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Letting September 18, 2020

Notice to Bidders, Specifications and Proposal

Contract No. 61F90
LAKE County
Section 14-00031-00-SW (Lake Villa)
Various Routes
Project B6ME-038 ()
District 1 Construction Funds

Prepared by	F
Checked by	

(Printed by authority of the State of Illinois)

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. September 18, 2020 at which time the bids will be publicly opened from the iCX SecureVault.

2. **DESCRIPTION OF WORK**. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 61F90
   LAKE County
   Section 14-00031-00-SW (Lake Villa)
   Project B6ME-038 ()
   Various Routes
   District 1 Construction Funds

   Sidewalk construction at various locations in Lake Villa.

3. **INSTRUCTIONS TO BIDDERS**. (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS**. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to re-advertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Omer Osman,
Acting Secretary

CONTRACT 61F90

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2020

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-20)

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

The following LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

INDEX OF SPECIAL PROVISIONS

BDE SPECIAL PROVISIONS

The following special provisions indicated by an "X" are applicable to this contract. An * indicates a new or revised special provision for the letting.

File Name	Pg.		Special Provision Title	Effective	Revised
80099			Accessible Pedestrian Signals (APS)	April 1, 2003	April 1, 2020
80274			Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
80192			Automated Flagger Assistance Device	Jan. 1, 2008	
80173			Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80246			Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	
80241			Bridge Demolition Debris	July 1, 2009	
5026I			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5048I			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5049I			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5053I			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
80425			Cape Seal	Jan. 1, 2020	
80384	133	X	Compensable Delay Costs	June 2, 2017	April 1, 2019
80198			Completion Date (via calendar days)	April 1, 2008	
80199			Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293			Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
80311			Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
80277			Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
80261	137	X	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80387			Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
80029	140	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
80402	150	X	Disposal Fees	Nov. 1, 2018	
80378			Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
80405			Elastomeric Bearings	Jan. 1, 2019	
80421			Electric Service Installation	Jan. 1, 2020	
80415	152	X	Emulsified Asphalts	Aug. 1, 2019	
80423			Engineer's Field Office Laboratory	Jan. 1, 2020	
80388	155	X	Equipment Parking and Storage	Nov. 1, 2017	
80229			Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80417	156	X	Geotechnical Fabric for Pipe Underdrains and French Drains	Nov. 1, 2019	
80420			Geotextile Retaining Walls	Nov. 1, 2019	
80304			Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
80422			High Tension Cable Median Barrier Reflectors	Jan. 1, 2020	
80416			Hot-Mix Asphalt – Binder and Surface Course	July 2, 2019	Nov. 1, 2019
80398			Hot-Mix Asphalt – Longitudinal Joint Sealant	Aug. 1, 2018	Nov. 1, 2019
80406			Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT Data Collection)	Jan. 1, 2019	Jan. 2, 2020
80347			Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	July 2, 2019
80383			Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	July 2, 2019
80411			Luminaires, LED	April 1, 2019	
80393			Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	Mar. 1, 2019
80045			Material Transfer Device	June 15, 1999	Aug. 1, 2014
80418			Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	
80424			Micro-Surfacing and Slurry Sealing	Jan. 1, 2020	
80428	158	X	Mobilization	April 1, 2020	
80165			Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80412			Obstruction Warning Luminaires, LED	Aug. 1, 2019	
80349			Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
80371			Pavement Marking Removal	July 1, 2016	
80389	159	X	Portland Cement Concrete	Nov. 1, 2017	

	File Name	Pg.		Special Provision Title	Effective	Revised
*	80430	160	X	Portland Cement Concrete – Haul Time	July 1, 2020	
	80359			Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2019
*	80431			Portland Cement Concrete Pavement Patching	July 1, 2020	
*	80432			Portland Cement Concrete Pavement Placement	July 1, 2020	
	80300			Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
	3426I			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
	80157			Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
	80306			Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 2, 2020
	80407	161	X	Removal and Disposal of Regulated Substances	Jan. 1, 2019	Jan. 1, 2020
	80419	172	X	Silt Fence, Inlet Filters, Ground Stabilization and Riprap Filter Fabric	Nov. 1, 2019	April 1, 2020
	80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
	80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2017
	80127			Steel Cost Adjustment	April 2, 2014	Aug. 1, 2017
	80408			Steel Plate Beam Guardrail Manufacturing	Jan. 1, 2019	
	80413			Structural Timber	Aug. 1, 2019	
	80397	178	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
	80391	179	X	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
	80317			Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	Aug. 1, 2019
	80298			Temporary Pavement Marking	April 1, 2012	April 1, 2017
	80403			Traffic Barrier Terminal, Type 1 Special	Nov. 1, 2018	
	80409	180	X	Traffic Control Devices – Cones	Jan. 1, 2019	
	80410			Traffic Spotters	Jan. 1, 2019	
	20338			Training Special Provisions	Oct. 15, 1975	
	80318			Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
	80429			Ultra-Thin Bonded Wearing Course	April 1, 2020	
	80288	181	X	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
	80302	183	X	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
	80414			Wood Fence Sight Screen	Aug. 1, 2019	April 1, 2020
	80427	184	X	Work Zone Traffic Control Devices	Mar. 2, 2020	
	80071	186	X	Working Days	Jan. 1, 2002	

The following special provisions are in the 2020 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location(s)	Effective	Revised
80404	Coarse Aggregate Quality for Micro-Surfacing and Cape Seals	Article 1004.01(b)	Jan. 1, 2019	
80392	Lights on Barricades	Articles 701.16, 701.17(c)(2) & 603.07	Jan. 1, 2018	
80336	Longitudinal Joint and Crack Patching	Check Sheet #36	April 1, 2014	April 1, 2016
80400	Mast Arm Assembly and Pole	Article 1077.03(b)	Aug. 1, 2018	
80394	Metal Flared End Section for Pipe Culverts	Articles 542.07(c) and 542.11	Jan. 1, 2018	April 1, 2018
80390	Payments to Subcontractors	Article 109.11	Nov. 2, 2017	

The following special provisions have been deleted from use.

File Name	Special Provision Title	Effective	Revised
80328	Progress Payments	Nov. 2, 2013	

STATE OF ILLINOIS
SPECIAL PROVISIONS

The following Special Provisions supplement the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted April 1, 2016 (hereinafter referred to as the "Standard Specifications"); the most recent "Supplemental Specifications and Recurring Special Provisions"; and the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect on the date of invitation for bids; all of which apply to and govern the construction of Sidewalk on Cedar Avenue, Lake Avenue and Central Avenue, Job No. C-91-154-18, Contract No. 61F90, Section No. 14-00031-00 SW, Project No. B6ME(038), in the Village of Lake Villa, Lake County, and in case of conflict with any part or parts of said specifications, the said special provisions shall take precedence and shall govern.

LOCATION OF IMPROVEMENTS

This project is located on Cedar Avenue from north of the CN Railroad to IL Route 83, Milwaukee Avenue; on Lake Avenue from Cedar Avenue to IL Route 83, Milwaukee Avenue and on Central Avenue from Cedar Avenue to IL Route 132, Grand Avenue within the limits of the Village of Lake Villa in Lake County, Illinois. The gross and net length is 2,850 feet (0.54 mile).

DESCRIPTION OF IMPROVEMENTS

The work consists of both removal and replacement of sidewalk and new sidewalk, associated grading, restoration, pavement marking and underdrain, as well as all incidental and collateral work to complete the project as shown on the plans or described herein.

MAINTENANCE OF ROADWAYS

Effective: September 30, 1985 Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

TEMPORARY INFORMATION SIGNING
Effective: November 13, 1996
Revised: January 29, 2020

Description.
This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

Materials.
Materials shall be according to the following Articles of Section 1000 - Materials:

	Item	Article/Section
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.
Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.
Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

GENERAL CONSTRUCTION REQUIREMENTS

Installation.
The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

The attachment of temporary signs to existing bridges, sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs and/or structures due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Method of Measurement.
This work shall be measured for payment in square feet (square meters) edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis Of Payment.
This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.

STATUS OF UTILITIES (D-1)
Effective: June 1, 2016
Revised: January 1, 2020

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information regarding their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Department's contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

UTILITIES TO BE ADJUSTED

Conflicts noted below have been identified by following the suggested staging plan included in the contract. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work; in some instances, resolution will be a function of the construction staging. The responsible agency must relocate, or complete new installations as noted below; this work has been deemed necessary to be complete for the Department's contractor to then work in the stage under which the item has been listed.

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
Lake Ave; Sta 28+90	Fire hydrant	Fire hydrant is in conflict with sidewalk; The Contractor shall remove existing hydrant and install hydrant at new location.	Lake Villa Public Works	3 Days
Central Ave; Sta 48+60 to 49+45	Drainage pipe	Existing drainage pipe is in conflict with the sidewalk; The Contractor shall remove existing drainage pipe, connecting existing system to new pipe underdrain.	Lake Villa Public Works	3 Days

Conflicts are listed as noted above.

6 Days Total Installation

The following contact information is what was used during the preparation of the plans as provided by the Agency/Company responsible for resolution of the conflict.

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
Village of Lake Villa	Glenn McCollum	847-356-6100	GMccollum@lake-villa.org

UTILITIES TO BE WATCHED AND PROTECTED

The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Department's contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances, the contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owner's part can be secured.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
Cedar, Lake & Central Avenues; Throughout project limits; All stages	Aerial Electric Lines Power Poles Guy Wires	The Contractor is alerted that there are aerial electric powerlines, power poles and guy wires within and adjacent to the project limits There are no conflicts with the proposed improvements, however the Contractor shall take caution with all construction vehicles passing near or crossing under overhead electric facilities	ComEd

Cedar, Lake and Central Avenues; Throughout project limits, All stages	Gas Lines	The Contractor is alerted that there are underground natural gas pipelines within and adjacent to the project limits. There are no conflicts with the proposed improvements, however the Contractor shall take caution when excavating for sidewalk and underdrain.	Nicor
Cedar, Lake and Central Avenues; Throughout project limits; All stages	Telephone Line	The Contractor is alerted that there are aerial telephone lines within and adjacent to the project limits. There are no conflicts with the proposed improvements, however the Contractor shall take caution during construction.	AT&T
Cedar, Lake and Central Avenues; Throughout project limits; All stages	Communications Line	The Contractor is alerted that there are aerial communication lines within and adjacent to the project limits. There are no conflict with the proposed improvements, however the Contractor shall take caution during construction.	Comcast

Facilities requiring extra consideration are listed as noted above.

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
AT&T (Technology Operation, Construction & Engineering)	Janet C Ahern	630-573-6414	Ja1763@att.com
Comcast	Thomas Munar	224-229-5851	Thomas_Munar@comcast.com
ComEd (Public Relocation)	Terri Bleck	847-816-5239	Terri.bleck@ComEd.com
Nicor Gas Co	Michal Ann Beyke	630-388-2761	mbeyke@southernco.com
Village of Lake Villa	Glenn McCollum	847-356-6100	GMcollum@lake-villa.org

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be considered in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications for Road and Bridge Construction shall apply.

Estimated duration of time provided above for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies

will be working toward resolving subsequent conflicts in conjunction with contractor activities in the number of days noted.

The estimated relocation duration must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department's contractor and the utility companies when necessary. The Department's contractor is responsible for contacting J.U.L.I.E. prior to all excavation work.

TRAFFIC CONTROL PLAN
Effective: September 30, 1985
Revised: January 1, 2007

Traffic Control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, and the Special Provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS:

701006	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701011	OFF-ROAD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701301	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311	LANE CLOSURE 2L, 2W MOVING OPERATIONS- DAY ONLY
701501	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701801	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901	TRAFFIC CONTROL DEVICES

DETAILS:

TC-10	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS
TC-22	ARTERIAL ROAD INFORMATION SIGN

SPECIAL PROVISIONS:

MAINTENANCE OF ROADWAYS
EQUIPMENT PARKING AND STORAGE (BDE)
TRAFFIC CONTROL DEVICES – CONES (BDE)
WORK ZONE TRAFFIC CONTROL DEVICES (BDE)
TEMPORARY INFORMATION SIGNING (D-1)

FIRE HYDRANTS TO BE RELOCATED

Revise Article 564.01 of the Standard Specifications as follows:

"Materials for the replacement shall be Mueller Super Centurion 250 with a mechanical joint. Hydrant shall be provided with a six-inch (6") RWGV mounted directly to an anchoring tee. Bolts shall be stainless steel. Hydrant shall be painted with Rust-Oleum V7400 System, 340 VOC DTM ALKYD Enamel, Item #245478 Safety Red. Hydrant shall include a five-foot (5') long spring mounted reinforced fiberglass hydrant whip marker. Hydrant auxiliary valve shall have six-inch (6") valve box, flush with final grade with cover marked "Water".

BASIS OF PAYMENT

This work will be paid for at the contract unit price per each for FIRE HYDRANTS TO BE RELOCATED.

AVAILABLE REPORTS

☐ No project specific reports were prepared.

When applicable, the following checked reports and record information is available for Bidders' reference upon request:

☐ Record structural plans

☒ Preliminary Site Investigation (PSI)

☒ Preliminary Environmental Site Assessment (PESA)

☐ Soils/Geotechnical Report

☐ Boring Logs

☐ Pavement Cores

☐ Location Drainage Study (LDS)

☐ Hydraulic Report

☐ Noise Analysis

☐ Other: _____

Those seeking these reports should request access from:

Glenn McCollum, Public Works Director
Village of Lake Villa
847-356-6100
GMccollum@lake-villa.org

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)

Effective: November 1, 2012
Revise: November 1, 2019

Revise Section 1031 of the Standard Specifications to read:

"SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

1031.01 Description. Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

(a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

(b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Central Bureau of Materials approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.

(1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.

(2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

1031.02 Stockpiles. RAP and RAS stockpiles shall be according to the following.

(a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP -#4 or Type 2 RAS", etc…).

(1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mixture composition of the mix design.

(2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, HMA (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.

(3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

(4) Conglomerate “D” Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or HMA (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

(5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as “Non-Quality”.

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of Type 1 RAS with Type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer’s written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability.

The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

1031.03 Testing. FRAP and RAS testing shall be according to the following.

(a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.

(3) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

(b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.

(1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

(2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

1031.04 Evaluation of Tests. Evaluation of test results shall be according to the following.

(a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag), G_{mm}. A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 30 (600 μm)	± 5 %
No. 200 (75 μm)	± 2.0 %
Asphalt Binder	± 0.3 %
G_{mm}	± 0.03 1/

1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be

used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)" or Illinois Modified AASHTO T-164-11, Test Method A.

(b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.5 %
Asphalt Binder Content	± 2.0 %

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

(c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision	
% Passing:[1/]	FRAP	RAS
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%
G_{mm}	0.030	

1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

(d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

1031.05 Quality Designation of Aggregate in RAP and FRAP.

(a) RAP. The aggregate quality of the RAP for homogeneous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

(1) RAP from Class I, HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.

(3) RAP from Class I, HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

(4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

(b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

1031.06 Use of FRAP and/or RAS in HMA. The use of FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

(a) FRAP. The use of FRAP in HMA shall be as follows.

(1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.

(2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.

(3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.

(4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.

(5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.

(b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

(c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts indicated in the table below for a given N Design.

Max Asphalt Binder Replacement for FRAP with RAS Combination

HMA Mixtures [1/ 2/ 4/]	Maximum % ABR		
Ndesign	Binder [5/]	Surface [5/]	Polymer Modified [3/]
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
SMA			30
IL-4.75			40

1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 % for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 % binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 %, the required virgin asphalt binder grade shall be PG64-28.

3/ When the ABR for SMA or IL-4.75 is 15 % or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.

4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

5/ When the mix has Illinois Flexibility Index Test (I-FIT) requirements, the maximum percent asphalt binder replacement designated on the table may be increased by 5%.

1031.07 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

(a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.

(b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design.

The RAP, FRAP and RAS stone specific gravities (Gsb) shall be according to the "Determination of Aggregate Bulk (Dry) Specific Gravity (Gsb) or Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)" procedure in the Department's Manual of Test Procedures for Materials.

1031.08 HMA Production. HMA production utilizing FRAP and/or RAS shall be as follows.

A scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized and agglomerated material.

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein, the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

(a) FRAP. The coarse aggregate in all FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

(b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)

i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.

j. Accumulated mixture tonnage.

k. Dust Removed (accumulated to the nearest 0.1 ton (0.1 metric ton))

(2) Batch Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

d. Mineral filler weight to the nearest pound (kilogram).

f. RAS and FRAP weight to the nearest pound (kilogram).

g. Virgin asphalt binder weight to the nearest pound (kilogram).

h. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B. The use of RAP or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

(b) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75 µm) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation."

FRICTION AGGREGATE (D-1)

Effective: January 1, 2011
Revised: November 1, 2019

Revise Article 1004.03(a) of the Standard Specifications to read:

"**1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA).** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	Allowed Alone or in Combination [5/]: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	Allowed Alone or in Combination [5/]: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag[1/] Crushed Concrete

<table>
<tr><th>Use</th><th>Mixture</th><th>Aggregates Allowed</th></tr>
<tr><td>HMA
High ESAL
Low ESAL</td><td>Binder
IL-19.0
or IL-19.0L

SMA Binder</td><td><u>Allowed Alone or in Combination</u> [5/ 6/]:
Crushed Gravel
Carbonate Crushed Stone[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Concrete[3/]</td></tr>
<tr><td>HMA
High ESAL
Low ESAL</td><td>C Surface and
Leveling Binder
IL-9.5 or IL-9.5L

SMA
Ndesign 50
Surface</td><td><u>Allowed Alone or in Combination</u> [5/]:
Crushed Gravel
Carbonate Crushed Stone[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag[4/]
Crushed Concrete[3/]</td></tr>
<tr><td rowspan="5">HMA
High ESAL</td><td rowspan="5">D Surface and
Binder IL-9.5

SMA
Ndesign 50
Surface</td><td><u>Allowed Alone or in Combination</u> [5/]:
Crushed Gravel
Carbonate Crushed Stone (other than Limestone)[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag[4/]
Crushed Concrete[3/]</td></tr>
<tr><td><u>Other Combinations Allowed:</u>
Up to... | With...</td></tr>
<tr><td>25% Limestone | Dolomite</td></tr>
<tr><td>50% Limestone | Any Mixture D aggregate other than Dolomite</td></tr>
<tr><td>75% Limestone | Crushed Slag (ACBF) or Crushed Sandstone</td></tr>
</table>

<table>
<tr><th>Use</th><th>Mixture</th><th colspan="2">Aggregates Allowed</th></tr>
<tr><td rowspan="5">HMA
High ESAL</td><td rowspan="5">E Surface
IL-9.5

SMA
Ndesign 80
Surface</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/ 6/]:

Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag

No Limestone.</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed:</u></td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>50% Dolomite[2/]</td><td>Any Mixture E aggregate</td></tr>
<tr><td>75% Dolomite[2/]</td><td>Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td></tr>
<tr><td>75% Crushed Gravel[2/] or Crushed Concrete[3/]</td><td>Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag</td></tr>
<tr><td rowspan="4">HMA
High ESAL</td><td rowspan="4">F Surface
IL-9.5

SMA
Ndesign 80
Surface</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/ 6/]:

Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag
No Limestone.</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed</u>:</td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>50% Crushed Gravel[2/], Crushed Concrete[3/], or Dolomite[2/]</td><td>Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td></tr>
</table>

1/ Crushed steel slag allowed in shoulder surface only.
2/ Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
3/ Crushed concrete will not be permitted in SMA mixes.
4/ Crushed steel slag shall not be used as leveling binder.
5/ When combinations of aggregates are used, the blend percent measurements shall be by volume."
6/ Combining different types of aggregate will not be permitted in SMA Ndesign 80."

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1)
Effective: June 26, 2006
Revised: April 1, 2016

Add the following to the end of article 1032.05 of the Standard Specifications:

"(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. A quantity of 10.0 to 14.0 percent GTR (Note 1) shall be blended by dry unit weight with a PG 64-28 to make a GTR 70-28 or a PG 58-28 to make a GTR 64-28. The base PG 64-28 and PG 58-28 asphalt binders shall meet the requirements of Article 1032.05(a). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

Test	Asphalt Grade GTR 70-28	Asphalt Grade GTR 64-28
Flash Point (C.O.C.), AASHTO T 48, °F (°C), min.	450 (232)	450 (232)
Rotational Viscosity, AASHTO T 316 @ 275 °F (135 °C), Poises, Pa·s, max.	30 (3)	30 (3)
Softening Point, AASHTO T 53, °F (°C), min.	135 (57)	130 (54)
Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min.	65	65

Note 1. GTR shall be produced from processing automobile and/or light truck tires by the ambient grinding method. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall contain no free metal particles or other materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois modified AASHTO T 27, *a* 50 g sample of the GTR shall conform to the following gradation requirements:

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 μm)	95 ± 5
No. 50 (300 μm)	> 20

Add the following to the end of Note 1. of article 1030.03 of the Standard Specifications:

"A dedicated storage tank for the Ground Tire Rubber (GTR) modified asphalt binder shall be provided. This tank must be capable of providing continuous mechanical mixing throughout by continuous agitation and recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ± 0.40 percent."

Revise 1030.02(c) of the Standard Specifications to read:

"(c) RAP Materials (Note 5) ……..…..1031"

Add the following note to 1030.02 of the Standard Specifications:

Note 5. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)

Effective: November 1, 2019
Revised: February 2, 2020

Description. This work shall consist of constructing a hot-mix asphalt (HMA) binder and/or surface course on a prepared base. Work shall be according to Sections 406 and 1030 of the Standard Specifications, except as modified herein.

Materials. Revise Article 1004.03(c) to read:

" (c) Gradation. The coarse aggregate gradations shall be as listed in the following table.

Use	Size/Application	Gradation No.
Class A-1, A-2, & A-3	3/8 in. (10 mm) Seal	CA 16 or CA 20
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & A-3	Cover Coat	CA 14
HMA High ESAL	IL-19.0; Stabilized Subbase IL-19.0	CA 11 1/
	SMA 12.5 2/	CA 13 4/, CA 14, or CA 16
	SMA 9.5 2/	CA 13 3/4/ or CA 16 3/
	IL-9.5	CA 16, CM 13 4/
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 1/
	IL-9.5L	CA 16

1/ CA 16 or CA 13 may be blended with the CA 11.

2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ The specified coarse aggregate gradations may be blended.

4/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve."

Revise Article 1004.03(e) of the Supplemental Specifications to read:

"(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent."

HMA Nomenclature. Revise the "High ESAL" portion of the table in Article 1030.01 to read:

"High ESAL	Binder Courses	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75, SMA 12.5, Stabilized Subbase IL-19.0
	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5"

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

"**1030.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.03
(b) Fine Aggregate	1003.03
(c) RAP Material	1031
(d) Mineral Filler	1011
(e) Hydrated Lime	1012.01
(f) Slaked Quicklime (Note 1)	
(g) Performance Graded Asphalt Binder (Note 2)	1032
(h) Fibers (Note 3)	
(i) Warm Mix Asphalt (WMA) Technologies (Note 4)	

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be a SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type I or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 4. Warm mix additives or foaming processes shall be selected from the Department's Qualified Producer List, "Technologies for the Production of Warm Mix Asphalt (WMA)"."

Mixture Design. Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

High ESAL, MIXTURE COMPOSITION (% PASSING) [1/]										
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 [4/]	16	32[4/]	34 [5/]	52 [2/]	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 [3/]	7.5	9.5 [3/]	4	6	7	9 [3/]
#635 (20 μm)			≤ 3.0		≤ 3.0					
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.

3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.

4/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.

5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

"(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

VOLUMETRIC REQUIREMENTS High ESAL				
	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA), %
Ndesign	IL-19.0; Stabilized Subbase IL- 19.0	IL-9.5	IL-4.75 1/	
50	13.5	15.0	18.5	65 – 78 2/
70				65 - 75

1/ Maximum draindown for IL-4.75 shall be 0.3 percent.

2/ VFA for IL-4.75 shall be 72-85 percent."

Revise the table in Article 1030.04(b)(3) to read:

"VOLUMETRIC REQUIREMENTS, SMA 12.5 1/ and SMA 9.5 1/			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 4/	3.5	17.0 2/	75 - 83

1/ Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.

2/ Applies when specific gravity of coarse aggregate is ≥ 2.760.

3/ Applies when specific gravity of coarse aggregate is < 2.760.

4/ Blending of different types of aggregate will not be permitted.
For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

"During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production."

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

"IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steal slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours."

Quality Control/Quality Assurance (QC/QA). Revise the third paragraph of Article 1030.05(d)(3) to read:

"If the Contractor and Engineer agree the nuclear density test method is not appropriate for the mixture, cores shall be taken at random locations determined according to the QC/QA document "Determination of Random Density Test Site Locations". Core densities shall be determined using the Illinois Modified AASHTO T 166 or T 275 procedure."

Add the following paragraphs to the end of Article 1030.05(d)(3):

"Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement). Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.

b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed."

Revise the second table in Article 1030.05(d)(4) and its notes to read:

"DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density, minimum
IL-4.75	Ndesign = 50	93.0 – 97.4 % 1/	91.0%
IL-9.5FG	Ndesign = 50 - 90	93.0 – 97.4 %	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0 %	90.0%
IL-9.5, IL-9.5L,	Ndesign < 90	92.5 – 97.4 %	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0 %	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 2/ – 97.4 %	90.0%
SMA	Ndesign = 80	93.5 – 97.4 %	91.0%

1/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.

