GEI Consultants

Consulting Engineers and Scientists

April 4, 2018
Project 180000

Via email: Steven.Walsh@dec.ny.gov

Mr. Steven Walsh
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7016

Re: Supplemental Investigation Work Plan
Concourse Village West Apartments – North
180 East 156th Street
Bronx, New York
NYSDEC BCP Site No.: C203091

Dear Mr. Walsh:

On behalf of Concourse Village West Owner LLC (Concourse Village), GEI Consultants, Inc., P.C. (GEI) has prepared this Supplemental Investigation Work Plan (SIWP) to provide additional information regarding subsurface impacts at Concourse Village West Apartments – North, located at 180 East 156th Street in the Bronx, New York (the Site). During a phone conference call on March 19, 2018 with the New York State Department of Environmental Conservation (NYSDEC), it was discussed that additional soil characterization beneath the proposed redevelopment footprint to the groundwater table would be beneficial when preparing the revised Remedial Action Work Plan (RAWP). Furthermore, additional monitoring wells are proposed to better delineate the groundwater contours and flow direction at and in the immediate vicinity of the Site, as well as to define the extent of the historical BTEX plume associated with NYSDEC Spill No. 05-51708 to the north that has reportedly migrated beneath the Site. These monitoring wells will also be used to potentially identify other sources of contamination upgradient (to the west) of the Site and beneath the Site surface.

Soil Boring Installation and Sampling

Eight (8) soil borings will be advanced at the locations shown on **Figure 1**. These locations will be utilized to more fully delineate the soils to remain below the proposed redevelopment for the Site, as well as to delineate areas that were previously inaccessible due to the historical structures formerly present at the Site (i.e., a brick building and mechanical car lifts). Previous soil delineation activities completed as a component of the 2017 Remedial Investigation and Supplemental Remedial Investigation were advanced only a foot deeper than the proposed redevelopment grade to a depth of approximately 16 feet below ground surface (ft bgs).

Prior to subsurface activity, the proposed soil boring locations will be cleared for utilities and other anomalies using hand digging methods to a depth of 5 ft bgs. Following pre-clearing, soil

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borings will be advanced utilizing a Geoprobe® rig. Soil cores will be obtained using a stainless steel and a macro-core sampler with an internal acetate liner. Soil cores will be examined for lithology and screened impacts using a photoionization detector (PID), as well as by visual and olfactory methods.

Soil borings will be advanced to a minimum of 35 ft bgs to reach the groundwater table located at approximately 30 to 32 ft bgs. If groundwater is not encountered, the soil boring will be advanced an additional 5-feet to a final maximum boring depth of 40 ft bgs. Soil cores will be collected and examined continuously from 15 ft bgs to the termination depth of the soil boring. Discrete (grab) samples will be taken from the 5-foot interval that has the highest degree of screened and visual impacts and the 5-foot interval that intercepts the groundwater table. If no impacts are identified in the non-saturated soil, a single soil sample will be collected from the interval that intercepts the groundwater table.

Soil samples to be submitted for analysis will be placed in a laboratory sample jar, and transported to the laboratory in an iced container. Samples will be submitted for laboratory analysis for the following:

- Volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260C;
- Semi-volatile organic compounds (SVOCs) using USEPA Method 8270D;
- Target Analyte List (TAL) metals (including mercury) using EPA Method 6010C and Method 7471B;
- Pesticides using USEPA Method 8081B; and
- Polychlorinated biphenyls (PCBs) using USEPA Method 8082A.

The soil boring/sample locations will be surveyed using a Global Positioning System (GPS) device.

Monitoring Well Installation

Three (3) monitoring wells (SIN-MW-1, SIN-MW-2, and SIN-MW-3) will be installed at the locations shown on **Figure 1**, utilizing the previously advanced soil borings. The monitoring wells will be installed utilizing a Geoprobe rig.

Each monitoring well will be constructed of two-inch diameter polyvinylchloride (PVC) and consist of 10 feet of 0.020-inch slot well screen that will intersect the water table at approximately 3 to 4 feet below the top of the screen. This depth is approximately 30 ft bgs, but will be confirmed during field activities. The annular space between the well screen and the borehole will be backfilled with No. 2 sand from the bottom of the well to approximately 2 feet above the well screen. The remaining annular space will be backfilled with soil cutting that were generated during completion of the soil borings described above. The monitoring wells will be completed with a J-plug and a minimum of 3-feet stickup from the ground surface.

