# ROD AND WIRE MILL ANNUAL INTERIM MEASURE 2023 PROGRESS REPORT

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# 1.0 INTRODUCTION

This Progress Report has been prepared by ARM Group LLC (ARM) which presents the 2023 Interim Measures (IMs) conducted for the Rod and Wire Mill (RWM) located at the Tradepoint Atlantic (TPA) property. This report includes:

- a brief history of the Rod and Wire Mill Area,
- a description of historical interim measures that operated at the RWM,
- a description of additional remedial efforts that were completed in 2016 and 2017 to treat soil and groundwater in the RWM area,
- the groundwater flow patterns and contaminant distribution, and
- an evaluation of the effectiveness of the interim measure to date.

## 1.1. Tradepoint Atlantic Site Background

The Tradepoint Atlantic property is located in Baltimore County, Maryland at the southeastern corner of the Baltimore metropolitan area, approximately nine miles from the downtown area. The property encompasses approximately 3,100 acres located on a peninsula situated on the Patapsco River near its confluence with the Chesapeake Bay, physically positioned in the mouth of the heavily industrialized and urbanized Baltimore Harbor / Patapsco River region. A land connection to the northeast links the peninsula with the adjacent community of Edgemere.

From the late 1800s until 2012, the property was used for the production and manufacturing of steel. Iron and steel production operations and processes at the Site included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steelmaking operations at the facility ceased in fall 2012, and current plans for the Site include demolition and redevelopment over the next several years. Some portions of the site have already undergone remediation and/or redevelopment.

The original topography of the peninsula was relatively flat with elevations not exceeding 15 feet based on the North American Vertical Datum 1988 (NAVD88). The peninsula has been significantly altered since the inception of steel manufacturing activities. Creeks have been filled in and new land has been added to various areas of the Site by building up near-shore areas of the river.

## 1.2. Site Ownership History

Bethlehem Steel Corporation operated an integrated steelmaking facility at the site from approximately 1916 through 2003. As a result of multiple market factors, Bethlehem Steel declared bankruptcy in 2001 and the facility was subsequently operated by a succession of owners, the last of which (RG Steel Sparrows Point, LLC) filed for bankruptcy in 2012. The site was subsequently purchased by Sparrows Point, LLC (SPLLC) at a bankruptcy sale on August 7, 2012. Sparrows Point Terminal, LLC (SPT) purchased the real property on September 18, 2014. SPT has subsequently undergone a name change and is now doing business as Tradepoint Atlantic.

### 1.3. Regulatory Process

Environmental responses for the RWM and for the site in general are being implemented pursuant to the following:

- Multi-Media Consent Decree (Decree) between Bethlehem Steel Corporation, the United States Environmental Protection Agency (EPA), and the Maryland Department of the Environment (MDE) (effective October 8, 1997); this Decree has been modified in accordance with a stipulated order entered into by Sparrows Point LLC and the respective agencies effective July 28, 2014;
- Administrative Consent Order (ACO) between Sparrows Point Terminal, LLC, and the Maryland Department of the Environment (effective September 12, 2014); and,
- Settlement Agreement and Covenant Not to Sue (SA) between Sparrows Point Terminal, LLC, and the United States Environmental Protection Agency (effective November 25, 2014).

The original Consent Decree for the Sparrows Point facility dealt with many issues associated with ongoing iron-making, steel-making, coking, byproduct, plating, and finishing operations. To the extent that these operations are no longer conducted, and the associated facilities no longer exist, many specific requirements of the Decree are no longer applicable and have been removed in accordance with the stipulated order implementing modifications to the Decree. The RWM is part of the acreage that remains subject to the requirements of the Decree as documented in correspondence received from EPA on September 12, 2014.

# 2.0 ROD AND WIRE MILL

## 2.1. SITE DESCRIPTION

### 2.1.1. Historical RWM Industrial Activities

The RWM (the Site) is located in the northwestern portion of the Tradepoint Atlantic property. This area has also been given the designation of Parcel A3, as the Tradepoint Atlantic property as a whole has been divided into several separate parcels. Parcel A3 (the RWM), is shown in **Figure 1.**

The RWM is the location of the former mill that produced rods and wire products from the 1940s to the early 1980s. All manufacturing activities at the RWM ceased operation in the early 1980s with subsequent demolition of all structures between 1994 and 2000, based on historical aerial photos.

Manufacturing activities at the RWM included leaching of zinc ore and a subsequent treatment process to remove cadmium impurities. The leaching process was implemented in large tanks located inside the north end of the former RWM building. From the 1950s, the acidic leach residue was stored in the Northwest Pond until about 1959 when filters were utilized to dewater the residues. Dewatered sludge generated from this process was temporarily stored on the ground outside the north end of the mill in the Former Sludge Bin Storage Area. Filtrate from the dewatering process was recycled to the wire plating process. Excess filtrate was discharged to the East Pond until 1971, after which it was sent to the Humphrey Creek Wastewater Treatment Plant (HCWWTP) for treatment. These operations ended in the early 1980s when the Rod and Wire Mill was shut down. The former locations of the Northwest Pond, the Sludge Bin Storage Area, and the East Pond are shown in **Figure 2.**

### 2.1.2. Site Geology/Hydrogeology

In general, the subsurface geology at the RWM includes slag fill materials overlying natural soils, which include fine-grained sediments (clays and silts) and coarse-grained sediments (sands). Groundwater occurrence at the Site has been segregated into three horizons identified as shallow, intermediate, and deep hydrogeologic zones.

The shallow hydrogeologic zone includes slag fill material or recent sedimentary deposits and the unconfined water table at the Site. Monitoring wells and piezometers designated as shallow are screened within this uppermost, unconfined water bearing unit. The “shallow” bottom-of-screen elevations generally range from +5 to -20 feet above mean sea level (amsl). In some areas of the Site, the slag fill is directly underlain by and hydrologically connected to, the coarser-grained beds or lenses within the Talbot Formation that comprise the Upper Talbot Channel Unit. In these areas, the slag fill and Upper Talbot Channel Units form a single groundwater flow system. In much of the investigation area, the slag fill material is underlain by finer-grained silts and clays that comprise the Talbot Clay Aquitard. In these areas, shallow groundwater flow may be separated from groundwater in any underlying coarse-grained beds or lenses.

The intermediate hydrogeologic zone was the focus of the pump and treat interim measure formerly used at the Site (1986-1999/2001-2016) and is therefore also referred to as the intermediate pumping zone. The intermediate zone includes the unconfined to partially confined groundwater in the Pleistocene-aged Upper Talbot unit. The "intermediate" bottom-of-screen elevations range from approximately -20 to -50 feet amsl. The presence of clay and silt layers within the intermediate hydrogeologic zone likely retard the vertical recharge of groundwater from the upper fill material and Upper Talbot channel Unit.

The lower hydrogeologic zone includes the confined groundwater in the Lower Talbot or Upper Patapsco Sand unit. One well (RW06R-MWD), has been installed in this lower hydrogeologic unit, with a total depth of 62 feet bgs. However, the lower hydrogeologic zone is not a primary focus of this groundwater investigation. Hydrogeologic zones at greater depth are known to exist based on a review of the regional geology; however, these deeper units are isolated from the upper three units and impacts associated with the former iron and steel operations have not been identified.

## 2.2. HISTORICAL INTERIM MEASURE FOR GROUNDWATER CONDITIONS

The historical operations within the RWM resulted in releases of cadmium and zinc to soil and groundwater. In 1986, a soil and groundwater remediation program was initiated to address groundwater exhibiting elevated levels of cadmium and zinc, as well as residual soil contamination in the Sludge Bin Storage Area. Remediation initially consisted of a soil flushing program and associated pumping and treatment of groundwater from shallow and intermediate wells. The groundwater pumping was discontinued, and the treatment plant was dismantled in 1999 to support the demolition of the Rod and Wire Mill, allowing for reassessment of the interim measure. A Work Plan to re-establish interim measures was submitted to the reviewing agencies (MDE and EPA) in July 2000, and the Work Plan was approved in November 2000. Re-establishment of the interim measures included the following:

- Institutional controls for soils were established to provide a "Restricted Work Area" to control the exposure of onsite workers to soils in the Former Sludge Bin Storage Area.
- A groundwater monitoring network consisting of 31 wells was installed to monitor the performance of the groundwater pump and treat system. This monitoring network was used to collect water level and groundwater quality data.
- A groundwater pump and treat system was operated and maintained, which consisted of two intermediate zone recovery wells (RW10-PZM020 and RW15-PZM020) that removed water at a combined rate of between 5 and 12 gallons per minute (gpm). The expected

normal operating rate for the treatment system was set at a combined rate of 8 to 12 gpm, with a maximum design flow of 25 gpm.

- Recovered groundwater was transported via a pipeline to the HCWWTP for subsequent treatment and discharge in accordance with the NPDES permit requirements for the facility.

The pumping and treatment of groundwater resumed in September 2001, and continued until September 2016, when it was stopped to support the construction activities at the RWM. In particular, the pumping wells and associated pumps, piping, and pipe racks were shut down and removed in order to install the alkaline charged remediation trenches. The remediation trenches were constructed between October and December 2017 (*Interim Measures Construction Report, In-Situ Groundwater Treatment*, Advanced GeoServices Corp, January 2018).

# 3.0 INTERIM MEASURES AND GROUNDWATER CONDITIONS

## 3.1. INTERIM MEASURE REMEDIAL APPROACH

Advanced GeoServices (AGS) was contracted to design and install remediation trenches to serve as the interim measure for remediating groundwater at the RWM. The full details of the remediation design are presented in the AGS Work Plan, *Interim Measure Work Plan In-Situ Groundwater Treatment* (AGS, 2016). The primary purpose of this interim measure, which focused on groundwater in the intermediate zone, was to reduce concentrations of dissolved metals and to minimize contaminant discharges from this zone to surface water. In the IM design, the groundwater velocities were expected to be slow, in the range of 5 to 10 feet per year (later calculated to be less than five feet per year in the RWM Supplemental Investigation Report). Groundwater in the shallow zone was noted to have a higher pH compared to the intermediate zone due to the presence of slag fill, and as a result, the distribution of metals impacts in the shallow zone groundwater indicates limited mobility (i.e., lack of migration). Therefore, the intermediate zone was the primary focus of the interim measure.

Groundwater extraction from the pumping wells ceased in September 2016 to support the construction of the remediation trenches. The objective of the remediation trenches is to address the elevated dissolved cadmium and zinc in the intermediate groundwater zone by precipitating the dissolved metals in-situ. This is achieved by raising the existing groundwater pH from approximately 4 to above 7.0 through the addition of alkaline reagents into the intermediate groundwater zone at select high concentration areas. To accomplish this, excavated soils were replaced with alkaline charges that react with acidic groundwater to create alkaline conditions within the aquifer and remove the dissolved cadmium and zinc from solution. The alkaline charges utilized a combination of fast acting TerrabondMG (40% by weight) in conjunction with limestone aggregate (60% by weight). The reagents were placed in trenches in a staggered/offset alignment perpendicular to the anticipated groundwater flow. A typical cross-section of a remediation trench is provided as **Figure 3**, and the approximate locations of the trenches are shown on the various maps provided as part of this report.

Paving at the RWM, completed around the end of March 2018, has reduced aquifer recharge from precipitation. While the whole Site is not paved, and it is possible there is some recharge to the intermediate zone via shallow zone groundwater draining through the trenches, the potentiometric surface is nearly flat in the intermediate zone. A lack of gradient in the intermediate zone results in a slow groundwater velocity which controls the rate of treatment by the trenches. As part of creating an updated conceptual site model in the Rod and Wire Mill Interim Measure Supplemental Investigation Report (ARM, Revision 1 dated April 8, 2020), lateral groundwater flow velocities were calculated based on groundwater level measurements in May 2019. Groundwater flow velocity was calculated at 33.8 ft/year in the shallow zone and 4.94 ft/year in the intermediate zone. Details of these calculations can be found in the Rod and

Wire Mill Interim Measure Supplemental Investigation Report (ARM 2020a). Groundwater flow velocities were verified with 2023 data; there were no changes to the results.

Approximately 2,392 cubic yards of contaminated soil were removed from the RWM during construction of the trenches and disposed of at an offsite facility. Construction of the trenches was completed in January 2017. In addition, approximately 27,000 CY of contaminated soil were excavated and removed from the RWM in 2017 during hot spot excavations (metals excavations and non-aqueous phase liquid [NAPL] / oil and grease excavations).

The interim groundwater treatment goals are to increase the pH in the intermediate groundwater zone in order to precipitate the dissolved metals and achieve a reduction in dissolved concentrations of cadmium and zinc within and downgradient of the source areas. Ultimately the treatment goal is to demonstrate that the concentrations of the primary contaminants (cadmium and zinc) in groundwater discharging at the shoreline/property boundary are acceptable.

## 3.2. Groundwater Well Network

In 2023, the monitoring network for the shallow and intermediate zones at the Site included 76 wells. Well construction details for all wells are included in **Table 1**. A "well pair" refers to one shallow zone well and one intermediate zone well installed adjacent to each other whose well names begin with the same prefix (e.g., RWA-MWS and RWA-MWI). Shallow zone wells have been assigned a well name ending in "-MWS" while intermediate zone wells have been assigned a well name ending in "-MWI". Note that deep well RW06R-MWD is sampled annually, but does not fall into the shallow or intermediate zones.

For the purposes of evaluating trends in groundwater, monitoring wells at the Site have been categorized into four groups:

- The "Upgradient" wells are located farthest upgradient, generally farthest to the east.
- The "Delineation" wells are located along the northern boundary of the site.
- The "Interior" wells are located in the central portion of the site. The Focused well pairs—RWJ, RWK, and RWL—are a subset of Interior wells that were installed directly adjacent to one of the trenches to help assess the trench performance. Their proximity to the trench is very important due to the slow intermediate zone groundwater velocity calculated for the site.
- The "Downgradient Perimeter" wells are generally located farthest to west (downgradient), running north-south.

Well categories are shown below in Table 3.2.1.

| Table 3.2.1 - Well Categories | | | |
|---|---|---|---|
| **Upgradient** | **Delineation** | **Interior/Focused** | **Downgradient Perimeter** |
| RW19-MWS/RW19-MWI | RW21-MWS/RW21-MWI | RW09-MWS/RW09-MWI | RW01-MWS/RW01-MWI |
| RWR-MWS/RWR-MWI | RWH-MWS/RWH-MWI | RW10-MWI | RW02-MWS/RW02-MWI |
| RWS-MWS/RWS-MWI | RWI-MWS/RWI-MWI | RW11-MWS/RW11-MWI | RW03R-MWS/RW03R-MWI |
| | RWO-MWS/RWO-MWI | RW12-MWS/RW12-MWI | RW04-MWS |
| | RWP-MWI | RW13-MWI | RW05-MWS/RW05R-MWI |
| | RWQ-MWS/RWQMWI | RW14-MWS | RW06R-MWS/RW06-MWI |
| | | RW15-MWS/RW15-MWI | RW07-MWS/RW07-MWI |
| | | RW16-MWS/RW16-MWI | RW08-MWS/RW08-MWI |
| | | RW18-MWS/RW18-MWI | RW22R-MWS/RW22R-MWI |
| | | RW23-MWS/RW23-MWI | RWA-MWS/RWA-MWI |
| | | RW24-MWS/RW24-MWI | RWB-MWS/RWB-MWI |
| | | RW25-MWS/RW25-MWI | RWD-MWS/RWD-MWI |
| | | RWJ-MWS/RWJ-MWI | RWE-MWS/RWE-MWI |
| | | RWK-MWS/RWK-MWI | RWF-MWS/RWF-MWI |
| | | RWL-MWS/RWL-MWI | RWG-MWS/RWG-MWI |
| | | RWM-MWS/RWM-MWI | |
| | | RWN-MWS | |

As detailed in the RWM Supplemental Investigation Report (ARM, 2020a), well pairs J – K – L were installed in close proximity to the western most trench in order to evaluate the trench performance. Well pair RWJ was installed directly adjacent to the trench. The other two well pairs (RWK and RWL) were installed progressively further from the RWJ pair in the southwestern direction, with the RWK pair approximately 10 feet away and the RWL pair approximately 25 feet away. These three well pairs, along with the RW12 well pair (located immediately upgradient of the western-most trench and approximately colinear with the J-K-L pairs), are used to assess the near-field effect of one of the remediation trenches.

Groundwater samples were collected from all existing shallow and intermediate wells on a monthly basis from February 2017 up to January 2018. Following the January 2018 sampling event, groundwater samples were collected from all existing shallow and intermediate wells on a quarterly basis.

ARM submitted a Rod and Wire Mill Monitoring Network Update Letter dated March 8, 2021 (MNU Letter) to outline an updated groundwater sampling plan for the calendar year of 2021 and going forward. This plan consisted of collecting samples from some wells on a semiannual basis and others on an annual basis. The MNU Letter included tables showing the updated sampling frequency for the wells and the rationale for each. These tables are included as **Table 2** (shallow wells) and **Table 3** (intermediate wells). Samples collected for the first quarter sampling event

(Q1) were collected from March 6 to April 4, 2023. Samples collected for the third quarter sampling event (Q3) were collected from September 8-28, 2023.

As part of roadway expansion associated with Riverside Drive, monitoring wells RW01-MWS-RW01-MWI, RW02-MWS, RW02-MWI, and RW06-MWI were properly abandoned on April 25, 2023 in accordance with the *Parcel A3 Well Abandonment Request Letter* (April 24, 2023). Therefore, these locations were sampled during the Spring 2023 event, but were not able to be sampled during the Fall 2023 event. Abandonment logs are included at **Appendix A**. Monitoring well RW05-MWS was destroyed as part of this roadway expansion work between the Spring 2023 and Fall 2023 sampling events. Three of the monitoring wells (RW01R-MWS, RW01R-MWI, and RW05R-MWS) were proposed for reinstallation in the *Parcel A3 Well Reinstallation Letter Request* (September 26, 2023). Agency approval was received on October 2, 2023 via email. This work is currently scheduled to be performed in 2024.

This IM Progress Report summarizes groundwater conditions following remediation trench installation, with focus on the results of the two semiannual sampling events carried out in 2023.

## 3.3. Groundwater Conditions in 2023

### 3.3.1. Shallow Groundwater Zone

#### *3.3.1.1 Groundwater Elevations*

A synoptic round of groundwater level measurements was collected for the Q1 and Q3 sampling events. Based on the field measurements, groundwater potentiometric surface maps were constructed for the shallow zone for the Q1 and Q3 events and are included as **Figure 4** and **Figure 5**, respectively. As shown on the figures, the predominant flow direction for the shallow zone in the eastern portion of the Site is to the west. In the central and west portions of the Site groundwater flow is to the north and northwest. In the southwest portion of the Site (south of RW06R-MWS) flow is to the west and southwest. On both figures, RW23-MWS is seen to be a localized high point from which groundwater flows radially to the north, northwest, west, and southwest.

#### *3.3.1.2 Zinc*

**Figure 6** displays the distribution of zinc concentrations in the shallow zone during the Q1 sampling event. **Figure 7** displays the distribution of zinc concentrations in the shallow zone during the Q3 sampling event. For contour purposes, if a sample was not collected during the Q3 sampling event (i.e., RWN-MWS), then the concentration from the Q1 sampling event was used on **Figure 7**.

Time series graphs of zinc concentrations in shallow wells are shown in **Figures 8** through **13**. For all charts, the y-axes are shown on logarithmic scales. The charts include the four different well groups and are divided up based on installation date. Wells installed in 2017 or prior are termed "original wells", and wells installed in 2019 are termed "supplemental wells".

- **Figure 8**: shallow downgradient perimeter wells, original wells
- **Figure 9**: shallow downgradient perimeter wells, supplemental wells
- **Figure 10**: shallow interior wells, original wells
- **Figure 11**: shallow interior wells, supplemental wells
- **Figure 12**: shallow delineation wells, all wells
- **Figure 13**: shallow upgradient wells, all wells

Several items to note include:

- Interior Wells: concentrations of zinc in shallow interior wells remains within the range of historical concentrations, and no significant fluctuations have been observed. The highest detected zinc concentration was at RWN-MWS (546,700 µg/L), located upgradient of the western-most remediation trench and within the former Sludge Bin Storage Area.
- Upgradient / Delineation wells: zinc was detected at high concentrations (compared to other shallow well concentrations during 2023) east of the trenches near the southern edges of the Former East Pond at RWR-MWS (233,900 µg/L in Q1 and 243,900 µg/L in Q3) and RWS-MWS (158,800), and northwest of the remediation trenches in RW22R-MWS (138,800 µg/L).
- Downgradient Perimeter wells: concentrations of zinc in perimeter shallow wells were below the relevant surface water criterion of 81 µg/L in four of 12 perimeter shallow wells sampled in the 2023 event: RWB-MWS, RWD-MWS, RW05-MWS, and RW06R-MWS. The highest detected zinc concentration in shallow perimeter wells was at RW22R-MWS (138,800 µg/L in Q1 and 154,200 µg/L in Q3), located northwest of the remediation trenches. Zinc concentrations in RWA-MWS, located to the west of RW22R-MWS and closer to the shoreline, are significantly lower (284 µg/L in Q1 and 319 µg/L in Q3).

Refer to Section 3.4 for trend analysis. Results for zinc concentrations in shallow wells are shown in **Table 4.** Laboratory reports for samples collected during 2023 are included as **Appendix B.** Individual time-series graphs for each shallow zone monitoring well are presented in **Appendix C.**

##### *3.3.1.3 Cadmium*

**Figure 14** displays a map of the distribution of cadmium concentrations in the shallow zone during the Q1 2023 sampling event. **Figure 15** displays the distribution of cadmium concentrations in the shallow zone during the Q3 2023 sampling event. For contour purposes, if a sample was not collected during the Q3 sampling event (i.e., RWN-MWS, RWI-MWS), then the concentration from the Q1 sampling event was utilized.

Time series graphs of cadmium concentrations in shallow wells are shown in **Figures 16** through **21**. For all charts, the y-axes are shown on logarithmic scales. The charts include the four different well groups, and are divided up based on installation date. Wells installed in 2017 or prior are termed "original wells", and wells installed in 2019 are termed "supplemental wells".

- **Figure 16**: shallow downgradient perimeter wells, original wells
- **Figure 17**: shallow downgradient perimeter wells, supplemental wells
- **Figure 18**: shallow interior wells, original wells
- **Figure 19**: shallow interior wells, supplemental wells
- **Figure 20**: shallow delineation wells, all wells
- **Figure 21**: shallow upgradient wells, all wells

Several items to note include:

- Interior Wells: concentrations of cadmium in shallow interior wells remains within the range of historical concentrations, and no significant fluctuations have been observed. The highest detected cadmium concentration was at RWN-MWS (2,517 µg/L in Q1), located within the Former Sludge Bin Storage Area.
- Upgradient / Delineation Wells: RWI-MWS, located within the Former Northwest Pond, also had a relatively high cadmium concentration of 596 µg/L in Q1 2023.
- Downgradient Perimeter wells: concentrations of cadmium in perimeter shallow wells were below the relevant surface water criterion of 7.9 µg/L in all perimeter shallow wells sampled in the Q1 and Q3 2023 events, with the exception of RW22R-MWS (22.0 µg/L and 24.1 µg/L for Q1 and Q3 2023, respectively). Cadmium concentrations in RWA-MWS and RWB-MWS, located to the northwest and southwest of RW22R-MWS and closer to the shoreline, were below the relevant surface water criterion of 7.9 µg/L.

Refer to Section 3.4 for trend analysis. Cadmium concentrations in shallow wells are shown in **Table 5.** Laboratory reports for samples collected during 2023 are included as **Appendix B.** Individual time-series graphs for each shallow zone monitoring well are presented in **Appendix C.**

#### *3.3.1.4 pH*

Measurements of pH in the shallow groundwater zone from the Q1 2023 sampling event, shown on **Figure 22**, ranged from 4.68 to 10.36. Wells RWJ-MWS, RW03R-MWS and RW16-MWS had relatively high pH values (10.36, 8.65, and 9.59, respectively).

Measurements of pH in the shallow groundwater zone from the Q3 2023 sampling event, shown on **Figure 23**, ranged from 4.84 to 11.48. Wells RWJ-MWS and RW03R-MWS again had relatively high pH values (11.48 and 9.59, respectively). All 2023 shallow zone field parameter data, including pH, are summarized in **Table 6**.

### 3.3.2. Intermediate Groundwater Zone

#### *3.3.2.1 Groundwater Elevations*

A synoptic round of groundwater level measurements was collected for each of the Q1 and Q3 2023 sampling events. Based on these field measurements, groundwater elevation contour maps were constructed for the intermediate zone for the two semiannual events (included as **Figure 24** and **Figure 25**, respectively). The groundwater elevations reveal that the potentiometric surface in the intermediate zone was nearly flat during both 2023 events, with very little variation (generally less than a foot of difference) amongst most calculated groundwater elevations across the Site. Anomalous elevations were measured for the Q1 event for wells RW06-MWI (4.13 feet amsl) and RWK-MWI (-5.45 feet amsl) so these values were not included for the generation of the contours on **Figure 24**. RW06-MWI was subsequently abandoned in April 2023 due to the roadway expansion associated with Riverside Drive. The Q3 groundwater elevation for RWK-MWI (1.59 feet amsl) was in line with historic groundwater elevations.

Groundwater elevations in the intermediate zone are generally lower than in the shallow zone, indicating a downward vertical gradient. There are several locations where a higher groundwater elevation was observed in the intermediate well than in the shallow well, indicating a potential upward vertical gradient. These wells are generally located along the north or west (shoreline) perimeter of the Site. This upward vertical gradient has also been observed in several sampling events prior to 2023.

#### *3.3.2.2 Zinc*

Intermediate groundwater zinc concentrations during the Q1 2023 event are shown on **Figure 26**. Intermediate zone groundwater zinc concentrations during the Q3 2023 event are shown on **Figure 27.** For contour purposes, if a sample was not collected during the Q3 sampling event, then the concentration from the Q1 sampling event was used.

Time series graphs of zinc concentrations in intermediate wells are shown in **Figures 28** through **33**. For all charts, the y-axes are shown on logarithmic scales. The charts include the four different well groups and are divided up based on installation date. Wells installed in 2017 or prior are termed “original wells”, and wells installed in 2019 are termed “supplemental wells”.

- **Figure 28**: intermediate downgradient perimeter wells, original wells
- **Figure 29**: intermediate downgradient perimeter wells, supplemental wells
- **Figure 30**: intermediate interior wells, original wells
- **Figure 31**: intermediate interior wells, supplemental wells
- **Figure 32**: intermediate delineation wells, all wells
- **Figure 33**: intermediate upgradient wells, all wells

Several items to note include:

- Interior Wells: Concentrations of zinc in intermediate interior wells remains within the range of historical concentrations, and no significant fluctuations have been observed.
- Upgradient / Delineation wells:
  - Former East Pond Area: Maximum zinc concentrations in the intermediate zone are observed in RWP-MWI, RWQ-MWI, RWR-MWI, and RWS-MWI, all located around the perimeter of the former East Pond source area. Maximum zinc concentrations were detected at well RWR-MWI (2,476,000 µg/L in Q1 and 2,476,000 µg/L in Q3) and RWP-MWI (3,118,000 µg/L in Q3). During the Q1 event, the zinc concentrations from RW19-MWI, RWP-MWI and RWQ-MWI were significantly lower (by several orders of magnitude) than historical concentrations. The concentration detected in Q3 in RWP-MWI (3,118,000 µg/L) and RWQ-MWI (292,800 µg/L) were in line with the historical concentration range; it is assumed that the Q1 results were anomalous. RW19-MWI was not sampled in the Q3 event; but future results will be reviewed to determine if the Q1 2023 result was an anomaly.
  - Former Northwest Pond Area: **Figures 26 and 27** show that the contaminant plume in the intermediate zone extends beyond the northern limits of the treatment trenches and that the former Northwest Pond area may have acted as a source of contaminant mass to the intermediate zone groundwater. This impacted area was discussed in the Rod and Wire Mill IM 2020 Progress Report (ARM 2021d) and Parcel A3 NAPL Semi-Annual Monitoring Report (ARM 2023); it was identified in previous sampling and delineation events but was unable to be completely excavated due to the presence of overhead electric lines. Maximum zinc concentrations (above 400,000 µg/L) in the northwest pond area were observed at locations RWH-MWI, RWI-MWI and RW21-MWI. Other intermediate wells in the northwest pond area had zinc concentrations below 200,000 µg/L,
- Downgradient Perimeter wells: Concentrations of zinc in perimeter intermediate wells were below the relevant surface water criterion of 81 µg/L in two of 14 perimeter shallow wells sampled: RWB-MWI (17.1 µg/L in Q1 and 19.3 µg/L in Q3) and RW08-MWI (not detected in Q1). The zinc concentrations in RWB-MWI and RW08-MWI are similar to historic concentrations (refer to **Table 7**). The highest zinc concentration amongst perimeter wells in 2023 was consistently measured in well RWA-MWI (309,600 µg/L in the Q1 event and 341,900 µg/L in the Q3 event). Based on the lower concentration in RW22R-MWI (68,800 µg/L), the relatively high zinc concentration in RWA-MWI appears to be isolated from the high concentrations observed around the former Northwest Pond area.

Refer to Section 3.4 for trend analysis. All intermediate well zinc results are included in **Table 7.** Laboratory reports for samples collected during 2023 are included as **Appendix B.** Individual time-series graphs for each intermediate zone monitoring well are presented in **Appendix D.**

#### *3.3.2.3 Cadmium*

Intermediate zone cadmium concentrations during the Q1 event, shown on **Figure 34**, vary significantly across the Site. Intermediate zone cadmium concentrations during the Q3 event, shown on **Figure 35,** are similar to those observed during the Q1 event.

Time series graphs of cadmium concentrations in intermediate wells are shown in **Figures 36** through **41**. For all charts, the y-axes are shown on logarithmic scales. The charts include the four different well groups and are divided up based on installation date. Wells installed in 2017 or prior are termed "original wells", and wells installed in 2019 are termed "supplemental wells".

- **Figure 36**: intermediate downgradient perimeter wells, original wells
- **Figure 37**: intermediate downgradient perimeter wells, supplemental wells
- **Figure 38**: intermediate interior wells, original wells
- **Figure 39**: intermediate interior wells, supplemental wells
- **Figure 40**: intermediate delineation wells, all wells
- **Figure 41**: intermediate upgradient wells, all wells

Several items to note include:

- Interior Wells: Concentrations of cadmium in intermediate interior wells remains within the range of historical concentrations, and no significant fluctuations have been observed. The highest cadmium concentration was detected in RW13-MWI (35,700 µg/L in Q1), located in the former Sludge Bin Storage Area.
- Upgradient / Delineation Wells: There are elevated cadmium concentrations in wells RWI-MWI (5,797 µg/L in Q1) and RWH-MWI (4,700 µg/L in Q1 and 3,385 µg/L in Q3), located within the former Northwest Pond Area.
- Downgradient Perimeter wells: Cadmium concentrations in four of 14 intermediate perimeter wells were below the relevant surface water criterion of 7.9 µg/L during the Q1 2023 event in RWB-MWI, RW07-MWI, RW08-MWI, and RW22R-MWI (0.2 U µg/L, 0.738 µg/L, 0.2 U µg/L, and 4.49 µg/L, respectively). The highest cadmium concentration in perimeter wells in 2023 was consistently measured in well RWA-MWI (8,051 µg/L in the Q1 event and 7,977 µg/L in the Q3 event). However, based on the lower concentration of cadmium in RW22R-MWI (5.19 µg/L in Q1 and 4.49 µg/L in Q3), the relatively high cadmium concentration in RWA-MWI appears to be isolated from the high concentrations observed within the former Northwest Pond area (similar to what was also observed for intermediate zinc concentrations).

Refer to Section 3.4 for trend analysis. Cadmium results for all samples from the intermediate zone are included in **Table 8.** Laboratory reports for samples collected during 2023 are included as **Appendix B**. Individual time-series graphs for each intermediate zone monitoring well are presented in **Appendix D**.

##### *3.3.2.4 pH*

All 2023 intermediate zone field parameter data, including pH, are summarized in **Table 9**. For both the Q1 and Q3 event, pH values in the intermediate groundwater zone ranged from 4.72 (RWP-MWI in Q3) to 8.36 (RW03R-MWI in Q1). Measurements of pH within the intermediate groundwater zone during the Q1 and Q3 events are shown on **Figure 42** and **Figure 43,** respectively. Unlike in previous years, there were no intermediate zone monitoring wells with pH values less than 4.0. Across the whole site, pH is generally lower in the intermediate zone than in the shallow zone. However, during both the Q1 and Q3 events, the pH in the intermediate wells in the RWK and RWL well pairs was higher than it was in the corresponding shallow wells. This is discussed further in the paragraph below.

### 3.3.3. Focused Well Pairs J-K-L

**Figure 26** and **Figure 27** show the locations of the Focused wells (well pairs J-K-L) relative to the trench, along with the intermediate zinc concentrations for the Q1 and Q3 2023 sampling events, respectively. **Figure 34** and **Figure 35** show the locations of the Focused wells, along with the intermediate cadmium concentrations for the Q1 and Q3 2023 sampling events, respectively. **Figure 42** and **Figure 43** show pH in the intermediate wells during the Q1 and Q3 2023 sampling events, respectively. These Focused wells were installed in 2019, more than two years following the trench installation.

Time series graphs for the focused well pairs are shown in **Figures 44** through **48**. For zinc and cadmium charts, the y-axes are shown on logarithmic scales. Zinc results are compared to the relevant surface water criterion for zinc of 81 µg/L, and cadmium results are compared to the surface water criterion for cadmium of 7.9 µg/L.

- **Figure 44**: shallow zone, pH
- **Figure 45**: intermediate zone, pH
- **Figure 46**: shallow zone, zinc
- **Figure 47**: intermediate zone, zinc
- **Figure 48**: intermediate zone, cadmium

Cadmium concentrations are generally not detected above the reporting limits in the shallow Focused wells, therefore no time-series graph was made for cadmium concentrations in the shallow wells. Several items to note include:

- pH: Measured pH values exhibit decreasing gradient moving away from the trench in the intermediate zone Focused wells. In both the Q1 and Q3 events, RWJ-MWI has the highest pH of the focused intermediate wells (6.62 and 7.09) while RWL-MWI has the lowest pH (5.53 and 5.94), with RWK-MWI having a pH between the two (6.15 and 6.25). Furthermore, during both the Q1 and Q3 events, the pH was higher in intermediate well RWK-MWI than in its paired shallow well RWK-MWS, and the pH was higher in intermediate well RWL-MWI than in its paired shallow well RWL-MWS. This suggests that treated groundwater from the trench may be starting to reach the RWK-MWI and RWL-MWI wells.
- Shallow zone: Zinc concentrations in RWJ-MWS (closest to the trench) are lower than zinc concentrations in RWK or RWL. Zinc concentrations in the shallow zone Focused wells remain similar to historic concentrations since 2019. Cadmium concentrations are generally not detected above the reporting limits in the shallow Focused wells, or are detected at levels significantly below the cadmium surface water criteria (maximum cadmium concentration for 2023 was 0.11 µg/L in RWK-MWS vs cadmium surface water criteria of 7.9 µg/L).
- Intermediate zone: The zinc concentration in RWJ-MWI, directly adjacent and downgradient of the trench, was detected at 5,894 µg/L in the Q1 sampling event and 6,992 µg/L in the Q3 sampling event. As the distance downgradient from the trench increased, the zinc concentration was observed to increase such that the zinc concentration ranged from 15,630 µg/L to 22,520 µg/L in RWK-MWI (~10 feet downgradient of RWJ-MWI) and from 76,850 µg/L to 88,270 µg/L in RWL-MWI (~20 feet downgradient from RWJ-MWI) in the Q1 and Q3 sampling events, respectively. The same pattern appears in these Focused wells in intermediate zone for cadmium concentrations, with 35,700 µg/L cadmium (RW13-MWI in Q1) and cadmium concentrations ranging from 57.4 µg/L to 851 µg/L in the intermediate zone Focused wells. For comparison purposes, upgradient groundwater concentrations are significantly higher (479,900 µg/L zinc and 35,700 µg/L cadmium in RW13-MWI in Q1 2023). This suggests that the trenches are effective at reducing zinc and cadmium concentrations in the intermediate zone wells.

The zinc concentrations, cadmium concentrations, and pH measurements in the intermediate zone suggest that the permeable reactive barrier treatment technology and the reagent appears to be effective in raising the pH of the groundwater and removing the dissolved metals concentrations from the ground water.

The groundwater elevations of the Focused well pairs provide evidence that groundwater may be draining through the trenches from the shallow zone to the intermediate zone. In both semiannual sampling events 2023, there is a slight groundwater elevation gradient toward the trench (from L toward J) in these three wells in the shallow zone. This gradient is depicted by the groundwater elevations shown on **Figure 4** and **Figure 5**. The differences in groundwater elevations between the three wells are within a tenth of a foot, which is consistent with historical observations. During both the Q1 and Q3 2023 events, there is a slight groundwater elevation gradient towards the trench (from L toward J) in the shallow zone and away from the trench in the intermediate zone. This gradient is depicted by the groundwater elevations shown on **Figure 25**. The difference in groundwater elevations between the three intermediate zone Focused wells is approximately a few tenths of a foot. A groundwater elevation gradient away from the trench in the intermediate zone was not observed during the Q1 event due to an anomalous groundwater elevation at RWK-MWI.

### 3.4. STATISTICAL EVALUATION – TREND ANALYSIS

For the purpose of evaluating the distribution of parameter concentrations over time, parameters were subjected to a trend analysis. Trend analysis was performed for cadmium and zinc for all wells using the Mann-Kendall test.

The Mann-Kendall test is a non-parametric test for identifying linear trends in data. The test is suitable for non-normally distributed data and is not limited by sample size. The test pairs measurements and assigns a score to each possible pair based on comparing the average of the pair in question to the average of a pair of earlier measurements. If the average of a particular pair of measurements is lower than the average of an earlier pair it is assigned a score of -1, if it is tied it is assigned a score of 0, and if it is higher it is assigned a score of 1. The sum of these scores is computed to obtain the Mann-Kendall Statistic (S). If S is positive it implies an upward trend over time, if it is negative it implies a downward trend over time, an S value near zero roughly indicates that there is no apparent trend in data. As the absolute value of S gets larger, the stronger the evidence for a real increasing or decreasing trend. For larger data sets (greater than 10), the behavior of S tends to approximate a normal distribution in accordance to the central limit theorem, and a standardized statistic, Z, is used for trend identification. For higher levels of significance, the larger the absolute value of Z or S needs to be to conclude the presence of a trend in data over time. A significance level of 95 percent was used for all Mann-Kendall Tests performed for this evaluation. Data points that were below the detection limits were replaced with the laboratory reporting limit divided by two. No wells were excluded as a result of having too few samples. The results of the trend tests were reviewed to remove any trends that were the result of changing detection limits over time. Statistical analyses were performed using the ChemStat® statistical analysis software (version 6.3.0.2, Starpoint Software, Inc., ©1996-2013). A trend was identified as statistically significant if the Mann-Kendall Test identified it as increasing or decreasing at a 95% confidence factor. The ChemStat® input and output files are included as an Electronic Attachment.

Statistically significant trends for cadmium and zinc are summarized **Table 10**. If no statistically significant trend was identified for a parameter, it is not shown in **Table 10**. Historical sampling dates included in the statistical trend analysis covered events from well installation (2017 to 2019) to present. The results of all trend tests are included in **Appendix E** and are summarized below.

<u>Upgradient wells:</u>

- Shallow
  - Downward trend for cadmium in RWR-MWS
  - Upward trend for zinc in RWS-MWS
- Intermediate
  - Downward trend for cadmium in RW19-MWI

Delineation wells:
- Shallow
  - Downward trend for cadmium in RWO-MWS
  - Downward trend for zinc in RWO-MWS
- Intermediate
  - Downward trend for cadmium in RWO-MWI
  - Downward trends for zinc in RWO-MWI, RWP-MWI, and RWQ-MWI

Interior wells:
- Shallow
  - Downward trends for cadmium in RW12-MWS, RW16-MWS, RW18-MWS, RW23-MWS, and RWN-MWS
  - Downward trends for zinc in RW16-MWS, RW18-MWS, and RWN-MWS
  - Upward trend for cadmium at RW11-MWS
  - Upward trend for zinc at RW11-MWS
- Intermediate
  - Downward trends for cadmium RW10-MWI, RW11-MWI, RW12-MWI, RW16-MWI, RW18-MWI, and RW24-MWI
  - Downward trends for zinc in RW10-MWI, RW11-MWI, RW12-MWI, RW16-MWI, RW24-MWI, and RWM-MWI
  - Upward trends for cadmium at RW23-MWI and RW25-MWI
  - Upward trends for zinc at RW09-MWI

Focused (J-K-L) wells:
- Shallow
  - Downward trends for cadmium in RWJ-MWS, RWK-MWS, and RWL-MWS
  - Upward trend for zinc in RWK-MWS
- Intermediate
  - Downward trend for cadmium in RWL-MWI
  - Downward trend for zinc in RWL-MWI

Downgradient Perimeter wells:
- Shallow
  - Downward trends for cadmium in RW01-MWS, RW02-MWS, RW05-MWS, RW06-MWS, RW22R-MWS, RWB-MWS, RWD-MWS, and RWF-MWS
  - Downward trends for zinc in RW01-MWS, RW05-MWS, and RWF-MWS

    - Upward trends for zinc at RW07-MWS
- Intermediate
    - Downward trends for cadmium in RW05R-MWI, RWB-MWI, and RWE-MWI
    - Downward trends for zinc in RW05R-MWI, RW08-MWI, and RWE-MWI
    - Upward trends for cadmium at RW01-MWI, RW06-MWI, RW07-MWI, and RW22R-MWI
    - Upward trends for zinc at RW01-MWI, RW06-MWI, RW07-MWI, RW22R-MWI, and RWG-MWI

For the Focused J-K-L wells, several downward trends were identified, and one upward trend was identified.

For interior wells, trends were evaluated in six shallow wells and 12 intermediate wells (based on wells with 2023 sampling results). For cadmium in the 18 interior wells, eleven wells had downward trends, three wells had upward trends, and four wells had no statistically significant trend. For zinc in the 18 interior wells, nine wells had downward trends, two wells had upward trends, and seven wells had no statistically significant trend.

This indicates that for the wells within the remediation trench area (interior and Focused wells), the majority of wells have either stable or downward trends for both cadmium and zinc.

## 3.5. Contaminant Reduction

The interim groundwater treatment goals are to increase the pH in the intermediate groundwater zone in order to precipitate the dissolved metals and achieve a reduction in dissolved concentrations of cadmium and zinc within the source areas.

The time-series graphs show that the cadmium and zinc concentrations have, in some cases, fluctuated by orders of magnitude between consecutive sampling events. As a result, the comparison of individual quarterly values for some wells can indicate an increase or decrease depending on which specific quarterly values are compared (when that may not be representative of the overall trend for the well). For ease in visualizing overall trends and magnitude of reductions, annual average concentrations of cadmium and zinc were calculated for each well for which multiple years of data are available.

### 3.5.1. Shallow Zone

**Table 11** summarizes average annual groundwater cadmium and zinc concentrations at each shallow zone well installed prior to 2017. The table shows that the average cadmium concentrations in shallow zone wells that were sampled in 2023 are all below the ambient surface water quality criterion of 7.9 ug/L, with the exception of RW12-MWS (located within the interior portion of the plume), with an average 2023 cadmium concentration of 9.8 ug/L.

##### *3.5.1.1 Cadmium*

For the interior shallow zone well group, average cadmium concentrations increased for RW11-MWS and RW12-MWS (both located within the western portion of the interior well group), and average cadmium concentrations decreased for RW16-MWS and RW18-MWS (both located along the eastern portion of the interior wells). For the downgradient perimeter shallow zone well group, average cadmium concentrations decreased for all downgradient perimeter shallow wells over the observed time period.

##### *3.5.1.2 Zinc*

For the interior shallow zone well group, average zinc concentrations increased for RW11-MWS and RW12-MWS (both located within the western portion of the interior well group), and average zinc concentrations decreased for RW16-MWS and RW18-MWS (both located along the eastern portion of the interior wells). For the downgradient perimeter shallow zone well group, average zinc concentrations decreased for all downgradient perimeter shallow wells except RW02-MWS over the observed time period.

#### 3.5.2. Intermediate Zone

**Table 12** summarizes average annual groundwater cadmium and zinc concentrations at each intermediate zone well installed prior to 2017.

##### *3.5.2.1 Cadmium*

For upgradient and interior intermediate wells, average cadmium concentrations decreased for all wells, with the exception of RW09-MWI and RW15-MWI. However, the average cadmium concentration for RW09-MWI is close to the surface water criteria (11.5 ug/L for 2023). For the downgradient perimeter intermediate wells, average cadmium concentrations increased for all wells, with the exception of RW08-MWI.

For downgradient perimeter wells with an increase in the average cadmium concentrations, the average 2023 cadmium concentrations ranged from 13.8 ug/L (RW07-MWI) to 571 ug/L (RW06-MWI), which are still significantly below the maximum average cadmium concentrations observed in interior wells (35,700 ug/L in RW13-MWI). In addition, the 2023 average cadmium concentrations for downgradient perimeter wells are below the historical maximum average cadmium concentrations observed (i.e., 2023 average cadmium concentration for RW06-MWI is 571 ug/L, which is below the historical maximum of 807 ug/L from 2019 for RW06-MWI).

