Note: This workplan has been modified to address comments by the New York State Department of Environmental Conservation. These comment have been included to this document as an Exhibit A, which can be located at the bottom.

Mr. Sarken Dressler, P.G.
Division of Environmental Remediation
Remedial Bureau A, Region 1
New York State Department of Environmental Conservation
50 Circle Road
Stony Brook, NY 11790

Arcadis of New York, Inc.
Two Huntington Quadrangle
Suite 1S10
Melville
New York 11747
Tel 631 249 7600
Fax 631 249 7610
www.arcadis.com

ENVIRONMENT

Subject:
Operable Unit 2 2019 Remedial Investigation Work Plan,
131 Sunnyside Boulevard, Plainview, New York

Date:
November 27, 2019

Contact:
Steven Feldman

Phone:
631 391 5244

Email:
Steven.Feldman@arcadis.com

Our ref:
30017764

Dear Mr. Dressler:

Presented below is a Work Plan to complete the ongoing Remedial Investigation (RI) for the Former United Stellar Industries Site located at 131 Sunnyside Boulevard, Plainview, New York ("Site"). The New York State Department of Environmental Conservation (NYSDEC) is in the process of formally designating Site-related impacts to groundwater as Operable Unit 2 (OU2). This OU2 2019 RI Work Plan ("Work Plan") presents the proposed scope of work to complete the OU2 RI. Operable Unit 1 (OU1), is not addressed in this plan, and is associated with site-related impacts to onsite soil and soil gas.

BACKGROUND

The Site is located on the western side of, but within, the Plainview Industrial Park, which is 140 acres in size. The Plainview Industrial Park contains about 75 commercial and light industrial properties, at least 11 of which have a documented history of solvent use. The Industrial Park was assigned a NYSDEC Site Code of 130104 and following a Preliminary Site Assessment (PSA) by the NYSDEC in 2007, was assigned the Classification N. Although the PSA concluded that contributions of VOC sources other than the United Stellar Industries Site were not significant, the NYSDEC cautions that significant conclusions should not be based solely on Class N Site summaries because of the preliminary nature of the information.

The 131 Sunnyside Boulevard Site is located south of the Long Island Expressway on the eastern side of Sunnyside Boulevard in Plainview, Town of

Oyster Bay. To the south, a portion of the property is bounded by Terminal Drive. The property is 3.3 acres and currently contains one building that has undergone renovation.

The previously completed Site Characterization and ongoing RI efforts have identified the presence of two perched water zones (shallow and deep) beneath the Site. The most recent off-site investigation activities have tentatively identified the down-slope extents of the shallow and deep clay units and characterized perched water quality.

PURPOSE AND OBJECTIVES

This Work Plan has been developed to collect the hydrogeologic and chemical data needed to:

- further evaluate the distribution of dissolved VOCs in the deep perched zone,
- further evaluate the potential presence of VOCs in the regional (non-perched) aquifer system,
- refine our understanding of groundwater flow in the perched and regional zones, and
- refine the conceptual site model (i.e., hydrogeologic details, contaminant distribution).

SCOPE OF WORK

Installation of Additional Monitoring Wells

Five additional locations, shown on **Figure 1**, have been identified for the installation of monitoring wells to delineate groundwater impacts. The installation of monitoring wells at these locations will supplement the existing monitoring well network, refine the delineation of off-site groundwater impacts, and provide the water quality data necessary to evaluate natural attenuation processes.

Proposed locations are identified as either regional water table monitoring wells (designated with the prefix MW), or perched water monitoring wells (designated with the prefix PW). Based on the current understanding of the nature and extent of the deep clay, the wells planned at PW-20 and PW-21 are expected to be perched water wells screened above the deep clay. At proposed well locations MW-22, MW-23, and MW-24, the deep clay is not expected to be encountered, and these wells will be constructed to monitor the regional water table. However, if the deep clay is encountered during drilling at the MW locations, the NYSDEC will be notified and the well will be completed as a perched water well screened above the deep clay.

The anticipated total well depths, screen intervals, and units to be monitored are presented in **Table 1**.

Following installation, the new wells will be surveyed, and updated figures will be provided to the NYSDEC.

Proposed Monitoring Program

The proposed monitoring program will include water level and groundwater sample collection, laboratory analysis of groundwater samples, and data tabulation and validation of the analytical results, as described below.

Volatile Organic Compound Sampling

Following installation of the additional monitoring wells described in the previous section, the monitoring well network associated with this RI will include shallow and deep perched water wells and regional water table wells.

A groundwater monitoring program has been developed to collect the data necessary to document the natural attenuation of VOC that has been observed downgradient of the Site. Water quality data will be collected on a quarterly basis for one year, as shown on the implementation schedule (see **Attachment 1**). Following the annual monitoring program described in this section, the data will be evaluated to assess whether additional monitoring is needed for completion of the RI and initiation of a feasibility study.