Following installation, each monitoring well will be developed using a submersible pump to ensure good hydraulic connection with the surrounding saturated deposits.

Groundwater sampling will be completed utilizing the USEPA's low-flow (minimal drawdown) procedures with dedicated and decontaminated sampling equipment. Prior to collecting the groundwater samples, the depth to groundwater and the total well depth will measured at each of

the groundwater monitoring wells using a multi-parameter interface probe attached to a measuring tape accurate to 0.01 foot. Field parameters (e.g., turbidity, pH, oxidation-reduction potential, and dissolved oxygen) will be measured during completion of the groundwater sampling event.

The monitoring wells will be sampled for the following analytical:

- VOCs using USEPA Method 8260C;
- SVOCs using USEPA Method 8270D;
- TAL metals (including mercury) using USEPA Method 6010C and Method 7473;
- Pesticides using USEPA Method 8081B;
- Chemical Oxygen Demand;
- Dissolved Iron; and
- Dissolved Magnesium.

The analytical for VOCs shall be run, with the remaining sample analyses to be held by the laboratory. If the analytical VOCs results confirm the presence of petroleum-related compounds that can be associated with the Site, the remaining sample analyses being held will be analyzed in support of a to-be-designed groundwater treatment program.

Due to remedial activities being completed on-Site (i.e., mobilization, demolition of preexisting buildings and structures, and removal of preexisting asphalt cover), monitoring wells that were previously installed on-Site (ET MW-23 and ET MW-24) and off-Site (ET MW-8 and ET MW-28A) will be inspected for damage and re-surveyed. If both historical monitoring wells on-Site are destroyed, an additional monitoring well will be installed as a replacement in the vicinity of its previous location. The monitoring well will be installed as detailed above and will be used solely to confirm the groundwater flow.

Each of the newly installed monitoring wells will be surveyed using a GPS device to obtain horizontal and vertical survey coordinates.

As appropriate, duplicate samples, matrix spike, matrix spike duplicates, field blanks, and trip blanks will be collected and analyzed during the course of the investigation for quality control. The sampling and analysis described in this SIWP will be conducted in accordance with the Quality Assurance Project Plan (QAPP) included as Appendix F of the RAWP and in accordance with NYSDEC Analytical Services Protocol (ASP) with Category B data deliverables. An electronic data deliverable (EDD) will also be provided by the laboratory.

During the investigation activities described herein, the precautions set forth in the Construction Health and Safety Plan included in Appendix D of the RAWP will be adhered to. This includes community air monitoring during all drilling activities.

The soil and groundwater sampling described will be scheduled upon NYSDEC-approval and driller availability.

Please contact either me (631-759-2975) or Christopher (631-759-2967) if you have any questions or require additional information.

Sincerely,

GEI CONSULTANTS, INC.

