Strand Associates, Inc.®
910 West Wingra Drive
Madison, WI 53715
(P) 608-251-4843
(F) 608-251-8655

November 28, 2017

Mr. Dan Stephany, Director of Public Works
City of Monona
5211 Schluter Road
Monona, WI 53716

Re: North Winnequah Park Lagoon Improvements Preliminary Design

Dear Dan,

This letter is written to transmit deliverables for the North Winnequah Park Lagoon Improvements Preliminary Design project partially funded by a Wisconsin Department of Natural Resources (WDNR) Large Scale Lake Management Planning Grant. The following deliverables are attached.

1. Attachment A–Preliminary Drawings–The preliminary drawings show Phase 1 and Phase 2 limits. The Phase 1 limits involve removing only sediments contaminated with polychlorinated Biphenyls (PCBs) as required by WDNR and associated adjacent work. The Phase 2 limits involve removing all remaining sediments and associated adjacent work.
2. Attachment B–Preliminary Technical Specifications Framework
3. Attachment C–Opinion of Probable Construction Cost (OPCC)–Two OPCCs (in 2019 dollars) are attached, the Phase 1 OPCC and the combined Phases 1 and 2 OPCC. The combined Phases 1 and 2 OPCC contemplates completing the entire North Winnequah Park Lagoon Improvements as one project and can serve as the City of Monona's long-term master plan for the area with implementation dependent on available funding.
4. Attachment D–Sediment Sampling Results Letter
5. Attachment E–Anticipated Permitting Requirements
6. Attachment F–Anticipated Project Schedule
7. Attachment G–Grant Agreement Signed

Sincerely,

STRAND ASSOCIATES, INC.®

Jon H. Lindert, P.E., LEED AP

Enclosures

c/enc.: Jacob Anderson, Parks and Recreation Director, City of Monona
Brad Bruun, Project Manager/GIS Specialist, City of Monona

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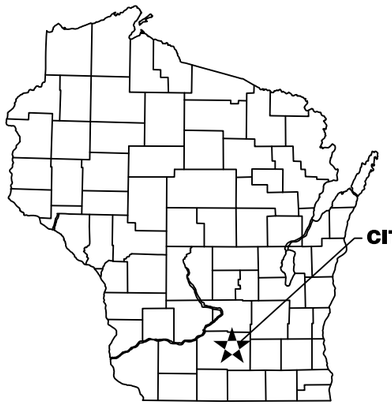
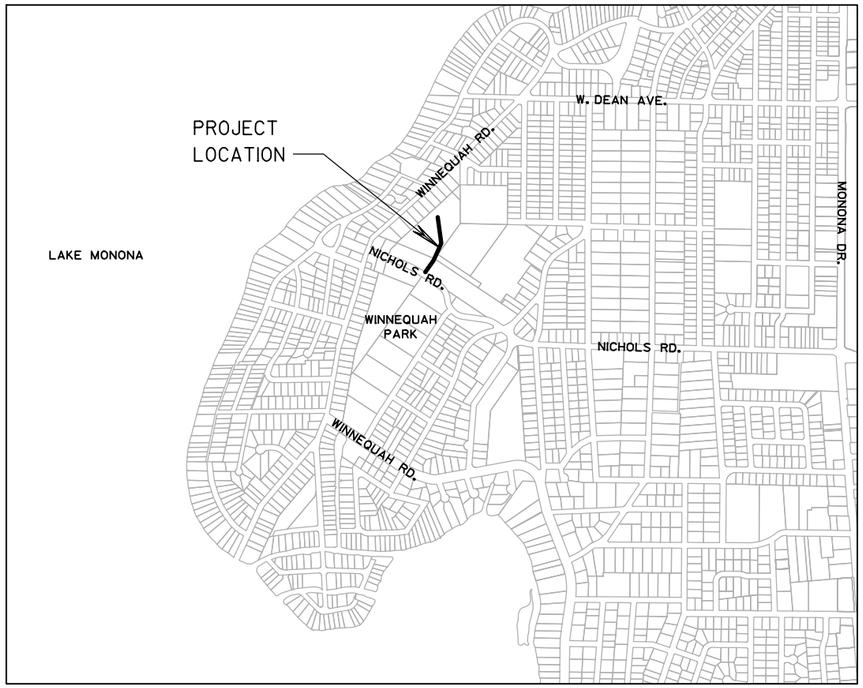
Attachment A-Preliminary Drawings

NORTH WINNEQUAH PARK
LAGOON DREDGING PLAN
FOR THE
CITY OF MONONA
DANE COUNTY, WISCONSIN
NOVEMBER, 2017



PROJECT LOCATION MAP
NO SCALE



LIST OF DRAWINGS

910 West Wingra Drive
Madison, WI 53715
608-251-4843
608-251-8655 fax
www.strand.com

CONTRACT NO. 3-20XX

PROJECT LOCATION MAP
NO SCALE

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

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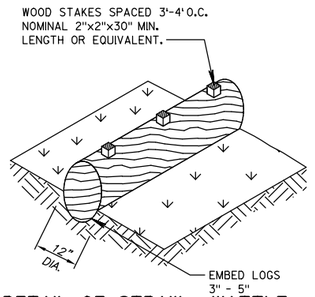
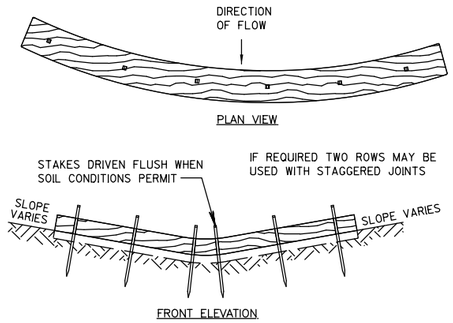
SHEET 1
JOB NO. 1093.057

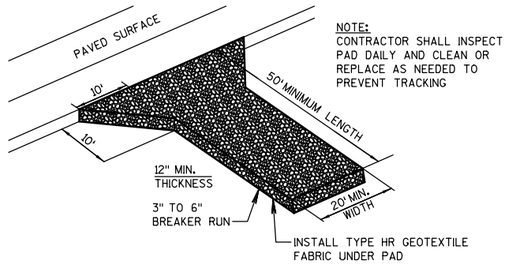


DETAIL OF STRAW WATTLE INSTALLATION



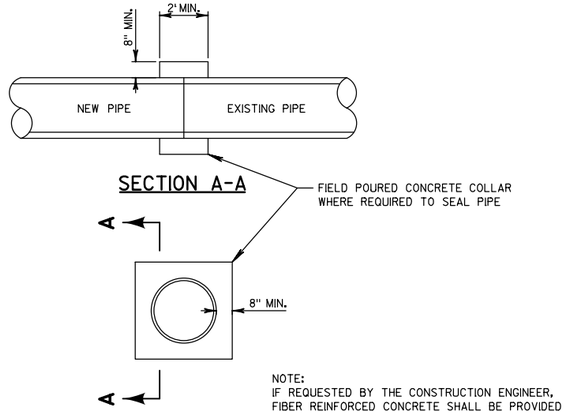
12" STRAW WATTLE ACROSS DITCH BOTTOM

1/2 STRAW WATTLE



2/2 TRACKING PAD FOR CONSTRUCTION ENTRANCE

NOT TO SCALE



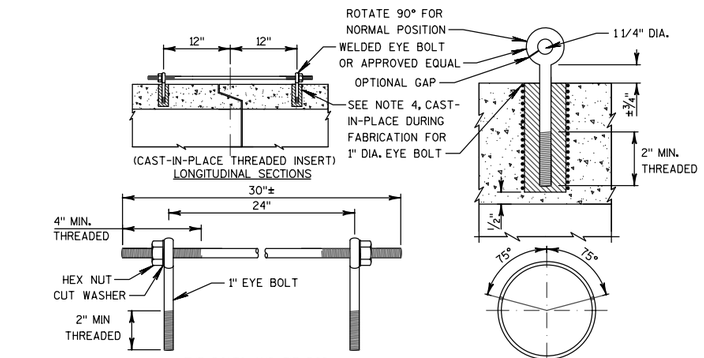
3/2 CONCRETE COLLAR

STANDARD SYMBOLS

TEMPORARY EASEMENT	PAVED ROAD
PROPERTY LINE AND/OR RIGHT OF WAY	EXISTING CULVERT
SOIL BORING	NOTATION FOR COMBUSTIBLE FLUIDS
BENCH MARK	FORCE MAIN
PROPERTY STAKE	WATER MAIN
IRON PIPE	STORM SEWER
INLET	SANITARY SEWER
CURB WATER BOX	EXISTING SANITARY SEWER AND MANHOLE
ROAD SIGN	TELEPHONE OR TV CABLE
PRIVATE WELL	FIBER OPTIC CABLE
EXISTING UTILITY POLE	GAS MAIN
BURIED TELEPHONE CABLE PEDESTAL	UNDERGROUND ELECTRIC CABLE
SIGN	ORIGINAL GROUND IN PROFILE
LIGHT POLE	FENCE
MAIL BOX	GUARD RAIL
OBJECTS TO BE REMOVED	SILT FENCE
EXISTING DECIDUOUS TREE	CONTROL POINT
EXISTING CONIFEROUS TREE	GUY WIRE & ANCHOR
WETLAND AREA	

UTILITY CONTACTS

UTILITY	COMPANY	CONTACT
TELEPHONE	AT&T	CAROL ANASON (608) 252-2385 ca2624@att.com
GAS	MADISON GAS AND ELECTRIC	JOHN WICHERN (608) 252-1563 JWICHERN@MGE.COM
ELECTRIC	MADISON GAS AND ELECTRIC	RAY PARKER (608) 252-7379 RPARKER@MGE.COM
CABLE	CHARTER COMMUNICATIONS	GLEN JAKUSZ (608) 274-3822 (X6657) GJAKUSZ@CHARTERCOM.COM
CABLE	TDS COMMUNICATIONS	JERRY MYERS (608) 664-4404 JERRY.MYERS@TDSTELECOM.COM



4/2 JOINT TIES CONCRETE PIPE

ADJUSTABLE TIE ROD DIMENSION TABLE				
PIPE DIAMETER	TIE ROD DIAMETER	D	L1	N
12–60	5/8	5/8	5	1/2
66–84	3/4	3/4	5	1/2
90–108	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES

EYE BOLT DIMENSION TABLE		
	L = LENGTH	
PIPE SIZE	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18 " TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

NOTES:

1. ALL APRON END WALL JOINTS AND TWO ADDITIONAL UPSTREAM JOINTS (TOTAL OF 3) SHALL BE TIED TOGETHER AS SHOWN. ADDITIONAL TIED JOINTS MAY BE REQUIRED, AS SPECIFIED OR AS SHOWN ON THE PLAN. UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE CULVERT PIPE AS INDICATED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE REINFORCED CONCRETE CULVERT PIPE.

2. DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

3. ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

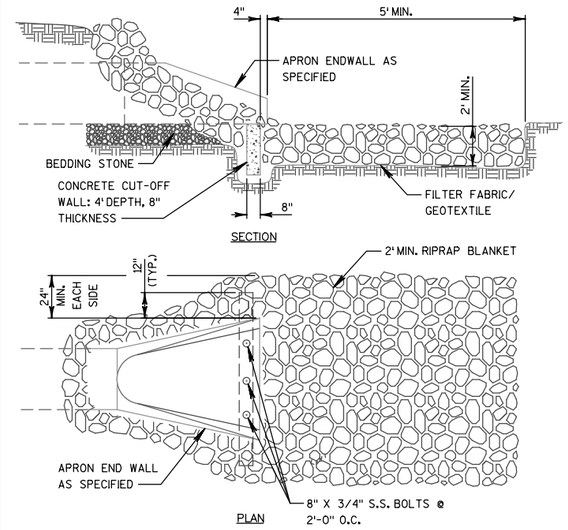
4. THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

5. HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12" FROM ℄ OF TONGUE AND GROOVE.

6. BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".

7. ROD DIAMETER +1".

8. LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



5/2 STORM SEWER OUTFALL

DATE:

REVISIONS

NO.

EROSION CONTROL DETAILS AND CONTROL

NORTH WINNEQUAH PARK
LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO. 1093.057

PROJECT MGR. JHL

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SHEET 2

NOTES:
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

2. VARIATIONS IN THE DIMENSIONS OR MATERIALS SHOWN HEREON SHALL BE PERMITTED IF THEY PROVIDE EQUIVALENT PROTECTION AND MATERIAL STRENGTH.

3. LAP JOINTS SHALL NOT BE PLACED IN THE BOTTOM OF V-SHAPED DITCHES.

4. JUNCTION SLOTS ON ADJACENT STRIPS OF MATTING SHALL BE STAGGERED A MINIMUM OF 4 FEET APART.

5. EDGES OF THE EROSION MAT SHALL BE IMPRESSED IN THE SOIL.

6. EROSION MAT SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

EROSION MAT OVER SOD

- ONLY JUTE FABRIC WILL BE PERMITTED OVER SOD.

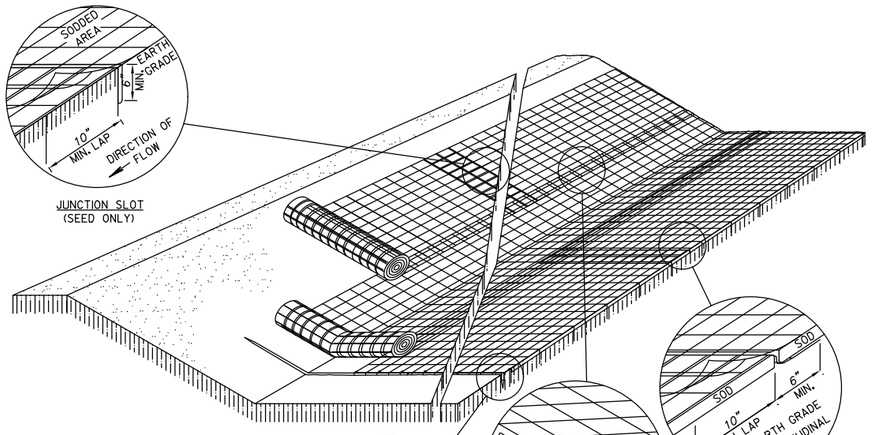
- FLOOD STAKES FOR SOD MAY BE OMITTED IF THE EXISTING SLOPE AND SOIL CONDITIONS SO PERMIT.

- THE WIDTH OF EROSION MAT SHALL ALWAYS EQUAL THE SOD WIDTH.

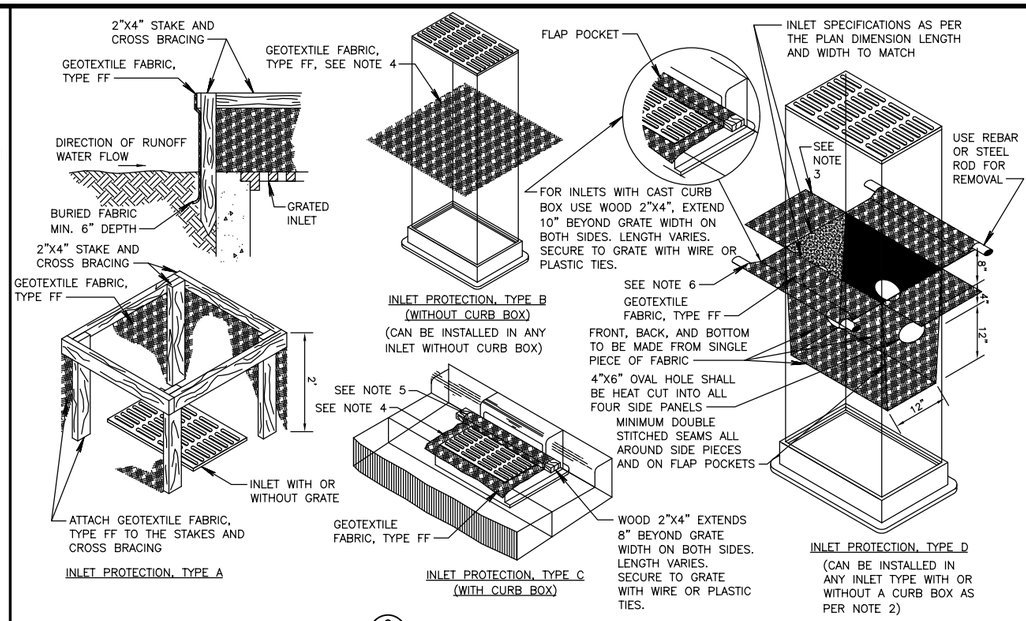
- SOD STRIPS MAY BE PLACED EITHER LONGITUDINALLY OR TRANSVERSELY TO THE FLOW LINE OF THE DITCH.

EROSION MAT OVER SEEDING

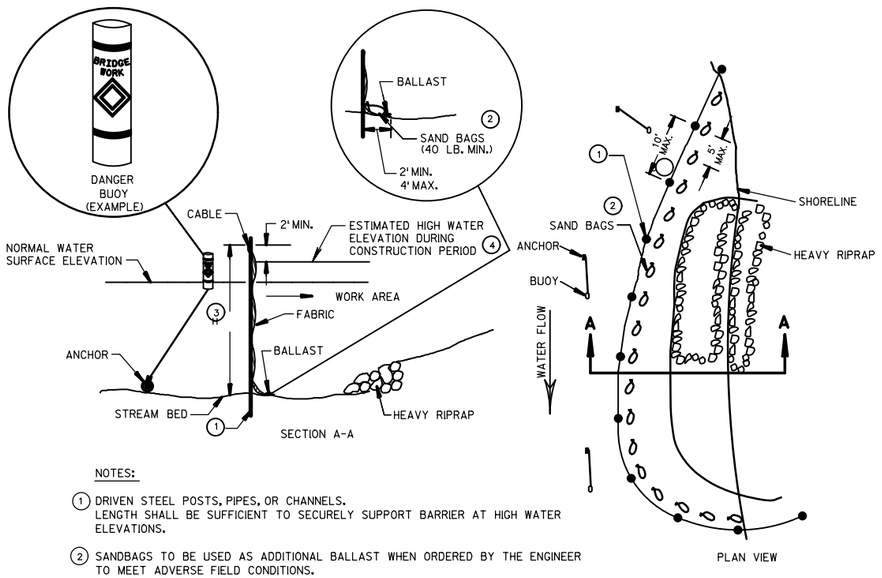
- JUNCTION OR ANCHOR SLOTS SHALL BE AT MINIMUM INTERVALS OF 100 FEET ON GRADES UP TO AND INCLUDING 3 PERCENT, AND 50 FEET ON GRADES EXCEEDING 3 PERCENT.



1/3 EROSION CONTROL MAT DETAIL



2/3 INLET PROTECTION DETAIL



NOTES:

(1) DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

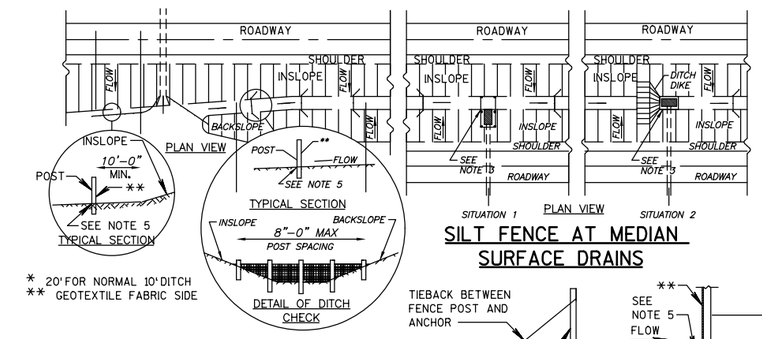
(2) SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS.

(3) WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

(4) ELEVATION VALUE TO BE ESTABLISHED BY THE CONTRACTOR BASED ON THE TIME OF YEAR AND DURATION OF THE ACTIVITY.

(5) TURBIDITY BARRIER SHALL CONFORM TO WIDNR TECHNICAL STANDARD 1069.

3/3 TURBIDITY BARRIER



4/3 SILT FENCE DETAIL

NOTES:

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

2. WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.

3. CROSS BRACE WITH 2"x4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

4. MINIMUM 14 GAGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C-C.

5. EXCAVATE TRENCH A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC, FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.

6. WIRE SUPPORT FENCE SHALL BE 14 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C-C.

7. GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 1/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.

8. STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.2 LBS/LINEAR FOOT WITHOUT ANCHORS, OR ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4" DIAMETER, OR 2 1/2" X 3 1/2", EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OAK OR HICKORY.

9. ALTERNATES A AND B ARE EQUAL AND EITHER MAY BE USED.

DATE:
REVISIONS
NO.

EROSION CONTROL DETAILS

NORTH WINNEQUAH PARK
LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

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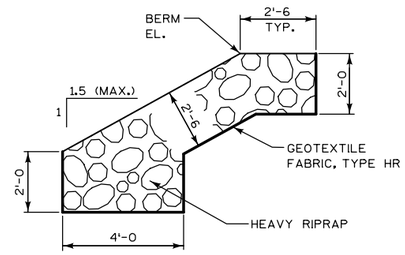
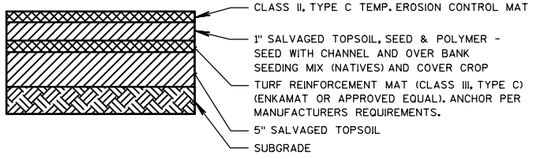
SHEET 3

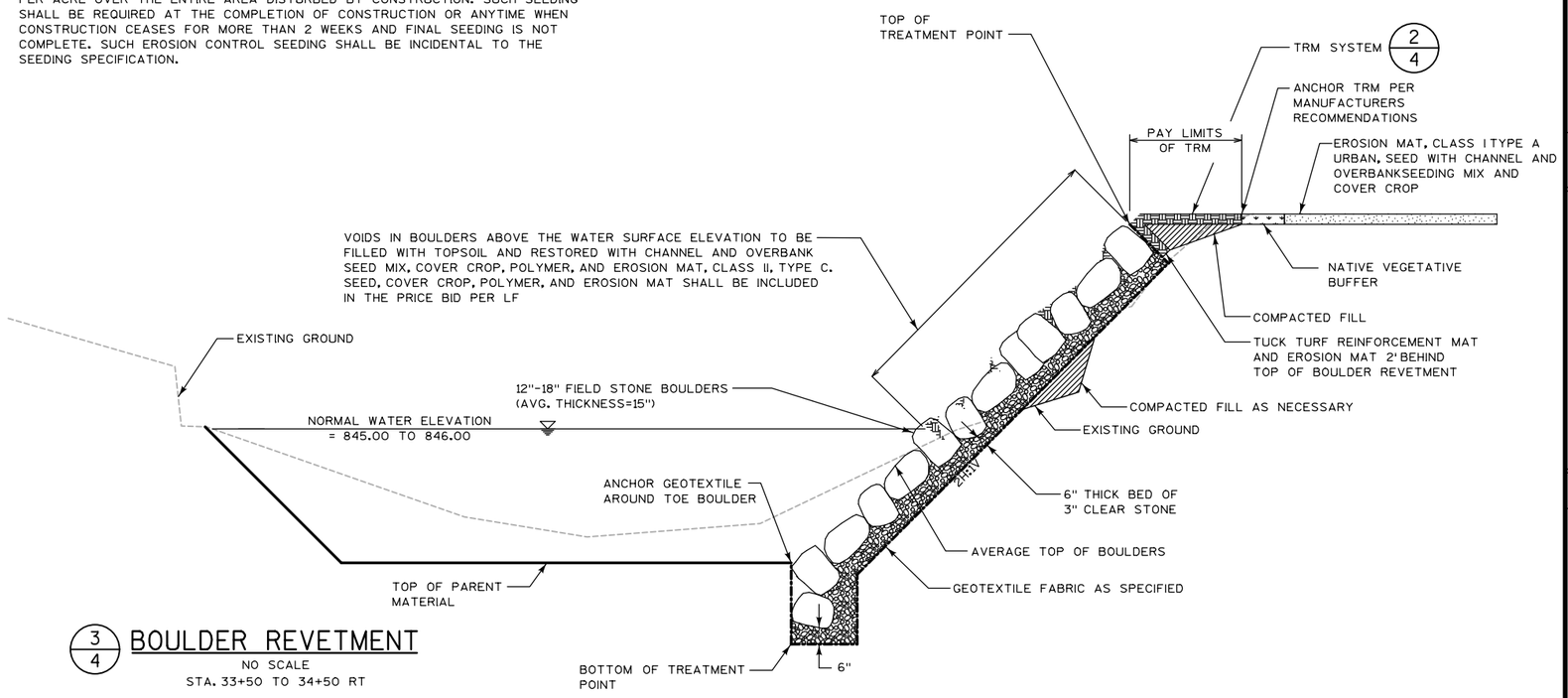


1/4 HEAVY RIPRAP DETAIL

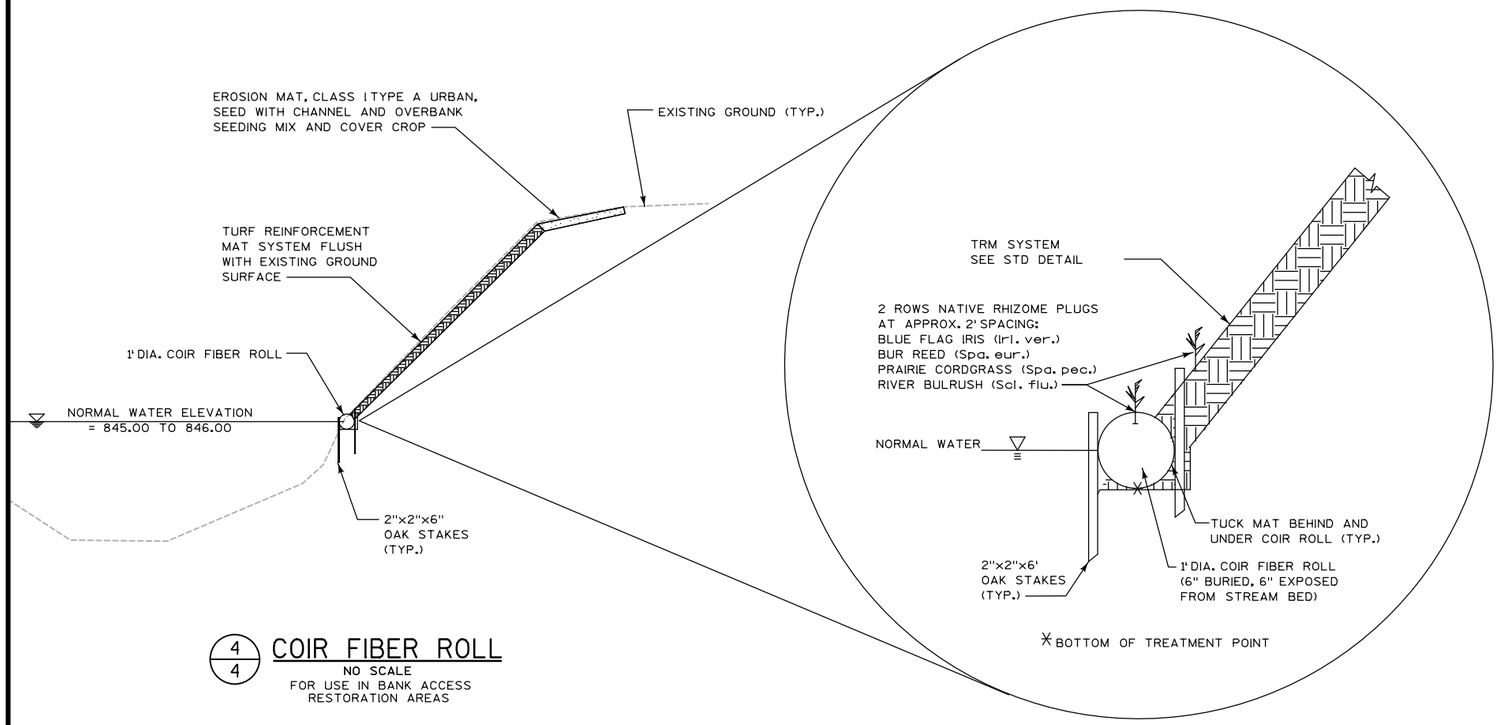


2/4 TURF REINFORCEMENT MAT SYSTEM DETAIL
NO SCALE

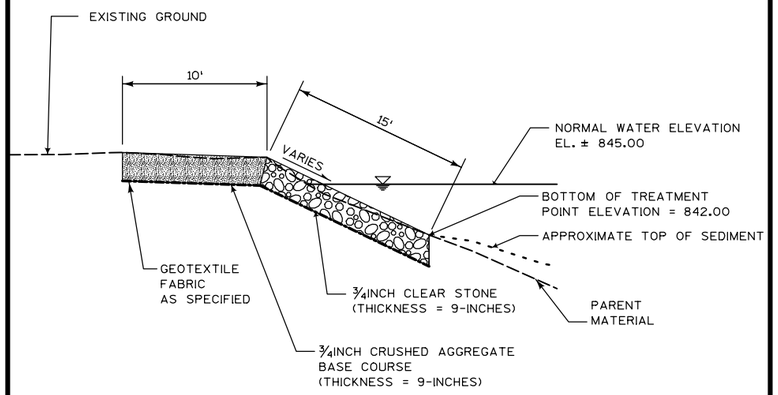
NOTE: ANNUAL RYEGRASS OR WHEAT SHALL BE PLANTED AT A RATE OF 50 LBS PER ACRE OVER THE ENTIRE AREA DISTURBED BY CONSTRUCTION. SUCH SEEDING SHALL BE REQUIRED AT THE COMPLETION OF CONSTRUCTION OR ANYTIME WHEN CONSTRUCTION CEASES FOR MORE THAN 2 WEEKS AND FINAL SEEDING IS NOT COMPLETE. SUCH EROSION CONTROL SEEDING SHALL BE INCIDENTAL TO THE SEEDING SPECIFICATION.