The monitoring program will use subsets of the well network sampled on an annual, semi-annual and quarterly basis, as shown in **Table 2**. For example, monitoring well PW-5D will be sampled every quarter; that is, it will be sampled four times. Monitoring well PW-5S will be monitored on a semi-annual basis, or two times. Monitoring Well PW-1D will be sampled one time as part of the annual round.

VOC samples will be collected using passive diffusion bag (PDB) samplers following the initial annual sampling event that also includes biogeochemical parameters.

Emerging Contaminant Sampling

During the first groundwater sampling round conducted, samples will also be collected for the analysis of emerging contaminants (per- and polyfluoroalkyl substances [PFASs] and 1,4-dioxane) from the following three monitoring wells:

- PW-12D (upgradient)
- PW-6D (on-site)
- PW-17D (off-site)

Emerging contaminant samples will be collected via submersible pump.

Biogeochemical Sampling

Evaluation of the relative concentrations of individual chlorinated VOCs (CVOCs) provide the strongest evidence of natural attenuation processes, which include sorption, dilution, volatilization and biodegradation. In addition to tracking VOC concentration trends over time, a one-time snapshot of biogeochemical conditions will be performed to evaluate subsurface conditions relative to biodegradation. The monitoring program will include other analytes and field parameters to support the evaluation of biogeochemical conditions that can support biodegradation. The additional analyte list includes the following:

- Electron Acceptors - The presence or lack of alternate electron acceptors provides an indication of the primary microbial respiration processes controlling the groundwater environment. Specifically, nitrate and sulfate will be monitored as supplemental analytes.
- Supplemental Reduced Electron Acceptors – Supplemental reduced electron acceptors will consist of dissolved iron (ferrous) and dissolved manganese (manganous); samples will be filtered in the field.

- Methane and Degradation End Products – The presence of methane as a reduced electron acceptor provides evidence that conditions are amenable for the eventual complete reductive dechlorination of CVOCs. The presence and relative concentrations of CVOC degradation end products (ethene and ethane) can provide confirmation that reductive dechlorination processes are being driven to completion. Therefore, selective monitoring of ethene, ethane, and methane will be included in the monitoring program.
- Field Parameters – Field parameters that will be measured as part of the monitoring program include pH and dissolved oxygen (DO).

The subset of monitoring wells along with analytes and field parameters to be included are provided in Table 2. It is anticipated that the biogeochemical monitoring program data will generally show that conditions are not ideal for biodegradation, but that the other three attenuation processes (sorption, dilution, volatilization) are primarily responsible for the decreasing concentration trends observed along the downgradient flowpath. Based on this conceptual site model (CSM), it is anticipated that tracking of VOC concentration trends over time will be the primary means of demonstrating natural attenuation processes.

Water level Monitoring

Water level measurements will be recorded from each well prior to sample collection. Following the annual sampling round, the water level data will be used to develop potentiometric surface maps showing groundwater contours and the inferred groundwater flow directions in the shallow and deep perched water zones. Water level measurements from the regional aquifer monitoring wells will be compared with U.S. Geological Survey data and maps to refine our understanding of groundwater flow direction in the regional aquifer.

Laboratory Analysis and Data Validation

Groundwater samples will be collected for the analysis of Target Compound List (TCL) VOCs. In addition to the groundwater samples, trip blanks and one matrix spike/matrix spike duplicate sample per sample event will be submitted for laboratory analysis. Field blanks at a frequency of 1 per 20 samples will be collected when sampling is performed using a submersible pump.

The TCL VOC analysis will be completed using Environmental Protection Agency (EPA) Method 8260C. The emerging contaminant analysis will be conducted using EPA Method 8270C with Isotope Dilution for 1,4-dioxane and EPA modified Method 537 for PFAS (21 compound TAL). Biogeochemical samples will be submitted for the following analyses:

- Nitrate and Sulfate via USEPA Methods 353.2 and 516-90,02, respectively.
- Dissolved iron and manganese via USEPA Method 6010.
- Light Hydrocarbons (methane, ethene and ethane) via USEPA Method AM20GAX.

The analytical results will be tabulated and validated by Arcadis, appropriate qualifiers will be included on the data summary table, and a data usability memo will be prepared.

Quarterly Reporting

Quarterly updates to the NYSDEC will be email data summaries consisting of a brief overview of the water quality data, tables summarizing the validated, qualified analytical results; and submittal of the electronic data deliverable (EDD). This quarterly updates will not include a detailed analysis of the data.

A comprehensive annual report will be submitted containing validated data tables with qualifiers; data usability memoranda for each of the sample sets included in the submission; the EDD; trend graphs for those wells sampled on a quarterly basis, potentiometric surface maps for the shallow and deep perched water zones, and a description and evaluation of the groundwater quality data.