##### *3.5.2.2 Zinc*

For interior intermediate wells, average zinc concentrations decreased for all wells, with the exception of RW09-MWI and RW15-MWI (similar to cadmium). For the downgradient perimeter intermediate wells, average zinc concentrations increased for all wells, with the exception of RW08-MWI. For both interior and downgradient perimeter wells, the 2023 average zinc concentrations are below the maximum average concentrations observed for any of the wells. For example, interior well RW15-MWI and downgradient perimeter well RW07-MWI had the largest percent increase between the first sampling event and 2023 (9112% and 3411%, respectively). The 2023 average zinc concentration for RW15-MWI is 100,800 ug/L, which is below the historical maximum of 118,100 ug/L from 2019. The 2023 average zinc concentration for RW07-MWI is 25,244 ug/L, which is below the historical maximum of 65,300 ug/L from 2022.

# 4.0 SUMMARY AND CONCLUSIONS

The current approach for addressing the source area elevated dissolved cadmium and zinc in the intermediate groundwater zone is to precipitate the dissolved metals in-situ by raising the groundwater pH above 7.0. This approach relies on the impacted ground water to come into contact with the trenches and precipitate the dissolved metals in the intermediate zone. The effectiveness of the interim measure is expected to be observed first in the intermediate zone wells closest to the trenches. However, the groundwater velocity is relatively slow (less than 5 ft/year), and most wells (with the exception of the focused well pairs) are located more than 50 feet from any of the trenches. Therefore, results may not be apparent in downgradient wells for multiple years following trench installation (January 2017).

## 4.1. FOCUSED WELLS

The three Focused well pairs wells J - K - L were installed directly adjacent to the western most treatment trench to help evaluate overall trench performance. Monitoring well RWJ-MWI located closest to the trench exhibited increased pH values and, most notably, significantly lower zinc concentrations when compared to the upgradient groundwater concentrations relative to the trench. Furthermore, it is notable that the pH was higher in intermediate wells RWK-MWI and RWL-MWI than in their paired shallow wells RWK-MWS and RWL-MWS. This suggests that treated groundwater from the trench may be starting to reach the RWK-MWI and RWL-MWI wells.

It is still early in the generation and evaluation of the groundwater monitoring data, especially due to the relatively flat groundwater gradient in the intermediate zone (as shown on **Figure 24** and **Figure 25**). Flow through the trenches is what affects the treatment of the groundwater, and the flow of ground water is slow due to the flat hydraulic gradient. However, the trend analysis completed identified several downward trends (cadmium in RWJ-MWS, RWK-MWS, RWL-MWS, and RWL-MWI, and zinc in RWL-MWI) in the Focused J-K-L wells, and only one upward trend for zinc in RWK-MWS (refer to Section 3.4).

## 4.2. INTERIOR WELLS

For interior wells, trends were evaluated in six shallow wells and 12 intermediate wells (based on wells with 2023 sampling results). For cadmium in the 18 interior wells, eleven wells had downward trends, three wells had upward trends, and four wells had no statistically significant trend. For zinc in the 18 interior wells, nine wells had downward trends, two wells had upward trends, and seven wells had no statistically significant trend. **Table 12** shows also that there are concentration reductions in the majority of interior intermediate wells since installation of the trenches.

This indicates that for the wells within the remediation trench area, the majority of wells have either stable or downward trends for both cadmium and zinc. Groundwater monitoring data and the overall trend will continue to be monitored and evaluated to assess the effectiveness of the treatment trenches in precipitating the dissolved cadmium and zinc concentrations from the groundwater.

### 4.3. Downgradient Perimeter Wells

In the shallow wells along the western shoreline (downgradient perimeter wells), cadmium concentrations in nearly all wells are below the ambient surface water quality criterion. In addition, zinc concentrations in four of 12 shallow wells sampled in 2023 are below the ambient surface water quality criterion.

In the intermediate wells along the western shoreline (downgradient perimeter wells), cadmium concentrations in four of 14 intermediate wells were below the relevant surface water criterion. In addition, zinc concentrations in two of 14 intermediate wells sampled in 2023 were below the ambient surface water quality criterion.

The RWM IM Supplemental Investigation Report (ARM 2020a) identified some areas that may be outside the intended effective zone of the remediation trenches. The long-term effectiveness of the interim measure and the need for additional or alternative remedial measures will be evaluated further as described in the Rod and Wire Mill Groundwater Corrective Measures Study (CMS) Work Plan (Revision 1, dated January 14, 2021). The forthcoming Rod and Wire Mill Groundwater CMS Report will also evaluate the existing monitoring well network for both the shallow and intermediate groundwater zones.

Groundwater sampling at the RWM for dissolved cadmium and zinc will continue in 2024 in accordance with the schedule as presented in the RWM Monitoring Network Update letter (ARM 2021c).

# 5.0 REFERENCES

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ARM Group LLC (2023). *Semi-Annual NAPL Update – Parcel A3 - RW-003.* March 3, 2023.

# FIGURES


Trade Point Atlantic
Rod & Wire Mill Location Map
March 30, 2021

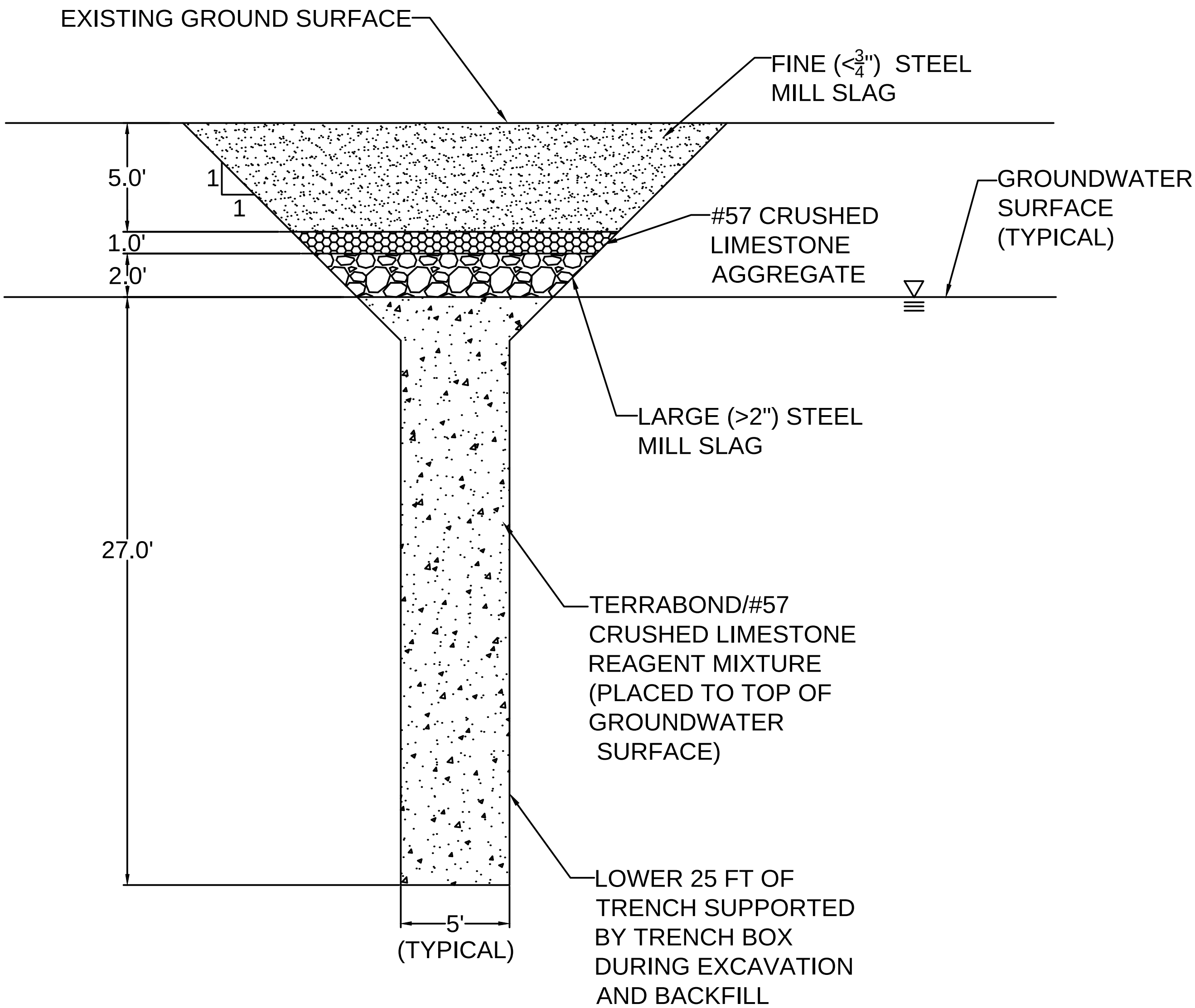
Figure
1

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103


Parcel A3 (Rod & Wire Mill)
Location of Historical Activities
January 13, 2020

Figure 2

| | |
|---|---|
| Tradepoint Atlantic | Sparrows Point |
| ARM Project 21010103 | Baltimore County, MD |

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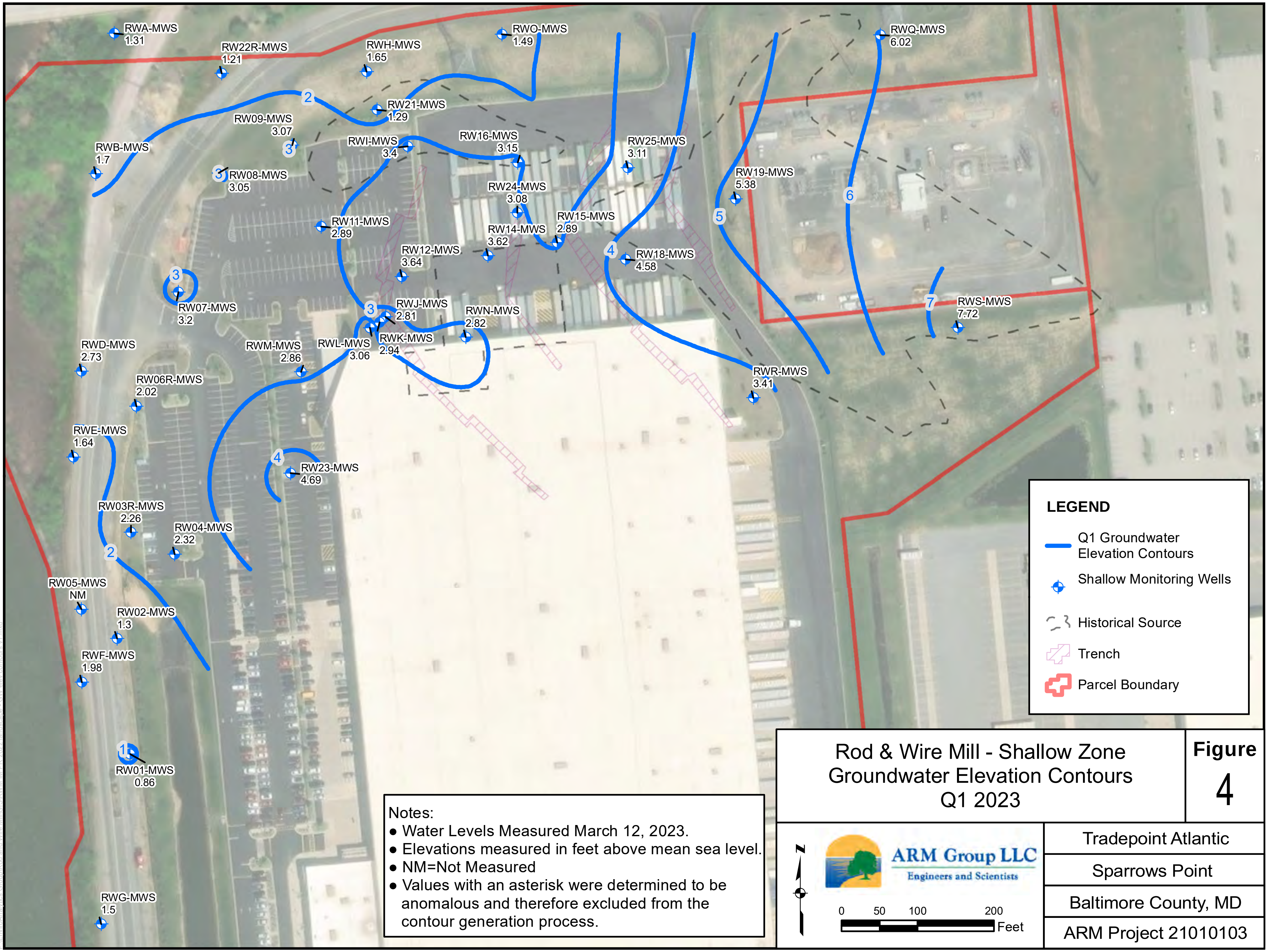
F:\Projects\2016\20163421 - Sparrows Point Rod and Wire Mill Area\Cad\FIGURE 3 - Trench Profiles.dwg

INTERIM REMEDIAL MEASURES
FORMER ROD AND WIRE MILL AREA
SPARROWS POINT, MD
TYPICAL TREATMENT TRENCH BACKFILL PROFILE SECTION VIEW

| | |
|---|---|
| PROJECT ENGINEER: JSD | SCALE: 1" = 8' |
| CHECKED BY: | PROJECT NUMBER: 2016-3421 |
| DRAWN BY: EEE | DATE: 3/23/2017 FIGURE: 3 |




Notes:

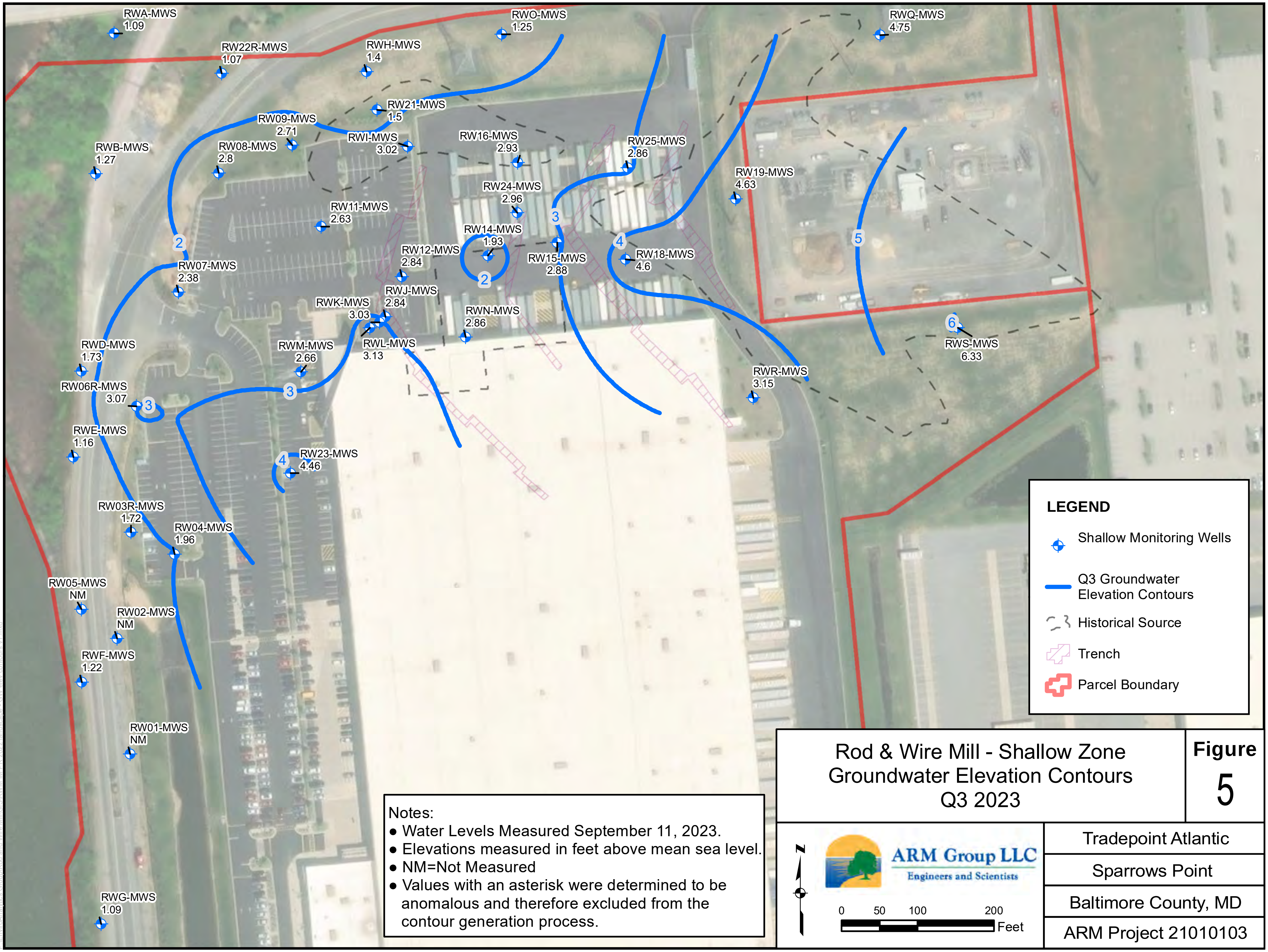
- Water Levels Measured March 12, 2023.
- Elevations measured in feet above mean sea level.
- NM=Not Measured
- Values with an asterisk were determined to be anomalous and therefore excluded from the contour generation process.

Rod & Wire Mill - Shallow Zone Groundwater Elevation Contours Q1 2023

**Figure 4**

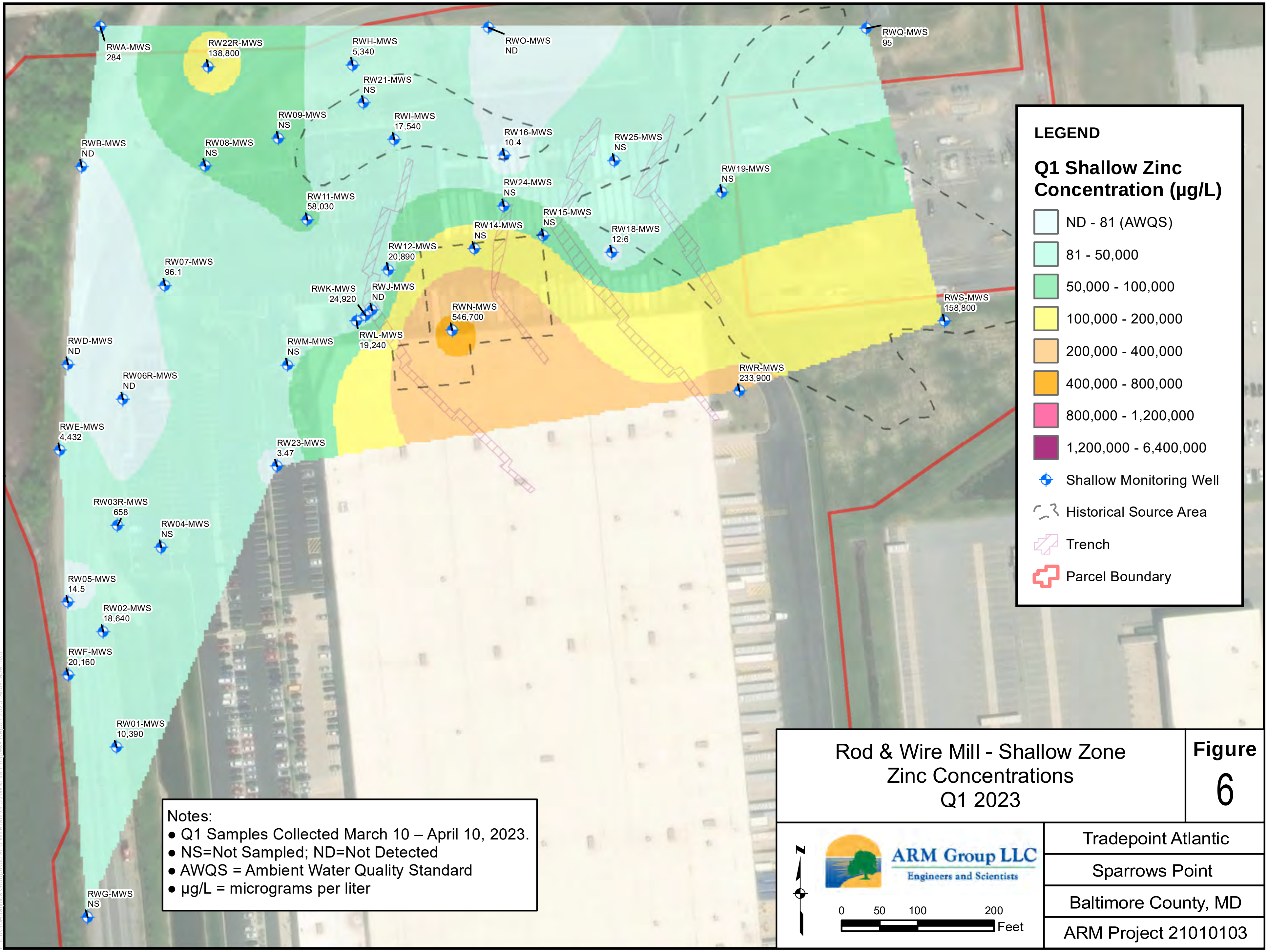
ARM Group LLC
Engineers and Scientists

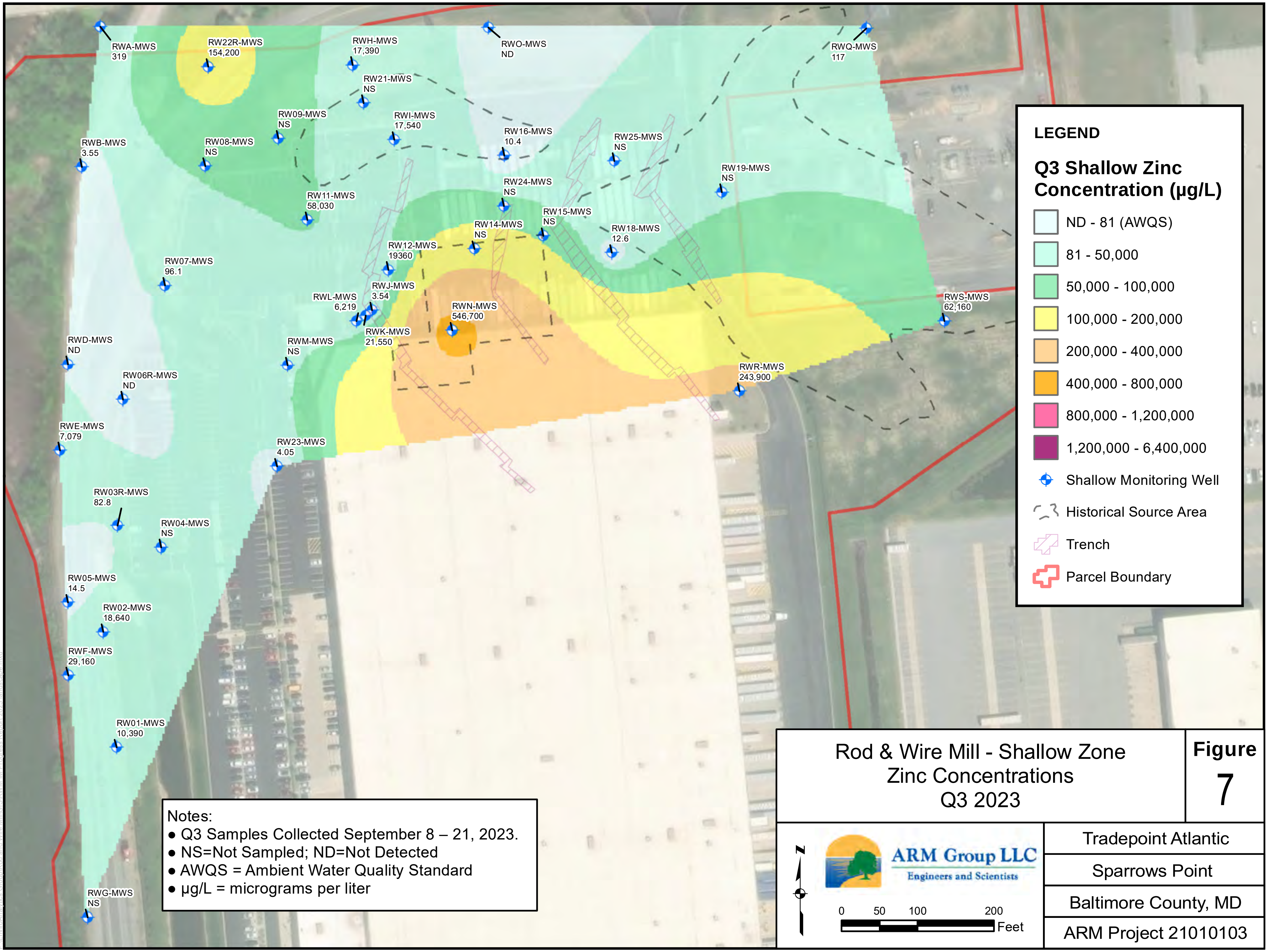
| |
|---|
| Tradepoint Atlantic |
| Sparrows Point |
| Baltimore County, MD |
| ARM Project 21010103 |

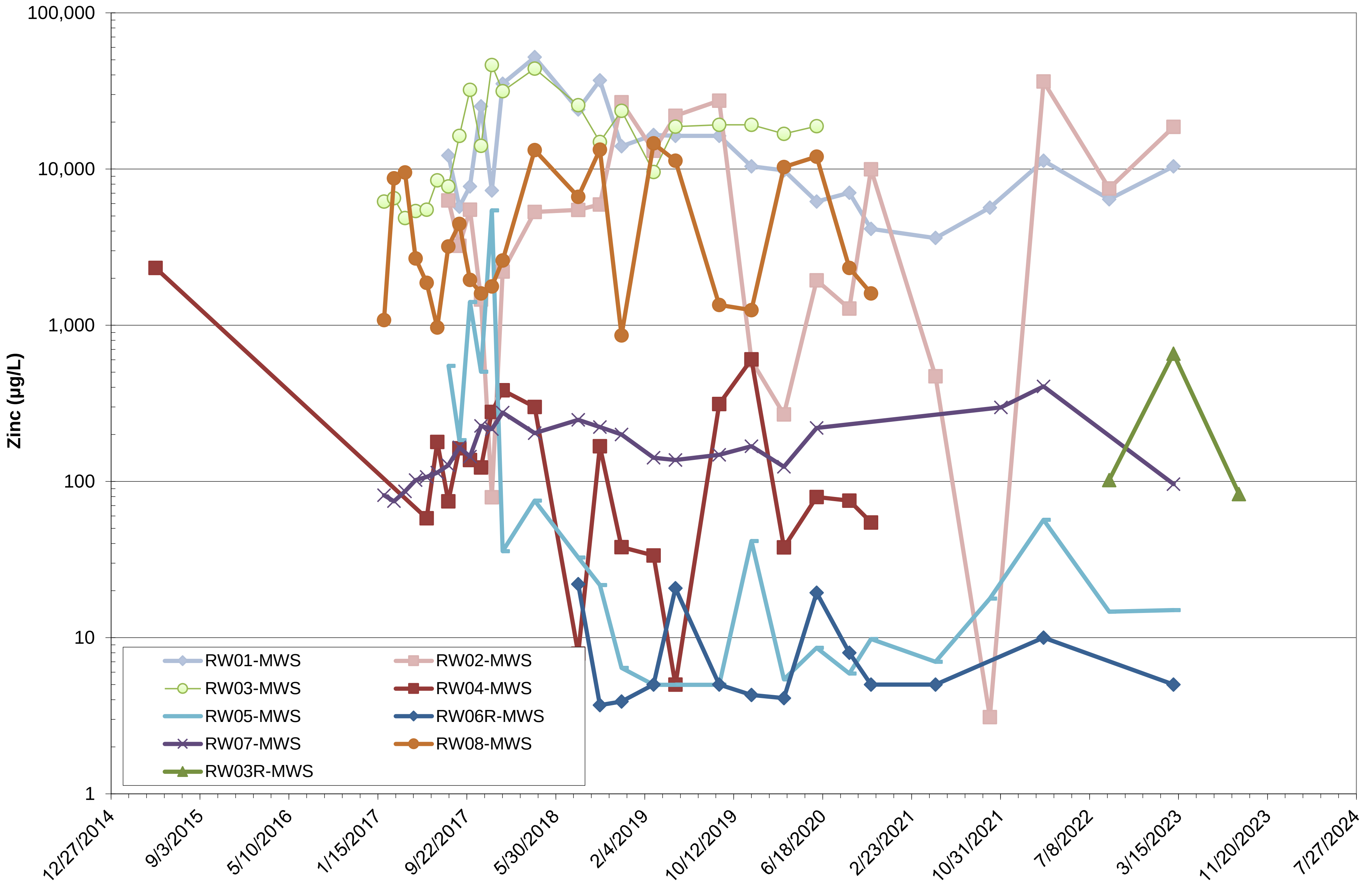



Notes:
- Water Levels Measured September 11, 2023.
- Elevations measured in feet above mean sea level.
- NM=Not Measured
- Values with an asterisk were determined to be anomalous and therefore excluded from the contour generation process.

| Rod & Wire Mill - Shallow Zone Groundwater Elevation Contours Q3 2023 | Figure 5 |
| --- | --- |
| ARM Group LLC Engineers and Scientists | Tradepoint Atlantic |
| | Sparrows Point |
| | Baltimore County, MD |
| | ARM Project 21010103 |


RWA-MWS 284
RW22R-MWS 138,800
RWH-MWS 5,340
RWO-MWS ND
RWQ-MWS 95
RW21-MWS NS
RW09-MWS NS
RWI-MWS 17,540
RW16-MWS 10.4
RW25-MWS NS
RWB-MWS ND
RW08-MWS NS
RW19-MWS NS
RW11-MWS 58,030
RW24-MWS NS
RW15-MWS NS
RW14-MWS NS
RW18-MWS 12.6
RW12-MWS 20,890
RW07-MWS 96.1
RWK-MWS 24,920
RWJ-MWS ND
RWN-MWS 546,700
RWS-MWS 158,800
RWD-MWS ND
RWM-MWS NS
RWL-MWS 19,240
RW06R-MWS ND
RWR-MWS 233,900
RWE-MWS 4,432
RW23-MWS 3.47
RW03R-MWS 658
RW04-MWS NS
RW05-MWS 14.5
RW02-MWS 18,640
RWF-MWS 20,160
RW01-MWS 10,390
RWG-MWS NS
LEGEND
Q1 Shallow Zinc Concentration (µg/L)
ND - 81 (AWQS)
81 - 50,000
50,000 - 100,000
100,000 - 200,000
200,000 - 400,000
400,000 - 800,000
800,000 - 1,200,000
1,200,000 - 6,400,000
Shallow Monitoring Well
Historical Source Area
Trench
Parcel Boundary
Notes:
● Q1 Samples Collected March 10 – April 10, 2023.
● NS=Not Sampled; ND=Not Detected
● AWQS = Ambient Water Quality Standard
● µg/L = micrograms per liter
Rod & Wire Mill - Shallow Zone
Zinc Concentrations
Q1 2023
Figure
6
ARM Group LLC
Engineers and Scientists
N
0 50 100 200
Feet
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103


RWA-MWS
319
RW22R-MWS
154,200
RWH-MWS
17,390
RWO-MWS
ND
RWQ-MWS
117
RW21-MWS
NS
RW09-MWS
NS
RWI-MWS
17,540
RWB-MWS
3.55
RW08-MWS
NS
RW16-MWS
10.4
RW25-MWS
NS
RW19-MWS
NS
RW11-MWS
58,030
RW24-MWS
NS
RW15-MWS
NS
RW14-MWS
NS
RW18-MWS
12.6
RW12-MWS
19360
RW07-MWS
96.1
RWJ-MWS
3.54
RWL-MWS
6,219
RWN-MWS
546,700
RWS-MWS
62,160
RWK-MWS
21,550
RWM-MWS
NS
RWD-MWS
ND
RW06R-MWS
ND
RWR-MWS
243,900
RWE-MWS
7,079
RW23-MWS
4.05
RW03R-MWS
82.8
RW04-MWS
NS
RW05-MWS
14.5
RW02-MWS
18,640
RWF-MWS
29,160
RW01-MWS
10,390
RWG-MWS
NS
LEGEND
Q3 Shallow Zinc Concentration (µg/L)
ND - 81 (AWQS)
81 - 50,000
50,000 - 100,000
100,000 - 200,000
200,000 - 400,000
400,000 - 800,000
800,000 - 1,200,000
1,200,000 - 6,400,000
Shallow Monitoring Well
Historical Source Area
Trench
Parcel Boundary
Notes:
● Q3 Samples Collected September 8 – 21, 2023.
● NS=Not Sampled; ND=Not Detected
● AWQS = Ambient Water Quality Standard
● µg/L = micrograms per liter
N
0 50 100 200
Feet
ARM Group LLC
Engineers and Scientists
Rod & Wire Mill - Shallow Zone
Zinc Concentrations
Q3 2023
Figure
7
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103




ARM Group LLC

Engineers and Scientists

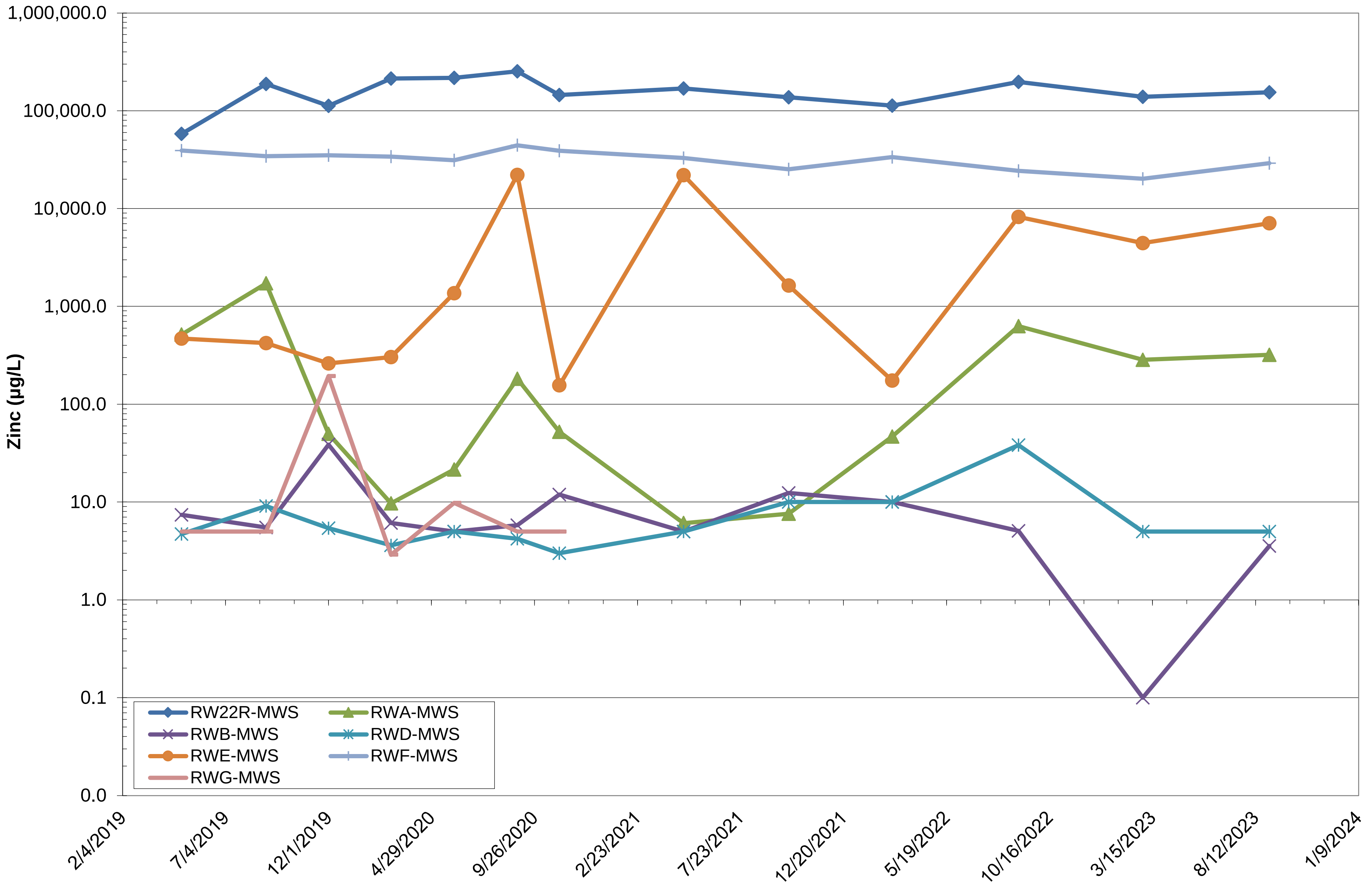
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

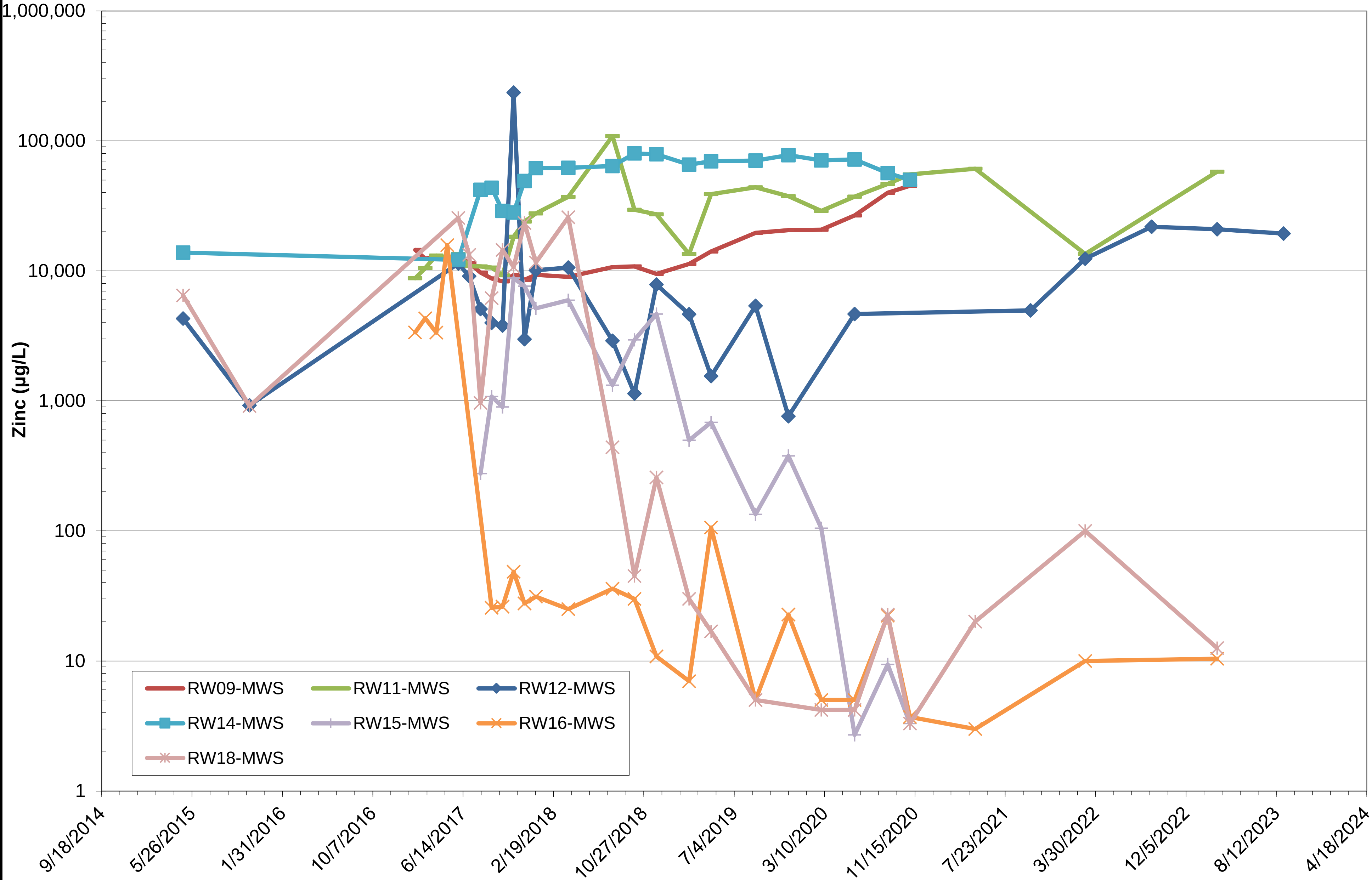
Shallow Downgradient Perimeter Zinc Concentrations (Original Wells)

January 2024

**Figure 8**




| | | | |
|---|---|---|---|
| ARM Group LLC<br>Engineers and Scientists | Rod and Wire Mill<br>Tradepoint Atlantic<br><br>Sparrows Point, Maryland | Shallow Downgradient Perimeter Zinc Concentrations (Supplemental Wells)<br>January 2024 | **Figure**<br>**9** |




ARM Group LLC
Engineers and Scientists

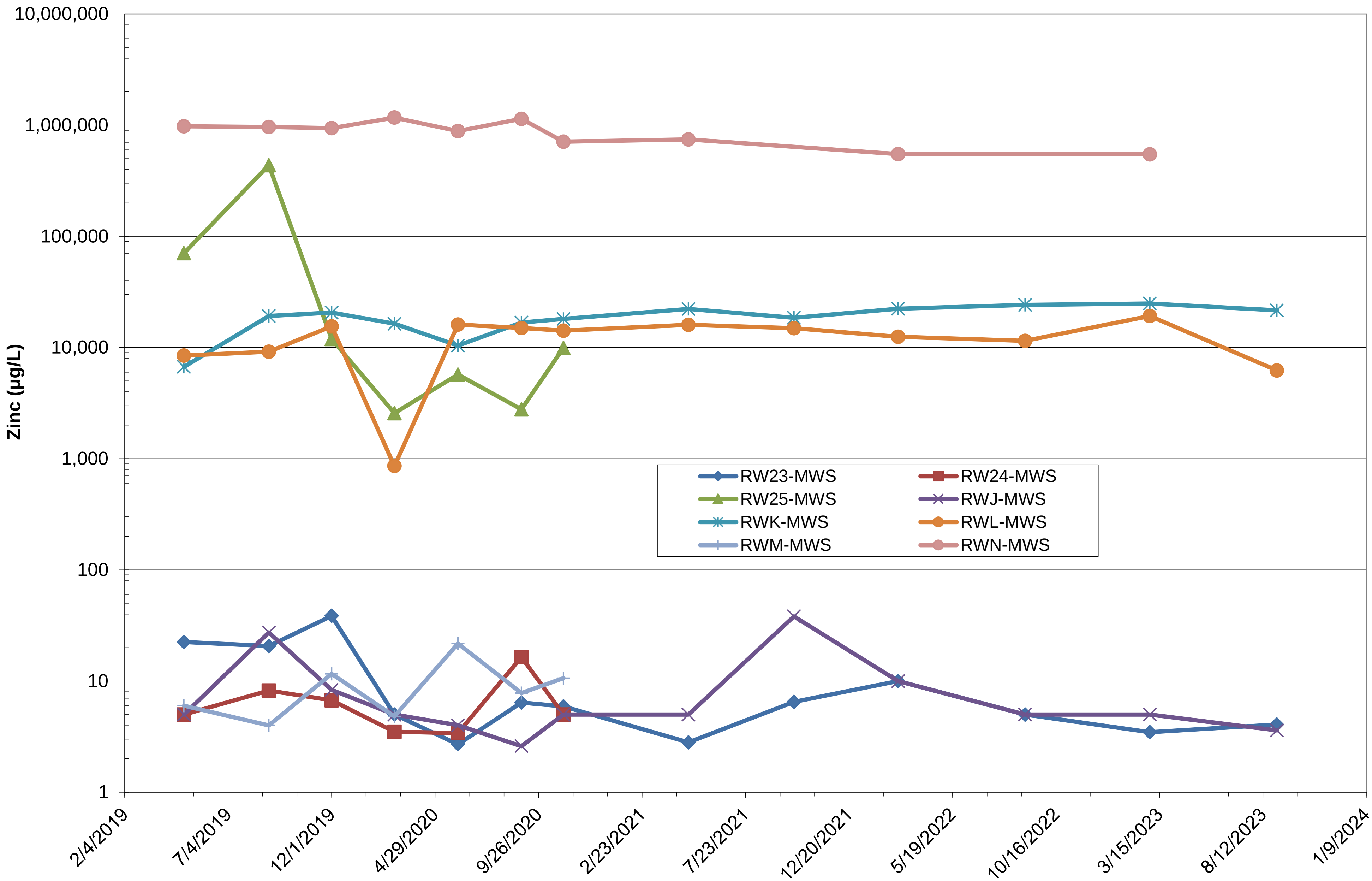
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Shallow Interior Zinc Concentrations (Original Wells)

