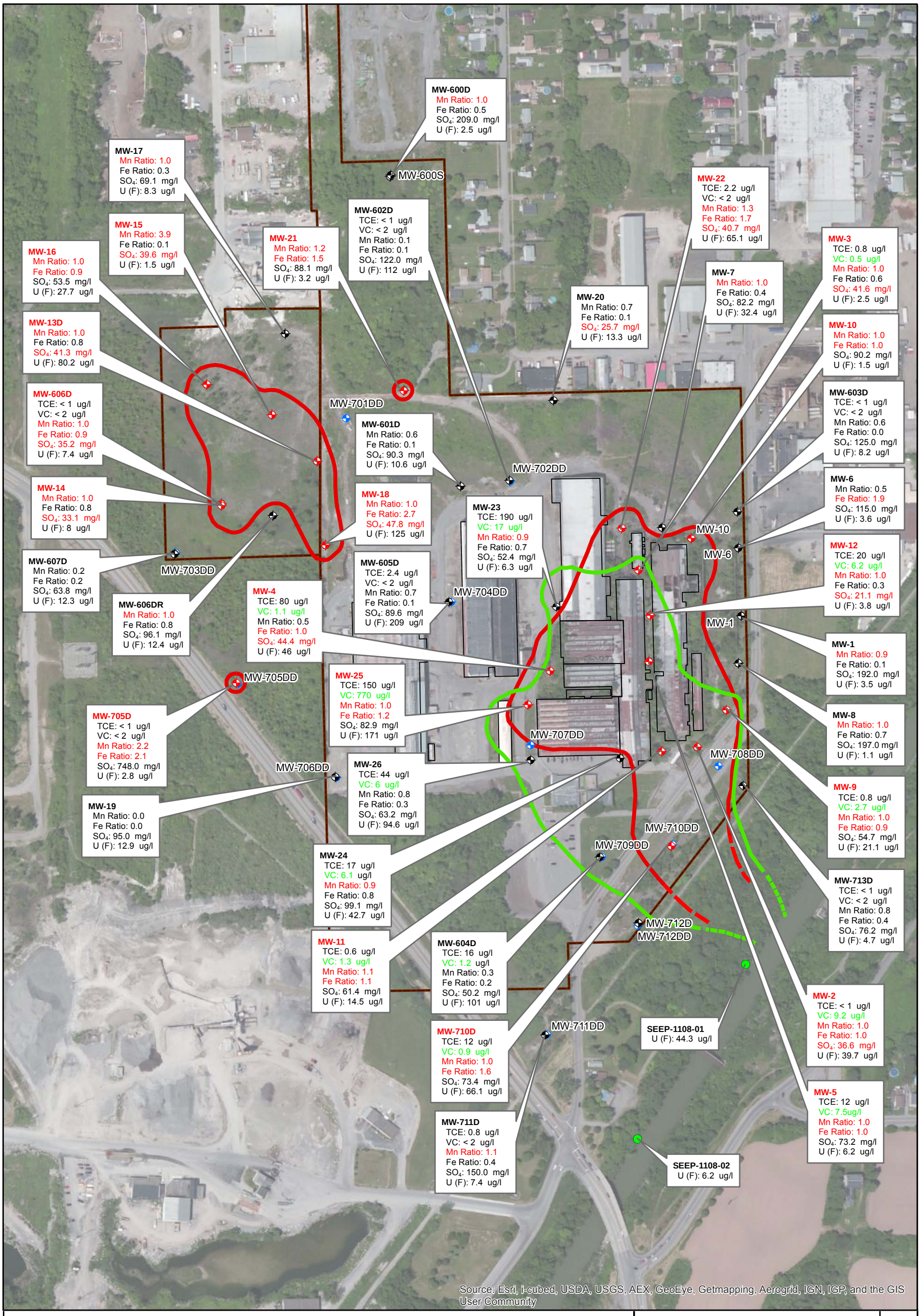
VOCS IN DEEP GROUNDWATER
(OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/28/2013	1 inch = 300 feet	3-6B

File Name: Guterl_159_GW_VOC_Oct2012_Deep_r1 Date: 6/28/2013 Time: 2:02:11 PM



Legend

- SHALLOW WELL LOCATION
- SHALLOW WELL WITH REDUCTIVE CONDITIONS
- DEEP WELL LOCATION
- SEEP LOCATION
- REDUCTIVE AREA EXTENT
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