2/ 92.0 % when placed as first lift on an unimproved subgrade."

Equipment. Add the following to Article 1101.01 of the Standard Specifications:

"(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when starting, stopping, or reversing directions. The oscillatory roller shall be able to operate in a mode that will provide tangential impact force with or without vertical impact force by using at least one drum. The oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

(1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm);

(2) The minimum length of the drum(s) shall be 57 in. (1480 mm);

(3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and

(4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN)."

Construction Requirements.

Add the following to Article 406.03 of the Standard Specifications:

"(j) Oscillatory Roller ..... 1101.01"

Revise the third paragraph of Article 406.05(a) to read:

"All depressions of 1 in. (25 mm) or more in the surface of the existing pavement shall be filled with binder. At locations where heavy disintegration and deep spalling exists, the area shall be cleaned of all loose and unsound material, tacked, and filled with binder (hand method)."

Revise Article 406.05(c) to read.

"(c) Binder (Hand Method). Binder placed other than with a finishing machine will be designated as binder (hand method) and shall be compacted with a roller to the satisfaction of the Engineer. Hand tamping will be permitted when approved by the Engineer."

Revise the special conditions for mixture IL-4.75 in Article 406.06(b)(2)e. to read:

"e. The mixture shall be overlaid within 5 days of being placed."

Revise Article 406.06(d) to read:

"(d) Lift Thickness. The minimum compacted lift thickness for HMA binder and surface courses shall be as follows.

MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19) - over HMA surfaces 1/ 1 (25) - over PCC surfaces 1/
IL-9.5FG	1 1/4 (32)
IL-9.5, IL-9.5L	1 1/2 (38)
SMA 9.5	1 3/4 (45)
SMA 12.5	2 (51)
IL-19.0, IL-19.0L	2 1/4 (57)

1/ The maximum compacted lift thickness for mixture IL-4.75 shall be 1 1/4 in. (32 mm)."

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

"TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Binder and Surface [1/]	V_D, P [3/], T_B, 3W, O_T, O_B	P [3/], O_T, O_B	V_S, T_B, T_F, O_T	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA [4/ 5/]	T_B, 3W, O_T	- -	T_F, 3W, O_T	
Bridge Decks [2/]	T_B	- -	T_F	As specified in Articles 582.05 and 582.06.

3/ A vibratory roller (V_D) or oscillatory roller (O_T or O_B) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder."

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

"O_T - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O_B - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m)."

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

"As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

(a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.

(b.) A mix design was prepared based on collected dust (baghouse).

Revise Article 1030.04 (d) of the Standard Specifications to read:

"(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department's verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new mix designs will be required to be tested, prior to submittal for Department verification and shall meet the following requirements:

(1)Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements [1/]

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions. For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa)."

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

"(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture at the beginning of each construction year according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip Procedures". At the request

of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results."

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

"The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day's production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.
If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria"

Method of Measurement:

Add the following after the fourth paragraph of Article 406.13 (b):

"The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design's G_{mb}."

Basis of Payment. Replace the second through the fifth paragraphs of Article 406.14 with the following:

" HMA binder and surface courses will be paid for at the contract unit price per ton (metric ton) for MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS; HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition, friction aggregate, and Ndesign specified."

State of Illinois
Department of Transportation
Bureau of Local Roads and
Streets

SPECIAL PROVISION FOR INSURANCE

Effective: February 1, 2007
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

Village of Lake Villa

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

Preliminary Site Investigation Report

RTA Access to Transit Sidewalks Improvement Project
Portions along Cedar Avenue, Lake Avenue, and Central Avenue
Lake Villa, Illinois 60046

PREPARED FOR
Applied Technologies, Inc.
468 Park Avenue
Lake Villa, Illinois 60046

PREPARED BY
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PROJECT NUMBER
TII9038

SUBMITTED ON
March 5, 2019

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APPENDICES

1.0 EXECUTIVE SUMMARY

True North Consultants, Inc. (True North) has prepared this summary report to document the Preliminary Site Investigation (PSI) performed along portions of Cedar Avenue, Lake Avenue, and Central Avenue in Lake Villa, Lake County, Illinois. Specifically, this PSI evaluated the RTA access to transit sidewalks improvement project area which is identified as the north and south sides of the Cedar Avenue right-of-way between North Milwaukee Avenue and the Canadian National Railway railroad tracks; the north side of the Lake Avenue right-of-way between North Milwaukee Avenue and Cedar Avenue; and, the west side of the Central Avenue right-of-way between Cedar Avenue and Grand Avenue (Site). The PSI was conducted at the Site during the due diligence and planning phase of the proposed RTA access to transit sidewalks improvement project. Figure 1 presents the approximate location of the Site.

The intent of this limited investigation was to determine the presence of environmental impacts associated with the Potentially Impacted Properties (PIPs) identified in the Preliminary Environmental Site Assessment (PESA) prepared by True North in December 2018. Within the subject report, the term Potentially Impacted Properties (PIPs) has been utilized interchangeably with recognized environmental condition (REC) based on the terms and language provided within the CCDD regulations.

Based upon the findings of the PESA and as of December 2018, the date of the last physical examination of the project area, it was determined that the Site has potential for soil contamination due to the identification of historical and current operations of printing, automotive repair, underground storage tanks (USTs) and emergency generator, a fueling station, and liquid propane refueling. The PESA provides additional details regarding these findings. Figure 2 identifies the approximate location of the identified PIPs within the project area.

In February 2019, True North performed PSI field activities to evaluate the conditions identified within the PESA. The analytical results from the investigations were compared to the Maximum Allowable Concentrations (MAC) as referenced within the Clean Construction and Demolition Debris (CCDD) regulations, 35 IAC 1100. The initial assessment included the advancement of a total of eleven soil borings at representative locations of the Site with respect to adjoining historical and current property uses. Soil samples were collected at each boring location and analyzed as necessary for the appropriate potential contaminants of concern to evaluate the PIPs and general soil conditions.

The results of this PSI demonstrated that soils did not exhibit concentrations of the analyzed constituents above the applicable MACs as referenced within the CCDD regulations. Elevated PID readings or other potential indications of impact were not noted in any of the soil borings during investigation activities.

During the PSI, representative soil samples were assessed for pH value based on the CCDD regulations. Per the requirements of 35 IAC 1100.201 (g), the pH of the sampled soils was compared to the pH range of 6.25 to 9.0 units which is the required pH range for CCDD acceptance. Soils were found to be within the acceptable soil pH range.

Based on the findings of the PSI, soils within the project area have been certified as uncontaminated. The PSI activities and findings are detailed herein and IEPA LPC-663 uncontaminated soil certification has been provided in Appendix C.

2.0 INTRODUCTION

True North was retained by Applied Technologies, Inc. (ATI) on behalf of the Village of Lake Villa (Village) to perform a PSI of the proposed RTA access to transit sidewalks improvement project area which is identified as the north and south sides of the Cedar Avenue right-of-way between North Milwaukee Avenue and the Canadian National Railway railroad tracks; the north side of the Lake Avenue right-of-way between North Milwaukee Avenue and Cedar Avenue; and, the west side of the Central Avenue right-of-way between Cedar Avenue and Grand Avenue in Lake Villa, Lake County, Illinois (Site). Figure 1 identifies the location of the Site.

As part of the due diligence and planning process, a PESA was performed for the Site by True North in December 2018 to evaluate the potential presence of regulated substances and identify potentially impacted properties within the immediate vicinity of the Site. Figure 2 identifies the approximate location of recognized environmental conditions or potentially impacted properties adjoining the project area. This PSI was performed to evaluate the environmental impacts at the Site from the identified properties.

3.0 BACKGROUND INFORMATION

3.1 Site History

Based on a review of historical information provided in the PESA, the Site was primarily surrounded by forested land and residential structures in 1938. Commercial development along the south side of Lake Avenue began by 1953 and continued through the early 1970s. Commercial structures were built west of Central Avenue by 1972. A new strip mall was constructed north of Lake Avenue by 1988 and new commercial structures were built north of Cedar Avenue by 1992. The surrounding areas have remained relatively unchanged since that time.

The vicinity immediately surrounding the Site can be characterized as a mix of residential and commercial uses both historically and currently. The PESA identified specific facilities which represent a potential for environmental impact to the Site. The following provides a summary of the sites located adjoining the project area that were identified as PIPs.

- 129 Central Avenue: According to the PESA report, this property historically operated as a printer. The property was determined to be adjacent to the Site and therefore evaluated as a PIP.
- Transmission Shop Inc. – 211 Lake Avenue: The property was identified within the EDR Historical Auto Station database. Based on the duration of operations, potential use of automotive-related chemicals, and close proximity to the Site, the property was evaluated as a PIP.
- Robin Aerne/Lake Villa Auto Clinic – 217 Lake Avenue: The property was identified within the UST and LUST databases. The property was determined to be adjacent to the Site and therefore evaluated as a PIP.
- Country Pantry Inc. – 203 East Grand Avenue: The property was identified within the EDR Historical Auto Station database. Based on the apparent duration of gasoline station operations and close proximity to the Site, the property was evaluated as a PIP.
- An emergency generator was observed at the southeast corner of Central Avenue and an unnamed alleyway during the PESA Site reconnaissance. Based on the petroleum storage and close proximity to the Site, the emergency generator was evaluated as a PIP.
- Super Hicks Gas Fuel – 198 Grand Avenue: The property operates as a liquid propane refueling service. Based on the close proximity to the Site, the property was evaluated as a PIP.

Based on the evaluation and the generation of spoils requiring off-site disposal in these locations, True North identified the presence of a total of six PIPs adjacent to the Site. True North used these property locations with respect to the proposed

project area as a basis for sampling locations and analyses. This investigation was intended to identify and quantify possible contaminated areas which could affect soil management options, lead to delays in construction, modification of design and/or construction operations.

3.2 Site Description

The Site is located within a mix of residential and commercial uses area within the Village of Lake Villa, Illinois. The Site consists of the proposed RTA access to transit sidewalks improvement project area which is identified as the north and south sides of the Cedar Avenue right-of-way between North Milwaukee Avenue and the Canadian National Railway railroad tracks; the north side of the Lake Avenue right-of-way between North Milwaukee Avenue and Cedar Avenue; and, the west side of the Central Avenue right-of-way between Cedar Avenue and Grand Avenue in Lake Villa, Lake County, Illinois (Site).

A Site location map is presented in Figure 1 of this report and Site detail maps are presented in Figure 3A-3B.

3.3 Physical Setting

The ISGS Potential for Contamination of Shallow Aquifers from Surface and near Surface Waste Disposal by Berg et. al. (1984) classifies the vicinity of the Site from west to east as "A2, B1, and E." The A2 materials are described as thick, permeable sand and gravel within 20 feet of land surface. The potential for contaminant migration in A2 materials is high. The B1 materials are described as sand and gravel within 20 feet thick over relatively impermeable till or bedrock. The potential for contaminant migration in B1 materials is moderate. The E materials are described as uniform, relatively impermeable silty or clayey till at least 50 feet thick with no evidence of interbedded sand and gravel. The potential for contaminant migration in E materials is low.

According to ISGS *Bedrock Geology of Illinois* (IM14), published by the ISGS, the underlying bedrock within the Site area is Silurian aged dolomite. The ISGS *Buried Bedrock Map of Illinois* indicates the bedrock elevation is approximately 550 feet above mean sea level (msl) which is between approximately 20 to 50 feet below ground surface (bgs) within the project area extents.

The native geology encountered during drilling activities is consistent with information provided within the aforementioned resources. Areas with non-native fill material were also encountered during the PSI as discussed further within Section 3.4 and as identified on the soil boring logs presented within Appendix A. Site-specific hydrogeologic information is not available. However, it is True North's experience

that local shallow groundwater flow regimes mimic local topography and it can be expected that shallow groundwater flow at the Site is generally westerly towards Cedar Lake at the western portion of the Site and easterly toward Deep Lake at the eastern portion of the Site.

3.4 Current/Future Site Operations

The Site is currently identified as a portion of various public right-of-ways, including the north and south sides of Cedar Avenue between North Milwaukee Avenue and the Canadian National Railway railroad tracks; the north side of Lake Avenue between North Milwaukee Avenue and Cedar Avenue; and, the west side of Central Avenue between Cedar Avenue and Grand Avenue. The Site is currently improved with portions of existing concrete sidewalks, grass, gravel, and existing asphalt driveways for adjacent businesses. It is True North's understanding that the Site will be improved with accessible concrete sidewalks at the completion of the project.

4.0 SITE INVESTIGATION METHODS

4.1 Description of Sampling Plan

The PSI field activities were performed by True North in a single phase on February 7, 2019. Prior to mobilization, a Site-specific sampling plan was developed to ensure that the objectives of the investigation were achieved.

The sampling plan included the installation of soil borings along the length of the Site to investigate the identified PIPS as well as evaluate soil for compliance with 35 IAC Part 1100, "Clean Construction or Demolition Debris Fill Operations (CCDD)" and uncontaminated soil regulations. Boring spacing was determined with the intent of increasing the likelihood of impact detection while providing representative sampling of existing conditions on the Site.

The following sections describe True North's sampling methodology and field activities.

4.2 Methods of Sampling

All PSI soil sampling procedures were performed in conformance with standards set forth by the Illinois Environmental Protection Agency (IEPA) 35 Illinois Administrative Code (IAC) Part 742, "Tiered Approach to Corrective Action Objectives (TACO)," United States Environmental Protection Agency (USEPA) SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," ASTM E1903-97 standard, "Standard for Environmental Site Assessments: Phase II Environmental Site Assessment Process," Occupational Health & Safety Administration (OSHA) 1910 and 1926 Standards and 35 IAC Part 1100, "Clean Construction or Demolition Debris Fill Operations (CCDD)."

4.2.1 Soil Sampling

Soil sampling procedures involved the advancement of one soil boring at each proposed location. All downhole equipment was decontaminated between each probe point with distilled water and liquid-nox solution and distilled water rinse. All soil cuttings were returned to the borehole of origin after sampling activities were completed. The boreholes were then sealed utilizing bentonite.

Soil samples were collected continuously at two and a half foot intervals. At each interval, the split spoons were opened and a representative soil sample from each interval was immediately placed in a zipper locked, 4-mil plastic bag, with airspace, and allowed to warm to ambient conditions. The soil samples were chosen for field screening and potential laboratory analysis based on visual observations and/or

noticeable odors. The soil samples that were containerized in the plastic bags were screened with a calibrated photoionization detector (PID) with a 10.6eV lamp to determine the presence of photoionizable vapors that are potentially indicative of the presence of volatile organic compounds in the soil. Soil samples that registered the highest PID concentration were considered for laboratory analysis. If no positive PID readings were encountered within a soil boring, soil sample locations were based on an appropriate soil sampling depth as determined by field screening activities. The depth intervals of selected soil samples were noted during soil screening activities. Immediately following screening activities, soil samples were collected directly from the split spoon.

Soil samples collected for VOC analysis followed SW846 Method 5035: "*Closed-System Purge-and-Trap Extraction for Volatile Organics in Soil and Waste Samples*." field preservation protocols. A power handle and syringe were utilized to fill two pre-weighed sodium bi-sulfate preserved vials and one pre-weighed methanol preserved vial with five grams of soil. The protocol also requires collection of one additional glass jar with soil for analysis of moisture content utilizing Method 160.3.

Samples selected for SVOC/PNA, PCB, RCRA metals, and/or pH analyses were containerized in nine-ounce soil sample jars. All soil samples collected for laboratory analyses were placed in laboratory provided containers, labeled, placed in a cooler with ice and logged on a chain of custody form. Soil samples were transported under proper chain-of-custody to PDC Laboratories (PDC) in Springfield, Illinois, a National Environmental Laboratory Accreditation (NELAC) accredited laboratory.

4.3 Analytical Methods

The following table identifies the compounds and analysis methods used to determine the concentrations of compound-of-concerns (COC) in soil.

Compound or Group of Compounds	USEPA Analytical Method Identification	Matrix
Volatile Organic Compounds (VOCs)	5035A/8260B	Soil
Polynuclear Aromatic Hydrocarbons (PNAs)/Semi-volatile organic compounds (SVOCs)	8270/8270SIM	Soil
Polychlorinated Biphenyls (PCBs)	8082	Soil
Resource Conservation Recovery Act (RCRA) Metals	6010B/7470/7471	Soil
Toxicity Characteristic Leachate Procedure (TCLP) RCRA Metals	1311/6020	Soil
pH	9045C	Soil

4.4 Field Activity Documentation

True North performed the field investigation activities at the Site on February 7, 2019. The locations of the proposed soil borings were field marked and the Joint Utility Locating Information for Excavators (JULIE) was notified. Prior to the advancement of each boring, True North and Soil and Materials Consultants (SMC) verified that all underground utility locates were not in conflict with the installation of the soil boring.

The subsurface investigation consisted of advancing a total of eleven soil borings to a depth of five feet below ground surface (bgs). The locations of the borings were based on the location of the PIPs with respect to the proposed improvement project. Figures 3A-3B identifies the approximate locations of the completed soil borings during the PSI activities. The following table provides the boring identification, the approximate location of each boring, the depth of soil sample collection, and justification for the placement of the boring.

Boring ID	Approximate Location	Depth of Sample (feet below grade)	Analytical Data Collected	Justification of Boring Placement
SB-1	217 Lake Avenue	3.5-5′	VOCs, SVOCs, RCRA Metals, pH	CCDD evaluation and PIP at 217 Lake Avenue
SB-2	211 Lake Avenue	1-2.5′	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation and PIP at 211 Lake Avenue
SB-3	East side of Lake Avenue/Central Avenue/Cedar Avenue intersection	3.5-5′	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation and PIP at 229 Central Avenue
SB-4	229 Cedar Avenue	3.5-5′	PNAs, RCRA Metals, pH	CCDD evaluation and PIP at 229 Central Avenue
SB-5	300 Milwaukee Avenue south driveway	1-2.5′	PNAs, RCRA Metals, pH	CCDD evaluation
SB-6	206 Cedar Avenue west entrance driveway	3.5-5′	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation
SB-7	129 Central Avenue	1-2.5′	VOCs, SVOCs, PCBs, RCRA Metals, pH	CCDD evaluation and PIP located at 229 Central Avenue
SB-8	Across from emergency generator	3.5-5′	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation and PIPs located at Central Avenue/alley intersection
SB-9	203 Villa Avenue	3.5-5′	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation and PIP located at 198 Grand Avenue
SB-10	West of Central Avenue/alleyway intersection	3.5-5′	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation and PIP located at 198 Grand Avenue

Boring ID	Approximate Location	Depth of Sample (feet below grade)	Analytical Data Collected	Justification of Boring Placement
SB-11	Northwest corner of Central Avenue/Grand Avenue	1-2.5'	VOCs, PNAs, RCRA Metals, pH	CCDD evaluation and PIPs at 198 Grand Avenue & 203 East Grand Avenue

Field soil identification was used to construct soil boring logs. During True North's PSI activities, surficial materials generally consisted of topsoil except for soil borings SB-4, SB-8, and SB-10, which consisted of gravel fill material and soil boring SB-1 which consisted of approximately three inches of asphalt. Surface materials were generally underlain by apparent native brownish gray silty clay with a variable content of clay and silt depending on the soil boring location. Saturated conditions were encountered at soil boring SB-7 approximately three feet below ground surface.

No visible odors, staining, or other visible signs of potential contamination was observed in any of the soil borings. PID readings were consistent with background concentrations of 0.0 to 0.4 ppm. PID readings are identified on the completed soil boring logs which are presented in Appendix A.

5.0 QUALITY ASSURANCE PROJECT PLAN

The Quality Assurance Project Plan (QAPP) presents the sampling and analytical methods and procedures that were used during implementation of the subject PSI. The following sections include information regarding the organization of objectives, functional activities, and specific sampling and analysis quality assurance (QA) and quality control (QC) procedures. The data is designed to achieve the specific technical and data quality objectives and goals needed to identify and characterize the identified potential contaminants of concern: VOCs, PNAs/SVOCs, PCBS, RCRA Metals, and pH.

The data collected during the limited PSI activities was used to meet the project objectives. Sampling and quality control were designed to be consistent with United States Environmental Protection Agency (USEPA) procedures outlined in *Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4* and the "*EPA Requirements for Quality Assurance Project Plans for Environmental Operations*", *EPA-QA/R-5.*

5.1 Data Quality Objectives

Data Quality Objectives (DQOs) are quantitative and qualitative statements specifying the quality of the data required to support the decision-making process. DQOs for measurement data are expressed in terms of accuracy, precision, completeness, representativeness, and comparability. DQOs define the degree of the total uncertainty in the data that is acceptable for each specific activity during environmental site assessment activities. The uncertainty includes both sampling error and analytical error. Ideally, the prospect of zero uncertainty is the intent; however, the variables associated with the process (field and laboratory) inherently contribute to uncertainty in the data. It was True North's overall objective to keep the total uncertainty within an acceptable range that would not hinder the intended use of the data. In order to achieve the objective, specific data quality requirements such as detection limits, criteria for accuracy and precision, sample representativeness, data compatibility and data completeness were attempted. The overall objectives and requirements were established such that there was a high degree of confidence in the measurements. The data collected during this assessment is being used to address the following: VOCs, PNAs/SVOCs, PCBs, RCRA Metals potentially present or absent in soil (quantitatively) as well as determination of soil pH values.

The objectives with respect to the field investigation were to maximize the confidence in the data. To ensure sample representativeness, sample collection was performed in accordance with USEPA recommended procedures for the collection, preservation, and holding times specified in EPA SW-846.

5.2 General Field Procedures

To assure that field data was collected accurately and correctly, specific standard field procedures as outlined in SW-846 were adhered to during each sampling event.

5.2.1 Equipment & Calibration

To ensure that measurements made in the field were performed with properly calibrated instruments, equipment was calibrated prior to each use as described in the Owner's Manual for each instrument. Field equipment was calibrated at a minimum frequency of once daily, and was maintained and repaired in accordance with the manufacturers specifications. In addition, prior to and after use, each major piece of equipment was cleaned, decontaminated, checked for damage and repaired as needed.

5.2.2 Sample Handling

After a sample was collected, proper sample handling procedures ensured that the sample remains representative. These procedures included:

- chain of custody;
- sample identification;
- sample packaging; and
- proper storage of the sample.

5.2.2.1 Sample Custody

Samples were collected and handled in accordance with standard USEPA chain of custody protocols. The objective of the chain of custody was to maintain an accurate written custody record that traced the possession and handling of the sample from collection through analysis.

Custody is defined if a sample:

- Is in one's actual possession, (or)
- Is in one's view, after being in one's physical possession, (or)
- Is in one's physical possession and then locked away so that no one can tamper with it, (or)
- Is kept in a secured area, restricted to authorized personnel only.

A unique identification number was assigned to each sample collected before it was submitted for shipment to the laboratory. Sample storage and custody was the responsibility of the field personnel. Upon laboratory receipt and analysis of the samples, a copy of the chain of custody form was returned to True North with

the laboratory report. The chain of custody form remained with the samples until the sample was discarded.

5.2.2.2 Sample Identification & Packing

A unique designation was used to identify individual samples for each location. Sample identification numbers were identified in the field and were used to identify the sample on the chain of custody form. After labels were checked, sample jars were checked for competency and placed into coolers with ice for return to the laboratory for analysis. Containerized samples were maintained at a maximum temperature of 4 degrees Celsius during transport.

5.2.3 Sample Delivery

Samples were picked up by laboratory personnel from True North's office the day after sampling was completed. Upon receipt of shipment, the laboratory inspected each sample jar for evidence of tampering. The laboratory sample custodian then removed each sample jar and verified the condition of the sample and containers and compared sample labels to the chain of custody. If any inconsistencies were observed, they were documented on the chain of custody.

PDC has been identified as the laboratory responsible for all environmental laboratory analyses of soil samples collected from the project area.

5.2.4 Decontamination Protocol

Decontamination protocols were strictly adhered to in order to minimize the potential for cross-contamination between sample locations and contamination of areas off-site. Prior to every entry into each borehole, drilling equipment was washed with deionized water and an Alconox, an anionic detergent. Decontamination took place at the sampling locations being all liquids contained in buckets for proper disposal. The sampling equipment was then rinsed with potable water and a final distilled water rinse.

6.0 INVESTIGATION RESULTS

6.1 Soil Analytical Data Evaluation

Soil analytical results were compared to the MACs as referenced within the CCDD regulations. Additionally, per the requirements of 35 IAC 1100.201 (g), the pH of the sampled soil was compared to the pH range of 6.25 to 9.0 units which is the required pH range for CCDD acceptance. Sampled depths and detected analytes in each of the collected subsurface soil samples are summarized and compared to their corresponding MACs. The laboratory analytical report is presented in Appendix B. Additionally, the analytical results are presented in tabular format with comparison to the corresponding MACs within Analytical Summary Tables 1 through 6. The LPC-663 certification provided for the subject project is enclosed within Appendix C.

Volatile Organic Compounds (VOCs)

Soil analytical results from this investigation indicated that concentrations of VOCs were below the MACs published in the CCDD regulations. Soil VOC analytical results are summarized in Table 1.

Semi-volatile organic compounds (SVOCs)

Soil analytical results from this investigation indicated that concentrations of SVOCs were below the MACs published in the CCDD regulations. Soil SVOC analytical results are summarized in Table 2.