January 2024

Figure
10




ARM Group LLC
Engineers and Scientists

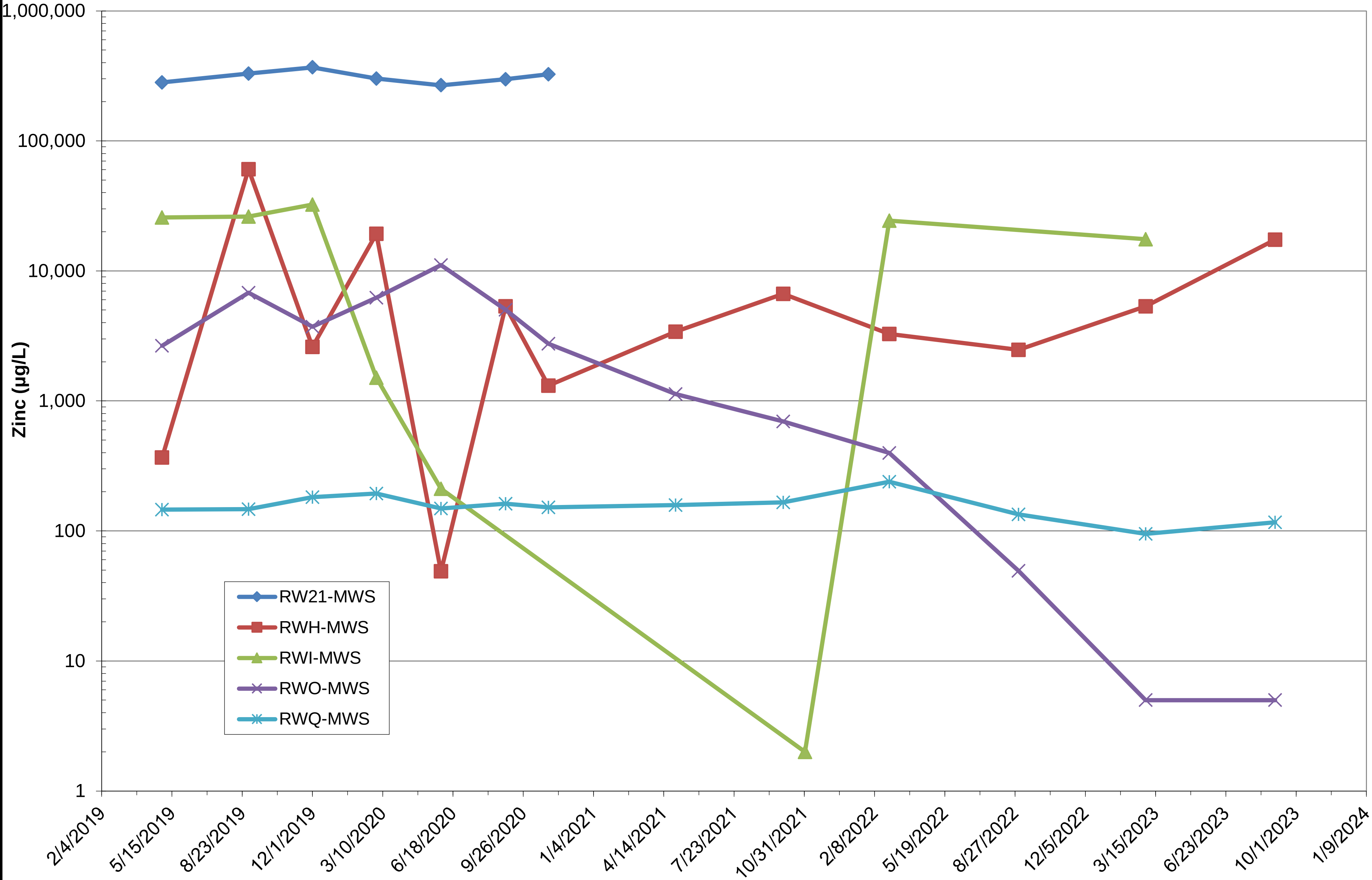
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

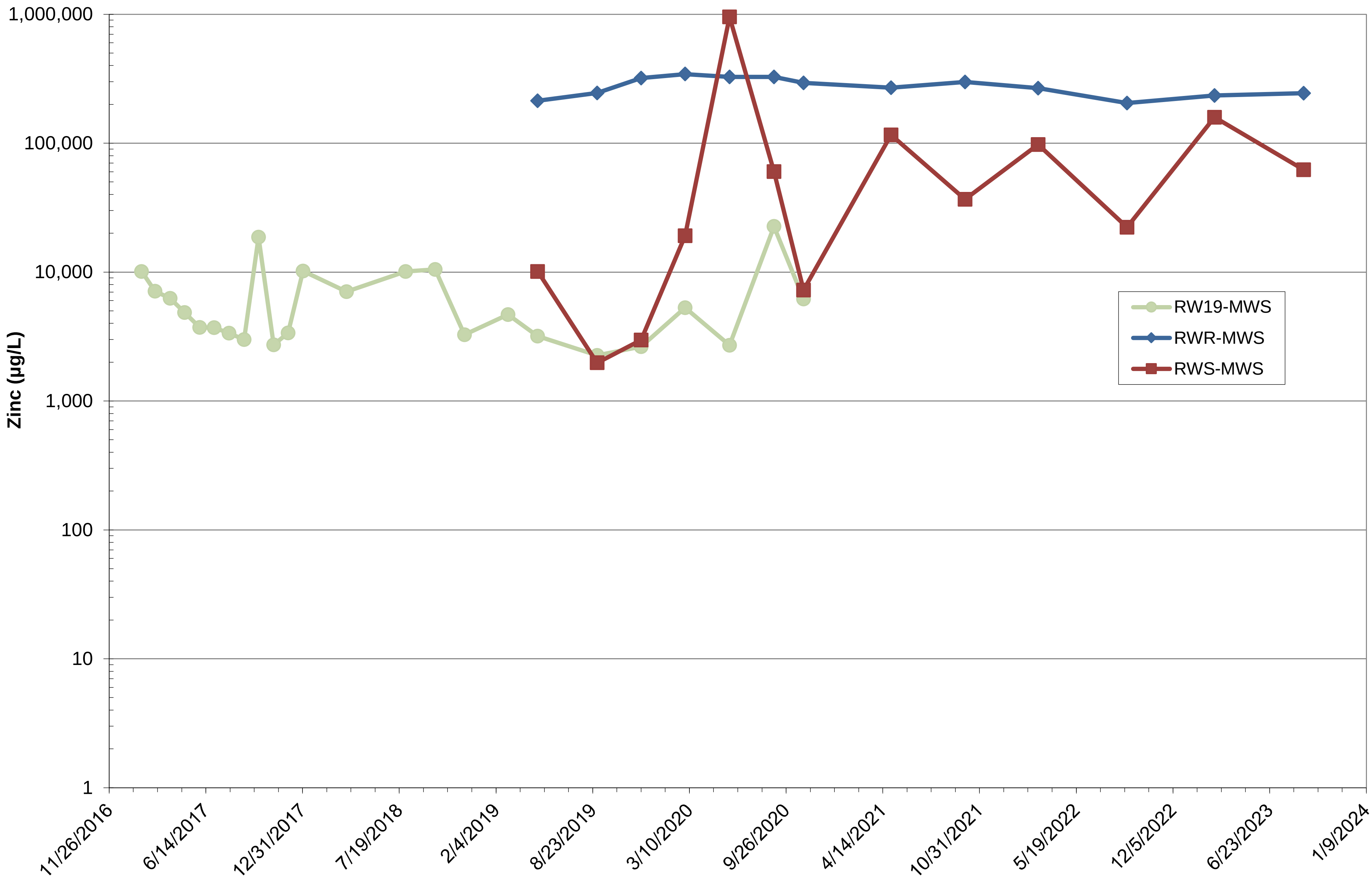
Shallow Interior Zinc Concentrations (Supplemental Wells)

January 2024

Figure 11

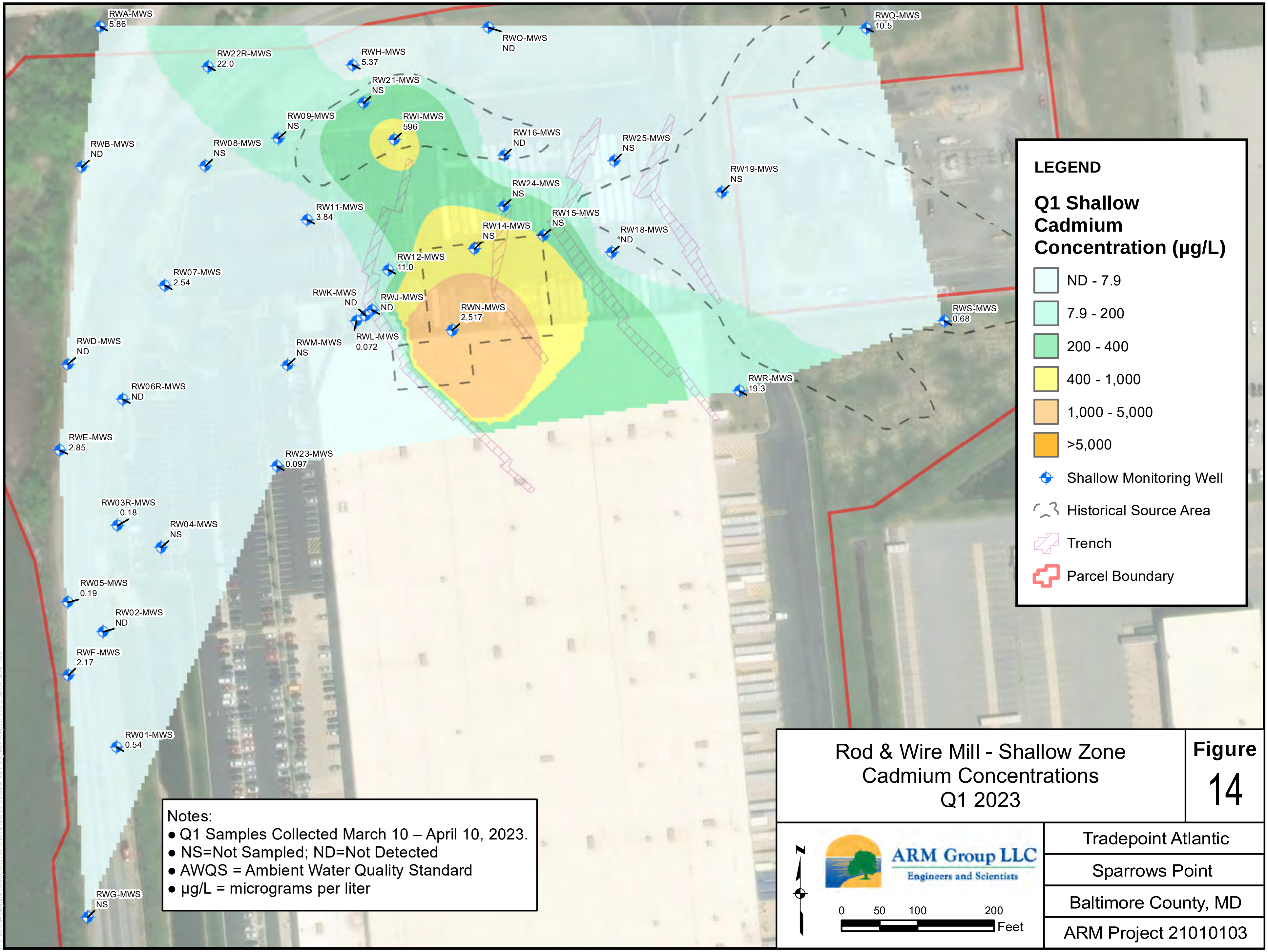



| ARM Group LLC<br>Engineers and Scientists | Rod and Wire Mill<br>Tradepoint Atlantic<br><br>Sparrows Point, Maryland | Shallow Delineation Wells<br>Zinc Concentrations<br><br>January 2024 | Figure<br>**12** |
|---|---|---|---|




ARM Group LLC
Engineers and Scientists

| Rod and Wire Mill<br>Tradepoint Atlantic | Shallow Upgradient<br>Zinc Concentrations<br>January 2024 | Figure<br>**13** |
|---|---|---|
| Sparrows Point, Maryland | | |

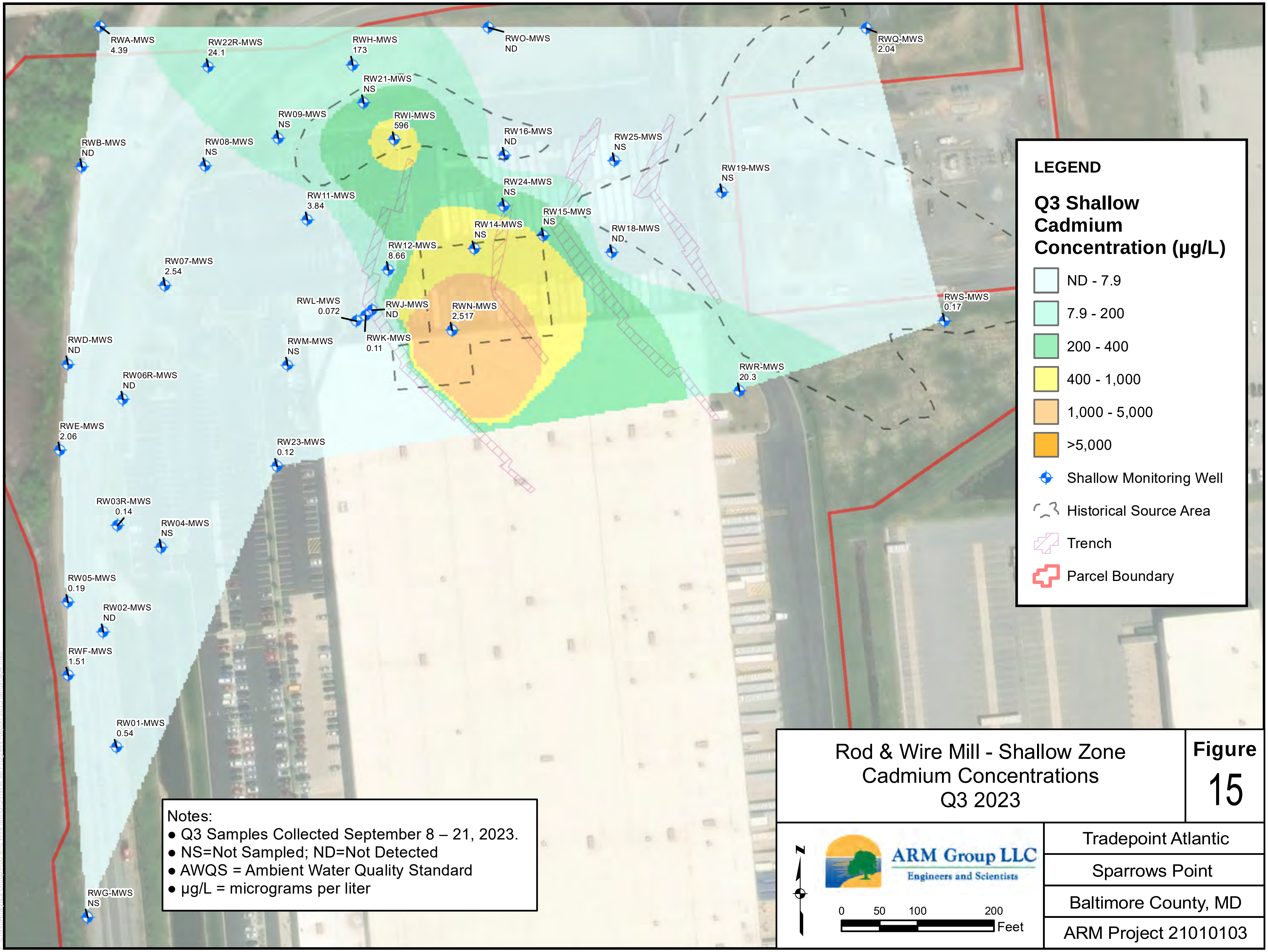



Notes:
- Q1 Samples Collected March 10 – April 10, 2023.
- NS=Not Sampled; ND=Not Detected
- AWQS = Ambient Water Quality Standard
- µg/L = micrograms per liter

| Rod & Wire Mill - Shallow Zone Cadmium Concentrations Q1 2023 | Figure 14 |
|---|---|

ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103



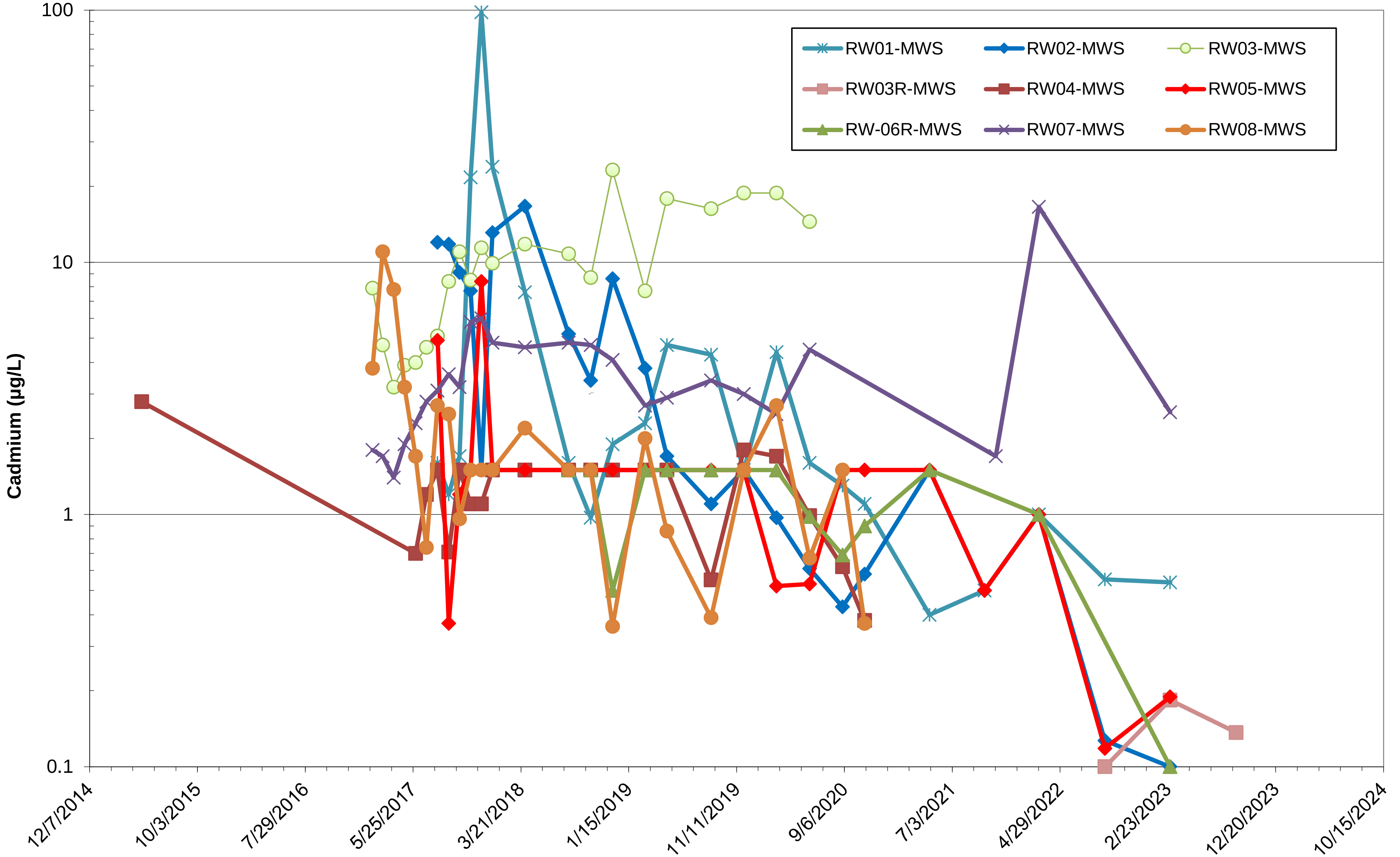

Notes:
- Q3 Samples Collected September 8 – 21, 2023.
- NS=Not Sampled; ND=Not Detected
- AWQS = Ambient Water Quality Standard
- µg/L = micrograms per liter

Rod & Wire Mill - Shallow Zone Cadmium Concentrations Q3 2023

Figure 15

ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103




ARM Group LLC
Engineers and Scientists

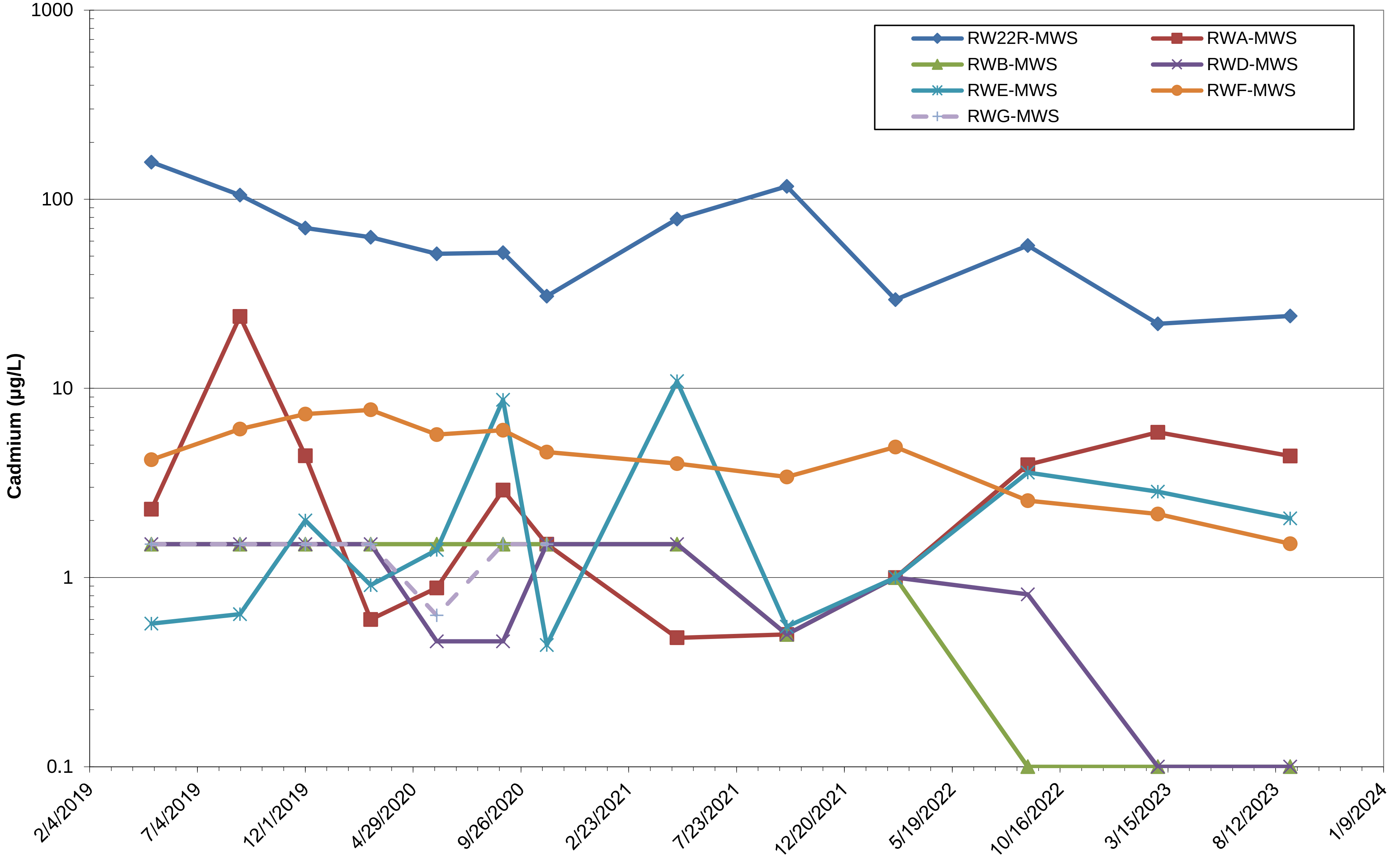
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Shallow Downgradient Perimeter
Cadmium Concentrations (Original Wells)

January 2024

**Figure 16**




ARM Group LLC
Engineers and Scientists

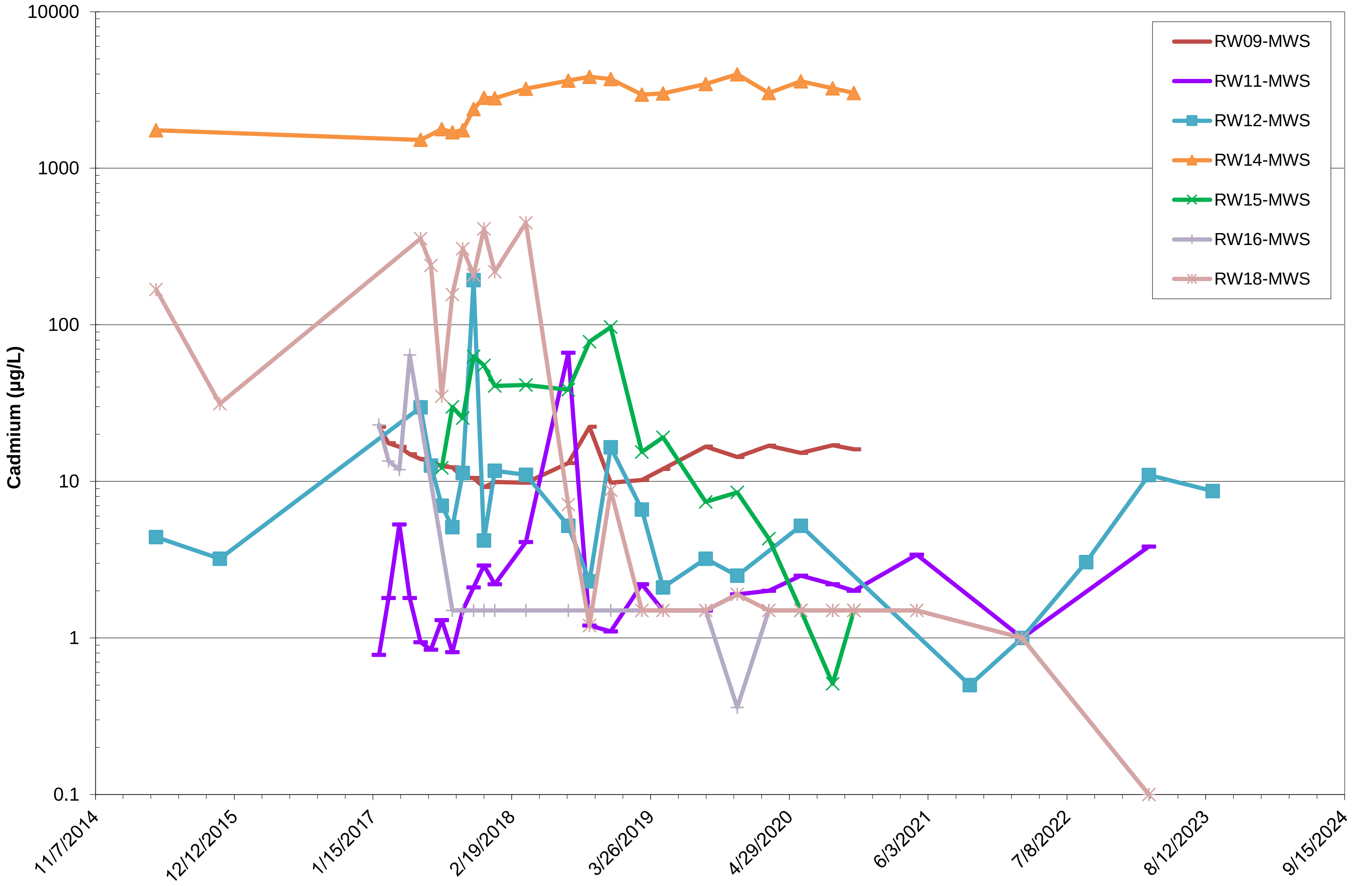
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

# Shallow Downgradient Perimeter Cadmium Concentrations (Supplemental Wells)

January 2024

**Figure 17**




ARM Group LLC
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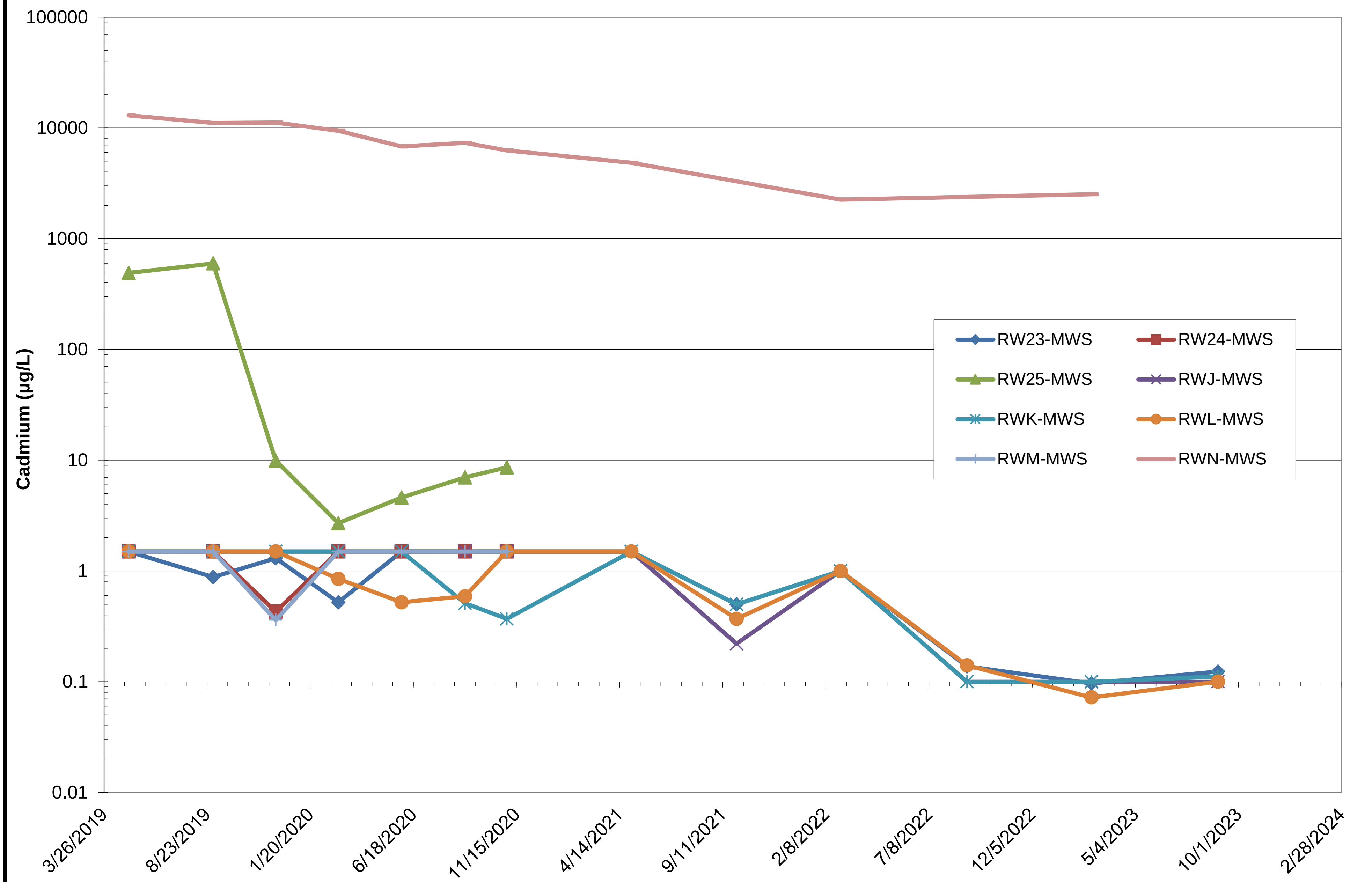
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

# Shallow Interior Cadmium Concentrations (Original Wells)

January 2024

**Figure 18**




ARM Group LLC
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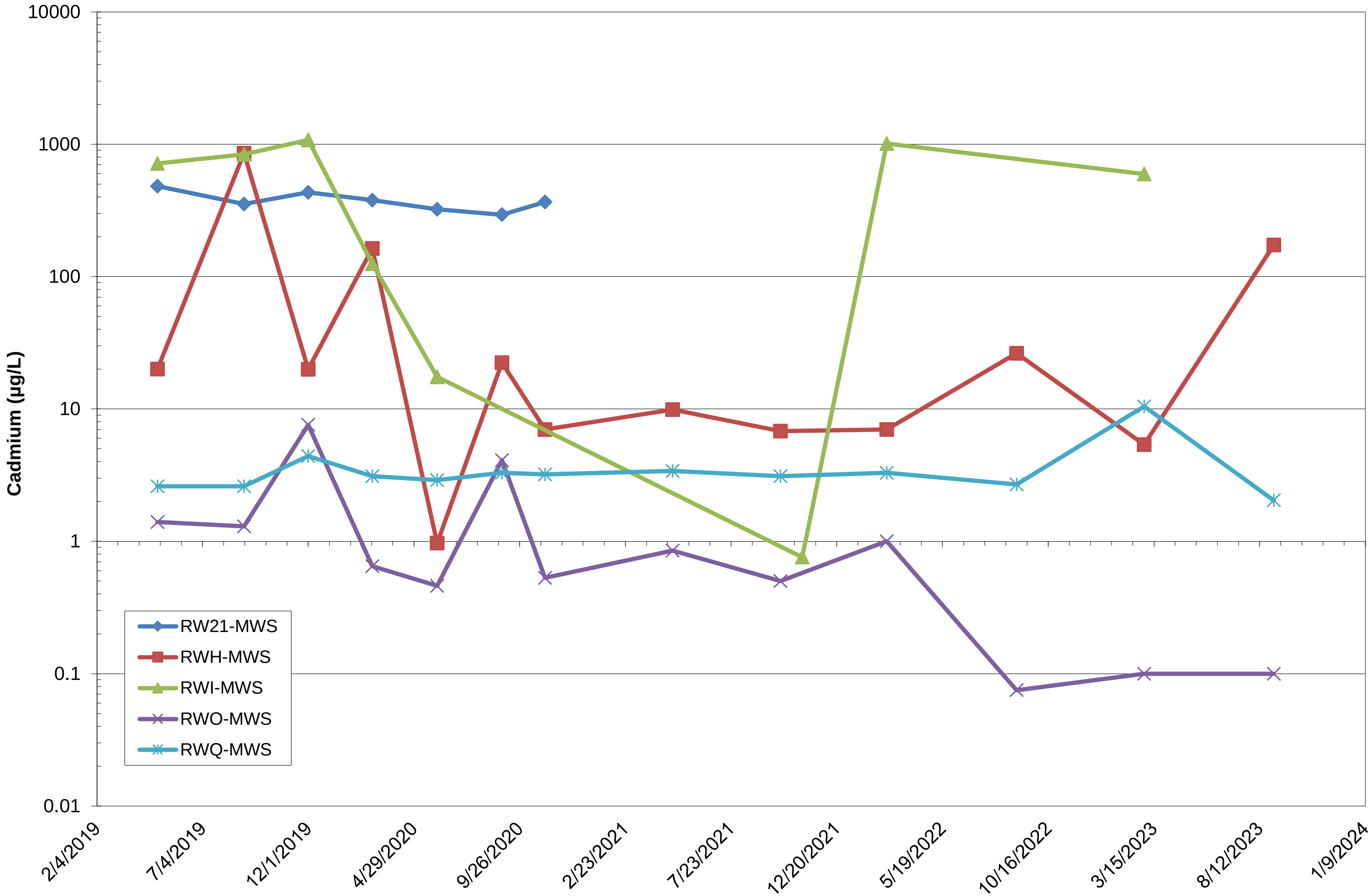
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Shallow Interior Cadmium Concentrations (Supplemental Wells)

January 2024

Figure 19




ARM Group LLC
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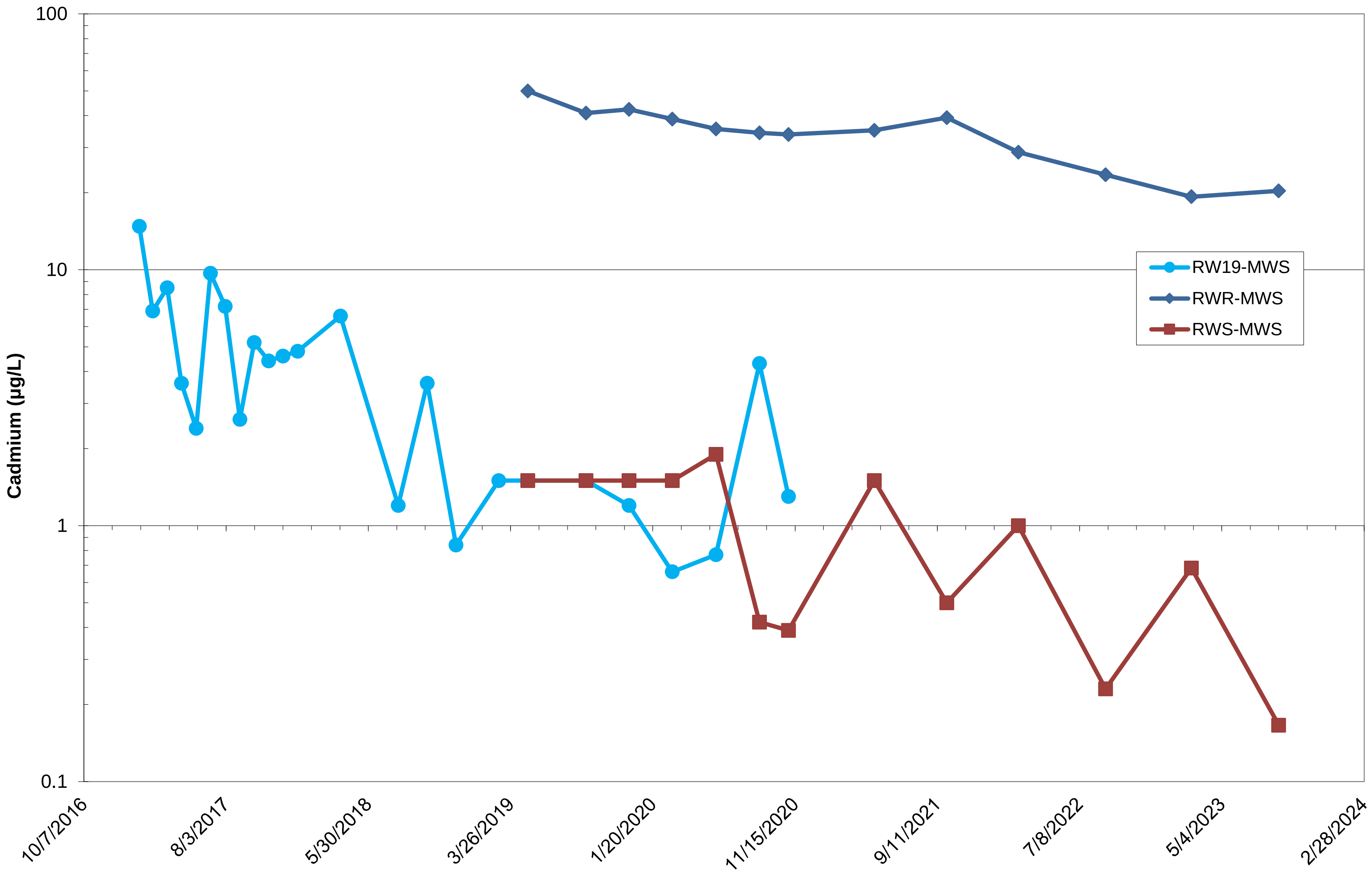
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Shallow Delineation Wells
Cadmium Concentrations

January 2024

Figure
20

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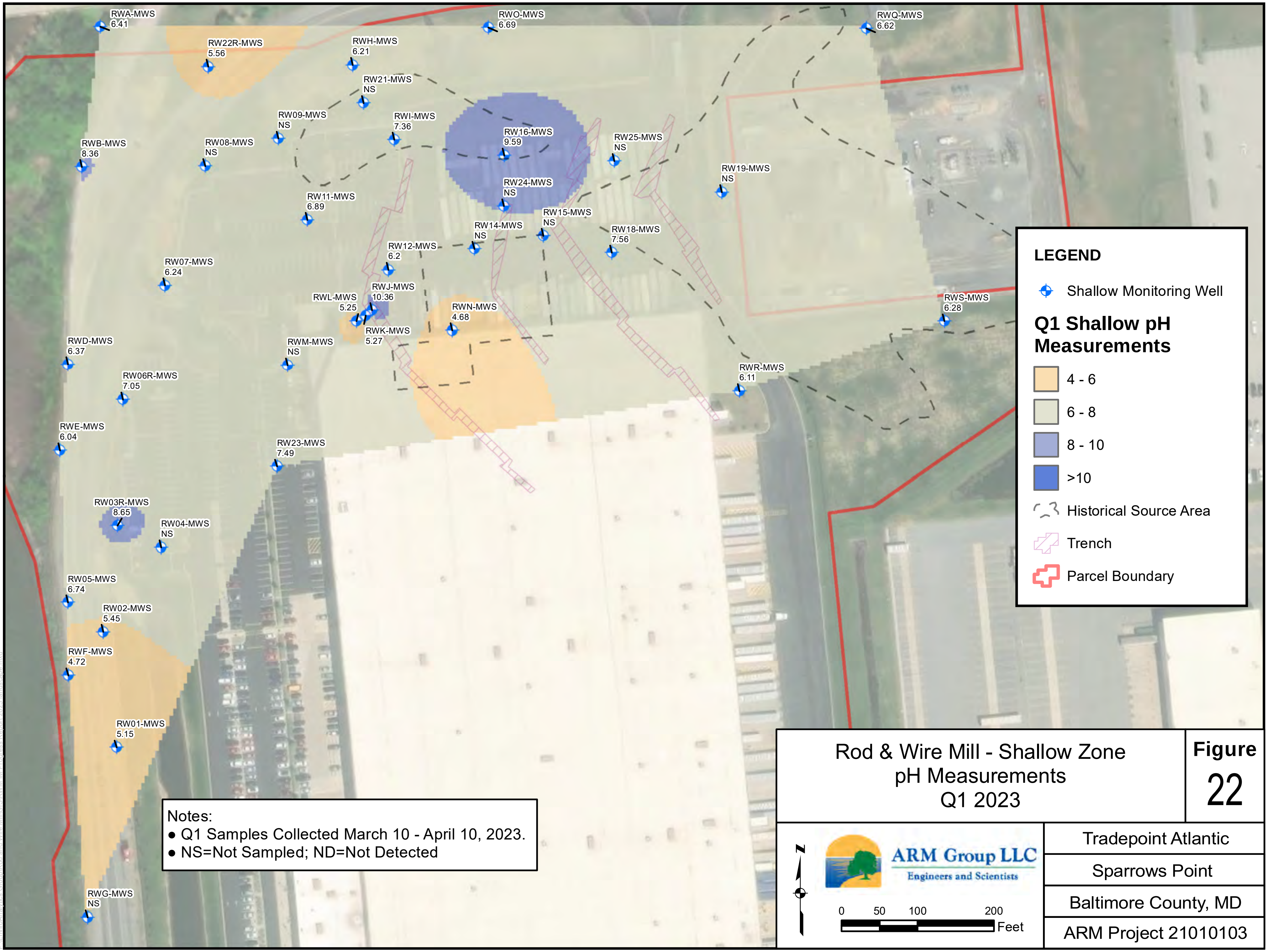
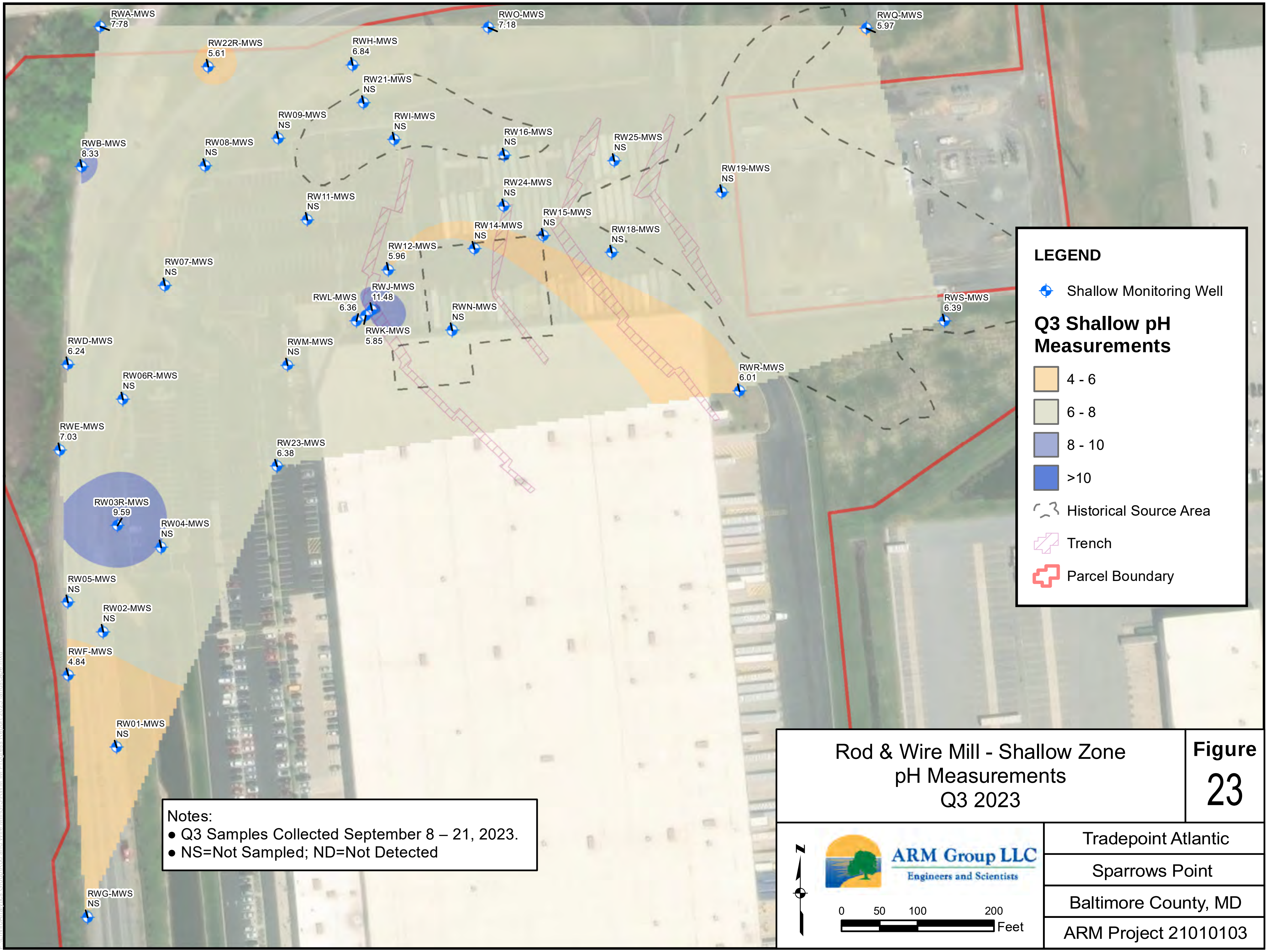
| Rod and Wire Mill<br>Tradepoint Atlantic | Shallow Upgradient<br>Cadmium Concentration<br>January 2024 | Figure<br>21 |
|---|---|---|
| Sparrows Point, Maryland | | |

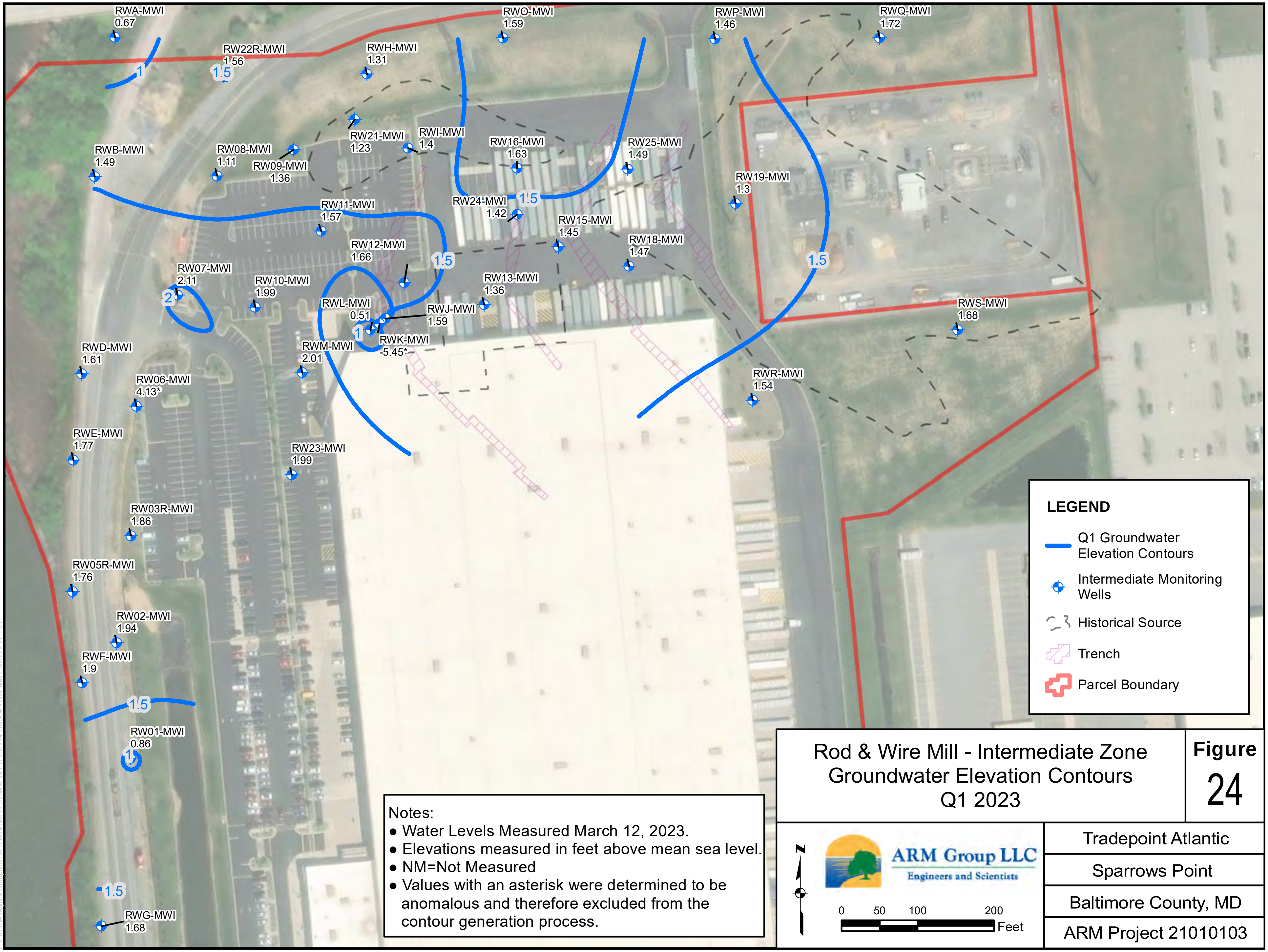

RWA-MWS 6.41
RWO-MWS 6.69
RWQ-MWS 6.62
RW22R-MWS 5.56
RWH-MWS 6.21
RW21-MWS NS
RW09-MWS NS
RWI-MWS 7.36
RW16-MWS 9.59
RW25-MWS NS
RWB-MWS 8.36
RW08-MWS NS
RW19-MWS NS
RW24-MWS NS
RW11-MWS 6.89
RW15-MWS NS
RW14-MWS NS
RW18-MWS 7.56
RW12-MWS 6.2
RW07-MWS 6.24
RWJ-MWS 10.36
RWL-MWS 5.25
RWN-MWS 4.68
RWS-MWS 6.28
RWK-MWS 5.27
RWD-MWS 6.37
RWM-MWS NS
RWR-MWS 6.11
RW06R-MWS 7.05
RWE-MWS 6.04
RW23-MWS 7.49
RW03R-MWS 8.65
RW04-MWS NS
RW05-MWS 6.74
RW02-MWS 5.45
RWF-MWS 4.72
RW01-MWS 5.15
RWG-MWS NS
LEGEND
Shallow Monitoring Well
Q1 Shallow pH Measurements
4 - 6
6 - 8
8 - 10
>10
Historical Source Area
Trench
Parcel Boundary
Notes:
● Q1 Samples Collected March 10 - April 10, 2023.
● NS=Not Sampled; ND=Not Detected
Rod & Wire Mill - Shallow Zone
pH Measurements
Q1 2023
Figure
22
N
ARM Group LLC
Engineers and Scientists
0 50 100 200
Feet
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103




Rod & Wire Mill - Shallow Zone
pH Measurements
Q3 2023

Figure
23

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103




Notes:
- Water Levels Measured March 12, 2023.
- Elevations measured in feet above mean sea level.
- NM=Not Measured
- Values with an asterisk were determined to be anomalous and therefore excluded from the contour generation process.