3/4 BOULDER REVETMENT
NO SCALE
STA. 33+50 TO 34+50 RT



4/4 COIR FIBER ROLL
NO SCALE
FOR USE IN BANK ACCESS RESTORATION AREAS



5/4 CANOE LAUNCH
NO SCALE

DATE:
REVISIONS
NO.

CONSTRUCTION DETAILS
NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO. 1093.057
PROJECT MGR. JHL

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SHEET 4

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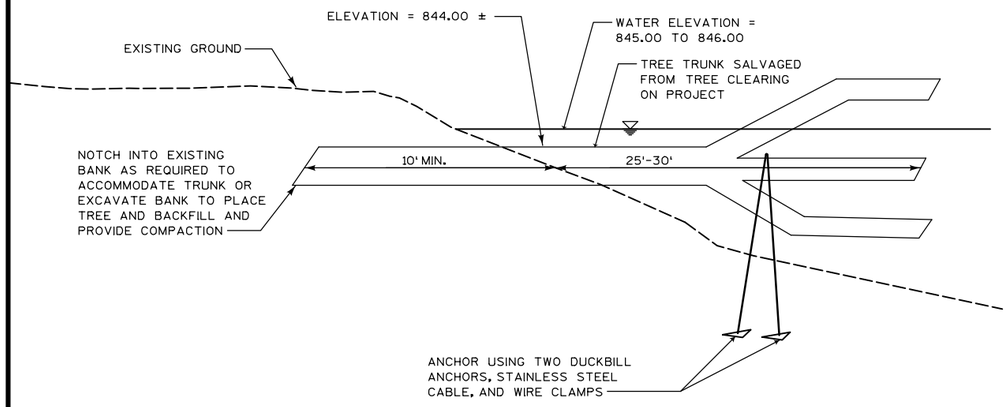
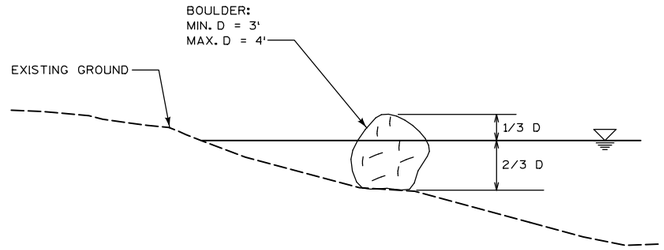
NOTES:
1. USE 18" MIN. DIA. TREE TRUNKS FOR WOODY DEBRIS. TRIM OFF BRANCHES LESS THAN 6" IN DIAMETER AND USE PORTION WHERE TRUNK BRANCHES INTO LIMBS. LARGE DIAMETER LIMBS (GREATER THAN 18") BRANCHING INTO SMALLER LIMBS MAY ALSO BE USED.

2. POSITION MOST OF TRUNK AND LIMBS UNDERWATER. POSITION SUCH THAT TRUNK IS STABLE, BUT ALLOW SPACE BELOW TRUNK AND SOME LIMBS FOR FISH HABITAT.

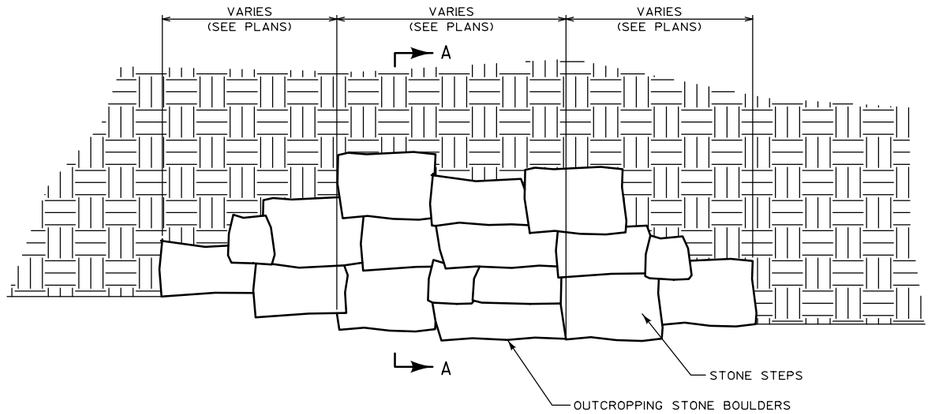
3. HARDWOOD TREES TO BE USED BEFORE SOFTWOOD TREES.



1/5 WOODY DEBRIS FISH HABITAT DETAIL
NO SCALE

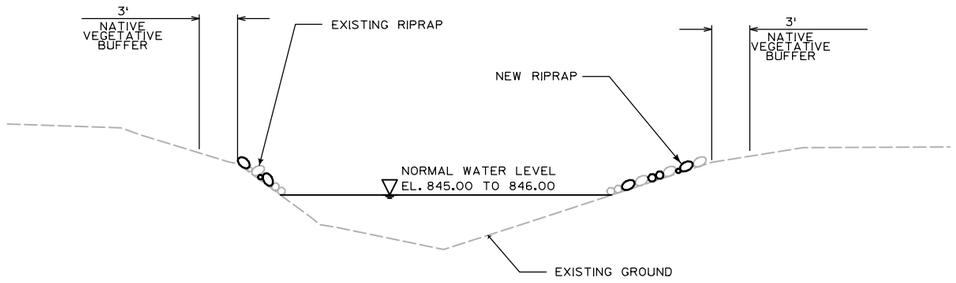


3/5 IN-STREAM BOULDER DETAIL
NO SCALE



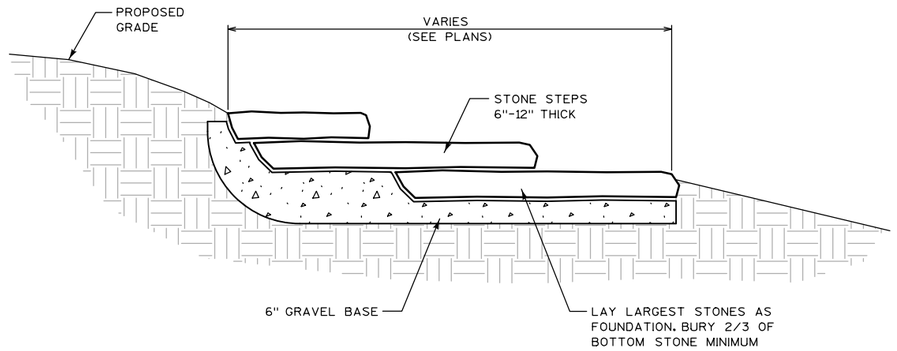
PLAN

NOTES:
1. NEW MEDIUM RIPRAP SHALL BE PLACED ON THE STREAMBANK BETWEEN VOIDS OF EXISTING RIPRAP



2/5 AUGMENTATIVE RIPRAP RESTORATION
NO SCALE

STA. 30+50 TO STA. 34+50 LT
STA. 30+50 TO STA. 33+50 RT



SECTION A-A

4/5 STONE STEPS
NO SCALE

DATE:
REVISIONS
NO.

CONSTRUCTION DETAILS
NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

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SHEET 5

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GENERAL NOTES

1. CONTRACTOR SHALL CHECK BETWEEN ALL BENCHMARKS AND CONTROL POINTS TO CONFIRM ELEVATIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROTECT ALL CONTROL POINTS NOT DIRECTLY IN THE CONSTUCTION AREA.
3. CONTRACTOR SHALL ESTABLISH ADDITIONAL BENCHMARKS AND CONTROL POINTS AS NECESSARY TO COMPLETE THE WORK. CONTRACTOR IS ENCOURAGED TO CHECK BENCHMARKS AND CONTROL POINTS PERIODICALLY FOR MOVEMENT.
4. CONTRACTOR SHALL MAINTAIN STORM SEWER CAPACITY EQUIVALENT TO THE EXISTING STORM SEWER SYSTEM WITHIN THE PROJECT LIMITS DURING RAIN EVENTS AND AT THE END OF EVERY DAY.
5. PROTECT EXISTING UTILITIES DURING CONSTRUCTION. PROVIDE SHORING AS REQUIRED TO PREVENT UNDERMINING EXISTING UTILITIES AND STRUCTURES.
6. ALL CONCRETE SHALL BE SAWCUT UNLESS EXISTING CONCRETE CAN BE REMOVED WITHOUT DAMAGING CONCRETE TO REMAIN IN PLACE.
7. EXISTING UTILITIES SHOWN ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS AND FIELD MEASUREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES IN THE FIELD.

   CONTRACTOR SHALL PROTECT ALL PROPERTY IRONS.
9. CONTOURS SHOWN ARE TOP OF SEDIMENT.

CONTROL POINTS

CP #	NORTHING	EASTING	TYPE
4	832,155.62	479,079.57	MAG NAIL
5	832,464.17	479,295.49	SPIKE
6	832,387.13	479,402.36	TEMP HUB
7	832,254.41	479,531.91	TEMP HUB
8	832,414.86	479,685.56	TEMP HUB

EROSION CONTROL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ROUTINE SITE INSPECTIONS AT LEASE ONCE EVERY 7 DAYS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR GREATER. KEEP INSPECTION REPORTS ON-SITE AND MAKE THEM AVAILABLE UPON REQUEST.
2. INSPECT AND MAINTAIN ALL INSTALLED EROSION CONTROL PRACTICES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
3. INSTALL PERIMETER EROSION CONTROLS AND ROCK TRACKING PAD CONSTRUCTION ENTRANCE PRIOR TO ANY LAND-DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRUBBING. USE WDNR TECHNICAL STANDARD STONE TRACKING PAD AND TIRE WASHING #1057 FOR ROCK CONSTRUCTION ENTRANCE.
4. INSTALL INLET PROTECTION PRIOR TO LAND-DISTURBING ACTIVITIES IN THE CONTRIBUTING DRAINAGE AREA AND/OR IMMEDIATELY UPON INLET INSTALLATION. COMPLY WITH WDNR TECHNICAL STANDARD STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITES #1060.
5. STAGE CONSTRUCTION ACTIVITIES TO MINIMIZE THE CUMMULATIVE EXPOSED AREA. CONDUCT TEMPORARY GRADING FOR EROSION CONTROL PER WDNR TECHNICAL STANDARD TEMPORARY GRADING PRACTICES FOR EROSION CONTROL #1067.
6. INSTALL AND MAINTAIN SILT FENCING PER WDNR TECHNICAL STANDARD SILT FENCE #1056. REMOVE SEDIMENT FROM BEHIND SILT FENCES AND SEDIMENT BARRIERS BEFORE SEDIMENT REACHES A DEPTH THAT IS EQUAL TO ONE-HALF OF THE FENCE AND/OR BARRIER HEIGHT.
7. REPAIR BREAKS AND GAPS IN SILT FENCES AND BARRIERS IMMEDIATELY. REPLACE DECOMPOSING STRAW BALES (TYPICAL BALE LIFE IS 3 MONTHS). LOCATE, INSTALL, AND MAINTAIN STRAW BALES PER WDNR TECHNICAL STANDARD DITCH CHECKS #1062.
8. IMMEDIATELY STABILIZE STOCKPILES AND SURROUND STOCKPILES AS NEEDED WITH SILT FENCE OR OTHER PERIMETER CONTROL IF STOCKPILES WILL REMAIN INACTIVE FOR 7 DAYS OR LONGER.
9. STABILIZE AREAS OF FINAL GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE.
10. SWEEP/CLEAN UP ALL SEDIMENT/TRASH THAT MOVES OFF-SITE DUE TO CONSTRUCTION ACTIVITY OR STORM EVENTS BEFORE THE END OF THE SAME WORKDAY OR AS DIRECTED BY WINNEBAGO COUNTY. SEPARATE SWEPT MATERIALS (SOILS AND TRASH) AND DISPOSE OF APPROPRIATELY.
11. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST PER WDNR TECHNICAL STANDARD DUST CONTROL ON CONSTRUCTION SITES #1068.
12. PROPERLY DISPOSE OF ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, OR OTHER CONSTRUCTION MATERIALS) AND DO NOT ALLOW THESE MATERIALS TO BE CARRIED BY RUNOFF INTO THE RECEIVING CHANNEL.
13. FOR NON-CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED SLOPES, PROVIDE CLASS I, TYPE B EROSION CONTROL MATTING. SELECT EROSION MATTING FROM APPROPRIATE MATRIX IN WISDOT'S PRODUCT ACCEPTABILITY LIST (PAL); INSTALL AND MAINTAIN PER WDNR TECHNICAL STANDARD CHANNEL EROSION MAT #1053.
14. INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES (SUCH AS TEMPORARY SEDIMENT BASINS, DITCH CHECKS, EROSION CONTROL MATTING, SILT FENCING, FILTER SOCKS, WATTLES, SWALES, ETC.) AS NEEDED, OR AS DIRECTED BY DANE COUNTY.

NO. | REVISIONS | DATE:

ACCESS AND EROSION CONTROL PLAN

NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO. 1093.057

PROJECT MGR. JHL

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GENERAL NOTES:

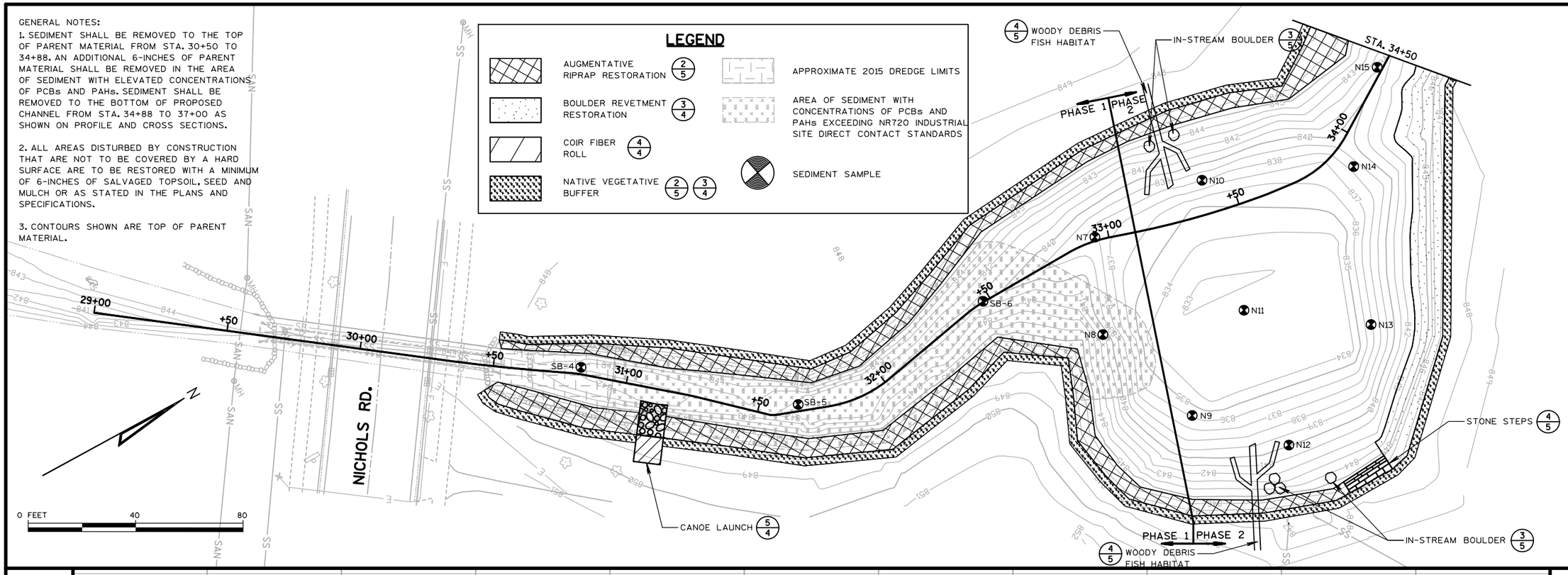
1. SEDIMENT SHALL BE REMOVED TO THE TOP OF PARENT MATERIAL FROM STA. 30+50 TO 34+88. AN ADDITIONAL 6-INCHES OF PARENT MATERIAL SHALL BE REMOVED IN THE AREA OF SEDIMENT WITH ELEVATED CONCENTRATIONS OF PCBs AND PAHs. SEDIMENT SHALL BE REMOVED TO THE BOTTOM OF PROPOSED CHANNEL FROM STA. 34+88 TO 37+00 AS SHOWN ON PROFILE AND CROSS SECTIONS.

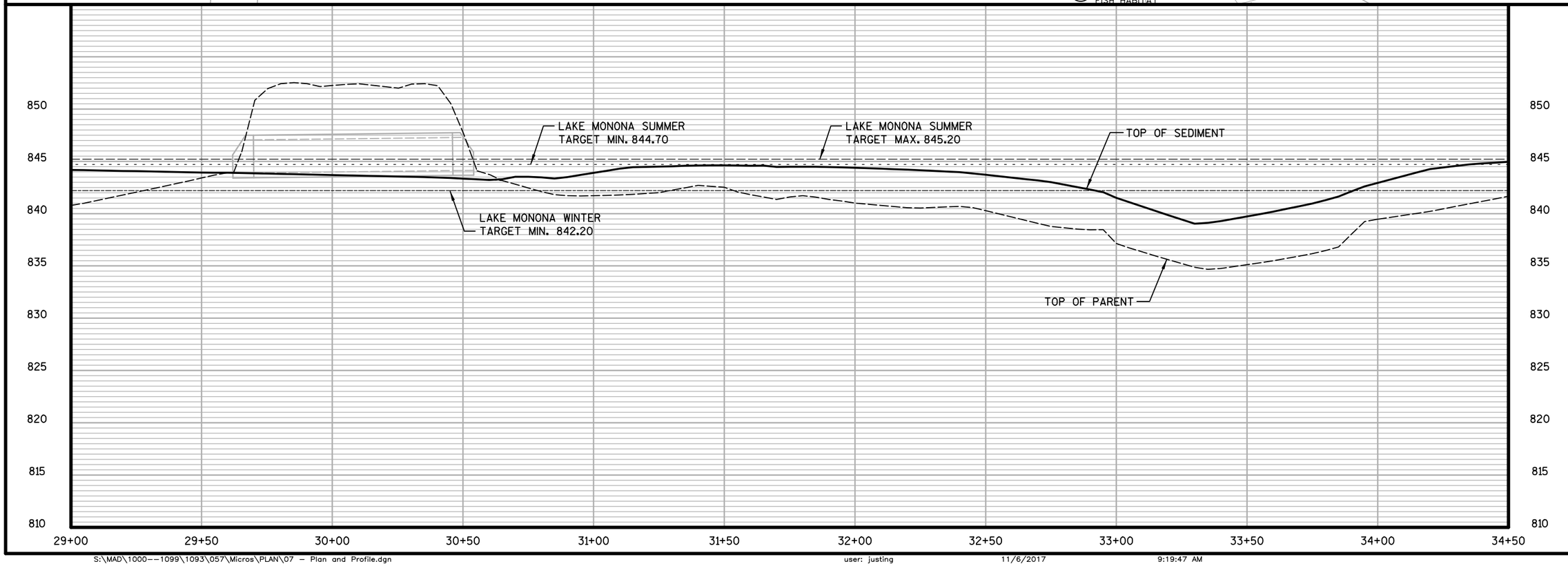
2. ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT TO BE COVERED BY A HARD SURFACE ARE TO BE RESTORED WITH A MINIMUM OF 6-INCHES OF SALVAGED TOPSOIL, SEED AND MULCH OR AS STATED IN THE PLANS AND SPECIFICATIONS.

3. CONTOURS SHOWN ARE TOP OF PARENT MATERIAL.

LEGEND

- AUGMENTATIVE RIPRAP RESTORATION (2/5)
- BOULDER REVETMENT RESTORATION (3/4)
- COIR FIBER ROLL (4/4)
- NATIVE VEGETATIVE BUFFER (2/5, 3/4)
- APPROXIMATE 2015 DREDGE LIMITS
- AREA OF SEDIMENT WITH CONCENTRATIONS OF PCBs AND PAHs EXCEEDING NR720 INDUSTRIAL SITE DIRECT CONTACT STANDARDS
- SEDIMENT SAMPLE





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PLAN AND PROFILE

NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO.
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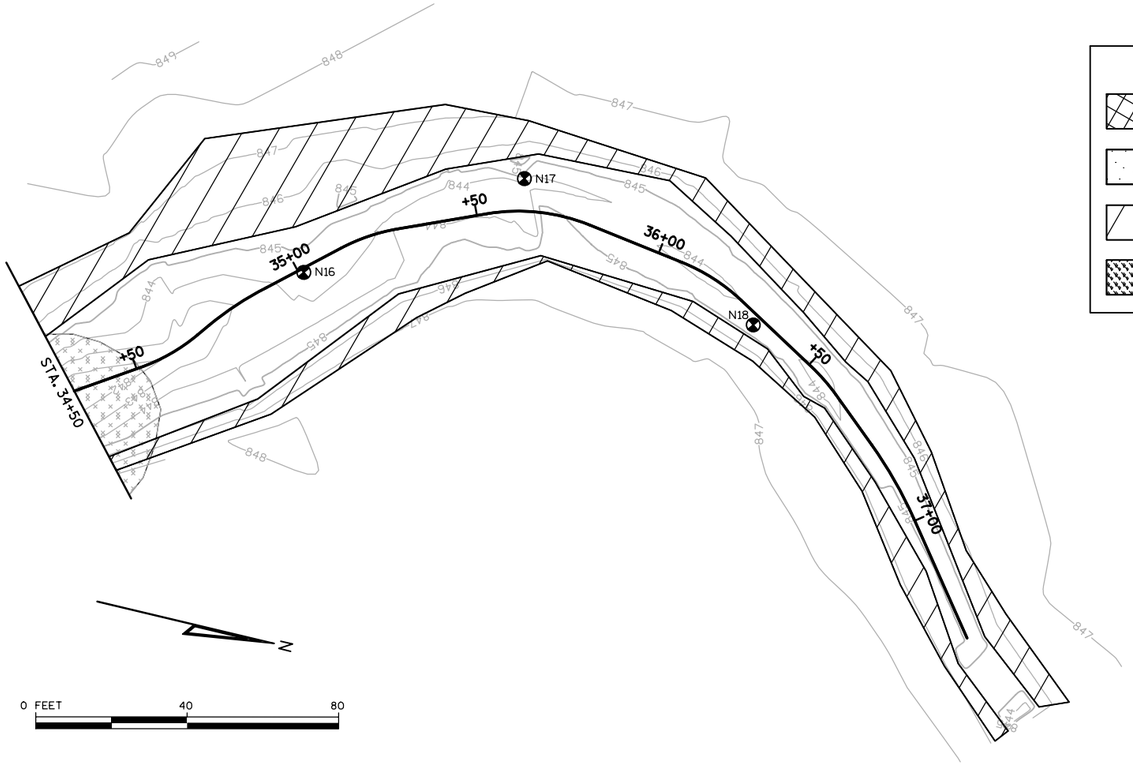


LEGEND

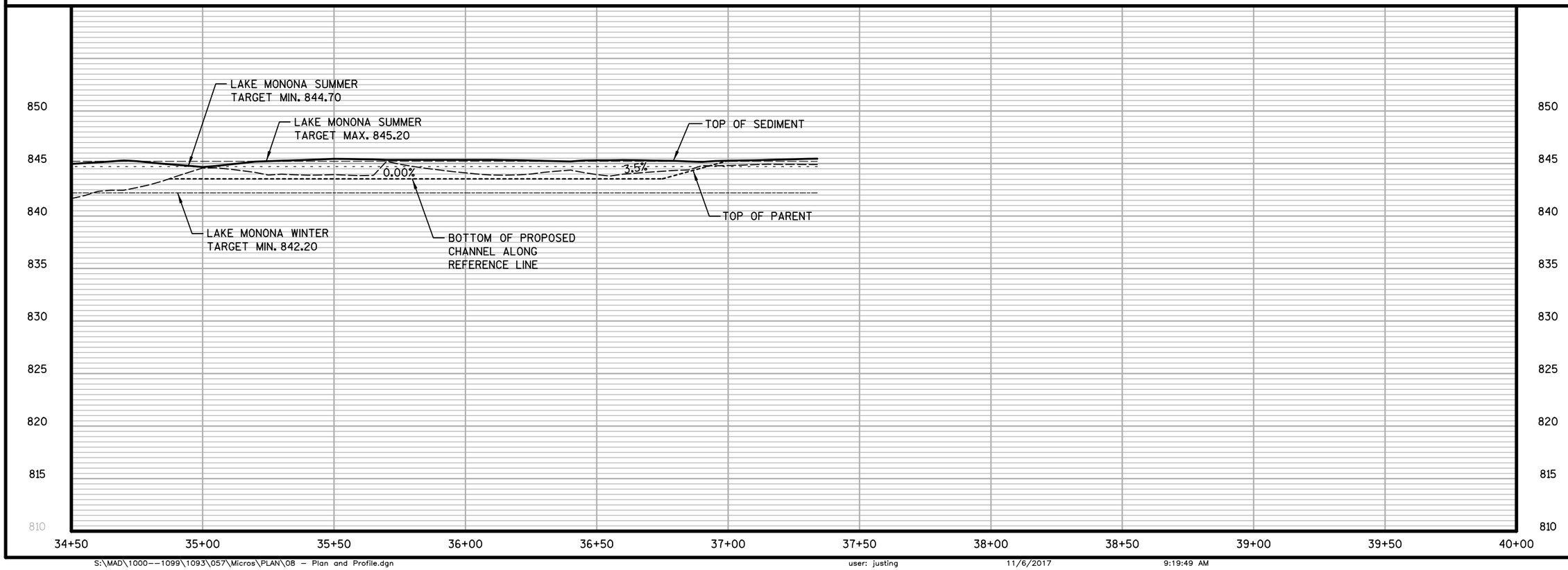
- AUGMENTATIVE RIPRAP RESTORATION (2/5)
- BOULDER REVETMENT RESTORATION (3/4)
- COIR FIBER ROLL (4/4)
- NATIVE VEGETATIVE BUFFER (2/5) (3/4)
- APPROXIMATE 2015 DREDGE LIMITS
- AREA OF SEDIMENT WITH CONCENTRATIONS OF PCBs AND PAHs EXCEEDING NR720 INDUSTRIAL SITE DIRECT CONTACT STANDARDS
- SEDIMENT SAMPLE

GENERAL NOTES:

1. SEDIMENT SHALL BE REMOVED TO THE TOP OF PARENT MATERIAL FROM STA. 30+50 TO 34+88. AN ADDITIONAL 6-INCHES OF PARENT MATERIAL SHALL BE REMOVED IN THE AREA OF SEDIMENT WITH ELEVATED CONCENTRATIONS OF PCBs AND PAHs. SEDIMENT SHALL BE REMOVED TO THE BOTTOM OF PROPOSED CHANNEL FROM STA. 34+88 TO 37+00 AS SHOWN ON PROFILE AND CROSS SECTIONS.

2. ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT TO BE COVERED BY A HARD SURFACE ARE TO BE RESTORED WITH A MINIMUM OF 6-INCHES OF SALVAGED TOPSOIL, SEED AND MULCH OR AS STATED IN THE PLANS AND SPECIFICATIONS.

3. CONTOURS SHOWN ARE TOP OF PARENT MATERIAL.



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PLAN AND PROFILE

NORTH WINNEQUAH PARK LAGOON DREDGING
CITY OF MONONA
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852
850
848
846
844

LAKE MONONA SUMMER
TARGET MAX. 845.20 (TYP.)

LAKE MONONA SUMMER
TARGET MIN. 844.70 (TYP.)

EXISTING GROUND (TYP.)

SB-4

EXISTING TOP OF SEDIMENT (TYP.)

TOP OF PARENT (TYP.)

30+75.00

30+54.21

30+50.00

NOTE:
CHANNEL WAS DRDGED IN 2015 FROM
APPROX. STA. 30+50 TO STA. 30+95

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NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
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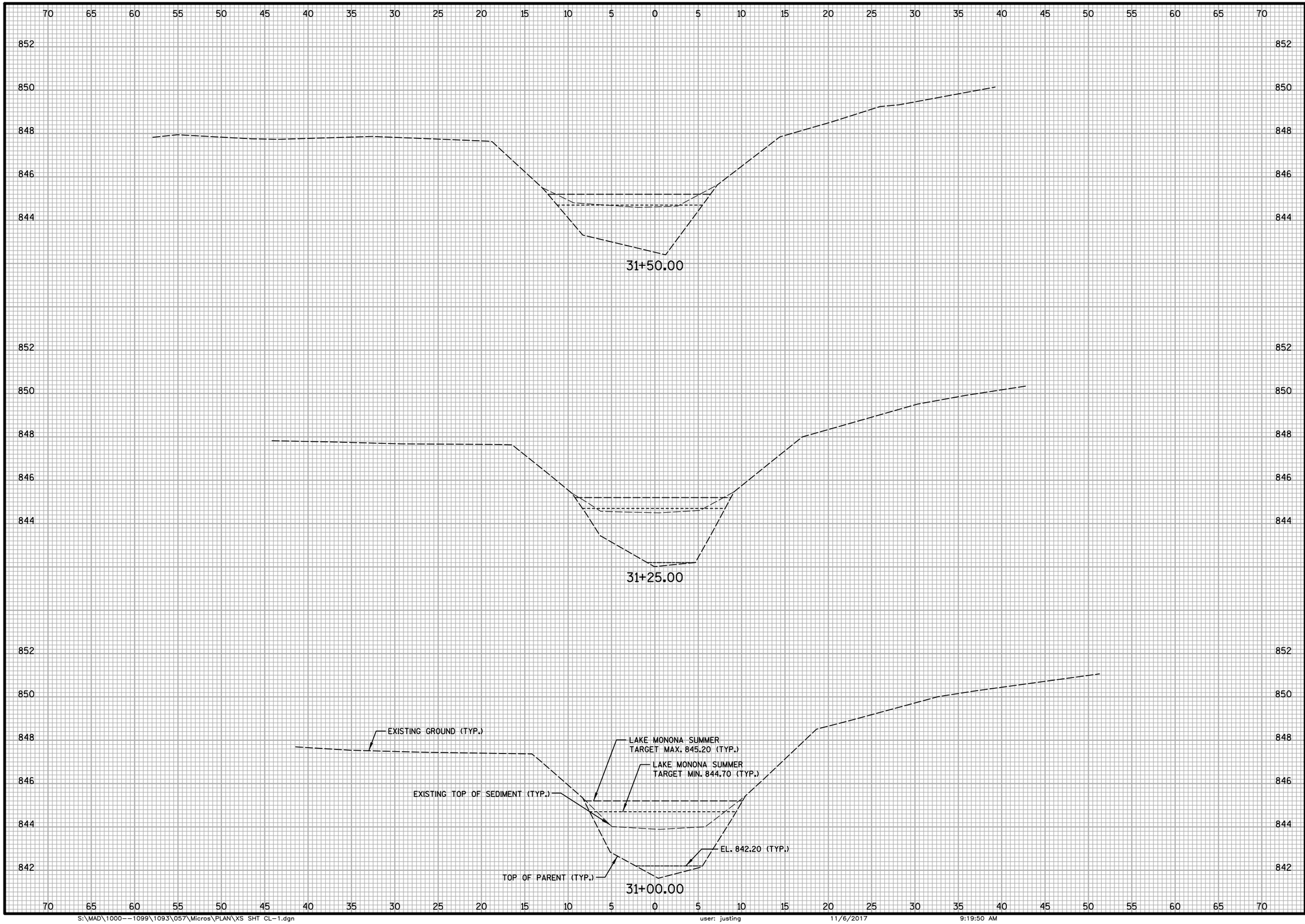

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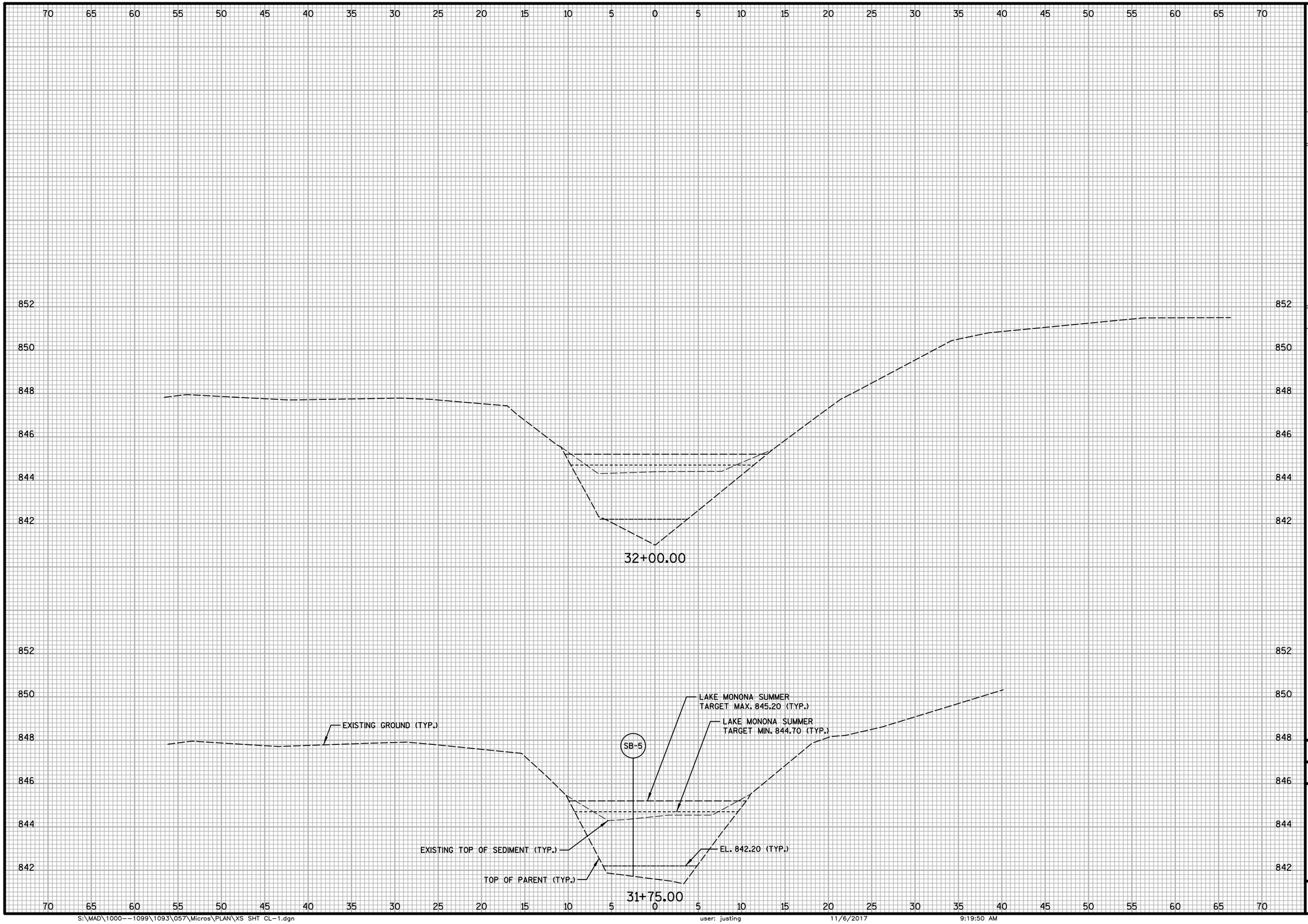

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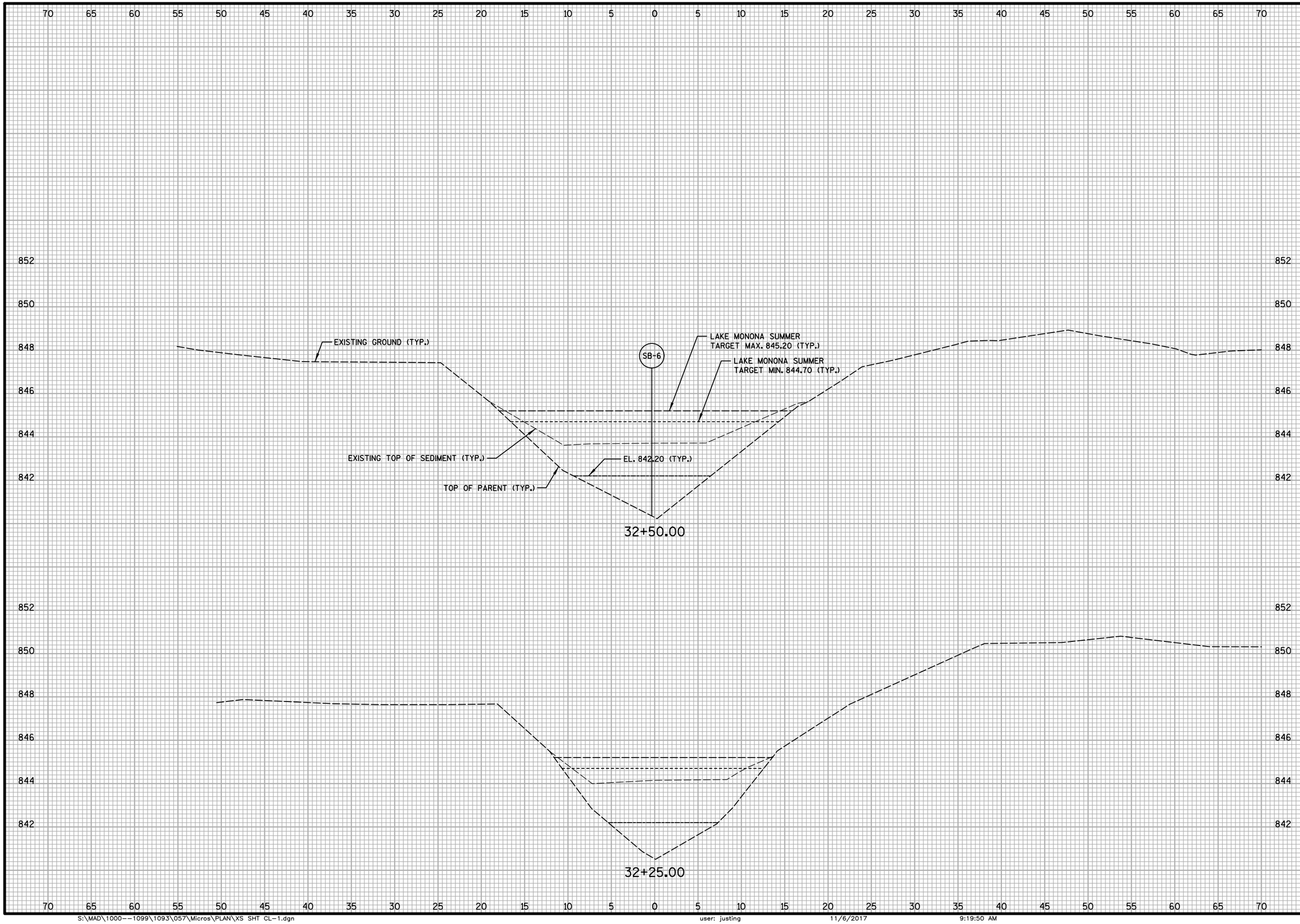

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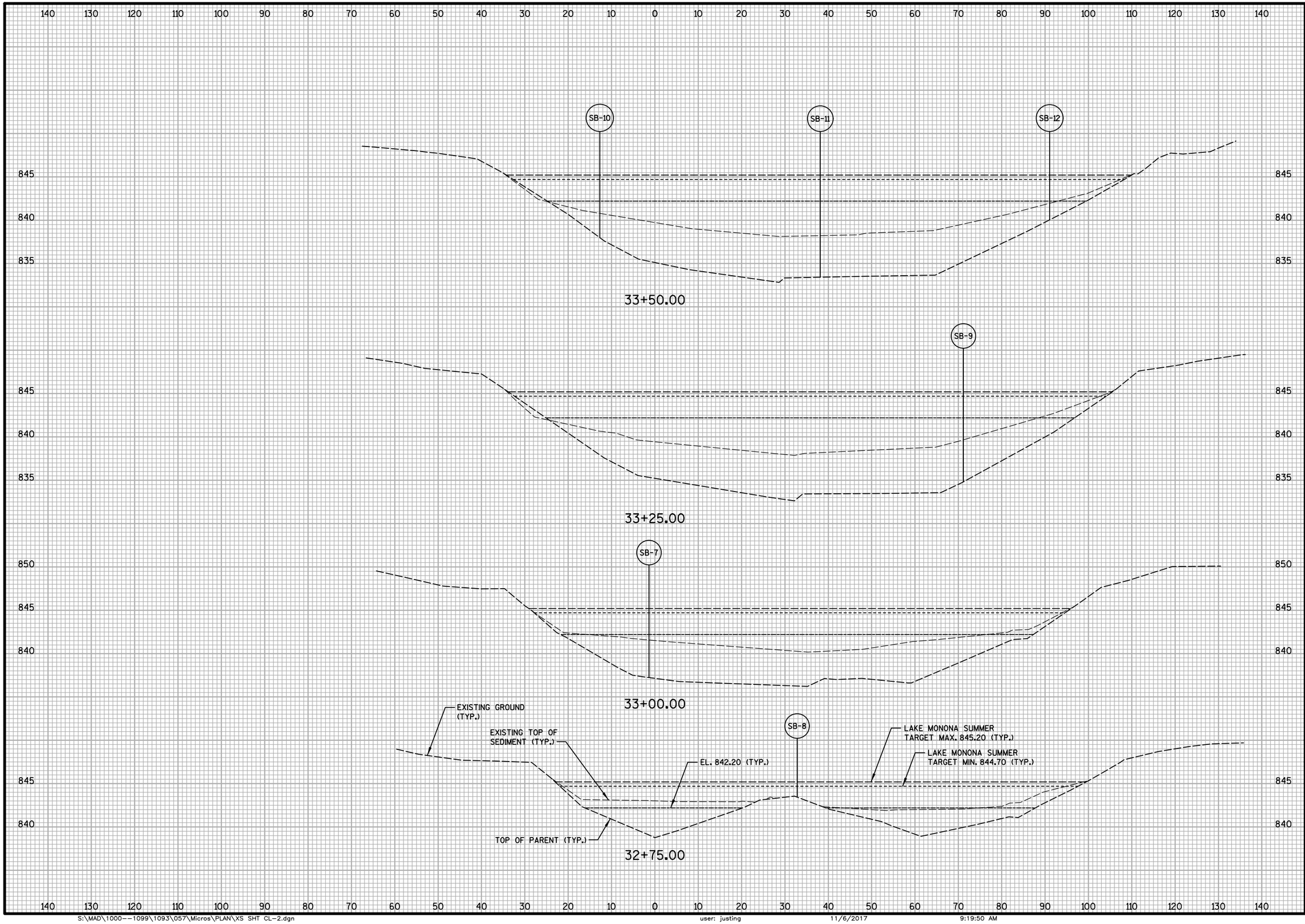

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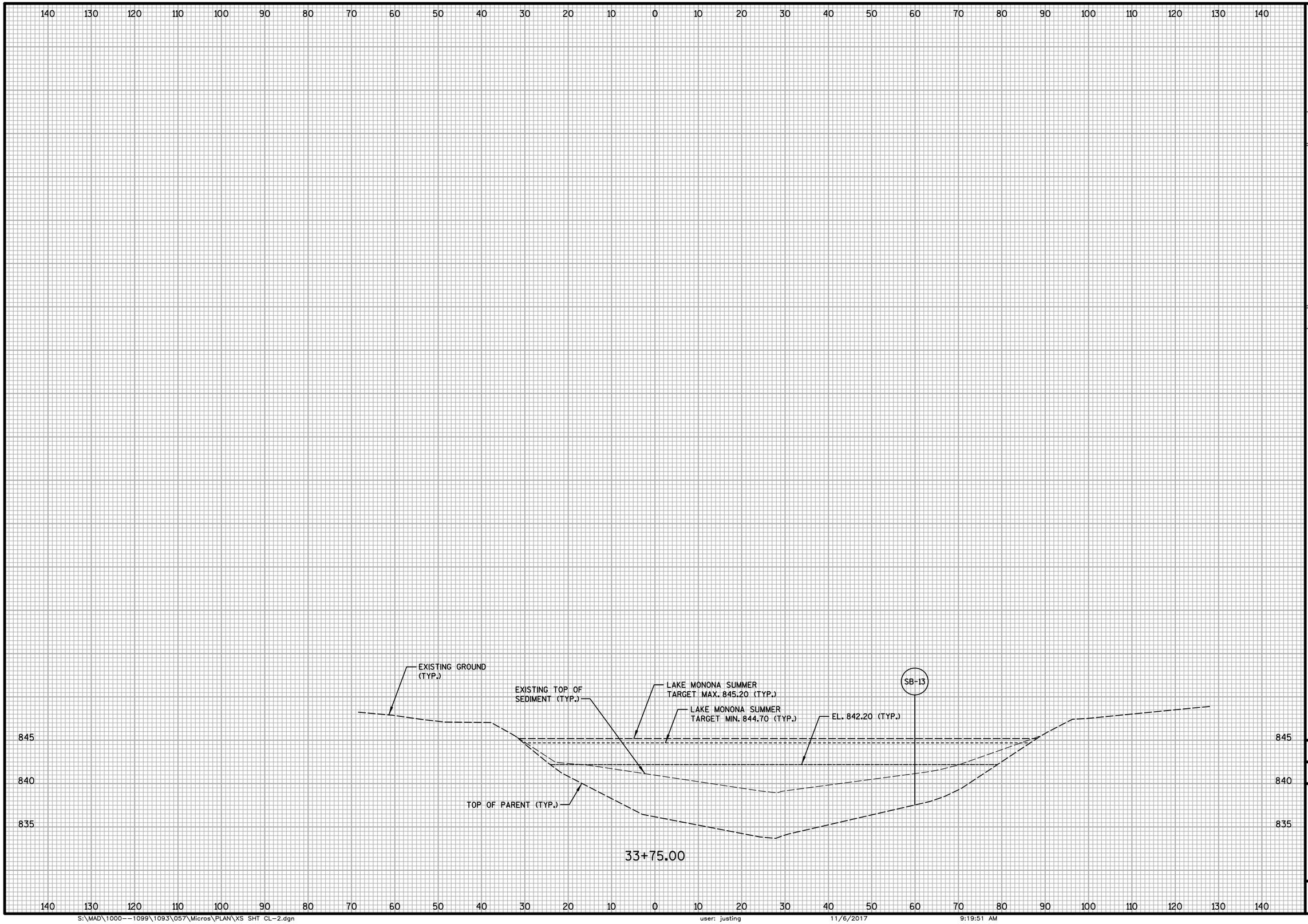

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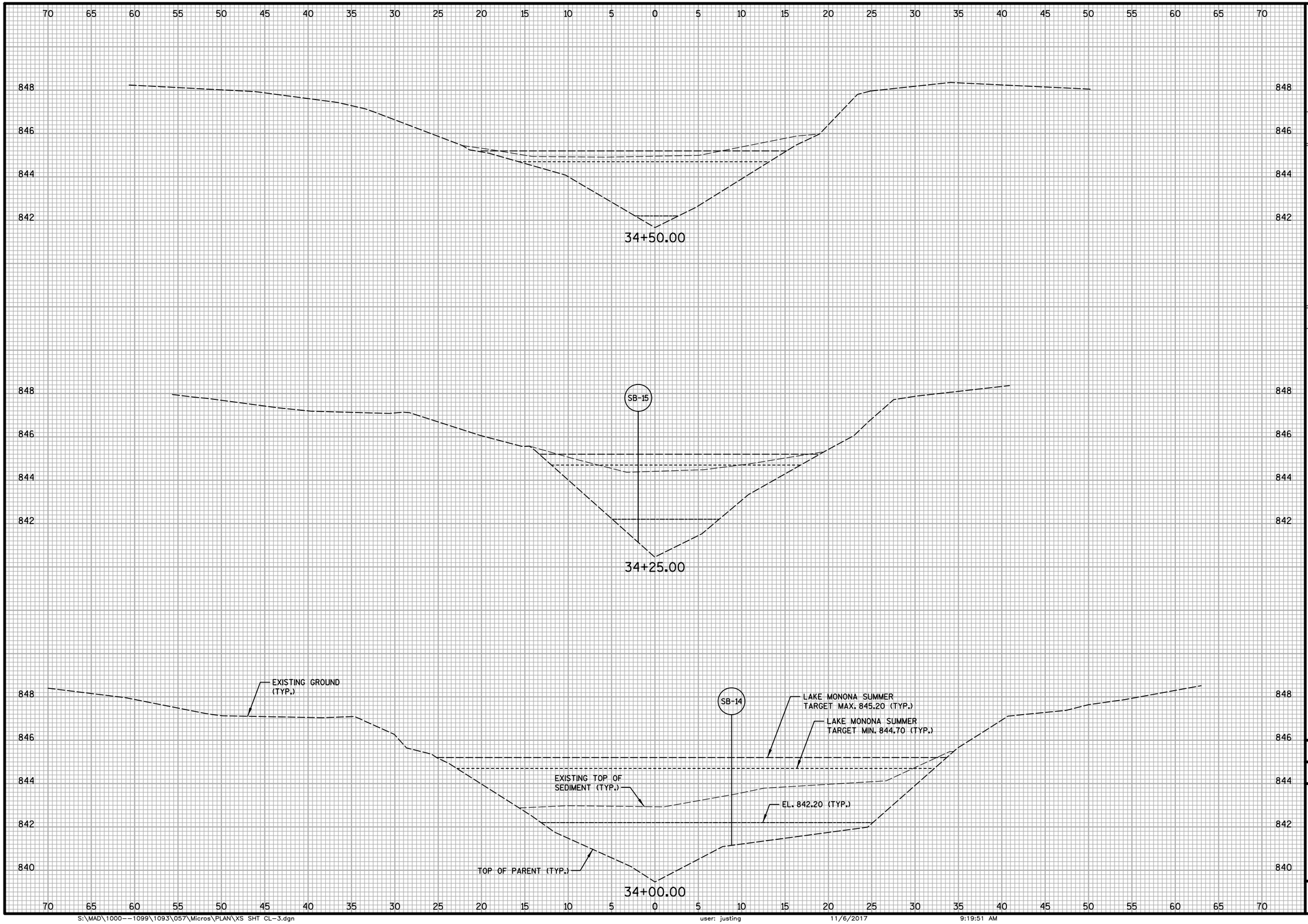

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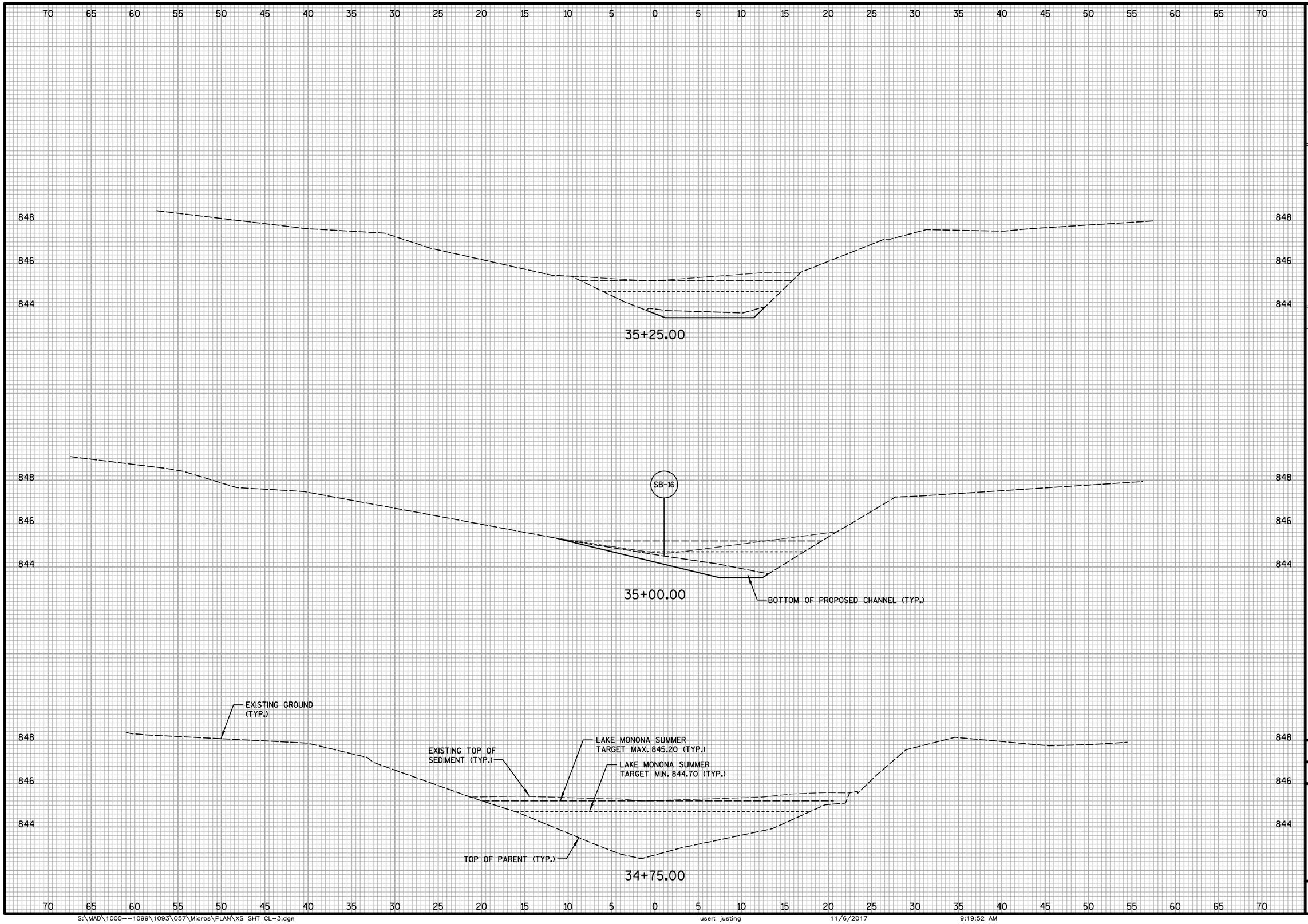