Polynuclear aromatic hydrocarbons (PNAs)

Soil analytical results from this investigation indicated that concentrations of PNAs were below the MACs published in the CCDD regulations. Soil PNA analytical results are summarized in Table 3.

Polychlorinated Biphenyls (PCBs)

Soil analytical results from this investigation indicated that concentrations of PCBs were below the MACs published in the CCDD regulations. Soil PCB analytical results are summarized in Table 4.

RCRA Metals and soil pH values

Soil analytical results from this investigation indicated that concentrations of RCRA Metals did not exceed the MACs published in the CCDD regulations at all soil sample

locations with the exception of chromium (total concentrations) at SB-1, SB-2, SB-5, SB-7, SB-8, and SB-11. The RCRA Metal chromium was further evaluated for samples SB-1, SB-2, SB-5, SB-7, SB-8, and SB-11 via the Toxicity Characteristic Leaching Procedure (TCLP) analytical method based on the CCDD regulations, data evaluation protocols identified within these regulations, and the total concentrations of chromium at these six locations. The TCLP analysis simulates leachable concentrations of the metal. The TCLP results, per the CCDD regulations, were compared to the corresponding most stringent soil component of groundwater remediation objective. The TCLP results indicate that the leachable concentrations of chromium within SB-1, SB-2, SB-5, SB-7, SB-8 and SB-11 are below the applicable MAC objective and are therefore compliant with CCDD standards.

Soil analytical results from this investigation for soil pH values were within the acceptable soil pH range. Table 5 summarizes the RCRA Metals (total concentrations), and pH analytical results. Table 6 summarizes the RCRA Metals TCLP analytical results.

7.0 FINDINGS AND CONCLUSIONS

In order to assess whether on-Site soils have been impacted by historical or current adjoining property uses, True North advanced a total of eleven soil borings at representative locations of the Site. Figures 3A-3B identifies the approximate location of the completed soil borings. Soil samples were collected from each boring location and were transported to a NELAC accredited environmental laboratory for analysis of a strategic combination of VOCs, SVOCs, PNAs, PBCs, RCRA Metals and pH, dependent upon sample location and the corresponding PIP being evaluated. The analytical results of these samples are summarized in Tables 1 through 6.

The results of this PSI demonstrated that soils did not exhibit concentrations of the analyzed constituents above the applicable MACs as referenced within the CCDD regulations. Additionally, elevated PID readings or other indications of potential impact were not noted in any of the soil borings.

During the PSI, representative soil samples were assessed for pH value based on the CCDD regulations. Per the requirements of 35 IAC 1100.201 (g), the pH of the sampled soils was compared to the pH range of 6.25 to 9.0 units which is the required pH range for CCDD acceptance. Soils were found to be within the acceptable soil pH range.

Based on the findings of the PSI, soils within the project area have been certified as uncontaminated.

It should be noted that the intent of this limited investigation was to provide environmental due diligence documentation prior to the performance of the right-of-way improvement project proposed for the Site. The findings and conclusions of this report are based on the eleven soil borings advanced at the identified locations. The information provided herein is representative of the existing conditions at the identified boring locations. Varying subsurface conditions, inclusive of soil types, types of contaminants, and concentrations of contaminants, may exist at other locations on-Site for which True North cannot be held accountable for identifying based on scope and/or budget limitations.

8.0 GENERAL RECOMMENDATIONS

This section presents recommendations for proper management of soils based upon the results of True North's investigation described herein.

The PSI did not identify areas of non-certifiable materials based on the eleven (11) soil borings and data collected during the February 2019 investigation. If visual observations, odors, and/or non-CCDD materials are encountered during construction, True North evaluated two options for soils not meeting CCDD regulatory standards, excavation and disposal versus excavation and management on-site.

8.1 Excavation and Disposal

During excavation activities, field personnel could remove the soil and replace with clean fill. This material should be removed and disposed of properly at a landfill and cannot be exported from the Site as clean fill. Additional testing (i.e. waste characterization) for disposal purposes shall be conducted for non-CCDD soils along the project corridor. This course of action represents the highest transportation and disposal cost option.

8.2 Excavation and On-Site Soil Management

Another option is to manage the material on the Site, if feasible. The material could be used as fill material on-Site within trenches or other areas requiring fill. This course of action represents a lowest cost for soil management if soils cannot be managed at a CCDD permitted facility.

FIGURES

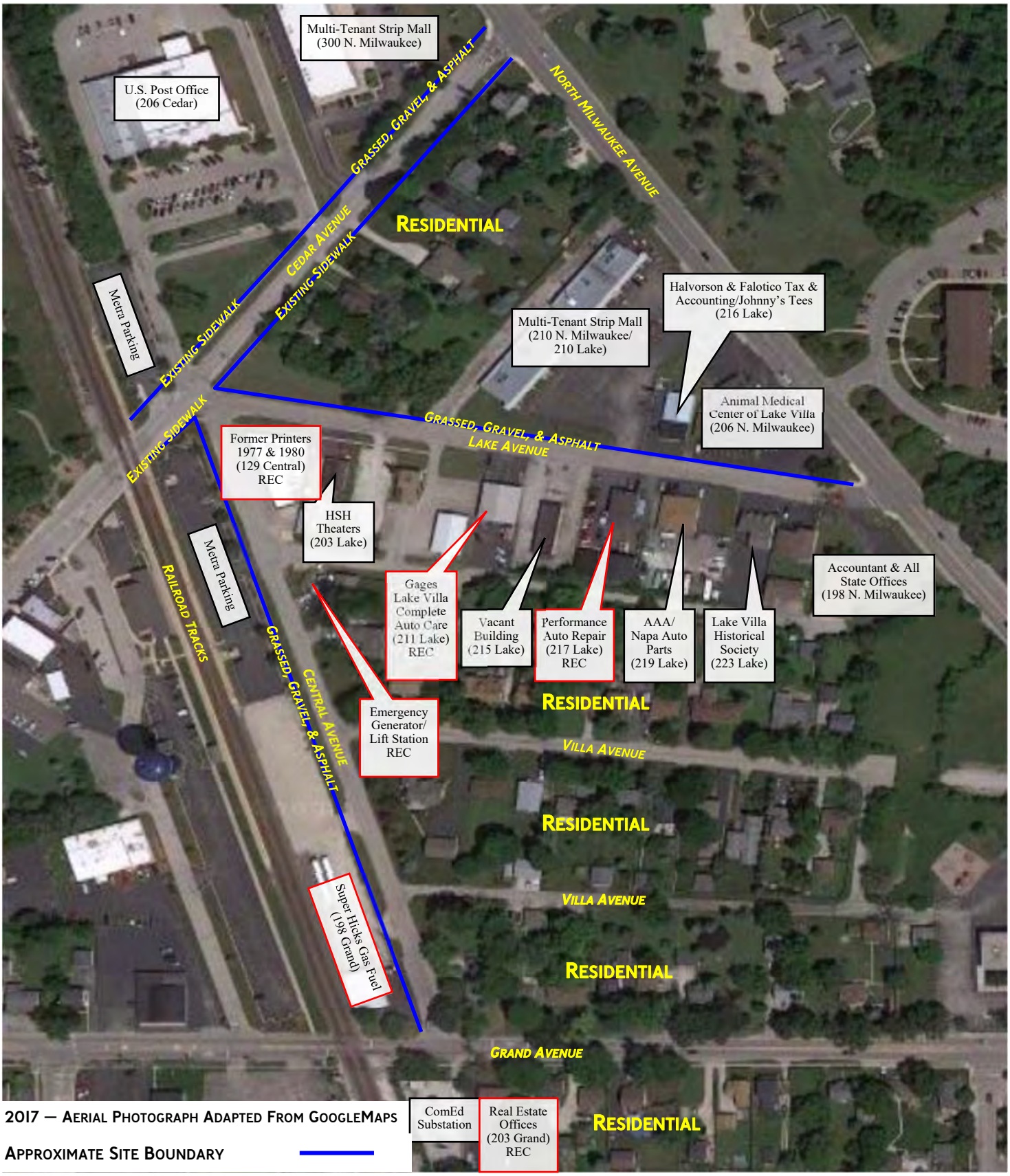
TRUE NORTH CONSULTANTS
1000 EAST WARRENVILLE ROAD
NAPERVILLE, ILLINOIS 60563
ENVIRONMENT : DEVELOPMENT : INFRASTRUCTURE

SITE
RTA ACCESS TO TRANSIT SIDEWALKS
PORTIONS OF CEDAR AVENUE, LAKE AVENUE, & CENTRAL AVENUE
LAKE VILLA, ILLINOIS 60046

CLIENT
APPLIED TECHNOLOGIES, INC.
468 PARK AVENUE
LAKE VILLA, ILLINOIS 60046

PROJECT TII8577
DATE 2/25/2019
SCALE 1 inch=1,000 feet

FIGURE 1



TRUENORTH CONSULTANTS 1000 East Warrenville Road, Suite 140 Naperville, Illinois 60563	Site Location: Proposed RTA Access to Transit Sidewalk Improvement Propject Lake Villa, Illinois Client: Applied Technologies, Inc. 468 Park Avenue Lake Villa, Illinois	Not To Scale	Figure: 2 Project Number: TII8748 Date: Dec. 2018

TRUENORTH CONSULTANTS
1000 EAST WARRENVILLE ROAD
NAPERVILLE, ILLINOIS 60563
ENVIRONMENT : DEVELOPMENT : INFRASTRUCTURE

SITE
RTA ACCESS TO TRANSIT SIDEWALKS
PORTIONS OF CEDAR AVENUE, LAKE AVENUE, & CENTRAL AVENUE
LAKE VILLA, ILLINOIS 60046

CLIENT
APPLIED TECHNOLOGIES, INC.
468 PARK AVENUE
LAKE VILLA, ILLINOIS 60046

PROJECT TII8577
DATE 2/25/2019
SCALE 1 inch=250 feet

FIGURE 3A

TRUE NORTH CONSULTANTS
1000 EAST WARRENVILLE ROAD
NAPERVILLE, ILLINOIS 60563
ENVIRONMENT : DEVELOPMENT : INFRASTRUCTURE

SITE
RTA ACCESS TO TRANSIT SIDEWALKS
PORTIONS OF CEDAR AVENUE, LAKE AVENUE, & CENTRAL AVENUE
LAKE VILLA, ILLINOIS 60046

CLIENT
APPLIED TECHNOLOGIES, INC.
468 PARK AVENUE
LAKE VILLA, ILLINOIS 60046

PROJECT TII8577
DATE 2/25/2019
SCALE 1 inch=250 feet

FIGURE 3B

TABLES

TABLE I

Summary of Soil Analytical Results - Soil Characterization Sampling

Volatile Organic Compounds (VOCs)

CLIENT: Applied Technologies, Inc.

SAMPLE DATE: February 7, 2019

SITE: RTA Access to Transit Sidewalks, Lake Villa, Illinois

LABORATORY: PDC Laboratories, Inc.

PROJECT NUMBER: TII9038

MATRIX: Soil

Analytical Method: EPA Method 5035A/8260B

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-1	SB-2	SB-3	SB-6	SB-7	SB-8	SB-9	SB-10
			Sample Date	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019
			Depth	3.5-5'	1-2.5'	3.5-5'	3.5-5'	1-2.5'	3.5-5'	3.5-5'	3.5-5'
	Value	Objective	Soil Type	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Sand
Acetone	25	MAC		< 0.0495	< 0.0557	< 0.0451	< 0.0538	< 0.0594	< 0.0513	< 0.0433	< 0.0459
Benzene	0.03	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Bromodichloromethane	0.6	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Bromoform	0.8	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Bromomethane	0.2	MAC		< 0.00990	< 0.0111	< 0.00903	< 0.00897	< 0.0119	< 0.0103	< 0.00867	< 0.00918
2-Butanone	17	MAC		< 0.00990	< 0.0111	< 0.00903	< 0.00897	< 0.0119	< 0.0103	< 0.00867	< 0.00918
Carbon disulfide	9	MAC		< 0.00990	< 0.0111	< 0.00903	< 0.00897	< 0.0119	< 0.0103	< 0.00867	< 0.00918
Carbon tetrachloride	0.07	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Chlorobenzene	1	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Chloroform	0.3	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,2-Dibromo-3-chloropropane	0.002	MAC		< 0.000990	< 0.00111	< 0.000903	< 0.000897	< 0.00119	< 0.00103	< 0.000867	< 0.000918
Dibromochloromethane	0.4	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,2-Dibromoethane	0.005	MAC		< 0.00198	< 0.00223	< 0.00181	< 0.00179	< 0.00238	< 0.00205	< 0.00173	< 0.00184
1,2-Dichlorobenzene	17	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,4-Dichlorobenzene	2	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,1-Dichloroethane	23	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,2-Dichloroethane	0.02	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,1-Dichloroethylene	0.06	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
cis-1,2-Dichloroethylene	0.4	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
trans-1,2-Dichloroethylene	0.7	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,2-Dichloropropane	0.03	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
cis-1,3-Dichloropropene	0.005	MAC		< 0.00297	< 0.00334	< 0.00271	< 0.00269	< 0.00357	< 0.00308	< 0.00260	< 0.00275
trans-1,3-Dichloropropene	0.005	MAC		< 0.00297	< 0.00334	< 0.00271	< 0.00269	< 0.00357	< 0.00308	< 0.00260	< 0.00275
1,3-Dichloropropene (total)	0.005	MAC		< 0.00297	< 0.00334	< 0.00271	< 0.00269	< 0.00357	< 0.00308	< 0.00260	< 0.00275
Ethylbenzene	13	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Methyl tertiary-butyl ether	0.32	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Methylene chloride	0.02	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Styrene	4	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Tetrachloroethylene	0.06	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Toluene	12	MAC		< 0.00495	< 0.00557	< 0.00451	0.00469	< 0.00594	< 0.00513	< 0.00433	0.00595
1,1,1-Trichloroethane	2	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
1,1,2-Trichloroethane	0.02	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Trichloroethylene	0.06	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Vinyl Acetate	10	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
Vinyl Chloride	0.01	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
o-Xylene	6.5	MAC		< 0.00495	< 0.00557	< 0.00451	< 0.00449	< 0.00594	< 0.00513	< 0.00433	< 0.00459
m,p-Xylenes	5.6	MAC		< 0.00990	< 0.0111	< 0.00903	< 0.00897	< 0.0119	< 0.0103	< 0.00867	< 0.00918
Xylenes (total)	5.6	MAC		< 0.0148	< 0.0167	< 0.0135	< 0.0135	< 0.0178	< 0.0154	< 0.0130	< 0.0138

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUENORTH CONSULTANTS

TABLE I (Continued)

Summary of Soil Analytical Results - Soil Characterization Sampling

Volatile Organic Compounds (VOCs)

CLIENT: Applied Technologies, Inc. **SAMPLE DATE:** February 7, 2019

SITE: RTA Access to Transit Sidewalks, Lake Villa, Illinois **LABORATORY:** PDC Laboratories, Inc.

PROJECT NUMBER: TII9038 **MATRIX:** Soil

Analytical Method: EPA Method 5035A/8260B

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-11							
			Sample Date	2/7/2019							
			Depth	1-2.5'							
	Value	Objective	Soil Type	Silty Clay							
Acetone	25	MAC		< 0.0527							
Benzene	0.03	MAC		< 0.00527							
Bromodichloromethane	0.6	MAC		< 0.00527							
Bromoform	0.8	MAC		< 0.00527							
Bromomethane	0.2	MAC		< 0.0105							
2-Butanone	17	MAC		< 0.0105							
Carbon disulfide	9	MAC		< 0.0105							
Carbon tetrachloride	0.07	MAC		< 0.00527							
Chlorobenzene	1	MAC		< 0.00527							
Chloroform	0.3	MAC		< 0.00527							
1,2-Dibromo-3-chloropropane	0.002	MAC		< 0.00105							
Dibromochloromethane	0.4	MAC		< 0.00527							
1,2-Dibromoethane	0.005	MAC		< 0.0021							
1,2-Dichlorobenzene	17	MAC		< 0.00527							
1,4-Dichlorobenzene	2	MAC		< 0.00527							
1,1-Dichloroethane	23	MAC		< 0.00527							
1,2-Dichloroethane	0.02	MAC		< 0.00527							
1,1-Dichloroethylene	0.06	MAC		< 0.00527							
cis-1,2-Dichloroethylene	0.4	MAC		< 0.00527							
trans-1,2-Dichloroethylene	0.7	MAC		< 0.00527							
1,2-Dichloropropane	0.03	MAC		< 0.00527							
cis-1,3-Dichloropropene	0.005	MAC		< 0.00316							
trans-1,3-Dichloropropene	0.005	MAC		< 0.00316							
1,3-Dichloropropene (total)	0.005	MAC		< 0.00316							
Ethylbenzene	13	MAC		< 0.00527							
Methyl tertiary-butyl ether	0.32	MAC		< 0.00527							
Methylene chloride	0.02	MAC		< 0.00527							
Styrene	4	MAC		< 0.00527							
Tetrachloroethylene	0.06	MAC		< 0.00527							
Toluene	12	MAC		< 0.00527							
1,1,1-Trichloroethane	2	MAC		< 0.00527							
1,1,2-Trichloroethane	0.02	MAC		< 0.00527							
Trichloroethylene	0.06	MAC		< 0.00527							
Vinyl Acetate	10	MAC		< 0.00527							
Vinyl Chloride	0.01	MAC		< 0.00527							
o-Xylene	6.5	MAC		< 0.00527							
m,p-Xylenes	5.6	MAC		< 0.0105							
Xylenes (total)	5.6	MAC		< 0.0158							

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUENORTH CONSULTANTS

TABLE 2

Summary of Soil Analytical Results - Soil Characterization Sampling

Semi-Volatile Organic Compounds (SVOCs)

CLIENT: Applied Technologies, Inc.

SAMPLE DATE: February 7, 2019

SITE: RTA Access to Transit Sidewalks, Lake Villa, Illinois

LABORATORY: PDC Laboratories, Inc.

PROJECT NUMBER: TII9038

MATRIX: Soil

Analytical Method: EPA Method 8270

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-1	SB-7						
			Sample Date	2/7/2019	2/7/2019						
			Depth	3.5-5'	1-2.5'						
	Value	Objective	Soil Type	Silty Clay	Silty Clay						
Acenaphthene	570	MAC		< 0.402	< 0.418						
Anthracene	12000	MAC		< 0.402	< 0.418						
Benzo(a)anthracene	1.8	MAC		< 0.402	< 0.418						
Benzo(b)fluoranthene	2.1	MAC		< 0.402	< 0.418						
Benzo(k)fluoranthene	9.0	MAC		< 0.402	< 0.418						
Benzo(a)pyrene	2.1	MAC		0.119	< 0.0753						
Benzoic Acid	400	MAC		< 0.402	< 0.418						
Bis(2-chloroethyl)ether	0.66	MAC		< 0.402	< 0.418						
Bis(2-ethylhexyl)phthalate	46	MAC		< 0.402	< 0.418						
Butyl benzyl phthalate	930	MAC		< 0.402	< 0.418						
Carbazole	0.6	MAC		< 0.402	< 0.418						
4-Chloroaniline	0.7	MAC		< 0.402	< 0.418						
2-Chlorophenol	1.5	MAC		< 0.402	< 0.418						
Chrysene	88	MAC		< 0.402	< 0.418						
Di-n-butyl phthalate	2300	MAC		< 1.45	< 1.51						
Di-n-octyl phthalate	1600	MAC		< 0.402	< 0.418						
Dibenz(a,h)anthracene	0.42	MAC		< 0.0724	< 0.0753						
3,3'-Dichlorobenzidine	1.3	MAC		< 0.0805	< 0.0837						
2,4-Dichlorophenol	0.48	MAC		< 0.241	< 0.251						
Diethyl phthalate	470	MAC		< 0.402	< 0.418						
2,4-Dimethylphenol	9	MAC		< 0.402	< 0.418						
2,4-Dinitrophenol	3.3	MAC		< 0.181	< 0.188						
2,4-Dinitrotoluene	0.25	MAC		< 0.121	< 0.126						
2,6-Dinitrotoluene	0.26	MAC		< 0.121	< 0.126						
Fluoranthene	3100	MAC		0.422	< 0.418						
Fluorene	560	MAC		< 0.402	< 0.418						
Hexachlorobenzene	0.4	MAC		< 0.121	< 0.126						
Hexachlorocyclopentadiene	1.1	MAC		< 0.402	< 0.418						
Hexachloroethane	0.5	MAC		< 0.241	< 0.251						
Indeno(1,2,3-cd)pyrene	1.6	MAC		< 0.402	< 0.418						
Isophorone	8	MAC		< 0.402	< 0.418						
2-Methylphenol	15	MAC		< 0.402	< 0.418						
Naphthalene	1.8	MAC		< 0.402	< 0.418						
Nitrobenzene	0.26	MAC		< 0.0905	< 0.0942						
N-Nitroso-di-n-propylamine	0.0018	MAC		< 0.000720	< 0.000749						
N-Nitrosodiphenylamine	1	MAC		< 0.402	< 0.418						
Pentachlorophenol	0.02	MAC		< 0.0121	< 0.0126						
Phenol	100	MAC		< 0.402	< 0.418						
Pyrene	2300	MAC		< 0.402	< 0.418						
1,2,4-Trichlorobenzene	5	MAC		< 0.402	< 0.418						
2,4,5-Trichlorophenol	26	MAC		< 0.402	< 0.418						
2,4,6-Trichlorophenol	0.66	MAC		< 0.181	< 0.188						

Notes:

Constituents that are not identifed in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUENORTH CONSULTANTS

TABLE 3

Summary of Soil Analytical Results - Soil Characterization Sampling

Polynuclear Aromatic Hydrocarbons (PNAs)

CLIENT: Applied Technologies, Inc.

SAMPLE DATE: February 7, 2019

SITE: RTA Access to Transit Sidewalks, Lake Villa, Illinois

LABORATORY: PDC Laboratories, Inc.

PROJECT NUMBER: TII9038

MATRIX: Soil

Analytical Method: EPA Method 8270

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-2	SB-3	SB-4	SB-5	SB-6	SB-8	SB-9	SB-10
			Sample Date	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019
			Depth	1-2.5'	3.5-5'	3.5-5'	1-2.5'	3.5-5'	3.5-5'	3.5-5'	3.5-5'
	Value	Objective	Soil Type	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Sand
Acenaphthene	**570**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Anthracene	**12000**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Benzo(a)anthracene	**1.8**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Benzo(b)fluoranthene	**2.1**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Benzo(k)fluoranthene	**9.0**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Benzo(a)pyrene	**2.1**	**MAC**		< 0.0707	< 0.0651	< 0.0641	< 0.0676	< 0.0616	< 0.0685	< 0.0619	< 0.0625
Chrysene	**88**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Dibenz(a,h)anthracene	**0.42**	**MAC**		< 0.0707	< 0.0651	< 0.0641	< 0.0676	< 0.0616	< 0.0685	< 0.0619	< 0.0625
Fluoranthene	**3100**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Fluorene	**560**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Indeno(1,2,3-cd)pyrene	**1.6**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Naphthalene	**1.8**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341
Pyrene	**2300**	**MAC**		< 0.386	< 0.355	< 0.350	< 0.369	< 0.336	< 0.373	< 0.338	< 0.341

Notes:

Constituents that are not identifed in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUENORTH CONSULTANTS

TABLE 3 (Continued)

Summary of Soil Analytical Results - Soil Characterization Sampling

Polynuclear Aromatic Hydrocarbons (PNAs)

CLIENT: Applied Technologies, Inc.

SAMPLE DATE: February 7, 2019

SITE: RTA Access to Transit Sidewalks, Lake Villa, Illinois

LABORATORY: PDC Laboratories, Inc.

PROJECT NUMBER: TII9038

MATRIX: Soil

Analytical Method: EPA Method 8270

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-II							
			Sample Date	2/7/2019							
			Depth	I-2.5'							
	Value	Objective	Soil Type	Silty Clay							
Acenaphthene	**570**	**MAC**		< 0.355							
Anthracene	**12000**	**MAC**		< 0.355							
Benzo(a)anthracene	**1.8**	**MAC**		< 0.355							
Benzo(b)fluoranthene	**2.1**	**MAC**		< 0.355							
Benzo(k)fluoranthene	**9.0**	**MAC**		< 0.355							
Benzo(a)pyrene	**2.1**	**MAC**		< 0.0651							
Chrysene	**88**	**MAC**		< 0.355							
Dibenz(a,h)anthracene	**0.42**	**MAC**		< 0.0651							
Fluoranthene	**3100**	**MAC**		< 0.355							
Fluorene	**560**	**MAC**		< 0.355							
Indeno(1,2,3-cd)pyrene	**1.6**	**MAC**		< 0.355							
Naphthalene	**1.8**	**MAC**		< 0.355							
Pyrene	**2300**	**MAC**		< 0.355							

Notes:

Constituents that are not identifed in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUENORTH CONSULTANTS

TABLE 4

Summary of Soil Analytical Results - Soil Characterization Sampling

Polychlorinated Biphenyls (PCBs)

CLIENT: Applied Technologies, Inc.

SITE: Applied Technologies, Inc.

PROJECT NUMBER: RTA Access to Transit Sidewalks, Lake \
TII9038

SAMPLE DATE: February 7, 2019

LABORATORY: PDC Laboratories, Inc.