0 75 150 300 Feet

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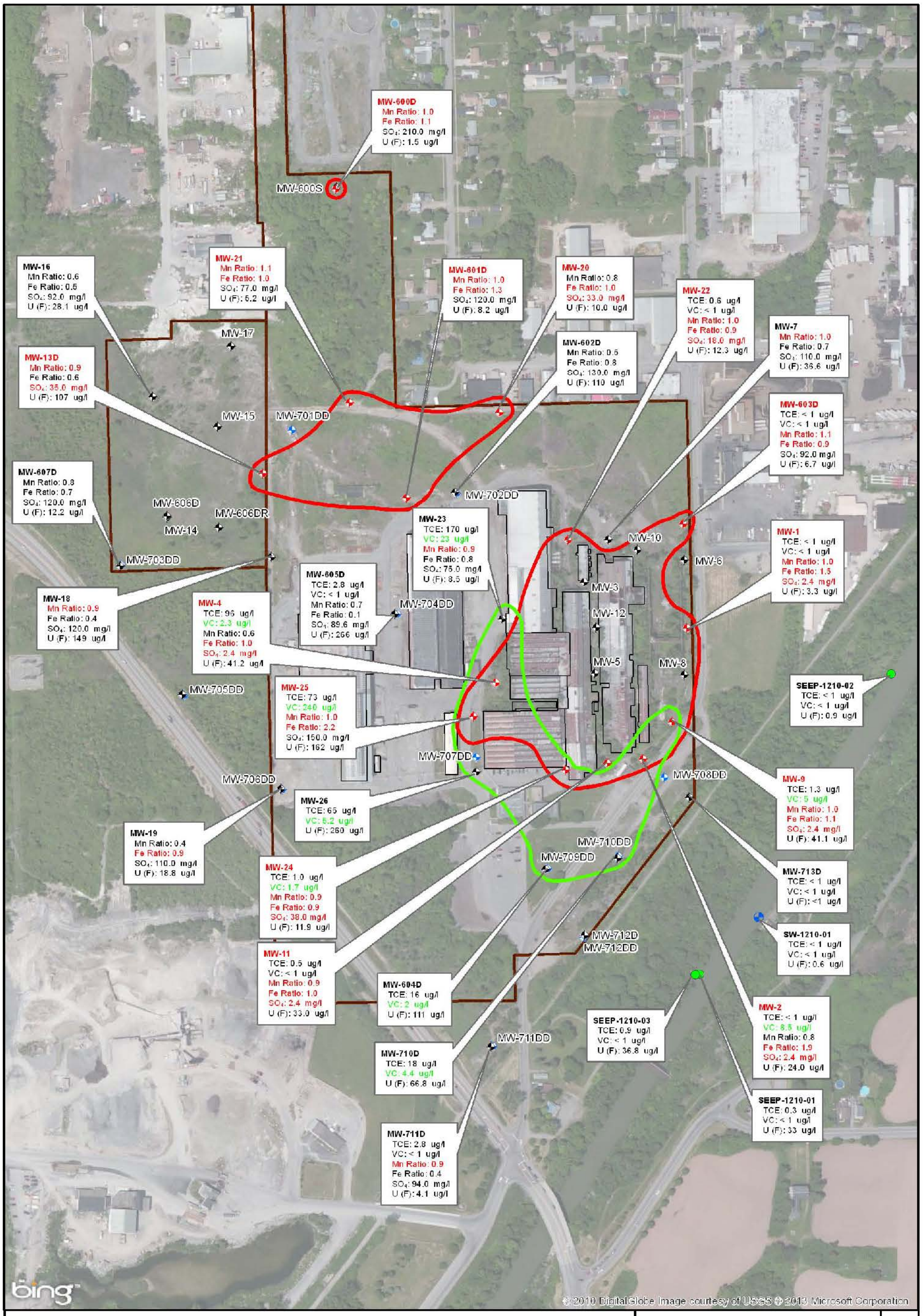
TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN SHALLOW GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-7A

File Name: Guterl_163_GW_VOC_ReducAreas_2011_Shallow Date: 6/28/2013 Time: 8:50:15 AM



Legend

- SHALLOW WELL LOCATION
- SHALLOW WELL WITH REDUCTIVE CONDITIONS
- DEEP WELL LOCATION
- SEEP LOCATION
- REDUCTIVE AREA EXTENT
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