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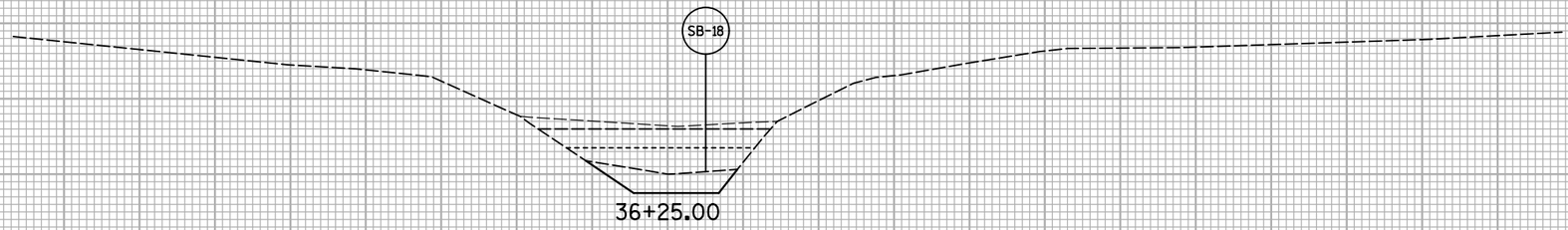

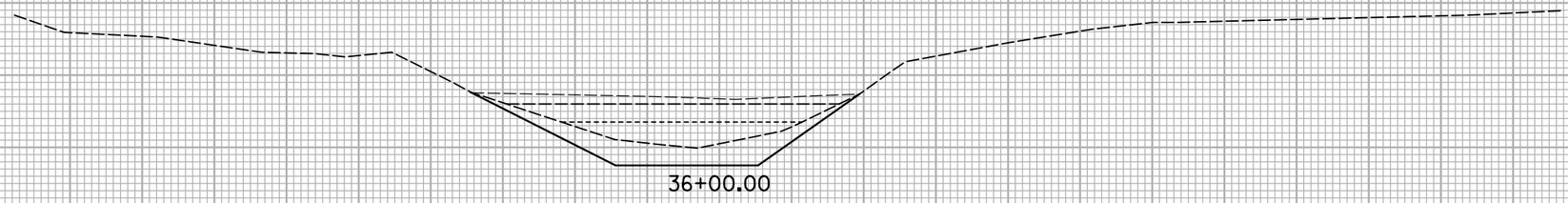

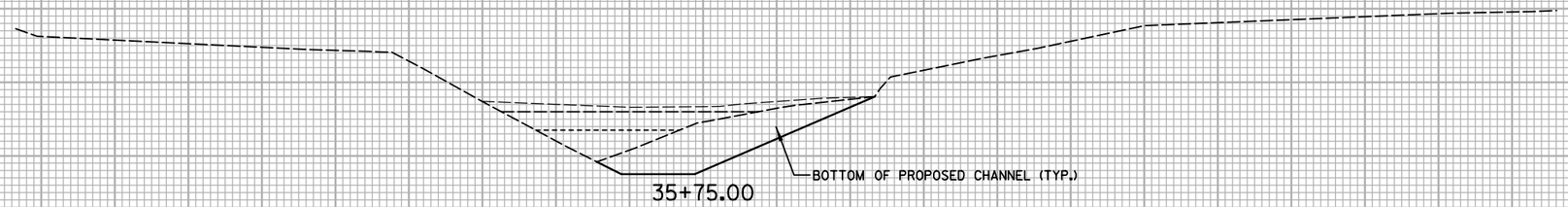

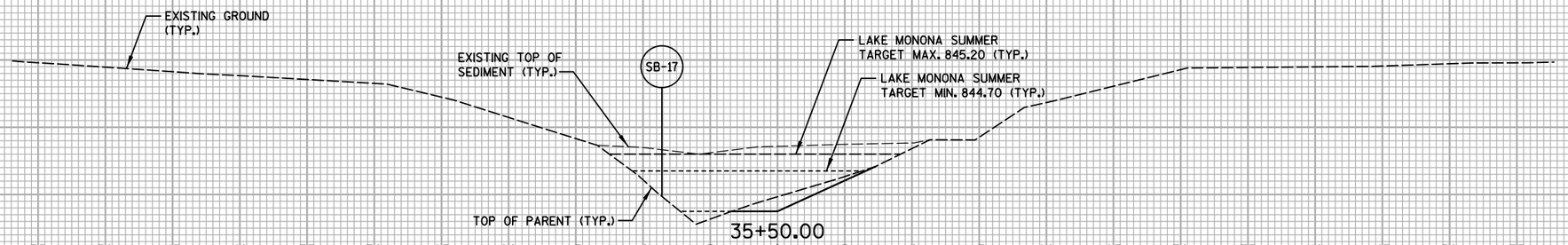

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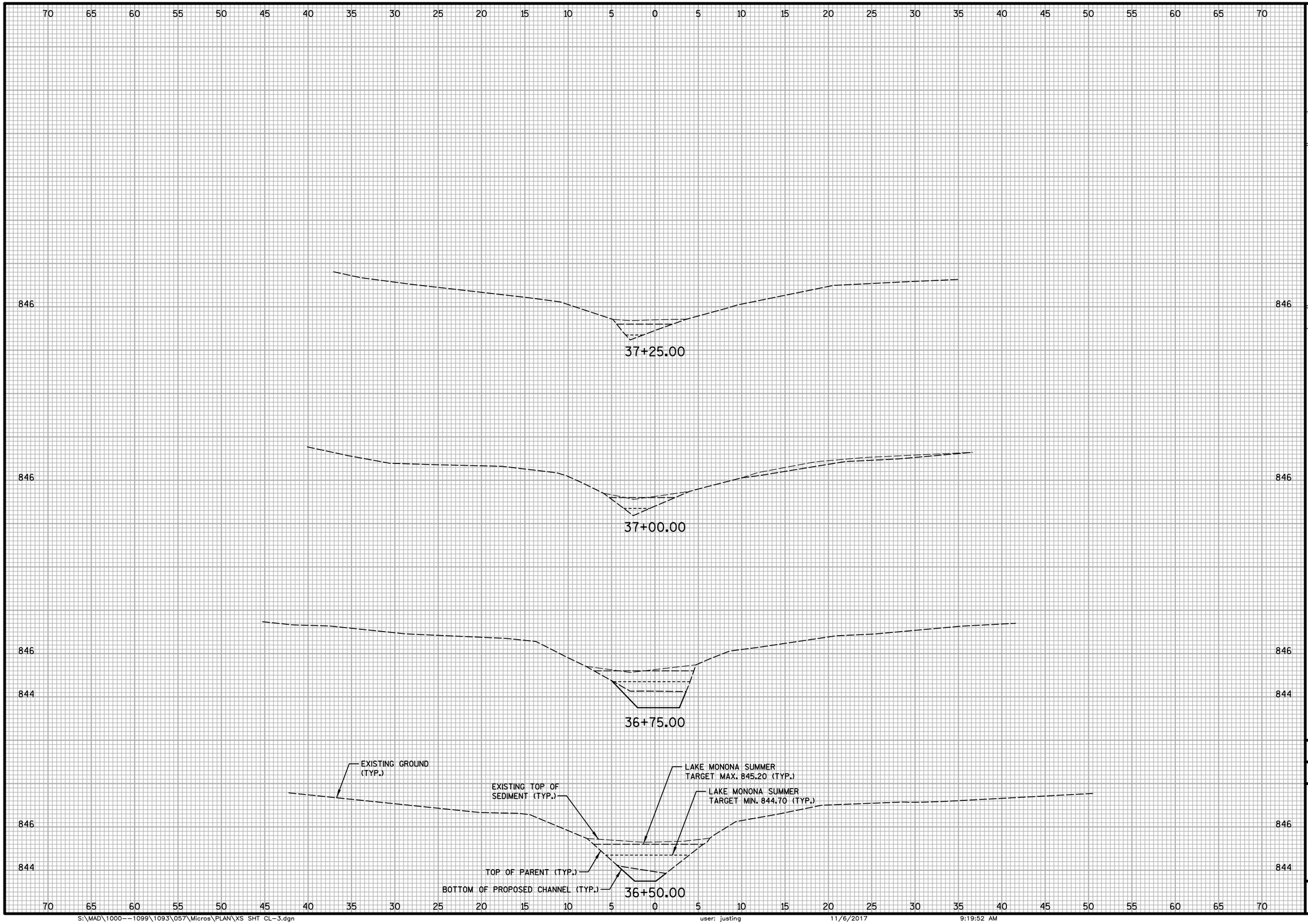

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Attachment B-Preliminary Technical Specifications Framework

The following technical specifications are anticipated to be needed. Front end documents and technical specifications are planned to be prepared during final design.

Specification Section, Special Provision, and/or Detail	Subsection	Phase 1 or Phase 2 Project
Site Clearing and Stripping		Both: Yes
Dewatering		Both: Yes
Excavation, Fill, Backfill, Grading	Mechanical Dredging/Excavation Hydraulic Dredging Note: Include provisions for fish removal and water tight trucks.	Both: Yes Phase 1: No; Phase 2: Yes
Geotextiles		Phase 1: Maybe; Phase 2: Yes
Cofferdam		Both: Yes
Erosion Control	Silt Fence Straw Wattle Turbidity Barrier Erosion Control Mat Turf Reinforcement Mat Coir Fiber Roll Stone Tracking Pad Inlet Protection	Both: Yes Both: Yes Both: Yes Both: Yes Both: Yes Phase 1: No; Phase 2: Yes Both: Yes Both: Yes
Rip Rap	For: Boulder Revetment Augmentative Rip Rap In-Stream Boulder	 Phase 1: No; Phase 2: Yes Phase 1: Yes; Phase 2: Yes Phase 1: No; Phase 2: Yes
Restoration	Turf Seeding Sodding Native Seeding Native Plugs Trees and Shrubs	Both: Yes Both: Yes Both: Yes Phase 1: No; Phase 2: Yes Phase 1: No; Phase 2: Yes
Woody Debris Fish Habitat		Phase 1: No; Phase 2: Yes
Stone Steps		Phase 1: No; Phase 2: Yes
Storm Drainage Utilities	Storm Sewer Joint Ties Endwall Cut-off Wall	Phase 1: No Phase 2: Yes
Stone Aggregates (For Canoe/Kayak Launch)	3/4" Clear Stone 3/4" Crushed Aggregate Base Course	Phase 1: Yes Phase 2: No

Attachment C-Opinion of Probable Construction Costs

1/6/2017

North Winnequah Park Lagoon Improvements Preliminary Design

Phase 1: Upstream of Nichols Road-Remove Contaminated Sediment to Station 33+10

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

ITEM NO.	DESCRIPTION	Quantity	Units	Unit Price	Total
1	Mobilization	1	LS	$7,500.00	$7,500
2	Clearing and Grubbing	1	LS	$500.00	$500
3	Dewatering	1	LS	$5,000.00	$5,000
4	Traffic Control	1	LS	$8,000.00	$8,000
5	Inlet Protection Type D	4	EA	$100.00	$400
6	Stone Tracking Pad	2	EA	$3,500.00	$7,000
7	Turbidity Barrier	15	LF	$40.00	$600
8	Dust Control	1	LS	$1,500.00	$1,500
9	Sediment Excavation and Disposal (Landfill Disposal) (Non-PCB Contaminated Area approx. 30+50 to 30+95 and 32+60 to 33+10)	260	CY	$250.00	$65,000
10	Sediment Excavation and Disposal (Landfill Disposal) - Top Sediment to Top Parent (PCB Contaminated Area 30+95 to 33+10)	363	CY	$250.00	$90,750
11	Parent Material Excavation and Disposal (Landfill Disposal) - 6-inches of Parent Material (PCB Contaminated Area 30+95 to 33+10)	130	CY	$250.00	$32,500
12	Medium Rip Rap (Aumentative Riprap)	165	SY	$70.00	$11,550
13	Native Vegetative Buffer - Topsoil, seed and Fertilizer (3' around ARR and BRR)	191	SY	$9.75	$1,862
14	Native Vegetative Buffer - Class 1, Urban Type B Erosion Control Revegetative Mat (3' around ARR and BRR)	191	SY	$2.75	$525
15	Turf Restoration-Topsoil, Seed, and Fertilizer (Assumes 22' Wide around Perimeter)	1,357	SY	$6.75	$9,160
16	Turf Restoration-Class I, Urban Type B Erosion Control Revegetative Mat	1,357	SY	$2.75	$3,732
17	Canoe/Kayak Launch	1	EA	$2,600.00	$2,600
18	Coffer Dam at Nichols	1	LS	$5,000.00	$5,000
				Landfill Cost (for Phase 1 Sediments)	
				Subtotal Construction Cost	$253,179
				Construction Contingency (20%)	$50,636
				Total Construction Cost	**$303,815**
				Geotechnical Investigation	$8,000
				Final Design	$37,500
				Construction Observation	$59,400
				GRAND TOTAL	**$408,700**

11/6/2017

North Winnequah Park Lagoon Improvements Preliminary Design

Phase 1 & 2: Upstream of Nichols Road-Remove All Sediment

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

ITEM NO.	DESCRIPTION	Quantity	Units	Unit Price	Total
1	Mobilization	1	LS	$20,000.00	$20,000
2	Clearing and Grubbing	1	LS	$1,500.00	$1,500
3	Dewatering	1	LS	$10,000.00	$10,000
4	Traffic Control	1	LS	$8,000.00	$8,000
5	Inlet Protection Type D	4	EA	$100.00	$400
6	Stone Tracking Pad	2	EA	$3,500.00	$7,000
7	Turbidity Barrier	15	LF	$40.00	$600
8	Dust Control	1	LS	$2,500.00	$2,500
9	Sediment Excavation and Disposal (Beneficial Reuse) (Non-PCB Contaminated Area approx. 30+50 to 30+95, 32+60 to 33+10, and 33+10 to 37+00)	2,321	CY	$145.00	$336,545
10	Sediment Excavation and Disposal (Landfill Disposal) (Non-PCB Contaminated Area approx. 30+50 to 30+95, 32+60 to 33+10, and 33+10 to 37+00)	2,321	CY	$235.00	$545,435
11	Sediment Excavation and Disposal (Landfill Disposal) - Top Sediment to Top Parent (PCB Contaminated Area 30+50 to 33+10)	363	CY	$235.00	$85,305
12	Parent Material Excavation and Disposal (Landfill Disposal) - 6-inches of Parent Material (PCB Contaminated Area 30+50 to 33+10)	130	CY	$235.00	$30,550
13	Medium Rip Rap (Aumentative Riprap)	245	SY	$70.00	$17,150
14	Vegetated Boulder Revetment	150	LF	$180.00	$27,000
15	Coir Fiber Roll Restoration	519	LF	$35.00	$18,165
16	Native Plugs for Coir Fiber Roll Restoration	519	EA	$8.00	$4,152
17	Turf Reinforcement Mat (upslope of coir fiber roll restoration)	585	SY	$23.00	$13,455
18	Native Seeding of TRM	585	SY	$3.00	$1,755
19	Stone Steps	8	CY	$560.00	$4,480
20	In-Stream Boulder	6	EA	$900.00	$5,400
21	Woody Debris Fish Habitat	2	EA	$1,600.00	$3,200
22	Native Vegetative Buffer - Topsoil, seed and Fertilizer (3' around ARR and BRR)	296	SY	$9.75	$2,886
23	Native Vegetative Buffer - Class 1, Urban Type B Erosion Control Revegetative Mat (3' around ARR and BRR)	296	SY	$2.75	$814
24	Turf Restoration-Topsoil, Seed, and Fertilizer (Assumes 22' Wide around Perimeter)	3,493	SY	$6.75	$23,578
25	Turf Restoration-Class I, Urban Type B Erosion Control Revegetative Mat	3,493	SY	$2.75	$9,606
26	Canoe/Kayak Launch	1	EA	$2,600.00	$2,600
27	Coffer Dam at Nichols	1	LS	$5,000.00	$5,000
				Beneficial Reuse Cost (for Phase 1 & 2 Sediments)	
				Subtotal Construction Cost	$641,641
				Construction Contingency (20%)	$128,328
				Total Construction Cost	**$769,969**
				Geotechnical Investigation	$8,000
				Final Design	$37,500
				Construction Observation	$59,400
				GRAND TOTAL	**$874,900**
				Landfill Cost (for Phase 1 & 2 Sediments)	
				Subtotal Construction Cost	$850,531
				Construction Contingency (20%)	$170,106
				Total Construction Cost	**$1,020,637**
				Geotechnical Investigation	$8,000
				Final Design	$37,500
				Construction Observation	$59,400
				GRAND TOTAL	**$1,125,500**

Attachment D-Sediment Sampling Results

Strand Associates, Inc.®
910 West Wingra Drive
Madison, WI 53715
(P) 608-251-4843
(F) 608-251-8655

October 24, 2017

Mr. Mike Schmoller
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Re: Winnequah Park Lagoons Sediment Investigation Report
Monona, Wisconsin
File Ref: 02-13-576071, Dane County

Dear Mr. Schmoller:

Enclosed is one copy of the Winnequah Park Lagoons Sediment Investigation Report.

Please contact me at (608) 251-4843 or Luke.Hellermann@Strand.com with questions.

Sincerely,

STRAND ASSOCIATES, INC.®

Luke T. Hellermann, P.G.

Enclosure: Report

c/enc: Dan Stephany, City of Monona DPW
Scott Inman, WDNR

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Report for
City of Monona, Wisconsin

Winnequah Park Lagoons Sediment Investigation
BRRTS No. 02-13-576071

Prepared by:

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October 2017

STRAND ASSOCIATES®

Sediment sampling and the initial management and planning efforts for the Winnequah Park lagoons have been completed. The assessment included collection and analysis of sediment samples, an initial dredging feasibility study, additional survey and preparation of preliminary design plans, assessment of stormwater treatment devices, and a shoreland erosion assessment. This project has been partially funded by two Wisconsin Department of Natural Resources (WDNR) Large Scale Lake Management Planning Grants. A third grant application will be submitted in December 2017 for final design and preparation of specifications and bidding documents.

EXECUTIVE SUMMARY

Sediment samples were collected from 18 locations at the Winnequah Park lagoons in Monona, Wisconsin in 2015, 2016, and 2017. Concentrations of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) were found to exceed the NR720 Industrial Site Direct Contact standards in the area of sample locations SB-4, SB-5, SB-6, and N-8. No significant concentrations of contaminants were detected in the parent material samples collected. The extent of sediment contamination has been defined and no further investigation of sediment or parent material is recommended.

Excavation and landfill disposal of sediment with concentrations of total PCBs and PAHs exceeding the NR 720 Industrial Site Direct Contact standards are recommended. This area is shown on Figure 2 and on the plan and profile sheet in Attachment 1. The estimated quantity of material recommended to be dredged from this area (approximately Station 310+90 to Station 33+00), assuming removal of sediment plus 6 inches of parent material, is approximately 500 cubic yards (CYs).

GENERAL INFORMATION

Owner:

City of Monona (City)
5211 Schluter Road
Monona, WI 53716
Contacts: Mr. Dan Stephany, DPW
Phone: (608) 222-2525

Consultant:

Strand Associates, Inc.® (Strand)
910 West Wingra Drive
Madison, WI 53715
Contact: Luke T. Hellermann, P.G.
Phone: (608) 251-4843

Wisconsin Department of Natural Resources:

Remediation and Redevelopment Program
3911 Fish Hatchery Road
Fitchburg, WI 53711
Contact: Mike Schmoller
Phone: (608) 275-3303

Analytical Laboratory:

CT Laboratories
1230 Lange Court
Baraboo, WI 53913
Contact: Dennis Linley
Phone: (608) 356-2760

Site Maps and tables showing the Winnequah Park lagoons, sediment sampling locations, parcel numbers, and legal descriptions for the parcels are provided in Attachment 1.

SITE AND BACKGROUND

In March 2015, sediment samples were initially collected at Winnequah Park from the lagoons located north and south of Nichols Road (SB-1 through SB-6). This sampling was related to a project that included limited dredging and culvert replacement at Nichols Road. Elevated levels of PCBs and PAHs were

detected in some of these initial sediment samples. In July 2015, a new culvert was installed under Nichols Road and approximately 46 CYs of sediment was dredged and disposed of in a licensed landfill. The area of sediment removal is shown on the plan sheet in Attachment 1.

A Site Investigation Work Plan was submitted to the WDNR on March 23, 2016. The Work Plan summarized proposed sampling locations, sampling procedures, and proposed analyses for the investigation of PCB contamination.

On May 12, 2016, additional sediment and parent material samples were collected from nine locations north of Nichols Road (N-7 through N-15) and from two locations south of Nichols Road (S-1 and S-2). The following sampling and analysis was completed in May 2016:

1. North of Nichols Road (sample locations N-7 through N-15), a grab parent material sample and a grab sediment sample were collected at each location. The nine sediment samples were analyzed for PCBs, PAHs, total organic carbon (TOC), and percent solids. The nine parent material samples were analyzed for PCBs.

2. South of Nichols Road (sample locations S-1 and S-2), grab sediment and grab parent material samples were collected. The grab sediment samples were composited and analyzed for a partial list of the NR 347 Table 1 sediment characterization parameters, including: total metals (As, Ba, Cd, Cr, Cu, Cn, Fe, Pb, Mn, Hg, Ni, Se, and Zn), PCBs, PAHs, nitrate, nitrite, ammonia, total kjeldahl nitrogen (TKN), total phosphorus (TP), grain size by hydrometer, percent solids, TOC, and moisture content. The grab parent material samples were composited and analyzed for the same NR 347 Table 1 parameters.

Elevated levels of PCBs and PAHs were detected in some of the sediment samples collected north of Nichols Road. The 2016 sediment sampling efforts and analytical results were summarized in the July 19, 2016 Technical Memorandum submitted to the City and the WDNR.

On June 14, 2017, additional sediment and parent material samples were collected from three locations north of Nichols Road (N-16, N-17, and N-18). Samples were collected at these locations to assess sediment and parent material quality in the channel north of the lagoons because dredging may be considered through this channel. The following sampling and analysis was completed at locations N-16, N-17, and N-18:

1. A grab parent material sample and a grab sediment sample were collected at each location. The six grab samples were analyzed for TOC, PCBs, and PAHs.

2. One composite sediment sample was collected from the three locations. The composite sample was analyzed for the project's previously approved partial list of NR 347, Table 1 parameters, including: PAHs; total metals (As, Ba, Cd, Cr, Cu, Cn, Fe, Pb, Mn, Hg, Ni, Se, and Zn), PCBs, nitrate; nitrite, ammonia, TKN, TP, grain size by hydrometer, percent solids, TOC, and moisture content.

Figure 1 in Attachment 1 shows the Winnequah Park lagoons and the 2015, 2016, and 2017 sampling locations, excluding sample locations S1 and S2. Locations S1 and S2 are not shown because PCBs were not detected at those locations and dredging in that area is not being considered at this time.

SEDIMENT AND PARENT MATERIAL SAMPLING

Samples were collected with a stainless steel Wildco model, 4-foot hand core sediment sampler. Disposable, plastic core tube liners were used and core sample were visually inspected for strata formation and described. Core samples were photographed and sample recovery, position, odor, texture, and color were recorded. Sample locations were recorded using a survey-grade global positioning system (GPS) with a horizontal accuracy of less than 1 centimeter (cm) and vertical accuracy of approximatly 1 cm. The lagoon water elevation and top and bottom elevations of sediment were also recorded using the GPS. Field data tables summarizing the sediment sampling observations are included in Attachment 2.

ANALYTICAL RESULTS

Sample analytical results are summarized in the data tables and laboratory reports in Attachment 2. The tables and lab reports include sampling results from 2015, 2016, and 2017.

The data tables compare the analytical results to the Consensus-Based Sediment Quality Guidelines (CBSQG) from the WDNR Interim Guidance dated December 2003. Results are compared to the Threshold Effect Concentration (TEC), Midpoint Effect Concentration (MEC), and Probable Effect Concentration (PEC) as provided in the CBSQG. The lower TEC is the concentration at which toxicity to benthic-dwelling organisms is unlikely, and the PEC is the concentration at which toxicity to benthic-dwelling organisms is probable. The MEC is the concentration midway between the TEC and the PEC concentrations. For comparison to the TEC, MEC, and PEC, reported concentrations are normalized to 1 percent TOC. As summarized in the data tables and shown on Figure 1, only a small area of sediment at SB-4 has a normalized total PCB concentration at a level exceeding the PEC. No individual or total PAH concentrations normalized to 1 percent TOC exceeded the PEC.

For comparison to the NR720 Industrial and Non-Industrial Site Direct Contact standards, dry weight concentrations are summarized in the tables. The data tables and Figure 2 show where concentrations of PCBs and PAHs exceed the NR720 Industrial Site Direct Contact standards, the area of SB-4, SB-5, SB-6, and N-8.

CONCLUSIONS AND RECOMMENDATIONS

Dry weight concentrations of PCBs and PAHs exceed the NR720 Industrial Site Direct Contact standards in the area of SB-4, SB-5, SB-6, and N-8. No significant concentrations of contaminants were detected in the parent material samples collected. The extent of sediment contamination has been defined and no further investigation of sediment or parent material is recommended.

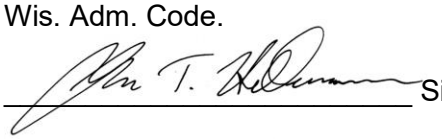
Excavation and landfill disposal of sediment with concentrations of total PCBs and PAHs exceeding the NR 720 Industrial Site Direct Contact standards (the area of SB-4, SB-5, SB-6, and N-8) are recommended. This area is shown on Figure 2 and on the plan and profile sheet (Attachment 1). The estimated quantity of material recommended to be dredged from this area (approximately Station 310+90 to Station 33+00), assuming removal of sediment plus 6 inches of parent material, is approximately 500 CYs. Cross sections of the lagoon showing water elevations, sample locations, and sediment thickness are also provided in Attachment 1.

Because no significant contamination has been detected in the parent material samples analyzed and planned dredging of contaminated sediment will include the removal of approximately 6 inches of parent material, no post-dredging confirmation sampling is planned.

Dredging and disposal of contaminated sediment is anticipated in 2019. Other dredging efforts may be completed to remove excess sediment from the lagoons, both north and south of Nichols Road, for improving stormwater treatment and storage capacity, the installation of stormwater pretreatment devices, and for streambank restoration. All of these improvements will require an engineering and permitting effort. Construction drawings and specifications will be required to convey project design information to the WDNR for review approval and issuance of permits.