Rod & Wire Mill - Intermediate Zone Groundwater Elevation Contours Q1 2023

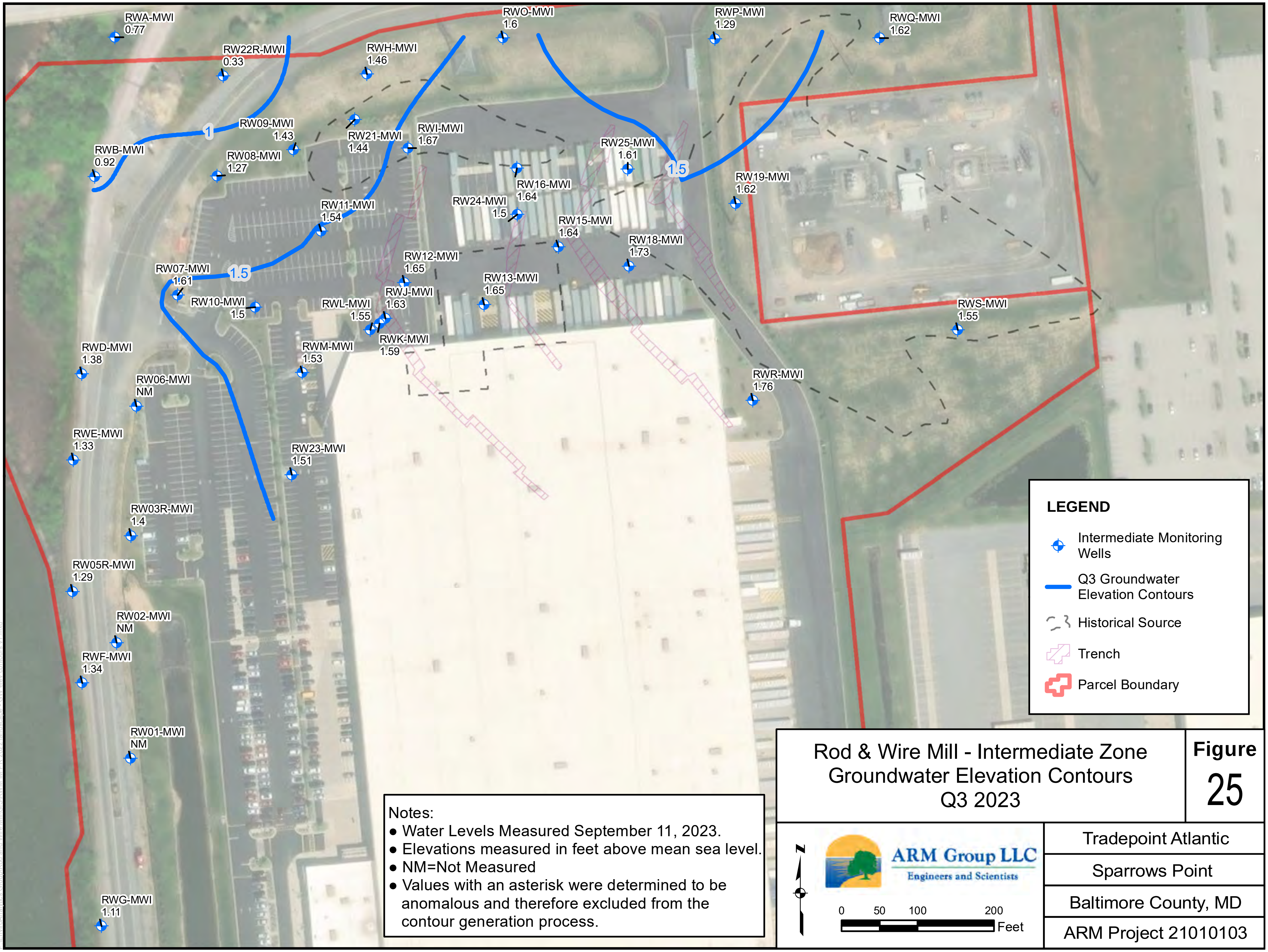
Figure 24

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010103




Notes:
- Water Levels Measured September 11, 2023.
- Elevations measured in feet above mean sea level.
- NM=Not Measured
- Values with an asterisk were determined to be anomalous and therefore excluded from the contour generation process.

Rod & Wire Mill - Intermediate Zone Groundwater Elevation Contours Q3 2023

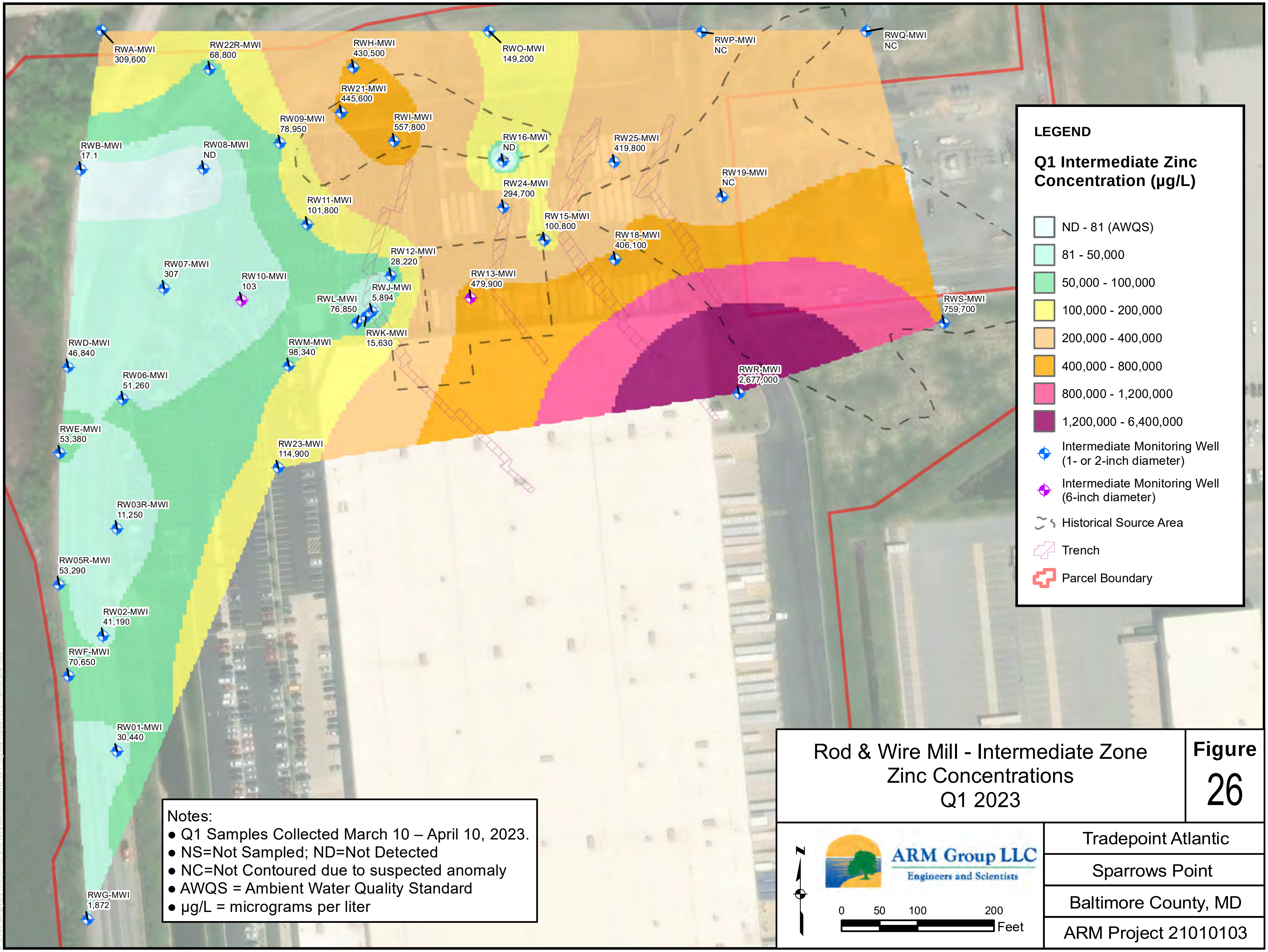
Figure 25

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010103




# Rod & Wire Mill - Intermediate Zone Zinc Concentrations Q1 2023

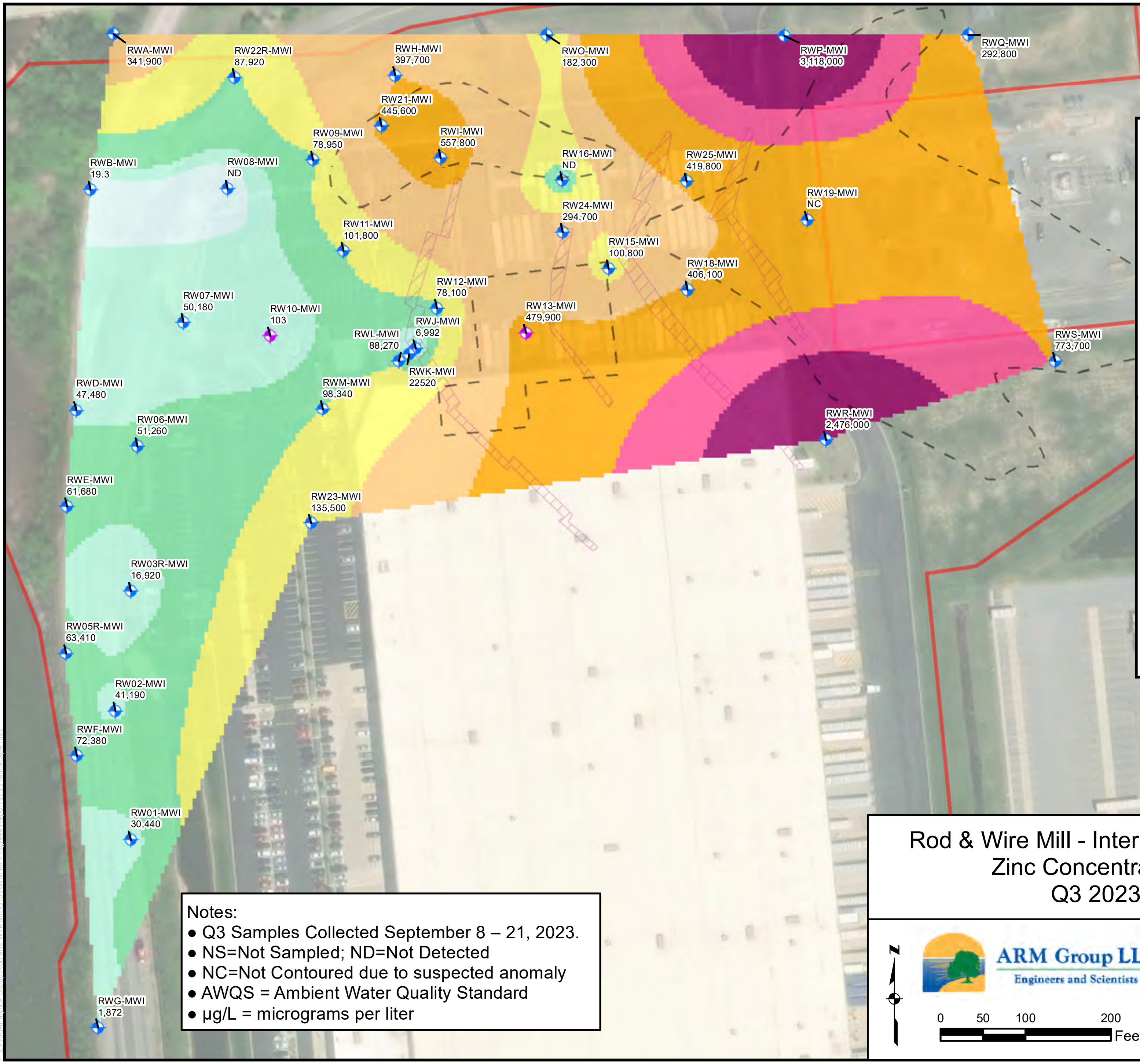
Figure 26

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010103




**LEGEND**

**Q3 Intermediate Zinc Concentration (µg/L)**

- ND - 81 (AWQS)
- 81 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- 200,000 - 400,000
- 400,000 - 800,000
- 800,000 - 1,200,000
- 1,200,000 - 6,400,000
- Intermediate Monitoring Well (1- or 2-inch diameter)
- Intermediate Monitoring Well (6-inch diameter)
- Historical Source Area
- Trench
- Parcel Boundary

Notes:
- Q3 Samples Collected September 8 – 21, 2023.
- NS=Not Sampled; ND=Not Detected
- NC=Not Contoured due to suspected anomaly
- AWQS = Ambient Water Quality Standard
- µg/L = micrograms per liter

# Rod & Wire Mill - Intermediate Zone Zinc Concentrations Q3 2023

**Figure 27**

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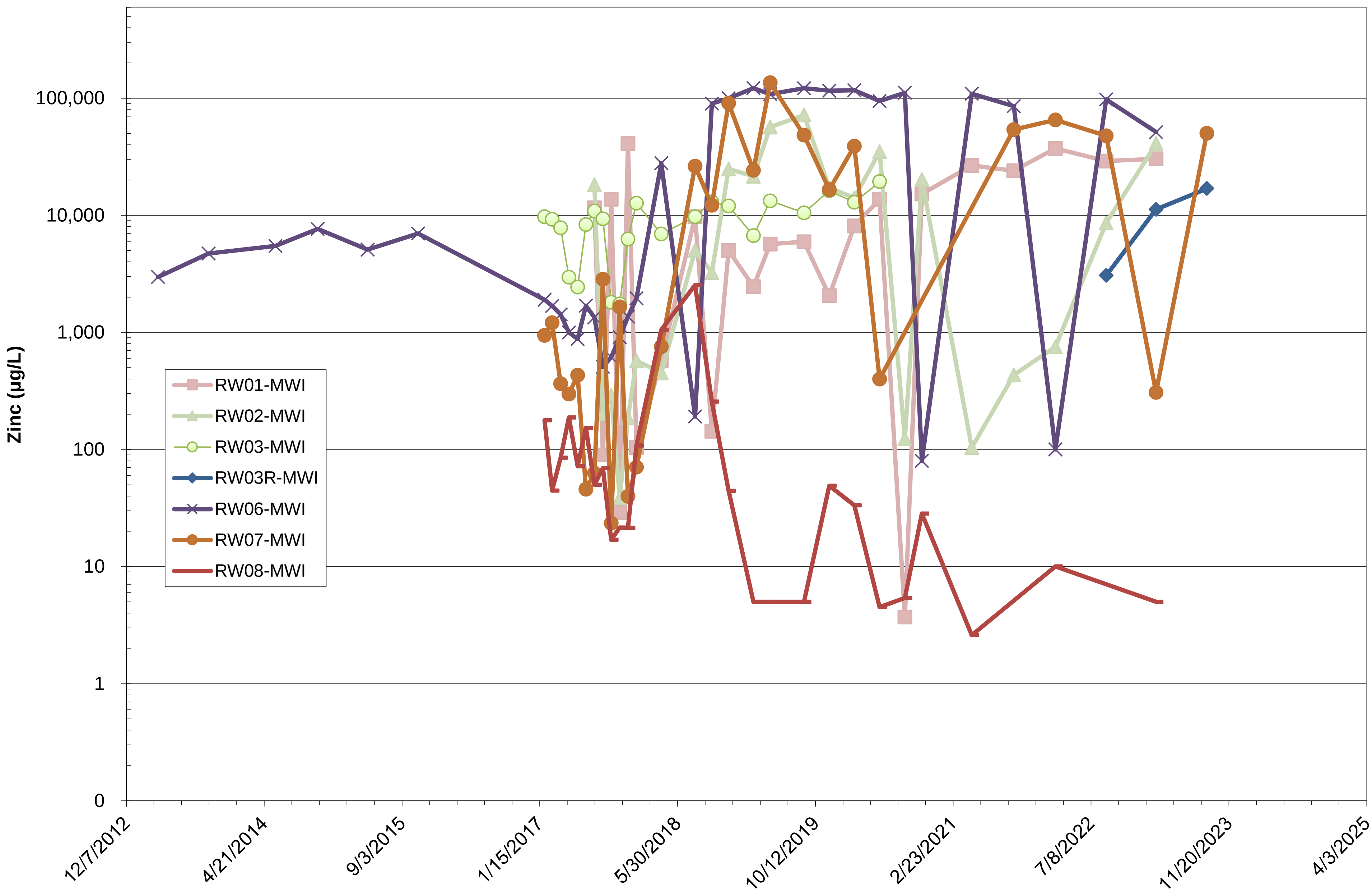
Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010103




ARM Group LLC
Engineers and Scientists

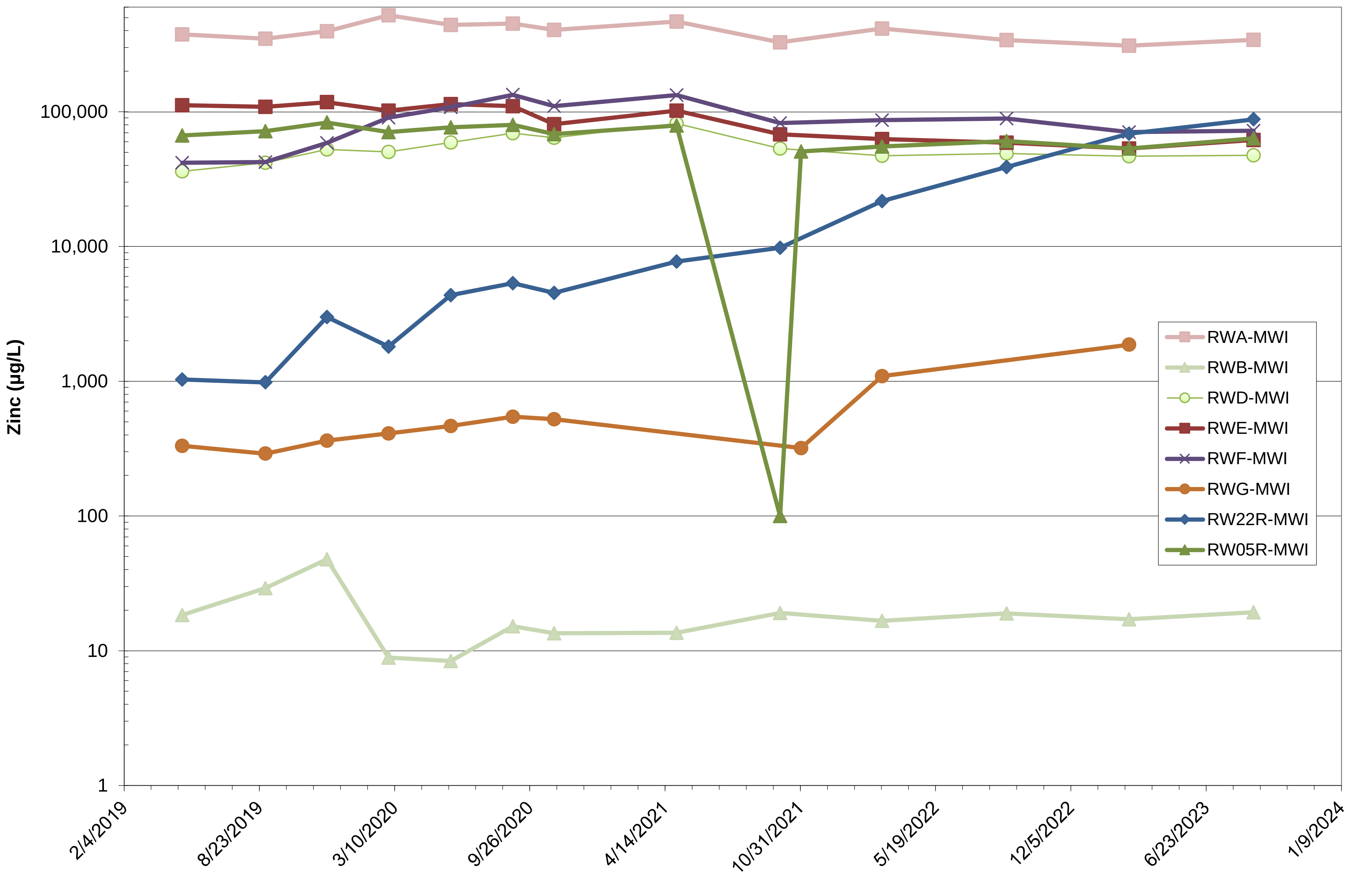
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Downgradient Perimeter Zinc Concentrations (Original Wells)

January 2024

Figure 28




ARM Group LLC
Engineers and Scientists

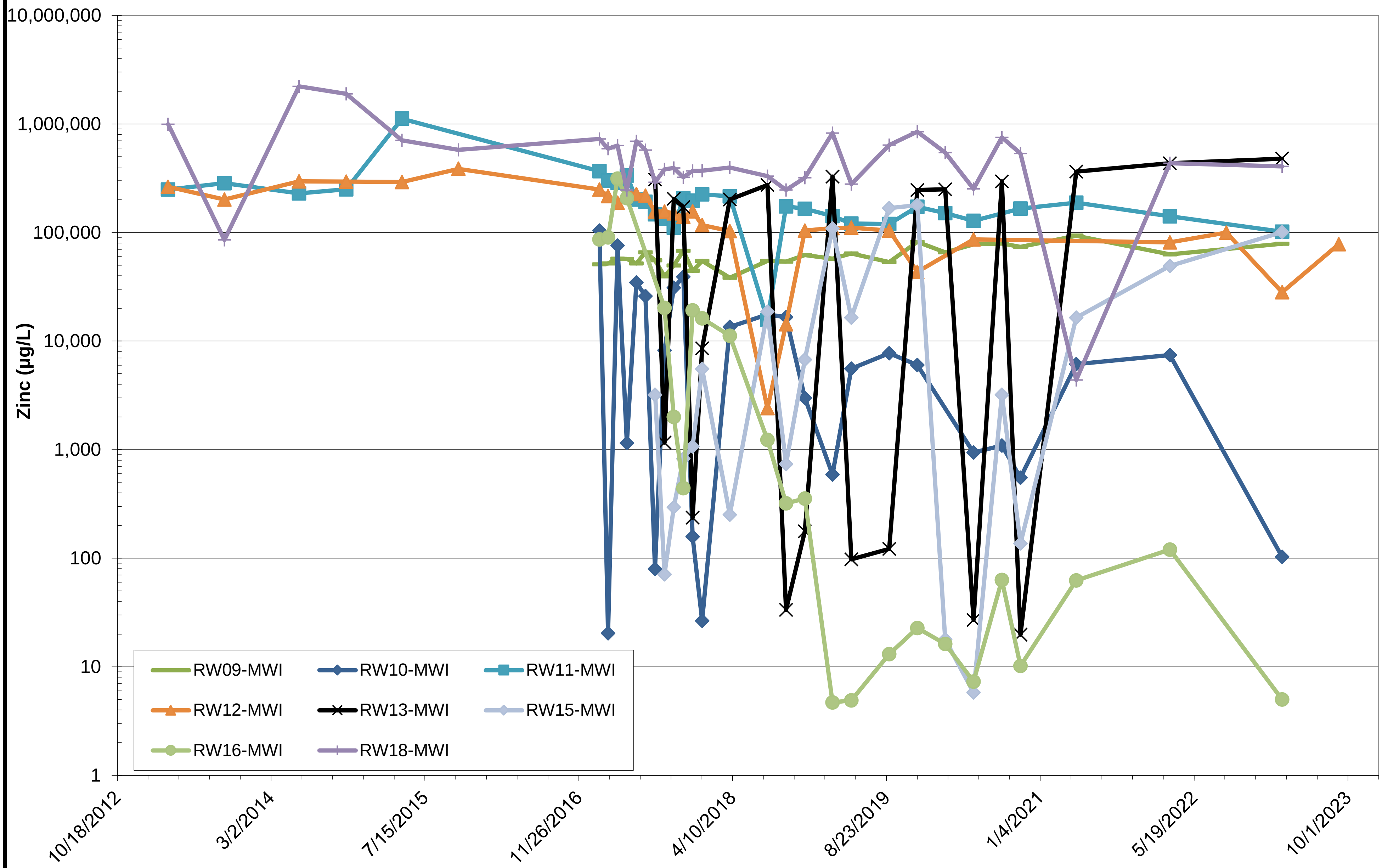
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Downgradient Perimeter Zinc Concentrations (Supplemental Wells)

January 2024

Figure 29




ARM Group LLC
Engineers and Scientists

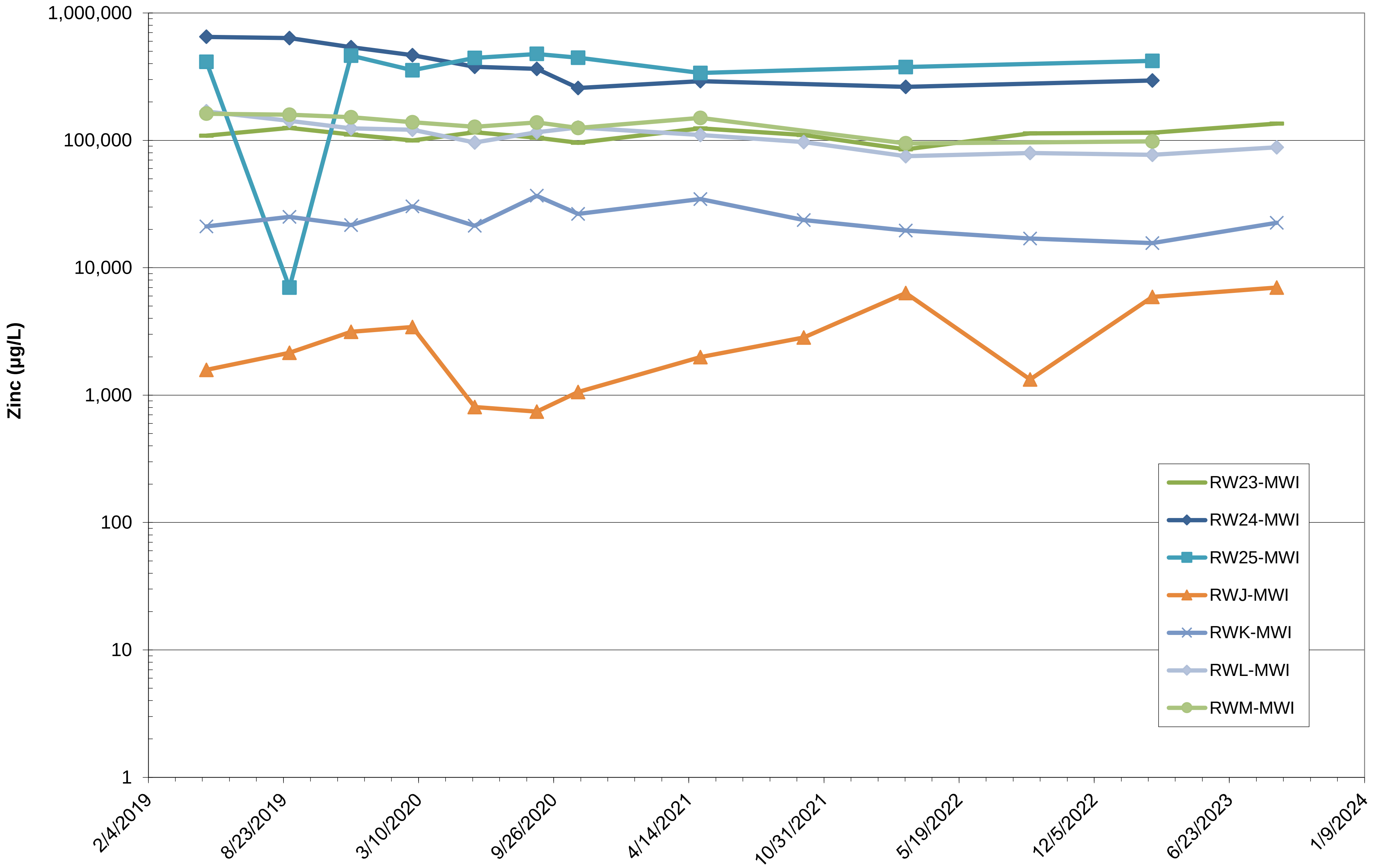
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Interior Zinc Concentrations (Original Wells)

January 2024

Figure 30




ARM Group LLC
Engineers and Scientists

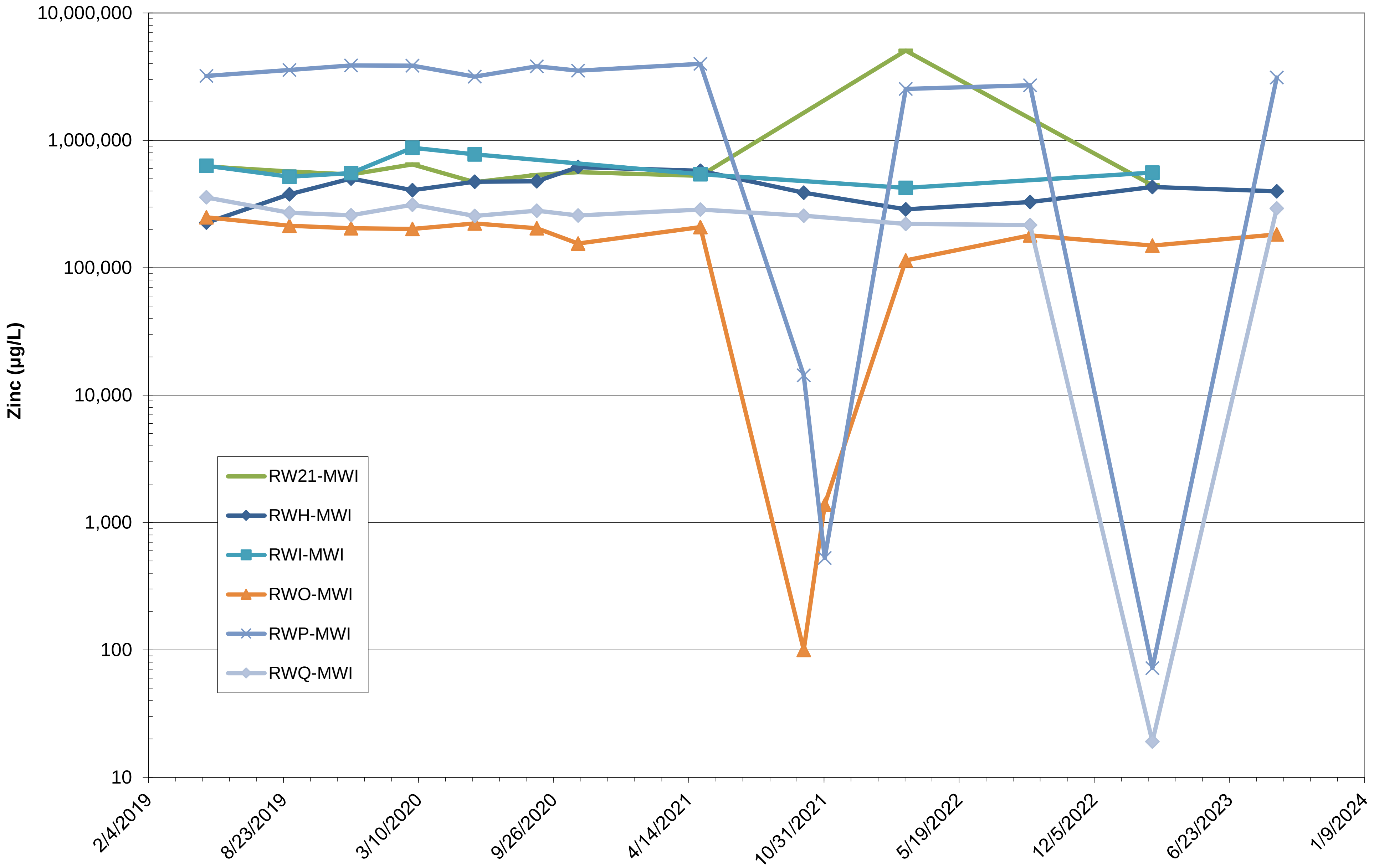
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Interior Zinc Concentrations (Supplemental Wells)

January 2024

Figure 31




ARM Group LLC
Engineers and Scientists

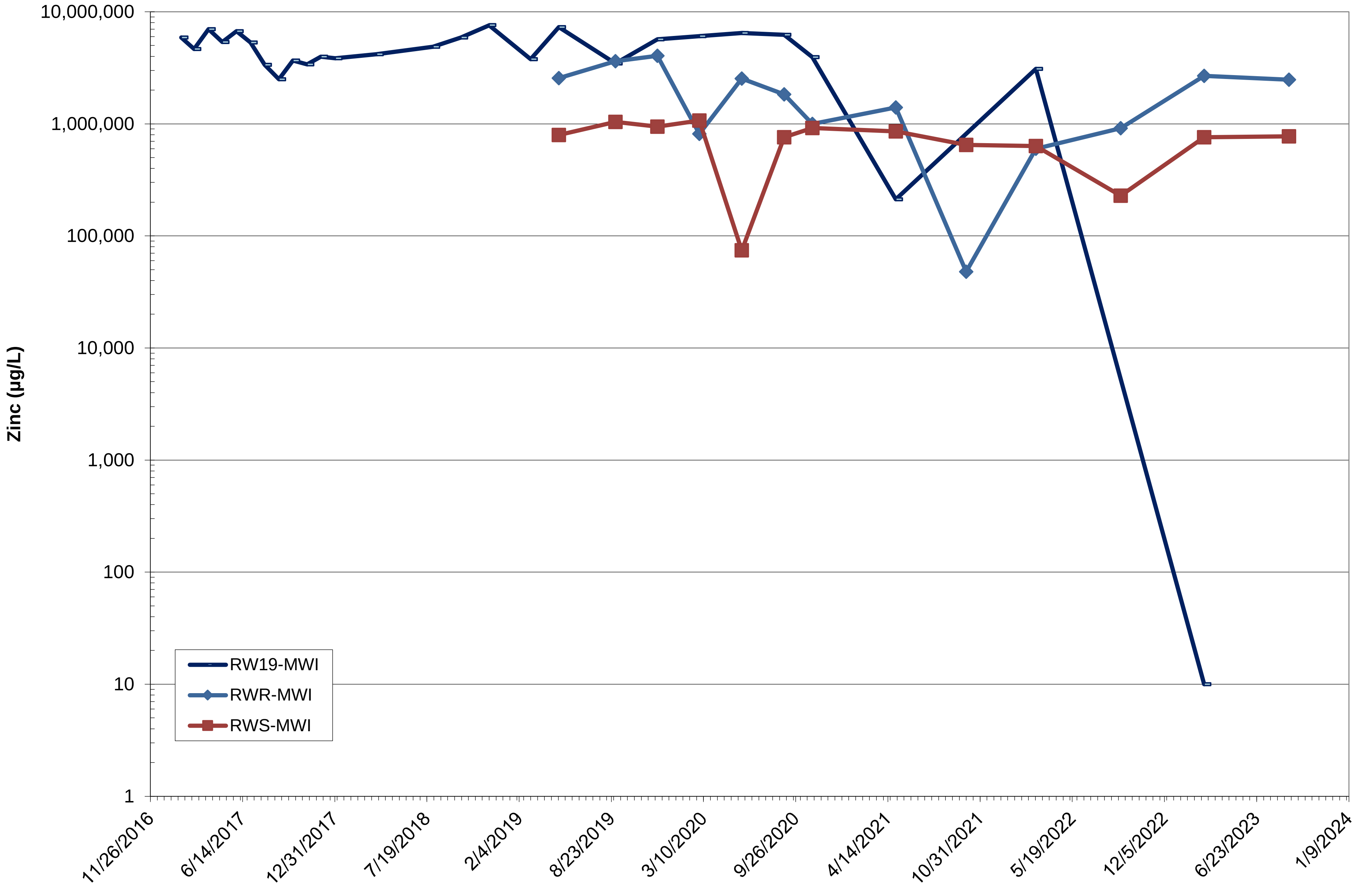
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Delineation Wells
Zinc Concentrations

January 2024

Figure
32




ARM Group LLC
Engineers and Scientists

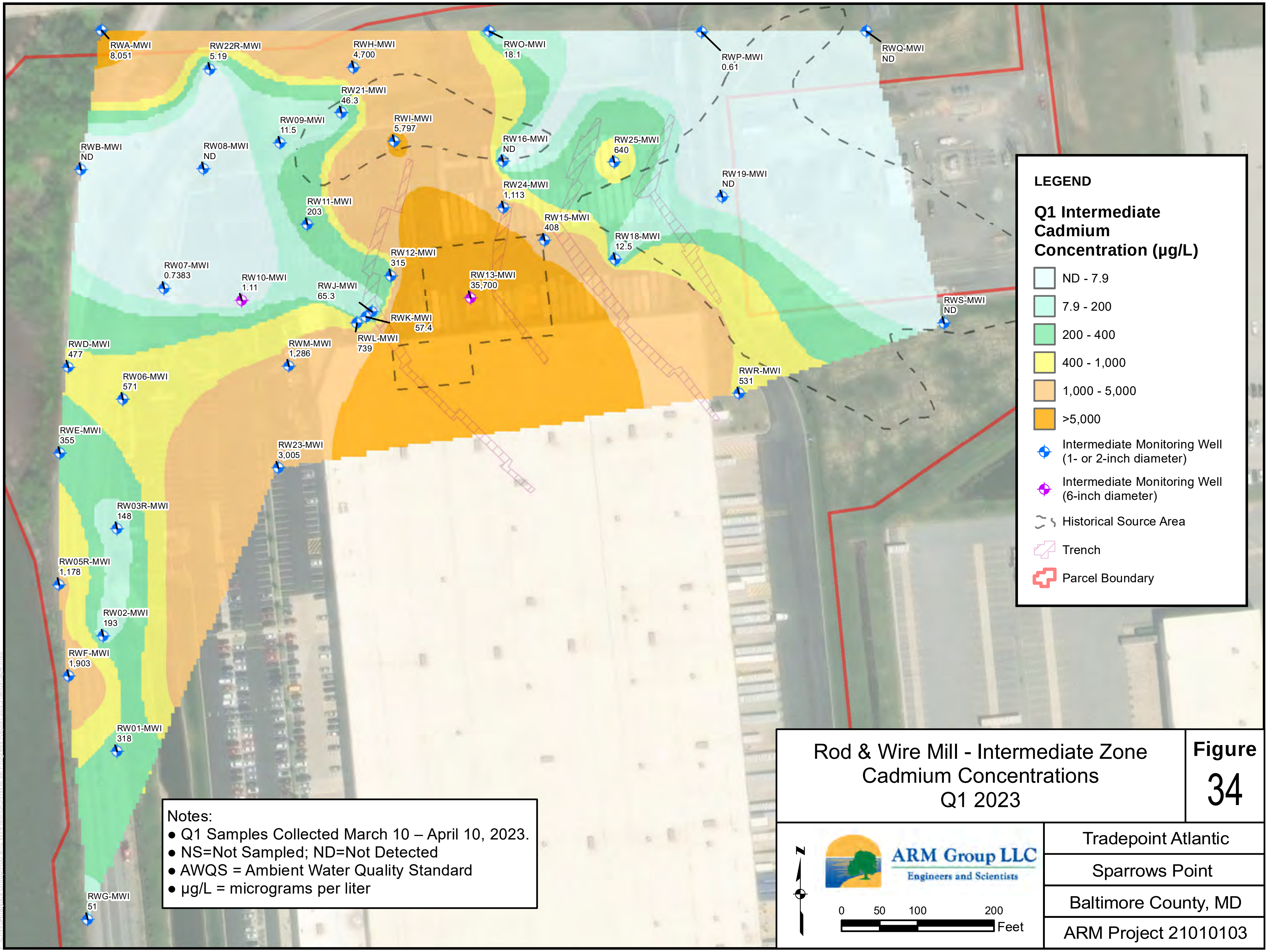
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Upgradient
Zinc Concentrations