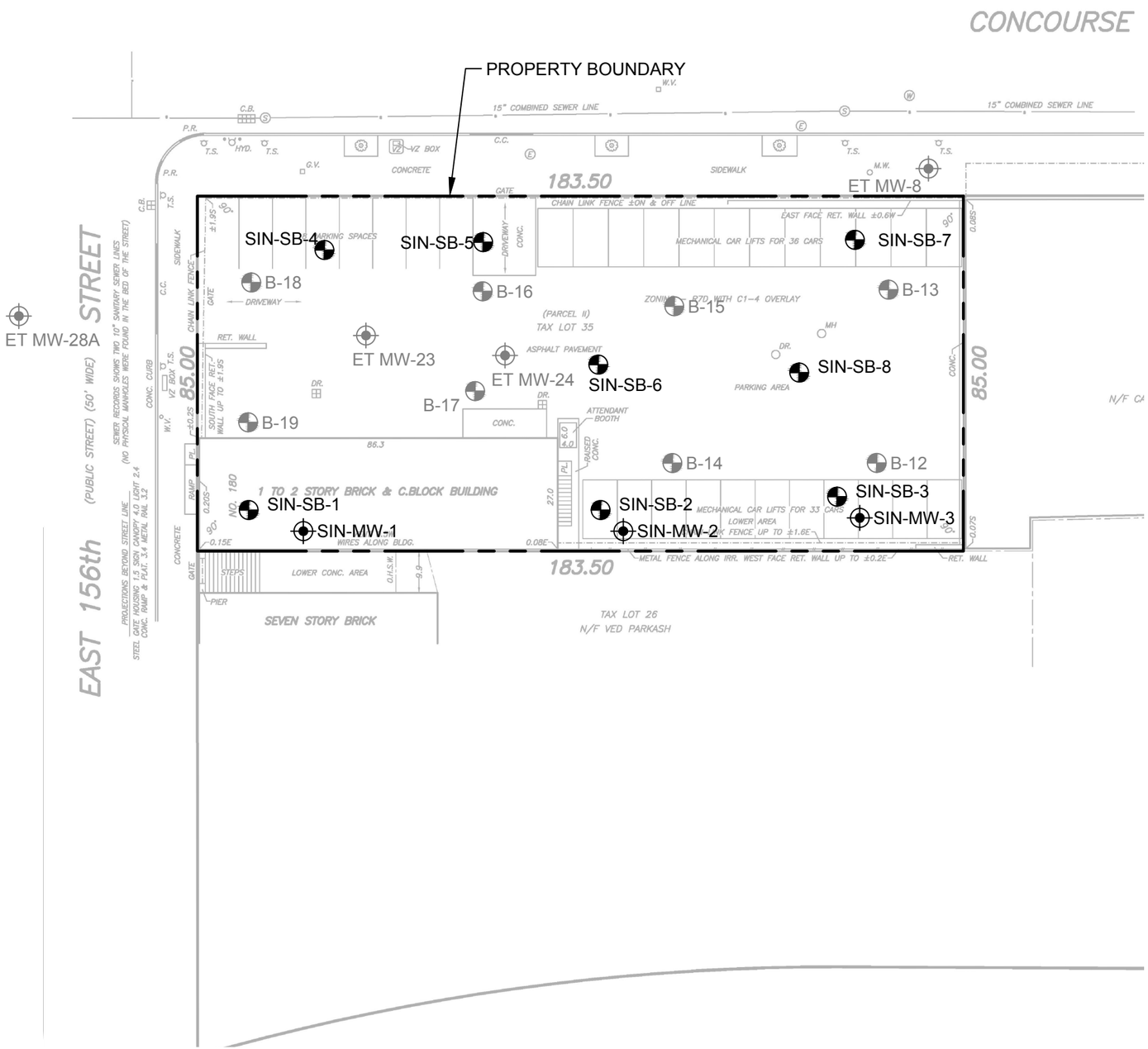
Jordanna Kendrot
Project Engineer

Christopher Morris, P.G.
Senior Geologist

JK/CM:gd
Attachment
c: Janet Brown, P.E., NYSDEC
Nicholas Recchia, P.G., GEI
Gary A. Rozmus, P.E., GEI

I:\Admin\Projects\Environmental\Azimuth Development Group\Concourse Village West, Bronx, NY\REMEDIAL ACTION\SRIWP-Pending NYSDEC App\SRIWP-North\SIWP.C203091.ConcourseVillageWest-North.docx

Figure



LEGEND:

SIN-SB-1	PROPOSED SOIL BORING
SIN-MW-1	PROPOSED GROUNDWATER MONITORING WELL
ETMW-24	EXISTING GROUNDWATER MONITORING WELL
B-13	HISTORIC SOIL BORING

0 30 60

SCALE: 1" = 30'

180 EAST 156TH STREET BRONX, NEW YORK	GEI Consultants	PROPOSED SOIL BORINGS AND MONITORING WELL LOCATION MAP
CONCOURSE VILLAGE WEST APARTMENTS - NORTH SUPPLEMENTAL INVESTIGATION	Project 1700655	APRIL 2018 Fig. 1

\\gdc1v-fs01\ I:\Tech\Environmental Projects\Azimuth Development Group\Concourse Village West Bronx, NY\CAD\Figures\Supplemental WP\1700655 - SIWP - FIG 1 - NORTH.dwg - 4/3/2018

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau B
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April 23, 2018

Nicholas Recchia
GEI Consultants, Inc. P.C.
110 Walt Whitman Rd
Huntington Station, NY 11746