IMPLEMENTATION SCHEDULE

A Remedial Investigation Implementation Schedule has been included with this Work Plan as **Attachment 1**. It presents the timing of the planned work activities associated with completing the RI:

- Work Plan review and approval;
- acquisition of permits from the Town of Oyster Bay;
- drilling, development, and geophysical logging of new monitoring wells;
- survey of new wells;
- establishment of access agreements for wells located on private property;
- re-development of existing monitoring wells;
- one year of groundwater monitoring; laboratory analysis of groundwater samples;
- quarterly updates to NYSDEC; and
- preparation of the RI report.

Please don't hesitate to contact us with any questions.

Sincerely,

Arcadis of New York, Inc.

Robert Porsche

Principal Geologist

Steven M. Feldman
Project Manager/Associate Vice President

Copies:
Ron Stallone, Spiegel Associates
Barry Cohen, Certilman, Balin Adler & Hyman, LLC

Enclosures:

Tables

1 Proposed Monitoring Well Construction Details
2 Proposed Water Quality Monitoring Frequency

Figures

1 Existing Monitoring Well Network and Proposed Well Locations

Attachments

1 Remedial Investigation Implementation Schedule

TABLES

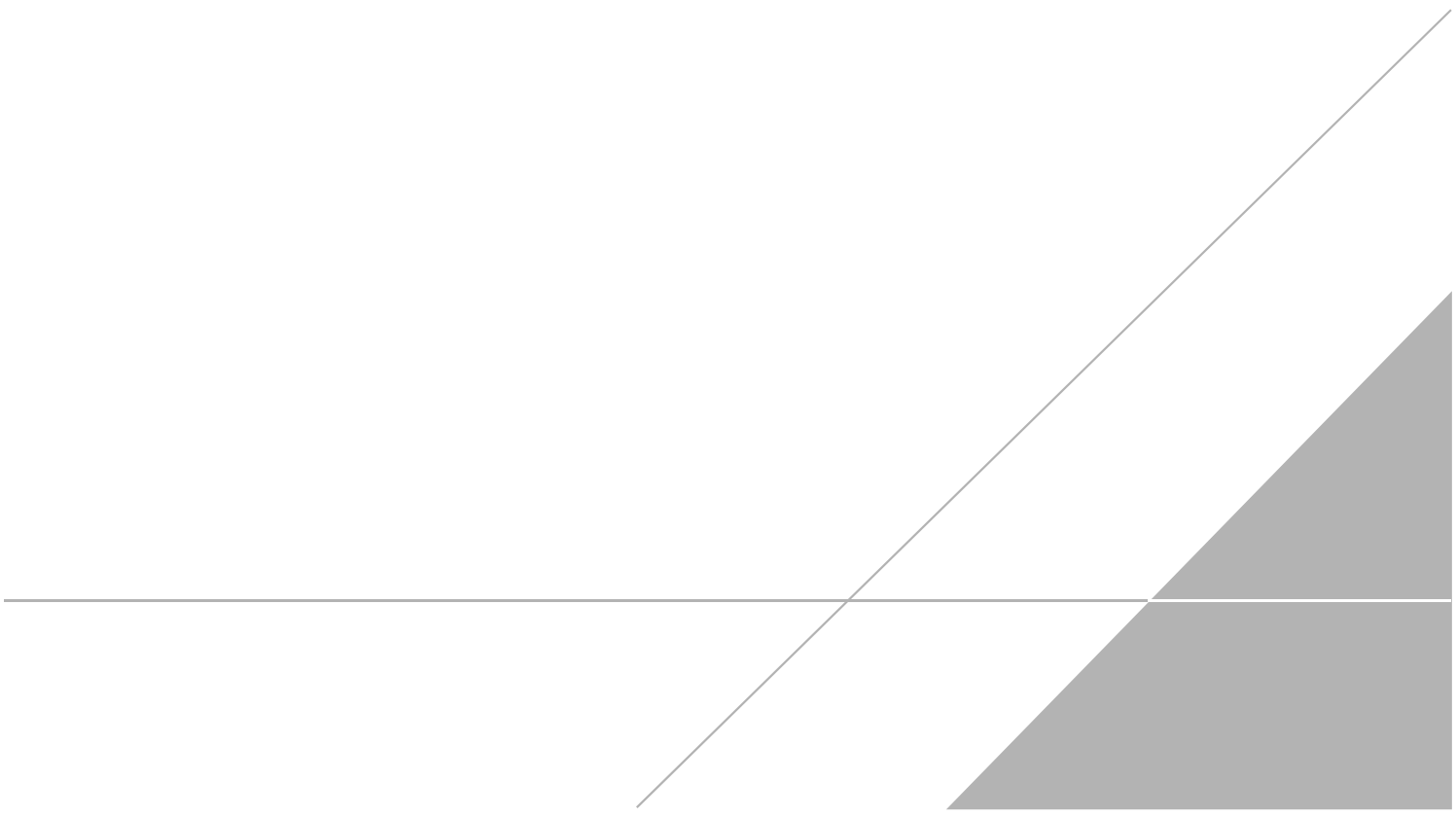


Table 1
Proposed Monitoring Well Construction Details
131 Sunnyside Boulevard
Plainview, New York