0 75 150 300 Feet

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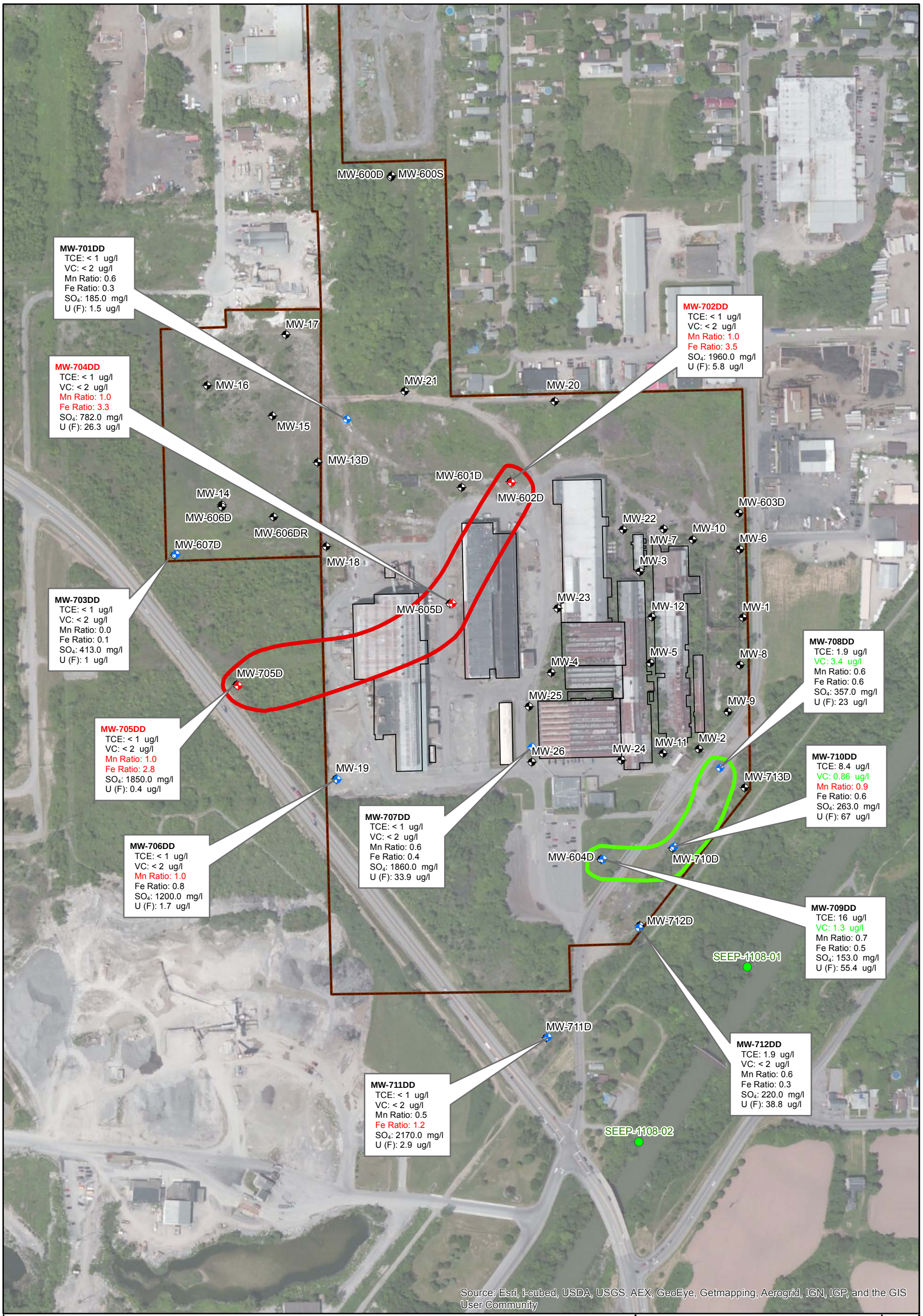
TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN SHALLOW GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-7B

File Name: Guterl_166_GW_VOC_ReducAreas_2012_Shallow Date: 6/28/2013 Time: 8:58:36 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- DEEP WELL WITH REDUCTIVE CONDITIONS
- SEEP LOCATION
- REDUCTIVE AREA EXTENT
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