MATRIX: Soil

Analytical Method: EPA Method 8082

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-7							
			Sample Date	2/7/2019							
			Depth	1-2.5'							
	Value	Objective	Soil Type	Silty Clay							
Aroclor 1016	1	MAC		< 0.0437							
Aroclor 1221	1	MAC		< 0.0437							
Aroclor 1232	1	MAC		< 0.0437							
Aroclor 1242	1	MAC		< 0.0437							
Aroclor 1248	1	MAC		< 0.0437							
Aroclor 1254	1	MAC		< 0.0437							
Aroclor 1260	1	MAC		< 0.0437							

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUE NORTH CONSULTANTS

TABLE 5

Summary of Soil Analytical Results - Soil Characterization Sampling

Resource Conservation Recovery Act (RCRA) Metals

CLIENT: Applied Technologies, Inc.

SITE: Applied Technologies, Inc.

PROJECT NUMBER: RTA Access to Transit Sidewalks, Lake \
TII9038

SAMPLE DATE: February 7, 2019

LABORATORY: PDC Laboratories, Inc.

MATRIX: Soil

Analytical Method: EPA Method 6010/6020

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8
			Sample Date	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019
			pH	8.1	7.9	8.3	7.6	9.0	8.2	8.3	8.4
			6.25 ≤ pH ≤ 9.0	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			Depth	3.5-5'	1-2.5'	3.5-5'	3.5-5'	1-2.5'	3.5-5'	1-2.5'	3.5-5'
	Value	Objective	Soil Type	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Arsenic	**13**	**MAC**		4.94	11.2	4.26	7.44	8.90	8.34	10.2	6.15
Barium	**1,500**	**MAC**		97.8	135	52.0	51.7	90.8	62.8	63.5	60.1
Cadmium	**5.2**	**MAC**		< 0.573	< 0.618	< 0.570	< 0.546	< 0.596	< 0.574	< 0.664	< 0.625
Chromium	**21**	**MAC**		**24.4**	**36.0**	17.9	17.2	**29.4**	17.0	**29.8**	**24.0**
Lead	**107**	**MAC**		22.5	16.8	10.5	10.0	15.2	28.7	31.1	12.0
Mercury	**0.89**	**MAC**		< 0.459	< 0.494	< 0.456	< 0.437	< 0.477	0.247	0.0523	0.0263
Selenium	**1.3**	**MAC**		< 0.573	< 0.618	< 0.570	< 0.546	< 0.596	< 0.574	< 0.664	< 0.625
Silver	**4.4**	**MAC**		< 0.0573	< 0.0618	< 0.0570	< 0.0546	< 0.0596	< 0.0574	< 0.0664	< 0.0625

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUE NORTH CONSULTANTS

TABLE 5 (Continued)

Summary of Soil Analytical Results - Soil Characterization Sampling

Resource Conservation Recovery Act (RCRA) Metals

CLIENT: Applied Technologies, Inc.
SAMPLE DATE: February 7, 2019

SITE: Applied Technologies, Inc.
LABORATORY: PDC Laboratories, Inc.

PROJECT NUMBER: RTA Access to Transit Sidewalks, Lake \
TII9038
MATRIX: Soil

Analytical Method: EPA Method 6010/6020

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-9	SB-10	SB-11					
			Sample Date	2/7/2019	2/7/2019	2/7/2019					
			pH	8.9	8.7	8.5					
			6.25 ≤ pH ≤ 9.0	Yes	Yes	Yes					
			Depth	3.5-5'	3.5-5'	1-2.5'					
	Value	Objective	Soil Type	Silty Clay	Silty Sand	Silty Clay					
Arsenic	**13**	**MAC**		3.34	8.02	10.7					
Barium	**1,500**	**MAC**		38.1	26.2	153					
Cadmium	**5.2**	**MAC**		< 0.548	< 0.561	< 0.642					
Chromium	**21**	**MAC**		11.8	10.0	**35.4**					
Lead	**107**	**MAC**		7.51	14.5	17.5					
Mercury	**0.89**	**MAC**		< 0.0219	< 0.0224	0.0449					
Selenium	**1.3**	**MAC**		< 0.548	< 0.561	< 0.642					
Silver	**4.4**	**MAC**		< 0.0548	< 0.0561	0.0760					

Notes:
Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H
< = Analyte not detected (i.e. less than RL or MDL)
All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.
NA = This constituent was not analyzed.
NE = No remediation objective established by the IEPA for this constituent.
Bold identifies an exceedence of the referenced objective.

TRUE NORTH CONSULTANTS

TABLE 6

Summary of Soil Analytical Results - Soil Characterization Sampling

Resource Conservation Recovery Act (RCRA) Metals

CLIENT: Applied Technologies, Inc.

SAMPLE DATE: February 7, 2019

SITE: RTA Access to Transit Sidewalks, Lake Villa, Illinois

LABORATORY: PDC Laboratories, Inc.

PROJECT NUMBER: TII9038

MATRIX: Soil

Analytical Method: EPA Method 6020

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	SB-1	SB-2	SB-5	SB-7	SB-8	SB-11		
			Sample Date	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019	2/7/2019		
			Depth	3.5-5'	1-2.5'	1-2.5'	1-2.5'	3.5-5'	1-2.5'		
	Value	Objective	Soil Type	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay		
Arsenic	**0.05**	**SCOG**									
Barium	**2**	**SCOG**									
Cadmium	**0.005**	**SCOG**									
Chromium	**0.1**	**SCOG**		0.00888	0.00805	0.00865	0.00870	0.00689	0.0133		
Lead	**0.0075**	**SCOG**									
Mercury	**0.002**	**SCOG**									
Selenium	**0.05**	**SCOG**									
Silver	**0.05**	**SCOG**									

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

As an alternative to the subject maximum allowable concentration value, compliance verification may be determined by comparing soil sample extraction results (TCLP/SPLP) for this constituent to the respective TACO Class I Soil Component of the Groundwater Ingestion Exposure Route objective (35 Ill. Admin. Code 742.Appendix B, Table A). (See 35 IAC 1100.610(b)(1)(B); 1100.610(b)(3)(C)).

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per liter (mg/L) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TRUE NORTH CONSULTANTS

APPENDIX A

Soil Boring Logs

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-1

Sheet 1 of 1

BOREHOLE LOCATION: 216 Lake Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
	0							Asphalt			No odors or staining noted throughout boring
								Fill: Fill material consists of sand and gravel			
		1	Sp	D		12		Silty Clay: Black, low plasticity, very stiff	0.0		
		2	Sp	D		18			0.0		Soil sample containerized for VOCs, SVOCs, RCRA Metals, and pH
	-5							Silty Clay: Blackish gray, low plasticity, very stiff			
								End of boring at 5'			
	-10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUENORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-2

Sheet 1 of 1

BOREHOLE LOCATION: Across from 211 Lake Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		12		Silty Clay: Brown, low plasticity, very stiff	0.1		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
		2	Sp	D		18			0.0		
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-3

Sheet 1 of 1

BOREHOLE LOCATION: NEC of Lake Avenue and Cedar Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		6		Silty Clay: Brownish black, low plasticity, very stiff	0.1		
		2	Sp	D		12		Silty Clay: Brownish gray, low plasticity, firm to stiff	0.2		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-4

Sheet 1 of 1

BOREHOLE LOCATION: 229 Cedar Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Fill: Fill material consists of gravel			No odors or staining noted throughout boring
		1	Sp	D		9		Silty Clay: Brown, low plasticity, stiff	0.4		
		2	Sp	D		12		Silty Clay: Brownish gray, low plasticity, firm to stiff	0.4		Soil sample containerized for PNAs, RCRA Metals, and pH
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-5

Sheet 1 of 1

BOREHOLE LOCATION: 300 Cedar Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		18		Silty Clay: Brownish gray, low plasticity, firm	0.1		Soil sample containerized for PNAs, RCRA Metals, and pH
		2	Sp	D		18			0.1		
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-6

Sheet 1 of 1

BOREHOLE LOCATION: NWC of Cedar Avenue and Lake Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		12		Silty Clay: Black, low plasticity, stiff	0.1		
								Silty Clay: Brownish gray, low plasticity, firm			
		2	Sp	D		12			0.2		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
-5	5							Silt: Gray, very fine, moist			
								End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUENORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-7

Sheet 1 of 1

BOREHOLE LOCATION: 129 Central Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		12		Silty Clay: Gray,medium plasticity, firm to soft, moist	0.0		Soil sample containerized for VOCs, SVOCs, PCBs, RCRA Metals, and pH
		2	Sp	D		6		Silty Clay: Gray, with small gravel, wet	0.0		
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-8

Sheet 1 of 1

BOREHOLE LOCATION: Near Metra Parking Lot on Central Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Fill: Fill material consists of gravel			No odors or staining noted throughout boring
		1	Sp	D		8		Silty Clay: Black, low plasticity, stiff	0.0		
		2	Sp	D		12		Silty Clay: Brownish gray, low plasticity, stiff	0.0		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-9

Sheet 1 of 1

BOREHOLE LOCATION: SWC of Central Avenue and Villa Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		12		Silty Clay: Black, medium plasticity, firm	0.1		
								Silty Clay: Blackish brown, low plasticity, stiff			
		2	Sp	D		18			0.1		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUE NORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-10

Sheet 1 of 1

BOREHOLE LOCATION: North of Super Hicks Gas Fuel		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Fill: Fill material consists of gravel			No odors or staining noted throughout boring
		1	Sp	D		12		Silty Clay: Brownish black, low plasticity, very stiff	0.0		
		2	Sp	D		18		Silty Sand: Brown, very fine, some gray clay	0.0		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

TRUENORTH CONSULTANTS

Project Name: RTA Access to Transit Sidewalks
Project Location: Lake Villa, Illinois
Project Number: T119038

Log of Boring SB-11

Sheet 1 of 1

BOREHOLE LOCATION: NWC of Central Avenue and Grand Avenue		
DATE BEGAN: 2/7/2019	**DATE FINISHED:** 2/7/2019	**FIELD GEOLOGIST:** SA
GROUND SURFACE ELEVATION:	**TOTAL DEPTH OF BOREHOLE:** 5'	**CHECKED BY:**
GWL DATE :	**GWL DEPTH:**	
DRILLING METHOD: Truck mounted	**CONTRACTOR:** SMC	

Water Level Elevation, feet	Depth, feet	Sample No.	Sample Method	Sample Type	Penetrometer (tons/ft2)	REC (in.)	USCS	DESCRIPTION	PID	Sample Location	REMARKS
0	0							Topsoil			No odors or staining noted throughout boring
		1	Sp	D		12		Silty Clay: Brown, low plasticity, stiff	0.1		Soil sample containerized for VOCs, PNAs, RCRA Metals, and pH
		2	Sp	D		12		Sand: Brown, coarse	0.1		
								Silty Clay: Brown, low plasticity, stiff			
-5	5							End of boring at 5'			
-10	10										

Sp = Split Spoon Sample Pp = Push Probe Sample Ha = Hand Auger D = Discrete St = Shelby Tube C = Composite

APPENDIX B

Laboratory Analytical Reports

PDC Laboratories, Inc.

Monday, February 25, 2019

Marjory Bredrup

True North Consultants
1000 East Warrenville Rd. #140
Naperville, IL 60563

TEL: (630) 717-2880

FAX: (630) 689-5881

RE: RTA Access to Transit Sidewalks: Lake Villa, IL AMENDED REPORT PDC WO: 19B0120

PDC Laboratories, Inc. received 11 sample(s) on 2/7/2019 for the analyses presented in the following report.

All applicable quality control procedures met method specific acceptance criteria unless otherwise noted.

This is an AMENDED REPORT issued subsequent to the orginal report. Please see the case narrative for the nature of the amendment.

If you have any questions, please feel free to contact me at (217) 753-1148.

Respectfully submitted,

Kristen A. Potter

Project Manager

Certifications: NELAP/NELAC - IL #100323

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Case Narrative

This report was originally issued on 2/15/19. Since then the client requested that samples SB-1, SB-2, SB-5, SB-7, SB-8 and SB-10 be analyzed for TCLP chromium. This amended report includes the additional data.

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-1 **Lab ID:** 19B0120-01
Collection Date: 2/7/19 8:30 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Benzene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Bromodichloromethane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Bromoform	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Bromomethane	U	0.00990		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*2-Butanone	U	0.00990		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Carbon disulfide	U	0.00990		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Chlorobenzene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Chloroform	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.000990		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Dibromochloromethane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00198		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00297		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00297		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00297		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Ethylbenzene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Methylene chloride	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Styrene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Tetrachloroethene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Toluene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Trichloroethene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Vinyl acetate	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Vinyl chloride	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
o-Xylene	U	0.00495		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
m,p-Xylenes	U	0.00990		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
*Xylenes (total)	U	0.0148		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*93 %*		*75-120*		2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*116 %*		*75-119*		2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
Surrogate: Toluene-d8		*102 %*		*78-114*		2/8/19 8:20	2/8/19 16:09	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Anthracene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
***Benzo(a)pyrene**	**0.119**	0.0724		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-1 **Lab ID:** 19B0120-01
Collection Date: 2/7/19 8:30 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Benzoic acid	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Bis(2-chloroethyl)ether	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Bis(2-ethylhexyl)phthalate	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Butyl benzyl phthalate	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Carbazole	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*4-Chloroaniline	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2-Chlorophenol	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Chrysene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Di-n-butyl phthalate	U	1.45		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Di-n-octyl phthalate	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0724		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*3,3'-Dichlorobenzidine	U	0.0805		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,4-Dichlorophenol	U	0.241		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Diethyl phthalate	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,4-Dimethylphenol	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,4-Dinitrophenol	U	0.181		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,4-Dinitrotoluene	U	0.121		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,6-Dinitrotoluene	U	0.121		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
***Fluoranthene**	**0.422**	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Fluorene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Hexachlorobenzene	U	0.121		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Hexachlorocyclopentadiene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Hexachloroethane	U	0.241		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Isophorone	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2-Methylphenol	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Naphthalene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Nitrobenzene	U	0.0905		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*N-Nitroso-di-n-propylamine	U	0.000720	M	mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*N-Nitrosodiphenylamine	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Pentachlorophenol	U	0.0121		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Phenol	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*Pyrene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*1,2,4-Trichlorobenzene	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,4,5-Trichlorophenol	U	0.402		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
*2,4,6-Trichlorophenol	U	0.181		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*75 %*		*40-120*		2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Surrogate: 2-Fluorophenol		*61 %*		*20-115*		2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*77 %*		*45-135*		2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Surrogate: Phenol-d6		*58 %*		*20-100*		2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*77 %*		*60-130*		2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Surrogate: 2,4,6-Tribromophenol		*68 %*		*30-100*		2/8/19 14:21	2/8/19 19:04	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**4.94**	2.87		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:43	SW6020A R1	KSH
***Barium**	**97.8**	5.73		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:43	SW6020A R1	KSH
*Cadmium	U	0.573		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:43	SW6020A R1	KSH
***Chromium**	**24.4**	0.573		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:43	SW6020A R1	KSH
***Lead**	**22.5**	0.573		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:43	SW6020A R1	KSH
*Mercury	U	0.459		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:09	SW6020A R1	KSH