ARCADIS Design & Consultancy for natural and built assets

Well ID	Diameter (inches)	Total Depth (feet below land surface)	Top of Screen (feet NAVD 88)	Bottom of Screen (feet NAVD 88)	Unit Monitored
PW-20	2	100	90	85	Deep Perched Zone
PW-21	2	100	90	85	Deep Perched Zone
MW-22	2	120	75	70	Regional Water Table
MW-23	2	120	75	70	Regional Water Table
MW-24	2	120	75	70	Regional Water Table

Notes:

NAVD 88 North American Vertical Datum of 1988.

Perched Water wells (PW) will be screened above the deep clay.

Monitoring wells (MW) are anticipated to be screened in the regional water table.

Based on the information available during the development of the RI work plan, it was anticipated that the deep clay will be encountered at locations PW-20 and PW-21, but will not be present at proposed locaitons MW-22, MW-23, and MW-24.

Table 2.
Proposed Water Quality Monitoring Program
131 Sunnyside Boulevard
Plainview, New York

ARCADIS Design & Consultancy for natural and built assets

Monitoring Frequency			
Well ID	**Annual**	**Semi-annual**	**Quarterly**
PW-1D	V, B		
PW-2S	V		
PW-2D	V, B		
PW-3S	V		
PW-3D	V		
PW-5D	V, B	V	
PW-6D	V, E, B	V	V
PW-7S	V		
PW-7D	V	V	
PW-8D	V		
PW-9D	V		
PW-10D	V, B		
PW-11S	V, B	V	
PW-11D	V, B	V	
PW-12S	V, B		
PW-12D	V, E, B	V	
PW-13D	V, B	V	V
PW-14D	V, B		
PW-15D	V, B	V	V
PW-17D	V, E, B	V	V
MW-18	V	V	V
PW-19D	V, B	V	V
MW-19	V	V	
PW-20D*	V, B	V	V
PW-21D*	V, B	V	V
MW-22*	V, B	V	
MW-23*	V, B	V	
MW-24*	V		

Footnotes on next page

Table 2.
Proposed Water Quality Monitoring Program
131 Sunnyside Boulevard
Plainview, New York

ARCADIS Design & Consultancy for natural and built assets

Notes:

V: To be sampled for volatile organic compound analysis.

E: To be sampled for emerging contaminants.

B: To be sampled for biogeochemical parameters.

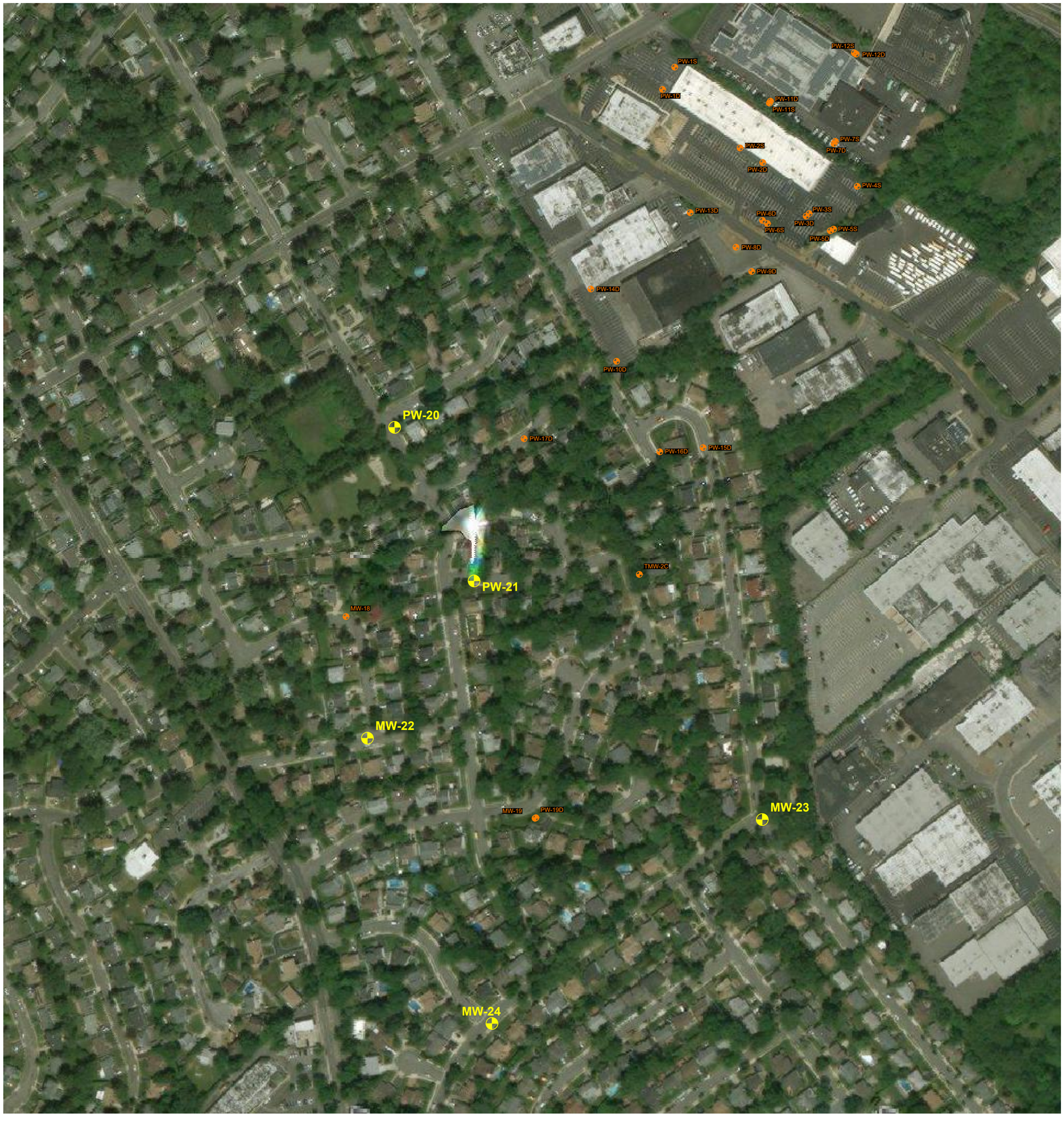
* To be installed in 2020.