Guido Subotovsky
Concourse Village West Owner LLC
40 Fulton Street, 12th Floor
New York, NY 10038

Re: Supplemental Remedial Investigation Work Plan
Concourse Village West – North (C203091) at 180 East 156th St, Bronx

Dear Messrs. Recchia, Subotovsky, and Duke:

The New York State Departments of Environmental Conservation (NYSDEC or the Department) has reviewed the April 2018 Supplemental Remedial Investigation Work Plan (SRIWP) prepared by GEI Consultants, Inc., P.C., for the above-referenced site. Based on this review, the April 2018 SRIWP is conditionally approved upon written acceptance of the following items:

1. Include QA/QC (MS/MSD) samples that will be taken and analyzed as referenced within the RAWP's CQAP for both soil and groundwater samples.
2. Collect and analyze groundwater samples for PFAS and 1,4-Dioxane at all new wells due to DUSR rejections of 1,4-dioxane results in October 2017 and new guidance (attached).
3. Clarify whether new wells will be surveyed with a licensed surveyor or via a GPS for horizontal and vertical controls. All new and existing wells should be located (surveyed/with GPS) and gauged using a common datum to determine and/or confirm GW elevations and direction of flow. Groundwater flow should be determined using the wells at both the North and South Concourse Village Sites.
4. Co-locate wells and soil borings on Figure to reflect the wells being placed in the soil borings if that is the intent.
5. All sample results will need to be Category B deliverables, validated and a DUSR provided.
6. A full EQuIS submittal is required for all data.

Within 15 days of receipt of this comment letter, please notify the Department in writing whether the Volunteer will implement these items. Upon acceptance, this letter and the written acceptance will become addenda to the SRIWP.

If you have any questions, please contact me at steven.walsh@dec.ny.gov or (518) 402-9824.

Sincerely,

Steve Walsh
Environmental Engineer

ec: J. Brown, NYSDEC
J. O'Connell, NYSDEC
G. Burke, NYSDEC
T. Chiu, NYSOGC
M. Doroski, NYSDOH
J. Deming, NYSDOH
G. Duke, Brown Sharlow Duke & Fogel, P.C
J. Kendrot, GEI

Groundwater Sampling for Emerging Contaminants

April 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where "full TAL/TCL sampling" would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard "full TAL/TCL" sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable, and a DUSR should be prepared by a data validator, and the electronic data submission should meet the requirements provided at: https://www.dec.ny.gov/chemical/62440.html ,

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. However, laboratories analyzing environmental samples (ex. soil, sediments, and groundwater) are required, by DER, to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537 or ISO 25101.

Modified EPA Method 537 is the preferred method to use for groundwater samples due to the ability to achieve 2 ng/L (ppt) detection limits. If contract labs or work plans submitted by responsible parties indicate that they are not able to achieve similar reporting limits, the project manager should discuss this with a DER chemist. Note: Reporting limits for PFOA and PFOS should not exceed 2 ng/L.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other

sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.28 µg/l (ppb). ELAP offers certification for both EPA Methods 8260 and 8270. In order to get the appropriate detection limits, the lab would need to run either of these methods in "selective ion monitoring" (SIM) mode. DER is advising the use of method 8270, since this method provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents (we acknowledge that 8260 has been shown to have a higher recovery in some studies).

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals

GEI Consultants

April 30, 2018

Consulting
Engineers and
Scientists

VIA EMAIL: Steven.walsh@dec.ny.gov

Mr. Steven Walsh
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau B
625 Broadway, 12th Floor
Albany, NY 12233-7036

Re: Supplemental Investigation Work Plan (SIWP)
Concourse Village West – North (C203091) at
180 East 156th Street, Bronx, NY

Dear Mr. Walsh:

GEI Consultants, Inc. P. C. (GEI) submitted a Supplemental Investigation Work Plan (SIWP) for the Concourse Village West Site - North/BCP Site No. C203091 on April 4, 2018 for New York State Department of Environmental Conservation (NYSDEC) review. A conditional approval letter dated April 23, 2018 was received from NYSDEC via email referencing a SRIWP, which is presumably the previously submitted SIWP. GEI has reviewed these comments and will amend the SIWP to include items as identified below, and accepts on behalf of the Volunteer (Concourse Village West Owner LLC) the items as described below:

1. Include QA/QC (MS/MSD) samples that will be taken and analyzed as referenced within the RAWP's CQAP for both soil and groundwater samples.