NR 712 CERTIFICATION

I, Luke T. Hellermann, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

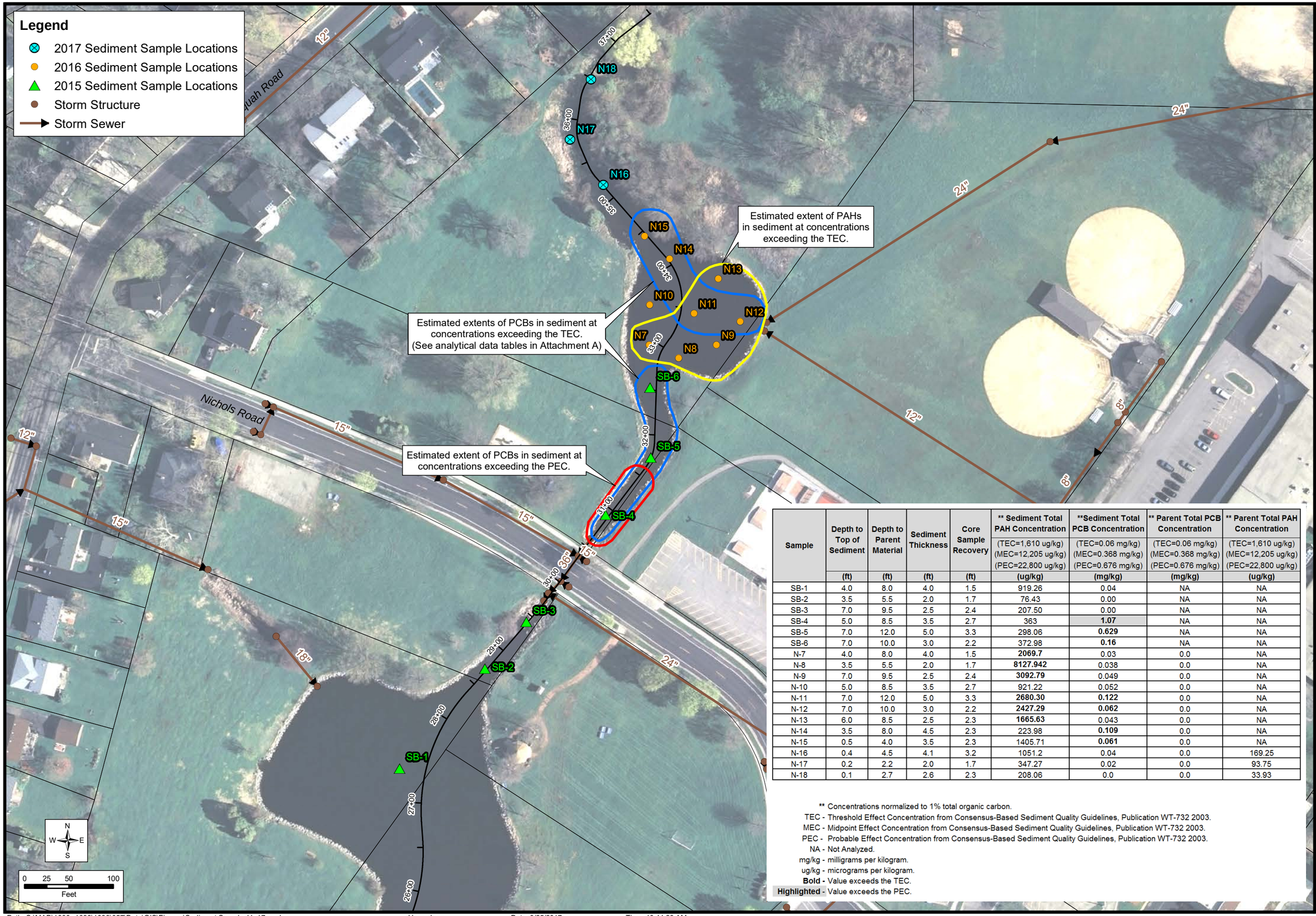


Signature and Title October 24, 2017 Date

ATTACHMENT 1

SAMPLE LOCATIONS AND ANALYTICAL RESULTS COMPARED TO CONSENSUS-BASED SEDIMENT QUALITY GUIDELINES (TEC, MEC, AND PEC)

WINNEQUAH PARK LAGOON NORTH OF NICHOLS ROAD
CITY OF MONONA
DANE COUNTY, WISCONSIN



Sample	Depth to Top of Sediment	Depth to Parent Material	Sediment Thickness	Core Sample Recovery	** Sediment Total PAH Concentration	**Sediment Total PCB Concentration	** Parent Total PCB Concentration	** Parent Total PAH Concentration
					(TEC=1,610 ug/kg) (MEC=12,205 ug/kg) (PEC=22,800 ug/kg)	(TEC=0.06 mg/kg) (MEC=0.368 mg/kg) (PEC=0.676 mg/kg)	(TEC=0.06 mg/kg) (MEC=0.368 mg/kg) (PEC=0.676 mg/kg)	(TEC=1,610 ug/kg) (MEC=12,205 ug/kg) (PEC=22,800 ug/kg)
	(ft)	(ft)	(ft)	(ft)	(ug/kg)	(mg/kg)	(mg/kg)	(ug/kg)
SB-1	4.0	8.0	4.0	1.5	919.26	0.04	NA	NA
SB-2	3.5	5.5	2.0	1.7	76.43	0.00	NA	NA
SB-3	7.0	9.5	2.5	2.4	207.50	0.00	NA	NA
SB-4	5.0	8.5	3.5	2.7	363	**1.07**	NA	NA
SB-5	7.0	12.0	5.0	3.3	298.06	**0.629**	NA	NA
SB-6	7.0	10.0	3.0	2.2	372.98	**0.16**	NA	NA
N-7	4.0	8.0	4.0	1.5	**2069.7**	0.03	0.0	NA
N-8	3.5	5.5	2.0	1.7	**8127.942**	0.038	0.0	NA
N-9	7.0	9.5	2.5	2.4	**3092.79**	0.049	0.0	NA
N-10	5.0	8.5	3.5	2.7	921.22	0.052	0.0	NA
N-11	7.0	12.0	5.0	3.3	**2680.30**	**0.122**	0.0	NA
N-12	7.0	10.0	3.0	2.2	**2427.29**	**0.062**	0.0	NA
N-13	6.0	8.5	2.5	2.3	**1665.63**	0.043	0.0	NA
N-14	3.5	8.0	4.5	2.3	223.98	**0.109**	0.0	NA
N-15	0.5	4.0	3.5	2.3	1405.71	**0.061**	0.0	NA
N-16	0.4	4.5	4.1	3.2	1051.2	0.04	0.0	169.25
N-17	0.2	2.2	2.0	1.7	347.27	0.02	0.0	93.75
N-18	0.1	2.7	2.6	2.3	208.06	0.0	0.0	33.93

** Concentrations normalized to 1% total organic carbon.
TEC - Threshold Effect Concentration from Consensus-Based Sediment Quality Guidelines, Publication WT-732 2003.
MEC - Midpoint Effect Concentration from Consensus-Based Sediment Quality Guidelines, Publication WT-732 2003.
PEC - Probable Effect Concentration from Consensus-Based Sediment Quality Guidelines, Publication WT-732 2003.
NA - Not Analyzed.
mg/kg - milligrams per kilogram.
ug/kg - micrograms per kilogram.
Bold - Value exceeds the TEC.
Highlighted - Value exceeds the PEC.

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FIGURE 1
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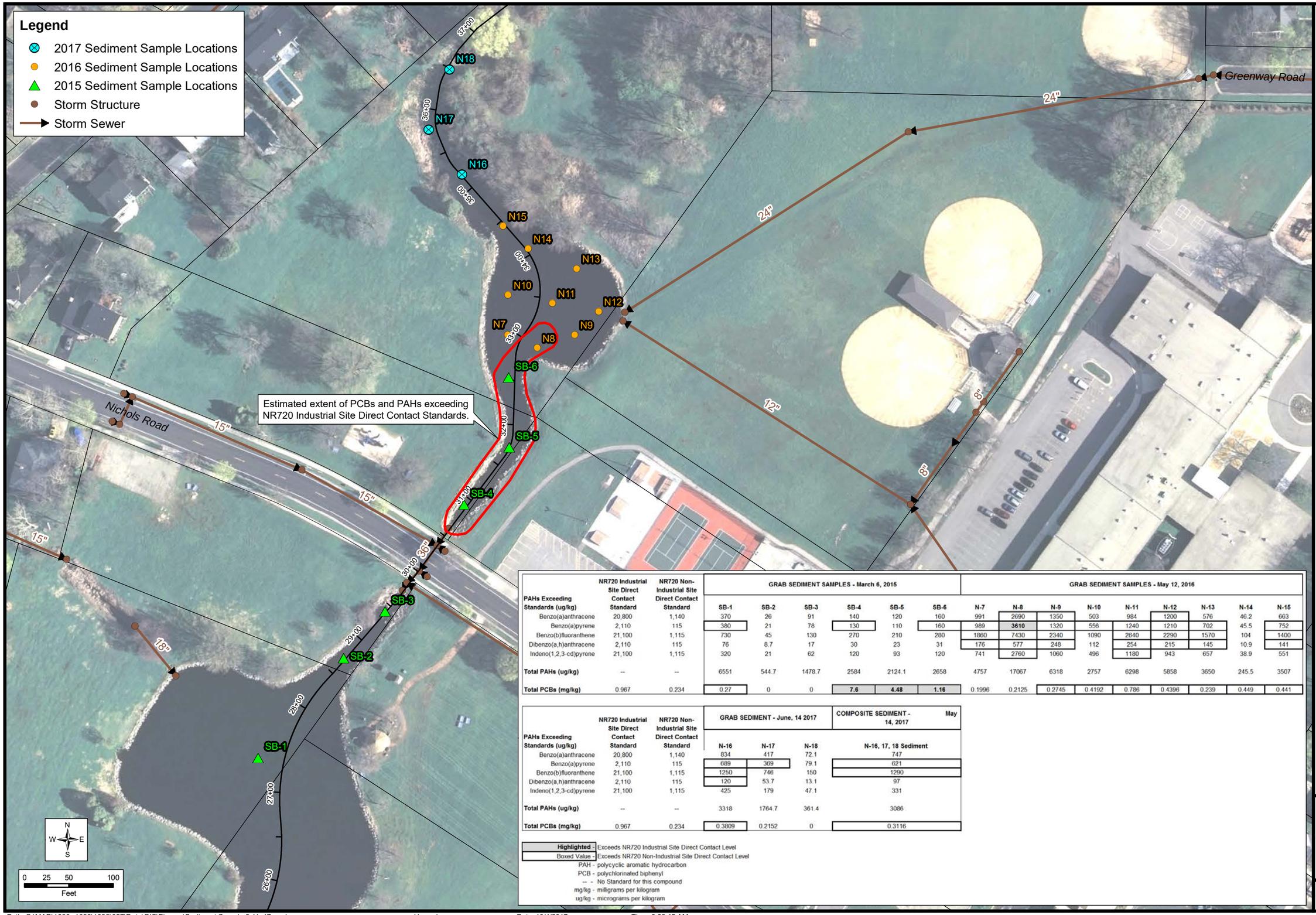

PAHs Exceeding Standards (ug/kg)	NR720 Industrial Site Direct Contact Standard	NR720 Non-Industrial Site Direct Contact Standard	GRAB SEDIMENT SAMPLES - March 6, 2015						GRAB SEDIMENT SAMPLES - May 12, 2016								
			SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	N-7	N-8	N-9	N-10	N-11	N-12	N-13	N-14	N-15
Benzo(a)anthracene	20,800	1,140	370	26	91	140	120	160	991	2690	1350	503	984	1200	576	46.2	663
Benzo(a)pyrene	2,110	115	380	21	78	130	110	160	989	3610	1320	556	1240	1210	702	45.5	752
Benzo(b)fluoranthene	21,100	1,115	730	45	130	270	210	280	1860	7430	2340	1090	2640	2290	1570	104	1400
Dibenzo(a,h)anthracene	2,110	115	76	8.7	17	30	23	31	176	577	248	112	254	215	145	10.9	141
Indeno(1,2,3-cd)pyrene	21,100	1,115	320	21	62	120	93	120	741	2760	1060	496	1180	943	657	38.9	551
Total PAHs (ug/kg)	--	--	6551	544.7	1478.7	2584	2124.1	2658	4757	17067	6318	2757	6298	5858	3650	245.5	3507
Total PCBs (mg/kg)	0.967	0.234	0.27	0	0	7.6	4.48	1.16	0.1996	0.2125	0.2745	0.4192	0.786	0.4396	0.239	0.449	0.441

PAHs Exceeding Standards (ug/kg)	NR720 Industrial Site Direct Contact Standard	NR720 Non-Industrial Site Direct Contact Standard	GRAB SEDIMENT - June, 14 2017			COMPOSITE SEDIMENT - May 14, 2017
			N-16	N-17	N-18	N-16, 17, 18 Sediment
Benzo(a)anthracene	20,800	1,140	834	417	72.1	747
Benzo(a)pyrene	2,110	115	689	369	79.1	621
Benzo(b)fluoranthene	21,100	1,115	1250	746	150	1290
Dibenzo(a,h)anthracene	2,110	115	120	53.7	13.1	97
Indeno(1,2,3-cd)pyrene	21,100	1,115	425	179	47.1	331
Total PAHs (ug/kg)	--	--	3318	1764.7	361.4	3086
Total PCBs (mg/kg)	0.967	0.234	0.3809	0.2152	0	0.3116

Highlighted - Exceeds NR720 Industrial Site Direct Contact Level
Boxed Value - Exceeds NR720 Non-Industrial Site Direct Contact Level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
-- - No Standard for this compound
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram

SAMPLE LOCATIONS AND ANALYTICAL RESULTS COMPARED TO NR 720 DIRECT CONTACT STANDARDS

WINNEQUAH PARK LAGOON NORTH OF NICHOLS ROAD
CITY OF MONONA
DANE COUNTY, WISCONSIN

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FIGURE 2
1093.057

PARCELS

WINNEQUAH PARK LAGOON NORTH OF NICHOLS ROAD
CITY OF MONONA
DANE COUNTY, WISCONSIN

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FIGURE 3
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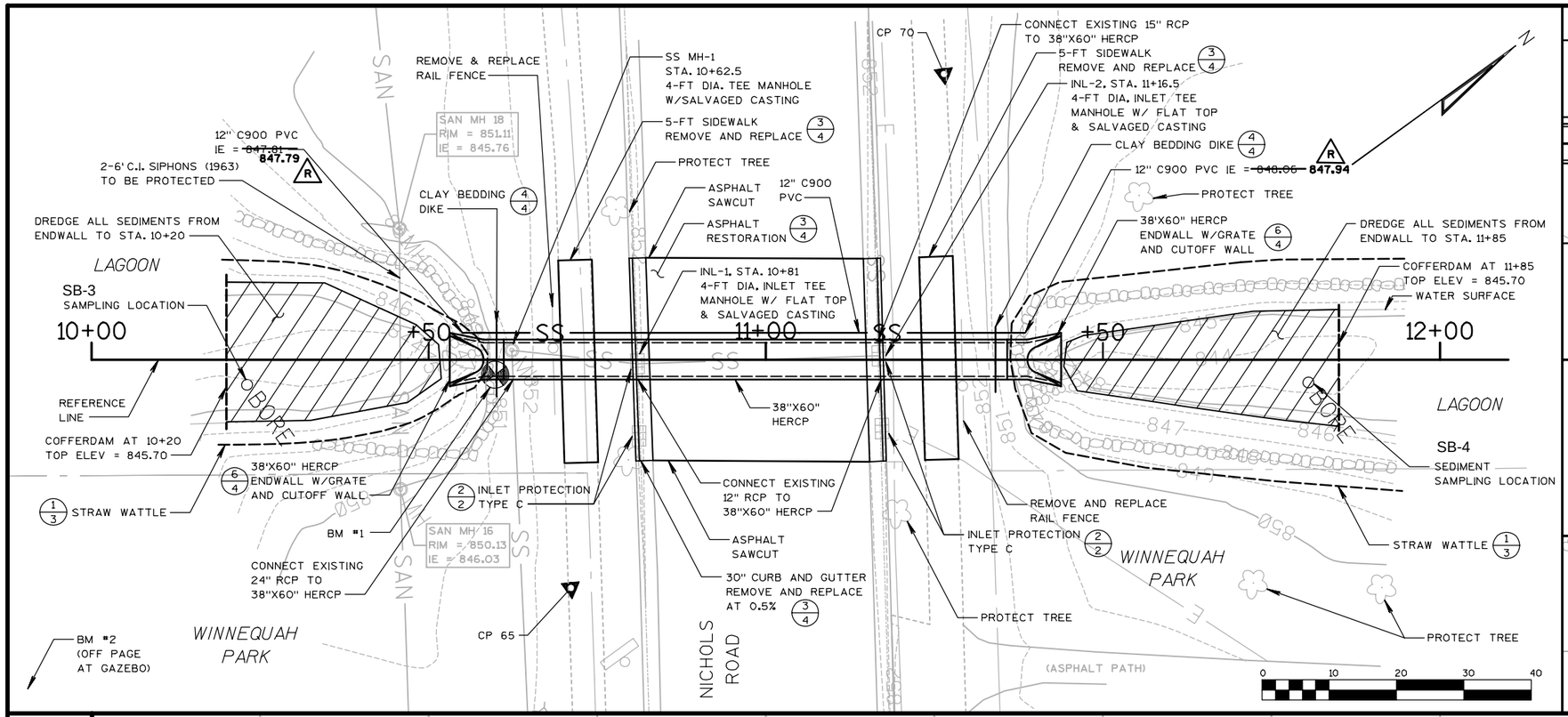
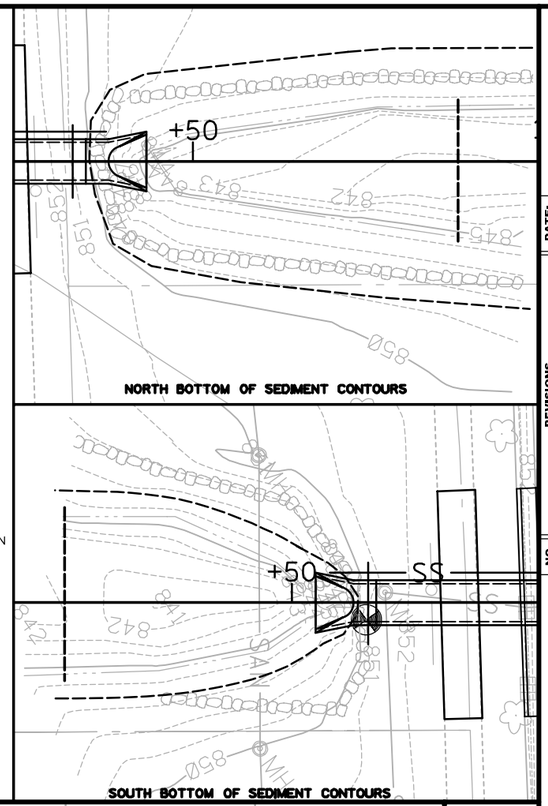
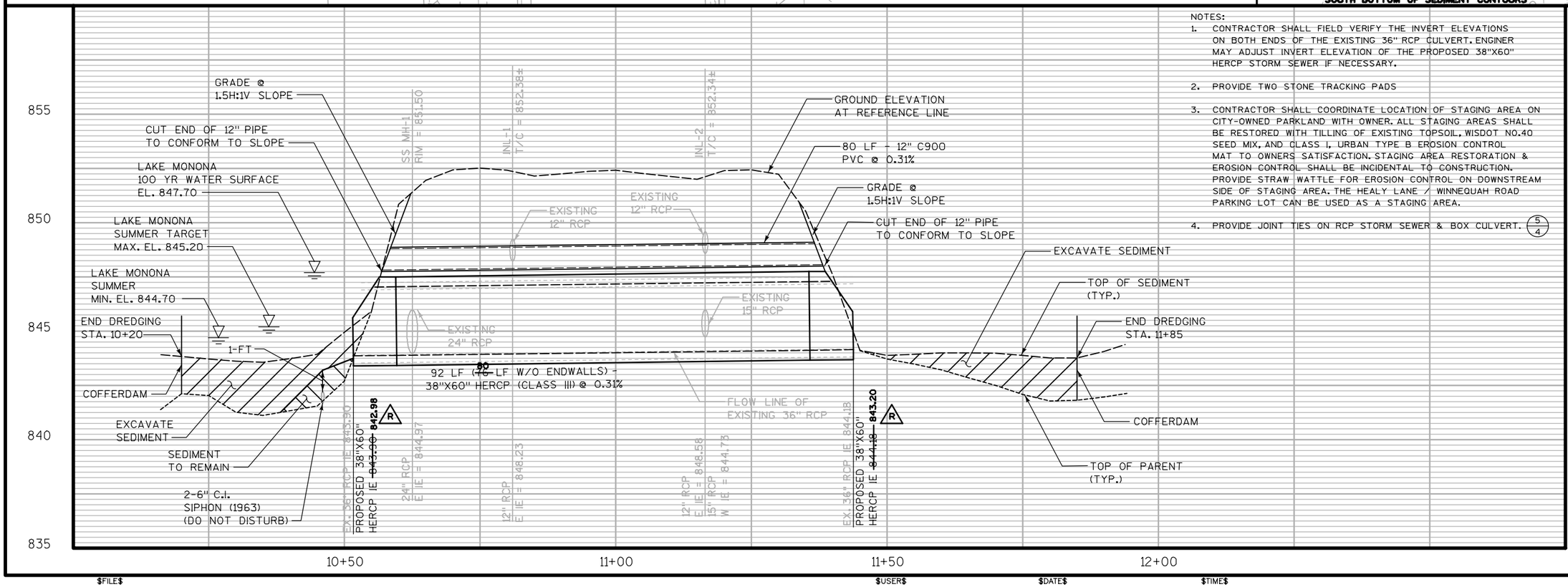
PARCELNO	PropertyAd	LegalDescr
071017311852		WINNEQUAH TERRACE FIREMAN'S PARK
071017344603		ASSESSORS PLAT 1 BLOOMING GROVE OUTLOT 54 EXC WLY 200 FT (WINNEQUAH PARK - S)
071017344809		ASSESSORS PLAT 1 BLOOMING GROVE PRT OUTLOT 55 LYG SE OF LN PARA WITH & 180 FT SE FR C/L WINNEQUAH RD (WINNEQUAH PARK - N)
071017350052		ASSESSORS PLAT 1 BLOOMING GROVE PRT OL 51, 52 & 53 THAT PRT ELY OF LN PARA TO & 150 FT E OF E LN WINNEQUAH RD (WINNEQUAH PARK W & S)
071017344907	920 PROGRESSIVE LN	ASSESSORS PLAT 1 BLOOMING GROVE PRT OL 56 COM 418.2 FT S OF N COR TH NW 127.2 FT NE 101.7 FT SE TO E LN S TO POB (FIREMENS PARK)
071017350007		SUBD OF OL 8, 9, 10, 11 ASSESSORS PLAT 1 BLOOMING GROVE 2.5 ACRES BLOCK 4 (WINNEQUAH PARK)
071017355002	1000 NICHOLS RD	ASSESSORS PLAT 1 B G NW 414 FT OUTLOT 6 EXC HWY IN R3071/71 (LIBRARY)
071017355075		ASSESSORS PLAT 1 BLOOMING GROVE PRT OUTLOT 7 COM NLY COR TH SE ALG NELY LN 398.2 FT SWLY 270.7 FT TO ELY COR BLK 4 REPLAT N52DEG47'W TO I S N39DEG17'E 270.1 FT TO POB (WINNEQUAH PARK)
071017366509		ASSESSORS PLAT # 1 BG PRT OUTLOTS 1, 2, 3 & 4 COM MOST WLY PT SD OL 1 TH S84DEGE ALG NLY LN 175 FT S40DEG18'W 660 FT N51DEG33'W 403.3 FT N40DEG18'E 397.9 FT S84DEGE 312.2 FT TO POB SUBJ TO BIKE PATH ESMT OVER WLY 20 FT SD OUTLOTS AS DESR IN R5155/52 (WI
071020220374		SUBD OF OL 8, 9, 10, 11 ASSESSORS REPLAT 1 B.G. BLOCK 7 2.3 A EXC WLY 150 FT (WINNEQUAH PARK)
071020220492		BLOOMING GROVE ASSESSORS PLAT #1 OUTLOT 12 LYG ELY OF LN PARA TO & 150 FT E OF E LN OF WINNEQUAH RD
071020220150		SUBD OF OL 8, 9, 10, 11 ASSESSORS PLAT 1 B.G. 2 A BLOCK 5 (WINNEQUAH PARK)
071020220267		SUBD OF OL 8, 9, 10, 11 ASSESSORS PLAT 1 B.G. BLOCK 6 2.4 A M/L (WINNEQUAH PARK)







NOTES:

1. CONTRACTOR SHALL FIELD VERIFY THE INVERT ELEVATIONS ON BOTH ENDS OF THE EXISTING 36" RCP CULVERT. ENGINER MAY ADJUST INVERT ELEVATION OF THE PROPOSED 38"X60" HERCP STORM SEWER IF NECESSARY.
2. PROVIDE TWO STONE TRACKING PADS
3. CONTRACTOR SHALL COORDINATE LOCATION OF STAGING AREA ON CITY-OWNED PARKLAND WITH OWNER. ALL STAGING AREAS SHALL BE RESTORED WITH TILLING OF EXISTING TOPSOIL, WISDOT NO.40 SEED MIX, AND CLASS I, URBAN TYPE B EROSION CONTROL MAT TO OWNERS SATISFACTION. STAGING AREA RESTORATION & EROSION CONTROL SHALL BE INCIDENTAL TO CONSTRUCTION. PROVIDE STRAW WATTLE FOR EROSION CONTROL ON DOWNSTREAM SIDE OF STAGING AREA. THE HEALY LANE / WINNEQUAH ROAD PARKING LOT CAN BE USED AS A STAGING AREA.
4. PROVIDE JOINT TIES ON RCP STORM SEWER & BOX CULVERT. (5/4)

NO.	REVISIONS	DATE:
R	Record Drawings	10/13/15

NICHOLS ROAD CULVERT UPGRADE
PLAN AND PROFILE
2014 STORMWATER PROJECTS

CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO. 1093.041

PROJECT MGR. JHL

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GENERAL NOTES:

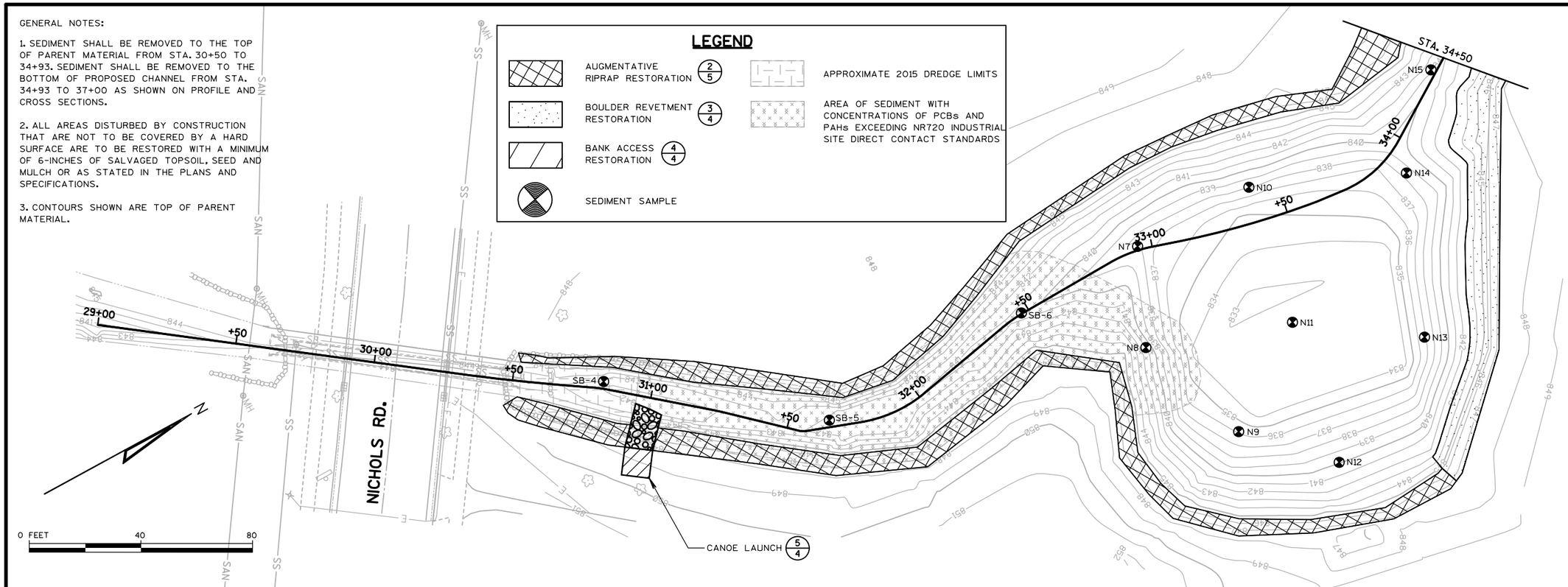
1. SEDIMENT SHALL BE REMOVED TO THE TOP OF PARENT MATERIAL FROM STA. 30+50 TO 34+93. SEDIMENT SHALL BE REMOVED TO THE BOTTOM OF PROPOSED CHANNEL FROM STA. 34+93 TO 37+00 AS SHOWN ON PROFILE AND CROSS SECTIONS.