Sampling program will be initiated with an annual round anticipated to occur in June 2020.

Semi-annual sampling anticipated to occur in December 2020.

Quarterly sampling anticipated to occur in September 2020 and March 2021.

FIGURE



LEGEND:

- PROPOSED LOCATION
- PERCHED WELL
- PW — PERMANENT PERCHED WATER MONITORING WELL
- TMW — TEMPORARY MONITORING WELL
- MW — PERMANENT REGIONAL WATER TABLE MONITORING WELL

NOTES:

1. THE LOCATION OF WELLS SURVEYED BY DONALD G. DEKENIPP L.S., P.C. PROFESSIONAL LAND SURVEYOR, 222 GREENE AVENUE, SAYVILLE, NY, 11782, ON JUNE 1, 5, AND 7, 2018.
2. SITE AERIAL PHOTOGRAPHY ADAPTED FROM GOOGLE EARTH PRO WITH AN IMAGERY DATE Of 03/06/2012.

0 200' 400'

APPROXIMATE SCALE IN FEET

UNITED STELLAR INDUSTRIES
131 SUNNYSIDE BOULEVARD
PLAINVIEW, NEW YORK

EXISTING MONITORING WELL NETWORK AND PROPOSED WELL LOACTIONS

ARCADIS Design & Consultancy for natural and built assets

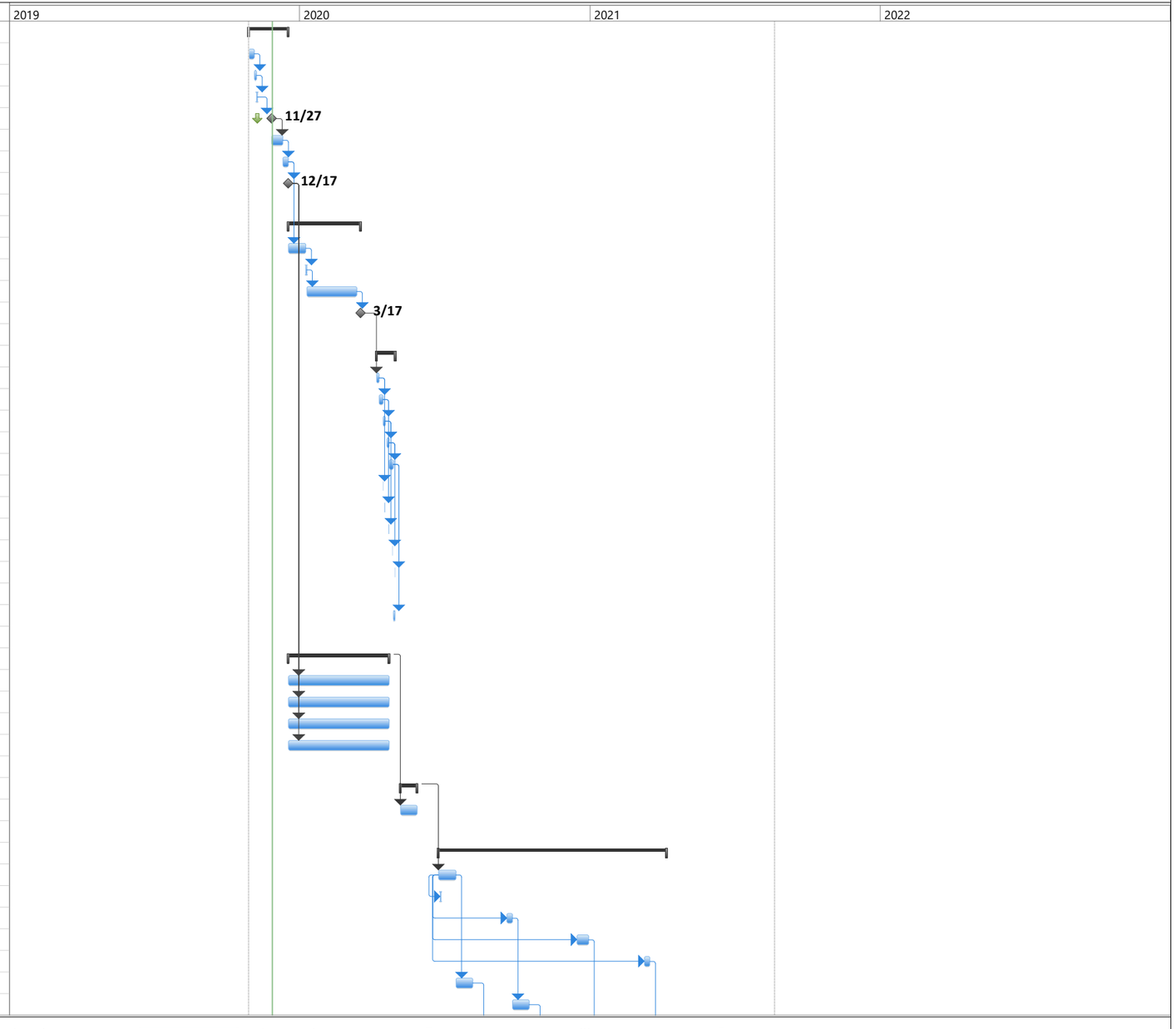
FIGURE 1

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:ALS PIC:(Opt) PM:(Req'd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\asanchez\BIM 360\Arcadis\ANA - SPIEGEL ASSOCIATES\Project Files\SUPPLEMENTAL RI\SUPPLEMENTAL RI DRILLING\2019\NY00142220009\01-DWG\SA-SRID-F-PROPOSED.dwg LAYOUT: 1 SAVED: 10/15/2019 10:21 AM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 11/4/2019 1:32 PM BY: SANCHEZ, ADRIAN
XREFS:
X-SA-SRID-BDR-CL
IMAGES:
XrA0512016.jpg

ATTACHMENT

Remedial Investigation
131 Sunnyside Boulevard
Plainview, New York

ID	Task Mode	Task Name	Duration	Start	Finish
1		**RI Work Plan**	**36 days**	**Tue 10/29/19**	**Tue 12/17/19**
2		Plan Prep	5 days	Tue 10/29/19	Mon 11/4/19
3		client review	3 days	Tue 11/5/19	Thu 11/7/19
4		address comments	1 day	Fri 11/8/19	Fri 11/8/19
5		Submit DRAFT to NYSDEC	0 days	Wed 11/27/19	Wed 11/27/19
6		NYSDEC review	10 days	Wed 11/27/19	Tue 12/10/19
7		address comments	5 days	Wed 12/11/19	Tue 12/17/19
8		Submit FINAL to NYSDEC	0 days	Tue 12/17/19	Tue 12/17/19
9					
10		**Permitting**	**64 days**	**Wed 12/18/19**	**Tue 3/17/20**