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-1 **Lab ID:** 19B0120-01
Collection Date: 2/7/19 8:30 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Selenium	U	0.573		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:43	SW6020A R1	KSH
*Silver	U	0.0573		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:09	SW6020A R1	KSH
TCLP Metals by ICP									
***Chromium**	**0.00888**	0.00500		mg/L	1	2/20/19 11:00	2/20/19 20:18	SW6010B R2	AEH
Conventional Chemistry Parameters									
***pH**	**8.1**	0.010		pH Units	1	2/11/19 10:41	2/11/19 16:06	SW9045C R3	OPM
Percent Solids	**81.3**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-2 **Lab ID:** 19B0120-02
Collection Date: 2/7/19 8:45 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Benzene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Bromodichloromethane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Bromoform	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Bromomethane	U	0.0111		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*2-Butanone	U	0.0111		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Carbon disulfide	U	0.0111		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Chlorobenzene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Chloroform	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.00111		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Dibromochloromethane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00223		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00334		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00334		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00334		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Ethylbenzene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Methylene chloride	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Styrene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Tetrachloroethene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Toluene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Trichloroethene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Vinyl acetate	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Vinyl chloride	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
o-Xylene	U	0.00557		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
m,p-Xylenes	U	0.0111		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
*Xylenes (total)	U	0.0167		mg/Kg dry	1	2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*96 %*		*75-120*		2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*75-119*		2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
Surrogate: Toluene-d8		*94 %*		*78-114*		2/8/19 8:20	2/8/19 16:37	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Anthracene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0707		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-2 **Lab ID:** 19B0120-02
Collection Date: 2/7/19 8:45 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0707		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Fluoranthene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Fluorene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Naphthalene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
*Pyrene	U	0.386		mg/Kg dry	1	2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*69 %*		*38-122*		2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*78 %*		*45-136*		2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*74 %*		*57-122*		2/11/19 15:06	2/11/19 18:57	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**11.2**	3.09		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:47	SW6020A R1	KSH
***Barium**	**135**	6.18		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:47	SW6020A R1	KSH
*Cadmium	U	0.618		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:47	SW6020A R1	KSH
***Chromium**	**36.0**	0.618		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:47	SW6020A R1	KSH
***Lead**	**16.8**	0.618		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:47	SW6020A R1	KSH
*Mercury	U	0.494		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:12	SW6020A R1	KSH
*Selenium	U	0.618		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:47	SW6020A R1	KSH
*Silver	U	0.0618		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:12	SW6020A R1	KSH
TCLP Metals by ICP									
***Chromium**	**0.00805**	0.00500		mg/L	1	2/20/19 11:00	2/20/19 20:23	SW6010B R2	AEH
Conventional Chemistry Parameters									
***pH**	**7.9**	0.010		pH Units	1	2/11/19 10:41	2/11/19 16:06	SW9045C R3	OPM
Percent Solids	**77.5**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-3 **Lab ID:** 19B0120-03
Collection Date: 2/7/19 8:55 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Benzene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Bromodichloromethane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Bromoform	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Bromomethane	U	0.00903		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*2-Butanone	U	0.00903		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Carbon disulfide	U	0.00903		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Carbon tetrachloride	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Chlorobenzene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Chloroform	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,2-Dibromo-3-chloropropane	U	0.000903		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Dibromochloromethane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,2-Dibromoethane	U	0.00181		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,2-Dichlorobenzene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,4-Dichlorobenzene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,1-Dichloroethane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,2-Dichloroethane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,1-Dichloroethene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*cis-1,2-Dichloroethene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*trans-1,2-Dichloroethene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,2-Dichloropropane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*cis-1,3-Dichloropropene	U	0.00271		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*trans-1,3-Dichloropropene	U	0.00271		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,3-Dichloropropene (total)	U	0.00271		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Ethylbenzene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Methyl tert-butyl ether	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Methylene chloride	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Styrene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Tetrachloroethene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Toluene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,1,1-Trichloroethane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*1,1,2-Trichloroethane	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Trichloroethene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Vinyl acetate	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Vinyl chloride	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
o-Xylene	U	0.00451		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
m,p-Xylenes	U	0.00903		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
*Xylenes (total)	U	0.0135		mg/Kg dry	1	2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
Surrogate: 4-Bromofluorobenzene		*73 %*	C1, I	*75-120*		2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
Surrogate: 1,2-Dichloroethane-d4		*115 %*		*75-119*		2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
Surrogate: Toluene-d8		*123 %*	S2	*78-114*		2/14/19 8:28	2/14/19 22:25	SW8260B R2	CDM
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Anthracene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0651		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-3 **Lab ID:** 19B0120-03
Collection Date: 2/7/19 8:55 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0651		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Fluoranthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Fluorene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Naphthalene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
*Pyrene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*64 %*		*38-122*		2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*70 %*		*45-136*		2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*71 %*		*57-122*		2/11/19 15:06	2/11/19 19:28	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**4.26**	2.85		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:50	SW6020A R1	KSH
***Barium**	**52.0**	5.70		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:50	SW6020A R1	KSH
*Cadmium	U	0.570		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:50	SW6020A R1	KSH
***Chromium**	**17.9**	0.570		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:50	SW6020A R1	KSH
***Lead**	**10.5**	0.570		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:50	SW6020A R1	KSH
*Mercury	U	0.456		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:16	SW6020A R1	KSH
*Selenium	U	0.570		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:50	SW6020A R1	KSH
*Silver	U	0.0570		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:16	SW6020A R1	KSH
Conventional Chemistry Parameters									
***pH**	**8.3**	0.010		pH Units	1	2/11/19 10:41	2/11/19 16:06	SW9045C R3	OPM
Percent Solids	**83.5**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-4 **Lab ID:** 19B0120-04
Collection Date: 2/7/19 9:10 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Anthracene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0641		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Chrysene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0641		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Fluoranthene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Fluorene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Naphthalene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
*Pyrene	U	0.350		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*65 %*		*38-122*		2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*69 %*		*45-136*		2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*71 %*		*57-122*		2/11/19 15:06	2/11/19 20:00	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**7.44**	2.73		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:54	SW6020A R1	KSH
***Barium**	**51.7**	5.46		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:54	SW6020A R1	KSH
*Cadmium	U	0.546		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:54	SW6020A R1	KSH
***Chromium**	**17.2**	0.546		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:54	SW6020A R1	KSH
***Lead**	**10.0**	0.546		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:54	SW6020A R1	KSH
*Mercury	U	0.437		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:19	SW6020A R1	KSH
*Selenium	U	0.546		mg/Kg dry	10	2/11/19 9:00	2/12/19 14:54	SW6020A R1	KSH
*Silver	U	0.0546		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:19	SW6020A R1	KSH
Conventional Chemistry Parameters									
***pH**	**7.6**	0.010		pH Units	1	2/11/19 10:41	2/11/19 16:06	SW9045C R3	OPM
Percent Solids	**85.2**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-5 **Lab ID:** 19B0120-05
Collection Date: 2/7/19 9:20 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Anthracene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0676		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Chrysene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0676		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Fluoranthene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Fluorene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Naphthalene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
*Pyrene	U	0.369		mg/Kg dry	1	2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*63 %*		*38-122*		2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*70 %*		*45-136*		2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*70 %*		*57-122*		2/11/19 15:06	2/11/19 20:32	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**8.90**	2.98		mg/Kg dry	10	2/11/19 9:00	2/12/19 15:18	SW6020A R1	KSH
***Barium**	**90.8**	5.96		mg/Kg dry	10	2/11/19 9:00	2/12/19 15:18	SW6020A R1	KSH
*Cadmium	U	0.596		mg/Kg dry	10	2/11/19 9:00	2/12/19 15:18	SW6020A R1	KSH
***Chromium**	**29.4**	0.596		mg/Kg dry	10	2/11/19 9:00	2/12/19 15:18	SW6020A R1	KSH
***Lead**	**15.2**	0.596		mg/Kg dry	10	2/11/19 9:00	2/12/19 15:18	SW6020A R1	KSH
*Mercury	U	0.477		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:23	SW6020A R1	KSH
*Selenium	U	0.596		mg/Kg dry	10	2/11/19 9:00	2/12/19 15:18	SW6020A R1	KSH
*Silver	U	0.0596		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:23	SW6020A R1	KSH
TCLP Metals by ICP									
***Chromium**	**0.00865**	0.00500		mg/L	1	2/20/19 11:00	2/20/19 20:29	SW6010B R2	AEH
Conventional Chemistry Parameters									
***pH**	**9.0**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**80.9**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-6 **Lab ID:** 19B0120-06
Collection Date: 2/7/19 9:35 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0538		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Benzene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Bromodichloromethane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Bromoform	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Bromomethane	U	0.00897		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*2-Butanone	U	0.00897		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Carbon disulfide	U	0.00897		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Chlorobenzene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Chloroform	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.000897		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Dibromochloromethane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00179		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00269		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00269		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00269		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Ethylbenzene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Methylene chloride	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Styrene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Tetrachloroethene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
***Toluene**	**0.00469**	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Trichloroethene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Vinyl acetate	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Vinyl chloride	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
o-Xylene	U	0.00449		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
m,p-Xylenes	U	0.00897		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
*Xylenes (total)	U	0.0135		mg/Kg dry	1	2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*91 %*		*75-120*		2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*117 %*		*75-119*		2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
Surrogate: Toluene-d8		*104 %*		*78-114*		2/8/19 8:20	2/8/19 17:35	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Anthracene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0616		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-6 **Lab ID:** 19B0120-06
Collection Date: 2/7/19 9:35 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0616		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Fluoranthene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Fluorene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Naphthalene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
*Pyrene	U	0.336		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*62 %*		*38-122*		2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*64 %*		*45-136*		2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*77 %*		*57-122*		2/11/19 15:06	2/11/19 21:04	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**8.34**	2.87		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:34	SW6020A R1	KSH
***Barium**	**62.8**	5.74		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:34	SW6020A R1	KSH
*Cadmium	U	0.574		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:34	SW6020A R1	KSH
***Chromium**	**17.0**	0.574		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:34	SW6020A R1	KSH
***Lead**	**28.7**	0.574		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:34	SW6020A R1	KSH
***Mercury**	**0.247**	0.0230		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:37	SW6020A R1	KSH
*Selenium	U	0.574		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:34	SW6020A R1	KSH
*Silver	U	0.0574		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:37	SW6020A R1	KSH
Conventional Chemistry Parameters									
***pH**	**8.2**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**83.3**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-7 **Lab ID:** 19B0120-07
Collection Date: 2/7/19 9:45 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Benzene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Bromodichloromethane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Bromoform	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Bromomethane	U	0.0119		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*2-Butanone	U	0.0119		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Carbon disulfide	U	0.0119		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Chlorobenzene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Chloroform	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.00119		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Dibromochloromethane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00238		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00357		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00357		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00357		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Ethylbenzene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Methylene chloride	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Styrene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Tetrachloroethene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Toluene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Trichloroethene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Vinyl acetate	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Vinyl chloride	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
o-Xylene	U	0.00594		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
m,p-Xylenes	U	0.0119		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
*Xylenes (total)	U	0.0178		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*94 %*		*75-120*		2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*106 %*		*75-119*		2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
Surrogate: Toluene-d8		*97 %*		*78-114*		2/8/19 8:20	2/8/19 18:04	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Anthracene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0753		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-7 **Lab ID:** 19B0120-07
Collection Date: 2/7/19 9:45 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Benzoic acid	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Bis(2-chloroethyl)ether	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Bis(2-ethylhexyl)phthalate	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Butyl benzyl phthalate	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Carbazole	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*4-Chloroaniline	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2-Chlorophenol	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Chrysene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Di-n-butyl phthalate	U	1.51		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Di-n-octyl phthalate	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0753		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*3,3'-Dichlorobenzidine	U	0.0837		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,4-Dichlorophenol	U	0.251		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Diethyl phthalate	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,4-Dimethylphenol	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,4-Dinitrophenol	U	0.188		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,4-Dinitrotoluene	U	0.126		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,6-Dinitrotoluene	U	0.126		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Fluoranthene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Fluorene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Hexachlorobenzene	U	0.126		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Hexachlorocyclopentadiene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Hexachloroethane	U	0.251		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Isophorone	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2-Methylphenol	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Naphthalene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Nitrobenzene	U	0.0942		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*N-Nitroso-di-n-propylamine	U	0.000749	M	mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*N-Nitrosodiphenylamine	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Pentachlorophenol	U	0.0126		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Phenol	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*Pyrene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*1,2,4-Trichlorobenzene	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,4,5-Trichlorophenol	U	0.418		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
*2,4,6-Trichlorophenol	U	0.188		mg/Kg dry	1	2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*72 %*		*40-120*		2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Surrogate: 2-Fluorophenol		*55 %*		*20-115*		2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*73 %*		*45-135*		2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Surrogate: Phenol-d6		*49 %*		*20-100*		2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*74 %*		*60-130*		2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Surrogate: 2,4,6-Tribromophenol		*56 %*		*30-100*		2/8/19 14:21	2/8/19 19:38	SW8270C R3	JKA
Polychlorinated Biphenyls by GC-ECD									
*Aroclor 1016	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
*Aroclor 1221	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
*Aroclor 1232	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
*Aroclor 1242	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
*Aroclor 1248	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
*Aroclor 1254	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-7 **Lab ID:** 19B0120-07
Collection Date: 2/7/19 9:45 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Aroclor 1260	U	0.0437		mg/Kg dry	1	2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
Surrogate: Decachlorobiphenyl		*71 %*		*60-140*		2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
Surrogate: Tetrachloro-m-xylene		*66 %*		*60-140*		2/12/19 11:09	2/13/19 19:29	SW8082 R0 1	JKA
Metals by ICP-MS									
***Arsenic**	**10.2**	3.32		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:38	SW6020A R1	KSH
***Barium**	**63.5**	6.64		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:38	SW6020A R1	KSH
*Cadmium	U	0.664		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:38	SW6020A R1	KSH
***Chromium**	**29.8**	0.664		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:38	SW6020A R1	KSH
***Lead**	**31.1**	0.664		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:38	SW6020A R1	KSH
***Mercury**	**0.0523**	0.0266		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:40	SW6020A R1	KSH
*Selenium	U	0.664		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:38	SW6020A R1	KSH
*Silver	U	0.0664		mg/Kg dry	10	2/11/19 10:30	2/11/19 18:40	SW6020A R1	KSH
TCLP Metals by ICP									
***Chromium**	**0.00870**	0.00500		mg/L	1	2/20/19 11:00	2/20/19 20:35	SW6010B R2	AEH
Conventional Chemistry Parameters									
***pH**	**8.3**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**75.0**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-8 **Lab ID:** 19B0120-08
Collection Date: 2/7/19 10:00 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Benzene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Bromodichloromethane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Bromoform	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Bromomethane	U	0.0103		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*2-Butanone	U	0.0103		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Carbon disulfide	U	0.0103		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Chlorobenzene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Chloroform	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.00103		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Dibromochloromethane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00205		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00308		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00308		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00308		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Ethylbenzene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Methylene chloride	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Styrene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Tetrachloroethene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Toluene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Trichloroethene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Vinyl acetate	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Vinyl chloride	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
o-Xylene	U	0.00513		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
m,p-Xylenes	U	0.0103		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
*Xylenes (total)	U	0.0154		mg/Kg dry	1	2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*96 %*		*75-120*		2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*106 %*		*75-119*		2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
Surrogate: Toluene-d8		*97 %*		*78-114*		2/8/19 8:20	2/8/19 18:33	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Anthracene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0685		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-8 **Lab ID:** 19B0120-08
Collection Date: 2/7/19 10:00 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0685		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Fluoranthene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Fluorene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Naphthalene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
*Pyrene	U	0.373		mg/Kg dry	1	2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*68 %*		*38-122*		2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*72 %*		*45-136*		2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*80 %*		*57-122*		2/11/19 15:06	2/11/19 21:36	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**6.15**	3.12		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:42	SW6020A R1	KSH
***Barium**	**60.1**	6.25		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:42	SW6020A R1	KSH
*Cadmium	U	0.625		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:42	SW6020A R1	KSH
***Chromium**	**24.0**	0.625		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:42	SW6020A R1	KSH
***Lead**	**12.0**	0.625		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:42	SW6020A R1	KSH
***Mercury**	**0.0263**	0.0250		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:05	SW6020A R1	KSH
*Selenium	U	0.625		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:42	SW6020A R1	KSH
*Silver	U	0.0625		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:05	SW6020A R1	KSH
TCLP Metals by ICP									
***Chromium**	**0.00689**	0.00500		mg/L	1	2/20/19 11:00	2/20/19 20:40	SW6010B R2	AEH
Conventional Chemistry Parameters									
***pH**	**8.4**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**80.0**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-9 **Lab ID:** 19B0120-09
Collection Date: 2/7/19 10:10 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Benzene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Bromodichloromethane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Bromoform	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Bromomethane	U	0.00867		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*2-Butanone	U	0.00867		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Carbon disulfide	U	0.00867		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Chlorobenzene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Chloroform	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.000867		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Dibromochloromethane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00173		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00260		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00260		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00260		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Ethylbenzene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Methylene chloride	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Styrene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Tetrachloroethene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Toluene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Trichloroethene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Vinyl acetate	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Vinyl chloride	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
o-Xylene	U	0.00433		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
m,p-Xylenes	U	0.00867		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
*Xylenes (total)	U	0.0130		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*99 %*		*75-120*		2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*115 %*		*75-119*		2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
Surrogate: Toluene-d8		*99 %*		*78-114*		2/8/19 8:20	2/8/19 19:02	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Anthracene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0619		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-9 **Lab ID:** 19B0120-09
Collection Date: 2/7/19 10:10 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0619		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Fluoranthene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Fluorene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Naphthalene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
*Pyrene	U	0.338		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*74 %*		*38-122*		2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*80 %*		*45-136*		2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*80 %*		*57-122*		2/11/19 15:06	2/11/19 22:08	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**3.34**	2.74		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:45	SW6020A R1	KSH
***Barium**	**38.1**	5.48		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:45	SW6020A R1	KSH
*Cadmium	U	0.548		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:45	SW6020A R1	KSH
***Chromium**	**11.8**	0.548		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:45	SW6020A R1	KSH
***Lead**	**7.51**	0.548		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:45	SW6020A R1	KSH
*Mercury	U	0.0219		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:08	SW6020A R1	KSH
*Selenium	U	0.548		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:45	SW6020A R1	KSH
*Silver	U	0.0548		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:08	SW6020A R1	KSH
Conventional Chemistry Parameters									
***pH**	**8.9**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**84.2**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-10 **Lab ID:** 19B0120-10
Collection Date: 2/7/19 10:25 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Benzene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Bromodichloromethane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Bromoform	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Bromomethane	U	0.00918		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*2-Butanone	U	0.00918		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Carbon disulfide	U	0.00918		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Chlorobenzene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Chloroform	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.000918		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Dibromochloromethane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00184		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00275		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00275		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00275		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Ethylbenzene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Methylene chloride	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Styrene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Tetrachloroethene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
***Toluene**	**0.00595**	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Trichloroethene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Vinyl acetate	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Vinyl chloride	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
o-Xylene	U	0.00459		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
m,p-Xylenes	U	0.00918		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
*Xylenes (total)	U	0.0138		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*83 %*		*75-120*		2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*119 %*		*75-119*		2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
Surrogate: Toluene-d8		*109 %*		*78-114*		2/8/19 8:20	2/8/19 19:30	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Anthracene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0625		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-10 **Lab ID:** 19B0120-10
Collection Date: 2/7/19 10:25 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0625		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Fluoranthene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Fluorene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Naphthalene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
*Pyrene	U	0.341		mg/Kg dry	1	2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*69 %*		*38-122*		2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*73 %*		*45-136*		2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*72 %*		*57-122*		2/11/19 15:06	2/11/19 22:40	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**8.02**	2.80		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:49	SW6020A R1	KSH
***Barium**	**26.2**	5.61		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:49	SW6020A R1	KSH
*Cadmium	U	0.561		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:49	SW6020A R1	KSH
***Chromium**	**10.0**	0.561		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:49	SW6020A R1	KSH
***Lead**	**14.5**	0.561		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:49	SW6020A R1	KSH
*Mercury	U	0.0224		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:11	SW6020A R1	KSH
*Selenium	U	0.561		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:49	SW6020A R1	KSH
*Silver	U	0.0561		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:11	SW6020A R1	KSH
Conventional Chemistry Parameters									
***pH**	**8.7**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**85.9**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-11 **Lab ID:** 19B0120-11
Collection Date: 2/7/19 10:50 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Acetone	U	0.0527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Benzene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Bromodichloromethane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Bromoform	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Bromomethane	U	0.0105		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*2-Butanone	U	0.0105		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Carbon disulfide	U	0.0105		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Carbon tetrachloride	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Chlorobenzene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Chloroform	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,2-Dibromo-3-chloropropane	U	0.00105		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Dibromochloromethane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,2-Dibromoethane	U	0.00211		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,2-Dichlorobenzene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,4-Dichlorobenzene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,1-Dichloroethane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,2-Dichloroethane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,1-Dichloroethene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*cis-1,2-Dichloroethene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*trans-1,2-Dichloroethene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,2-Dichloropropane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*cis-1,3-Dichloropropene	U	0.00316		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*trans-1,3-Dichloropropene	U	0.00316		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,3-Dichloropropene (total)	U	0.00316		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Ethylbenzene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Methyl tert-butyl ether	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Methylene chloride	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Styrene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Tetrachloroethene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Toluene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,1,1-Trichloroethane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*1,1,2-Trichloroethane	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Trichloroethene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Vinyl acetate	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Vinyl chloride	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
o-Xylene	U	0.00527		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
m,p-Xylenes	U	0.0105		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
*Xylenes (total)	U	0.0158		mg/Kg dry	1	2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
Surrogate: 4-Bromofluorobenzene		*94 %*		*75-120*		2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
Surrogate: 1,2-Dichloroethane-d4		*117 %*		*75-119*		2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
Surrogate: Toluene-d8		*100 %*		*78-114*		2/8/19 8:20	2/8/19 19:59	SW8260B R2	JLS
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Anthracene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Benzo(a)anthracene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Benzo(b)fluoranthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Benzo(k)fluoranthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Benzo(a)pyrene	U	0.0651		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120
Client Sample ID: SB-11 **Lab ID:** 19B0120-11
Collection Date: 2/7/19 10:50 **Matrix:** Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
*Chrysene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Dibenz(a,h)anthracene	U	0.0651		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Fluoranthene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Fluorene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Indeno(1,2,3-cd)pyrene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Naphthalene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
*Pyrene	U	0.355		mg/Kg dry	1	2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
Surrogate: 2-Fluorobiphenyl		*70 %*		*38-122*		2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
Surrogate: Nitrobenzene-d5		*77 %*		*45-136*		2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
Surrogate: 4-Terphenyl-d14		*70 %*		*57-122*		2/11/19 15:06	2/11/19 23:11	SW8270C R3	JKA
Metals by ICP-MS									
***Arsenic**	**10.7**	3.21		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:53	SW6020A R1	KSH
***Barium**	**153**	6.42		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:53	SW6020A R1	KSH
*Cadmium	U	0.642		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:53	SW6020A R1	KSH
***Chromium**	**35.4**	0.642		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:53	SW6020A R1	KSH
***Lead**	**17.5**	0.642		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:53	SW6020A R1	KSH
***Mercury**	**0.0449**	0.0257		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:15	SW6020A R1	KSH
*Selenium	U	0.642		mg/Kg dry	10	2/11/19 9:10	2/12/19 15:53	SW6020A R1	KSH
***Silver**	**0.0760**	0.0642		mg/Kg dry	10	2/11/19 10:30	2/11/19 19:15	SW6020A R1	KSH
TCLP Metals by ICP									
***Chromium**	**0.0133**	0.00500		mg/L	1	2/20/19 11:00	2/20/19 21:02	SW6010B R2	AEH
Conventional Chemistry Parameters									
***pH**	**8.5**	0.010		pH Units	1	2/12/19 10:20	2/12/19 12:55	SW9045C R3	OPM
Percent Solids	**77.3**	0.100		%	1	2/11/19 11:14	2/12/19 8:29	ASTM D2974	OPM

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000515 - SW 5035A VOA										
Blank (C000515-BLK1)				Prepared & Analyzed: 02/08/2019						
Acetone	U	0.0500	mg/Kg wet							
Benzene	U	0.00500	mg/Kg wet							
Bromodichloromethane	U	0.00500	mg/Kg wet							
Bromoform	U	0.00500	mg/Kg wet							
Bromomethane	U	0.0100	mg/Kg wet							
2-Butanone	U	0.0100	mg/Kg wet							
Carbon disulfide	U	0.0100	mg/Kg wet							
Carbon tetrachloride	U	0.00500	mg/Kg wet							
Chlorobenzene	U	0.00500	mg/Kg wet							
Chloroform	U	0.00500	mg/Kg wet							
1,2-Dibromo-3-chloropropane	U	0.00100	mg/Kg wet							
Dibromochloromethane	U	0.00500	mg/Kg wet							
1,2-Dibromoethane	U	0.00200	mg/Kg wet							
1,2-Dichlorobenzene	U	0.00500	mg/Kg wet							
1,4-Dichlorobenzene	U	0.00500	mg/Kg wet							
1,1-Dichloroethane	U	0.00500	mg/Kg wet							
1,2-Dichloroethane	U	0.00500	mg/Kg wet							
1,1-Dichloroethene	U	0.00500	mg/Kg wet							
cis-1,2-Dichloroethene	U	0.00500	mg/Kg wet							
trans-1,2-Dichloroethene	U	0.00500	mg/Kg wet							
1,2-Dichloropropane	U	0.00500	mg/Kg wet							
cis-1,3-Dichloropropene	U	0.00300	mg/Kg wet							
trans-1,3-Dichloropropene	U	0.00300	mg/Kg wet							
1,3-Dichloropropene (total)	U	0.00300	mg/Kg wet							
Ethylbenzene	U	0.00500	mg/Kg wet							
Methyl tert-butyl ether	U	0.00500	mg/Kg wet							
Methylene chloride	U	0.00500	mg/Kg wet							
Styrene	U	0.00500	mg/Kg wet							
Tetrachloroethene	U	0.00500	mg/Kg wet							
Toluene	U	0.00500	mg/Kg wet							
1,1,1-Trichloroethane	U	0.00500	mg/Kg wet							
1,1,2-Trichloroethane	U	0.00500	mg/Kg wet							
Trichloroethene	U	0.00500	mg/Kg wet							
Vinyl acetate	U	0.00500	mg/Kg wet							
Vinyl chloride	U	0.00500	mg/Kg wet							
o-Xylene	U	0.00500	mg/Kg wet							
m,p-Xylenes	U	0.0100	mg/Kg wet							
Xylenes (total)	U	0.0150	mg/Kg wet							
Surrogate: 4-Bromofluorobenzene	*0.0495*		*mg/Kg wet*	*0.050000*		*99*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0530*		*mg/Kg wet*	*0.050000*		*106*	*75-119*			
Surrogate: Toluene-d8	*0.0487*		*mg/Kg wet*	*0.050000*		*97*	*78-114*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000515 - SW 5035A VOA										
LCS (C000515-BS1)				Prepared & Analyzed: 02/08/2019						
Benzene	0.0459	0.00500	mg/Kg wet	0.050000		92	80-130			
Chlorobenzene	0.0485	0.00500	mg/Kg wet	0.050000		97	85-120			
1,1-Dichloroethene	0.0414	0.00500	mg/Kg wet	0.050000		83	70-130			
Ethylbenzene	0.0524	0.00500	mg/Kg wet	0.050000		105	77-132			
Toluene	0.0468	0.00500	mg/Kg wet	0.050000		94	80-130			
Trichloroethene	0.0436	0.00500	mg/Kg wet	0.050000		87	75-130			
o-Xylene	0.0540	0.00500	mg/Kg wet	0.050000		108	80-130			
m,p-Xylenes	0.107	0.0100	mg/Kg wet	0.10000		107	80-130			
Xylenes (total)	0.161	0.0150	mg/Kg wet	0.15000		107	80-130			
Surrogate: 4-Bromofluorobenzene	*0.0550*		*mg/Kg wet*	*0.050000*		*110*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0438*		*mg/Kg wet*	*0.050000*		*88*	*75-119*			
Surrogate: Toluene-d8	*0.0493*		*mg/Kg wet*	*0.050000*		*99*	*78-114*			
Matrix Spike (C000515-MS1)		**Source: 19B0030-04RE2**		Prepared & Analyzed: 02/08/2019						
Benzene	0.0420	0.00500	mg/Kg wet	0.050000	ND	84	50-140			
Chlorobenzene	0.0474	0.00500	mg/Kg wet	0.050000	ND	95	60-130			
1,1-Dichloroethene	0.0298	0.00500	mg/Kg wet	0.050000	ND	60	60-130			S
Ethylbenzene	0.0520	0.00500	mg/Kg wet	0.050000	ND	104	50-140			
Toluene	0.0432	0.00500	mg/Kg wet	0.050000	ND	86	55-130			
Trichloroethene	0.0376	0.00500	mg/Kg wet	0.050000	ND	75	60-130			
o-Xylene	0.0554	0.00500	mg/Kg wet	0.050000	ND	111	60-130			
m,p-Xylenes	0.113	0.0100	mg/Kg wet	0.10000	ND	113	60-130			
Xylenes (total)	0.168	0.0150	mg/Kg wet	0.15000	ND	112	60-130			
Surrogate: 4-Bromofluorobenzene	*0.0587*		*mg/Kg wet*	*0.050000*		*117*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0381*		*mg/Kg wet*	*0.050000*		*76*	*75-119*			
Surrogate: Toluene-d8	*0.0471*		*mg/Kg wet*	*0.050000*		*94*	*78-114*			
Matrix Spike Dup (C000515-MSD1)		**Source: 19B0030-04RE2**		Prepared & Analyzed: 02/08/2019						
Benzene	0.0441	0.00500	mg/Kg wet	0.050000	ND	88	50-140	5	20	
Chlorobenzene	0.0458	0.00500	mg/Kg wet	0.050000	ND	92	60-130	3	20	
1,1-Dichloroethene	0.0415	0.00500	mg/Kg wet	0.050000	ND	83	60-130	33	20	R
Ethylbenzene	0.0455	0.00500	mg/Kg wet	0.050000	ND	91	50-140	13	25	
Toluene	0.0454	0.00500	mg/Kg wet	0.050000	ND	91	55-130	5	25	
Trichloroethene	0.0470	0.00500	mg/Kg wet	0.050000	ND	94	60-130	22	20	R
o-Xylene	0.0454	0.00500	mg/Kg wet	0.050000	ND	91	60-130	20	25	
m,p-Xylenes	0.0914	0.0100	mg/Kg wet	0.10000	ND	91	60-130	21	25	
Xylenes (total)	0.137	0.0150	mg/Kg wet	0.15000	ND	91	60-130	20	25	
Surrogate: 4-Bromofluorobenzene	*0.0489*		*mg/Kg wet*	*0.050000*		*98*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0515*		*mg/Kg wet*	*0.050000*		*103*	*75-119*			
Surrogate: Toluene-d8	*0.0512*		*mg/Kg wet*	*0.050000*		*102*	*78-114*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000606 - SW 5035A VOA										
Blank (C000606-BLK1)				Prepared & Analyzed: 02/14/2019						
Acetone	U	0.0500	mg/Kg wet							
Benzene	U	0.00500	mg/Kg wet							
Bromodichloromethane	U	0.00500	mg/Kg wet							
Bromoform	U	0.00500	mg/Kg wet							
Bromomethane	U	0.0100	mg/Kg wet							
2-Butanone	U	0.0100	mg/Kg wet							
Carbon disulfide	U	0.0100	mg/Kg wet							
Carbon tetrachloride	U	0.00500	mg/Kg wet							
Chlorobenzene	U	0.00500	mg/Kg wet							
Chloroform	U	0.00500	mg/Kg wet							
1,2-Dibromo-3-chloropropane	U	0.00100	mg/Kg wet							
Dibromochloromethane	U	0.00500	mg/Kg wet							
1,2-Dibromoethane	U	0.00200	mg/Kg wet							
1,2-Dichlorobenzene	U	0.00500	mg/Kg wet							
1,4-Dichlorobenzene	U	0.00500	mg/Kg wet							
1,1-Dichloroethane	U	0.00500	mg/Kg wet							
1,2-Dichloroethane	U	0.00500	mg/Kg wet							
1,1-Dichloroethene	U	0.00500	mg/Kg wet							
cis-1,2-Dichloroethene	U	0.00500	mg/Kg wet							
trans-1,2-Dichloroethene	U	0.00500	mg/Kg wet							
1,2-Dichloropropane	U	0.00500	mg/Kg wet							
cis-1,3-Dichloropropene	U	0.00300	mg/Kg wet							
trans-1,3-Dichloropropene	U	0.00300	mg/Kg wet							
1,3-Dichloropropene (total)	U	0.00300	mg/Kg wet							
Ethylbenzene	U	0.00500	mg/Kg wet							
Methyl tert-butyl ether	U	0.00500	mg/Kg wet							
Methylene chloride	U	0.00500	mg/Kg wet							
Styrene	U	0.00500	mg/Kg wet							
Tetrachloroethene	U	0.00500	mg/Kg wet							
Toluene	U	0.00500	mg/Kg wet							
1,1,1-Trichloroethane	U	0.00500	mg/Kg wet							
1,1,2-Trichloroethane	U	0.00500	mg/Kg wet							
Trichloroethene	U	0.00500	mg/Kg wet							
Vinyl acetate	U	0.00500	mg/Kg wet							
Vinyl chloride	U	0.00500	mg/Kg wet							
o-Xylene	U	0.00500	mg/Kg wet							
m,p-Xylenes	U	0.0100	mg/Kg wet							
Xylenes (total)	U	0.0150	mg/Kg wet							
Surrogate: 4-Bromofluorobenzene	*0.0506*		*mg/Kg wet*	*0.050000*		*101*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0519*		*mg/Kg wet*	*0.050000*		*104*	*75-119*			
Surrogate: Toluene-d8	*0.0467*		*mg/Kg wet*	*0.050000*		*93*	*78-114*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000606 - SW 5035A VOA										
LCS (C000606-BS1)				Prepared & Analyzed: 02/14/2019						
Benzene	0.0489	0.00500	mg/Kg wet	0.050000		98	80-130			
Chlorobenzene	0.0492	0.00500	mg/Kg wet	0.050000		98	85-120			
1,1-Dichloroethene	0.0504	0.00500	mg/Kg wet	0.050000		101	70-130			
Ethylbenzene	0.0489	0.00500	mg/Kg wet	0.050000		98	77-132			
Toluene	0.0480	0.00500	mg/Kg wet	0.050000		96	80-130			
Trichloroethene	0.0493	0.00500	mg/Kg wet	0.050000		99	75-130			
o-Xylene	0.0495	0.00500	mg/Kg wet	0.050000		99	80-130			
m,p-Xylenes	0.0973	0.0100	mg/Kg wet	0.10000		97	80-130			
Xylenes (total)	0.147	0.0150	mg/Kg wet	0.15000		98	80-130			
Surrogate: 4-Bromofluorobenzene	*0.0498*		*mg/Kg wet*	*0.050000*		*100*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0527*		*mg/Kg wet*	*0.050000*		*105*	*75-119*			
Surrogate: Toluene-d8	*0.0492*		*mg/Kg wet*	*0.050000*		*98*	*78-114*			
Matrix Spike (C000606-MS1)		**Source: 19B0108-01**		Prepared & Analyzed: 02/14/2019						
Benzene	0.0489	0.00576	mg/Kg dry	0.057585	0.00227	81	50-140			
Chlorobenzene	0.0442	0.00576	mg/Kg dry	0.057585	ND	77	60-130			
1,1-Dichloroethene	0.0502	0.00576	mg/Kg dry	0.057585	ND	87	60-130			
Ethylbenzene	0.0467	0.00576	mg/Kg dry	0.057585	ND	81	50-140			
Toluene	0.0566	0.00576	mg/Kg dry	0.057585	0.00327	93	55-130			
Trichloroethene	0.0422	0.00576	mg/Kg dry	0.057585	ND	73	60-130			
o-Xylene	0.0508	0.00576	mg/Kg dry	0.057585	ND	88	60-130			
m,p-Xylenes	0.0977	0.0115	mg/Kg dry	0.11517	0.00346	82	60-130			
Xylenes (total)	0.149	0.0173	mg/Kg dry	0.17275	0.00346	84	60-130			
Surrogate: 4-Bromofluorobenzene	*0.0497*		*mg/Kg dry*	*0.057585*		*86*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0625*		*mg/Kg dry*	*0.057585*		*108*	*75-119*			
Surrogate: Toluene-d8	*0.0714*		*mg/Kg dry*	*0.057585*		*124*	*78-114*			*S*
Matrix Spike Dup (C000606-MSD1)		**Source: 19B0108-01**		Prepared & Analyzed: 02/14/2019						
Benzene	0.0425	0.00573	mg/Kg dry	0.057259	0.00227	70	50-140	14	20	
Chlorobenzene	0.0358	0.00573	mg/Kg dry	0.057259	ND	63	60-130	21	20	R
1,1-Dichloroethene	0.0355	0.00573	mg/Kg dry	0.057259	ND	62	60-130	34	20	R
Ethylbenzene	0.0410	0.00573	mg/Kg dry	0.057259	ND	72	50-140	13	25	
Toluene	0.0426	0.00573	mg/Kg dry	0.057259	0.00327	69	55-130	28	25	R
Trichloroethene	0.0350	0.00573	mg/Kg dry	0.057259	ND	61	60-130	19	20	
o-Xylene	0.0475	0.00573	mg/Kg dry	0.057259	ND	83	60-130	7	25	
m,p-Xylenes	0.0931	0.0115	mg/Kg dry	0.11452	0.00346	78	60-130	5	25	
Xylenes (total)	0.141	0.0172	mg/Kg dry	0.17178	0.00346	80	60-130	6	25	
Surrogate: 4-Bromofluorobenzene	*0.0604*		*mg/Kg dry*	*0.057259*		*106*	*75-120*			
Surrogate: 1,2-Dichloroethane-d4	*0.0507*		*mg/Kg dry*	*0.057259*		*88*	*75-119*			
Surrogate: Toluene-d8	*0.0597*		*mg/Kg dry*	*0.057259*		*104*	*78-114*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000517 - SW 3550B BNA										
Blank (C000517-BLK1)				Prepared & Analyzed: 02/08/2019						
Acenaphthene	U	0.333	mg/Kg wet							
Anthracene	U	0.333	mg/Kg wet							
Benzo(a)anthracene	U	0.333	mg/Kg wet							
Benzo(b)fluoranthene	U	0.333	mg/Kg wet							
Benzo(k)fluoranthene	U	0.333	mg/Kg wet							
Benzo(a)pyrene	U	0.0600	mg/Kg wet							
Benzoic acid	U	0.333	mg/Kg wet							
Bis(2-chloroethyl)ether	U	0.333	mg/Kg wet							
Bis(2-ethylhexyl)phthalate	U	0.333	mg/Kg wet							
Butyl benzyl phthalate	U	0.333	mg/Kg wet							
Carbazole	U	0.333	mg/Kg wet							
4-Chloroaniline	U	0.333	mg/Kg wet							
2-Chlorophenol	U	0.333	mg/Kg wet							
Chrysene	U	0.333	mg/Kg wet							
Di-n-butyl phthalate	U	1.20	mg/Kg wet							
Di-n-octyl phthalate	U	0.333	mg/Kg wet							
Dibenz(a,h)anthracene	U	0.0600	mg/Kg wet							
3,3'-Dichlorobenzidine	U	0.0667	mg/Kg wet							
2,4-Dichlorophenol	U	0.200	mg/Kg wet							
Diethyl phthalate	U	0.333	mg/Kg wet							
2,4-Dimethylphenol	U	0.333	mg/Kg wet							
2,4-Dinitrophenol	U	0.150	mg/Kg wet							
2,4-Dinitrotoluene	U	0.100	mg/Kg wet							
2,6-Dinitrotoluene	U	0.100	mg/Kg wet							
Fluoranthene	U	0.333	mg/Kg wet							
Fluorene	U	0.333	mg/Kg wet							
Hexachlorobenzene	U	0.100	mg/Kg wet							
Hexachlorocyclopentadiene	U	0.333	mg/Kg wet							
Hexachloroethane	U	0.200	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	U	0.333	mg/Kg wet							
Isophorone	U	0.333	mg/Kg wet							
2-Methylphenol	U	0.333	mg/Kg wet							
Naphthalene	U	0.333	mg/Kg wet							
Nitrobenzene	U	0.0750	mg/Kg wet							
N-Nitroso-di-n-propylamine	U	0.0333	mg/Kg wet							M
N-Nitrosodiphenylamine	U	0.333	mg/Kg wet							
Pentachlorophenol	U	0.0100	mg/Kg wet							
Phenol	U	0.333	mg/Kg wet							
Pyrene	U	0.333	mg/Kg wet							
1,2,4-Trichlorobenzene	U	0.333	mg/Kg wet							
2,4,5-Trichlorophenol	U	0.333	mg/Kg wet							
2,4,6-Trichlorophenol	U	0.150	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	*0.602*		*mg/Kg wet*	*0.66667*		*90*	*40-120*			
Surrogate: 2-Fluorophenol	*0.601*		*mg/Kg wet*	*1.0000*		*60*	*20-115*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000517 - SW 3550B BNA										
Blank (C000517-BLK1)				Prepared & Analyzed: 02/08/2019						
Surrogate: Nitrobenzene-d5	*0.644*		*mg/Kg wet*	*0.66667*		*97*	*45-135*			
Surrogate: Phenol-d6	*0.642*		*mg/Kg wet*	*1.0000*		*64*	*20-100*			
Surrogate: 4-Terphenyl-d14	*0.535*		*mg/Kg wet*	*0.66667*		*80*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*0.504*		*mg/Kg wet*	*1.0000*		*50*	*30-100*			
LCS (C000517-BS1)				Prepared & Analyzed: 02/08/2019						
Acenaphthene	0.559	0.333	mg/Kg wet	0.66667		84	30-140			
2-Chlorophenol	1.37	0.333	mg/Kg wet	1.3333		102	35-150			
2,4-Dinitrotoluene	0.518	0.100	mg/Kg wet	0.66667		78	35-130			
N-Nitroso-di-n-propylamine	0.616	0.0333	mg/Kg wet	0.66667		92	40-130			
Pentachlorophenol	0.924	0.0100	mg/Kg wet	1.3333		69	40-190			
Phenol	1.19	0.333	mg/Kg wet	1.3333		89	30-190			
Pyrene	0.541	0.333	mg/Kg wet	0.66667		81	35-140			
1,2,4-Trichlorobenzene	0.590	0.333	mg/Kg wet	0.66667		89	40-115			
Surrogate: 2-Fluorobiphenyl	*0.605*		*mg/Kg wet*	*0.66667*		*91*	*40-120*			
Surrogate: 2-Fluorophenol	*0.550*		*mg/Kg wet*	*1.0000*		*55*	*20-115*			
Surrogate: Nitrobenzene-d5	*0.576*		*mg/Kg wet*	*0.66667*		*86*	*45-135*			
Surrogate: Phenol-d6	*0.584*		*mg/Kg wet*	*1.0000*		*58*	*20-100*			
Surrogate: 4-Terphenyl-d14	*0.532*		*mg/Kg wet*	*0.66667*		*80*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*0.540*		*mg/Kg wet*	*1.0000*		*54*	*30-100*			
Matrix Spike (C000517-MS1)	**Source: 19B0128-04**			Prepared & Analyzed: 02/08/2019						
Acenaphthene	5.70	0.377	mg/Kg dry	0.75514	0.130	737	30-140			I
2-Chlorophenol	0.975	0.377	mg/Kg dry	1.5103	ND	65	35-150			
2,4-Dinitrotoluene	0.472	0.113	mg/Kg dry	0.75514	ND	62	35-130			
N-Nitroso-di-n-propylamine	0.450	0.0378	mg/Kg dry	0.75514	ND	60	40-130			
Pentachlorophenol	0.0983	0.0113	mg/Kg dry	1.5103	ND	7	40-190			I
Phenol	1.08	0.377	mg/Kg dry	1.5103	ND	72	30-190			
Pyrene	75.5	0.377	mg/Kg dry	0.75514	1.34	NR	35-140			I
1,2,4-Trichlorobenzene	0.505	0.377	mg/Kg dry	0.75514	ND	67	40-115			
Surrogate: 2-Fluorobiphenyl	*0.508*		*mg/Kg dry*	*0.75514*		*67*	*40-120*			
Surrogate: 2-Fluorophenol	*0.459*		*mg/Kg dry*	*1.1327*		*40*	*20-115*			
Surrogate: Nitrobenzene-d5	*0.600*		*mg/Kg dry*	*0.75514*		*79*	*45-135*			
Surrogate: Phenol-d6	*0.504*		*mg/Kg dry*	*1.1327*		*44*	*20-100*			
Surrogate: 4-Terphenyl-d14	*0.402*		*mg/Kg dry*	*0.75514*		*53*	*60-130*			*I*
Surrogate: 2,4,6-Tribromophenol	*0.179*		*mg/Kg dry*	*1.1327*		*16*	*30-100*			*I*