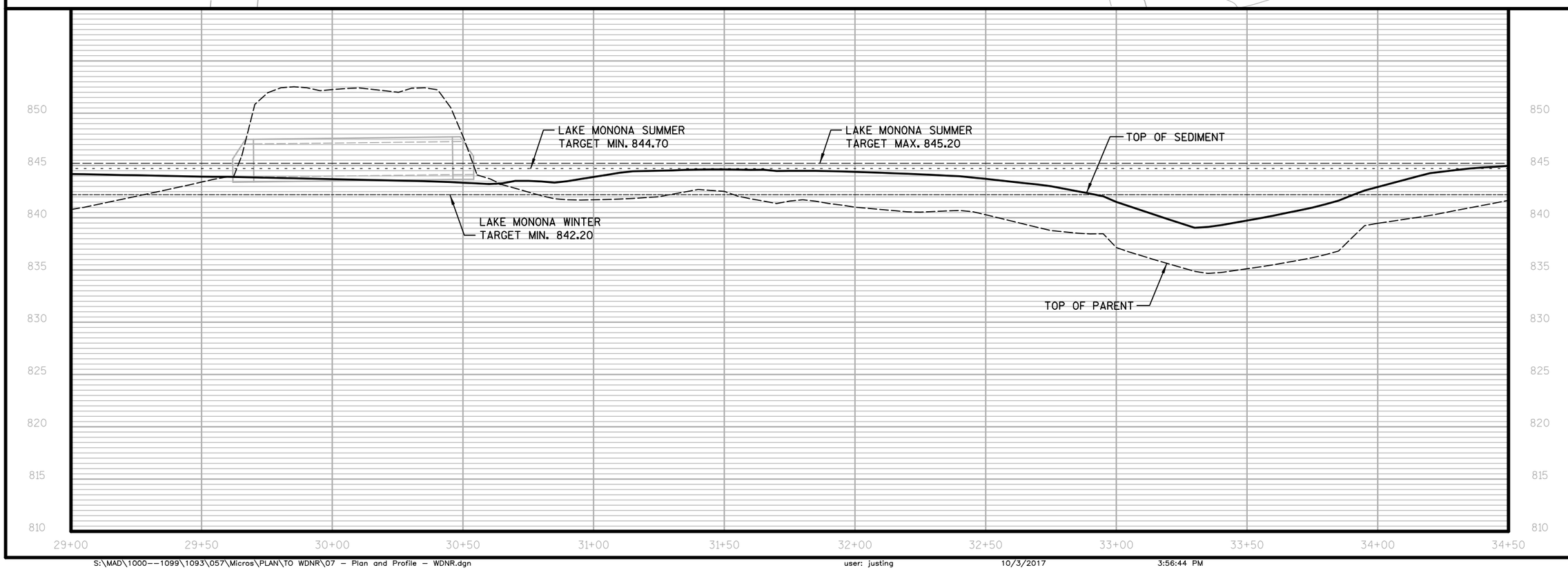
2. ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT TO BE COVERED BY A HARD SURFACE ARE TO BE RESTORED WITH A MINIMUM OF 6-INCHES OF SALVAGED TOPSOIL, SEED AND MULCH OR AS STATED IN THE PLANS AND SPECIFICATIONS.

3. CONTOURS SHOWN ARE TOP OF PARENT MATERIAL.

LEGEND

- AUGMENTATIVE RIPRAP RESTORATION (2/5)
- BOULDER REVETMENT RESTORATION (3/4)
- BANK ACCESS RESTORATION (4/4)
- SEDIMENT SAMPLE
- APPROXIMATE 2015 DREDGE LIMITS
- AREA OF SEDIMENT WITH CONCENTRATIONS OF PCBs AND PAHs EXCEEDING NR720 INDUSTRIAL SITE DIRECT CONTACT STANDARDS





DATE:

REVISIONS

NO.

PLAN AND PROFILE

NORTH WINNEQUAH PARK LAGOON DREDGING
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO.
1093.057

PROJECT MGR.
JHL

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70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

852
850
848
846
844

LAKE MONONA SUMMER
TARGET MAX. 845.20 (TYP.)

LAKE MONONA SUMMER
TARGET MIN. 844.70 (TYP.)

SB-4

TOP OF SEDIMENT (TYP.)

TOP OF PARENT (TYP.)

30+75.00

30+54.21

30+50.00

DATE:

REVISIONS

NO.

CROSS SECTIONS

NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO.
1093.057

PROJECT MGR.
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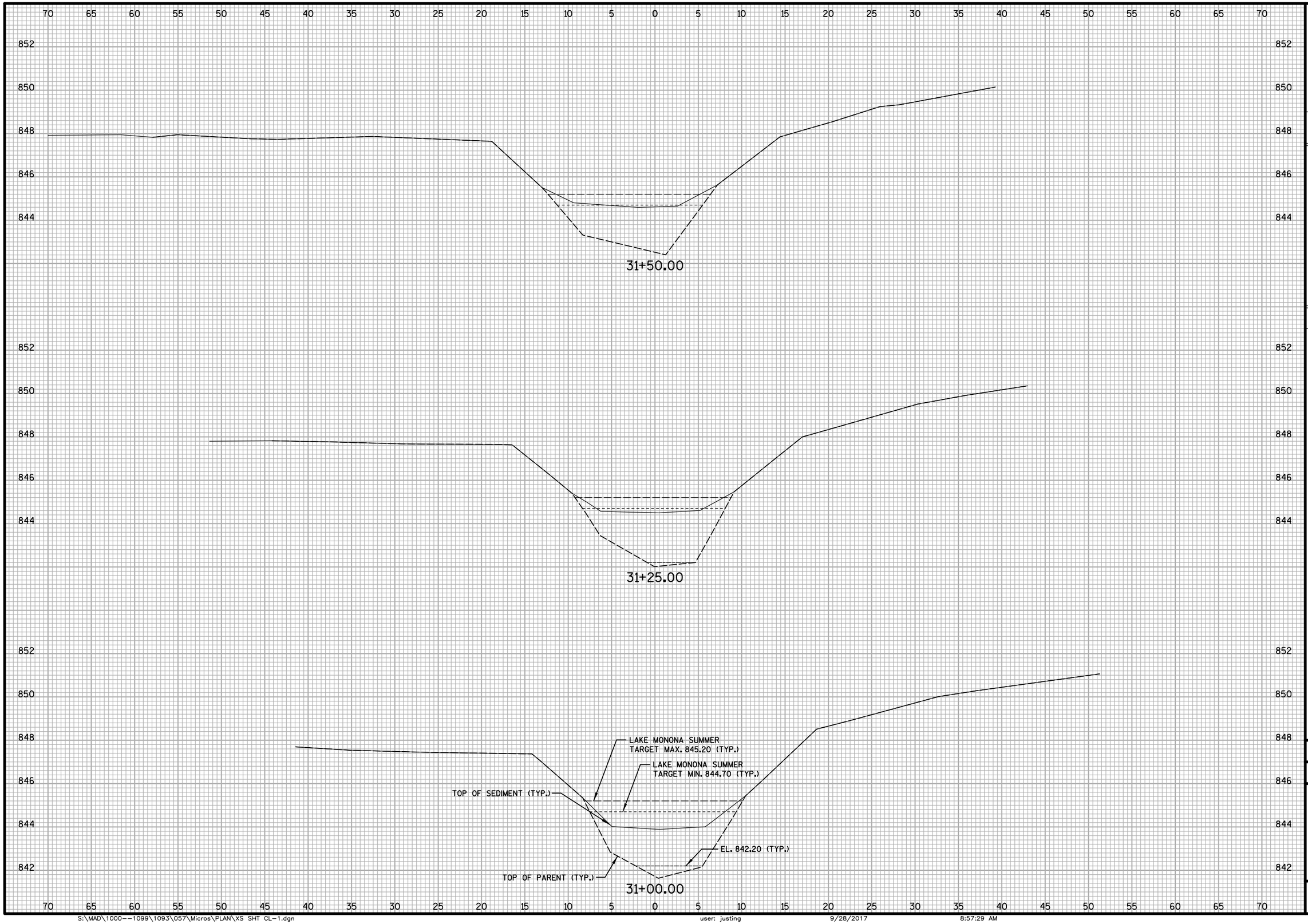

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REVISIONS

NO.

CROSS SECTIONS

NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO.
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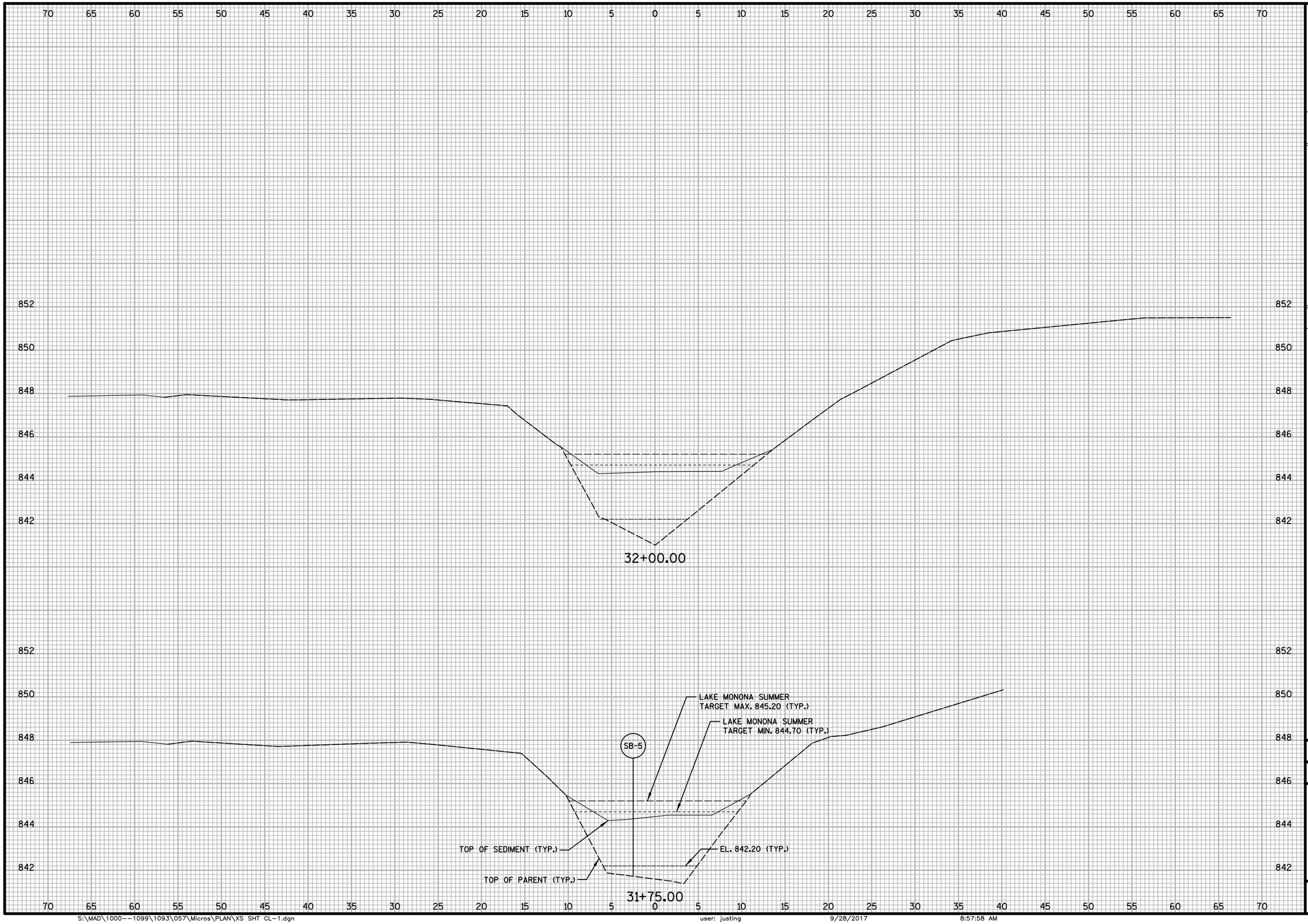

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NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO.
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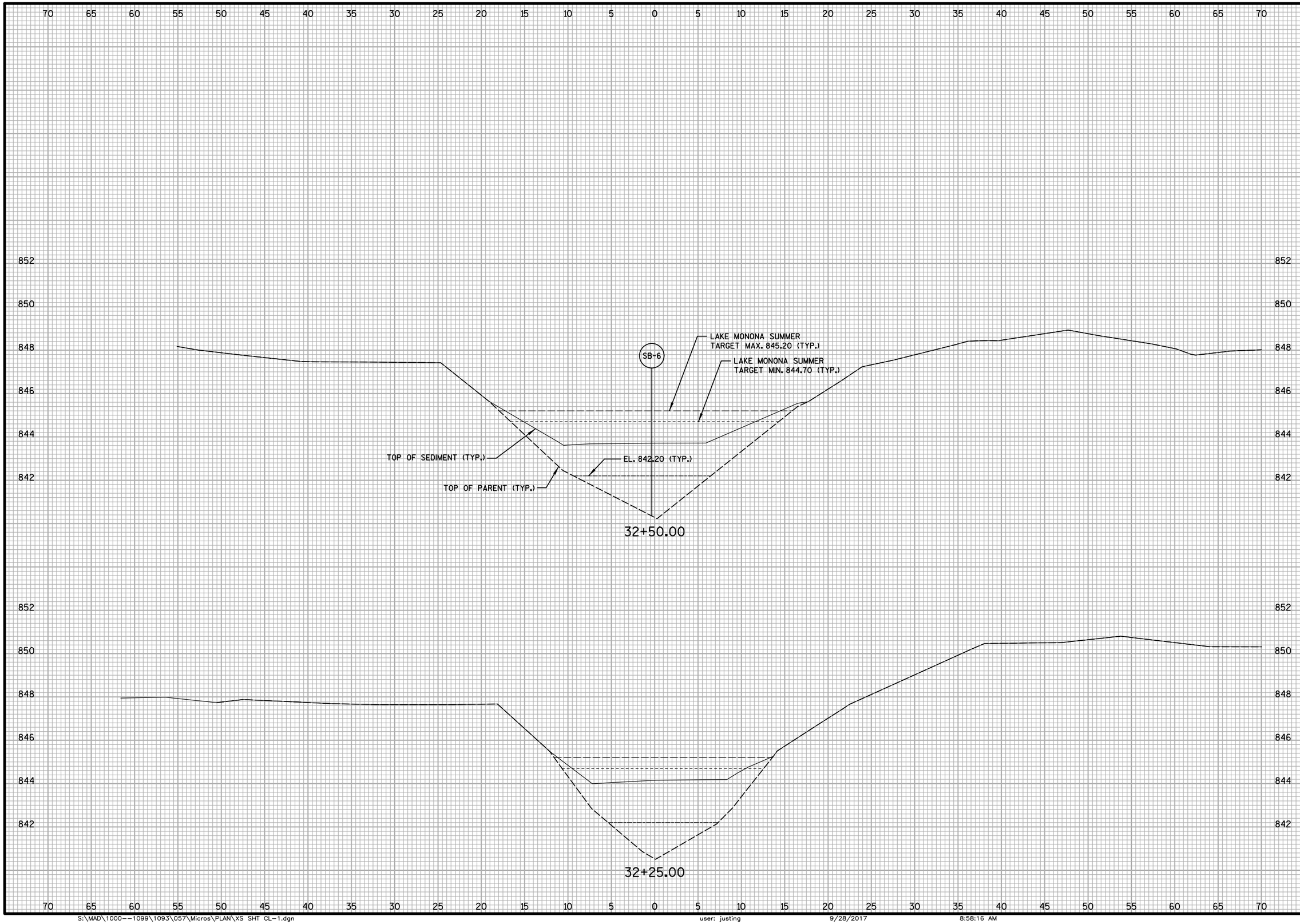

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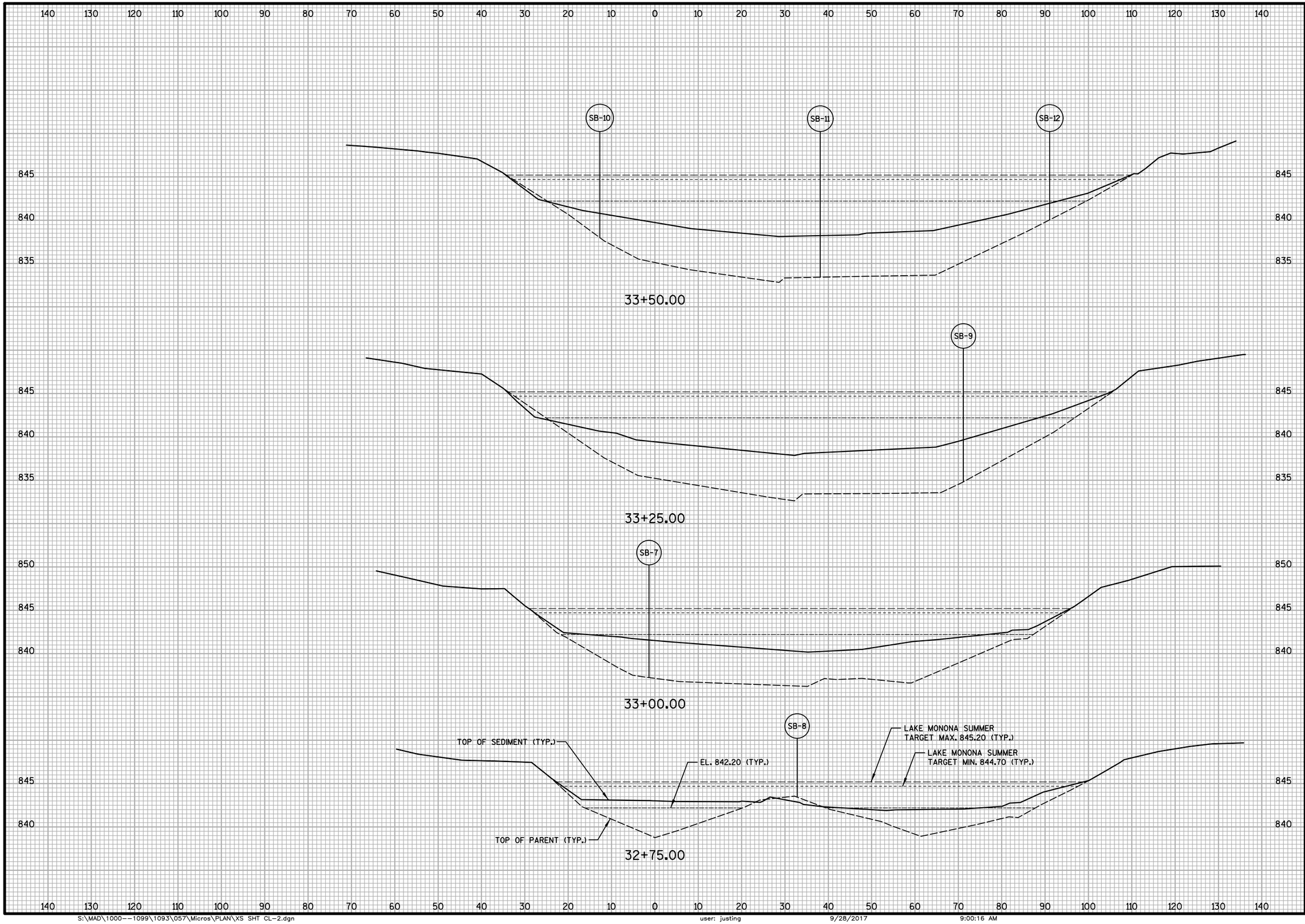

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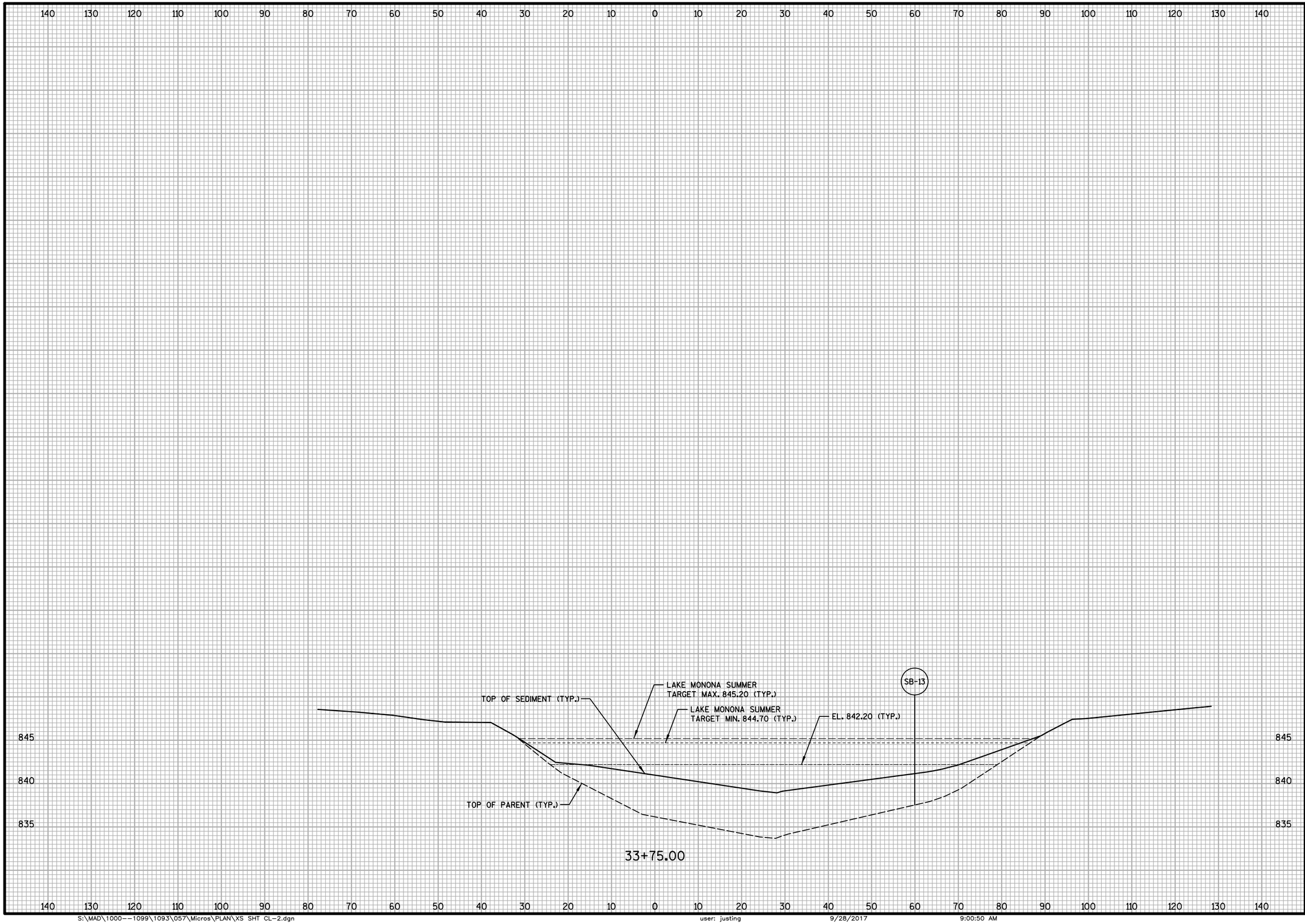

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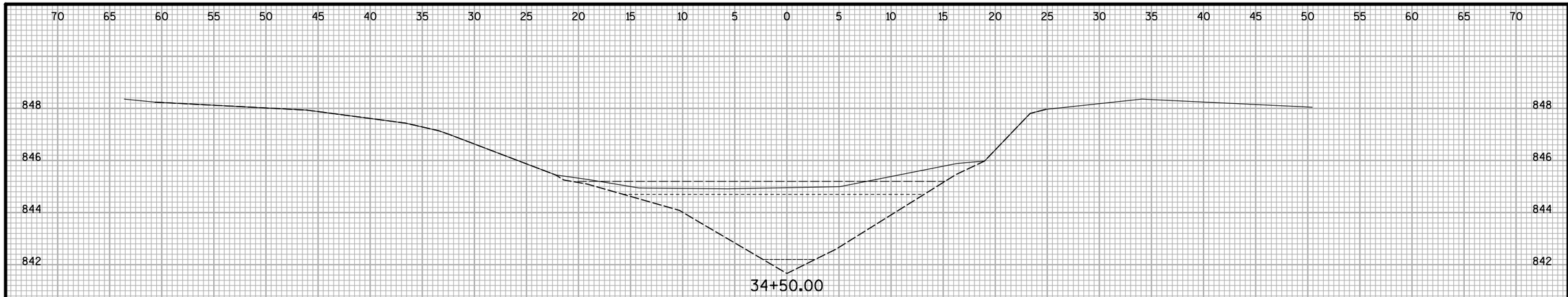