11		Prepare permit application	15 days	Wed 12/18/19	Wed 1/8/20
12		Application to TOB	1 day	Thu 1/9/20	Thu 1/9/20
13		Review by Town Board	45 days	Fri 1/10/20	Thu 3/12/20
14		Permit awarded	0 days	Tue 3/17/20	Tue 3/17/20
15					
16		**Well Drilling and Development**	**17.5 days**	**Tue 4/7/20**	**Thu 4/30/20**
17		PW-20 drilling and logging	3 days	Tue 4/7/20	Thu 4/9/20
18		PW-21 drilling and logging	3 days	Fri 4/10/20	Tue 4/14/20
19		MW-22 drilling and logging	3 days	Wed 4/15/20	Fri 4/17/20
20		MW-23 drilling and logging	3 days	Mon 4/20/20	Wed 4/22/20
21		MW-24 drilling and logging	3 days	Thu 4/23/20	Mon 4/27/20
22		PW-20 development	0.5 days	Wed 4/15/20	Wed 4/15/20
23		PW-21 development	0.5 days	Fri 4/17/20	Fri 4/17/20
24		MW-22 development	0.5 days	Wed 4/22/20	Wed 4/22/20
25		MW-23 development	0.5 days	Mon 4/27/20	Mon 4/27/20
26		MW-24 development	0.5 days	Thu 4/30/20	Thu 4/30/20
27					
28		Survey of New Wells	2 days	Tue 4/28/20	Wed 4/29/20
29					
30		**Access Agreement**	**90 days**	**Wed 12/18/19**	**Wed 4/22/20**
31		Extra Space Storage (PW-7S/D, PW-11S/D)	90 days	Wed 12/18/19	Wed 4/22/20
32		NFP (PW-12S/D)	90 days	Wed 12/18/19	Wed 4/22/20
33		Purity Products (PW-13D, PW-14D)	90 days	Wed 12/18/19	Wed 4/22/20
34		Karey Kassl Corp. (PW-8D, PW-9D, PW-10D)	90 days	Wed 12/18/19	Wed 4/22/20
35					
36		**Existing Well Redevelopment**	**14 days**	**Thu 5/7/20**	**Wed 5/27/20**
37		28 wells, 0.5 day each	14 days	Thu 5/7/20	Wed 5/27/20
38					
39		**Groundwater Sampling and Analysis**	**200 days**	**Wed 6/24/20**	**Tue 4/6/21**
40		Q01 GW Sampling (full round)	15 days	Wed 6/24/20	Wed 7/15/20
41		GW Sampling (emerging contaminants)	1 day	Fri 6/26/20	Fri 6/26/20
42		Q02 GW Sampling (quarterly)	5 days	Fri 9/18/20	Thu 9/24/20
43		Q03 GW Sampling (semi-annual)	10 days	Tue 12/15/20	Tue 12/29/20
44		Q04 GW Sampling (quarterly)	5 days	Wed 3/10/21	Tue 3/16/21
45		Q01 Laboratory Analysis	15 days	Thu 7/16/20	Wed 8/5/20
46		Q02 Laboratory Analysis	15 days	Fri 9/25/20	Thu 10/15/20