   Reference to QA/QC samples is included in the SIWP submittal on Page 3. All QA/QC samples will be conducted in accordance with the Quality Assurance Project Plan (QAPP), which was included as Appendix F of the submitted RAWP. This Appendix will be included in the revised SIWP document.

2. Collect and analyze groundwater samples for PFAS and 1,4-Dioxane at all new wells due to DUSR rejections of 1,4-dioxane results in October 2017 and new guidance (attached).

   The revised SIWP document will have the proposed (3) monitoring wells sampled for the following, additional, analytical to those listed in the SIWP on Page 3:

   - *TAL PFAS using a Modified USEPA Method 537; and*
   - *1,4-Dioxane using a Modified USEPA Method 8270 (selective ion monitoring [SIM]to be used during analysis).*

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3. Clarify whether new wells will be surveyed with a licensed surveyor or via a GPS for horizontal and vertical controls. All new and existing wells should be located (surveyed/with GPS) and gauged using a common datum to determine and/or confirm GW elevations and direction of flow. Groundwater flow should be determined using the wells at both the North and South Concourse Village Sites.

   As noted in the SIWP on Page 3: "Each of the newly installed monitoring wells will be surveyed using a GPS device to obtain horizontal and vertical survey coordinates." This text will be revised to the following, "All existing and proposed monitoring wells will be surveyed using a GPS device to obtain horizontal and vertical survey coordinates. These horizontal elevations will be utilized to confirm the groundwater flow at the Site. Groundwater flow at the Site will be supplemented with datum generated from BCP Site No. C203092."

4. Co-locate wells and soil borings on Figure to reflect the wells being placed in the soil borings if that is the intent.

   *Please see the attached, revised **Figure 1**. This Figure will supersede the figure submitted April 4, 2018.*

5. All sample results will need to be Category B deliverables, validated and a DUSR provided.

   Reference to Category B Deliverables is noted on Page 3 of the SIWP. Validation and DUSR protocols were referenced in the QAPP, which was included as Appendix F of the submitted RAWP. This Appendix will be included in the revised SIWP document.

6. A full EQuIS submittal is required for all data.

   The following text will be added to Page 3 following reference to the laboratory provided electronic data deliverable: "All end-point sample data generated for the RA will be logged in a database and organized to facilitate data review and evaluation. The NYSDEC has implemented an Environmental Information Management System (EIMS). The EIMS uses the database software application EQuISTM from EarthSoft® Inc. A complete data package will be submitted with supporting tables, which highlight such data as sample location coordinates and proper electronic data deliverable groupings.

   The electronic dataset will include the data flags provided in accordance with USEPA Laboratory Data Validation Functional Guidelines for Evaluating Organic Analysis and Inorganic Analyses, as well as additional comments of the data review for ASP/CLP analyses. The data flags include such items as: 1) concentration below required detection limit, 2) estimated concentration due to poor recovery below required detection limit, 3) estimated concentration due to poor spike recovery, and 4) concentration of chemical also found in laboratory blank."

If there are any questions or concerns pertaining to the above proposed changes or attached document, please feel free to contact the undersigned via email or at 631-760-9300.

Sincerely,

GEI CONSULTANTS, INC., P. C.