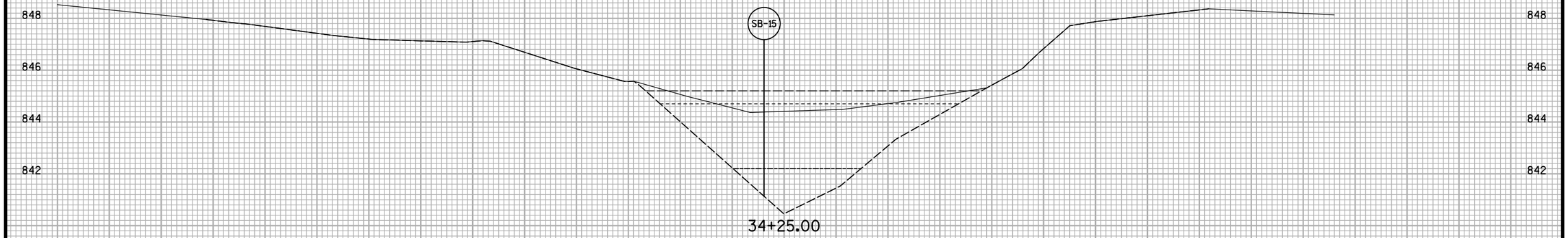

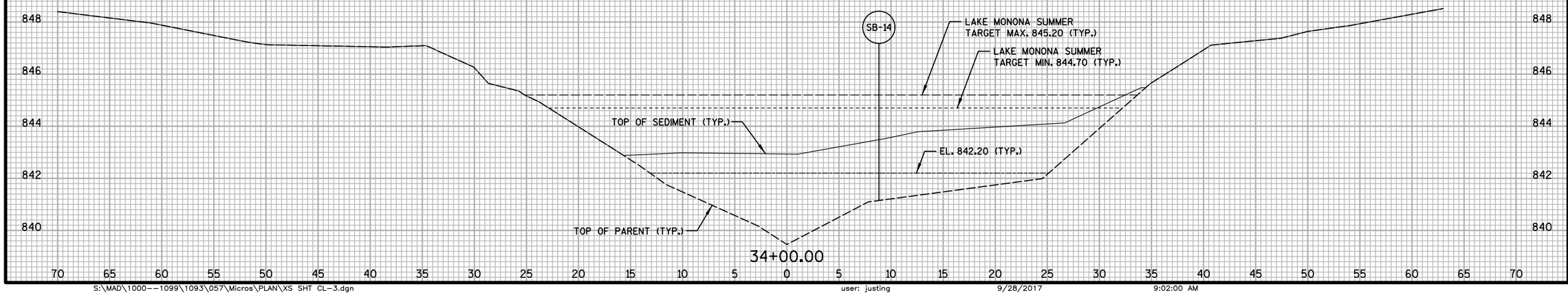

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CROSS SECTIONS

NORTH WINNEQUAH PARK LAGOON DREDGING PLAN
CITY OF MONONA
DANE COUNTY, WISCONSIN

JOB NO.
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ATTACHMENT 2

Winnequah Park Lagoons: Sediment Samples

1093.057

GRAB SEDIMENT SAMPLES - May 12, 2016

Contaminant	Industrial Site DC	Non-Industrial Site DC	CBSQG TEC	CBSQG MEC	CBSQG PEC	N-7 Dry Weight Concentration	N-7 Concentration Normalized to 1% TOC	N-8 Dry Weight Concentration	N-8 Concentration Normalized to 1% TOC	N-9 Dry Weight Concentration	N-9 Concentration Normalized to 1% TOC	N-10 Dry Weight Concentration	N-10 Concentration Normalized to 1% TOC	N-11 Dry Weight Concentration	N-11 Concentration Normalized to 1% TOC	N-12 Dry Weight Concentration	N-12 Concentration Normalized to 1% TOC	N-13 Dry Weight Concentration	N-13 Concentration Normalized to 1% TOC	N-14 Dry Weight Concentration	N-14 Concentration Normalized to 1% TOC	N-15 Dry Weight Concentration	N-15 Concentration Normalized to 1% TOC
						TOC mg/kg 63300	TOC % 6.33	TOC mg/kg 55400	TOC % 5.54	TOC mg/kg 56400	TOC % 5.64	TOC mg/kg 80100	TOC % 8.01	TOC mg/kg 64400	TOC % 6.44	TOC mg/kg 70500	TOC % 7.05	TOC mg/kg 56100	TOC % 5.61	TOC mg/kg 41200	TOC % 4.12	TOC mg/kg 72200	TOC % 7.22
PAHs (ug/kg)																							
1-Methylnaphthalene	72,700	17,600	--	--	--	23.8	3.76	39.70	7.17	9.85	1.75	10.40	1.3	202	31.37	17.4	2.47	15.4	2.75	16	3.88	27.3	3.78
2-Methylnaphthalene	3,010,000	239,000	20.2	111	201	28.3	4.47	41.7	7.53	13.2	2.34	15.2	1.9	270	*41.93*	29.8	4.23	21	3.74	28.9	7.01	46.5	6.44
Acenaphthene	45,200,000	3,590,000	6.7	48	89	66.7	*10.54*	181	*32.67*	84.8	*15.04*	34.4	4.29	93.1	*14.46*	123	*17.45*	40.8	*7.27*	13.2	3.2	81.9	*11.34*
Acenaphthylene	--	--	5.9	67	128	46.7	*7.38*	89.5	*16.16*	32.9	5.83	23.4	2.92	52.3	*8.12*	54	*7.66*	41.7	*7.43*	17.7	4.3	87.3	*12.09*
Anthracene	100,000,000	17,900,000	57.2	451	845	306	48.34	507	*91.52*	260	46.10	85.2	10.64	173	26.86	325	46.1	106	18.89	25.2	6.12	181	25.07
Benzo(a)anthracene	20,800	1,140	108	579	1050	991	*156.56*	2690	*485.56*	1350	*239.36*	503	62.8	984	*152.8*	1200	*170.21*	576	102.67	46.2	11.21	663	91.83
Benzo(a)pyrene	2,110	115	150	800	1450	989	*156.24*	3610	*651.62*	1320	*234.04*	556	69.41	1240	*192.55*	1210	*171.63*	702	125.13	45.5	11.04	752	104.16
Benzo(b)fluoranthene	21,100	1,115	240	6820	13400	1860	*293.84*	7430	*1341.16*	2340	*414.89*	1090	136.08	2640	*409.94*	2290	*324.82*	1570	*279.86*	104	25.24	1400	193.91
Benzo(g,h,i)perylene	--	--	170	1685	3200	819	129.38	2890	*521.66*	1120	*198.58*	539	67.29	1270	*197.2*	989	140.28	706	125.85	43.5	10.56	569	78.81
Benzo(k)fluoranthene	211,000	11,500	240	6820	13400	398	62.88	1540	*277.98*	673	119.33	306	38.20	607	94.25	499	70.78	351	62.57	19	4.61	359	49.72
Chrysene	2,110,000	115,000	166	728	1290	1050	165.88	4010	*723.83*	1370	*242.91*	596	74.41	1450	*225.16*	1320	*187.23*	846	150.8	66.4	16.12	813	112.6
Dibenzo(a,h)anthracene	2,110	115	33	84	135	176	27.8	577	104.15	248	*43.97*	112	13.98	254	*39.44*	215	30.5	145	25.85	10.9	2.65	141	19.53
Fluoranthene	30,100,000	2,390,000	423	1327	2230	2310	*364.93*	8010	1445.85	3270	*579.79*	1280	159.8	2640	*440.99*	3240	*459.57*	1580	281.64	139	33.74	1700	235.46
Fluorene	30,100,000	2,390,000	77.4	307	536	146	23.06	370	66.79	164	29.08	73.8	9.21	181	28.11	229	32.48	84.4	15.04	34.8	8.45	179	24.79
Indeno(1,2,3-cd)pyrene	21,100	1,115	200	1700	3200	741	117.06	2760	*498.19*	1060	187.94	496	61.92	1180	183.23	943	133.76	657	117.11	38.9	9.44	551	76.32
Naphthalene	24,100	5,520	176	369	561	29.7	4.69	62.9	11.35	17.6	3.12	17.6	2.2	64.7	10.05	28.2	4	25.9	4.62	14.6	3.54	38.2	5.29
Phenanthrene	--	--	204	687	1170	1200	189.57	3770	*680.51*	1450	*257.09*	541	67.54	1430	*222.05*	1850	*262.41*	546	97.33	124	30.1	1080	149.58
Pyrene	22,600,000	1,790,000	195	858	1520	1920	*303.32*	6450	1164.26	2660	*471.63*	1100	137.33	2330	*361.8*	2550	*361.7*	1330	*237.08*	135	32.77	1480	*204.99*
Total PAHs (ug/kg)	--	--	1610	12205	22800	13101.2	*2069.7*	45028.8	*8127.94*	17443.35	*3092.79*	7379	921.22	17261.1	*2680.3*	17112.4	*2427.29*	9344.2	*1665.63*	922.8	223.98	10149.2	1405.71
Total PCBs (mg/kg)	0.967	0.234	0.06	0.368	0.676	0.1996	0.03	0.2125	0.04	0.2745	0.05	0.4192	0.05	0.786	*0.12*	0.4396	*0.06*	0.239	0.04	0.449	*0.11*	0.441	*0.06*

GRAB SEDIMENT SAMPLES - June, 14 2017

Contaminant	N-16 Dry Weight Concentration	N-16 Concentration Normalized to 1% TOC	N-17 Dry Weight Concentration	N-17 Concentration Normalized to 1% TOC	N-18 Dry Weight Concentration	N-18 Concentration Normalized to 1% TOC
	TOC mg/kg 95800	TOC % 9.58	TOC mg/kg 134000	TOC % 13.4	TOC mg/kg 45000	TOC % 4.5
PAHs (ug/kg)						
1-Methylnaphthalene	0	0	4.46	0.33	0	0
2-Methylnaphthalene	0	0	4.46	0.33	0	0
Acenaphthene	67	6.99	11	0.82	4.56	1.01
Acenaphthylene	27.3	2.85	18.5	1.38	4.12	0.92
Anthracene	167	17.43	52.2	3.9	10.5	2.33
Benzo(a)anthracene	834	87.06	417	31.12	72.1	16.02
Benzo(a)pyrene	689	71.92	369	27.54	79.1	17.58
Benzo(b)fluoranthene	1250	130.48	746	55.67	150	33.33
Benzo(g,h,i)perylene	322	33.61	116	8.66	28.1	6.24
Benzo(k)fluoranthene	476	49.69	207	15.45	50.2	11.16
Chrysene	963	100.52	522	38.96	101	22.44
Dibenzo(a,h)anthracene	120	12.53	53.7	4.01	13.1	2.91
Fluoranthene	2120	221.29	853	63.66	170	37.78
Fluorene	110	11.48	16.9	1.26	4.78	1.06
Indeno(1,2,3-cd)pyrene	425	44.36	179	13.36	47.1	10.47
Naphthalene	12.2	1.27	4.17	0.31	1.22	0.27
Phenanthrene	818	85.39	268	20	59.4	13.2
Pyrene	1670	174.32	811	60.52	141	31.33
Total PAHs (ug/kg)	10070.5	1051.2	4653.39	347.27	936.28	208.06
Total PCBs (mg/kg)	0.3809	0.04	0.2152	0.02	0	0.00

GRAB PARENT MATERIAL SAMPLES - May 12, 2016

Contaminant	Industrial Site DC	Non-Industrial Site DC	CBSQG TEC	CBSQG MEC	CBSQG PEC	N-7 Dry Weight Concentration	N-7 Concentration Normalized to 1% TOC	N-8 Dry Weight Concentration	N-8 Concentration Normalized to 1% TOC	N-9 Dry Weight Concentration	N-9 Concentration Normalized to 1% TOC	N-10 Dry Weight Concentration	N-10 Concentration Normalized to 1% TOC	N-11 Dry Weight Concentration	N-11 Concentration Normalized to 1% TOC	N-12 Dry Weight Concentration	N-12 Concentration Normalized to 1% TOC	N-13 Dry Weight Concentration	N-13 Concentration Normalized to 1% TOC	N-14 Dry Weight Concentration	N-14 Concentration Normalized to 1% TOC	N-15 Dry Weight Concentration	N-15 Concentration Normalized to 1% TOC
						** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024	** TOC mg/kg 16024	TOC % 1.6024
PAHs (ug/kg)																							
1-Methylnaphthalene	72,700	17,600	--	--	--	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Methylnaphthalene	3,010,000	239,000	20.2	111	201	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	45,200,000	3,590,000	6.7	48	89	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthylene	--	--	5.9	67	128	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Anthracene	100,000,000	17,900,000	57.2	451	845	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)anthracene	20,800	1,140	108	579	1050	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	2,110	115	150	800	1450	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(b)fluoranthene	21,100	1,115	240	6820	13400	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(g,h,i)perylene	--	--	170	1685	3200	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(k)fluoranthene	211,000	11,500	240	6820	13400	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	2,110,000	115,000	166	728	1290	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibenzo(a,h)anthracene	2,110	115	33	84	135	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Fluoranthene	30,100,000	2,390,000	423	1327	2230	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Fluorene	30,100,000	2,390,000	77.4	307	536	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	21,100	1,115	200	1700	3200	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	24,100	5,520	176	369	561	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	--	--	204	687	1170	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Pyrene	22,600,000	1,790,000	195	858	1520	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total PAHs (ug/kg)	--	--	1610	12205	22800																		
Total PCBs (mg/kg)	0.967	0.234	0.06	0.368	0.676	0	0	0	0	0	0	0	0	0	0	0.0676	0.04	0	0	0	0	0	0

GRAB PARENT MATERIAL SAMPLES - June 14, 2017

Contaminant	N-16 Dry Weight Concentration	N-16 Concentration Normalized to 1% TOC	N-17 Dry Weight Concentration	N-17 Concentration Normalized to 1% TOC	N-18 Dry Weight Concentration	N-18 Concentration Normalized to 1% TOC
	TOC mg/kg 13800	TOC % 1.38	TOC mg/kg 11300	TOC % 1.13	TOC mg/kg 29000	TOC % 2.9
PAHs (ug/kg)						
1-Methylnaphthalene	0.794	0.58	0	0	0	0
2-Methylnaphthalene	0.93	0.67	0	0	0	0
Acenaphthene	0.705	0.51	0	0	0.828	0.29
Acenaphthylene	1.62	1.17	1.51	1.34	1.96	0.68
Anthracene	3.78	2.74	1.93	1.71	2.32	0.8
Benzo(a)anthracene	21.8	15.8	8.53	7.55	4.13	1.42
Benzo(a)pyrene	25.3	18.33	17.4	15.4	20.5	7.07
Benzo(b)fluoranthene	32.9	23.84	15.6	13.81	13.7	4.72
Benzo(g,h,i)perylene	6.74	4.88	5.51	4.88	7.12	2.46
Benzo(k)fluoranthene	9.56	6.93	4.25	3.76	4.03	1.39
Chrysene	20.3	14.71	8.62	7.63	7.35	2.53
Dibenzo(a,h)anthracene	2.96	2.14	2.17	1.92	2.03	0.7
Fluoranthene	37.3	27.03	10.9	9.65	6.96	2.4
Fluorene	2.94	2.13	0.778	0.69	0.853	0.29
Indeno(1,2,3-cd)pyrene	13.3	9.64	9.84	8.71	10.8	3.72
Naphthalene	0.834	0.6	0	0	0	0
Phenanthrene	13	9.42	2.5	2.21	1.11	0.38
Pyrene	38.8	28.12	16.4	14.51	14.7	5.07
Total PAHs (ug/kg)	233.563	169.25	105.938	93.75	98.391	33.93
Total PCBs (mg/kg)	0	0	0	0	0	0

** The TOC concentration of 16,024 mg/kg used to normalizing these results to 1% TOC is the average TOC concentration of the 5 Winnequah Park Lagoon parent material samples analyzed for TOC.

CBSQG - Consensus-Based Sediment Quality Guidelines, Interim Guidance, Publication WT-732 2003.
TEC - Threshold Effect Concentration
MEC - Midpoint Effect Concentration
PEC - Probable Effect Concentration
-- - No Standard for this compound
mg/kg - Milligrams Per Kilogram
ug/kg - Micrograms Per Kilogram
NA - Not Analyzed

Italics - Exceeds TEC
Bold - Exceeds MEC
Highlighted - Exceeds PEC
Highlighted - Exceeds NR720 Industrial Site Direct Contact Level
Boxed Value - Exceeds NR720 Non-Industrial Site Direct Contact Level
PAH - Polycyclic Aromatic Hydrocarbon
PCB - Polychlorinated Biphenyl
TOC - Total Organic Carbon

Winnequah Park Lagoons: Sediment Samples
1093.057

						GRAB SEDIMENT SAMPLES - March 6, 2015											
						SB-1		SB-2		SB-3		SB-4		SB-5		SB-6	
						** TOC mg/kg 71264	TOC % 7.1264	** TOC mg/kg 71264	TOC % 7.1264	** TOC mg/kg 71264	TOC % 7.1264	** TOC mg/kg 71264	TOC % 7.1264	** TOC mg/kg 71264	TOC % 7.1264	** TOC mg/kg 71264	TOC % 7.1264
Contaminant	Industrial Site DC	Non-Industrial Site DC	CBSQG TEC	CBSQG MEC	CBSQG PEC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC
PAHs (ug/kg)																	
1-Methylnaphthalene	72,700	17,600	--	--	--	400	56.13	8.7	1.22	29	4.07	26	3.65	7.1	1	14	1.96
2-Methylnaphthalene	3,010,000	239,000	20.2	111	201	41	5.75	5.8	0.81	13	1.82	20	2.81	14	1.96	28	3.93
Acenaphthene	45,200,000	3,590,000	6.7	48	89	49	*6.88*	3.3	0.46	6.7	0.94	16	2.25	26	3.65	33	4.63
Acenaphthylene	--	--	5.9	67	128	29	4.07	8.2	1.15	16	2.25	15	2	14	1.96	21	2.95
Anthracene	100,000,000	17,900,000	57.2	451	845	110	15.44	24	3.37	41	5.75	55	7.72	43	6.03	56	7.86
Benzo(a)anthracene	20,800	1,140	108	579	1050	370	51.92	26	3.65	91	12.77	140	19.65	120	16.84	160	22.45
Benzo(a)pyrene	2,110	115	150	800	1450	380	53.32	21	2.95	78	10.95	130	18.24	110	15.44	160	22.45
Benzo(b)fluoranthene	21,100	1,115	240	6820	13400	730	102.44	45	6.31	130	18.24	270	37.89	210	29.47	280	39.29
Benzo(g,h,i)perylene	--	--	170	1685	3200	340	47.71	26	3.65	71	9.96	120	16.84	100	14.03	120	16.84
Benzo(k)fluoranthene	211,000	11,500	240	6820	13400	200	28.06	13	1.82	43	6.03	72	10	67	9.4	90	12.63
Chrysene	2,110,000	115,000	166	728	1290	550	77.18	38	5.33	110	15.44	210	29.47	180	25.26	210	29.47
Dibenzo(a,h)anthracene	2,110	115	33	84	135	76	10.66	8.7	1.22	17	2.39	30	4.21	23	3.23	31	4.35
Fluoranthene	30,100,000	2,390,000	423	1327	2230	1200	168.39	99	13.89	280	39.29	540	75.77	450	63.15	510	71.56
Fluorene	30,100,000	2,390,000	77.4	307	536	99	13.89	19	2.67	35	4.91	66	9.26	67	9.4	79	11.09
Indeno(1,2,3-cd)pyrene	21,100	1,115	200	1700	3200	320	44.90	21	2.95	62	9	120	16.84	93	13.05	120	16.84
Naphthalene	24,100	5,520	176	369	561	87	12.21	24	3.37	46	6.45	44	6.17	20	2.81	36	5.05
Phenanthrene	--	--	204	687	1170	650	91.21	85	11.93	200	28.06	340	47.71	260	36.48	330	46.31
Pyrene	22,600,000	1,790,000	195	858	1520	920	129	69	9.68	210	29.47	370	51.92	320	44.9	380	53.32
Total PAHs (ug/kg)	--	--	1610	12205	22800	6551	919.26	544.7	76.43	1478.7	207	2584	363	2124.1	298.06	2658	372.98
Total PCBs (mg/kg)	0.967	0.234	0.06	0.368	0.676	0.27	0.04	0	0	0	0	7.6	1.07	4.48	0.629	1.16	*0.16*

** The TOC concentration of 71,264 mg/kg used to normalizing these results to 1% TOC is the median TOC concentration of the 14 Winnequah Park Lagoon sediment samples analyzed for TOC.

CBSQG - Consensus-Based Sediment Quality Guidelines, Interim Guidance, Publication WT-732 2003.
TEC - Threshold Effect Concentration
MEC - Midpoint Effect Concentration
PEC - Probable Effect Concentration
-- - No Standard for this compound
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram

Italics - Exceeds TEC
Bold - Exceeds MEC
Highlighted - Exceeds PEC
Highlighted - Exceeds NR720 Industrial Site Direct Contact Level
Boxed Value - Exceeds NR720 Non-Industrial Site Direct Contact Level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TOC - Total Organic Carbon

Winnequah Park Lagoons: Sediment Samples
1093.057

						COMPOSITE SAMPLES - May 12, 2016				June 14, 2017	
						S-1/S-2 Sediment		S-1/S-2 Parent Material		N-16, 17, 18 Sediment	
						TOC mg/kg	TOC %	TOC mg/kg	TOC %	TOC mg/kg	TOC %
						44100	4.41	6020	0.602	97500	9.75
Contaminant	Industrial Site DC	Non-Industrial Site DC	CBSQG TEC	CBSQG MEC	CBSQG PEC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC	Dry Weight Concentration	Concentration Normalized to 1% TOC
PAHs (ug/kg)											
1-Methylnaphthalene	72,700	17,600	--	--	--	5.22	1.18	2.17	3.6	8.54	0.88
2-Methylnaphthalene	3,010,000	239,000	20.2	111	201	45.7	10.36	28.8	*47.84*	8.49	*0.87*
Acenaphthene	45,200,000	3,590,000	6.7	48	89	4.11	0.93	0.558	0.93	49.1	5.04
Acenaphthylene	--	--	5.9	67	128	9.54	2.16	2.39	3.97	29	2.97
Anthracene	100,000,000	17,900,000	57.2	451	845	14.2	3.22	4.35	7.23	110	11.28
Benzo(a)anthracene	20,800	1,140	108	579	1050	33.8	7.66	3.31	5.5	747	76.62
Benzo(a)pyrene	2,110	115	150	800	1450	31.2	7.07	2.7	4.49	621	63.69
Benzo(b)fluoranthene	21,100	1,115	240	6820	13400	81.3	18.44	6.62	11	1290	132.31
Benzo(g,h,i)perylene	--	--	170	1685	3200	28.6	6.49	<1.5	0	234	0
Benzo(k)fluoranthene	211,000	11,500	240	6820	13400	13.8	3.13	1.78	2.96	415	42.56
Chrysene	2,110,000	115,000	166	728	1290	43.7	9.91	3.03	5.03	927	95.08
Dibenzo(a,h)anthracene	2,110	115	33	84	135	7.34	1.66	1.91	3.17	97	9.95
Fluoranthene	30,100,000	2,390,000	423	1327	2230	115	26.08	8.13	13.5	1740	178.46
Fluorene	30,100,000	2,390,000	77.4	307	536	19.2	4.35	1.7	2.82	76.9	7.89
Indeno(1,2,3-cd)pyrene	21,100	1,115	200	1700	3200	26.6	6.03	3.62	6.01	331	33.95
Naphthalene	24,100	5,520	176	369	561	5.56	1.26	1.69	2.81	7.66	0.79
Phenanthrene	--	--	204	687	1170	43.2	9.8	4.04	6.71	698	71.59
Pyrene	22,600,000	1,790,000	195	858	1520	88.9	20.16	7.29	12.11	1540	157.95
Total PAHs (ug/kg)	--	--	1610	12205	22800	616.97	139.90	84.09	139.68	8929.69	915.87
Total PCBs (mg/kg)	0.967	0.234	0.06	0.368	0.676	0.0214	0	0	0	0.3116	0.03
Solids (%)	--	--	--	--	--	51.4	NA	73.7	NA	37.4	NA
Moisture (%)	--	--	--	--	--	48.6	NA	26.3	NA	62.6	NA
Particle Size (Hydrometer)	--	--	--	--	--	OL	NA	CL/CL-ML	NA	ML	NA
Inorganic Results (mg/kg)											
Ammonia Nitrogen	--	--	--	--	--	69.3	NA	33.5	NA	111	NA
Cyanide	195	27.1	--	--	--	<0.22	NA	<0.17	NA	<0.48	NA
Phosphorus	--	--	--	--	--	703	NA	629	NA	846	NA
Kjeldahl Nitrogen	--	--	--	--	--	3710	NA	890	NA	7340	NA
Nitrate Nitrogen	--	--	--	--	--	<0.77	NA	3.85	NA	<1.1	NA
Nitrite Nitrogen	--	--	--	--	--	<2.9	NA	<2.0	NA	<4	NA
Total Organic Carbon	--	--	--	--	--	44100	NA	6020	NA	97500	NA
Metals (mg/kg)											
Arsenic	3	0.677	9.8	21.4	33	8.7	1.97	4.5	7.48	0	0
Barium	100,000	15,300	--	--	--	53	12.02	58.1	96.51	123	12.62
Cadmium	985	71.1	0.99	3	5	0	0	0	0	0.38	0.04
Total Chromium	--	--	43	76.5	110	13.6	3.08	12.7	21.1	19	1.95
Copper	46,700	3,130	32	91	150	13.5	3.06	15.1	25.08	35.8	3.67
Iron	100,000	54,800	20000	30000	40000	9870	2238.1	12900	*21428.57*	8160	836.92
Lead	800	400	36	83	130	12.7	2.88	8.5	14.12	138	14.15
Manganese	25,900	1,830	460	780	1100	196	44.44	271	450.17	271	27.79
Nickel	22,500	1,550	23	36	49	13.1	2.97	17.8	*29.57*	10.4	1.07
Selenium	5,840	391	--	--	--	2.3	0.52	1.1	1.83	5.1	0.52
Zinc	100,000	23,500	120	290	460	59.4	13.47	56.6	94.02	228	23.38
Mercury	3.13	3.13	0.18	0.64	1.1	0.04	0.01	0.031	0.05	0.041	0

CBSQG - Consensus-Based Sediment Quality Guidelines, Interim Guidance, Publication WT-732 2003.
PEC - Probable Effect Concentration
TEC - Threshold Effect Concentration
MEC - Midpoint Effect Concentration
-- - No Standard for this compound
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
NA - Not Applicable
Italics - Exceeds TEC
Bold - Exceeds MEC
Highlighted - Exceeds PEC
Highlighted - Exceeds NR720 Industrial Site Direct Contact Level
Boxed Value - Exceeds NR720 Non-Industrial Site Direct Contact Level
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
TOC - Total Organic Carbon
CL - lean clay
ML - silt
OL - organic silt

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ANALYTICAL REPORT

STRAND ASSOCIATES
STEVE SMALL
910 W WINGRA DR
MADISON, WI 53715

Project Name: MONONA STORMWATER PROJECT
Project Phase:
Contract #: 940
Project #: 1093-041
Folder #: 104121
Purchase Order #:

Arrival Temperature: See COC
Report Date: 06/05/2014
Date Received: 05/09/2014
Reprint Date: 06/06/2014

CT LAB Sample#: 452958 Sample Description: PIRATE ISLAND SEDIMENT Sampled: 05/07/2014 0930

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**71.6**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**12**	mg/kg	1.7	5.6	1		05/14/2014 09:00	05/14/2014 09:50	LJS	SM 4500-NH3H
Cyanide	<0.14	mg/kg	0.14	0.46	1	M,Y	05/13/2014 12:00	05/16/2014 11:26	CES	EPA 9012A
Phosphorus	**310**	mg/kg	21	68	1		05/13/2014 09:30	05/15/2014 16:15	CES	EPA 365.4
Nitrogen Kjeldahl	**230**	mg/kg	22	76	1		05/13/2014 09:30	05/15/2014 13:24	CES	ASTM D3590
Nitrate Nitrogen	<0.98	mg/kg	0.98	3.5	1		05/12/2014 12:37	05/13/2014 10:57	AGK	EPA 9056A
Nitrite Nitrogen	<0.98	mg/kg	0.98	3.3	1		05/12/2014 12:37	05/13/2014 10:57	AGK	EPA 9056A
Percent Moisture	**28.4**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**65000**	mg/kg	360	1200	1			05/14/2014 09:29	MDS	L-Kahn/9060A
Metals Results										
Arsenic	**0.93**	mg/kg	0.31 *	1.1	1		05/13/2014 10:00	05/16/2014 11:57	NAH	EPA 6010C
Barium	**181**	mg/kg	0.042	0.15	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Cadmium	<0.020	mg/kg	0.020	0.067	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Chromium	**4.7**	mg/kg	0.073	0.23	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Copper	**11.0**	mg/kg	0.13	0.40	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452958 Sample Description: PIRATE ISLAND SEDIMENT Sampled: 05/07/2014 0930

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Iron	**4830**	mg/kg	0.94	3.0	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Lead	**5.7**	mg/kg	0.27	0.91	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Manganese	**116**	mg/kg	0.21	0.68	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Nickel	**2.8**	mg/kg	0.15	0.50	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Selenium	<0.52	mg/kg	0.52	1.7	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Zinc	**44.5**	mg/kg	0.10	0.34	1		05/13/2014 10:00	05/14/2014 11:16	NAH	EPA 6010C
Mercury	**0.012**	mg/kg	0.00054	0.0019	1		05/15/2014 10:00	05/16/2014 12:19	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.0070	mg/kg	0.0070	0.025	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Aroclor-1221	<0.0097	mg/kg	0.0097	0.035	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Aroclor-1232	<0.013	mg/kg	0.013	0.042	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Aroclor-1242	<0.0097	mg/kg	0.0097	0.032	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Aroclor-1248	<0.0097	mg/kg	0.0097	0.031	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Aroclor-1254	<0.013	mg/kg	0.013	0.042	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Aroclor-1260	<0.0083	mg/kg	0.0083	0.025	1		05/14/2014 8:00	05/22/2014 16:02	JJY	EPA 8082A
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			06/04/2014 00:00	SUB	

CT LAB Sample#: 452975 Sample Description: GRAHAM PARK SEDIMENT Sampled: 05/07/2014 1030

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**46.9**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**27**	mg/kg	2.6	8.7	1		05/14/2014 09:00	05/14/2014 09:54	LJS	SM 4500-NH3H