January 2024

**Figure**
**33**



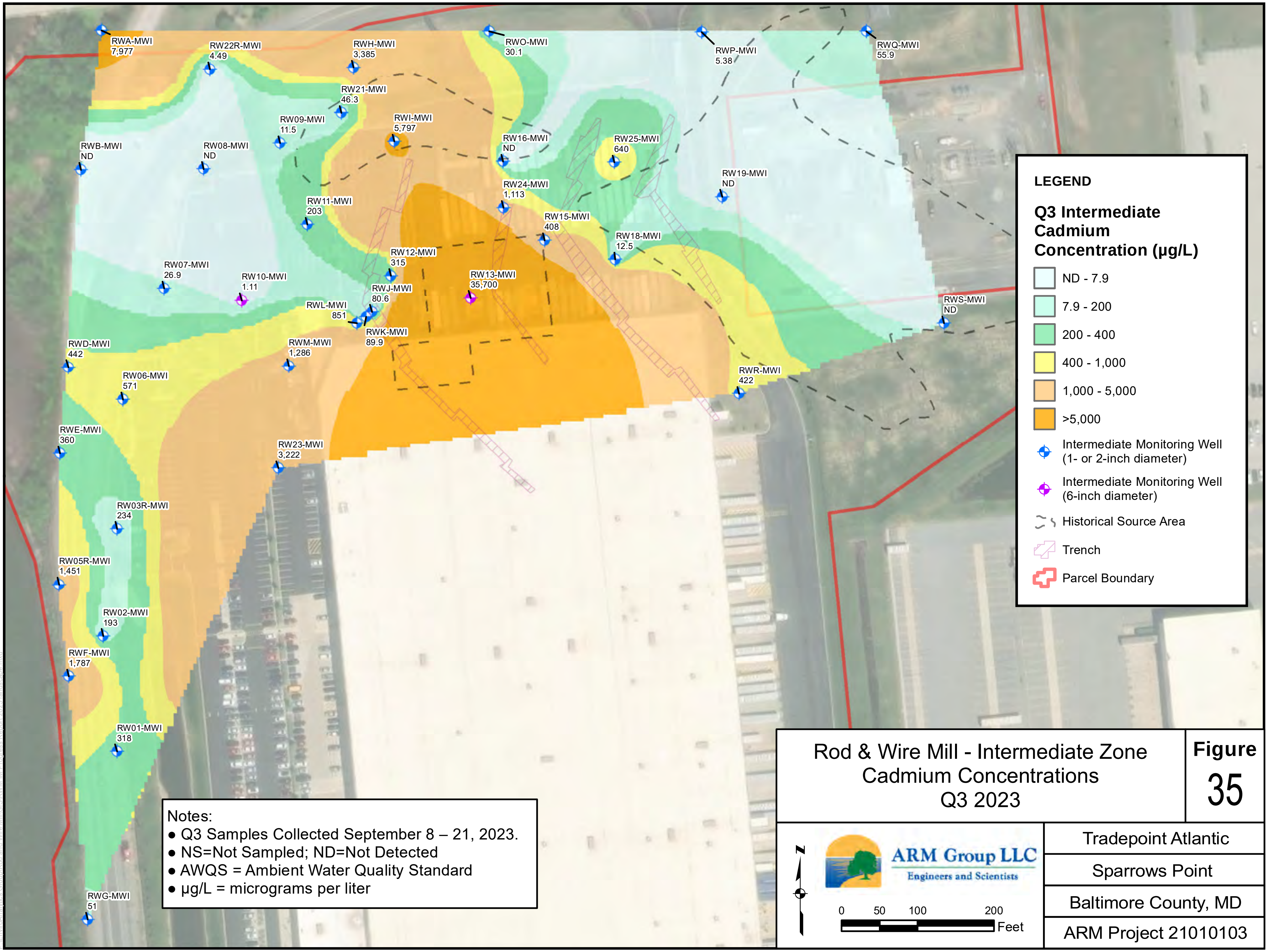

Notes:
- Q1 Samples Collected March 10 – April 10, 2023.
- NS=Not Sampled; ND=Not Detected
- AWQS = Ambient Water Quality Standard
- µg/L = micrograms per liter

Rod & Wire Mill - Intermediate Zone Cadmium Concentrations Q1 2023

Figure 34

ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103



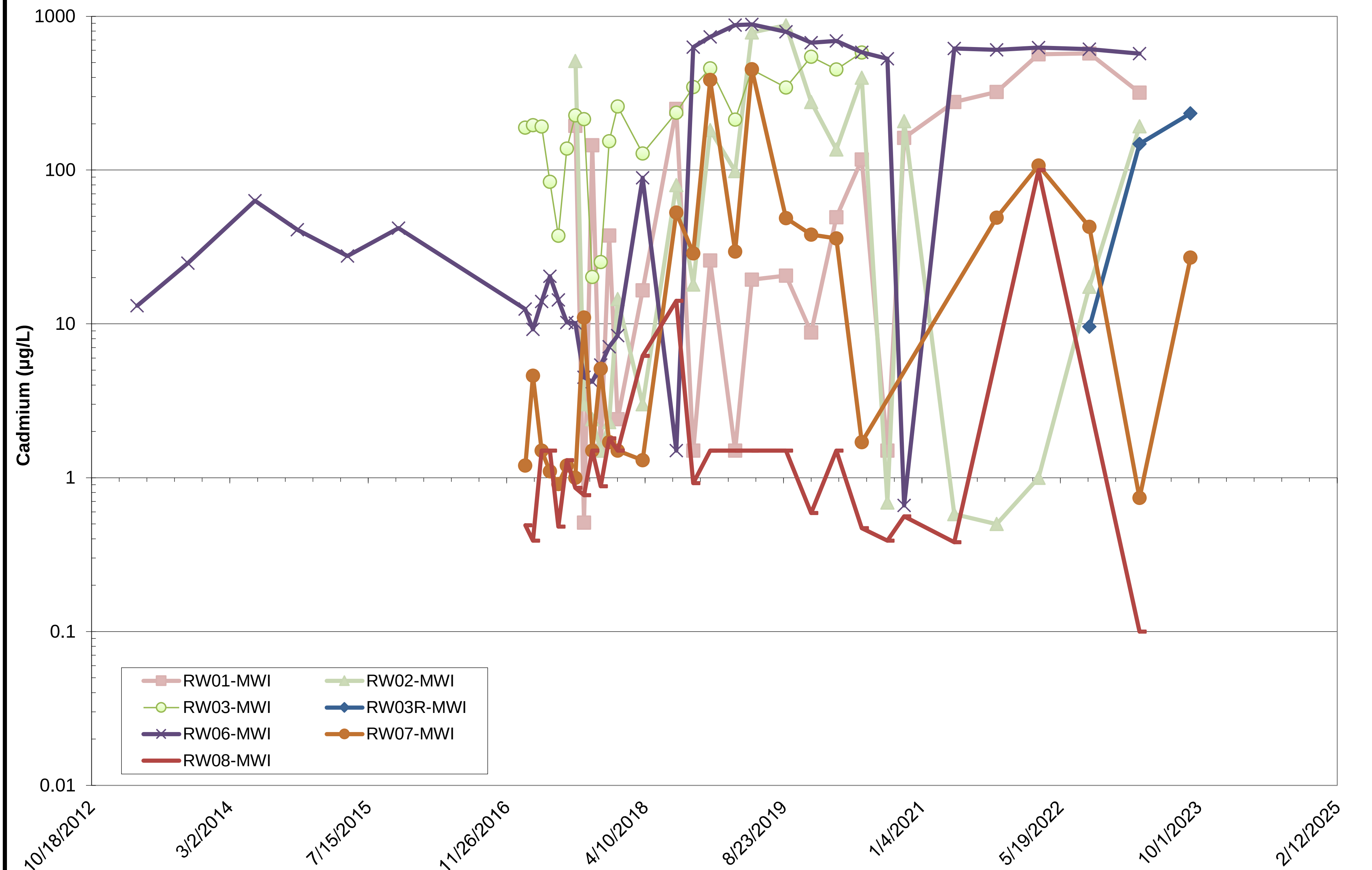

Rod & Wire Mill - Intermediate Zone Cadmium Concentrations Q3 2023

Figure 35

ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103

Notes:
- Q3 Samples Collected September 8 – 21, 2023.
- NS=Not Sampled; ND=Not Detected
- AWQS = Ambient Water Quality Standard
- µg/L = micrograms per liter




ARM Group LLC
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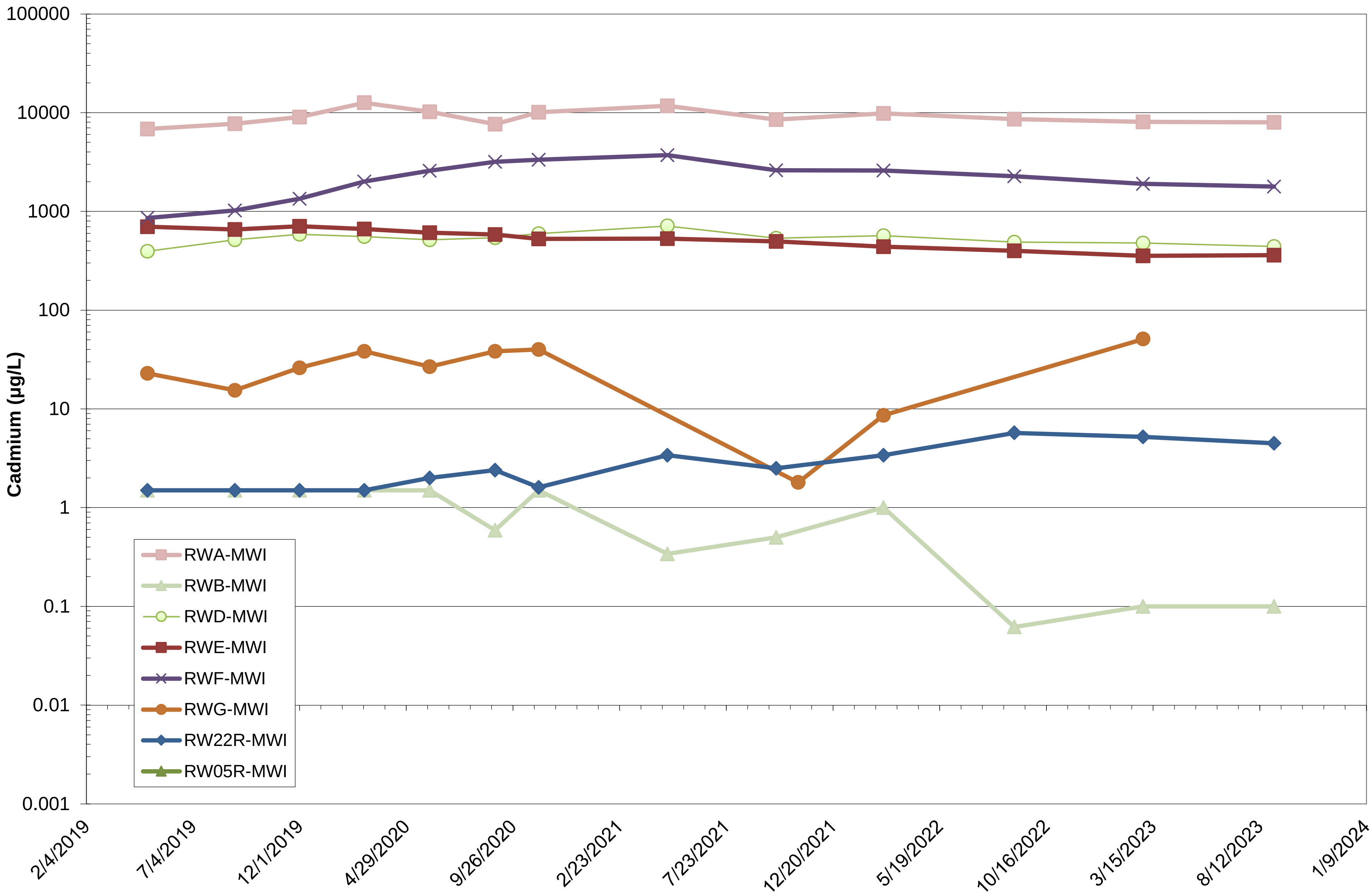
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

# Intermediate Downgradient Perimeter Cadmium Concentrations (Original Wells)

January 2024

**Figure 36**

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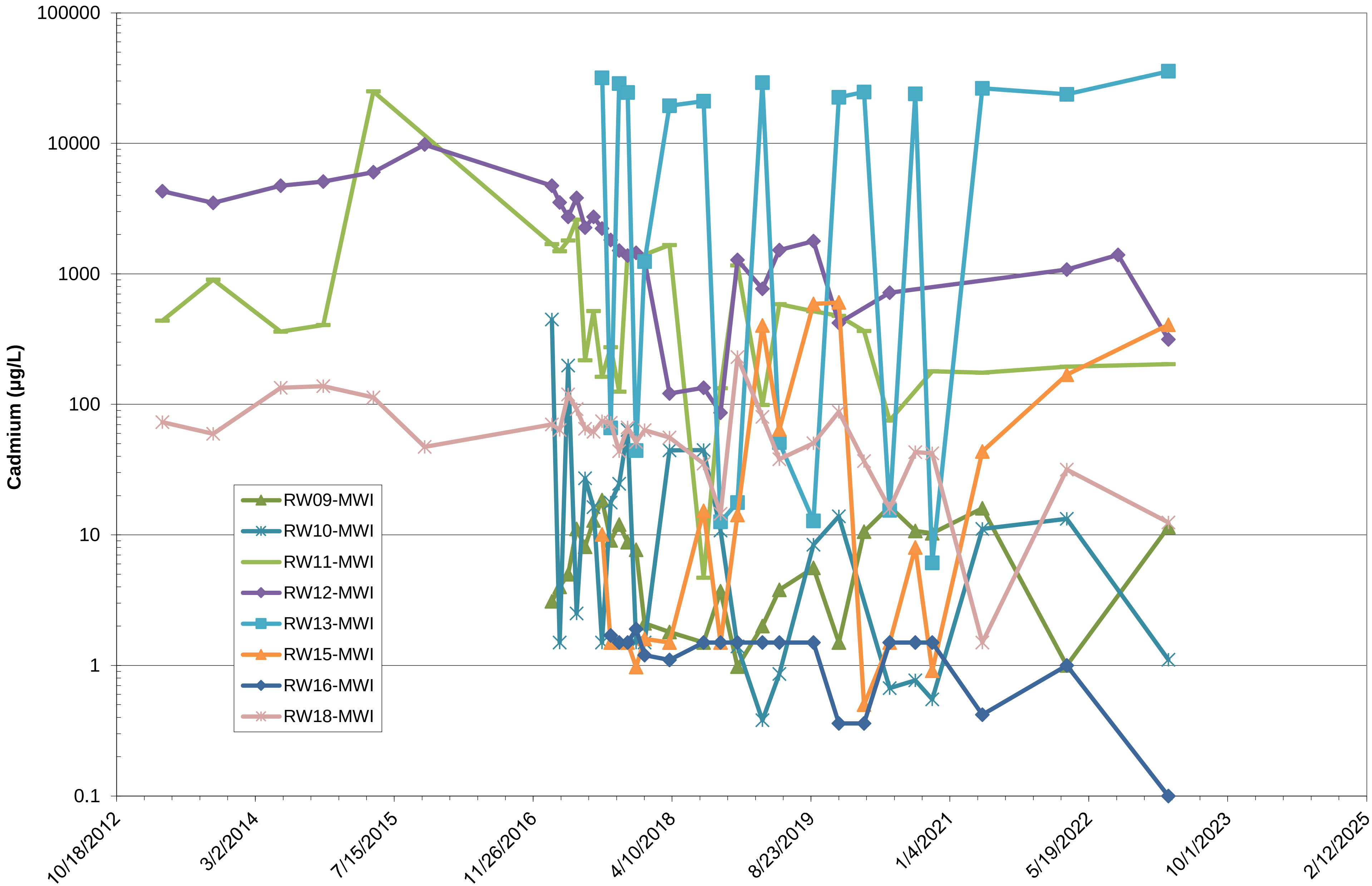
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Downgradient Perimeter Cadmium Concentrations (Supplemental Wells)

January 2024

**Figure 37**

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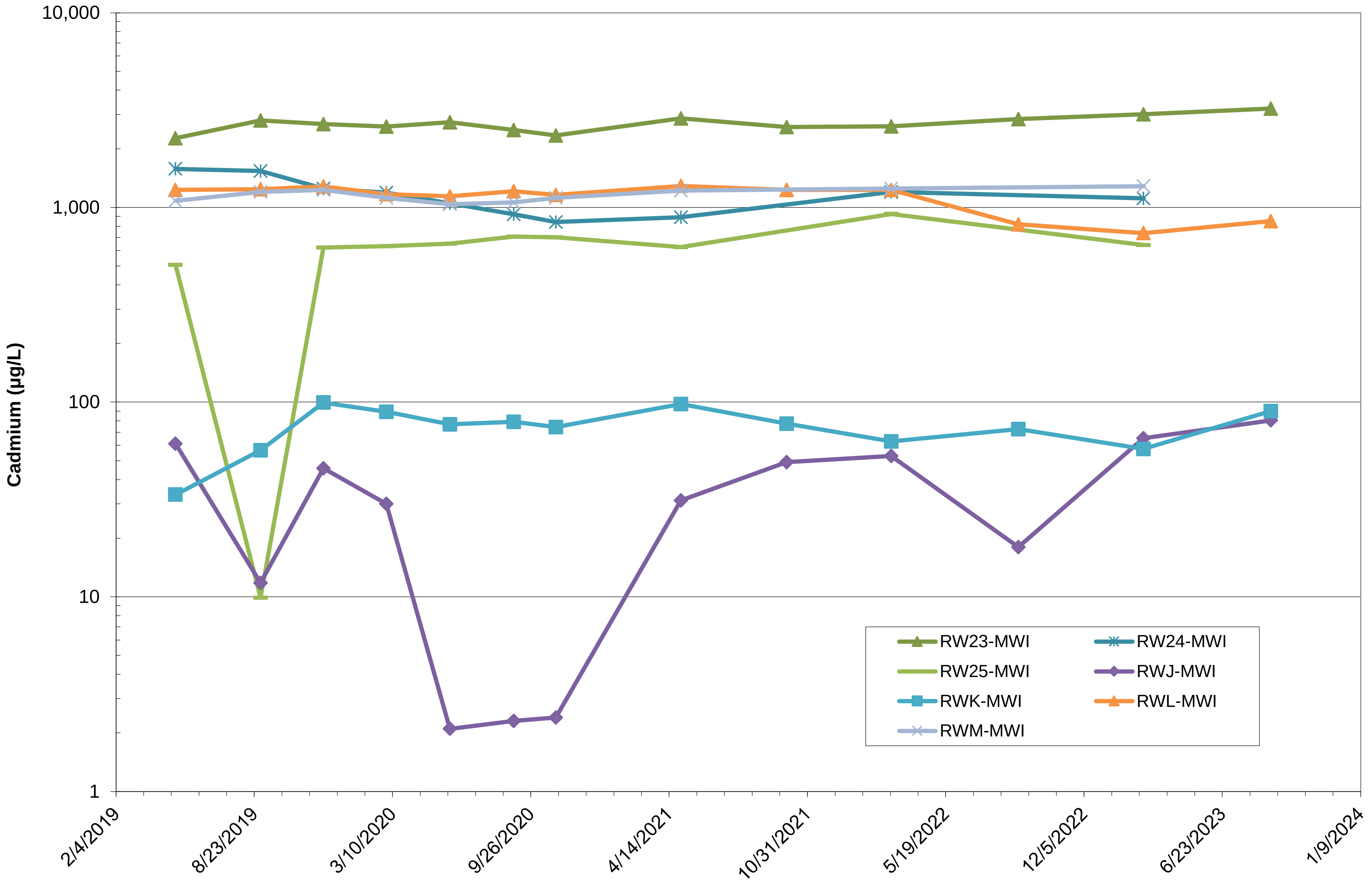
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Interior Cadmium Concentrations (Original Wells)

January 2024

**Figure 38**

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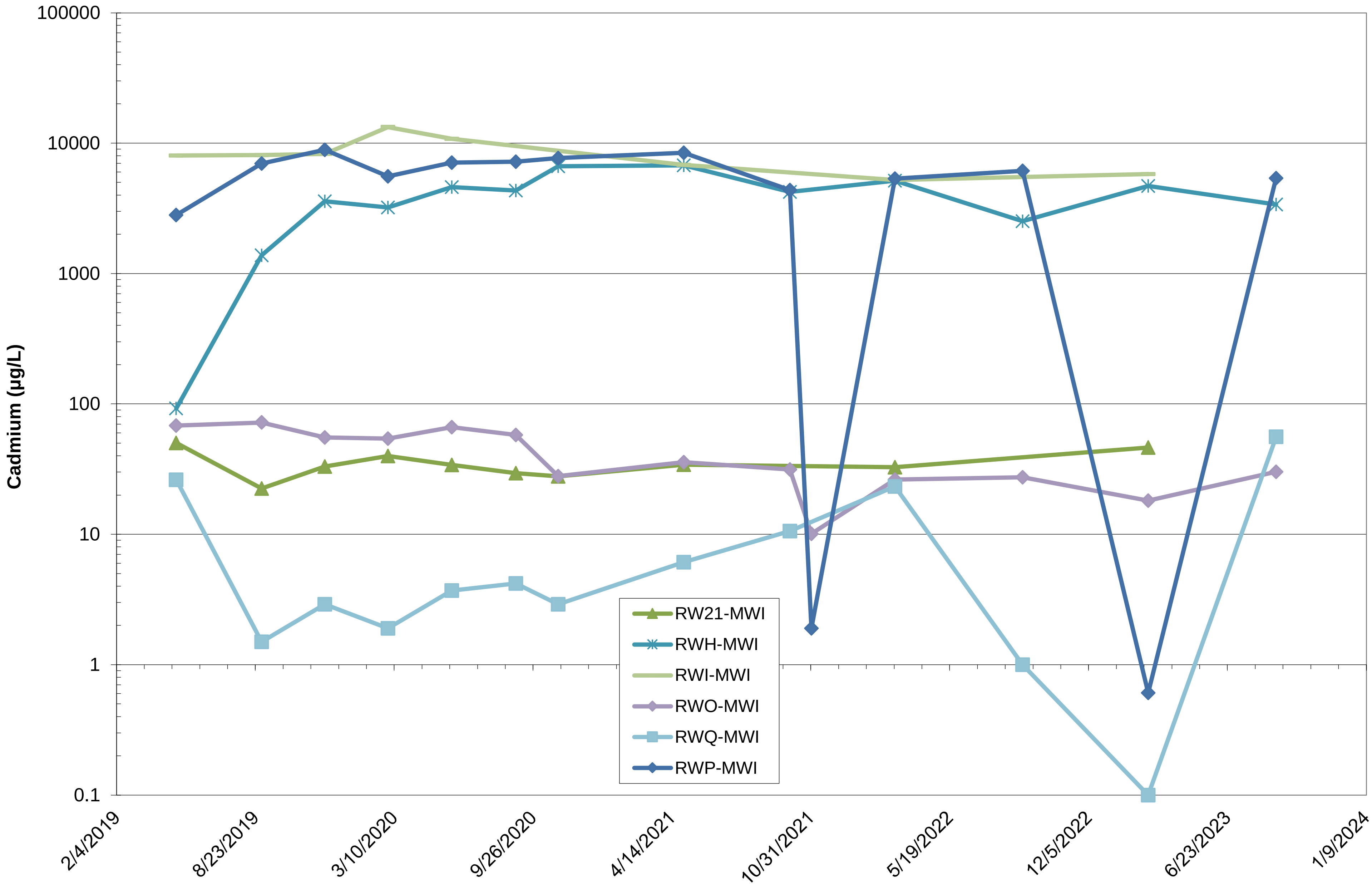
Engineers and Scientists

| | | | |
|---|---|---|---|
| Rod and Wire Mill<br>Tradepoint Atlantic | Intermediate Interior Cadmium Concentrations (Supplemental Wells)<br>January 2024 | **Figure 39** |
| Sparrows Point, Maryland | | |

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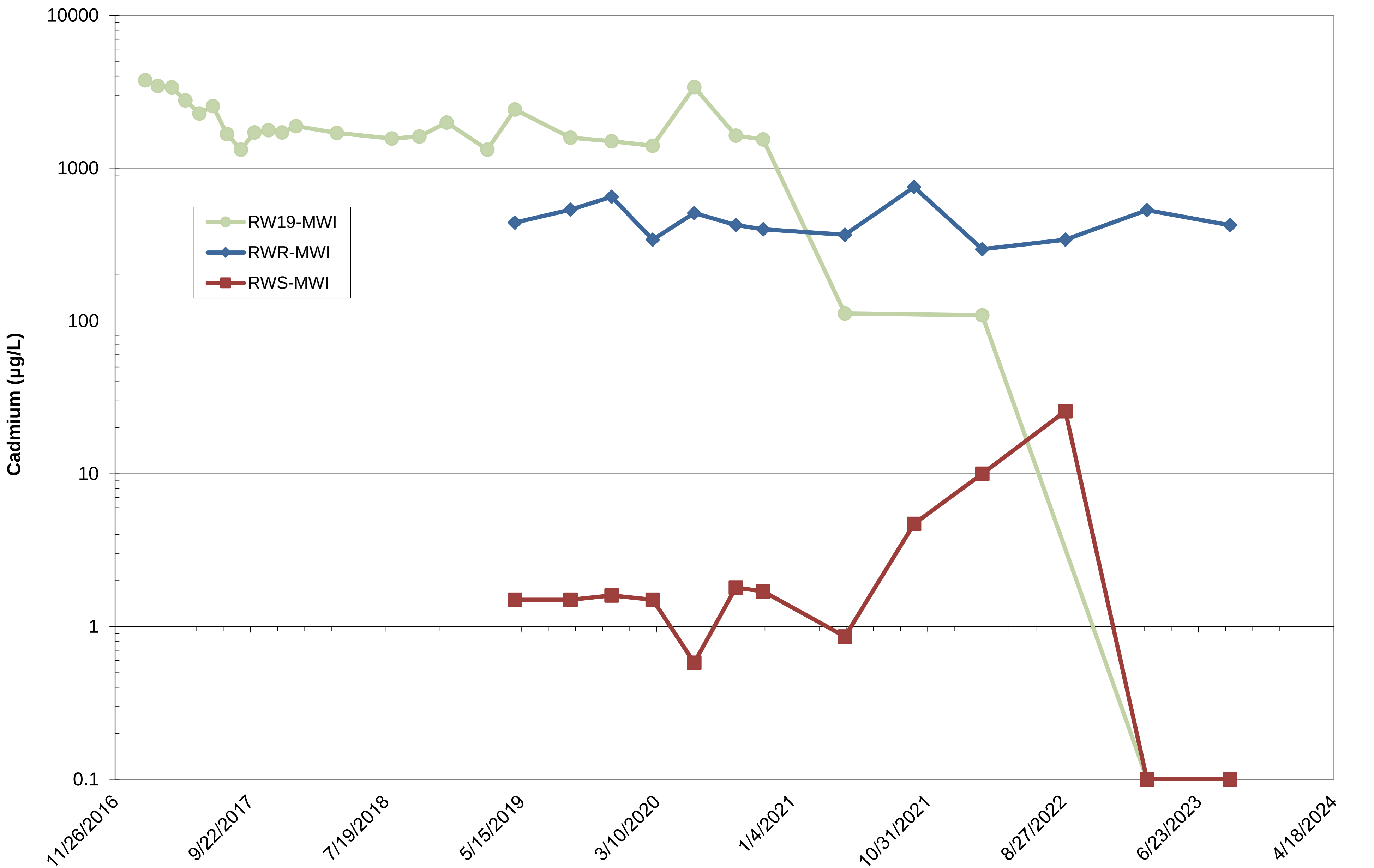
| Rod and Wire Mill<br>Tradepoint Atlantic | Intermediate Delineation Wells<br>Cadmium Concentrations<br>January 2024 | Figure<br>40 |
|---|---|---|
| Sparrows Point, Maryland | | |




ARM Group LLC
Engineers and Scientists

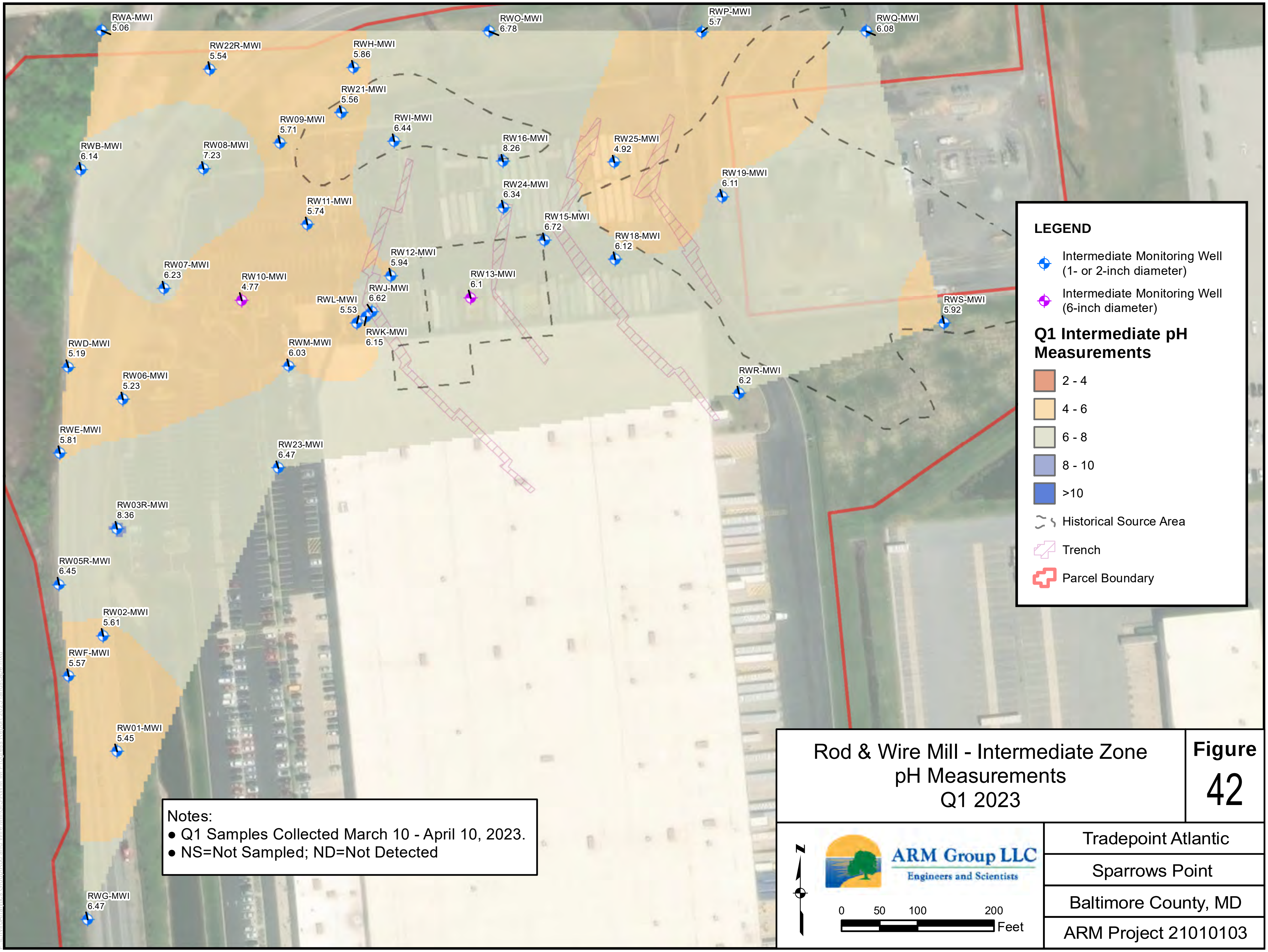
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

Intermediate Upgradient
Cadmium Concentrations

January 2024

Figure
41




**LEGEND**

- Intermediate Monitoring Well (1- or 2-inch diameter)
- Intermediate Monitoring Well (6-inch diameter)

**Q1 Intermediate pH Measurements**

- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- >10
- Historical Source Area
- Trench
- Parcel Boundary

Notes:
- Q1 Samples Collected March 10 - April 10, 2023.
- NS=Not Sampled; ND=Not Detected

0 50 100 200 Feet

Rod & Wire Mill - Intermediate Zone
pH Measurements
Q1 2023

Figure 42

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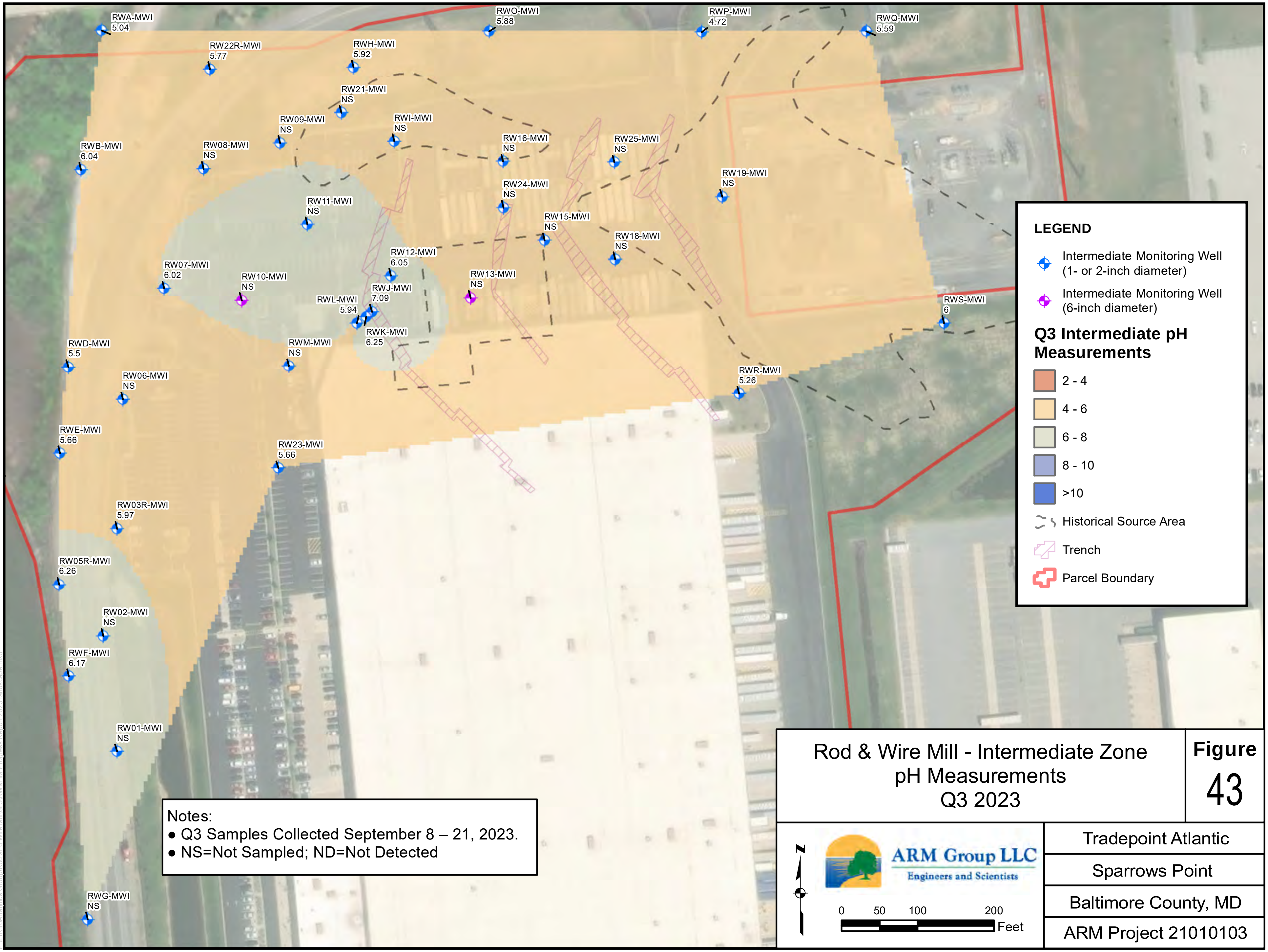
Engineers and Scientists

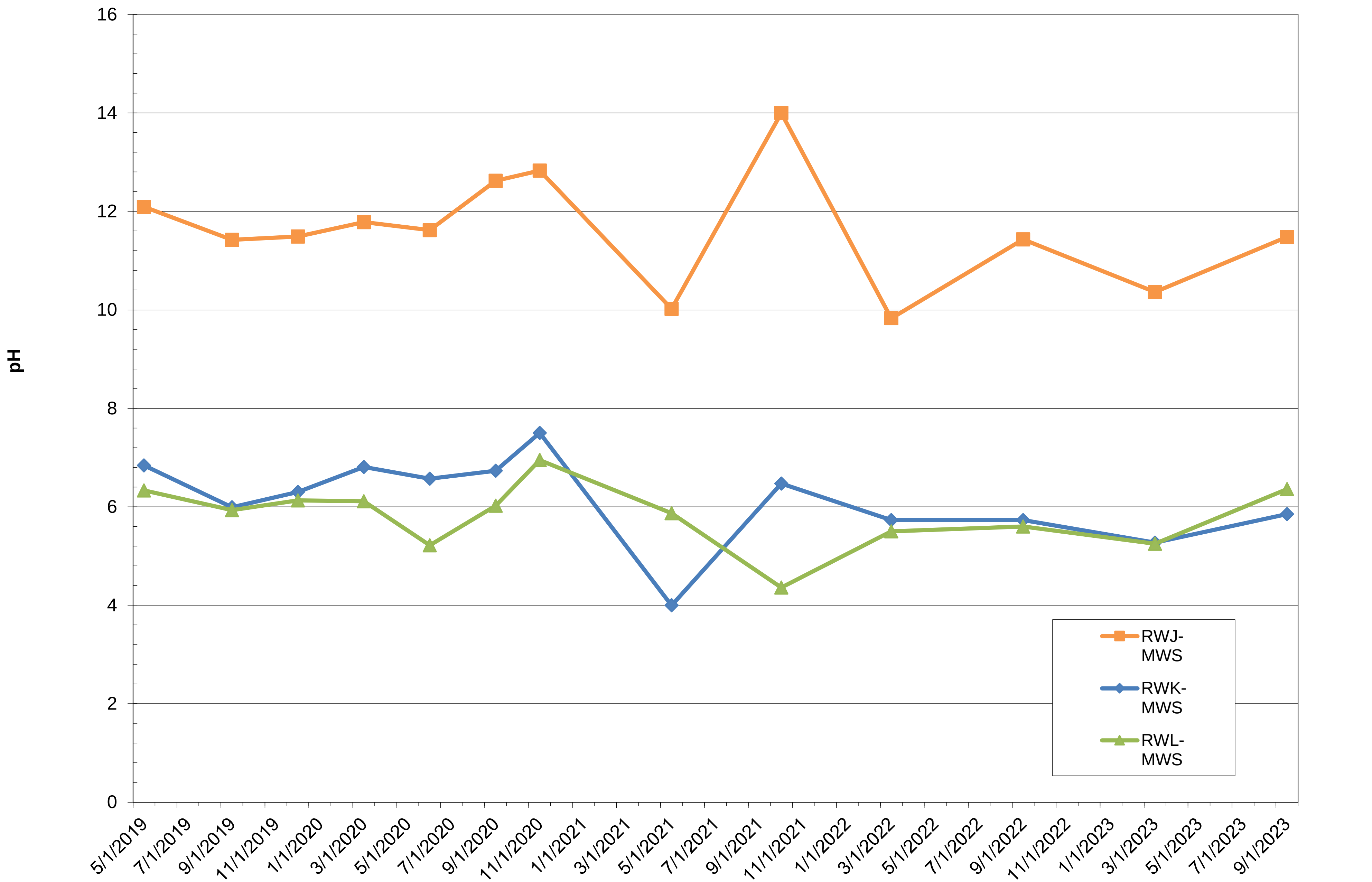
Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010103


RWA-MWI
5.04
RWO-MWI
5.88
RWP-MWI
4.72
RWQ-MWI
5.59
RW22R-MWI
5.77
RWH-MWI
5.92
RW21-MWI
NS
RW09-MWI
NS
RWI-MWI
NS
RWB-MWI
6.04
RW08-MWI
NS
RW16-MWI
NS
RW25-MWI
NS
RW19-MWI
NS
RW24-MWI
NS
RW11-MWI
NS
RW15-MWI
NS
RW18-MWI
NS
RW12-MWI
6.05
RW07-MWI
6.02
RW10-MWI
NS
RW13-MWI
NS
RWJ-MWI
7.09
RWL-MWI
5.94
RWS-MWI
6
RWK-MWI
6.25
RWD-MWI
5.5
RWM-MWI
NS
RW06-MWI
NS
RWR-MWI
5.26
RWE-MWI
5.66
RW23-MWI
5.66
RW03R-MWI
5.97
RW05R-MWI
6.26
RW02-MWI
NS
RWF-MWI
6.17
RW01-MWI
NS
RWG-MWI
NS
LEGEND
Intermediate Monitoring Well (1- or 2-inch diameter)
Intermediate Monitoring Well (6-inch diameter)
Q3 Intermediate pH Measurements
2 - 4
4 - 6
6 - 8
8 - 10
>10
Historical Source Area
Trench
Parcel Boundary
Notes:
• Q3 Samples Collected September 8 – 21, 2023.
• NS=Not Sampled; ND=Not Detected
Rod & Wire Mill - Intermediate Zone
pH Measurements
Q3 2023
Figure
43
ARM Group LLC
Engineers and Scientists
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103
N
0
50
100
200
Feet




ARM Group LLC
Engineers and Scientists

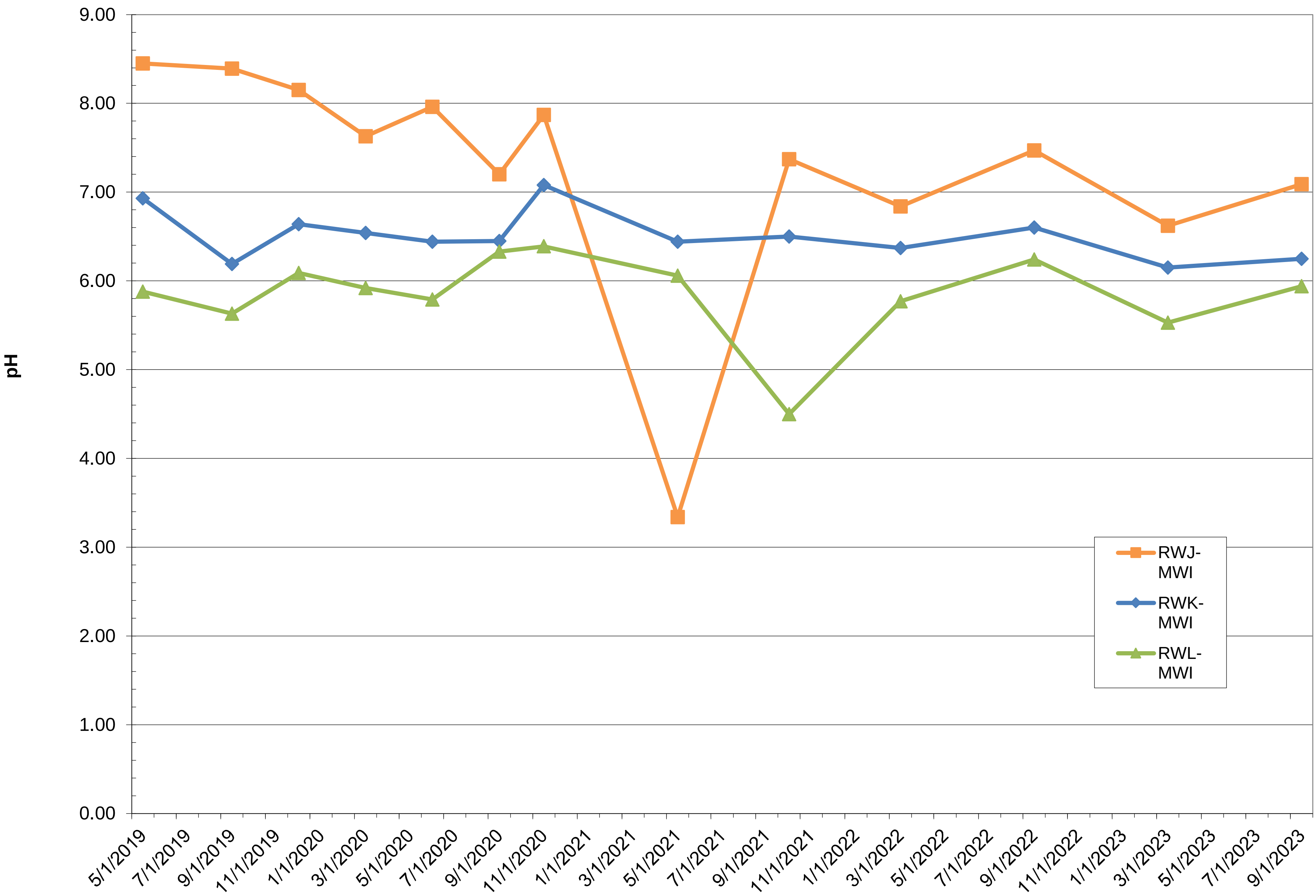
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