0 75 150 300 Feet

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

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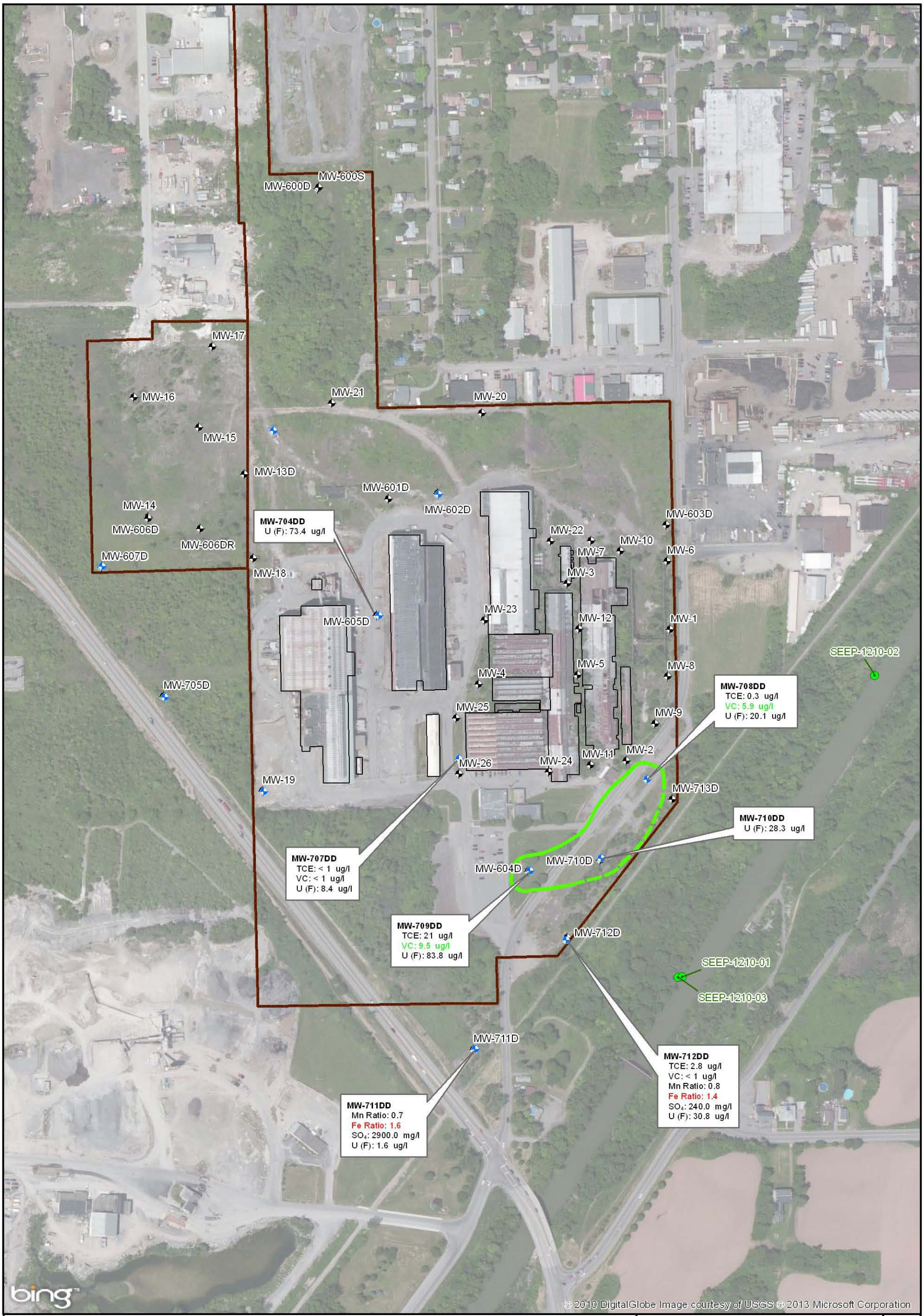
TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN DEEP GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-8A

File Name: Guterl_164_GW_VOC_ReducAreas_2011_Deep Date: 6/28/2013 Time: 8:51:09 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

0 75 150 300 Feet

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TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN DEEP GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-8B

File Name: Guterl_165_GW_VOC_ReducAreas_2012_Deep Date: 6/28/2013 Time: 8:56:01 AM