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000517 - SW 3550B BNA										
Matrix Spike Dup (C000517-MSD1)	**Source: 19B0128-04**			Prepared & Analyzed: 02/08/2019						
Acenaphthene	1.03	0.383	mg/Kg dry	0.76665	0.130	117	30-140	139	20	R
2-Chlorophenol	1.11	0.383	mg/Kg dry	1.5333	ND	72	35-150	13	50	
2,4-Dinitrotoluene	0.537	0.115	mg/Kg dry	0.76665	ND	70	35-130	13	45	
N-Nitroso-di-n-propylamine	0.580	0.0383	mg/Kg dry	0.76665	ND	76	40-130	25	40	
Pentachlorophenol	0.327	0.0115	mg/Kg dry	1.5333	ND	21	40-190	108	50	C1, I
Phenol	1.18	0.383	mg/Kg dry	1.5333	ND	77	30-190	9	35	
Pyrene	2.36	0.383	mg/Kg dry	0.76665	1.34	133	35-140	188	35	C1, I
1,2,4-Trichlorobenzene	0.552	0.383	mg/Kg dry	0.76665	ND	72	40-115	9	20	
Surrogate: 2-Fluorobiphenyl	*0.500*		*mg/Kg dry*	*0.76665*		*65*	*40-120*			
Surrogate: 2-Fluorophenol	*0.500*		*mg/Kg dry*	*1.1500*		*43*	*20-115*			
Surrogate: Nitrobenzene-d5	*0.607*		*mg/Kg dry*	*0.76665*		*79*	*45-135*			
Surrogate: Phenol-d6	*0.535*		*mg/Kg dry*	*1.1500*		*47*	*20-100*			
Surrogate: 4-Terphenyl-d14	*0.420*		*mg/Kg dry*	*0.76665*		*55*	*60-130*			*C1, I*
Surrogate: 2,4,6-Tribromophenol	*0.252*		*mg/Kg dry*	*1.1500*		*22*	*30-100*			*C1, I*
Batch C000539 - SW 3550B PNA										
Blank (C000539-BLK1)				Prepared & Analyzed: 02/11/2019						
Acenaphthene	U	0.300	mg/Kg wet							
Anthracene	U	0.300	mg/Kg wet							
Benzo(a)anthracene	U	0.300	mg/Kg wet							
Benzo(b)fluoranthene	U	0.300	mg/Kg wet							
Benzo(k)fluoranthene	U	0.300	mg/Kg wet							
Benzo(a)pyrene	U	0.0550	mg/Kg wet							
Chrysene	U	0.300	mg/Kg wet							
Dibenz(a,h)anthracene	U	0.0550	mg/Kg wet							
Fluoranthene	U	0.300	mg/Kg wet							
Fluorene	U	0.300	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	U	0.300	mg/Kg wet							
Naphthalene	U	0.300	mg/Kg wet							
Pyrene	U	0.300	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	*0.480*		*mg/Kg wet*	*0.66667*		*72*	*38-122*			
Surrogate: Nitrobenzene-d5	*0.543*		*mg/Kg wet*	*0.66667*		*81*	*45-136*			
Surrogate: 4-Terphenyl-d14	*0.495*		*mg/Kg wet*	*0.66667*		*74*	*57-122*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000539 - SW 3550B PNA										
LCS (C000539-BS1)				Prepared & Analyzed: 02/11/2019						
Acenaphthene	0.509	0.300	mg/Kg wet	0.66667		76	50-135			
Acenaphthylene	0.528	0.300	mg/Kg wet	0.66667		79	51-134			
Anthracene	0.536	0.300	mg/Kg wet	0.66667		80	52-117			
Benzo(a)anthracene	0.546	0.300	mg/Kg wet	0.66667		82	50-126			
Benzo(b)fluoranthene	0.524	0.300	mg/Kg wet	0.66667		79	57-134			
Benzo(k)fluoranthene	0.494	0.300	mg/Kg wet	0.66667		74	59-168			
Benzo(g,h,i)perylene	0.696	0.300	mg/Kg wet	0.66667		104	56-147			
Benzo(a)pyrene	0.476	0.0550	mg/Kg wet	0.66667		71	41-133			
Chrysene	0.494	0.300	mg/Kg wet	0.66667		74	52-127			
Dibenz(a,h)anthracene	0.534	0.0550	mg/Kg wet	0.66667		80	60-170			
Fluoranthene	0.584	0.300	mg/Kg wet	0.66667		88	57-130			
Fluorene	0.529	0.300	mg/Kg wet	0.66667		79	47-154			
Indeno(1,2,3-cd)pyrene	0.663	0.300	mg/Kg wet	0.66667		99	59-132			
Naphthalene	0.489	0.300	mg/Kg wet	0.66667		73	40-135			
Phenanthrene	0.533	0.300	mg/Kg wet	0.66667		80	54-126			
Pyrene	0.572	0.300	mg/Kg wet	0.66667		86	57-132			
Surrogate: 2-Fluorobiphenyl	*0.562*		*mg/Kg wet*	*0.66667*		*84*	*38-122*			
Surrogate: Nitrobenzene-d5	*0.630*		*mg/Kg wet*	*0.66667*		*94*	*45-136*			
Surrogate: 4-Terphenyl-d14	*0.622*		*mg/Kg wet*	*0.66667*		*93*	*57-122*			
Matrix Spike (C000539-MS1)	**Source: 19B0165-02**			Prepared: 02/11/2019 Analyzed: 02/12/2019						
Acenaphthene	0.586	0.358	mg/Kg dry	0.79635	ND	74	50-135			
Acenaphthylene	0.623	0.358	mg/Kg dry	0.79635	ND	78	51-134			
Anthracene	0.606	0.358	mg/Kg dry	0.79635	ND	76	52-117			
Benzo(a)anthracene	0.595	0.358	mg/Kg dry	0.79635	ND	75	50-126			
Benzo(b)fluoranthene	0.418	0.358	mg/Kg dry	0.79635	ND	52	57-134			I
Benzo(k)fluoranthene	0.378	0.358	mg/Kg dry	0.79635	ND	47	59-168			I
Benzo(g,h,i)perylene	0.555	0.358	mg/Kg dry	0.79635	ND	70	56-147			
Benzo(a)pyrene	0.321	0.0657	mg/Kg dry	0.79635	ND	40	41-133			I
Chrysene	0.532	0.358	mg/Kg dry	0.79635	ND	67	52-127			
Dibenz(a,h)anthracene	0.523	0.0657	mg/Kg dry	0.79635	ND	66	60-170			
Fluoranthene	0.606	0.358	mg/Kg dry	0.79635	ND	76	57-130			
Fluorene	0.616	0.358	mg/Kg dry	0.79635	ND	77	47-154			
Indeno(1,2,3-cd)pyrene	0.550	0.358	mg/Kg dry	0.79635	ND	69	59-132			
Naphthalene	0.565	0.358	mg/Kg dry	0.79635	ND	71	40-135			
Phenanthrene	0.596	0.358	mg/Kg dry	0.79635	ND	75	54-126			
Pyrene	0.585	0.358	mg/Kg dry	0.79635	ND	73	57-132			
Surrogate: 2-Fluorobiphenyl	*0.685*		*mg/Kg dry*	*0.79635*		*86*	*38-122*			
Surrogate: Nitrobenzene-d5	*0.734*		*mg/Kg dry*	*0.79635*		*92*	*45-136*			
Surrogate: 4-Terphenyl-d14	*0.632*		*mg/Kg dry*	*0.79635*		*79*	*57-122*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000539 - SW 3550B PNA										
Matrix Spike Dup (C000539-MSD1)	**Source: 19B0165-02**			Prepared: 02/11/2019 Analyzed: 02/12/2019						
Acenaphthene	0.546	0.364	mg/Kg dry	0.80979	ND	67	50-135	7	20	
Acenaphthylene	0.588	0.364	mg/Kg dry	0.80979	ND	73	51-134	6	20	
Anthracene	0.580	0.364	mg/Kg dry	0.80979	ND	72	52-117	5	20	
Benzo(a)anthracene	0.588	0.364	mg/Kg dry	0.80979	ND	73	50-126	1	20	
Benzo(b)fluoranthene	0.374	0.364	mg/Kg dry	0.80979	ND	46	57-134	11	20	C1, I
Benzo(k)fluoranthene	0.344	0.364	mg/Kg dry	0.80979	ND	42	59-168	10	20	C1, I
Benzo(g,h,i)perylene	0.591	0.364	mg/Kg dry	0.80979	ND	73	56-147	6	20	
Benzo(a)pyrene	0.324	0.0668	mg/Kg dry	0.80979	ND	40	41-133	0.8	20	C1, I
Chrysene	0.524	0.364	mg/Kg dry	0.80979	ND	65	52-127	2	20	
Dibenz(a,h)anthracene	0.524	0.0668	mg/Kg dry	0.80979	ND	65	60-170	0.2	20	
Fluoranthene	0.584	0.364	mg/Kg dry	0.80979	ND	72	57-130	4	20	
Fluorene	0.576	0.364	mg/Kg dry	0.80979	ND	71	47-154	7	20	
Indeno(1,2,3-cd)pyrene	0.594	0.364	mg/Kg dry	0.80979	ND	73	59-132	8	20	
Naphthalene	0.517	0.364	mg/Kg dry	0.80979	ND	64	40-135	9	20	
Phenanthrene	0.573	0.364	mg/Kg dry	0.80979	ND	71	54-126	4	20	
Pyrene	0.564	0.364	mg/Kg dry	0.80979	ND	70	57-132	4	20	
Surrogate: 2-Fluorobiphenyl	*0.615*		*mg/Kg dry*	*0.80979*		*76*	*38-122*			
Surrogate: Nitrobenzene-d5	*0.656*		*mg/Kg dry*	*0.80979*		*81*	*45-136*			
Surrogate: 4-Terphenyl-d14	*0.604*		*mg/Kg dry*	*0.80979*		*75*	*57-122*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Polychlorinated Biphenyls by GC-ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000551 - SW 3550B PCB										
Blank (C000551-BLK1)				Prepared: 02/12/2019 Analyzed: 02/13/2019						
Aroclor 1016	U	0.0333	mg/Kg wet							
Aroclor 1221	U	0.0333	mg/Kg wet							
Aroclor 1232	U	0.0333	mg/Kg wet							
Aroclor 1242	U	0.0333	mg/Kg wet							
Aroclor 1248	U	0.0333	mg/Kg wet							
Aroclor 1254	U	0.0333	mg/Kg wet							
Aroclor 1260	U	0.0333	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.0527*		*mg/Kg wet*	*0.066667*		*79*	*60-140*			
Surrogate: Tetrachloro-m-xylene	*0.0530*		*mg/Kg wet*	*0.066667*		*79*	*60-140*			
LCS (C000551-BS1)				Prepared: 02/12/2019 Analyzed: 02/13/2019						
Aroclor 1016	0.145	0.0333	mg/Kg wet	0.16667		87	45-150			
Aroclor 1260	0.167	0.0333	mg/Kg wet	0.16667		100	45-150			
Surrogate: Decachlorobiphenyl	*0.0563*		*mg/Kg wet*	*0.066667*		*85*	*60-140*			
Surrogate: Tetrachloro-m-xylene	*0.0565*		*mg/Kg wet*	*0.066667*		*85*	*60-140*			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Metals by ICP-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000526 - SW 3050B Metals										
Blank (C000526-BLK1)				Prepared & Analyzed: 02/11/2019						
Mercury	U	0.400	mg/Kg wet							
Silver	U	0.0500	mg/Kg wet							
LCS (C000526-BS1)				Prepared & Analyzed: 02/11/2019						
Mercury	1.13	0.400	mg/Kg wet	1.0000		113	80-120			
Silver	2.73	0.0500	mg/Kg wet	2.5000		109	80-120			
Matrix Spike (C000526-MS1)	**Source: 19B0110-02**			Prepared & Analyzed: 02/11/2019						
Mercury	1.26	0.476	mg/Kg dry	1.1910	0.0306	103	75-125			
Silver	2.92	0.0595	mg/Kg dry	2.9775	0.0596	96	75-125			
Matrix Spike Dup (C000526-MSD1)	**Source: 19B0110-02**			Prepared & Analyzed: 02/11/2019						
Mercury	1.33	0.476	mg/Kg dry	1.1898	0.0306	110	75-125	6	20	
Silver	3.42	0.0595	mg/Kg dry	2.9745	0.0596	113	75-125	16	20	
Batch C000527 - SW 3050B Metals										
Blank (C000527-BLK1)				Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	U	2.50	mg/Kg wet							
Barium	U	5.00	mg/Kg wet							
Cadmium	U	0.500	mg/Kg wet							
Chromium	U	0.500	mg/Kg wet							
Lead	U	0.500	mg/Kg wet							
Selenium	U	0.500	mg/Kg wet							
LCS (C000527-BS1)				Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	24.0	2.50	mg/Kg wet	25.000		96	80-120			
Barium	25.2	5.00	mg/Kg wet	25.000		101	80-120			
Cadmium	22.5	0.500	mg/Kg wet	25.000		90	80-120			
Chromium	24.1	0.500	mg/Kg wet	25.000		96	80-120			
Lead	24.8	0.500	mg/Kg wet	25.000		99	80-120			
Selenium	24.5	0.500	mg/Kg wet	25.000		98	80-120			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Metals by ICP-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000527 - SW 3050B Metals										
Matrix Spike (C000527-MS1)	**Source: 19B0120-08**			Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	31.2	3.11	mg/Kg dry	31.102	6.15	80	75-125			
Barium	78.3	6.22	mg/Kg dry	31.102	60.1	59	75-125			S
Cadmium	23.6	0.622	mg/Kg dry	31.102	ND	76	75-125			
Chromium	43.6	0.622	mg/Kg dry	31.102	24.0	63	75-125			S
Lead	34.3	0.622	mg/Kg dry	31.102	12.0	72	75-125			S
Selenium	26.1	0.622	mg/Kg dry	31.102	ND	84	75-125			
Matrix Spike Dup (C000527-MSD1)	**Source: 19B0120-08**			Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	39.6	3.10	mg/Kg dry	31.010	6.15	108	75-125	24	20	R
Barium	91.6	6.20	mg/Kg dry	31.010	60.1	102	75-125	16	20	
Cadmium	28.1	0.620	mg/Kg dry	31.010	ND	91	75-125	17	20	
Chromium	49.0	0.620	mg/Kg dry	31.010	24.0	80	75-125	11	20	
Lead	42.2	0.620	mg/Kg dry	31.010	12.0	98	75-125	21	20	R
Selenium	31.1	0.620	mg/Kg dry	31.010	ND	100	75-125	17	20	
Batch C000528 - SW 3050B Metals										
Blank (C000528-BLK1)				Prepared & Analyzed: 02/11/2019						
Mercury	U	0.400	mg/Kg wet							
Silver	U	0.0500	mg/Kg wet							
LCS (C000528-BS1)				Prepared & Analyzed: 02/11/2019						
Mercury	1.10	0.400	mg/Kg wet	1.0000		110	80-120			
Silver	2.72	0.0500	mg/Kg wet	2.5000		109	80-120			
Matrix Spike (C000528-MS1)	**Source: 19B0120-08**			Prepared & Analyzed: 02/11/2019						
Mercury	1.34	0.498	mg/Kg dry	1.2441	0.0263	106	75-125			
Silver	2.90	0.0622	mg/Kg dry	3.1102	0.0435	92	75-125			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Metals by ICP-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000528 - SW 3050B Metals										
Matrix Spike Dup (C000528-MSD1)	**Source: 19B0120-08**			Prepared & Analyzed: 02/11/2019						
Mercury	1.29	0.496	mg/Kg dry	1.2404	0.0263	102	75-125	4	20	
Silver	3.08	0.0620	mg/Kg dry	3.1010	0.0435	98	75-125	6	20	
Batch C000560 - SW 3050B Metals										
Blank (C000560-BLK1)				Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	U	2.50	mg/Kg wet							
Barium	U	5.00	mg/Kg wet							
Cadmium	U	0.500	mg/Kg wet							
Chromium	U	0.500	mg/Kg wet							
Lead	U	0.500	mg/Kg wet							
Selenium	U	0.500	mg/Kg wet							
LCS (C000560-BS1)				Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	25.6	2.50	mg/Kg wet	25.000		102	80-120			
Barium	23.9	5.00	mg/Kg wet	25.000		95	80-120			
Cadmium	22.6	0.500	mg/Kg wet	25.000		91	80-120			
Chromium	22.8	0.500	mg/Kg wet	25.000		91	80-120			
Lead	24.3	0.500	mg/Kg wet	25.000		97	80-120			
Selenium	25.4	0.500	mg/Kg wet	25.000		101	80-120			
Matrix Spike (C000560-MS1)	**Source: 19B0110-02**			Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	34.4	2.98	mg/Kg dry	29.775	6.35	94	75-125			
Barium	83.2	5.95	mg/Kg dry	29.775	59.6	79	75-125			
Cadmium	25.8	0.595	mg/Kg dry	29.775	ND	87	75-125			
Chromium	43.0	0.595	mg/Kg dry	29.775	20.7	75	75-125			S
Lead	35.8	0.595	mg/Kg dry	29.775	12.0	80	75-125			
Selenium	28.7	0.595	mg/Kg dry	29.775	ND	97	75-125			