Nicholas J. Recchia, P.G.
Environmental Practice Leader
Hydrogeologist

NJR:kmh
Enclosure
c: G. Duke
G. Rozmus
G. Subotovsky

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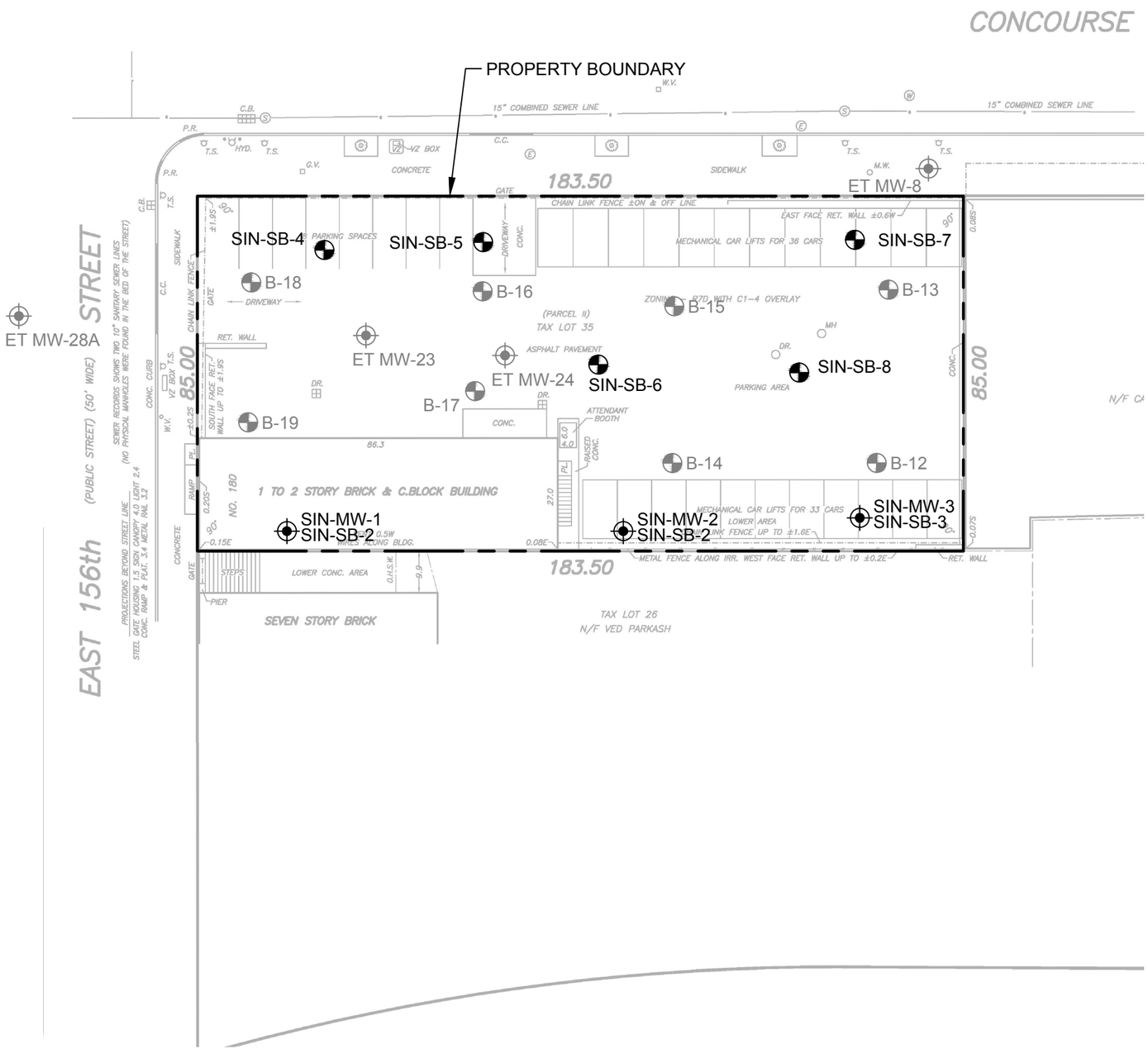

LEGEND:

SIN-SB-1	PROPOSED SOIL BORING
SIN-MW-1 / SIN-SB-1	PROPOSED GROUNDWATER MONITORING WELL AND SOIL BORING
ETMW-24	EXISTING GROUNDWATER MONITORING WELL
B-13	HISTORIC SOIL BORING

0 30 60

SCALE: 1" = 30'

SUPPLEMENTAL INVESTIGATION WORK PLAN
CONCOURSE VILLAGE WEST APARTMENTS NORTH
180 EAST 15TH STREET, BRONX, NEW YORK

BCP SITE# C203091
CONCOURSE VILLAGE WEST
NEW YORK, NEW YORK

GEI Consultants

PROPOSED SOIL BORINGS AND MONITORING WELL LOCATION MAP

Project 1700655 | APRIL 2018 | Fig. 1

\\gdc1v-fs01\ I:\Tech\Environmental Projects\Azimuth Development Group\Concourse Village West Bronx, NY\CAD\Figures\Supplemental WP\1700655 - SIWP - FIG 1 - NORTH.dwg - 4/3/2018