RWJ-MWS, RWK-MWS, RWL-MWS
pH Measurements

January 2024

**Figure 44**




ARM Group LLC
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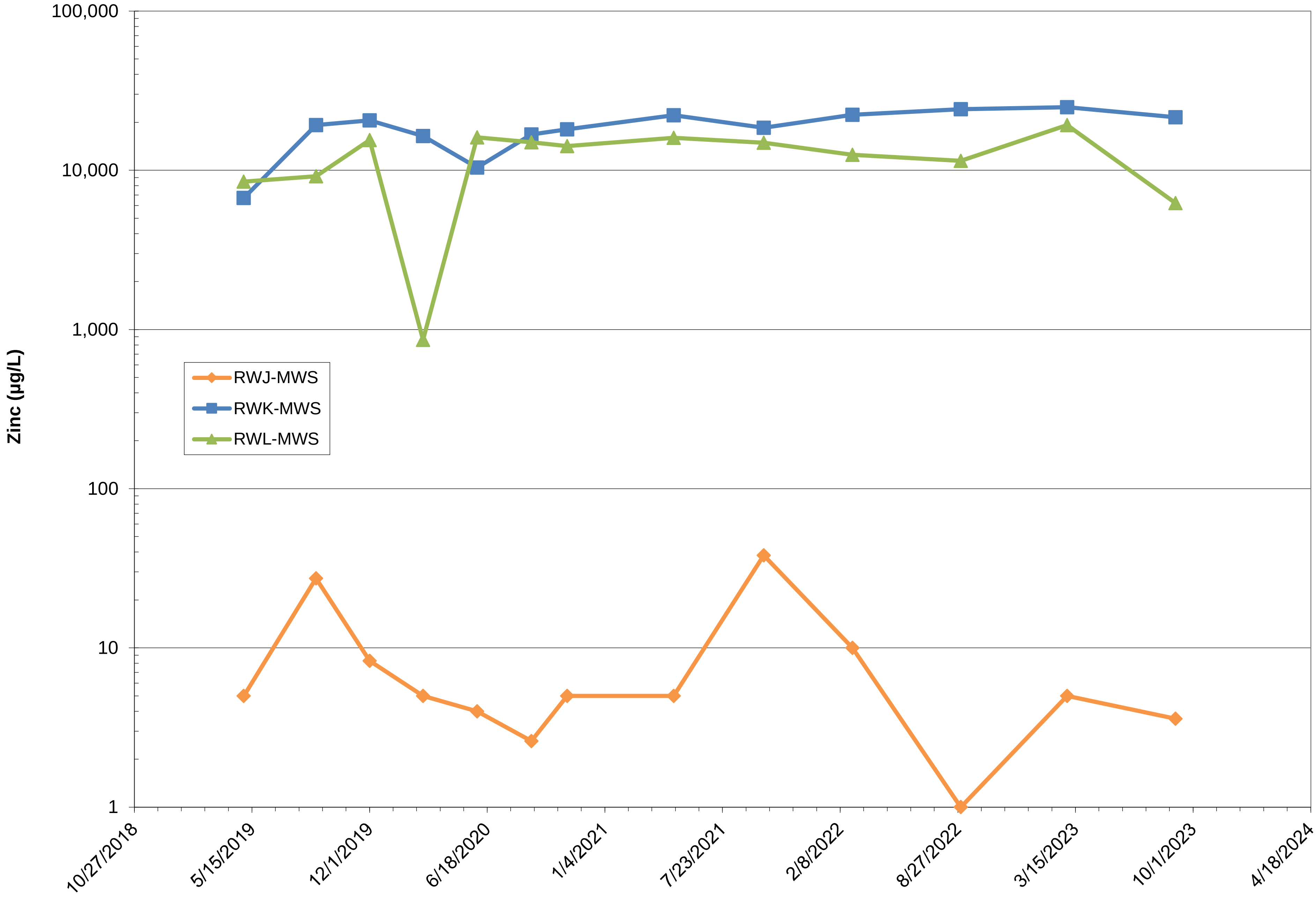
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

RWJ-MWI, RWK-MWI, and RWL-MWI
pH Measurements

January 2024

**Figure 45**




ARM Group LLC
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Rod and Wire Mill
Tradepoint Atlantic

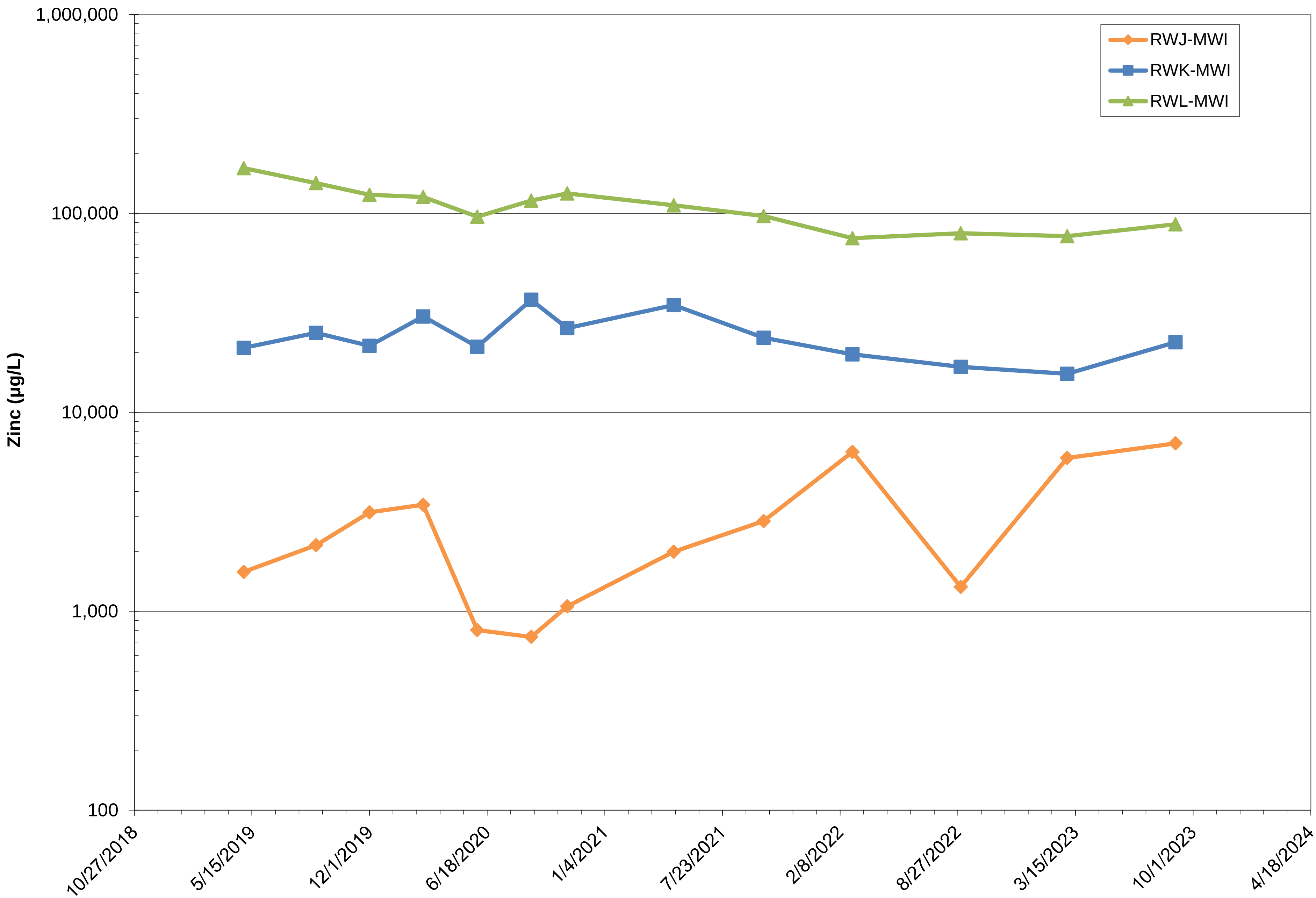
Sparrows Point, Maryland

RWJ-MWS, RWK-MWS, and RWL-MWS
Zinc Concentrations

January 2024

**Figure**

**46**




ARM Group LLC
Engineers and Scientists

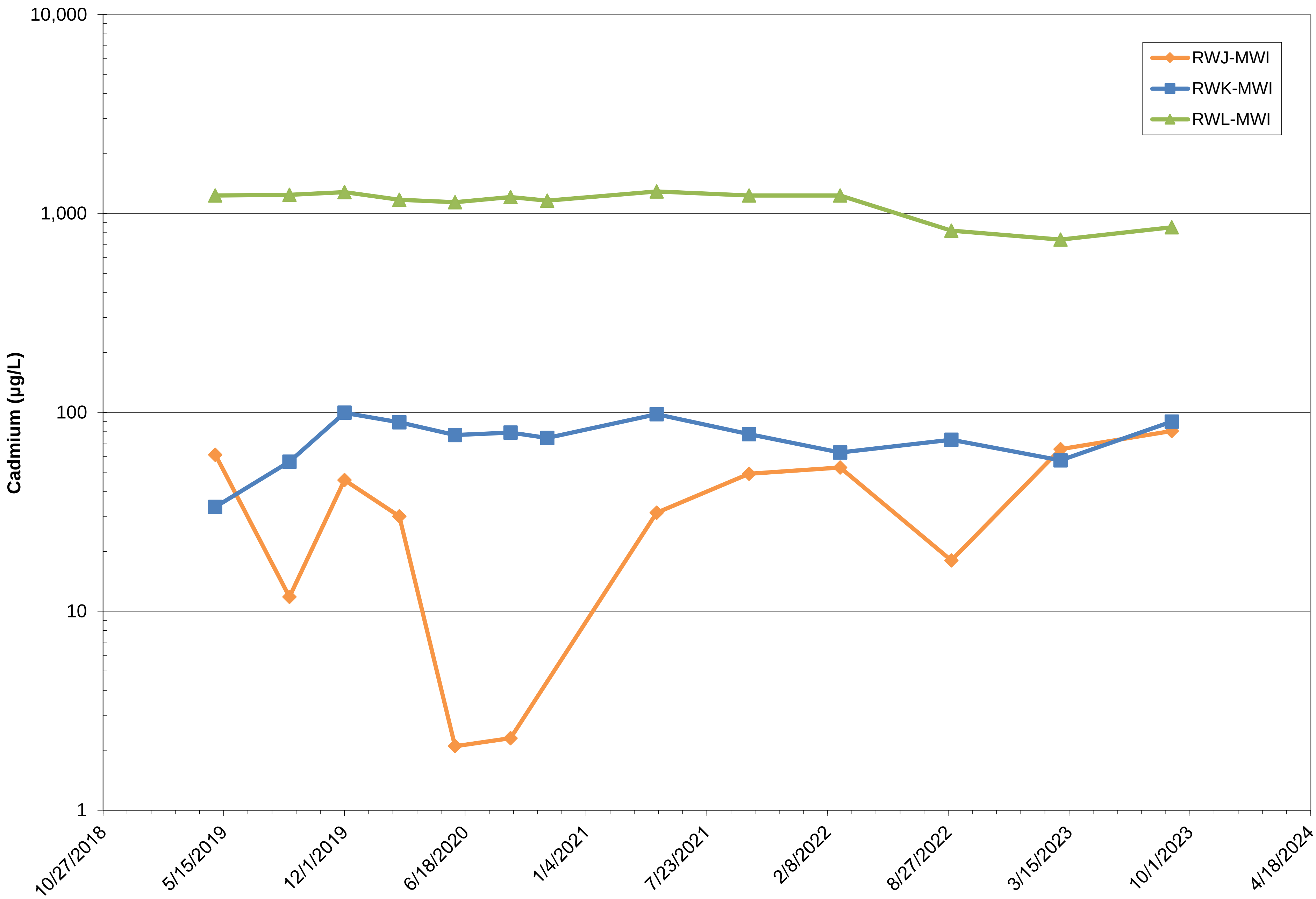
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

RWJ-MWI, RWK-MWI, and RWL-MWI
Zinc Concentrations

January 2024

Figure 47

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Sparrows Point, Maryland

RWJ-MWI, RWK-MWI, and RWL-MWI
Cadmium Concentrations

January 2024

**Figure**
**48**

# TABLES

**TABLE 1**
**Monitoring Well Construction Summary**
**Rod Wire Mill Interim Measure Progress Report**

| Well Name | Monitoring Area | Installation Date | Abandonment Date | Northing | Easting | Surface Completion | TOC Elevation (ft AMSL) | Ground Surface Elevation (ft AMSL) | Total Well Depth (feet) | Screen Length (feet) | Well Diameter (inch) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RW01-MWI | Intermediate | 8/1/2017 | 4/25/2023 | 571513.6572 | 1455952.772 | Flush Mount | 9.78 | 10.21 | 41 | 10 | 2 |
| RW01-MWS | Shallow | 7/28/2017 | 4/25/2023 | 571518.9458 | 1455952.268 | Flush Mount | 9.71 | 10.18 | 20 | 10 | 2 |
| RW02-MWI | Intermediate | 7/31/2017 | 4/25/2023 | 571665.1462 | 1455934.83 | Flush Mount | 9.86 | 10.12 | 36.5 | 10 | 2 |
| RW02-MWS | Shallow | 7/27/2017 | 4/25/2023 | 571670.4206 | 1455934.956 | Flush Mount | 10.01 | 10.18 | 18 | 10 | 2 |
| RW03-MWI | Intermediate | 12/9/2016 | Destroyed | 571819.168 | 1455955.53 | | 13.35 | 10.15 | 40 | 10 | 2 |
| RW03-MWS | Shallow | 12/9/2016 | Destroyed | 571824.033 | 1455955.781 | | 13.92 | 10.08 | 20 | 10 | 2 |
| RW03R-MWI | Shallow | 5/3/2022 | | 571809.753 | 1455953.368 | Stick-up Steel Casing | 13.8 | 11.63 | 20 | 8 | 2 |
| RW03R-MWS | Intermediate | 5/3/2022 | | 571805.64 | 1455953.193 | Stick-up Steel Casing | 13.78 | 11.52 | 40 | 10 | 2 |
| RW04-MWS | Shallow | 8/11/2000 | | 571781.312 | 1456010.849 | Flush Mount | 8.89 | 9.2 | 15 | unknown | 2 |
| RW05-MWS | Shallow | 7/11/2017 | Destroyed | 571709.0224 | 1455888.533 | Flush Mount | 9.73 | 10.08 | 17 | 10 | 2 |
| RW05R-MWI | Intermediate | 4/23/2019 | | 571732.443 | 1455877.003 | Stick-up Steel Casing | 12.95 | 10.56 | 40 | 10 | 1 |
| RW06R-MWD | Deep | 5/1/2018 | | 571962.528 | 1455966.189 | Flush mount | 11.84 | 12.07 | 62 | 10 | 2 |
| RW06R-MWS | Shallow | 4/30/2018 | | 571966.8512 | 1455965.706 | Flush mount | 11.44 | 11.95 | 10 | 5 | 2 |
| RW06-MWI | Intermediate | 4/30/1986 | 4/25/2023 | 571975.244 | 1455960.618 | Flush mount | 11.32 | 11.78 | 30 | | 2 |
| RW07-MWI | Intermediate | 12/14/2016 | | 572120.736 | 1456014.511 | Flush mount | 12.87 | 13.16 | 40 | 10 | 2 |
| RW07-MWS | Shallow | 12/14/2016 | | 572124.671 | 1456015.618 | Flush mount | 13.01 | 13.31 | 20 | 10 | 2 |
| RW08-MWI | Intermediate | 12/13/2016 | | 572277.419 | 1456066.32 | Flush mount | 12.27 | 12.71 | 40 | 10 | 2 |
| RW08-MWS | Shallow | 12/13/2016 | | 572281.232 | 1456068.357 | Flush mount | 12.32 | 12.47 | 20 | 10 | 2 |
| RW09-MWI | Intermediate | 12/15/2016 | | 572311.301 | 1456166.668 | Flush mount | 12.75 | 12.95 | 40 | 10 | 2 |
| RW09-MWS | Shallow | 12/16/2016 | | 572317.199 | 1456164.575 | flush mount | 12.81 | 13.07 | 20 | 10 | 2 |
| RW10-MWI | Intermediate | 12/22/2016 | | 572105.166 | 1456116.254 | Vault | 13.44 | NM | 40 | 10 | 6 |
| RW11-MWI | Intermediate | 8/30/2001 | | 572204.529 | 1456202.556 | Flush mount | 12.34 | 12.64 | 30 | unknown | 2 |
| RW11-MWS | Shallow | 12/19/2016 | | 572210.58 | 1456202.673 | Flush mount | 12.16 | 12.63 | 20 | 10 | 2 |
| RW12-MWI | Intermediate | 9/12/1985 | | 572137.284 | 1456311.813 | Flush mount | 13.43 | 13.6 | 30 | unknown | 2 |
| RW12-MWS | Shallow | 8/28/2001 | | 572145.256 | 1456308.732 | Flush mount | 13.15 | 13.5 | 14 | unknown | 2 |
| RW13-MWI | Intermediate | 7/21/2017 | | 572108.388 | 1456416.357 | Vault | 13.69 | 14.51 | 38 | 10 | 6 |
| RW14-MWS | Shallow | 7/27/2017 | | 572172.661 | 1456421.302 | Flush mount | 12.64 | 13.13 | 20.5 | 10 | 2 |
| RW15-MWI | Intermediate | 7/24/2017 | | 572183.9168 | 1456513.584 | Flush mount | 13.33 | 13.58 | 36.5 | 10 | 2 |
| RW15-MWS | Shallow | 7/21/2017 | | 572189.6508 | 1456512.039 | Flush mount | 13.22 | 13.52 | 18.3 | 10 | 2 |
| RW16-MWI | Intermediate | 8/22/2017 | | 572286.93 | 1456459.18 | Flush mount | 12.18 | 12.38 | 40 | 10 | 2 |
| RW16-MWS | Shallow | 8/22/2017 | | 572294.99 | 1456460.62 | Flush mount | 12.02 | 12.24 | 20 | 10 | 2 |
| RW18-MWI | Intermediate | 9/12/1985 | | 572158.807 | 1456606.197 | Flush mount | 13.8 | 14.04 | 30 | unknown | 2 |
| RW18-MWS | Shallow | 9/13/1985 | | 572167.7271 | 1456601.817 | Flush mount | 13.68 | 13.92 | 10 | unknown | 2 |
| RW19-MWI | Intermediate | 12/19/2016 | | 572240.998 | 1456746.128 | Flush mount | 12.64 | NM | 40 | 10 | 2 |
| RW19-MWS | Shallow | 12/20/2016 | | 572247.126 | 1456745.983 | Flush mount | 12.97 | NM | 20 | 10 | 2 |
| RW21-MWI | Intermediate | 4/9/2019 | | 572350.7734 | 1456246.875 | Flush mount | 14.46 | 14.63 | 40 | 10 | 1 |
| RW21-MWP | Perched | 1/28/2020 | | 572363.832 | 1456276.034 | Flush mount | 13.52 | 13.87 | 14 | 10 | 2 |
| RW21-MWS | Shallow | 8/25/2017 | | 572363.8291 | 1456276.018 | Flush mount | 13.51 | 13.91 | 28 | 5 | 2 |
| RW22R-MWI | Intermediate | 4/11/2019 | | 572408.1789 | 1456074.575 | Stick-up Steel Casing | 16.63 | 14.02 | 40 | 10 | 1 |
| RW22R-MWS | Shallow | 4/10/2019 | | 572411.5743 | 1456072.492 | Stick-up Steel Casing | 16.56 | 14.02 | 20 | 10 | 1 |

**TABLE 1**
**Monitoring Well Construction Summary**
**Rod Wire Mill Interim Measure Progress Report**

| Well Name | Monitoring Area | Installation Date | Abandonment Date | Northing | Easting | Surface Completion | TOC Elevation (ft AMSL) | Ground Surface Elevation (ft AMSL) | Total Well Depth (feet) | Screen Length (feet) | Well Diameter (inch) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RW23-MWI | Intermediate | 4/3/2019 | | 571885.073 | 1456164.16 | Flush Mount | 14.36 | 14.6 | 40 | 10 | 1 |
| RW23-MWS | Shallow | 4/4/2019 | | 571887.2879 | 1456162.566 | Flush Mount | 14.24 | 14.5 | 20 | 10 | 1 |
| RW24-MWI | Intermediate | 4/12/2019 | | 572226.4847 | 1456459.746 | Flush Mount | 12.57 | 12.74 | 40 | 10 | 1 |
| RW24-MWS | Shallow | 4/12/2019 | | 572228.5369 | 1456459.897 | Flush Mount | 12.55 | 12.78 | 20 | 10 | 1 |
| RW25-MWI | Intermediate | 4/15/2019 | | 572285.8111 | 1456604.805 | Flush Mount | 12.08 | 12.28 | 40 | 10 | 1 |
| RW25-MWS | Shallow | 4/12/2019 | | 572287.9682 | 1456604.755 | Flush Mount | 11.94 | 12.16 | 20 | 10 | 1 |
| RWA-MWI | Intermediate | 4/10/2019 | | 572458.8731 | 1455932.71 | Stick-up Steel Casing | 10.2 | 7.52 | 20.3 | 5 | 1 |
| RWA-MWS | Shallow | 4/10/2019 | | 572463.9889 | 1455931.14 | Stick-up Steel Casing | 10.59 | 7.74 | 14 | 10 | 1 |
| RWB-MWI | Intermediate | 4/15/2019 | | 572276.3787 | 1455905.79 | Stick-up Steel Casing | 19.73 | 17.57 | 40 | 10 | 1 |
| RWB-MWS | Shallow | 4/16/2019 | | 572280.0647 | 1455906.999 | Stick-up Steel Casing | 20.17 | 17.66 | 20.5 | 10 | 1 |
| RWD-MWI | Intermediate | 4/22/2019 | | 572017.6 | 1455888.923 | Stick-up Steel Casing | 14.87 | 12.72 | 40 | 10 | 1 |
| RWD-MWS | Shallow | 4/22/2019 | | 572021.3034 | 1455888.645 | Stick-up Steel Casing | 14.93 | 12.68 | 19.5 | 10 | 1 |
| RWE-MWI | Intermediate | 4/23/2019 | | 571904.5202 | 1455877.954 | Stick-up Steel Casing | 13.92 | 11.43 | 40 | 10 | 1 |
| RWE-MWS | Shallow | 4/22/2019 | | 571908.5576 | 1455878.188 | Stick-up Steel Casing | 13.96 | 11.57 | 20 | 10 | 1 |
| RWF-MWI | Intermediate | 4/24/2019 | | 571612.1556 | 1455889.581 | Stick-up Steel Casing | 12.31 | 10.3 | 40 | 10 | 1 |
| RWF-MWS | Shallow | 4/24/2019 | | 571613.4919 | 1455888.933 | Stick-up Steel Casing | 12.74 | 10.24 | 20 | 10 | 1 |
| RWG-MWI | Intermediate | 4/25/2019 | | 571293.311 | 1455914.675 | Flush Mount | 9.45 | 9.62 | 40 | 10 | 1 |
| RWG-MWS | Shallow | 4/24/2019 | | 571296.366 | 1455914.217 | Flush mount | 9.64 | 9.55 | 20 | 10 | 1 |
| RWH-MWI | Intermediate | 4/9/2019 | | 572410.3075 | 1456262.809 | Flush Mount | 12.03 | 12.4 | 33.5 | 10 | 1 |
| RWH-MWS | Shallow | 4/8/2019 | | 572413.9151 | 1456261.997 | Flush Mount | 11.83 | 12.29 | 20 | 10 | 1 |
| RWI-MWI | Intermediate | 4/8/2019 | | 572313.561 | 1456316.524 | Flush Mount | 12.95 | 13.23 | 40 | 10 | 1 |
| RWI-MWS | Shallow | 4/8/2019 | | 572315.7998 | 1456316.335 | Flush Mount | 12.89 | 13.23 | 20 | 10 | 1 |
| RWJ-MWI | Intermediate | 4/29/2019 | | 572090.2068 | 1456286.997 | Flush Mount | 14.1 | 14.4 | 40 | 10 | 1 |
| RWJ-MWS | Shallow | 4/29/2019 | | 572092.2156 | 1456287.233 | Flush Mount | 13.81 | 14.31 | 20.5 | 10 | 1 |
| RWK-MWI | Intermediate | 4/2/2019 | | 572083.3646 | 1456279.397 | Flush Mount | 14.22 | 14.54 | 40 | 10 | 1 |
| RWK-MWS | Shallow | 4/1/2019 | | 572085.0241 | 1456279.042 | Flush Mount | 14.24 | 14.5 | 20 | 10 | 1 |
| RWL-MWI | Intermediate | 4/2/2019 | | 572075.2173 | 1456267.262 | Flush Mount | 14.36 | 14.6 | 40 | 10 | 1 |
| RWL-MWS | Shallow | 4/2/2019 | | 572078.1957 | 1456266.559 | Flush Mount | 14.26 | 14.55 | 20 | 10 | 1 |
| RWM-MWI | Intermediate | 4/4/2019 | | 572018.7755 | 1456178.189 | Flush Mount | 14.92 | 15.2 | 40 | 10 | 1 |
| RWM-MWS | Shallow | 4/4/2019 | | 572019.8634 | 1456176.579 | Flush Mount | 14.97 | 15.21 | 20 | 10 | 1 |
| RWN-MWS | Shallow | 4/11/2019 | | 572065.843 | 1456392.375 | Flush Mount | 14.84 | 15.16 | 25 | 10 | 1 |
| RWO-MWI | Intermediate | 4/29/2019 | | 572457.7694 | 1456441.038 | Flush Mount | 11.67 | 11.99 | 40 | 10 | 1 |
| RWO-MWS | Shallow | 4/29/2019 | | 572462.5312 | 1456439.69 | Flush Mount | 11.59 | 11.93 | 20 | 10 | 1 |
| RWP-MWI | Intermediate | 4/17/2019 | | 572456.879 | 1456719.178 | Stick-up Steel Casing | 14.32 | 11.62 | 40 | 10 | 1 |
| RWQ-MWI | Intermediate | 4/18/2019 | | 572457.955 | 1456935.254 | Stick-up Steel Casing | 17.07 | 14.87 | 40 | 10 | 1 |
| RWQ-MWS | Shallow | 4/17/2019 | | 572461.929 | 1456935.291 | Stick-up Steel Casing | 17.11 | 14.64 | 20 | 10 | 1 |
| RWR-MWI | Intermediate | 4/25/2019 | | 571982.59 | 1456768.613 | Flush Mount | 13.7 | 14.04 | 40 | 10 | 1 |
| RWR-MWS | Shallow | 4/25/2019 | | 571986.165 | 1456769.115 | Flush Mount | 13.68 | 14.07 | 20 | 10 | 1 |
| RWS-MWI | Intermediate | 4/18/2019 | | 572075.052 | 1457037.284 | Stick-up Steel Casing | 17.6 | 15.06 | 45 | 10 | 1 |
| RWS-MWS | Shallow | 4/18/2019 | | 572077.763 | 1457037.433 | Stick-up Steel Casing | 17.6 | 15.25 | 20 | 10 | 1 |

NM = not mearsured
TOC = top of casing
AMSL = above mean sea level

**TABLE 2**
**Shallow Zone Sampling Frequency**
**Rod Wire Mill Interim Measure Progress Report**

| Well Name | Monitoring Area | Sample Frequency | Sampling Rationale |
|---|---|---|---|
| RWA-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWB-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWD-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWE-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWF-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWG-MWS | Downgradient Perimeter | Not Sampled | Outside the area of concern (south) and do not expect to see any changes |
| RWH-MWS | Delineation | Semi-Annually | Monitor northern perimeter concentrations |
| RWI-MWS | Delineation | Annually | Monitor the northwest pond |
| RWJ-MWS | Interior | Semi-Annually | Compare to the intermediate well to assess potential vertical migration |
| RWK-MWS | Interior | Semi-Annually | Compare to the intermediate well to assess potential vertical migration |
| RWL-MWS | Interior | Semi-Annually | Compare to the intermediate well to assess potential vertical migration |
| RWM-MWS | Interior | Not Sampled | Not monitoring the perimeter |
| RWN-MWS | Interior | Annually | Monitor effect on former sludge storage area and any southern direction impacts before the operational building |
| RWO-MWS | Delineation | Semi-Annually | Monitor northern perimeter concentrations |
| RWQ-MWS | Delineation | Semi-Annually | Monitor northern perimeter concentrations |
| RWR-MWS | Upgradient | Semi-Annually | Monitor eastern perimeter concentrations |
| RWS-MWS | Upgradient | Semi-Annually | Monitor eastern perimeter concentrations |
| RW01-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations; Abandoned, will be reinstalled |
| RW02-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations; Abandoned, will be reinstalled |
| RW03R-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RW04-MWS | Downgradient Perimeter | Not Sampled | In close proximity to RW03-MWS; not needed to monitor the perimeter |
| RW05-MWS | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations; Destroyed |
| RW06R-MWS | Downgradient Perimeter | Annually | In close proximity to RWD and RWE-MWS; not needed to monitor the perimeter |
| RW07-MWS | Downgradient Perimeter | Annually | In close proximity to RWB; not needed to monitor the perimeter |
| RW08-MWS | Downgradient Perimeter | Not Sampled | Not monitoring the perimeter |
| RW09-MWS | Interior | Not Sampled | Not monitoring the perimeter |
| RW11-MWS | Interior | Annually | Provide spatial coverage in central area |
| RW12-MWS | Interior | Semi-Annually | Compare to the intermediate well to assess potential vertical migration |
| RW14-MWS | Interior | Not Sampled | Redundant with other wells monitoring central area |
| RW15-MWS | Interior | Not Sampled | Redundant with other wells monitoring central area |
| RW16-MWS | Interior | Annually | Within the area of the northwest disposal pond; provide spatial coverage in central area |
| RW18-MWS | Interior | Annually | Monitor any southern direction impacts before the operational building; provide spatial coverage in central area |
| RW19-MWS | Upgradient | Not Sampled | Do not expect to see changes in conditions |
| RW21-MWP | Delineation | Not Sampled | Installed for NAPL monitoring |
| RW21-MWS | Delineation | Not Sampled | Redundant with other monitoring wells in the central area |
| RW22R-MWS | Downgradient Perimeter | Semi-Annually | Monitor downgradient of northwest pond area; monitor northern perimeter concentrations |
| RW23-MWS | Interior | Semi-Annually | Monitor southern perimeter and immediately downgradient of operational building concentrations |
| RW24-MWS | Interior | Not Sampled | Redundant with other monitoring wells in the central area |
| RW25-MWS | Interior | Not Sampled | Redundant with other monitoring wells in the central area |

**TABLE 3**
**Intermediate Zone Sampling Frequency**
**Rod Wire Mill Interim Measure Progress Report**

| Well Name | Monitoring Area | Sample Frequency | Sampling Rationale |
|---|---|---|---|
| RWA-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWB-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWD-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWE-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWF-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RWG-MWI | Downgradient Perimeter | Annually | Monitor for changes in perimeter concentrations |
| RWH-MWI | Delineation | Semi-Annually | Monitor northern perimeter conditions |
| RWI-MWI | Delineation | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RWJ-MWI | Performance | Semi-Annually | Near field wells to monitor trench effectiveness; inside final treatment trench |
| RWK-MWI | Performance | Semi-Annually | Near field wells to monitor trench effectiveness; immediate well downgradient after final treatment trench |
| RWL-MWI | Performance | Semi-Annually | Near field wells to monitor trench effectiveness; delineation of final treatment trench |
| RWM-MWI | Performance | Annually | Trench effectiveness is already being monitored closer to the area of concern |
| RWO-MWI | Delineation | Semi-Annually | Monitor northern perimeter conditions |
| RWP-MWI | Delineation | Semi-Annually | Monitor northern perimeter conditions |
| RWQ-MWI | Delineation | Semi-Annually | Monitor northern perimeter conditions |
| RWR-MWI | Upgradient | Semi-Annually | Monitor eastern perimeter conditions; monitor concentrations proximal to the operational building |
| RWS-MWI | Upgradient | Semi-Annually | Monitor eastern perimeter conditions |
| RW01-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations; Abandoned, will be reinstalled |
| RW02-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations; Abandoned, will be reinstalled |
| RW03R-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RW05R-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations |
| RW06-MWI | Downgradient Perimeter | Semi-Annually | Monitor for changes in perimeter concentrations; Abandoned, will be reinstalled |
| RW06R-MWD | Downgradient Perimeter | Annually | Monitor any vertical movement of groundwater into lower hydrogeologic zone |
| RW07-MWI | Downgradient Perimeter | Semi-Annually | Monitor western perimeter |
| RW08-MWI | Downgradient Perimeter | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW09-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW10-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW11-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW12-MWI | Performance | Semi-Annually | Near field wells to monitor trench effectiveness; well immediate upgradient to final treatment trench |
| RW13-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW15-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW16-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW18-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW19-MWI | Upgradient | Annually | Do not expect to see changing conditions because it is upgradient of all treatment trenches |
| RW21-MWI | Delineation | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW22R-MWI | Downgradient Perimeter | Semi-Annually | Monitor downgradient of northwest pond area; monitor northern perimeter concentrations |
| RW23-MWI | Performance | Semi-Annually | Monitor the concentrations along the southern perimeter and immediately downgradient of operational building |
| RW24-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |
| RW25-MWI | Performance | Annually | Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater |

**TABLE 4**
**Shallow Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW01-MWS | RW02-MWS | RW03-MWS | RW03R-MWS | RW04-MWS | RW05-MWS | RW06R-MWS | RW07-MWS | RW08-MWS | RW09-MWS | RW11-MWS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Semiannually | NA | Semiannually | Not Sampled | Semiannually | Annually | Annually | Not Sampled | Not Sampled | Annually |
| 5/1/2015 | µg/L | DNE | DNE | DNE | DNE | **2,330** | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/1/2015 | µg/L | DNE | DNE | DNE | DNE | NS | DNE | DNE | DNE | DNE | DNE | DNE |
| 2/10/2017-2/14/2017 | µg/L | DNE | DNE | **6,200** | DNE | NS | DNE | DNE | **81.6** | **1,080** | **14,500** | **8,790** |
| 3/28/2017-3/29/2017 | µg/L | DNE | DNE | **6,510** | DNE | NS | DNE | DNE | **74.8** | **8,710** | **12,400** | **10,500** |
| 4/25/2017-4/27/2017 | µg/L | DNE | DNE | **4,860** | DNE | NS | DNE | DNE | **86.4** | **9,520** | **12,900** | **13,100** |
| 5/22/2017-5/24/2017 | µg/L | DNE | DNE | **5,380** | DNE | NS | DNE | DNE | **102** | **2,680** | **11,900** | **12,500** |
| 6/5/2017-6/8/2017 | µg/L | DNE | DNE | **5,500** | DNE | **58.2** | DNE | DNE | **107** | **1,870** | **13,000** | **13,500** |
| 7/10/2017-7/12/2017 | µg/L | DNE | DNE | **8,460** | DNE | **179** | DNE | DNE | **114** | **968** | **11,500** | **10,900** |
| 8/7/2017-8/10/2017 | µg/L | **12,200** | **6,290** | **7,730** | DNE | **74.7** | **550** | DNE | **127** | **3,190** | **9,700** | **10,800** |
| 9/1/2017-9/8/2017 | µg/L | **5,730** | **3,220** | **16,300** | DNE | **163** | **184** | DNE | **165** | **4,460** | **8,750** | **10,600** |
| 10/2/2017-10/6/2017 | µg/L | **7,730** | **5,490** | **32,100** | DNE | **137** | **1,410** | DNE | **144** | **1,950** | **8,310 ML** | **9,270** |
| 11/3/2017-11/13/2017 | µg/L | **25,200** | **1,460** | **14,100** | DNE | **123** | **503** | DNE | **227** | **1,600** | **9,290** | **18,300** |
| 12/4/2017-12/8/2017 | µg/L | **7,300** | **79.3** | **46,400** | DNE | **279** | **5,440** | DNE | **216** | **1,770** | **8,550** | **24,000** |
| 1/2/2018-1/9/2018 | µg/L | **35,200** | **2,210** | **31,500** | DNE | **384** | **35.7** | DNE | **276** | **2,600** | **9,310** | **27,700** |
| 4/8/2018-4/13/2018 | µg/L | **52,000** | **5,320** | **44,000** | DNE | **300** | **75.3** | DNE | **204** | **13,200** | **8,980** | **37,100** |
| 7/30/2018-8/3/2018 | µg/L | **24,100** | **5,470** | **25,600** | DNE | **7.9 J** | **32.6** | **22** | **248** | **6,640** | **10,700** | **109,000** |
| 10/1/2018-10/5/2018 | µg/L | **37,000** | **5,930** | **14,900** | DNE | **168** | **21.7** | **3.7 J** | **223** | **13,300** | **10,800** | **29,500** |
| 12/10/2018-12/14/2018* | µg/L | **13,700** | **27,400** | **23,300** | DNE | **23.5** | 10 U | 10 U | **176** | **931** | **9,200** | **28,900** |
| 3/12/2019-3/19/2019* | µg/L | **16,500** | **13,100** | **9,570** | DNE | **33.6** | 10 U | 10 U | **142** | **14,600** | **11,300** | **13,500** |
| 5/3/2019-6/7/2019* | µg/L | **16,300** | **21,900** | **18,700** | DNE | 10 U | 10 U | **20.7** | **137** | **11,300** | **14,100** | **38,900** |
| 9/10/2019-9/23/2019* | µg/L | **16,300** | **27,400** | **19,200** | DNE | **313** | 8.3 B | 4.1 B | **148** | **1,350** | **19,600** | **44,000** |
| 12/3/2019-12/11/2019 | µg/L | **10,400** | **594** | **19,200** | DNE | **604** | **41.6** | **4.3 J** | **168** | **1,250** | **20,600** | **37,500** |
| 3/11/20-3/23/20* | µg/L | **9,810** | **269** | **16,800** | DNE | **37.8** | **5.4 J** | **4.1 J** | **124** | **10,300** | **20,700** | **28,900** |
| 6/8/20-6/30/20* | µg/L | **6,200** | **1,940** | **18,800** | DNE | **79.4** | **8.6 J** | **19.4** | **220** | **12,000** | **26,700** | **37,200** |
| 9/9/20-9/29/20* | µg/L | **7,050** | **1,280** | NS | DNE | **75.4** | **5.9 J** | **8 J** | NS | **2,330** | **39,900** | **46,600** |
| 11/5/20-11/19/20* | µg/L | **4,140** | **9,950** | NS | DNE | **54.6** | **9.8 J** | 10 U | NS | **1,600** | **45,200** | **55,200** |
| 5/26/21-6/18/21* | µg/L | **3,620** | **472** | NS | DNE | NS | **7.0 J** | 10 U | NS | NS | NS | **61,000** |
| 10/4/21-10/18/21* | µg/L | **5,660** | **3.1 J** | NS | DNE | NS | **17.8 J** | NS | NS | NS | NS | NS |
| 11/29/21-11/30/21* | µg/L | NS | NS | NS | DNE | NS | NS | NS | **298** | NS | NS | NS |
| 2/23/22-3/28/22* | µg/L | **11,300** | **36,300** | DNE | DNE | NS | **56.7** | 20 U | **406** | NS | NS | **13,500** |
| 9/9/2022-9/15/2022* | µg/L | **6,406** | **7,503** | DNE | **102** | NS | **14.7** | NS | NS | NS | NS | NS |
| 3/10/2023-4/10/2023 | µg/L | **10,390** | **18,640** | DNE | **658** | NS | **14.5** | 10 U | **96.1** | NS | NS | **58,030** |
| 9/08/23-9/21/23 | µg/L | NS | NS | NS | **82.8** | NS | NS | NS | NS | NS | NS | NS |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist
*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 4**
**Shallow Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW12-MWS | RW14-MWS | RW15-MWS | RW16-MWS | RW18-MWS | RW19-MWS | RW21-MWS | RW22R-MWS | RW23-MWS | RW24-MWS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Not Sampled | Not Sampled | Annually | Annually | Not Sampled | Not Sampled | Semiannually | Semiannually | Not Sampled |
| 5/1/2015 | µg/L | **4,290** | *DNE* | *DNE* | *DNE* | **6,470** | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | **925** | *DNE* | *DNE* | *DNE* | **912** | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/14/2017 | µg/L | *NS* | *DNE* | *DNE* | *DNE* | *NS* | **10,100** | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/28/2017-3/29/2017 | µg/L | *NS* | *DNE* | *DNE* | *DNE* | *NS* | **7,100** | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/27/2017 | µg/L | *NS* | *DNE* | *DNE* | *DNE* | *NS* | **6,260** | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *NS* | *DNE* | *DNE* | *DNE* | *NS* | **4,860** | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/8/2017 | µg/L | **11,400** | *DNE* | *DNE* | *DNE* | **25,500** | **3,720** | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/12/2017 | µg/L | **9,090** | *DNE* | *DNE* | *DNE* | **13,300** | **3,700** | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | **5,090** | **42,000** | **276** | *NS* | **964** | **3,360** | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | **3,980** | **43,500** | **1,080** | **25.6** | **6,160** | **2,990** | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/6/2017 | µg/L | **3,790** | **28,900** | **900** | **26.2** | **14,500** | **18,700** | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | **235,000** | **28,100** | **8,800** | **48.6** | **10,700** | **2,730** | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | **2,980** | **49,200** | **7,630** | **27.7** | **23,400** | **3,380** | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | **10,100** | **61,800** | **5,150** | **31.2** | **11,600** | **10,200** | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | **10,600** | **62,100** | **5,940** | **25** | **25,900** | **7,060** | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | **2,900** | **64,100** | **1,320** | **35.9** | **439** | **10,100** | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | **1,140** | **80,100** | **2,950** | **30.0** | **44.9** | **10,500** | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | **8,570** | **79,200** | **4,380** | **5.5 J** | **12.7** | **3,390** | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | **4,640** | **65,700** | **499** | **7 J** | **30** | **4,680** | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **1,550** | **69,600** | **684** | **106** | **16.9** | **3,180** | **282,000** | **58,100** | **22.4** | **5 J** |
| 9/10/2019-9/23/2019* | µg/L | **5,390** | **70,500** | **134** | *10.0 U* | *4.3 B* | **2,260** | **330,000** | **188,000** | **20.6** | **8.2 J** |
| 12/3/2019-12/11/2019 | µg/L | **763** | **77,500** | **378** | **22.7** | **15.2** | **2,640** | **368,000** | **112,000** | **38.6** | **6.7 J** |
| 3/11/20-3/23/20* | µg/L | *NS* | **70,800** | **105** | *10 U* | **4.2 J** | **5,300** | **301,000** | **213,000** | **5 J** | **3.5 J** |
| 6/8/20-6/30/20* | µg/L | **4,660** | **71,900** | **2.7 J** | *10 U* | **4.2 J** | **2,710** | **268,000** | **217,000** | **2.7 J** | **3.4 J** |
| 9/9/20-9/29/20* | µg/L | *NS* | **56,600** | **9.4 J** | **22.3** | **22.7** | **22,600** | **298,000** | **253,000** | **6.4 J** | **16.4** |
| 11/5/20-11/19/20* | µg/L | *NS* | **50,200** | **3.3 J** | **3.7 J** | **3.3 J** | **6,190** | **325,000** | **145,000** | **5.9 J** | *10 U* |
| 5/26/21-6/18/21* | µg/L | *NS* | *NS* | *NS* | **3.0 J** | **20.1** | *NS* | *NS* | **169,000** | **2.8 J** | *NS* |
| 10/4/21-10/18/21* | µg/L | **4,960** | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | **137,000** | **6.5 J** | *NS* |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* |
| 2/23/22-3/28/22* | µg/L | **12,400** | *NS* | *NS* | *20 U* | *200 U* | *NS* | *NS* | **113,000** | *20 U* | *NS* |
| 9/9/2022-9/15/2022* | µg/L | **21,800** | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | **197,000** | *10 U* | *NS* |
| 3/10/2023-4/10/2023 | µg/L | **20,890** | *NS* | *NS* | **10.4** | **12.6** | *NS* | *NS* | **138,800** | **3.47 J** | *NS* |
| 9/08/23-9/21/23 | µg/L | **19,360** | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | **154,200** | **4.05 J** | *NS* |