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Metals by ICP-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000560 - SW 3050B Metals										
Matrix Spike Dup (C000560-MSD1)	**Source: 19B0110-02**			Prepared: 02/11/2019 Analyzed: 02/12/2019						
Arsenic	38.3	2.97	mg/Kg dry	29.745	6.35	107	75-125	11	20	
Barium	82.1	5.95	mg/Kg dry	29.745	59.6	75	75-125	1	20	
Cadmium	27.5	0.595	mg/Kg dry	29.745	ND	92	75-125	6	20	
Chromium	44.7	0.595	mg/Kg dry	29.745	20.7	81	75-125	4	20	
Lead	38.2	0.595	mg/Kg dry	29.745	12.0	88	75-125	6	20	
Selenium	29.9	0.595	mg/Kg dry	29.745	ND	101	75-125	4	20	

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

TCLP Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000691 - SW 3005A Metals										
Blank (C000691-BLK1)				Prepared & Analyzed: 02/20/2019						
Chromium	U	0.00800	mg/L							
Blank (C000691-BLK2)				Prepared & Analyzed: 02/20/2019						
Chromium	U	0.00800	mg/L							
LCS (C000691-BS1)				Prepared & Analyzed: 02/20/2019						
Chromium	0.456	0.00800	mg/L	0.50000		91	80-120			
Matrix Spike (C000691-MS1)	**Source: 19B0164-08**			Prepared & Analyzed: 02/20/2019						
Chromium	0.465	0.00500	mg/L	0.50000	0.00691	92	75-125			
Matrix Spike Dup (C000691-MSD1)	**Source: 19B0164-08**			Prepared & Analyzed: 02/20/2019						
Chromium	0.452	0.00500	mg/L	0.50000	0.00691	89	75-125	3	20	

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch C000525 - SW 9045C pH										
Duplicate (C000525-DUP1)		**Source: 19B0110-03**		Prepared & Analyzed: 02/11/2019						
pH	11	0.010	pH Units		11			0.8	5	
Batch C000529 - ASTM D2974 Solids										
Blank (C000529-BLK1)				Prepared: 02/11/2019 Analyzed: 02/12/2019						
Percent Solids	U	0.100	%							
Duplicate (C000529-DUP1)		**Source: 19B0120-09**		Prepared: 02/11/2019 Analyzed: 02/12/2019						
Percent Solids	83.5	0.100	%		84.2			0.9	20	
Batch C000549 - SW 9045C pH										
Duplicate (C000549-DUP1)		**Source: 19B0165-01**		Prepared & Analyzed: 02/12/2019						
pH	7.8	0.010	pH Units		7.7			1	5	

LABORATORY RESULTS

Client: True North Consultants
Project: RTA Access to Transit Sidewalks: Lake Villa, IL **Lab Order:** 19B0120

Notes and Definitions

S2	Surrogate recovery exceeds the acceptance criteria due to matrix interference, but there is no observable concentration in associated analyte(s).
S	Spike recovery outside acceptance limits.
R	RPD outside acceptance limits.
M	Reporting limit set between LOQ and MDL.
I	Matrix interference.
C1	Analyte result confirmed by second analysis.
*	NELAC certified compound.
U	Analyte not detected (i.e. less than RL or MDL).

Chain of Custody Record

Phone: (847) 651-2604
FAX: (847) 458-9680

Client	True North Consultants
Address	1000 East Warrenville Road, Suite 140
City, State, Zip Code	Naperville, Illinois 60563
Phone / Facsimile	630.717.2880/630.689.5881
Project Name / Numbe	RTA Access to Transit Sidewalks
Project Location	Lake Villa, Illinois
P.O. # or Invoice To	T119038
Contact Person	Marjory McMahon Bredrup, Lauren Trzaskus, Sean Armbrust

Analysis and/or Method Requested: VOC; SVOCs; PNAs; PCBs; RCRA Metals; pH

Reporting: CCDD ■ MAC ☐; CALM ☐ A ☐ D ☐ B ☐ E ☐ C ☐ F; RISC ☐ Resid ☐ Indust

Sample Description	Sampling Date	Sampling Time	Matrix Code	Preserv Code	No. of Containers	Sample Type Comp.	Sample Type Grab	VOC	SVOCs	PNAs	PCBs	RCRA Metals	pH				Sampler Comments
SB-1	2/7/2019	08:30	S	0,5	4		x	X	X			X	X				
SB-2	2/7/2019	08:45	S	0,5	4		x	X		X		X	X				
SB-3	2/7/2019	08:55	S	0,5	4		x	X		X		X	X				
SB-4	2/7/2019	09:10	S	0,5	4		x			X		X	X				
SB-5	2/7/2019	09:20	S	0,5	4		x			X		X	X				
SB-6	2/7/2019	09:35	S	0,5	4		x	X		X		X	X				
SB-7	2/7/2019	09:45	S	0,5	4		x	X	X		X	X	X				
SB-8	2/7/2019	10:00	S	0,5	4		x	X		X		X	X				
SB-9	2/7/2019	10:10	S	0,5	4		x	X		X		X	X				
SB-10	2/7/2019	10:25	S	0,5	4		x	X		X		X	X				
SB-11	2/7/2019	10:50	S	0,5	4		x	X		X		X	X				

Matrix Code	A - Aqueous	DW - Drinking Water	GW - Ground Water	NA - Non-Aqueous Liquid	S - Solid	O - Oil	X - Other (Specify)
Preserv Code	0 - None	1 - HCl	2 - H2SO4	3 - HNO3	4 - NaOH	5 - 5035 Kit	X - Other (Specify)

Relinquished By	Date	Time	Received By	Date	Time	Method of Shipment
Sean Armbrust	2/7/2019	1500		2/7/19	1500	
	2/7/19	1700				
				2-8-19	10:40	UPS

Special Instructions:

Turnaround Time: Standard ■ Rush ☐ Date Required: ☐

QC Level: 1☐ 2■ 3☐ 4☐

On wet ice? Yes No

Temperature (°C): 1.4

PAS COC Rev. 3

Page 1 of 1

Copies: White - Client / Yellow - PAS, Inc. / Pink - Sampler

Kristen Potter

From: Lauren Trzaskus <ltrzaskus@consulttruenorth.com>
Sent: Monday, February 18, 2019 2:52 PM
To: Kristen Potter
Cc: Marjory McMahon Bredrup
Subject: RE: Report 19B0120

Hi Kristen,

Can you please run TCLP chromium on SB-1, SB-2, SB-5, SB-7, SB-8, and SB-11 samples?

Thanks!
Lauren F. Trzaskus
Associate Project Manager

True North Consultants, Inc. | **www.consulttruenorth.com**
1000 East Warrenville Road | Suite 140 | Naperville, IL 60563
P: (630) 717-2880 M: (815) 557-7256

Please consider the environment.

From: Kristen Potter <kpotter@pdclab.com>
Sent: Friday, February 15, 2019 2:33 PM
To: Marjory McMahon Bredrup <mbredrup@consulttruenorth.com>; Lauren Trzaskus <ltrzaskus@consulttruenorth.com>; Sean Brady <sbrady@consulttruenorth.com>; Michelle Schmidt <mschmidt@consulttruenorth.com>; Jamie Hoelbl <jhoelbl@consulttruenorth.com>
Subject: Report 19B0120

Please contact me with any questions.

Thanks!

Kristen Potter
kpotter@pdclab.com

PDC Laboratories, Inc.
1210 Capital Airport Drive
Springfield, IL 62707
217-753-1148 | www.pdclab.com

APPENDIX C

LPC #663 Certification

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: RTA Access to Transit Sidewalks Office Phone Number, if available: _____

Physical Site Location (address, inclduding number and street):

Portions along Cedar Ave, Lake Ave, and Central Ave - See Attached Figures

City: Lake Villa State: IL Zip Code: 60046

County: Lake Township: Lake Villa Township

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.41832 (Decimal Degrees) Longitude: -88.07910 (-Decimal Degrees)

Identify how the lat/long data were determined:

☐ GPS ☒ Map Interpolation ☐ Photo Interpolation ☐ Survey ☐ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

II. Owner/Operator Information for Source Site

Site Owner		Site Operator	
Name:	Village of Lake Villa	Name:	
Street Address:	65 Cedar Avenue	Street Address:	
PO Box:	P.O. Box 519	PO Box:	
City:	Lake Villa State: IL	City:	State:
Zip Code:	60046 Phone:	Zip Code:	Phone:
Contact:	Joyce DeLong	Contact:	
Email, if available:	jjdelong@ati-ae.com	Email, if available:	

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: RTA Access to Transit Sidewalks

Latitude: 42.41832 Longitude: -88.07910

Uncontaminated Site Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

A limited historical & regulatory review was performed to identify PIPs. Site reconnaissance was performed while sampling to evaluate on-site environmental conditions & potential PIPs. Based on the nature & scope of the project, 11 soil samples were collected for indicator contaminants associated with the PIPs, and screened with a PID. Figures 3A-3B show sample locations.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

See attached analytical summary tables, laboratory reports and associated NELAC certifications. Figures 3A-3B identifies the project area that is covered by this certification.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Sean P. Brady (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name: True North Consultants

Street Address: 1000 East Warrenville Road, Suite 140

City: Naperville State: IL Zip Code: 60563

Phone: 630.717.2880

Sean P. Brady
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

03.06.2019
Date:

LICENSED PROFESSIONAL ENGINEER
SEAN P. BRADY
062-067794
STATE OF ILLINOIS

P.E. or L.P.G. Seal:

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017
Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

"(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

(1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.

(2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.

(3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days."

Revise Article 107.40(c) of the Standard Specifications to read:

"(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

(1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

(2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the

Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

(3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13."

Revise Article 108.04(b) of the Standard Specifications to read:

"(b) No working day will be charged under the following conditions.

(1) When adverse weather prevents work on the controlling item.

(2) When job conditions due to recent weather prevent work on the controlling item.

(3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.

(4) When delays caused by utility or railroad adjustments prevent work on the controlling item.

(5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.

(6) When any condition over which the Contractor has no control prevents work on the controlling item."

Revise Article 109.09(f) of the Standard Specifications to read:

"(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead

other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited."

Add the following to Section 109 of the Standard Specifications.

"**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

(a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to $5,000,000	One Project Superintendent
Over $ 5,000,000 - up to $25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over $25,000,000 - up to $50,000,000	One Project Manager, One Project Superintendent, One Engineer, and

	One Clerk
Over $50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

80384

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010
Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment's respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 1/	600-749	2002
	750 and up	2006
June 1, 2011 2/	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 2/	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (http://www.epa.gov/cleandiesel/verification/verif-list.htm), or verified by the California Air Resources Board (CARB) (http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm); or

b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be $1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000
Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

> The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
>
> (a) Withholding progress payments;
>
> (b) Assessing sanctions;
>
> (c) Liquidated damages; and/or
>
> (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 20.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

(a) The bidder documents enough DBE participation has been obtained to meet the goal or,

(b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;

(3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

(6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

DISPOSAL FEES (BDE)

Effective: November 1, 2018

Replace Articles 109.04(b)(5) – 109.04(b)(8) of the Standard Specifications with the following:

"(5) Disposal Fees. When the extra work performed includes paying for disposal fees at a clean construction and demolition debris facility, an uncontaminated soil fill operation or a landfill, the Contractor shall receive, as administrative costs, an amount equal to five percent of the first $10,000 and one percent of any amount over $10,000 of the total approved costs of such fees.

(6) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

(7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements at the cost of force account work shall be detailed as follows.

a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.

b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

c. Quantities of materials, prices and extensions.

d. Transportation of materials.

e. Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions, and social security tax.

(8) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being $100.

(9) All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after receipt of the Central Bureau of Construction form “Extra Work Daily Report”. If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery.”

80402

EMULSIFIED ASPHALTS (BDE)

Effective: August 1, 2019

Revise Article 1032.06 of the Standard Specifications to read:

"**1032.06 Emulsified Asphalts.** Emulsified asphalts will be accepted according to the current Bureau of Materials Policy Memorandum, "Emulsified Asphalt Acceptance Procedure". These materials shall be homogeneous and shall show no separation of asphalt after thorough mixing, within 30 days after delivery, provided separation has not been caused by freezing. They shall coat the aggregate being used in the work to the satisfaction of the Engineer and shall be according to the following requirements.

(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts RS-1, RS-2, HFRS-2, SS-1h, and SS-1 shall be according to AASHTO M 140, except as follows.

(1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(b) Cationic Emulsified Asphalt. Cationic emulsified asphalts CRS-1, CRS-2, CSS-1h, and CSS-1 shall be according to AASHTO M 208, except as follows.

(1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(c) High Float Emulsion. High float emulsions HFE-90, HFE-150, and HFE-300 are medium setting and shall be according to the following table.

Test	HFE-90	HFE-150	HFE-300
Viscosity, Saybolt Furol, at 122 °F (50 °C), (AASHTO T 59), SFS [1/]	50 min.	50 min.	50 min.
Sieve Test, No. 20 (850 µm), retained on sieve, (AASHTO T 59), %	0.10 max.	0.10 max.	0.10 max.
Storage Stability Test, 1 day, (AASHTO T 59), %	1 max.	1 max.	1 max.
Coating Test (All Grades), (AASHTO T 59), 3 minutes	stone coated thoroughly		
Distillation Test, (AASHTO T 59): Residue from distillation test to 500 °F (260 °C), % Oil distillate by volume, %	65 min. 7 max.	65 min. 7 max.	65 min. 7 max.

Characteristics of residue from distillation test to 500 °F (260 °C): Penetration at 77 °F (25 °C), (AASHTO T 49), 100 g, 5 sec, dmm	90-150	150-300	300 min.
Float Test at 140 °F (60 °C), (AASHTO T 50), sec.	1200 min.	1200 min.	1200 min.

1/ The emulsion shall be pumpable.

(d) Penetrating Emulsified Prime. Penetrating Emulsified Prime (PEP) shall be according to AASHTO T 59, except as follows.

Test	Result
Viscosity, Saybolt Furol, at 77 °F (25 °C), SFS	75 max.
Sieve test, retained on No. 20 (850 µm) sieve, %	0.10 max.
Distillation to 500 °F (260 °C) residue, %	38 min.
Oil distillate by volume, %	4 max.

The PEP shall be tested according to the current Bureau of Materials Illinois Laboratory Test Procedure (ILTP), "Sand Penetration Test of Penetrating Emulsified Prime (PEP)". The time of penetration shall be equal to or less than that of MC-30. The depth of penetration shall be equal to or greater than that of MC-30.

(e) Delete this subparagraph.

(f) Polymer Modified Emulsified Asphalt. Polymer modified emulsified asphalts, e.g. SS-1hP, CSS-1hP, CRS-2P (formerly CRSP), CQS-1hP (formerly CSS-1h Latex Modified) and HFRS-2P (formerly HFP) shall be according to AASHTO M 316, except as follows.

(1) The cement mixing test will be waived when the polymer modified emulsion is being used as a tack coat.

(2) CQS-1hP (formerly CSS-1h Latex Modified) emulsion for micro-surfacing treatments shall use latex as the modifier.

(3) Upon examination of the storage stability test cylinder after standing undisturbed for 24 hours, the surface shall show minimal to no white, milky colored substance and shall be a homogenous brown color throughout.

(4) The distillation for all polymer modified emulsions shall be performed according to AASHTO T 59, except the temperature shall be 374 ± 9 °F (190 ± 5 °C) to be held for a period of 15 minutes and measured using an ASTM 16F (16C) thermometer.

(5) The specified temperature for the Elastic Recovery test for all polymer modified emulsions shall be 50.0 ± 1.0 °F (10.0 ± 0.5 °C).

(6) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(g) Non-Tracking Emulsified Asphalt. Non-tracking emulsified asphalt NTEA (formerly SS-1vh) shall be according to the following.

Test	Requirement
Saybolt Viscosity at 77 °F (25 °C), (AASHTO T 59), SFS	20-100
Storage Stability Test, 24 hr, (AASHTO T 59), %	1 max.
Residue by Distillation, 500 ± 10 °F (260 ± 5 °C), or Residue by Evaporation, 325 ± 5 °F (163 ± 3 °C), (AASHTO T 59), %	50 min.
Sieve Test, No. 20 (850 µm), (AASHTO T 59), %	0.3 max.
Tests on Residue from Evaporation	
Penetration at 77 °F (25 °C), 100 g, 5 sec, (AASHTO T 49), dmm	40 max.
Softening Point, (AASHTO T 53), °F (°C)	135 (57) min.
Ash Content, (AASHTO T 111), % 1/	1 max.

1/ The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent

The different grades are, in general, used for the following.

Grade	Use
SS-1, SS-1h, RS-1, RS-2, CSS-1, CRS-1, CRS-2, CSS-1h, HFE-90, SS-1hP, CSS-1hP, NTEA (formerly SS-1vh)	Tack Coat
PEP	Prime Coat
RS-2, HFE-90, HFE-150, HFE-300, CRS-2P (formerly CRSP), HFRS-2P (formerly HFP), CRS-2, HFRS-2	Bituminous Surface Treatment
CQS-1hP (formerly CSS-1h Latex Modified)	Micro-Surfacing Slurry Sealing Cape Seal”

80415

EQUIPMENT PARKING AND STORAGE (BDE)

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

"**701.11 Equipment Parking and Storage.** During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

(a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.

(b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.

(c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.

(d) Behind other man-made or natural barriers meeting the approval of the Engineer."

80388

GEOTECHNICAL FABRIC FOR PIPE UNDERDRAINS AND FRENCH DRAINS (BDE)

Effective: November 1, 2019

Revise Article 1080.01(a) of the Standard Specifications to read:

"(a) Fabric Materials. Fabric materials shall be as follows.

(1) Knitted Fabric. Knitted fabric envelope shall be Type A according to ASTM D 6707 and be a continuous one piece knitted polymeric material that fits over the pipe underdrain like a sleeve. It shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

(2) Woven or Nonwoven Fabric. The fabric shall be Class 3 according to AASHTO M 288 and consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape like character) shall not be permitted. The yarns or filaments shall be dimensionally stable (i.e. maintain their relative position with respect to each other) and resistant to delamination. The yarns or filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

(3) Physical Properties. The physical properties for knitted, woven, and nonwoven fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Knitted [1/]	Woven [2/]	Nonwoven [2/]
Grab Strength, lb (N) ASTM D 4632 [3/]	--	180 (800) min.	112 (500) min.
Elongation/Grab Strain, % ASTM D 4632 [3/]	--	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 [3/]	--	67 (300) min.	40 (180) min.
Puncture Strength, lb (N) ASTM D 6241 [3/]	180 (800) min.	370 (1650) min.	222 (990) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 [4/]	30 (0.60) max.	40 (0.425) max.	40 (0.425) max.
Permittivity, sec^{-1} ASTM D 4491	1.0 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	--	50 min.	50 min.

1/ Manufacturer's certification to meet test requirements.

2/ NTPEP results or manufacturer's certification to meet test requirements.

3/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

4/ Values represent the maximum average roll value."

Revise Article 1080.05 of the Standard Specifications to read:

"**1080.05 Geotechnical Fabric for French Drains and Pipe Underdrains, Type 2.** Geotechnical fabric for french drains and pipe underdrains, Type 2 shall be Class 3 according to AASHTO M 288 and consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. The yarns or filaments shall be dimensionally stable (i.e. maintain their relative position with respect to each other) and resistant to delamination. The yarns or filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

The fabric shall be according to the following.

PHYSICAL PROPERTIES 1/		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 2/	180 (800) min.	112 (500) min.
Elongation/Grab Strain, % ASTM D 4632 2/	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 2/	67 (300) min.	40 (180) min.
Puncture Strength, lb (N) ASTM D 6241 2/	370 (1650) min.	222 (990) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 3/	60 (0.25) max.	
Permittivity, sec^{-1} ASTM D 4491	0.2 min.	
Ultraviolet Stability % retained strength after 500 hours of exposure - ASTM D 4355	50 min.	

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

3/ Values represent the maximum average roll value."

80417

MOBILIZATION (BDE)

Effective: April 1, 2020

Replace Articles 671.02(a), (b), and (c) of the Standard Specifications with the following:

"(a) Upon execution of the contract, 90 percent of the pay item will be paid.

(b) When 90 percent of the adjusted contract value is earned, the remaining ten percent of the pay item will be paid along with any amount bid in excess of six percent of the original contract amount."

80428

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	
	PP-1	4.0 - 8.0"
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type."

80389

PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

"(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time 1/ (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer."

80430

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2019
Revised: January 1, 2020

Revise Section 669 of the Standard Specifications to read:

"**SECTION 669. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES**

669.01 Description. This work shall consist of the transportation and proper disposal of regulated substances. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their contents and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.

669.02 Equipment. The Contractor shall notify the Engineer of the delivery of all excavation, storage, and transportation equipment to a work area location. The equipment shall comply with OSHA and American Petroleum Institute (API) guidelines and shall be furnished in a clean condition. Clean condition means the equipment does not contain any residual material classified as a non-special waste, non-hazardous special waste, or hazardous waste. Residual materials include, but are not limited to, petroleum products, chemical products, sludges, or any other material present in or on equipment.

Before beginning any associated soil or groundwater management activity, the Contractor shall provide the Engineer with the opportunity to visually inspect and approve the equipment. If the equipment contains any contaminated residual material, decontamination shall be performed on the equipment as appropriate to the regulated substance and degree of contamination present according to OSHA and API guidelines. All cleaning fluids used shall be treated as the contaminant unless laboratory testing proves otherwise.

669.03 Pre-Construction Submittals and Qualifications. Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a "Regulated Substances Pre-Construction Plan (RSPCP)" to the Engineer for review and approval using form BDE 2730. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

As part of the RSPCP, the Contractor(s) or firm(s) performing the work shall meet the following qualifications.

(a) Regulated Substances Monitoring. Qualification for environmental observation and field screening of regulated substances work and environmental observation of UST removal shall require either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements using BDE 2730.

Qualification for each individual performing regulated substances monitoring shall require a minimum of one-year of experience in similar activities as those required for the project.

(b) Underground Storage Tank Removal. Qualification for underground storage tank (UST) removal work shall require licensing and certification with the Office of the State Fire Marshall (OSFM) and possession of all permits required to perform the work. A copy of the permit shall be provided to the Engineer prior to tank removal.

The qualified Contractor(s) or firm(s) shall also document it does not have any current or former ties with any of the properties contained within, adjoining, or potentially affecting the work.

The Engineer will require up to 21 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 21 days will be required for each subsequent review. Work shall not commence until the RSPCP has been approved by the Engineer. After approval, the RSPCP shall be revised as necessary to reflect changed conditions in the field and documented using BDE 2730A "Regulated Substances Pre-Construction Plan (RSPCP) Addendum" and submitted to the Engineer for approval.

CONSTRUCTION REQUIREMENTS

669.04 Regulated Substances Monitoring. Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities at the contract specific work areas. As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)".

(a) Environmental Observation. Prior to beginning excavation, the Contractor shall mark the limits of the contract specific work areas. Once work begins, the monitoring personnel shall be present on-site continuously during the excavation and loading of material.

(b) Field Screening. Field screening shall be performed during the excavation and loading of material from the contract specific work areas, except for material classified according to Article 669.05(b)(1) or 669.05(c) where field screening is not required.

Field screening shall be performed with either a photoionization detector (PID) (minimum 10.6eV lamp) or a flame ionization detector (FID), and other equipment as appropriate, to monitor for potential contaminants associated with regulated substances. The PID or FID shall be calibrated on-site, and background level readings taken and recorded daily, and as field and weather conditions change. Field screen readings on the PID or FID in excess of background levels indicates the potential presence of regulated substances requiring handling as a non-special waste, special waste, or hazardous waste. PID or FID readings may be used as the basis of increasing the limits of removal with the approval of the Engineer but shall in no case be used to decrease the limits.