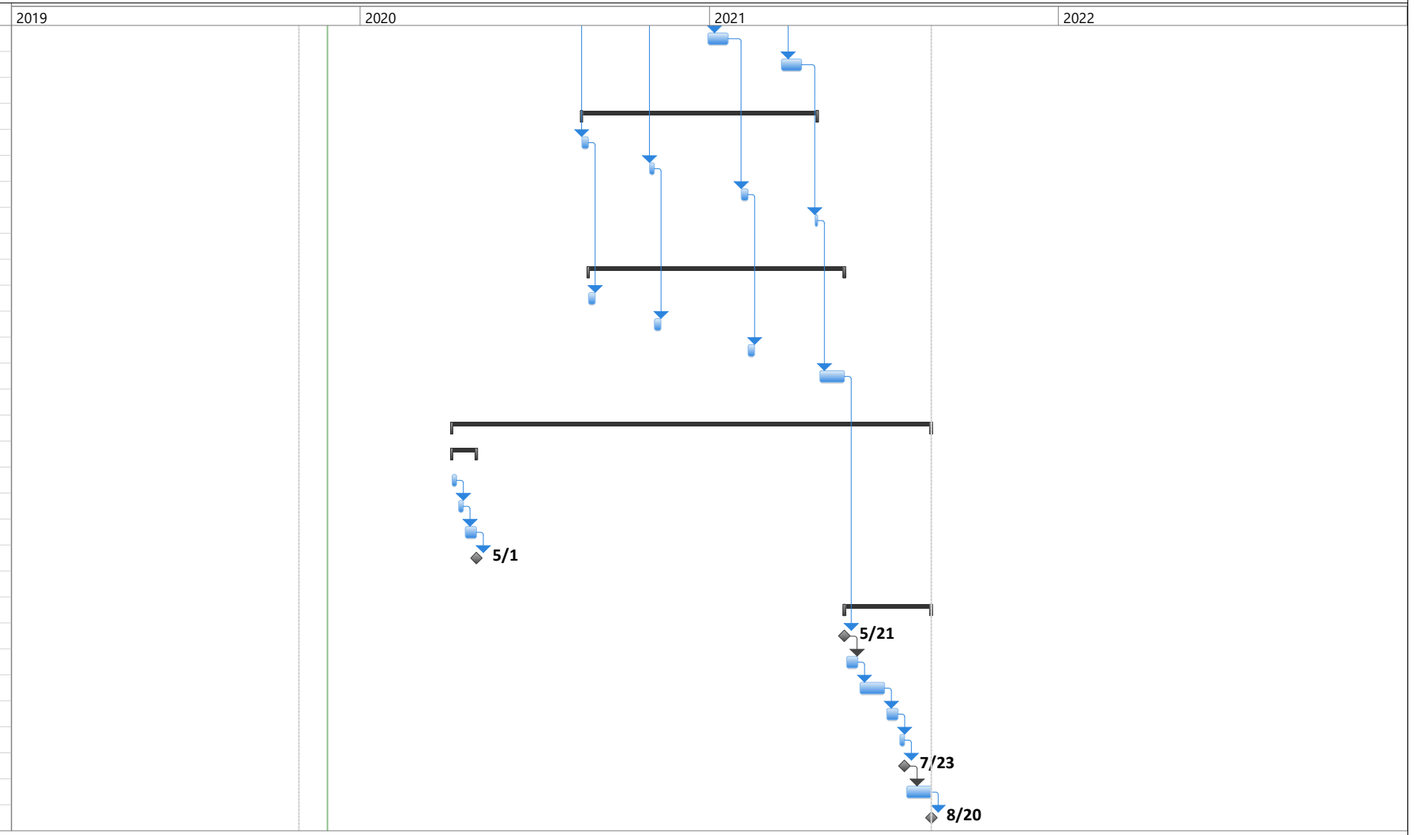


Project: RI Implementation Sched
Date: Thu 11/28/19

Task	Project Summary	Manual Task	Start-only	Deadline	
Split	Inactive Task	Duration-only	Finish-only	Progress	
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress	
Summary	Inactive Summary	Manual Summary	External Milestone		

Remedial Investigation
131 Sunnyside Boulevard
Plainview, New York

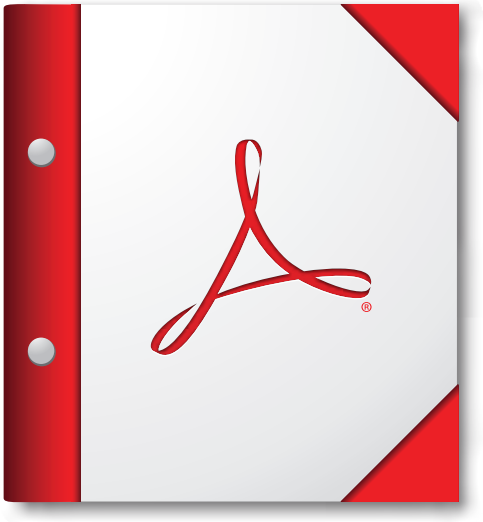
ID	Task Mode	Task Name	Duration	Start	Finish
47		Q03 Laboratory Analysis	15 days	Wed 12/30/20	Tue 1/19/21
48		Q04 Laboratory Analysis	15 days	Wed 3/17/21	Tue 4/6/21
49					
50		**Data Validation**	**173 days**	**Thu 8/20/20**	**Fri 4/23/21**
51		Q01	5 days	Thu 8/20/20	Wed 8/26/20
52		Q02	3 days	Fri 10/30/20	Tue 11/3/20
53		Q03	5 days	Wed 2/3/21	Tue 2/9/21
54		Q04	3 days	Wed 4/21/21	Fri 4/23/21
55					
56		**Quarterly Updates to NYSDEC**	**188 days**	**Thu 8/27/20**	**Fri 5/21/21**
57		Q01 Data Summary	5 days	Thu 8/27/20	Wed 9/2/20
58		Q02 Data Summary	5 days	Wed 11/4/20	Tue 11/10/20
59		Q03 Data Summary	5 days	Wed 2/10/21	Tue 2/16/21
60		Q04 Annual Report	20 days	Mon 4/26/21	Fri 5/21/21