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NS = Not Sampled
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*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 4**
**Shallow Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW25-MWS | RWA-MWS | RWB-MWS | RWD-MWS | RWE-MWS | RWF-MWS | RWG-MWS | RWH-MWS | RWI-MWS | RWJ-MWS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Not Sampled | Semiannually | Semiannually | Semiannually | Semiannually | Semiannually | Not Sampled | Semiannually | Annually | Semiannually |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/14/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/28/2017-3/29/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/27/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/12/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/6/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **70,500** | **516** | **7.4 J** | **4.7 J** | **468** | **39,100** | *10 U* | **367** | **25,800** | *10 U* |
| 9/10/2019-9/23/2019* | µg/L | **437,000** | **1,720** | **5.5 J** | **9.1 J** | **422** | **34,300** | *10.0 U* | **60,600** | **26,200** | **27** |
| 12/3/2019-12/11/2019 | µg/L | **11,900** | **49.7** | **38.7** | **5.4 J** | **261** | **35,000** | **194** | **2,600** | **32,400** | **8.3 J** |
| 3/11/20-3/23/20* | µg/L | **2,570** | **9.7 J** | **6.1 J** | **3.6 J** | **303** | **33,900** | **2.9 J** | **19,300** | **1,510** | *10 U* |
| 6/8/20-6/30/20* | µg/L | **5,720** | **21.5** | *10 U* | *10 U* | **1,360** | **31,200** | **9.8 J** | **48.9** | **211** | **4 J** |
| 9/9/20-9/29/20* | µg/L | **2,780** | **182** | **5.8 J** | **4.2 J** | **22,100** | **44,400** | *10 U* | **5,330** | *NS* | **2.6 J** |
| 11/5/20-11/19/20* | µg/L | **9,930** | **52.1** | **11.9** | **3 J** | **156** | **39,000** | *10 U* | **1,310** | *NS* | *10 U* |
| 5/26/21-6/18/21* | µg/L | *NS* | **6.1 J** | *10 U* | *10 U* | **21,900** | **32,800** | *NS* | **3,400** | *NS* | *10 U* |
| 10/4/21-10/18/21* | µg/L | *NS* | **7.6 J** | **12.4 J** | **10 J** | **1,630** | **25,200** | *NS* | **6,670** | *NS* | **38.2** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | **2.0 J** | *NS* |
| 2/23/22-3/28/22* | µg/L | *NS* | **46.8** | *20 U* | *20 U* | **174** | **33,600** | *NS* | **3,270** | **24,300** | *20 U* |
| 9/9/2022-9/15/2022* | µg/L | *NS* | **628** | **5.07 J** | **38.2** | **8,214** | **24,250** | *NS* | **2,468** | *NS* | *10 U* |
| 3/10/2023-4/10/2023 | µg/L | *NS* | **284** | *0.2 U* | *10 U* | **4,432** | **20,160** | *NS* | **5,340** | **17,540** | *10 U* |
| 9/08/23-9/21/23 | µg/L | *NS* | **319** | **3.55 J** | *10 U* | **7,079** | **29,160** | *NS* | **17,390** | *NS* | **3.54 J** |

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*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 4**
**Shallow Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RWK-MWS | RWL-MWS | RWM-MWS | RWN-MWS | RWO-MWS | RWQ-MWS | RWR-MWS | RWS-MWS |
|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Semiannually | Not Sampled | Annually | Semiannually | Semiannually | Semiannually | Semiannually |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/14/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/28/2017-3/29/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/27/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/12/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/6/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **6,710** | **8,480** | **6 J** | **978,000** | **2,660** | **146** | **213,000** | **10,100** |
| 9/10/2019-9/23/2019* | µg/L | **19,200** | **9,180** | **4.0 J** | **964,000** | **6,790** | **147** | **245,000** | **1,980** |
| 12/3/2019-12/11/2019 | µg/L | **20,600** | **15,500** | **11.6** | **943,000** | **3,720** | **182** | **320,000** | **2,970** |
| 3/11/20-3/23/20* | µg/L | **16,400** | **861** | **4.8 J** | **1,170,000** | **6,220** | **194** | **344,000** | **19,100** |
| 6/8/20-6/30/20* | µg/L | **10,400** | **16,100** | **21.8** | **884,000** | **11,100** | **149** | **327,000** | **954,000** |
| 9/9/20-9/29/20* | µg/L | **16,800** | **15,000** | **7.8 J** | **1,140,000** | **5,030** | **162** | **326,000** | **60,300** |
| 11/5/20-11/19/20* | µg/L | **18,100** | **14,200** | **10.6** | **709,000** | **2,750** | **152** | **293,000** | **7,260** |
| 5/26/21-6/18/21* | µg/L | **22,200** | **16,000** | *NS* | **745,000** | **1,130** | **158** | **269,000** | **116,000** |
| 10/4/21-10/18/21* | µg/L | **18,500** | **14,900** | *NS* | *NS* | **694** | **166** | **298,000** | **36,700** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* |
| 2/23/22-3/28/22* | µg/L | **22,300** | **12,500** | *NS* | **548,000** | **397** | **239** | **267,000** | **97,500** |
| 9/9/2022-9/15/2022* | µg/L | **24,170** | **11,470** | *NS* | *NS* | **49.3** | **134** | **205,000** | **22,290** |
| 3/10/2023-4/10/2023 | µg/L | **24,920** | **19,240** | *NS* | **546,700** | *10 U* | **94.5** | **233,900** | **158,800** |
| 9/08/23-9/21/23 | µg/L | **21,550** | **6,219** | *NS* | *NS* | *10 U* | **117** | **243,900** | **62,160** |

**Bold indicates detection above the reporting limit**
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*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 5**
**Shallow Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW01-MWS | RW02-MWS | RW03-MWS | RW03R-MWS | RW04-MWS | RW05-MWS | RW06R-MWS | RW07-MWS | RW08-MWS | RW09-MWS | RW11-MWS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Semiannually | NA | Semiannually | Not Sampled | Semiannually | Annually | Annually | Not Sampled | Not Sampled | Annually |
| 5/1/2015 | µg/L | DNE | DNE | DNE | DNE | **2.8** | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/1/2015 | µg/L | DNE | DNE | DNE | DNE | NS | DNE | DNE | DNE | DNE | DNE | DNE |
| 2/10/2017-2/14/2017 | µg/L | DNE | DNE | **7.9** | DNE | NS | DNE | DNE | **1.8 J** | **3.8** | **22.3** | **0.78 J** |
| 3/28/2017-3/29/2017 | µg/L | DNE | DNE | **4.7** | DNE | NS | DNE | DNE | **1.7 J** | **11** | **17.5** | **1.8 J** |
| 4/25/2017-4/27/2017 | µg/L | DNE | DNE | **3.2** | DNE | NS | DNE | DNE | **1.4 J** | **7.8** | **16.6** | **5.3** |
| 5/22/2017-5/24/2017 | µg/L | DNE | DNE | **3.9** | DNE | NS | DNE | DNE | **1.9 J** | **3.2** | **14.9** | **1.8 J** |
| 6/5/2017-6/8/2017 | µg/L | DNE | DNE | **4** | DNE | **0.7 J** | DNE | DNE | **2.3 J** | **1.7 J** | **13.9** | **0.94 J** |
| 7/10/2017-7/12/2017 | µg/L | DNE | DNE | **4.6** | DNE | **1.2 J** | DNE | DNE | **2.8 J** | **0.74 J** | **13.4** | **0.84 J** |
| 8/7/2017-8/10/2017 | µg/L | **1.6 J** | **12** | **5.1** | DNE | 3 U | **4.9** | DNE | **3.1** | **2.7 J** | **12.5** | **1.3 J** |
| 9/1/2017-9/8/2017 | µg/L | **1.2 J** | **11.8** | **8.4** | DNE | **0.71 J** | **0.37 J** | DNE | **3.6** | **2.5 J** | **12.3** | **0.81 J** |
| 10/2/2017-10/6/2017 | µg/L | **1.7 J** | **9.1** | **11** | DNE | 3 U | **1.2 J** | DNE | **3.2** | **0.96 J** | **10.6** | 3 U |
| 11/3/2017-11/13/2017 | µg/L | **21.7** | **7.7** | **8.5** | DNE | **1.1 J** | 3 U | DNE | **5.8** | 3 U | **10.5** | **2.1 J** |
| 12/4/2017-12/8/2017 | µg/L | **98** | 3 U | **11.4** | DNE | **1.1 J** | **8.4** | DNE | **6** | 3 U | **9.2** | **2.9 J** |
| 1/2/2018-1/9/2018 | µg/L | **23.9** | **13.1** | **9.9** | DNE | 3 U | 3 U | DNE | **4.8** | 3 U | **9.9** | **2.2 J** |
| 4/8/2018-4/13/2018 | µg/L | **7.6** | **16.7** | **11.8** | DNE | 3 U | 3 U | DNE | **4.6** | **2.2 J** | **9.8** | **4.1** |
| 7/30/2018-8/3/2018 | µg/L | **1.6 J** | **5.2** | **10.8** | DNE | 3 U | 3 U | 3 U | **4.8** | 3 U | **13.1** | **66.3** |
| 10/1/2018-10/5/2018 | µg/L | **0.97 J** | **3.4** | **8.7** | DNE | 3 U | 3 U | 3 U | **4.7** | 3 U | **22.3** | **1.2 J** |
| 12/10/2018-12/14/2018* | µg/L | **1.8 J** | **9** | **24** | DNE | 3 U | 3 U | **0.56 J** | **4.1** | 3 U | **9.3** | **0.81 J** |
| 3/12/2019-3/19/2019* | µg/L | **2.3 J** | **3.8** | **7.7** | DNE | 3 U | 3 U | 3 U | **2.7 J** | **2 J** | **10.2** | **2.2 J** |
| 5/3/2019-6/7/2019* | µg/L | **4.7** | **1.7 J** | **17.9** | DNE | 3 U | 3 U | 3 U | **2.9 J** | **0.86 J** | **12** | 1.1 B |
| 9/10/2019-9/23/2019* | µg/L | **4.3** | **1.1 J** | **16.3** | DNE | **0.55 J** | 3.0 U | 3.0 U | **3.4** | **0.39 J** | **16.7** | 3.0 U |
| 12/3/2019-12/11/2019 | µg/L | 3.9 B | 0.55 B | **18.8** | DNE | **1.8 J** | 3.0 U | 3.0 U | **3.0 J** | 3.0 U | **14.3** | **1.9 J** |
| 3/11/20-3/23/20* | µg/L | **4.4** | **0.97 J** | **18.8** | DNE | **1.7 J** | **0.52 J** | 3 U | **2.5 J** | **2.7 J** | **16.9** | **2 J** |
| 6/8/20-6/30/20* | µg/L | **1.6 J** | **0.61 J** | **14.5** | DNE | **0.99 J** | **0.53 J** | **0.98 J** | **4.5** | **0.67 J** | **15.2** | **2.5 J** |
| 9/9/20-9/29/20* | µg/L | **1.3 J** | **0.43 J** | NS | DNE | **0.62 J** | 3 U | **0.69 J** | NS | 3 U | **17** | **2.2 J** |
| 11/5/20-11/19/20* | µg/L | **1.1 J** | **0.58 J** | NS | DNE | **0.38 J** | 3 U | **0.9 J** | NS | **0.37 J** | **16** | **2 J** |
| 5/26/21-6/18/21* | µg/L | **0.40 J** | 3 U | NS | DNE | NS | 3 U | 3 U | NS | NS | NS | **3.4** |
| 10/4/21-10/18/21* | µg/L | 1 U | 1 U | NS | DNE | NS | 1 U | NS | NS | NS | NS | NS |
| 11/29/21-11/30/21* | µg/L | NS | NS | NS | DNE | NS | NS | NS | **1.7** | NS | NS | NS |
| 2/23/22-3/28/22* | µg/L | 2 U | 2 U | DNE | DNE | NS | 2 U | 2 U | **16.6** | NS | NS | 2 U |
| 9/9/2022-9/15/2022* | µg/L | **0.55** | **0.13 J** | DNE | 0.2 U | NS | **0.12 J** | NS | NS | NS | NS | NS |
| 3/10/2023-4/10/2023 | µg/L | **0.54** | 0.2 U | DNE | **0.18 J** | NS | **0.19 J** | 0.2 U | **2.54** | NS | NS | **3.84** |
| 9/08/23-9/21/23 | µg/L | NS | NS | NS | **0.14 J** | NS | NS | NS | NS | NS | NS | NS |

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**TABLE 5**
**Shallow Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW12-MWS | RW14-MWS | RW15-MWS | RW16-MWS | RW18-MWS | RW19-MWS | RW21-MWS | RW22R-MWS | RW23-MWS | RW24-MWS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Not Sampled | Not Sampled | Annually | Annually | Not Sampled | Not Sampled | Semiannually | Semiannually | Not Sampled |
| 5/1/2015 | µg/L | **4.4** | DNE | DNE | DNE | **168** | DNE | DNE | DNE | DNE | DNE |
| 11/1/2015 | µg/L | **3.2** | DNE | DNE | DNE | **31.3** | DNE | DNE | DNE | DNE | DNE |
| 2/10/2017-2/14/2017 | µg/L | NS | DNE | DNE | DNE | NS | **14.8** | DNE | DNE | DNE | DNE |
| 3/28/2017-3/29/2017 | µg/L | NS | DNE | DNE | DNE | NS | **6.9** | DNE | DNE | DNE | DNE |
| 4/25/2017-4/27/2017 | µg/L | NS | DNE | DNE | DNE | NS | **8.5** | DNE | DNE | DNE | DNE |
| 5/22/2017-5/24/2017 | µg/L | NS | DNE | DNE | DNE | NS | **3.6** | DNE | DNE | DNE | DNE |
| 6/5/2017-6/8/2017 | µg/L | **29.7** | DNE | DNE | DNE | **356** | **2.4 J** | DNE | DNE | DNE | DNE |
| 7/10/2017-7/12/2017 | µg/L | **12.6** | DNE | DNE | DNE | **240** | **9.7** | DNE | DNE | DNE | DNE |
| 8/7/2017-8/10/2017 | µg/L | **7** | **1,780** | **12.2** | NS | **34.9** | **7.2** | DNE | DNE | DNE | DNE |
| 9/1/2017-9/8/2017 | µg/L | **5.1** | **1,700** | **29.9** | 3 U | **156** | **2.6 J** | DNE | DNE | DNE | DNE |
| 10/2/2017-10/6/2017 | µg/L | **11.3** | **1,750** | **25.3** | 3 U | **306** | **5.2** | DNE | DNE | DNE | DNE |
| 11/3/2017-11/13/2017 | µg/L | **193** | **2,390** | **63** | 3 U | **208** | **4.4** | DNE | DNE | DNE | DNE |
| 12/4/2017-12/8/2017 | µg/L | **4.2** | **2,820** | **55** | 3 U | **410** | **4.6** | DNE | DNE | DNE | DNE |
| 1/2/2018-1/9/2018 | µg/L | **11.7** | **2,800** | **40.7** | 3 U | **218** | **4.8** | DNE | DNE | DNE | DNE |
| 4/8/2018-4/13/2018 | µg/L | **11** | **3,220** | **41.2** | 3 U | **448** | **6.6** | DNE | DNE | DNE | DNE |
| 7/30/2018-8/3/2018 | µg/L | **5.2** | **3,630** | **38.5** | 3 U | **7.1** | **1.2 J** | DNE | DNE | DNE | DNE |
| 10/1/2018-10/5/2018 | µg/L | **2.3 J** | **3,840** | **78.1** | 3 U | **1.2 J** | **3.6** | DNE | DNE | DNE | DNE |
| 12/10/2018-12/14/2018* | µg/L | **15.3** | **3,730** | **94.4** | 3 U | **1.5 J** | 3 U | DNE | DNE | DNE | DNE |
| 3/12/2019-3/19/2019* | µg/L | **6.6** | **2,960** | **15.4** | 3 U | 3 U | 3 U | DNE | DNE | DNE | DNE |
| 5/3/2019-6/7/2019* | µg/L | **2.1 J** | **3,000** | **19.1** | 3 U | 3 U | 3 U | **483** | **157** | 3 U | 3 U |
| 9/10/2019-9/23/2019* | µg/L | **3.2** | **3,450** | **7.4** | 3.0 U | 3.0 U | 3.0 U | **354** | **105** | **0.88 J** | 3.0 U |
| 12/3/2019-12/11/2019 | µg/L | **2.5 J** | **3,990** | **8.5** | **0.36 J** | **1.9 J** | **1.2 J** | **433** | **70.4** | **1.3 J** | **0.43 J** |
| 3/11/20-3/23/20* | µg/L | NS | **3,020** | **4.3** | 3 U | 3 U | **0.66 J** | **378** | **62.9** | **0.52 J** | 3 U |
| 6/8/20-6/30/20* | µg/L | **5.2** | **3,590** | 3 U | 3 U | 3 U | **0.77 J** | **322** | **51.4** | 3 U | 3 U |
| 9/9/20-9/29/20* | µg/L | NS | **3,240** | **0.51 J** | 3 U | 3 U | **4.3** | **294** | **52.1** | 3 U | 3 U |
| 11/5/20-11/19/20* | µg/L | NS | **3,020** | 3 U | 3 U | 3 U | **1.3 J** | **367** | **30.7** | 3 U | 3 U |
| 5/26/21-6/18/21* | µg/L | NS | NS | NS | 3 U | 3 U | NS | NS | **78.5** | 3 U | NS |
| 10/4/21-10/18/21* | µg/L | 1 U | NS | NS | NS | NS | NS | NS | **117** | 1 U | NS |
| 11/29/21-11/30/21* | µg/L | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 2/23/22-3/28/22* | µg/L | 2 U | NS | NS | 2 U | 2 U | NS | NS | **29.4** | 2 U | NS |
| 9/9/2022-9/15/2022* | µg/L | **3.05** | NS | NS | NS | NS | NS | NS | **56.9** | **0.14** | NS |
| 3/10/2023-4/10/2023 | µg/L | **11.0** | NS | NS | 0.2 U | 0.2 U | NS | NS | **22.0** | **0.097 J** | NS |
| 9/08/23-9/21/23 | µg/L | **8.66** | NS | NS | NS | NS | NS | NS | **24.1** | **0.12 J** | NS |

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**TABLE 5**
**Shallow Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW25-MWS | RWA-MWS | RWB-MWS | RWD-MWS | RWE-MWS | RWF-MWS | RWG-MWS | RWH-MWS | RWI-MWS | RWJ-MWS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Not Sampled | Semiannually | Semiannually | Semiannually | Semiannually | Semiannually | Not Sampled | Semiannually | Annually | Semiannually |
| 5/1/2015 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/1/2015 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 2/10/2017-2/14/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 3/28/2017-3/29/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 4/25/2017-4/27/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 5/22/2017-5/24/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 6/5/2017-6/8/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 7/10/2017-7/12/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 8/7/2017-8/10/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 9/1/2017-9/8/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 10/2/2017-10/6/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/3/2017-11/13/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 12/4/2017-12/8/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 1/2/2018-1/9/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 4/8/2018-4/13/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 7/30/2018-8/3/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 10/1/2018-10/5/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 12/10/2018-12/14/2018* | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 3/12/2019-3/19/2019* | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 5/3/2019-6/7/2019* | µg/L | **491** | **2.3 J** | 3 U | 3 U | **0.57 J** | **4.2** | 3 U | **20** | **714** | 3 U |
| 9/10/2019-9/23/2019* | µg/L | **599** | **24** | 3.0 U | 3.0 U | **0.64 J** | **6.1** | 3.0 U | **856** | **840** | 3.0 U |
| 12/3/2019-12/11/2019 | µg/L | **9.9** | **4.4** | 3.0 U | 3.0 U | **2.0 J** | **7.3** | 3.0 U | **19.9** | **1,080** | 3.0 U |
| 3/11/20-3/23/20* | µg/L | **2.7 J** | **0.6 J** | 3 U | 3 U | **0.91 J** | **7.7** | 3 U | **163** | **125** | 3 U |
| 6/8/20-6/30/20* | µg/L | **4.6** | **0.88 J** | 3 U | **0.46 J** | **1.4 J** | **5.7** | **0.63 J** | **0.97 J** | **17.5** | 3 U |
| 9/9/20-9/29/20* | µg/L | **7.0** | **2.9 J** | 3 U | **0.46 J** | **8.7** | **6.0** | 3 U | **22.4** | NS | 3 U |
| 11/5/20-11/19/20* | µg/L | **8.6** | **1.5 J** | 3 U | 3 U | **0.44 J** | **4.6** | 3 U | **7.0** | NS | 3 U |
| 5/26/21-6/18/21* | µg/L | NS | **0.48 J** | 3 U | 3 U | **10.9** | **4.0** | NS | **9.9** | NS | 3 U |
| 10/4/21-10/18/21* | µg/L | NS | 1 U | 1 U | 1 U | **0.55 J** | **3.4** | NS | **6.8** | NS | **0.22 J** |
| 11/29/21-11/30/21* | µg/L | NS | NS | NS | NS | NS | NS | NS | NS | **0.76 J** | NS |
| 2/23/22-3/28/22* | µg/L | NS | 2 U | 2 U | 2 U | 2 U | **4.9** | NS | **7.0** | **1,010** | 2 U |
| 9/9/2022-9/15/2022* | µg/L | NS | **3.94** | 0.2 U | **0.81** | **3.58** | **2.55** | NS | **26.3** | NS | 0.2 U |
| 3/10/2023-4/10/2023 | µg/L | NS | **5.86** | 0.2 U | 0.2 U | **2.85** | **2.17** | NS | **5.37** | **596** | 0.2 U |
| 9/08/23-9/21/23 | µg/L | NS | **4.39** | 0.2 U | 0.2 U | **2.06** | **1.51** | NS | **173** | NS | 0.2 U |

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**TABLE 5**
**Shallow Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RWK-MWS | RWL-MWS | RWM-MWS | RWN-MWS | RWO-MWS | RWQ-MWS | RWR-MWS | RWS-MWS |
|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Semiannually | Not Sampled | Annually | Semiannually | Semiannually | Semiannually | Semiannually |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/14/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/28/2017-3/29/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/27/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/12/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/6/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | *3 U* | *3 U* | *3 U* | **13,000** | **1.4 J** | **2.6 J** | **50** | *3 U* |
| 9/10/2019-9/23/2019* | µg/L | *3.0 U* | *3.0 U* | *3.0 U* | **11,100** | **1.3 J** | **2.6 J** | **41** | *3.0 U* |
| 12/3/2019-12/11/2019 | µg/L | *3.0 U* | *3.0 U* | **0.36 J** | **11,200** | **7.6** | **4.4** | **42.3** | *3.0 U* |
| 3/11/20-3/23/20* | µg/L | *3 U* | **0.85 J** | *3 U* | **9,420** | **0.65 J** | **3.1** | **38.8** | *3 U* |
| 6/8/20-6/30/20* | µg/L | *3 U* | **0.52 J** | *3 U* | **6,810** | **0.46 J** | **2.9 J** | **35.5** | **1.9 J** |
| 9/9/20-9/29/20* | µg/L | **0.51 J** | **0.59 J** | *3 U* | **7,350** | **4.1** | **3.3** | **34.3** | **0.42 J** |
| 11/5/20-11/19/20* | µg/L | **0.37 J** | *3 U* | *3 U* | **6,260** | **0.53 J** | **3.2** | **33.8** | **0.39 J** |
| 5/26/21-6/18/21* | µg/L | *3 U* | *3 U* | *NS* | **4,850** | **0.85 J** | **3.4** | **35.1** | *3 U* |
| 10/4/21-10/18/21* | µg/L | *1 U* | **0.37 J** | *NS* | *NS* | *1 U* | **3.1** | **39.3** | *10 U* |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* |
| 2/23/22-3/28/22* | µg/L | *2 U* | *2 U* | *NS* | **2,260** | *2 U* | **3.3** | **28.8** | *2 U* |
| 9/9/2022-9/15/2022* | µg/L | *0.2 U* | **0.14** | *NS* | *NS* | **0.075** | **2.69** | **23.5** | **0.23** |
| 3/10/2023-4/10/2023 | µg/L | *0.2 U* | **0.072 J** | *NS* | **2,517** | *0.2 U* | **10.5** | **19.3** | **0.68** |
| 9/08/23-9/21/23 | µg/L | **0.11 J** | *0.2 U* | *NS* | *NS* | *0.2 U* | **2.04** | **20.3** | **0.17** |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist
*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 6**
**2023 Shallow Field Parameter Data**
**Rod Wire Mill Interim Measures Progress Report**

| | | RW01-MWS | | RW02-MWS | | RW03/03R-MWS | | RW05-MWS | | RW06R-MWS | | RW07-MWS | | RW11-MWS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 5.15 | *NS* | 5.45 | *NS* | 8.65 | 9.59 | 6.74 | *NS* | 7.05 | *NS* | 6.24 | *NS* | 6.89 | *NS* |
| Specific Conductance | ms/cm | 1.1 | *NS* | 1.51 | *NS* | 2.03 | 1.68 | 3.11 | *NS* | 1.06 | *NS* | 2.78 | *NS* | 4.27 | *NS* |
| Dissolved Oxygen | mg/L | 0.81 | *NS* | 0.64 | *NS* | 0 | 2.1 | 1.11 | *NS* | 6.09 | *NS* | 287 | *NS* | 0 | *NS* |
| ORP | mV | 31 | *NS* | -51 | *NS* | 24 | -497 | -59 | *NS* | 176 | *NS* | 325 | *NS* | -18 | *NS* |
| Turbidity | NTU | 4.18 | *NS* | 10.49 | *NS* | 8.68 | 4.32 | 4.91 | *NS* | 5.22 | *NS* | 2.68 | *NS* | 8.6 | *NS* |
| Depth To Water | ft | 9.42 | *NS* | 9.91 | *NS* | 13.45 | 12.61 | 10.17 | *NS* | 17.5 | *NS* | 10.1 | *NS* | NA | *NS* |

| | | RW12-MWS | | RW16-MWS | | RW18-MWS | | RW22R-MWS | | RW23-MWS | | RWA-MWS | | RWB-MWS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 6.2 | 5.96 | 9.59 | *NS* | 7.56 | *NS* | 5.56 | 5.61 | 7.49 | 6.38 | 6.41 | 7.78 | 8.36 | 8.33 |
| Specific Conductance | ms/cm | 3.77 | 3.57 | 0.76 | *NS* | 2.53 | *NS* | 2.48 | 2.4 | 0.779 | 0.609 | 2.56 | 2.49 | 0.809 | 0.812 |
| Dissolved Oxygen | mg/L | 0 | 0.02 | 2.7 | *NS* | 0 | *NS* | 0 | 0.02 | 0.31 | 0.04 | 0 | 1.58 | 0 | 0.06 |
| ORP | mV | 31 | 2 | -87 | *NS* | 84 | *NS* | 33 | 40 | 107 | 77 | -135 | -270 | -203 | 8 |
| Turbidity | NTU | 14 | 3.5 | 4.16 | *NS* | 15.5 | *NS* | 2.32 | 0 | 11.44 | 1 | 2.27 | 2.03 | 6.32 | 1.65 |
| Depth To Water | ft | NA | 11.65 | 9.9 | *NS* | 11.8 | *NS* | NA | 15.53 | 14 | 11.73 | 9.67 | 9.41 | 22.25 | 22.75 |

| | | RWD-MWS | | RWE-MWS | | RWF-MWS | | RWH-MWS | | RWI-MWS | | RWJ-MWS | | RWK-MWS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 6.37 | 6.24 | 6.04 | 7.03 | 4.72 | 4.84 | 6.21 | 6.84 | 7.36 | *NS* | 10.36 | 11.48 | 5.27 | 5.85 |
| Specific Conductance | ms/cm | 1.28 | 1.56 | 2.38 | 1.86 | 7.7 | 5.4 | 0.947 | 1.13 | 3.65 | *NS* | 5.18 | 3.06 | 1.46 | 1.59 |
| Dissolved Oxygen | mg/L | 2.13 | 0.24 | 0 | 0.02 | 0.64 | 0 | 0.58 | 0.46 | 0 | *NS* | 0 | 0.6 | 0 | 0.44 |
| ORP | mV | -19 | -82 | -16 | -133 | 207 | 166 | -92 | -202 | -131 | *NS* | -105 | -77 | 75 | 15 |
| Turbidity | NTU | 2.71 | 2.5 | 3.61 | 10.81 | 10.02 | 1.35 | 4.31 | 3.32 | 3.75 | *NS* | 1.78 | 1.21 | 3.48 | 2.84 |
| Depth To Water | ft | 15.28 | NA | 13 | 13.28 | NA | 12.62 | 10.22 | 9.92 | NA | *NS* | 11.45 | 11.39 | NA | NA |

| | | RWL-MWS | | RWN-MWS | | RWO-MWS | | RWQ-MWS | | RWR-MWS | | RWS-MWS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RWG-MWS** | **Units** | **Mar-23** | **Sep-23** | **Apr-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 5.25 | 6.36 | 4.68 | *NS* | 6.69 | 7.18 | 6.62 | 5.97 | 6.11 | 6.01 | 6.28 | 6.39 |
| Specific Conductance | ms/cm | 1.05 | 1.45 | 2.77 | *NS* | NA | 1.54 | 0.389 | 0.632 | 1.49 | 1.97 | 1.86 | 1.5 |
| Dissolved Oxygen | mg/L | 0.13 | 0.78 | 0.8 | *NS* | NA | 0.3 | 0 | 0.31 | 0 | 0.19 | 0 | 0.01 |
| ORP | mV | 89 | -132 | 246 | *NS* | NA | -290 | 192 | 75 | 78 | 52 | -72 | -98 |
| Turbidity | NTU | 19.9 | 20.7 | 39.5 | *NS* | NA | 4.46 | 3.48 | 17.6 | 8.88 | 1.75 | 4.3 | 4.33 |
| Depth To Water | ft | NA | 16.75 | 12.39 | *NS* | NA | NA | 11.94 | NA | 10.92 | 10.62 | NA | 11.96 |

Wells RW04-MWS, RW08-MWS, RW09-MWS, RW14-MWS, RW15-MWS, RW19-MWS, RW21-MWS, RW24-MWS, RW25-MWS, RWG-MWS, and RWM-MWS were not sampled during either event.
NS = Not Sampled