669.05 Regulated Substances Management and Disposal. The management and disposal of soil and/or groundwater containing regulated substances shall be according to the following:

(a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605, the soil shall be managed as follows:

(1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC, but still considered within area background levels by the Engineer, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable. If the soils cannot be utilized within the right-of-way, they shall be managed and disposed of at a landfill as a non-special waste.

(2) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County identified in 35 Ill. Admin. Code 742 Appendix A. Table G, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of at a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation (USFO) within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(5) When the Engineer determines soil cannot be managed according to Articles 669.05(a)(1) through (a)(4) above and the materials do not contain special waste or hazardous waste, as determined by the Engineer, the soil shall be managed and disposed of at a landfill as a non-special waste.

(6) When analytical results indicate soil is hazardous by characteristic or listing pursuant to 35 Ill. Admin. Code 721, contains radiological constituents, or the Engineer otherwise determines the soil cannot be managed according to Articles 669.05(a)(1)

through (a)(5) above, the soil shall be managed and disposed of off-site as a special waste or hazardous waste as applicable.

(b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO for any of the following reasons.

(1) The pH of the soil is less than 6.25 or greater than 9.0.

(2) The soil exhibited PID or FID readings in excess of background levels.

(c) Soil Analytical Results Exceed Most Stringent MAC but Do Not Exceed Tiered Approach to Corrective Action Objectives (TACO) Residential. When the soil analytical results indicate that detected levels exceed the most stringent MAC but do not exceed TACO Tier 1 Soil Remediation Objectives for Residential Properties pursuant to 35 Ill. Admin. Code 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO.

(d) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Ill. Admin. Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste or hazardous waste as applicable. Special waste groundwater shall be containerized and trucked to an off-site treatment facility, or may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority. Groundwater discharged to a sanitary sewer or combined sewer shall be pre-treated to remove particulates and measured with a calibrated flow meter to comply with applicable discharge limits. A copy of the permit shall be provided to the Engineer prior to discharging groundwater to the sanitary sewer or combined sewer.

Groundwater encountered within trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench, it may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority, or it shall be containerized and trucked to an off-site treatment facility as a special waste or hazardous waste. The Contractor is prohibited from discharging groundwater within the trench through a storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive

soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than 10^{-7} cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.

The Contractor shall use due care when transferring contaminated material from the area of origin to the transporter. Should releases of contaminated material to the environment occur (i.e., spillage onto the ground, etc.), the Contractor shall clean-up spilled material and place in the appropriate storage containers as previously specified. Clean-up shall include, but not be limited to, sampling beneath the material staging area to determine complete removal of the spilled material.

The Contractor shall provide engineered barriers, when required, and shall include materials sufficient to completely line excavation surfaces, including sloped surfaces, bottoms, and sidewall faces, within the areas designated for protection.

The Contractor shall obtain all documentation including any permits and/or licenses required to transport the material containing regulated substances to the disposal facility. The Contractor shall coordinate with the Engineer on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate waste disposal approvals with the disposal facility.

The Contractor shall provide the Engineer with all transport-related documentation within two days of transport or receipt of said document(s). For management of special or hazardous waste, the Contractor shall provide the Engineer with documentation that the Contractor is operating with a valid Illinois special waste transporter permit at least two weeks before transporting the first load of contaminated material.

Transportation and disposal of material classified according to Article 669.05(a)(5) or 669.05(a)(6) shall be completed each day so that none of the material remains on-site by the close of business, except when temporary staging has been approved.

Any waste generated as a special or hazardous waste from a non-fixed facility shall be manifested off-site using the Department's county generator number provided by the Bureau of Design and Environment. An authorized representative of the Department shall sign all manifests for the disposal of the contaminated material and confirm the Contractor's transported volume. Any waste generated as a non-special waste may be managed off-site without a manifest, a special waste transporter, or a generator number.

The Contractor shall select a landfill permitted for disposal of the contaminant within the State of Illinois. The Department will review and approve or reject the facility proposed by the Contractor to use as a landfill. The Contractor shall verify whether the selected disposal facility is compliant with those applicable standards as mandated by their permit and whether the disposal facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The use of a Contractor selected landfill shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.

669.06 Non-Special Waste Certification. An authorized representative of the Department shall sign and date all non-special waste certifications. The Contractor shall be responsible for providing the Engineer with the required information that will allow the Engineer to certify the waste is not a special waste.

(a) Definition. A waste is considered a non-special waste as long as it is not:

(1) a potentially infectious medical waste;

(2) a hazardous waste as defined in 35 Ill. Admin. Code 721;

(3) an industrial process waste or pollution control waste that contains liquids, as determined using the paint filter test set forth in subdivision (3)(A) of subsection (m) of 35 Ill. Admin. Code 811.107;

(4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61.141;

(5) a material containing polychlorinated biphenyls (PCB's) regulated pursuant to 40 CFR Part 761;

(6) a material subject to the waste analysis and recordkeeping requirements of 35 Ill. Admin. Code 728.107 under land disposal restrictions of 35 Ill. Admin. Code 728;

(7) a waste material generated by processing recyclable metals by shredding and required to be managed as a special waste under Section 22.29 of the Environmental Protection Act; or

(8) an empty portable device or container in which a special or hazardous waste has been stored, transported, treated, disposed of, or otherwise handled.

(b) Certification Information. All information used to determine the waste is not a special waste shall be attached to the certification. The information shall include but not be limited to:

(1) the means by which the generator has determined the waste is not a hazardous waste;

(2) the means by which the generator has determined the waste is not a liquid;

(3) if the waste undergoes testing, the analytic results obtained from testing, signed and dated by the person responsible for completing the analysis;

(4) if the waste does not undergo testing, an explanation as to why no testing is needed;

(5) a description of the process generating the waste; and

(6) relevant material safety data sheets.

669.07 Temporary Staging. Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. Soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Temporary staging shall be accomplished within the right-of-way and the Contractor's means and methods shall be described in the approved or amended RSPCP. Staging areas shall not be located within 200 feet (61 m) of a public or private water supply well; nor within 100 feet (30 m) of sensitive environmental receptor areas, including wetlands, rivers, streams, lakes, or designated habitat zones.

The method of staging shall consist of containerization or stockpiling as applicable for the type, classification, and physical state (i.e., liquid, solid, semisolid) of the material. Materials of different classifications shall be staged separately with no mixing or co-mingling.

When containers are used, the containers and their contents shall remain intact and inaccessible to unauthorized persons until the manner of disposal is determined. The Contractor shall be responsible for all activities associated with the storage containers including, but not limited to, the procurement, transport, and labeling of the containers. The Contractor shall not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could cause the waste to be reclassified as a hazardous or special waste.

When stockpiles are used, they shall be covered with a minimum 20-mil plastic sheeting or tarps secured using weights or tie-downs. Perimeter berms or diversionary trenches shall be provided to contain and collect for disposal any water that drains from the soil. Stockpiles shall be managed to prevent or reduce potential dust generation.

When staging non-special waste, special waste, or hazardous waste, the following additional requirements shall apply:

(a) Non-Special Waste. When stockpiling soil classified according to Article 669.05(a)(1) or 669.05(a)(5), an impermeable surface barrier between the materials and the ground surface shall be installed. The impermeable barrier shall consist of a minimum 20-mil plastic liner material and the surface of the stockpile area shall be clean and free of debris prior to placement of the liner. Measures shall also be taken to limit or discourage access to the staging area.

(b) Special Waste and Hazardous Waste. Soil classified according to Article 669.05(a)(6) shall not be stockpiled but shall be containerized immediately upon generation in containers, tanks or containment buildings as defined by RCRA, Toxic Substances Control

Act (TSCA), and other applicable State or local regulations and requirements, including 35 Ill. Admin. Code Part 722, Standards Applicable to Generators of Hazardous Waste.

The staging area(s) shall be enclosed (by a fence or other structure) to restrict direct access to the area, and all required regulatory identification signs applicable to a staging area containing special waste or hazardous waste shall be deployed.

Storage containers shall be placed on an all-weather gravel-packed, asphalt, or concrete surface. Containers shall be in good condition and free of leaks, large dents, or severe rusting, which may compromise containment integrity. Containers must be constructed of, or lined with, materials that will not react or be otherwise incompatible with the hazardous or special waste contents. Containers used to store liquids shall not be filled more than 80 percent of the rated capacity. Incompatible wastes shall not be placed in the same container or comingled.

All containers shall be legibly labeled and marked using pre-printed labels and permanent marker in accordance with applicable regulations, clearly showing the date of waste generation, location and/or area of waste generation, and type of waste. The Contractor shall place these identifying markings on an exterior side surface of the container.

Storage containers shall be kept closed, and storage pads covered, except when access is needed by authorized personnel.

Special waste and hazardous waste shall be transported and disposed within 90 days from the date of generation.

669.08 Underground Storage Tank Removal. For the purposes of this section, an underground storage tank (UST) includes the underground storage tank, piping, electrical controls, pump island, vent pipes and appurtenances.

Prior to removing an UST, the Engineer shall determine whether the Department is considered an "owner" or "operator" of the UST as defined by the UST regulations (41 Ill. Adm. Code Part 176). Ownership of the UST refers to the Department's owning title to the UST during storage, use or dispensing of regulated substances. The Department may be considered an "operator" of the UST if it has control of, or has responsibility for, the daily operation of the UST. The Department may however voluntarily undertake actions to remove an UST from the ground without being deemed an "operator" of the UST.

In the event the Department is deemed not to be the "owner" or "operator" of the UST, the OSFM removal permit shall reflect who was the past "owner" or "operator" of the UST. If the "owner" or "operator" cannot be determined from past UST registration documents from OSFM, then the OSFM removal permit will state the "owner" or "operator" of the UST is the Department. The Department’s Office of Chief Counsel (OCC) will review all UST removal permits prior to submitting any removal permit to the OSFM. If the Department is not the “owner” or “operator” of the UST then it will not register the UST or pay any registration fee.

The Contractor shall be responsible for obtaining permits required for removing the UST, notification to the OSFM, using an OSFM certified tank contractor, removal and disposal of the UST and its contents, and preparation and submittal of the OSFM Site Assessment Report in accordance with 41 Ill. Admin. Code Part 176.330.

The Contractor shall contact the Engineer and the OSFM's office at least 72 hours prior to removal to confirm the OSFM inspector's presence during the UST removal. Removal, transport, and disposal of the UST shall be according to the applicable portions of the latest revision of the "American Petroleum Institute (API) Recommended Practice 1604".

The Contractor shall collect and analyze tank content (sludge) for disposal purposes. The Contractor shall remove as much of the regulated substance from the UST system as necessary to prevent further release into the environment. All contents within the tank shall be removed, transported and disposed of, or recycled. The tank shall be removed and rendered empty according to IEPA definition.

The Contractor shall collect soil samples from the bottom and sidewalls of the excavated area in accordance with 35 Ill. Admin. Code Part 734.210(h) after the required backfill has been removed during the initial response action, to determine the level of contamination remaining in the ground, regardless if a release is confirmed or not by the OSFM on-site inspector.

In the event the UST is designated a leaking underground storage tank (LUST) by the OSFM's inspector, or confirmation by analytical results, the Contractor shall notify the Engineer and the District Environmental Studies Unit (DESU). Upon confirmation of a release of contaminants and notifications to the Engineer and DESU, the Contractor shall report the release to the Illinois Emergency Management Agency (IEMA) (e.g., by telephone or electronic mail) and provide them with whatever information is available ("owner" or "operator" shall be stated as the past registered "owner" or "operator", or the IDOT District in which the tank is located and the DESU Manager).

The Contractor shall perform the following initial response actions if a release is indicated by the OSFM inspector:

(a) Take immediate action to prevent any further release of the regulated substance to the environment, which may include removing, at the Engineer's discretion, and disposing of up to 4 ft (1.2 m) of the contaminated material, as measured from the outside dimension of the tank;

(b) Identify and mitigate fire, explosion and vapor hazards;

(c) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and groundwater; and

(d) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors and free product that have migrated from the tank excavation zone and entered into subsurface structures (such as sewers or basements).

The tank excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. All uncontaminated concrete and soil removed during tank extraction may be used to backfill the excavation, at the discretion of the Engineer.

After backfilling the excavation, the site shall be graded and cleaned.

669.09 Regulated Substances Final Construction Report. Not later than 90 days after completing this work, the Contractor shall submit a "Regulated Substances Final Construction Report (RSFCR)" to the Engineer using form BDE 2733 and required attachments. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

669.10 Method of Measurement. Non-special waste, special waste, and hazardous waste soil will be measured for payment according to Article 202.07(b) when performing earth excavation, Article 502.12(b) when excavating for structures, or by computing the volume of the trench using the maximum trench width permitted and the actual depth of the trench.

Groundwater containerized and transported off-site for management, storage, and disposal will be measured for payment in gallons (liters).

Backfill plugs will be measured in cubic yards (cubic meters) in place, except the quantity for which payment will be made shall not exceed the volume of the trench, as computed by using the maximum width of trench permitted by the Specifications and the actual depth of the trench, with a deduction for the volume of the pipe.

Engineered Barriers will be measured for payment in square yards (square meters).

669.11 Basis of Payment. The work of preparing, submitting and administering a Regulated Substances Pre-Construction Plan will be paid for at the contract lump sum price for REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN.

Regulated substances monitoring, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day, or fraction thereof to the nearest 0.5 calendar day, for REGULATED SUBSTANCES MONITORING.

The installation of engineered barriers will be paid for at the contract unit price per square yard (square meter) for ENGINEERED BARRIER.

The work of UST removal, soil excavation, soil and content sampling, the management of excavated soil and UST content, and UST disposal, will be paid for at the contract unit price per each for UNDERGROUND STORAGE TANK REMOVAL.

The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for

NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.

The transportation and disposal of groundwater from an excavation determined to be contaminated will be paid for at the contract unit price per gallon (liter) for SPECIAL WASTE GROUNDWATER DISPOSAL or HAZARDOUS WASTE GROUNDWATER DISPOSAL. When groundwater is discharged to a sanitary or combined sewer by permit, the cost will be paid for according to Article 109.05.

Backfill plugs will be paid for at the contract unit price per cubic yard (cubic meter) for BACKFILL PLUGS.

Payment for temporary staging of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) will be paid for according to Article 109.04. The Department will not be responsible for any additional costs incurred, if mismanagement of the staging area, storage containers, or their contents by the Contractor results in excess cost expenditure for disposal or other material management requirements.

Payment for accumulated stormwater removal and disposal will be according to Article 109.04. Payment will only be allowed if appropriate stormwater and erosion control methods were used.

Payment for decontamination, labor, material, and equipment for monitoring areas beyond the specified areas, with the Engineer's prior written approval, will be according to Article 109.04.

When the waste material for disposal requires sampling for landfill disposal acceptance, the samples shall be analyzed for TCLP VOCs, SVOCs, RCRA metals, pH, ignitability, and paint filter test. The analysis will be paid for at the contract unit price per each for SOIL DISPOSAL ANALYSIS using EPA Methods 1311 (extraction), 8260B for VOCs, 8270C for SVOCs, 6010B and 7470A for RCRA metals, 9045C for pH, 1030 for ignitability, and 9095A for paint filter.

The work of preparing, submitting and administering a Regulated Substances Final Construction Report will be paid for at the contract lump sum price REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT."

80407

SILT FENCE, INLET FILTERS, GROUND STABILIZATION AND RIPRAP FILTER FABRIC (BDE)

Effective: November 1, 2019
Revised: April 1, 2020

Revise Article 280.02(m) and add Article 280.02(n) so the Standard Specifications read:

"(m) Above Grade Inlet Filter (Fitted)..... 1081.15(j)
(n) Above Grade Inlet Filter (Non-Fitted).....1081.15(k)"

Revise the last sentence of the first paragraph in Article 280.04(c) of the Standard Specifications to read:

"The protection shall be constructed with hay or straw bales, silt filter fence, above grade inlet filters (fitted and non-fitted), or inlet filters.

Revise the first sentence of the second paragraph in Article 280.04(c) of the Standard Specifications to read:

"When above grade inlet filters (fitted and non-fitted) are specified, they shall be of sufficient size to completely span and enclose the inlet structure."

Revise Article 1080.02 of the Standard Specifications to read:

"**1080.02 Geotextile Fabric.** The fabric for silt filter fence shall consist of woven fabric meeting the requirements of AASHTO M 288 for unsupported silt fence.

The fabric for ground stabilization shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 2 and nonwoven fabrics shall be Class 1 according to AASHTO M 288.

The physical properties for silt fence and ground stabilization fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Silt Fence Woven [1/]	Ground Stabilization Woven [2/]	Ground Stabilization Nonwoven [2/]
Grab Strength, lb (N) [3/] ASTM D 4632	123 (550) MD 101 (450) XD	247 (1100) min. [4/]	202 (900) min. [4/]
Elongation/Grab Strain, % ASTM D 4632 [4/]	49 max.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 [4/]	--	90 (400) min.	79 (350) min.

Puncture Strength, lb (N) ASTM D 6241 [4/]	--	494 (2200) min.	433 (1925) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 [5/]	30 (0.60) max.	40 (0.43) max.	40 (0.43) max.
Permittivity, sec^{-1} ASTM D 4491	0.05 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	70 min.	50 min.	50 min.

1/ NTPEP results or manufacturer's certification to meet test requirements.

2/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

3/ MD = Machine direction. XD = Cross-machine direction.

4/ Values represent the minimum average roll value (MARV) in the weaker principle direction, MD or XD.

5/ Values represent the maximum average roll value."

Revise Article 1080.03 of the Standard Specifications to read:

"**1080.03 Filter Fabric.** The filter fabric shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 3 for riprap gradations RR 4 and RR 5, and Class 2 for RR 6 and RR 7 according to AASHTO M 288. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. Nonwoven fabrics shall be Class 2 for riprap gradations RR 4 and RR 5, and Class 1 for RR 6 and RR 7 according to AASHTO M 288. After forming, the fabric shall be processed so that the yarns or filaments retain their relative positions with respect to each other. The fabric shall be new and undamaged.

The filter fabric shall be manufactured in widths of not less than 6 ft (2 m). Sheets of fabric may be sewn together with thread of a material meeting the chemical requirements given for the yarns or filaments to form fabric widths as required. The sheets of filter fabric shall be sewn together at the point of manufacture or another approved location.

The filter fabric shall be according to the following.

PHYSICAL PROPERTIES [1/]				
	Gradation Nos. RR 4 & RR 5		Gradation Nos. RR 6 & RR 7	
	Woven	Nonwoven	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 [2/]	180 (800) min.	157 (700) min.	247 (1100) min.	202 (900) min.
Elongation/Grab Strain, % ASTM D 4632 [2/]	49 max.	50 min.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 [2/]	67 (300) min.	56 (250) min.	90 (400) min.	79 (350) min.
Puncture Strength, lb (N) ASTM D 6241 [2/]	370 (1650) min.	309 (1375) min.	494 (2200) min.	433 (1925) min.
Ultraviolet Stability, % retained strength after 500 hours of exposure - ASTM D 4355	50 min.			

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

As determined by the Engineer, the filter fabric shall meet the requirements noted in the following after an onsite investigation of the soil to be protected.

Soil by Weight (Mass) Passing the No. 200 sieve (75 µm), %	Apparent Opening Size, Sieve No. (mm) - ASTM D 4751 [1/]	Permittivity, sec^{-1} ASTM D 4491
49 max.	60 (0.25) max.	0.2 min.
50 min.	70 (0.22) max.	0.1 min.

1/ Values represent the maximum average roll value."

Revise Article 1081.15(h)(3)a of the Standard Specifications to read:

"a. Inner Filter Fabric Bag. The inner filter fabric bag shall be constructed of woven yarns or nonwoven filaments made of polyolefins or polyesters with a minimum silt and debris capacity of 2.0 cu ft (0.06 cu m). Woven fabric shall be Class 3 and nonwoven fabric shall be Class 2 according to AASHTO M 288. The fabric bag shall be according to the following.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 1/	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 1/	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 1/	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 1/	370 (1650) min.	309 (1375) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 2/	60 (0.25) max.	
Permittivity, sec^{-1} ASTM D 4491	2.0 min.	
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.	

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value."

Revise Article 1081.15(i)(1) of the Standard Specifications to read:

"(i) Urethane Foam/Geotextile. Urethane foam/geotextile shall be triangular shaped having a minimum height of 10 in. (250 mm) in the center with equal sides and a minimum 20 in. (500 mm) base. The triangular shaped inner material shall be a low density urethane foam. The outer geotextile fabric cover shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters placed around the inner material and shall extend beyond both sides of the triangle a minimum of 18 in. (450 mm). Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288.

(1) The geotextile shall meet the following properties.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 1/	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 1/	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 1/	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 1/	370 (1650) min.	309 (1375) min.

Apparent Opening Size, Sieve No. (mm) ASTM D 4751 2/	30 (0.60) max.
Permittivity, sec^{-1} ASTM D 4491	2.0 min.
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value."

Add the following to Article 1081.15(i) of the Standard Specifications.

"(3) Certification. The manufacturer shall furnish a certificate with each shipment of urethane foam/geotextile assemblies stating the amount of product furnished and that the material complies with these requirements."

Revise the title and first sentence of Article 1081.15(j) of the Standards Specifications to read:

"(j) Above Grade Inlet Filters (Fitted). Above grade inlet filters (fitted) shall consist of a rigid polyethylene frame covered with a fitted geotextile filter fabric."

Revise Article 1081.15(j)(2) of the Standard Specifications to read:

(2) Fitted Geotextile Filter Fabric. The fitted geotextile filter fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288. The filter shall be fabricated to provide a direct fit to the frame. The top of the filter shall integrate a coarse screen with a minimum apparent opening size of 1/2 in. (13 mm) to allow large volumes of water to pass through in the event of heavy flows. The filter shall have integrated anti-buoyancy pockets capable of holding a minimum of 3.0 cu ft (0.08 cu m) of stabilization material. Each filter shall have a label with the following information sewn to or otherwise permanently adhered to the outside: manufacturer's name, product name, and lot, model, or serial number. The fitted geotextile filter fabric shall be according to the table in Article 1081.15(h)(3)a above."

Add Article 1081.15(k) to the Standard Specifications to read:

"(k) Above Grade Inlet Filters (Non-Fitted). Above grade inlet filters (non-fitted) shall consist of a geotextile fabric surrounding a metal frame. The frame shall consist of either a) a circular cage formed of welded wire mesh, or b) a collapsible aluminum frame, as described below.

(1) Frame Construction.

a) Welded Wire Mesh Frame. The frame shall consist of 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh formed of #10 gauge (3.42 mm) steel conforming to ASTM A 185. The mesh shall be 30 in. (750 mm) tall and formed into a 42 in. (1.05 m) minimum diameter cylinder.

b) Collapsible Aluminum Frame. The collapsible aluminum frame shall consist of grade 6036 aluminum. The frame shall have anchor lugs that attach it to the inlet grate, which shall resist movement from water and debris. The collapsible joints of the frame shall have a locking device to secure the vertical members in place, which shall prevent the frame from collapsing while under load from water and debris.

(2) Geotextile Fabric. The geotextile fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. The woven filter fabric shall be a Class 3 and the nonwoven filter fabric shall be a Class 2 according to AASHTO M 288. The geotextile fabric shall be according to the table in Article 1081.15(h)(3)a above.

(3) Geotechnical Fabric Attachment to the Frame.

a) Welded Wire Mesh Frame. The woven or nonwoven geotextile fabric shall be wrapped 3 in. (75 mm) over the top member of a 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh frame and secured with fastening rings constructed of wire conforming to ASTM A 641, A 809, A 370, and A 938 at 6 in. (150 mm) on center. The fastening rings shall penetrate both layers of geotextile and securely close around the steel mesh. The geotextile shall be secured to the sides of the welded wire mesh with fastening rings at a spacing of 1 per sq ft (11 per sq m) and securely close around a steel member.

b) Collapsible Aluminum Frame. The woven or nonwoven fabric shall be secured to the aluminum frame along the top and bottom of the frame perimeter with strips of aluminum secured to the perimeter member, such that the anchoring system provides a uniformly distributed stress throughout the geotechnical fabric.

(4) Certification. The manufacturer shall furnish a certificate with each shipment of above grade inlet filter assemblies stating the amount of product furnished and that the material complies with these requirements."

80419

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

"**109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.** The Contractor shall report all payments made to the following parties:

(a) first tier subcontractors;

(b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;

(c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment."

80397

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017
Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

"This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than $10,000	25%
$10,000 to less than $20,000	20%
$20,000 to less than $40,000	18%
$40,000 to less than $60,000	16%
$60,000 to less than $80,000	14%
$80,000 to less than $100,000	12%
$100,000 to less than $250,000	10%
$250,000 to less than $500,000	9%
$500,000 to $750,000	8%
Over $750,000	7%"

80391

TRAFFIC CONTROL DEVICES - CONES (BDE)

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

"(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts."

Revise Article 1106.02(b) of the Standard Specifications to read:

"(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer's specifications such that they are not moved by wind or passing traffic."

80409

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012
Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

"**1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(11) Equipment for Warm Mix Technologies.

a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(e) Warm Mix Technologies.

(1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.

(2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports .....1106.02"

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

"For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer's specifications."

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

"**701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer's self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device."

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

"**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact

attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019."

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

"(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis."

80427

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within 45 working days.

80071

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection

for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each

classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of

Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

"(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.