61					
62		**Remedial Investigation Report**	**354 days**	**Mon 4/6/20**	**Fri 8/20/21**
63		**Outline Approval**	**20 days**	**Mon 4/6/20**	**Fri 5/1/20**
64		Finalize draft outline	5 days	Mon 4/6/20	Fri 4/10/20
65		Client review of Outline	5 days	Mon 4/13/20	Fri 4/17/20
66		NYSDEC review of Outline	10 days	Mon 4/20/20	Fri 5/1/20
67		NYSDEC approval of Outline	0 days	Fri 5/1/20	Fri 5/1/20
68					
69		**Report Preparation**	**65 days**	**Fri 5/21/21**	**Fri 8/20/21**
70		Completion of 1-year Sampling Program	0 days	Fri 5/21/21	Fri 5/21/21
71		Data Evaluation	10 days	Mon 5/24/21	Fri 6/4/21
72		Report Preparation	20 days	Mon 6/7/21	Fri 7/2/21
73		Client review	10 days	Mon 7/5/21	Fri 7/16/21
74		Address comments	5 days	Mon 7/19/21	Fri 7/23/21
75		Submit DRAFT RI to NYSDEC	0 days	Fri 7/23/21	Fri 7/23/21
76		Address comments	20 days	Mon 7/26/21	Fri 8/20/21
77		Submit FINAL RI to NYSDEC	0 days	Fri 8/20/21	Fri 8/20/21



Project: RI Implementation Sched
Date: Thu 11/28/19

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Exhibit A



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