**TABLE 7**
**Intermediate Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW01-MWI | RW02-MWI | RW03-MWI | RW03R-MWI | RW05-MWI | RW05R-MWI | RW06-MWI | RW07-MWI | RW08-MWI | RW09-MWI | RW10-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Semiannually | NA | Semiannually | NA | Semiannually | Semiannually | Semiannually | Annually | Annually | Annually |
| 4/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | **136** | *DNE* | **2,970** | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | **247** | *DNE* | **4,720** | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | **2,180** | *DNE* | **5,480** | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | **592** | *DNE* | **7,660** | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | **1,300** | *DNE* | **5,090** | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *NS* | *DNE* | **7,000** | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/16/2017 | µg/L | *DNE* | *DNE* | **9,740** | *DNE* | *NS* | *DNE* | **1,900** | **944** | **178** | **51,000** | **104,000** |
| 3/27/2017-3/30/2017 | µg/L | *DNE* | *DNE* | **9,240** | *DNE* | *NS* | *DNE* | **1,680** | **1,210** | **44.6** | **51,900** | **20.4** |
| 4/25/2017-4/28/2017 | µg/L | *DNE* | *DNE* | **7,830** | *DNE* | *NS* | *DNE* | **1,420** | **364** | **85** | **57,500** | **75,800** |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | **2,960** | *DNE* | *NS* | *DNE* | **999** | **298** | **188** | **57,200** | **1,150** |
| 6/5/2017-6/9/2017 | µg/L | *DNE* | *DNE* | **2,440** | *DNE* | **374** | *DNE* | **876** | **432** | **71.9** | **51,900** | **34,600** |
| 7/10/2017-7/13/2017 | µg/L | *DNE* | *DNE* | **8,330** | *DNE* | **1,730** | *DNE* | **1,690** | **45.7** | **153** | **65,600** | **25,900** |
| 8/7/2017-8/10/2017 | µg/L | **11,600** | **18,200** | **10,900** | *DNE* | **1,730** | *DNE* | **1,340** | **62.7** | **49.8** | **55,500** | **79.7** |
| 9/1/2017-9/8/2017 | µg/L | **90** | **203** | **9,340** | *DNE* | **328** | *DNE* | **508** | **2,840** | **69.4** | **39,400** | **8,220** |
| 10/2/2017-10/9/2017 | µg/L | **13,700** | **290** | **1,810** | *DNE* | **349** | *DNE* | **615** | **23.4** | **16.9** | **49,700** | **31,000** |
| 11/3/2017-11/13/2017 | µg/L | **29** | **38.6** | **1,750** | *DNE* | **502** | *DNE* | **909** | **1,650** | **21.5** | **67,900** | **39,000** |
| 12/4/2017-12/8/2017 | µg/L | **41,000** | **186** | **6,270** | *DNE* | **205** | *DNE* | **1,360** | **39.8** | **21.4** | **44,500** | **158** |
| 1/2/2018-1/9/2018 | µg/L | **104** | **573** | **12,700** | *DNE* | **173** | *DNE* | **1,950** | **70.6** | **108** | **54,700** | **26.5** |
| 4/8/2018-4/13/2018 | µg/L | **576** | **452** | **6,920** | *DNE* | **402** | *DNE* | **27,900** | **756** | **1,050** | **38,400** | **13,500** |
| 7/30/2018-8/3/2018 | µg/L | **9,710** | **5,030** | **9,710** | *DNE* | **282** | *DNE* | **191** | **26,300** | **2,540** | **54,700** | **17,600** |
| 10/1/2018-10/5/2018 | µg/L | **143** | **3,240** | **13,000** | *DNE* | **110** | *DNE* | **90,100** | **12,200** | **256** | **53,800** | **16,600** |
| 12/10/2018-12/14/2018* | µg/L | **3,880** | **25,300** | **14,900** | *DNE* | **177** | *DNE* | **99,600** | **86,000** | **11** | **66,600** | **2,520** |
| 3/12/2019-3/19/2019* | µg/L | **2,460** | **21,500** | **6,720** | *DNE* | **7.5 J** | *DNE* | **122,000** | **24,200** | *10 U* | **57,500** | **591** |
| 5/3/2019-6/7/2019* | µg/L | **5,670** | **56,600** | **13,300** | *DNE* | *Abandoned* | **66,800** | **108,000** | **136,000** | *10 U* | **64,200** | **5,560** |
| 9/10/2019-9/23/2019* | µg/L | **5,940** | **72,000** | **10,500** | *DNE* | *Abandoned* | **71,700** | **122,000** | **48,300** | *11.2 B* | **53,300** | **7,730** |
| 12/3/2019-12/11/2019 | µg/L | **2,060** | **17,200** | **16,200** | *DNE* | *Abandoned* | **83,400** | **116,000** | **16,600** | **48.9** | **82,000** | **6,020** |
| 3/11/20-3/23/20* | µg/L | **8,120** | **14,100** | **12,900** | *DNE* | *Abandoned* | **70,700** | **117,000** | **39,000** | **33.4** | **65,600** | *NS* |
| 6/8/20-6/30/20* | µg/L | **13,700** | **34,900** | **19,400** | *DNE* | *Abandoned* | **76,600** | **94,400** | **400** | **4.5 J** | **77,800** | **940** |
| 9/9/20-9/29/20* | µg/L | **3.7 J** | **123** | *Destroyed* | *DNE* | *Abandoned* | **80,000** | **111,000** | *NS* | **5.4 J** | **79,100** | **1,090** |
| 11/5/20-11/19/20* | µg/L | **15,200** | **20,200** | *Destroyed* | *DNE* | *Abandoned* | **68,200** | **79.7** | *NS* | **28.3** | **73,700** | **550** |
| 5/26/21-6/18/21* | µg/L | **26,600** | **104** | *Destroyed* | *DNE* | *Abandoned* | **79,000** | **109,000** | *NS* | **2.6 J** | **93,600** | **6,130** |
| 10/4/21-10/18/21* | µg/L | **24,000** | **433** | *Destroyed* | *DNE* | *Abandoned* | *200 U* | **85,500** | **53,900** | *NS* | *NS* | *NS* |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *Destroyed* | *DNE* | *Abandoned* | **50,700** | *NS* | *NS* | *NS* | *NS* | *NS* |
| 2/23/22-3/28/22* | µg/L | **37,300** | **751** | *Destroyed* | *DNE* | *Abandoned* | **55,200** | *200 U* | **65,300** | *20 U* | **63,000** | **7,440** |
| 9/9/2022-9/15/2022* | µg/L | **29,010** | **8,598** | *Destroyed* | **3,063** | *Abandoned* | **60,560** | **97,570** | **47,770** | *NS* | *NS* | *NS* |
| 3/10/2023-4/10/2023 | µg/L | **30,440** | **41,190** | *Destroyed* | **11,250** | *Abandoned* | **53,290** | **51,260** | **307** | *10 U* | **78,950** | **103** |
| 9/08/23-9/21/23 | µg/L | *NS* | *NS* | *NS* | **16,920** | *Abandoned* | **63,410** | *NS* | **50,180** | *NS* | *NS* | *NS* |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 7**
**Intermediate Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW11-MWI | RW12-MWI | RW13-MWI | RW15-MWI | RW16-MWI | RW18-MWI | RW19-MWI | RW21-MWI | RW22-MWI | RW22R-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Annually | Semiannually | Annually | Annually | Annually | Annually | Annually | Annually | NA | Semiannually |
| 4/1/2013 | µg/L | **249,000** | **263,000** | *DNE* | *DNE* | *DNE* | **996,000** | *DNE* | *DNE* | *NS* | *DNE* |
| 10/1/2013 | µg/L | **284,000** | **201,000** | *DNE* | *DNE* | *DNE* | **85,400** | *DNE* | *DNE* | *NS* | *DNE* |
| 6/1/2014 | µg/L | **229,000** | **296,000** | *DNE* | *DNE* | *DNE* | **2,220,000** | *DNE* | *DNE* | *NS* | *DNE* |
| 11/1/2014 | µg/L | **250,000** | **295,000** | *DNE* | *DNE* | *DNE* | **1,890,000** | *DNE* | *DNE* | *NS* | *DNE* |
| 5/1/2015 | µg/L | **1,120,000** | **291,000** | *DNE* | *DNE* | *DNE* | **708,000** | *DNE* | *DNE* | *NS* | *DNE* |
| 11/1/2015 | µg/L | *NS* | **387,000** | *DNE* | *DNE* | *DNE* | **576,000** | *DNE* | *DNE* | *NS* | *DNE* |
| 2/10/2017-2/16/2017 | µg/L | **368,000** | **249,000** | *DNE* | *DNE* | *DNE* | **728,000** | **5,900,000** | *DNE* | *NS* | *DNE* |
| 3/27/2017-3/30/2017 | µg/L | **301,000** | **216,000** | *DNE* | *DNE* | *DNE* | **592,000** | **4,650,000** | *DNE* | *NS* | *DNE* |
| 4/25/2017-4/28/2017 | µg/L | **288,000** | **188,000** | *DNE* | *DNE* | *DNE* | **633,000** | **7,010,000** | *DNE* | *NS* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | **336,000** | **232,000** | *DNE* | *DNE* | *DNE* | **246,000** | **5,370,000** | *DNE* | *NS* | *DNE* |
| 6/5/2017-6/9/2017 | µg/L | **201,000** | **226,000** | *DNE* | *DNE* | *DNE* | **694,000** | **6,720,000** | *DNE* | **303** | *DNE* |
| 7/10/2017-7/13/2017 | µg/L | **192,000** | **219,000** | *DNE* | *DNE* | *DNE* | **575,000** | **5,330,000** | *DNE* | **103** | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | **147,000** | **156,000** | **308,000** | **3,210** | *DNE* | **290,000** | **3,360,000** | *DNE* | *NS* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | **134,000** | **156,000** | **1,160** | **71.1** | **20,200** | **382,000** | **2,500,000** | *DNE* | **43,000** | *DNE* |
| 10/2/2017-10/9/2017 | µg/L | **111,000** | **150,000** | **204,000** | **295** | **2,000** | **393,000** | **3,670,000** | *DNE* | **16,100** | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | **207,000** | **140,000** | **172,000** | **825** | **441** | **323,000** | **3,400,000** | *DNE* | **3,700** | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | **197,000** | **157,000** | **237** | **1,070** | **19,200** | **369,000** | **3,970,000** | *DNE* | **19,500** | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | **225,000** | **117,000** | **8,600** | **5,540** | **16,200** | **370,000** | **3,840,000** | *DNE* | **27,200** | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | **215,000** | **103,000** | **201,000** | **252** | **11,200** | **396,000** | **4,190,000** | *DNE* | **44,700** | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | **15,700** | **2,410** | **274,000** | **18,600** | **1,230** | **330,000** | **4,880,000** | *DNE* | **73,300** | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | **174,000** | **14,300** | **33.4** | **736** | **320** | **247,000** | **5,880,000** | *DNE* | **47,100** | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | **176,000** | **109,000** | **116** | **6,540** | **6 J** | **318,000** | **7,580,000** | *DNE* | **68,100** | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | **142,000** | **110,000** | **328,000** | **109,000** | **4.7 J** | **822,000** | **3,770,000** | *DNE* | **81,100** | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **121,000** | **111,000** | **97.7** | **16,400** | **4.9 J** | **279,000** | **7,280,000** | **624,000** | *NS* | **1,030** |
| 9/10/2019-9/23/2019* | µg/L | **120,000** | **104,000** | **122** | **168,000** | **13.1** | **640,000** | **3,460,000** | **570,000** | *NS* | **983** |
| 12/3/2019-12/11/2019 | µg/L | **173,000** | **43,500** | **246,000** | **179,000** | **22.7** | **849,000** | **5,690,000** | **539,000** | *NS* | **3,000** |
| 3/11/20-3/23/20* | µg/L | **151,000** | *NS* | **250,000** | **17.9** | **16.2** | **545,000** | **6,050,000** | **648,000** | *Abandoned* | **1,810** |
| 6/8/20-6/30/20* | µg/L | **128,000** | **86,400** | **27** | **5.8 J** | **7.3 J** | **252,000** | **6,450,000** | **470,000** | *Abandoned* | **4,350** |
| 9/9/20-9/29/20* | µg/L | *NS* | *NS* | **296,000** | **3,210** | **63.1** | **753,000** | **6,220,000** | **536,000** | *Abandoned* | **5,340** |
| 11/5/20-11/19/20* | µg/L | **166,000** | *NS* | **19.8** | **137** | **10.2** | **534,000** | **3,930,000** | **562,000** | *Abandoned* | **4,520** |
| 5/26/21-6/18/21* | µg/L | **188,000** | *NS* | **363,000** | **16,400** | **62.4** | **4,380** | **212,000** | **527,000** | *Abandoned* | **7,730** |
| 10/4/21-10/18/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | **9,800** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | *NS* |
| 2/23/22-3/28/22* | µg/L | **141,000** | **81,000** | **435,000** | **49,300** | **120** | **434,000** | **3,090,000** | **5,070,000** | *Abandoned* | **21,700** |
| 9/9/2022-9/15/2022* | µg/L | *NS* | **99,550** | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | **38,920** |
| 3/10/2023-4/10/2023 | µg/L | **101,800** | **28,220** | **479,900** | **100,800** | *10 U* | **406,100** | **9.94** | **445,600** | *Abandoned* | **68,800** |
| 9/08/23-9/21/23 | µg/L | *NS* | **78,100** | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | **87,920** |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 7**
**Intermediate Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW23-MWI | RW24-MWI | RW25-MWI | RWA-MWI | RWB-MWI | RWD-MWI | RWE-MWI | RWF-MWI | RWG-MWI | RWH-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Annually | Annually | Semiannually | Semiannually | Semiannually | Semiannually | Semiannually | Annually | Semiannually |
| 4/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/16/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/27/2017-3/30/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/28/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/9/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/9/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **109,000** | **650,000** | **413,000** | **375,000** | **18** | **36,200** | **112,000** | **41,900** | **332** | **226,000** |
| 9/10/2019-9/23/2019* | µg/L | **125,000** | **635,000** | **7,000** | **349,000** | **29.2** | **41,900** | **109,000** | **42,300** | **291** | **378,000** |
| 12/3/2019-12/11/2019 | µg/L | **111,000** | **538,000** | **462,000** | **396,000** | **47.8** | **52,600** | **118,000** | **58,800** | **362** | **502,000** |
| 3/11/20-3/23/20* | µg/L | **100,000** | **466,000** | **355,000** | **521,000** | **8.9 J** | **50,400** | **102,000** | **90,400** | **411** | **406,000** |
| 6/8/20-6/30/20* | µg/L | **116,000** | **378,000** | **443,000** | **441,000** | **8.4 J** | **59,300** | **114,000** | **108,000** | **465** | **474,000** |
| 9/9/20-9/29/20* | µg/L | **105,000** | **364,000** | **477,000** | **452,000** | **15.2** | **69,300** | **110,000** | **134,000** | **545** | **477,000** |
| 11/5/20-11/19/20* | µg/L | **95,600** | **258,000** | **445,000** | **406,000** | **13.5** | **64,200** | **80,800** | **110,000** | **522** | **618,000** |
| 5/26/21-6/18/21* | µg/L | **124,000** | **292,000** | **338,000** | **468,000** | **13.6** | **81,900** | **102,000** | **133,000** | *NS* | **578,000** |
| 10/4/21-10/18/21* | µg/L | **110,000** | *NS* | *NS* | **328,000** | **19.1 J** | **53,400** | **68,000** | **82,500** | *NS* | **388,000** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | **319** | *NS* |
| 2/23/22-3/28/22* | µg/L | **85,000** | **263,000** | **376,000** | **415,000** | **16.7** | **47,200** | **62,700** | **86,800** | **1,090** | **287,000** |
| 9/9/2022-9/15/2022* | µg/L | **1,113,200** | *NS* | *NS* | **340,500** | **18.9** | **49,020** | **58,890** | **89,070** | *NS* | **328,000** |
| 3/10/2023-4/10/2023 | µg/L | **114,900** | **294,700** | **419,800** | **309,600** | **17.1** | **46,840** | **53,380** | **70,650** | **1,872** | **430,500** |
| 9/08/23-9/21/23 | µg/L | **135,500** | *NS* | *NS* | **341,900** | **19.3** | **47,480** | **61,680** | **72,380** | *NS* | **397,700** |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 7**
**Intermediate Zinc Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RWI-MWI | RWJ-MWI | RWK-MWI | RWL-MWI | RWM-MWI | RWO-MWI | RWP-MWI | RWQ-MWI | RWR-MWI | RWS-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Annually | Semiannually | Semiannually | Semiannually | Annually | Semiannually | Semiannually | Semiannually | Semiannually | Semiannually |
| 4/1/2013 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 10/1/2013 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 6/1/2014 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/1/2014 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 5/1/2015 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/1/2015 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 2/10/2017-2/16/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 3/27/2017-3/30/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 4/25/2017-4/28/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 5/22/2017-5/24/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 6/5/2017-6/9/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 7/10/2017-7/13/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 8/7/2017-8/10/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 9/1/2017-9/8/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 10/2/2017-10/9/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 11/3/2017-11/13/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 12/4/2017-12/8/2017 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 1/2/2018-1/9/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 4/8/2018-4/13/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 7/30/2018-8/3/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 10/1/2018-10/5/2018 | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 12/10/2018-12/14/2018* | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 3/12/2019-3/19/2019* | µg/L | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE | DNE |
| 5/3/2019-6/7/2019* | µg/L | **632,000** | **1,580** | **21,100** | **169,000** | **162,000** | **249,000** | **3,210,000** | **357,000** | **2,560,000** | **797,000** |
| 9/10/2019-9/23/2019* | µg/L | **519,000** | **2,150** | **25,100** | **142,000** | **159,000** | **214,000** | **3,570,000** | **270,000** | **3,620,000** | **1,040,000** |
| 12/3/2019-12/11/2019 | µg/L | **554,000** | **3,140** | **21,600** | **124,000** | **152,000** | **204,000** | **3,880,000** | **258,000** | **4,050,000** | **946,000** |
| 3/11/20-3/23/20* | µg/L | **875,000** | **3,430** | **30,300** | **121,000** | **139,000** | **202,000** | **3,860,000** | **312,000** | **814,000** | **1,070,000** |
| 6/8/20-6/30/20* | µg/L | **775,000** | **805** | **21,400** | **96,300** | **128,000** | **223,000** | **3,160,000** | **255,000** | **2,530,000** | **74,300** |
| 9/9/20-9/29/20* | µg/L | NS | **744** | **36,800** | **116,000** | **138,000** | **204,000** | **3,810,000** | **280,000** | **1,830,000** | **760,000** |
| 11/5/20-11/19/20* | µg/L | NS | **1,060** | **26,500** | **126,000** | **125,000** | **155,000** | **3,520,000** | **257,000** | **996,000** | **919,000** |
| 5/26/21-6/18/21* | µg/L | **542,000** | **1,990** | **34,600** | **110,000** | **150,000** | **208,000** | **3,990,000** | **286,000** | **1,400,000** | **858,000** |
| 10/4/21-10/18/21* | µg/L | NS | **2,840** | **23,700** | **97,000** | NS | 200 U | **14,300** | **256,000** | **48,000** | **649,000** |
| 11/29/21-11/30/21* | µg/L | NS | NS | NS | NS | NS | **1,380** | **526** | NS | NS | NS |
| 2/23/22-3/28/22* | µg/L | **424,000** | **6,330** | **19,600** | **75,200** | **94,900** | **114,000** | **2,530,000** | **221,000** | **599,000** | **633,000** |
| 9/9/2022-9/15/2022* | µg/L | NS | **1,325** | **16,940** | **79,440** | NS | **180,000** | **2,709,000** | **216,500** | **912,000** | **228,900** |
| 3/10/2023-4/10/2023 | µg/L | **557,800** | **5,894** | **15,630** | **76,850** | **98,340** | **149,200** | **72.0** | **19.1** | **2,677,000** | **759,700** |
| 9/08/23-9/21/23 | µg/L | NS | **6,992** | **22,520** | **88,270** | NS | **182,300** | **3,118,000** | **292,800** | **2,476,000** | **773,700** |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 8**
**Intermediate Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW01-MWI | RW02-MWI | RW03-MWI | RW03R-MWI | RW05-MWI | RW05R-MWI | RW06-MWI | RW07-MWI | RW08-MWI | RW09-MWI | RW10-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Semiannually | NA | Semiannually | NA | Semiannually | Semiannually | Semiannually | Annually | Annually | Annually |
| 4/1/2013 | µg/L | DNE | DNE | DNE | DNE | **0.75** | DNE | **13.1** | DNE | DNE | DNE | DNE |
| 10/1/2013 | µg/L | DNE | DNE | DNE | DNE | **1.2** | DNE | **24.8** | DNE | DNE | DNE | DNE |
| 6/1/2014 | µg/L | DNE | DNE | DNE | DNE | **4.1** | DNE | **63.2** | DNE | DNE | DNE | DNE |
| 11/1/2014 | µg/L | DNE | DNE | DNE | DNE | **1.8** | DNE | **40.9** | DNE | DNE | DNE | DNE |
| 5/1/2015 | µg/L | DNE | DNE | DNE | DNE | **13.3** | DNE | **27.6** | DNE | DNE | DNE | DNE |
| 11/1/2015 | µg/L | DNE | DNE | DNE | DNE | NS | DNE | **41.9** | DNE | DNE | DNE | DNE |
| 2/10/2017-2/16/2017 | µg/L | DNE | DNE | **189** | DNE | NS | DNE | **12.5** | **1.2 J** | **0.49 J** | **3.1** | **446** |
| 3/27/2017-3/30/2017 | µg/L | DNE | DNE | **196** | DNE | NS | DNE | **9.2** | **4.6** | **0.39 J** | **4** | 3 U |
| 4/25/2017-4/28/2017 | µg/L | DNE | DNE | **192** | DNE | NS | DNE | **14** | 3 U | 3 U | **5** | **198** |
| 5/22/2017-5/24/2017 | µg/L | DNE | DNE | **84** | DNE | NS | DNE | **20.4** | **1.1 J** | **1.5 J** | **11.1** | **2.5 J** |
| 6/5/2017-6/9/2017 | µg/L | DNE | DNE | **37.4** | DNE | **1.9 J** | DNE | **14.3** | **0.91 J** | **0.48 J** | **8.1** | **27.2** |
| 7/10/2017-7/13/2017 | µg/L | DNE | DNE | **138** | DNE | **17.5** | DNE | **10.2** | **1.2 J** | **1.3 J** | **12.9** | **16.3** |
| 8/7/2017-8/10/2017 | µg/L | **194** | **511** | **227** | DNE | **19.3** | DNE | **10.1** | **1 J** | **0.86 J** | **18.5** | 3 U |
| 9/1/2017-9/8/2017 | µg/L | **0.51 J** | **3 J** | **214** | DNE | **3.7** | DNE | **4.5** | **11** | **0.77 J** | **9.1** | **17.7** |
| 10/2/2017-10/9/2017 | µg/L | **145** | **2.4 J** | **20.2** | DNE | **4.2** | DNE | **4.2** | 3 U | 3 U | **12** | **24.6** |
| 11/3/2017-11/13/2017 | µg/L | 3 U | 3 U | **25.2** | DNE | **4.9** | DNE | **5.4** | **5.1** | **0.88 J** | **8.8** | **63.7** |
| 12/4/2017-12/8/2017 | µg/L | **37.5** | **2.3 J** | **154** | DNE | **2.7 J** | DNE | **7.1** | **1.7 J** | **1.8 J** | **7.7** | 3 U |
| 1/2/2018-1/9/2018 | µg/L | **2.4 J** | **14.5** | **259** | DNE | **2.2 J** | DNE | **8.4** | 3 U | 3 U | **2.1 J** | 3 U |
| 4/8/2018-4/13/2018 | µg/L | **16.5** | **3** | **128** | DNE | **2.6 J** | DNE | **89.2** | **1.3 J** | **6.2** | **1.8 J** | **44.4** |
| 7/30/2018-8/3/2018 | µg/L | **250** | **79.9** | **236** | DNE | **1.3 J** | DNE | 3 U | **52.9** | **14.1** | 3 U | **44.7** |
| 10/1/2018-10/5/2018 | µg/L | 3 U | **18** | **346** | DNE | 3 U | DNE | **629** | **28.7** | **0.92 J** | **3.7** | **10.8** |
| 12/10/2018-12/14/2018* | µg/L | **9.3** | **191** | **342** | DNE | **0.76 J** | DNE | **752** | **344** | 3 U | **0.96 J** | 3 U |
| 3/12/2019-3/19/2019* | µg/L | 3 U | **98.3** | **213** | DNE | 3 U | DNE | **876** | **29.5** | 3 U | **2 J** | **0.38 J** |
| 5/3/2019-6/7/2019* | µg/L | **19.4** | **785** | **449** | DNE | Abandoned | **2,570** | **885** | **453** | 3 U | **3.8** | **0.86 J** |
| 9/10/2019-9/23/2019* | µg/L | **20.6** | **873** | **344** | DNE | Abandoned | **2,820** | **793** | **48.7** | 3.0 U | **5.6** | **8.4** |
| 12/3/2019-12/11/2019 | µg/L | **8.8** | **277** | **546** | DNE | Abandoned | **2,700** | **673** | **38.1** | **0.59 J** | 4.2 B | **13.9** |
| 3/11/20-3/23/20* | µg/L | **49.3** | **136** | **451** | DNE | Abandoned | **1,960** | **690** | **36** | 3 U | **10.6** | NS |
| 6/8/20-6/30/20* | µg/L | **117** | **398** | **581** | DNE | Abandoned | **1,930** | **582** | **1.7 J** | **0.47 J** | **16.5** | **0.67 J** |
| 9/9/20-9/29/20* | µg/L | 3 U | **0.69 J** | Destroyed | DNE | Abandoned | **1,650** | **530** | NS | **0.39 J** | **10.7** | **0.77 J** |
| 11/5/20-11/19/20* | µg/L | **162** | **208** | Destroyed | DNE | Abandoned | **1,790** | **0.66 J** | NS | **0.56 J** | **10.3** | **0.55 J** |
| 5/26/21-6/18/21* | µg/L | **277** | **0.58 J** | Destroyed | DNE | Abandoned | **1,570** | **616** | NS | **0.38 J** | **16** | **11.1** |
| 10/4/21-10/18/21* | µg/L | **322** | 1 U | Destroyed | DNE | Abandoned | **1,470** | **604** | **49.1** | NS | NS | NS |
| 11/29/21-11/30/21* | µg/L | NS | NS | Destroyed | DNE | Abandoned | **16.8** | NS | NS | NS | NS | NS |
| 2/23/22-3/28/22 | µg/L | **565** | 2 U | Destroyed | DNE | Abandoned | **1,660** | **626** | **107** | 200 U | 2 U | **13.3** |
| 9/9/2022-9/15/2022* | µg/L | **574** | **17.4** | Destroyed | **9.60** | Abandoned | **1,243** | **611** | **42.7** | NS | NS | NS |
| 3/10/2023-4/10/2023 | µg/L | **318** | **193** | Destroyed | **148** | Abandoned | **1,178** | **571** | **0.74** | 0.2 U | **11.5** | **1.11** |
| 9/08/23-9/21/23 | µg/L | NS | NS | Destroyed | **234** | Abandoned | **1,451** | NS | **26.9** | NS | NS | NS |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 8**
**Intermediate Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW11-MWI | RW12-MWI | RW13-MWI | RW15-MWI | RW16-MWI | RW18-MWI | RW19-MWI | RW21-MWI | RW22-MWI | RW22R-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Annually | Semiannually | Annually | Annually | Annually | Annually | Annually | Annually | NA | Semiannually |
| 4/1/2013 | µg/L | **438** | **4,300** | *DNE* | *DNE* | *DNE* | **73.1** | *DNE* | *DNE* | *NS* | *DNE* |
| 10/1/2013 | µg/L | **903** | **3,500** | *DNE* | *DNE* | *DNE* | **59.4** | *DNE* | *DNE* | *NS* | *DNE* |
| 6/1/2014 | µg/L | **361** | **4,740** | *DNE* | *DNE* | *DNE* | **134** | *DNE* | *DNE* | *NS* | *DNE* |
| 11/1/2014 | µg/L | **405** | **5,090** | *DNE* | *DNE* | *DNE* | **138** | *DNE* | *DNE* | *NS* | *DNE* |
| 5/1/2015 | µg/L | **25,000** | **6,000** | *DNE* | *DNE* | *DNE* | **113** | *DNE* | *DNE* | *NS* | *DNE* |
| 11/1/2015 | µg/L | *NS* | **9,780** | *DNE* | *DNE* | *DNE* | **47.2** | *DNE* | *DNE* | *NS* | *DNE* |
| 2/10/2017-2/16/2017 | µg/L | **1,690** | **4,740** | *DNE* | *DNE* | *DNE* | **70.3** | **3,760** | *DNE* | *NS* | *DNE* |
| 3/27/2017-3/30/2017 | µg/L | **1,490** | **3,530** | *DNE* | *DNE* | *DNE* | **63.8** | **3,450** | *DNE* | *NS* | *DNE* |
| 4/25/2017-4/28/2017 | µg/L | **1,800** | **2,730** | *DNE* | *DNE* | *DNE* | **119** | **3,380** | *DNE* | *NS* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | **2,600** | **3,820** | *DNE* | *DNE* | *DNE* | **92** | **2,770** | *DNE* | *NS* | *DNE* |
| 6/5/2017-6/9/2017 | µg/L | **218** | **2,260** | *DNE* | *DNE* | *DNE* | **65.1** | **2,280** | *DNE* | **0.35 J** | *DNE* |
| 7/10/2017-7/13/2017 | µg/L | **518** | **2,730** | *DNE* | *DNE* | *DNE* | **61.7** | **2,550** | *DNE* | *3 U* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | **163** | **2,220** | **31,800** | **10.1** | *DNE* | **74.4** | **1,670** | *DNE* | *NS* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | **274** | **1,820** | **66** | *3 U* | **1.7 J** | **72.2** | **1,320** | *DNE* | **2.3 J** | *DNE* |
| 10/2/2017-10/9/2017 | µg/L | **125** | **1,510** | **28,700** | *3 U* | *3 U* | **43.7** | **1,710** | *DNE* | *3 U* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | **1,460** | **1,380** | **24,500** | *3 U* | *3 U* | **66.6** | **1,770** | *DNE* | **3.8** | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | **1,380** | **1,450** | **44.2** | **0.97 J** | **1.9 J** | **51.5** | **1,710** | *DNE* | **15.2** | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | **1,400** | **1,270** | **1,240** | **1.6 J** | **1.2 J** | **63.5** | **1,880** | *DNE* | **4.1** | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | **1,660** | **121** | **19,400** | *3 U* | **1.1 J** | **55.8** | **1,700** | *DNE* | *3 U* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | **4.7** | **134** | **21,000** | **15.3** | *3 U* | **35.1** | **1,560** | *DNE* | *3 U* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | **133** | **86.3** | **12.6** | *3 U* | *3 U* | **14.5** | **1,610** | *DNE* | *3 U* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | **1,160** | **1,220** | **3.2** | **12.9** | *3 U* | **44.7** | **1,900** | *DNE* | *3 U* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | **98.9** | **768** | **29,200** | **402** | *3 U* | **80.3** | **1,320** | *DNE* | *3 U* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **586** | **1,520** | **51.1** | **64.2** | *3 U* | **38.0** | **2,420** | **50.2** | *NS* | *3 U* |
| 9/10/2019-9/23/2019* | µg/L | **517** | **1,780** | **12.8** | **589** | *3.0 U* | **50.4** | **1,580** | **23** | *NS* | *3.0 U* |
| 12/3/2019-12/11/2019 | µg/L | **476** | **420** | **22,500** | **605** | **0.36 J** | **87.6** | **1,500** | **33.1** | *NS* | *3.0 U* |
| 3/11/20-3/23/20* | µg/L | **365** | *NS* | **24,700** | **0.5 J** | **0.36 J** | **36.8** | **1,400** | **39.8** | *Abandoned* | *3 U* |
| 6/8/20-6/30/20* | µg/L | **75.1** | **716** | **15.4** | *3 U* | *3 U* | **16** | **3,390** | **34** | *Abandoned* | **2 J** |
| 9/9/20-9/29/20* | µg/L | *NS* | *NS* | **23,900** | **8** | *3 U* | **43.1** | **1,630** | **29.4** | *Abandoned* | **2.4 J** |
| 11/5/20-11/19/20* | µg/L | **179** | *NS* | **6.1** | **0.91 J** | *3 U* | **42.1** | **1,540** | **27.8** | *Abandoned* | **1.6 J** |
| 5/26/21-6/18/21* | µg/L | **175** | *NS* | **26,400** | **43.6** | **0.42 J** | *3 U* | **112** | **34.2** | *Abandoned* | **3.4** |
| 10/4/21-10/18/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | **2.5 J** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | *NS* |
| 2/23/22-3/28/22 | µg/L | **194** | **1,080** | **23,700** | **169** | *2 U* | **31.7** | **109** | **32.7** | *Abandoned* | **3.4** |
| 9/9/2022-9/15/2022* | µg/L | *NS* | **1,396** | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | **5.722** |
| 3/10/2023-4/10/2023 | µg/L | **203** | **315** | **35,700** | **408** | *0.2 U* | **12.5** | *0.2 U* | **46.3** | *Abandoned* | **5.194** |
| 9/08/23-9/21/23 | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *Abandoned* | **4.492** |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

**TABLE 8**
**Intermediate Cadmium Concentrations**
**Rod Wire Mill Interim Measures Progress Report**

| Sampling Dates | Units | RW23-MWI | RW24-MWI | RW25-MWI | RWA-MWI | RWB-MWI | RWD-MWI | RWE-MWI | RWF-MWI | RWG-MWI | RWH-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Semiannually | Annually | Annually | Semiannually | Semiannually | Semiannually | Semiannually | Semiannually | Annually | Semiannually |
| 4/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/16/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/27/2017-3/30/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/28/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/9/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/9/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **2,270** | **1,580** | **507** | **6,830** | *3 U* | **395** | **700** | **859** | **23** | **92** |
| 9/10/2019-9/23/2019* | µg/L | **2,800** | **1,540** | **9.9** | **7,740** | *3.0 U* | **514** | **656** | **1,020** | **15.4** | **1,380** |
| 12/3/2019-12/11/2019 | µg/L | **2,680** | **1,250** | **622** | **9,020** | *3.0 U* | **586** | **707** | **1,340** | **26.0** | **3,580** |
| 3/11/20-3/23/20* | µg/L | **2,600** | **1,190** | **633** | **12,600** | *3 U* | **555** | **664** | **2,010** | **38.2** | **3,210** |
| 6/8/20-6/30/20* | µg/L | **2,740** | **1,050** | **652** | **10,200** | *3 U* | **515** | **609** | **2,580** | **26.7** | **4,610** |
| 9/9/20-9/29/20* | µg/L | **2,500** | **922** | **708** | **7,630** | **0.59 J** | **541** | **584** | **3,170** | **38.2** | **4,330** |
| 11/5/20-11/19/20* | µg/L | **2,340** | **842** | **703** | **10,100** | *3 U* | **596** | **527** | **3,330** | **40.0** | **6,650** |
| 5/26/21-6/18/21* | µg/L | **2,870** | **890** | **626** | **11,700** | **0.34 J** | **713** | **530** | **3,710** | *NS* | **6,760** |
| 10/4/21-10/18/21* | µg/L | **2,590** | *NS* | *NS* | **8,510** | *1 U* | **536** | **497** | **2,610** | *NS* | **4,220** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | *NS* | **1.8** | *NS* |
| 2/23/22-3/28/22 | µg/L | **2,610** | **1,200** | **926** | **9,840** | *2 U* | **567** | **438** | **2,590** | **8.6** | **5,150** |
| 9/9/2022-9/15/2022* | µg/L | **2,844** | *NS* | *NS* | **8,587** | **0.062 J** | **488** | **399** | **2,263** | *NS* | **2,520** |
| 3/10/2023-4/10/2023 | µg/L | **3,005** | **1,113** | **640** | **8,051** | *0.2 U* | **477** | **355** | **1,903** | **51.0** | **4,700** |
| 9/08/23-9/21/23 | µg/L | **3,222** | *NS* | *NS* | **7,977** | *0.2 U* | **442** | **360** | **1,787** | *NS* | **3,385** |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

# TABLE 8
## Intermediate Cadmium Concentrations
### Rod Wire Mill Interim Measures Progress Report

| Sampling Dates | Units | RWI-MWI | RWJ-MWI | RWK-MWI | RWL-MWI | RWM-MWI | RWO-MWI | RWP-MWI | RWQ-MWI | RWR-MWI | RWS-MWI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 Sampling Frequency | | Annually | Semiannually | Semiannually | Semiannually | Annually | Semiannually | Semiannually | Semiannually | Semiannually | Semiannually |
| 4/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2013 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2014 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/1/2015 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 2/10/2017-2/16/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/27/2017-3/30/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/25/2017-4/28/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/22/2017-5/24/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 6/5/2017-6/9/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/10/2017-7/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 8/7/2017-8/10/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 9/1/2017-9/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/2/2017-10/9/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 11/3/2017-11/13/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/4/2017-12/8/2017 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 1/2/2018-1/9/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 4/8/2018-4/13/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 7/30/2018-8/3/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 10/1/2018-10/5/2018 | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 12/10/2018-12/14/2018* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 3/12/2019-3/19/2019* | µg/L | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* | *DNE* |
| 5/3/2019-6/7/2019* | µg/L | **8,050** | **61.2** | **33.5** | **1,230** | **1,080** | **68** | **2,810** | **26.2** | **440** | *3 U* |
| 9/10/2019-9/23/2019* | µg/L | **8,120** | **11.8** | **56.5** | **1,240** | **1,200** | **72.1** | **6,990** | *3.0 U* | **535** | *3.0 U* |
| 12/3/2019-12/11/2019 | µg/L | **8,270** | **45.7** | **99.5** | **1,280** | **1,230** | **55.4** | **8,910** | **2.9 J** | **650** | **1.6 J** |
| 3/11/20-3/23/20* | µg/L | **13,300** | **30.0** | **89.1** | **1,170** | **1,120** | **54.3** | **5,560** | **1.9 J** | **340** | *3 U* |
| 6/8/20-6/30/20* | µg/L | **10,800** | **2.1 J** | **76.9** | **1,140** | **1,040** | **66.2** | **7,090** | **3.7** | **508** | **0.58 J** |
| 9/9/20-9/29/20* | µg/L | *NS* | **2.3 J** | **79.1** | **1,210** | **1,060** | **57.8** | **7,220** | **4.2** | **425** | **1.8 J** |
| 11/5/20-11/19/20* | µg/L | *NS* | **2.4 J** | **74.4** | **1,160** | **1,120** | **27.9** | **7,700** | **2.9 J** | **398** | **1.7 J** |
| 5/26/21-6/18/21* | µg/L | **6,810** | **31.3** | **97.8** | **1,290** | **1,220** | **35.8** | **8,430** | **6.1** | **367** | **0.86 J** |
| 10/4/21-10/18/21* | µg/L | *NS* | **49.1** | **77.6** | **1,230** | *NS* | **31.4** | **4,370** | **10.6** | **753** | **4.7 J** |
| 11/29/21-11/30/21* | µg/L | *NS* | *NS* | *NS* | *NS* | *NS* | **10.1** | **2.0** | *NS* | *NS* | *NS* |
| 2/23/22-3/28/22 | µg/L | **5,230** | **52.8** | **62.8** | **1,230** | **1,250** | **26.3** | **5,340** | **23.3** | **295** | *20 U* |
| 9/9/2022-9/15/2022* | µg/L | *NS* | **18.0** | **72.7** | **819** | *NS* | **27.3** | **6,136** | *2 U* | **340** | **25.7** |
| 3/10/2023-4/10/2023 | µg/L | **5,797** | **65.3** | **57.4** | **739** | **1,286** | **18.1** | **0.6083** | *0.2 U* | **531** | *0.2 U* |
| 9/08/23-9/21/23 | µg/L | *NS* | **80.6** | **89.9** | **851** | *NS* | **30.1** | **5,384** | **55.9** | **422** | *0.2 U* |

**Bold indicates detection above the reporting limit**
NS = Not Sampled
DNE = Did Not Exist

*Indicates concentrations are for dissolved metals.  All other events show total metals.

**TABLE 9**

**2023 Intermediate and Deep Field Parameter Data**

**Rod Wire Mill Interim Measures Progress Report**

| | | RW01-MWI | | RW02-MWI | | RW03/03R-MWI | | RW05-MWI | | RW06R-MWI | | RW06R-MWD | | RW07-MWI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 5.45 | *NS* | 5.61 | *NS* | 8.36 | 5.97 | 6.45 | 6.26 | 5.23 | *NS* | 6.45 | *NS* | 6.23 | 6.02 |
| Specific Conductance | ms/cm | 5.83 | *NS* | 4.08 | *NS* | 2.67 | 4.12 | 3.36 | 3.47 | 2.58 | *NS* | 0.223 | *NS* | 3.29 | 2.35 |
| Dissolved Oxygen | mg/L | 0.88 | *NS* | 1.01 | *NS* | 0 | 0.14 | 0.92 | 0.11 | 0 | *NS* | 4.38 | *NS* | 4.44 | 0.03 |
| ORP | mV | -33 | *NS* | -84 | *NS* | 96 | -59 | -64 | -101 | 102 | *NS* | 193 | *NS* | 148 | -94 |
| Turbidity | NTU | 9.05 | *NS* | 7.15 | *NS* | 8.32 | 5.03 | 19.3 | 0.99 | 25.4 | *NS* | 13.8 | *NS* | 4.43 | 3.99 |
| Depth To Water | ft | 9.42 | *NS* | 9.84 | *NS* | NA | 13.16 | NA | 12 | 11.47 | *NS* | NA | *NS* | NA | 12.04 |

| | | RW08-MWI | | RW09-MWI | | RW10-MWI | | RW11-MWI | | RW12-MWI | | RW13-MWI | | RW15-MWI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Apr-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 7.23 | *NS* | 5.71 | *NS* | 4.77 | *NS* | 5.74 | *NS* | 5.94 | 6.05 | 6.1 | *NS* | 6.72 | *NS* |
| Specific Conductance | ms/cm | 1.43 | *NS* | 2.6 | *NS* | 0.908 | *NS* | 2.8 | *NS* | 2.14 | 2.59 | 3.26 | *NS* | 2.1 | *NS* |
| Dissolved Oxygen | mg/L | 0 | *NS* | 0 | *NS* | 5.22 | *NS* | 0 | *NS* | 0 | 0.01 | 0 | *NS* | 0 | *NS* |
| ORP | mV | -69 | *NS* | -14 | *NS* | 273 | *NS* | -30 | *NS* | -17 | -51 | -52 | *NS* | -95 | *NS* |
| Turbidity | NTU | 5.1 | *NS* | 6.65 | *NS* | 28.9 | *NS* | 3.86 | *NS* | 3.9 | 0.01 | 9.6 | *NS* | 7.55 | *NS* |
| Depth To Water | ft | 15.09 | *NS* | 11.82 | *NS* | 12.6 | *NS* | 11.05 | *NS* | 12.1 | 12.13 | 12.9 | *NS* | 12.55 | *NS* |

| | | RW16-MWI | | RW18-MWI | | RW19-MWI | | RW21-MWI | | RW22R-MWI | | RW23-MWI | | RW24-MWI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 8.26 | *NS* | 6.12 | *NS* | 6.11 | *NS* | 5.56 | *NS* | 5.54 | 5.77 | 6.47 | 5.66 | 6.34 | *NS* |
| Specific Conductance | ms/cm | 1.56 | *NS* | 2.79 | *NS* | 10 | *NS* | 4.57 | *NS* | 5.44 | 5.54 | 2.45 | 2.54 | 3.65 | *NS* |
| Dissolved Oxygen | mg/L | 0 | *NS* | 0 | *NS* | 0 | *NS* | 0 | *NS* | 0 | 0.02 | 0 | 0.03 | 0 | *NS* |
| ORP | mV | -277 | *NS* | 63 | *NS* | 36 | *NS* | -3 | *NS* | -1 | -75 | 56 | -9 | 36 | *NS* |
| Turbidity | NTU | 4.22 | *NS* | 4.95 | *NS* | 24.7 | *NS* | 9.1 | *NS* | 3.27 | 5.2 | 4.92 | 10.13 | 3.15 | *NS* |
| Depth To Water | ft | NA | *NS* | 13.11 | *NS* | 12.38 | *NS* | 14.02 | *NS* | 22.2 | 23.68 | 14.59 | 13.2 | 11.94 | *NS* |

| | | RW25-MWI | | RWA-MWI | | RWB-MWI | | RWD-MWI | | RWE-MWI | | RWF-MWI | | RWG-MWI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RWG-MWS** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 4.92 | *NS* | 5.06 | 5.04 | 6.14 | 6.04 | 5.19 | 5.5 | 5.81 | 5.66 | 5.57 | 6.17 | 6.47 | *NS* |
| Specific Conductance | ms/cm | 2.42 | *NS* | 3.31 | 3.27 | 1.13 | 1.14 | 2.33 | 2.24 | 3.56 | 3.03 | 6.39 | 5.52 | 8.32 | *NS* |
| Dissolved Oxygen | mg/L | 0 | *NS* | 0 | 0.47 | 0 | 0.38 | 0 | 0.96 | 1.06 | 0 | 1.13 | 0 | 1.47 | *NS* |
| ORP | mV | 176 | *NS* | 151 | 96 | 11 | -38 | 117 | 47 | 40 | 7 | -45 | -88 | -68 | *NS* |
| Turbidity | NTU | 4.77 | *NS* | NA | 10 | 10.1 | 3.42 | 4.98 | 4.59 | 11.34 | 1.24 | 3.41 | 3.33 | 4.53 | *NS* |
| Depth To Water | ft | 10.94 | *NS* | NA | 12.52 | 22.7 | 22.58 | 13.93 | NA | 12.88 | 13.1 | 11.8 | 11.73 | 8.72 | *NS* |

## TABLE 9
## 2023 Intermediate and Deep Field Parameter Data
### Rod Wire Mill Interim Measures Progress Report

| | | RWH-MWI | | RWI-MWI | | RWJ-MWI | | RWK-MWI | | RWL-MWI | | RWM-MWI | | RWO-MWI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RWG-MWS** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 5.86 | 5.92 | 6.44 | *NS* | 6.62 | 7.09 | 6.15 | 6.25 | 5.53 | 5.94 | 6.03 | *NS* | 6.78 | 5.88 |
| Specific Conductance | ms/cm | 3.88 | 3.81 | 3.99 | *NS* | 2.52 | 2.37 | 2.56 | 2.39 | 2.64 | 2.52 | 1.64 | *NS* | NA | 2.96 |
| Dissolved Oxygen | mg/L | 5.06 | 0.36 | 0 | *NS* | 0 | 0.65 | 0 | 0.47 | 0 | 0.58 | 0 | *NS* | NA | 0.3 |
| ORP | mV | 0 | -97 | -47 | *NS* | -146 | -195 | -39 | 0.64 | 22 | -29 | -3 | *NS* | NA | -111.0 |
| Turbidity | NTU | 3.16 | 14.5 | 4.21 | *NS* | 12.8 | 3.66 | 4.76 | 3.2 | 9.28 | 4.75 | 5.78 | *NS* | NA | 2.96 |
| Depth To Water | ft | 10.92 | NA | 11.65 | *NS* | 13.31 | 12.97 | 13.22 | 12.9 | 13.21 | 13 | 14.36 | *NS* | NA | 10.17 |

| | | RWP-MWI | | RWQ-MWI | | RWR-MWI | | RWS-MWI | |
|---|---|---|---|---|---|---|---|---|---|
| **RWG-MWS** | **Units** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** | **Mar-23** | **Sep-23** |
| pH | s.u. | 5.7 | 4.72 | 6.08 | 5.59 | 6.2 | 5.26 | 5.92 | 6 |
| Specific Conductance | ms/cm | 7.61 | 8.96 | 2.83 | 3.36 | 3.3 | 5 | 6.76 | 4.19 |
| Dissolved Oxygen | mg/L | 0 | 0.24 | 0 | 0.35 | 0 | 0.22 | 0 | 0.02 |
| ORP | mV | 183 | 149 | -3 | -66 | 112 | -16 | -22 | -52 |
| Turbidity | NTU | 32.1 | 8.09 | 2.66 | 2.36 | 3.92 | 2.97 | 14.5 | 1.63 |
| Depth To Water | ft | 18.31 | NA | 15.37 | NA | 12.68 | 11.98 | 16.51 | 16.36 |

NS = Not Sampled

# TABLE 10
## Statistically Significant Trends
## Rod Wire Mill 2023 Interim Measure Progress Report

| Zone | Well ID | Monitoring Area | Parameter Name | Statistical Trend |
|---|---|---|---|---|
| Shallow | RW01-MWS* | Downgradient Perimeter | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW02-MWS* | Downgradient Perimeter | Cadmium | Downward |
| | RW05-MWS** | Downgradient Perimeter | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW06-MWS | Downgradient Perimeter | Cadmium | Downward |
| | RW07-MWS | Downgradient Perimeter | Zinc | Upward |
| | RW11-MWS | Interior | Cadmium | Upward |
| | | | Zinc | Upward |
| | RW12-MWS | Interior | Cadmium | Downward |
| | RW16-MWS | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW18-MWS | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW22R-MWS | Downgradient Perimeter | Cadmium | Downward |
| | RW23-MWS | Interior | Cadmium | Downward |
| | RWB-MWS | Downgradient Perimeter | Cadmium | Downward |
| | RWD-MWS | Downgradient Perimeter | Cadmium | Downward |
| | RWF-MWS | Downgradient Perimeter | Cadmium | Downward |
| | | | Zinc | Downward |
| | RWJ-MWS | Focused | Cadmium | Downward |
| | RWK-MWS | Focused | Cadmium | Downward |
| | | | Zinc | Upward |
| | RWL-MWS | Focused | Cadmium | Downward |
| | RWN-MWS | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RWO-MWS | Delineation | Cadmium | Downward |
| | | | Zinc | Downward |
| | RWR-MWS | Upgradient | Cadmium | Downward |
| | RWS-MWS | Upgradient | Zinc | Upward |

**TABLE 10**
**Statistically Significant Trends**
**Rod Wire Mill 2023 Interim Measure Progress Report**

| Zone | Well ID | Monitoring Area | Parameter Name | Statistical Trend |
|---|---|---|---|---|
| Intermediate | RW01-MWI* | Downgradient Perimeter | Cadmium | Upward |
| | | | Zinc | Upward |
| | RW05R-MWI | Downgradient Perimeter | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW06-MWI* | Downgradient Perimeter | Cadmium | Upward |
| | | | Zinc | Upward |
| | RW07-MWI | Downgradient Perimeter | Cadmium | Upward |
| | | | Zinc | Upward |
| | RW08-MWI | Downgradient Perimeter | Zinc | Downward |
| | RW09-MWI | Interior | Zinc | Upward |
| | RW10-MWI | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW11-MWI | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW12-MWI | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW16-MWI | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW18-MWI | Interior | Cadmium | Downward |
| | RW19-MWI | Upgradient | Cadmium | Downward |
| | RW22R-MWI | Downgradient Perimeter | Cadmium | Upward |
| | | | Zinc | Upward |
| | RW23-MWI | Interior | Cadmium | Upward |
| | RW24-MWI | Interior | Cadmium | Downward |
| | | | Zinc | Downward |
| | RW25-MWI | Interior | Cadmium | Upward |
| | RWB-MWI | Downgradient Perimeter | Cadmium | Downward |
| | RWE-MWI | Downgradient Perimeter | Cadmium | Downward |
| | | | Zinc | Downward |
| | RWG-MWI | Downgradient Perimeter | Zinc | Upward |
| | RWL-MWI | Focused | Cadmium | Downward |
| | | | Zinc | Downward |
| | RWM-MWI | Interior | Zinc | Downward |
| | RWO-MWI | Delineation | Cadmium | Downward |
| | | | Zinc | Downward |
| | RWP-MWI | Delineation | Zinc | Downward |
| | RWQ-MWI | Delineation | Zinc | Downward |

*Note: Cadmium and zinc in all wells underwent trend testing. If the result of the testing was that no upward or downward trend was identified for a parameter at a particular well, it was not included in this table.*
**: Wells abandoned after Spring 2023 sampling event due to site development.*
***: Well destroyed by site development after Spring 2023 sampling event.*

# TABLE 11
## Average Historical Shallow Zone Concentrations
Rod Wire Mill Interim Measure Progress Report

| Shallow Zone Cadmium Concentration (µg/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Well Group** | **Well** | **2015** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **% Change from Earliest Yearly Average** |
| Upgradient | RW19-MWS | NA | 6.4 | 3.4 | 1.4 | 1.8 | NS | NS | NS | NA |
| Interior | RW09-MWS | NA | 14.0 | 13.0 | 13.3 | 16.3 | NS | NS | NS | NA |
| | RW11-MWS | NA | 1.8 | 15.0 | 1.8 | 2.2 | 3.4 | 1.0 | 3.8 | 110% |
| | RW12-MWS | 3.8 | 37.6 | 9.3 | 3.6 | 5.2 | 0.5 | 3.0 | 9.8 | 158% |
| | RW14-MWS | NA | 2,088 | 3,440 | 3,350 | 3,218 | NS | NS | NS | NA |
| | RW15-MWS | NA | 37.1 | 59.1 | 12.6 | 2.0 | NS | NS | NS | NA |
| | RW16-MWS | NA | 1.5 | 1.5 | 1.2 | 1.5 | 1.5 | 1.0 | 0.1 | -93% |
| | RW18-MWS | 100 | 244 | 137 | 1.6 | 1.5 | 1.5 | 1.0 | 0.1 | -100% |
| Downgradient Perimeter | RW01-MWS | NA | 24.8 | 7.2 | 3.2 | 2.1 | 0.5 | 0.6 | 0.5 | -98% |
| | RW02-MWS | NA | 8.4 | 9.4 | 2.0 | 0.6 | 1.0 | 0.1 | 0.1 | -99% |
| | RW03-MWS | NA | 6.6 | 12.9 | 15.2 | 16.7 | NS | NS | NS | NA |
| | RW04-MWS | 2.8 | 1.1 | 1.5 | 1.3 | 0.9 | NS | NS | NS | NA |
| | RW05-MWS | NA | 3.3 | 1.5 | 1.5 | 1.0 | 1.0 | 0.1 | 0.2 | -94% |
| | RW06R-MWS | NA | NA | 1.2 | 1.5 | 1.0 | 1.5 | 1.0 | 0.1 | -91% |
| | RW07-MWS | NA | 3.1 | 4.6 | 3.0 | 3.5 | 1.7 | 16.6 | 2.5 | -17% |
| | RW08-MWS | NA | 3.4 | 1.4 | 1.2 | 1.3 | NS | NS | NS | NA |

| Shallow Zone Zinc Concentration (µg/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Well Group** | **Well** | **2015** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **% Change from Earliest Yearly Average** |
| Upgradient | RW19-MWS | NA | 6,082 | 8,226 | 3,190 | 9,200 | NS | NS | NS | NA |
| Interior | RW09-MWS | NA | 10,982 | 9,856 | 16,400 | 33,125 | NS | NS | NS | NA |
| | RW11-MWS | NA | 12,933 | 46,100 | 33,475 | 41,975 | 61,000 | 13,500 | 58,030 | 349% |
| | RW12-MWS | 2,608 | 38,761 | 6,516 | 3,086 | 4,660 | 4,960 | 17,100 | 20,125 | 672% |
| | RW14-MWS | NA | 38,340 | 69,380 | 70,825 | 62,375 | NS | NS | NS | NA |
| | RW15-MWS | NA | 3,737 | 4,002 | 424 | 30 | NS | NS | NS | NA |
| | RW16-MWS | NA | 32 | 26.6 | 35.2 | 9.0 | 3.0 | 10.0 | 10.4 | -68% |
| | RW18-MWS | 3,691 | 13,503 | 7,648 | 17.3 | 8.6 | 20.1 | 100.0 | 12.6 | -100% |
| Downgradient Perimeter | RW01-MWS | NA | 11,632 | 32,460 | 14,875 | 6,800 | 4,640 | 8,853 | 10,390 | -11% |
| | RW02-MWS | NA | 3,308 | 9,146 | 15,749 | 3,360 | 238 | 21,902 | 18,640 | 464% |
| | RW03-MWS | NA | 13,958 | 27,920 | 16,668 | 17,800 | NS | NS | NS | NA |
| | RW04-MWS | 2,330 | 145 | 180 | 239 | 62 | NS | NS | NS | NA |
| | RW05-MWS | NA | 1,617 | 34.3 | 14.2 | 7.4 | 12.4 | 35.7 | 14.5 | -99% |
| | RW06R-MWS | NA | NA | 9.9 | 8.8 | 9.1 | 5.0 | 10.0 | 5.0 | -49% |
| | RW07-MWS | NA | 131 | 230 | 149 | 172 | 298 | 406.0 | 96.1 | -27% |
| | RW08-MWS | NA | 3,436 | 7,320 | 7,125 | 6,558 | NS | NS | NS | NA |

Positive % change
Negative % change
NA = Not Applicable
NS = Not Sampled

# TABLE 12
## Average Historical Intermediate Zone Concentrations
Rod Wire Mill Interim Measure Progress Report

| Average Cadmium Concentration (µg/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Well Group** | **Well** | **2015** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **% Change from Earliest Yearly Average** |
| Upgradient | RW19-MWI | NA | 2,397 | 1,748 | 1,705 | 1,990 | 112 | 109 | 0.1 | -100% |
| Interior | RW09-MWI | NA | 9.1 | 2.0 | 3.2 | 12.0 | 16.0 | 1 | 11.5 | 26% |
| | RW10-MWI | NA | 72.8 | 20.6 | 5.9 | 0.7 | 11.1 | 13 | 1.1 | -98% |
| | RW11-MWI | 25,000 | 1,065 | 872 | 419 | 206 | 175 | 194 | 203 | -99% |
| | RW12-MWI | 7,890 | 2,563 | 578 | 1,122 | 716 | NS | 1,238 | 315 | -96% |
| | RW13-MWI | 44,500 | 17,022 | 8,334 | 12,941 | 12,155 | 26,400 | 23,700 | 35,700 | -20% |
| | RW15-MWI | NA | 3.1 | 6.8 | 415 | 2.7 | 43.6 | 169 | 408 | 12996% |
| | RW16-MWI | NA | 1.7 | 1.4 | 1.2 | 1.2 | 0.42 | 1 | 0 | -94% |
| | RW18-MWI | 80.1 | 70.9 | 79.8 | 64.1 | 34.5 | 1.5 | 32 | 12 | -84% |
| Downgradient Perimeter | RW01-MWI | NA | 75.7 | 59.2 | 12.6 | 82.5 | 299.5 | 570 | 318 | 320% |
| | RW02-MWI | NA | 104 | 59.5 | 508 | 186 | 1 | 9 | 193 | 85% |
| | RW03-MWI | NA | 134 | 285 | 388 | 516 | NS | 9.6 | 190.8 | 42% |
| | RW06-MWI | 34.8 | 10.2 | 292 | 807 | 451 | 610 | 618 | 571 | 1542% |
| | RW07-MWI | NA | 2.8 | 93.9 | 142 | 18.9 | 49.1 | 74.9 | 13.8 | 393% |
| | RW08-MWI | NA | 1.0 | 4.8 | 1.3 | 0.7 | 0.38 | 1.0 | 0.1 | -90% |

| Average Zinc Concentration (µg/L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Well Group** | **Well** | **2015** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **% Change from Earliest Yearly Average** |
| Upgradient | RW19-MWI | NA | 4,716,364 | 5,278,000 | 5,050,000 | 5,662,500 | 212,000 | 3,090,000 | 10* | NC |
| Interior | RW09-MWI | NA | 53,827 | 52,740 | 64,250 | 74,050 | 93,600 | 63,000 | 78,950 | 47% |
| | RW10-MWI | NA | 29,084 | 10,143 | 4,975 | 860 | 6,130 | 7,440 | 103 | -100% |
| | RW11-MWI | 1,120,000 | 225,636 | 158,940 | 139,000 | 148,333 | 188,000 | 141,000 | 101,800 | -91% |
| | RW12-MWI | 339,000 | 189,909 | 68,142 | 92,125 | 86,400 | NS | 90,275 | 53,160 | -84% |
| | RW13-MWI | 658,000 | 137,079 | 96,762 | 143,555 | 136,512 | 363,000 | 435,000 | 479,900 | -27% |
| | RW15-MWI | NA | 1,094 | 6,374 | 118,100 | 843 | 16,400 | 49,300 | 100,800 | 9112% |
| | RW16-MWI | NA | 10,460 | 5,861 | 11.4 | 29.8 | 62.4 | 120 | 5 | -100% |
| | RW18-MWI | 642,000 | 475,000 | 332,400 | 647,500 | 521,000 | 4,380 | 434,000 | 406,100 | -37% |
| Downgradient Perimeter | RW01-MWI | NA | 13,284 | 3,107 | 4,033 | 9,256 | 25,300 | 33,155 | 30,440 | 129% |
| | RW02-MWI | NA | 3,784 | 6,839 | 41,825 | 17,331 | 269 | 4,675 | 41,190 | 989% |
| | RW03-MWI | NA | 6,419 | 10,866 | 11,680 | 16,150 | NS | 3,063 | 14,085 | 119% |
| | RW06-MWI | 6,045 | 1,209 | 43,988 | 117,000 | 80,620 | 97,250 | 48,835 | 51,260 | 748% |
| | RW07-MWI | NA | 719 | 25,985 | 56,275 | 19,700 | 53,900 | 65,300 | 25,244 | 3411% |
| | RW08-MWI | NA | 81.8 | 800 | 16.0 | 17.9 | 2.6 | 10 | 5 | -94% |

Positive % change
Negative % change
NA = Not Applicable
NC = Not Calculated
NS = Not Sampled
* RW19-MWI Spring 2023 sample is suspected to be anomalous. Therefore, Percent Change has not been calculated for this year.
The RW13-MWI concentrations for 2015 are actually results for a sample from RW-057-PZ, a PDI piezometer existing in November 2015 at a location within a few feet of the current location of RW13-MWI.