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452975 Sample Description: GRAHAM PARK SEDIMENT Sampled: 05/07/2014 1030

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Cyanide	<0.21	mg/kg	0.21	0.69	1		05/13/2014 12:00	05/16/2014 11:32	CES	EPA 9012A
Phosphorus	**250**	mg/kg	31	100	1		05/13/2014 09:30	05/15/2014 16:16	CES	EPA 365.4
Nitrogen Kjeldahl	**550**	mg/kg	33	110	1		05/13/2014 09:30	05/15/2014 13:25	CES	ASTM D3590
Nitrate Nitrogen	<1.5	mg/kg	1.5	5.3	1		05/12/2014 12:37	05/13/2014 12:01	AGK	EPA 9056A
Nitrite Nitrogen	<1.5	mg/kg	1.5	5.1	1		05/12/2014 12:37	05/13/2014 12:01	AGK	EPA 9056A
Percent Moisture	**53.1**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**50000**	mg/kg	550	1800	1			05/14/2014 09:35	MDS	L-Kahn/9060A
Metals Results										
Arsenic	<0.58	mg/kg	0.58	2.1	1		05/13/2014 10:00	05/16/2014 12:00	NAH	EPA 6010C
Barium	**59.3**	mg/kg	0.078	0.27	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Cadmium	<0.037	mg/kg	0.037	0.12	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Chromium	**2.8**	mg/kg	0.14	0.43	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Copper	**5.1**	mg/kg	0.23	0.74	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Iron	**2090**	mg/kg	1.7	5.6	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Lead	**2.9**	mg/kg	0.50	1.7	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Manganese	**59.5**	mg/kg	0.39	1.3	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Nickel	**2.0**	mg/kg	0.27	0.93	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Selenium	<0.97	mg/kg	0.97	3.1	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Zinc	**15.8**	mg/kg	0.19	0.64	1		05/13/2014 10:00	05/14/2014 11:20	NAH	EPA 6010C
Mercury	**0.0044**	mg/kg	0.00080	0.0028	1		05/15/2014 10:00	05/16/2014 12:27	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.011	mg/kg	0.011	0.038	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A
Aroclor-1221	<0.015	mg/kg	0.015	0.053	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A
Aroclor-1232	<0.019	mg/kg	0.019	0.064	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452975 Sample Description: GRAHAM PARK SEDIMENT Sampled: 05/07/2014 1030

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1242	<0.015	mg/kg	0.015	0.049	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A
Aroclor-1248	<0.015	mg/kg	0.015	0.047	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A
Aroclor-1254	<0.019	mg/kg	0.019	0.064	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A
Aroclor-1260	<0.013	mg/kg	0.013	0.038	1		05/14/2014 8:00	05/22/2014 17:02	JJY	EPA 8082A
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			06/04/2014 00:00	SUB	

CT LAB Sample#: 452976 Sample Description: GRAHAM PARK PARENT Sampled: 05/07/2014 1045

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**74.9**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**2.7**	mg/kg	1.6 *	5.4	1		05/14/2014 09:00	05/14/2014 09:55	LJS	SM 4500-NH3H
Cyanide	<0.14	mg/kg	0.14	0.45	1		05/13/2014 12:00	05/16/2014 11:33	CES	EPA 9012A
Phosphorus	**220**	mg/kg	20	65	1		05/13/2014 09:30	05/15/2014 16:17	CES	EPA 365.4
Nitrogen Kjeldahl	**64**	mg/kg	21 *	73	1		05/13/2014 09:30	05/15/2014 13:26	CES	ASTM D3590
Nitrate Nitrogen	**1.4**	mg/kg	0.94 *	3.3	1		05/12/2014 12:37	05/13/2014 12:22	AGK	EPA 9056A
Nitrite Nitrogen	<0.94	mg/kg	0.94	3.2	1		05/12/2014 12:37	05/13/2014 12:22	AGK	EPA 9056A
Percent Moisture	**25.1**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**19000**	mg/kg	340	1100	1			05/14/2014 09:41	MDS	L-Kahn/9060A
Metals Results										
Arsenic	<0.29	mg/kg	0.29	1.0	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Barium	**14.2**	mg/kg	0.038	0.13	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Cadmium	<0.018	mg/kg	0.018	0.061	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452976 Sample Description: GRAHAM PARK PARENT Sampled: 05/07/2014 1045

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Chromium	**2.1**	mg/kg	0.067	0.21	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Copper	**1.9**	mg/kg	0.11	0.36	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Iron	**1340**	mg/kg	0.86	2.8	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Lead	**1.5**	mg/kg	0.25	0.83	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Manganese	**57.5**	mg/kg	0.19	0.62	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Nickel	**1.3**	mg/kg	0.13	0.46	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Selenium	<0.48	mg/kg	0.48	1.5	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Zinc	**6.6**	mg/kg	0.095	0.31	1		05/13/2014 10:00	05/14/2014 11:36	NAH	EPA 6010C
Mercury	**0.0012**	mg/kg	0.00052 *	0.0018	1		05/15/2014 10:00	05/16/2014 12:29	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.0066	mg/kg	0.0066	0.024	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Aroclor-1221	<0.0093	mg/kg	0.0093	0.033	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Aroclor-1232	<0.012	mg/kg	0.012	0.040	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Aroclor-1242	<0.0093	mg/kg	0.0093	0.031	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Aroclor-1248	<0.0093	mg/kg	0.0093	0.029	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Aroclor-1254	<0.012	mg/kg	0.012	0.040	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Aroclor-1260	<0.0080	mg/kg	0.0080	0.024	1		05/14/2014 8:00	05/22/2014 17:21	JJY	EPA 8082A
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			06/04/2014 00:00	SUB	

CT LAB Sample#: 452977 Sample Description: WINNEQUAH SEDIMENT Sampled: 05/07/2014 1400

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452977 Sample Description: WINNEQUAH SEDIMENT Sampled: 05/07/2014 1400

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Solids, Percent	**36.4**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**110**	mg/kg	34	110	10		05/14/2014 09:00	05/14/2014 12:48	LJS	SM 4500-NH3H
Cyanide	<0.30	mg/kg	0.30	0.98	1		05/13/2014 12:00	05/16/2014 11:34	CES	EPA 9012A
Phosphorus	**490**	mg/kg	40	130	1		05/13/2014 09:30	05/15/2014 16:19	CES	EPA 365.4
Nitrogen Kjeldahl	**860**	mg/kg	43	150	1		05/13/2014 09:30	05/15/2014 13:27	CES	ASTM D3590
Nitrate Nitrogen	<1.9	mg/kg	1.9	6.9	1		05/12/2014 12:37	05/13/2014 12:43	AGK	EPA 9056A
Nitrite Nitrogen	<1.9	mg/kg	1.9	6.6	1		05/12/2014 12:37	05/13/2014 12:43	AGK	EPA 9056A
Percent Moisture	**63.6**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**61000**	mg/kg	700	2300	1			05/14/2014 09:50	MDS	L-Kahn/9060A
Metals Results										
Arsenic	**1.8**	mg/kg	0.51 *	1.9	1		05/13/2014 10:00	05/16/2014 12:04	NAH	EPA 6010C
Barium	**30.4**	mg/kg	0.068	0.24	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Cadmium	**0.11**	mg/kg	0.032	0.11	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Chromium	**7.1**	mg/kg	0.12	0.37	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Copper	**13.3**	mg/kg	0.20	0.64	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Iron	**5660**	mg/kg	1.5	4.9	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Lead	**22.0**	mg/kg	0.44	1.5	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Manganese	**117**	mg/kg	0.34	1.1	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Nickel	**6.6**	mg/kg	0.24	0.81	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Selenium	<0.85	mg/kg	0.85	2.7	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Zinc	**78.7**	mg/kg	0.17	0.56	1		05/13/2014 10:00	05/14/2014 11:39	NAH	EPA 6010C
Mercury	**0.034**	mg/kg	0.0011	0.0037	1		05/15/2014 10:00	05/16/2014 12:30	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.014	mg/kg	0.014	0.049	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452977 Sample Description: WINNEQUAH SEDIMENT Sampled: 05/07/2014 1400

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1221	<0.019	mg/kg	0.019	0.068	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A
Aroclor-1232	<0.025	mg/kg	0.025	0.082	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A
Aroclor-1242	<0.019	mg/kg	0.019	0.063	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A
Aroclor-1248	<0.019	mg/kg	0.019	0.060	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A
Aroclor-1254	<0.025	mg/kg	0.025	0.082	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A
Aroclor-1260	<0.016	mg/kg	0.016	0.049	1		05/14/2014 8:00	05/22/2014 17:41	JJY	EPA 8082A
1-Methylnaphthalene	**89**	ug/kg	12	39	10		05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**120**	ug/kg	15	50	10		05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Acenaphthene	**950**	ug/kg	13	43	10	M	05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Acenaphthylene	**77**	ug/kg	11	39	10	M	05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Anthracene	**2800**	ug/kg	8.2	28	10	M	05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**8400**	ug/kg	110	350	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**8300**	ug/kg	110	360	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**13000**	ug/kg	96	320	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**4400**	ug/kg	16	54	10	M	05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**4200**	ug/kg	98	330	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Chrysene	**8900**	ug/kg	57	190	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**1000**	ug/kg	20	68	10		05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Fluoranthene	**22000**	ug/kg	120	410	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Fluorene	**1500**	ug/kg	11	35	10	M	05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**4200**	ug/kg	18	61	10	M	05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Naphthalene	**140**	ug/kg	12	41	10		05/14/2014 10:30	05/19/2014 14:20	RPN	EPA 8270D-SIM
Phenanthrene	**13000**	ug/kg	120	400	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM
Pyrene	**17000**	ug/kg	120	410	100	M	05/14/2014 10:30	05/19/2014 17:22	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452977 Sample Description: WINNEQUAH SEDIMENT Sampled: 05/07/2014 1400

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			06/04/2014 00:00	SUB	

CT LAB Sample#: 452978 Sample Description: WINNEQUAH PARENT Sampled: 05/07/2014 1410

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**72.5**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**90**	mg/kg	16	55	10		05/14/2014 09:00	05/14/2014 12:50	LJS	SM 4500-NH3H
Cyanide	<0.14	mg/kg	0.14	0.47	1		05/13/2014 12:00	05/16/2014 11:35	CES	EPA 9012A
Phosphorus	**560**	mg/kg	21	69	1		05/13/2014 09:30	05/15/2014 16:20	CES	EPA 365.4
Nitrogen Kjeldahl	**470**	mg/kg	22	77	1		05/13/2014 09:30	05/15/2014 13:28	CES	ASTM D3590
Nitrate Nitrogen	<0.97	mg/kg	0.97	3.5	1		05/12/2014 12:37	05/13/2014 13:05	AGK	EPA 9056A
Nitrite Nitrogen	<0.97	mg/kg	0.97	3.3	1		05/12/2014 12:37	05/13/2014 13:05	AGK	EPA 9056A
Percent Moisture	**27.5**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**15000**	mg/kg	350	1200	1			05/14/2014 10:00	MDS	L-Kahn/9060A
Metals Results										
Arsenic	**5.1**	mg/kg	0.24	0.88	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Barium	**61.6**	mg/kg	0.032	0.11	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Cadmium	**0.054**	mg/kg	0.015	0.051	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Chromium	**14.7**	mg/kg	0.056	0.18	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Copper	**17.0**	mg/kg	0.096	0.30	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Iron	**12400**	mg/kg	0.72	2.3	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Lead	**9.6**	mg/kg	0.21	0.70	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452978 Sample Description: WINNEQUAH PARENT Sampled: 05/07/2014 1410

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Manganese	**196**	mg/kg	0.16	0.52	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Nickel	**14.6**	mg/kg	0.11	0.38	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Selenium	**0.43**	mg/kg	0.40 *	1.3	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Zinc	**49.9**	mg/kg	0.080	0.26	1		05/13/2014 10:00	05/14/2014 11:43	NAH	EPA 6010C
Mercury	**0.014**	mg/kg	0.00054	0.0018	1		05/15/2014 10:00	05/16/2014 12:36	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.0068	mg/kg	0.0068	0.025	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
Aroclor-1221	<0.0096	mg/kg	0.0096	0.034	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
Aroclor-1232	<0.012	mg/kg	0.012	0.041	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
Aroclor-1242	<0.0096	mg/kg	0.0096	0.032	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
Aroclor-1248	<0.0096	mg/kg	0.0096	0.030	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
Aroclor-1254	<0.012	mg/kg	0.012	0.041	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
Aroclor-1260	<0.0082	mg/kg	0.0082	0.025	1		05/14/2014 8:00	05/22/2014 18:01	JJY	EPA 8082A
1-Methylnaphthalene	**5.5**	ug/kg	0.59	2.0	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**6.1**	ug/kg	0.76	2.5	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Acenaphthene	**39**	ug/kg	0.65	2.2	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Acenaphthylene	**3.9**	ug/kg	0.58	2.0	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Anthracene	**88**	ug/kg	0.41	1.4	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**360**	ug/kg	5.4	18	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**350**	ug/kg	5.5	18	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**520**	ug/kg	4.8	16	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**170**	ug/kg	0.81	2.7	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**180**	ug/kg	0.49	1.6	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Chrysene	**360**	ug/kg	2.9	9.6	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452978 Sample Description: WINNEQUAH PARENT Sampled: 05/07/2014 1410

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dibenzo(a,h)anthracene	**42**	ug/kg	1.0	3.4	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Fluoranthene	**880**	ug/kg	6.2	20	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM
Fluorene	**58**	ug/kg	0.54	1.8	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**170**	ug/kg	0.92	3.1	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Naphthalene	**5.5**	ug/kg	0.62	2.1	1		05/14/2014 10:30	05/19/2014 14:42	RPN	EPA 8270D-SIM
Phenanthrene	**460**	ug/kg	6.0	20	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM
Pyrene	**670**	ug/kg	6.2	21	10		05/14/2014 10:30	05/19/2014 17:44	RPN	EPA 8270D-SIM
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			06/04/2014 00:00	SUB	

CT LAB Sample#: 452979 Sample Description: NICHOLS ROAD SEDIMENT Sampled: 05/07/2014 1600

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**37.1**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**99**	mg/kg	32 *	110	10		05/14/2014 09:00	05/14/2014 12:51	LJS	SM 4500-NH3H
Cyanide	<0.29	mg/kg	0.29	0.94	1		05/13/2014 12:00	05/16/2014 11:36	CES	EPA 9012A
Phosphorus	**560**	mg/kg	41	130	1		05/13/2014 09:30	05/15/2014 16:23	CES	EPA 365.4
Nitrogen Kjeldahl	**1900**	mg/kg	44	150	1		05/13/2014 09:30	05/15/2014 13:30	CES	ASTM D3590
Nitrate Nitrogen	<1.9	mg/kg	1.9	6.7	1		05/12/2014 12:37	05/13/2014 13:26	AGK	EPA 9056A
Nitrite Nitrogen	<1.9	mg/kg	1.9	6.5	1		05/12/2014 12:37	05/13/2014 13:26	AGK	EPA 9056A
Percent Moisture	**62.9**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**85000**	mg/kg	690	2300	1			05/14/2014 10:06	MDS	L-Kahn/9060A
Metals Results										

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452979 Sample Description: NICHOLS ROAD SEDIMENT Sampled: 05/07/2014 1600

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Arsenic	**2.7**	mg/kg	0.66	2.4	1		05/13/2014 10:00	05/16/2014 12:07	NAH	EPA 6010C
Barium	**129**	mg/kg	0.088	0.31	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Cadmium	**0.15**	mg/kg	0.042	0.14	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Chromium	**29.2**	mg/kg	0.15	0.49	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Copper	**28.5**	mg/kg	0.27	0.84	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Iron	**6690**	mg/kg	2.0	6.4	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Lead	**25.2**	mg/kg	0.57	1.9	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Manganese	**212**	mg/kg	0.44	1.4	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Nickel	**6.5**	mg/kg	0.31	1.1	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Selenium	**2.0**	mg/kg	1.1 *	3.5	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Zinc	**157**	mg/kg	0.22	0.73	1		05/13/2014 10:00	05/14/2014 11:46	NAH	EPA 6010C
Mercury	**0.026**	mg/kg	0.0010	0.0035	1		05/15/2014 10:00	05/16/2014 12:38	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.13	mg/kg	0.13	0.48	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
Aroclor-1221	<0.19	mg/kg	0.19	0.67	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
Aroclor-1232	<0.24	mg/kg	0.24	0.80	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
Aroclor-1242	**3.9**	mg/kg	0.19	0.62	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
Aroclor-1248	<0.19	mg/kg	0.19	0.59	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
Aroclor-1254	**17**	mg/kg	0.24	0.80	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
Aroclor-1260	**6.9**	mg/kg	0.16	0.48	10		05/14/2014 8:00	05/23/2014 12:04	JJY	EPA 8082A
1-Methylnaphthalene	**21**	ug/kg	1.2	3.9	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**41**	ug/kg	1.5	4.9	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Acenaphthene	**49**	ug/kg	1.3	4.2	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Acenaphthylene	**24**	ug/kg	1.1	3.8	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452979 Sample Description: NICHOLS ROAD SEDIMENT Sampled: 05/07/2014 1600

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Anthracene	**110**	ug/kg	0.80	2.7	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**270**	ug/kg	1.0	3.5	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**250**	ug/kg	1.1	3.6	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**430**	ug/kg	0.94	3.2	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**110**	ug/kg	1.6	5.3	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**150**	ug/kg	0.97	3.2	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Chrysene	**330**	ug/kg	0.56	1.9	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**27**	ug/kg	2.0	6.7	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Fluoranthene	**680**	ug/kg	2.4	8.0	2		05/14/2014 10:30	05/19/2014 18:07	RPN	EPA 8270D-SIM
Fluorene	**130**	ug/kg	1.0	3.5	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**100**	ug/kg	1.8	6.0	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Naphthalene	**48**	ug/kg	1.2	4.0	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Phenanthrene	**540**	ug/kg	2.4	7.8	2		05/14/2014 10:30	05/19/2014 18:07	RPN	EPA 8270D-SIM
Pyrene	**530**	ug/kg	1.2	4.0	1		05/14/2014 10:30	05/19/2014 15:05	RPN	EPA 8270D-SIM
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			06/04/2014 00:00	SUB	

CT LAB Sample#: 452980 Sample Description: NICHOLS ROAD PARENT Sampled: 05/07/2014 1610

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**69.5**	%	0.1	0.1	1			05/13/2014 15:07	BMS	EPA 8000C
Ammonia Nitrogen	**11**	mg/kg	1.8	5.8	1		05/14/2014 09:00	05/14/2014 10:02	LJS	SM 4500-NH3H
Cyanide	<0.16	mg/kg	0.16	0.51	1		05/13/2014 12:00	05/16/2014 11:37	CES	EPA 9012A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452980 Sample Description: NICHOLS ROAD PARENT Sampled: 05/07/2014 1610

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Phosphorus	**520**	mg/kg	22	71	1		05/13/2014 09:30	05/15/2014 16:25	CES	EPA 365.4
Nitrogen Kjeldahl	**970**	mg/kg	23	80	1	M	05/13/2014 09:30	05/15/2014 13:31	CES	ASTM D3590
Nitrate Nitrogen	<1.0	mg/kg	1.0	3.6	1		05/12/2014 12:37	05/13/2014 14:30	AGK	EPA 9056A
Nitrite Nitrogen	<1.0	mg/kg	1.0	3.5	1		05/12/2014 12:37	05/13/2014 14:30	AGK	EPA 9056A
Percent Moisture	**30.5**	%	N/A	N/A	1			05/13/2014 15:07	BMS	SM 2540G
Total Organic Carbon	**20000**	mg/kg	370	1200	1			05/14/2014 10:26	MDS	L-Kahn/9060A
Metals Results										
Arsenic	**3.1**	mg/kg	0.37	1.4	1		05/13/2014 10:00	05/16/2014 12:11	NAH	EPA 6010C
Barium	**80.9**	mg/kg	0.050	0.17	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Cadmium	<0.024	mg/kg	0.024	0.079	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Chromium	**11.1**	mg/kg	0.087	0.27	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Copper	**13.3**	mg/kg	0.15	0.47	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Iron	**11500**	mg/kg	1.1	3.6	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Lead	**7.8**	mg/kg	0.32	1.1	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Manganese	**318**	mg/kg	0.25	0.81	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Nickel	**12.7**	mg/kg	0.17	0.60	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Selenium	**1.3**	mg/kg	0.62 *	2.0	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Zinc	**39.8**	mg/kg	0.12	0.41	1		05/13/2014 10:00	05/14/2014 11:50	NAH	EPA 6010C
Mercury	**0.016**	mg/kg	0.00054	0.0019	1		05/15/2014 10:00	05/16/2014 12:40	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.0072	mg/kg	0.0072	0.026	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A
Aroclor-1221	<0.010	mg/kg	0.010	0.036	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A
Aroclor-1232	<0.013	mg/kg	0.013	0.043	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A
Aroclor-1242	<0.010	mg/kg	0.010	0.033	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 452980 Sample Description: NICHOLS ROAD PARENT Sampled: 05/07/2014 1610

Analyte	Result	Units	LOD		LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1248	<0.010	mg/kg	0.010		0.032	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A
Aroclor-1254	<0.013	mg/kg	0.013		0.043	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A
Aroclor-1260	<0.0086	mg/kg	0.0086		0.026	1		05/14/2014 8:00	05/22/2014 18:40	JJY	EPA 8082A
1-Methylnaphthalene	**1.8**	ug/kg	0.62	*	2.1	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**1.9**	ug/kg	0.79	*	2.6	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Acenaphthene	**1.4**	ug/kg	0.67	*	2.3	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Acenaphthylene	**1.9**	ug/kg	0.60	*	2.0	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Anthracene	**4.2**	ug/kg	0.43		1.4	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**11**	ug/kg	0.56		1.8	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**26**	ug/kg	0.57		1.9	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**25**	ug/kg	0.50		1.7	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**21**	ug/kg	0.85		2.8	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**5.1**	ug/kg	0.52		1.7	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Chrysene	**13**	ug/kg	0.30		1.0	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**3.6**	ug/kg	1.1		3.6	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Fluoranthene	**22**	ug/kg	0.64		2.1	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Fluorene	**3.4**	ug/kg	0.56		1.8	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**10**	ug/kg	0.96		3.2	1	B	05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Naphthalene	**1.3**	ug/kg	0.64	*	2.1	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Phenanthrene	**13**	ug/kg	0.63		2.1	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM
Pyrene	**21**	ug/kg	0.64		2.2	1		05/14/2014 10:30	05/19/2014 15:27	RPN	EPA 8270D-SIM

Sub Lab Results

Hydrometer	**attached**		N/A		N/A	1			06/04/2014 00:00	SUB	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes: * Indicates Value in between the LOD (limit of detection) and the LOQ (limit of quantitation).

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: Eric T. Korthals
Project Manager
608-356-2760

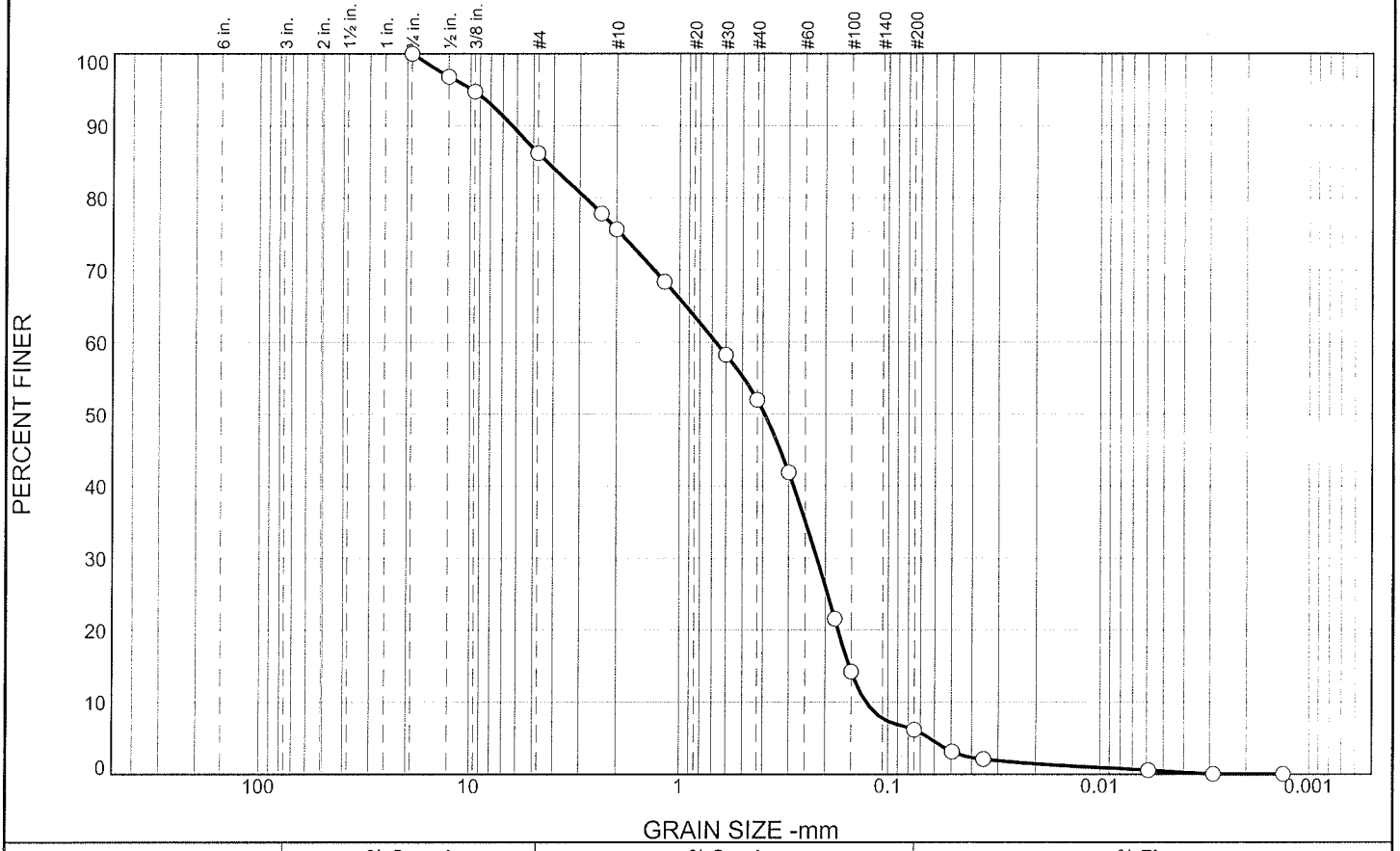
QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Illinois NELAP ID# 002413
Kansas NELAP ID# E-10368
Kentucky ID# 0023
Pennsylvania NELAP ID# 68-04201
New Jersey NELAP ID# WI001
North Carolina ID# 674
Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
DoD-ELAP A2LA Cert # 3317.013
Alaska ID # UST-099
Louisiana ID # 115843
Virginia ID# 460203
ISO/IEC 17025-2005 A2LA Cert # 3317.01
GA EPD Stipulation ID 115843, Expires Annually

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	13.8	10.6	23.6	45.8	5.8	0.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	96.8		
3/8	94.7		
#4	86.2		
#8	77.8		
#10	75.6		
#16	68.4		
#30	58.2		
#40	52.0		
#50	41.9		
#80	21.6		
#100	14.2		
#200	6.2		

* (no specification provided)

Material Description

Dark Gray to Black Fine to Coarse Sand, Some Gravel, Little Silt, Trace Clay

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 6.3227 D_{85}= 4.3196 D_{60}= 0.6717
D_{50}= 0.3918 D_{30}= 0.2197 D_{15}= 0.1533
D_{10}= 0.1271 C_u= 5.29 C_c= 0.57

Classification

USCS= SP-SM AASHTO=

Remarks

Location: Pirate Island Sediment
Sample Number: 452958

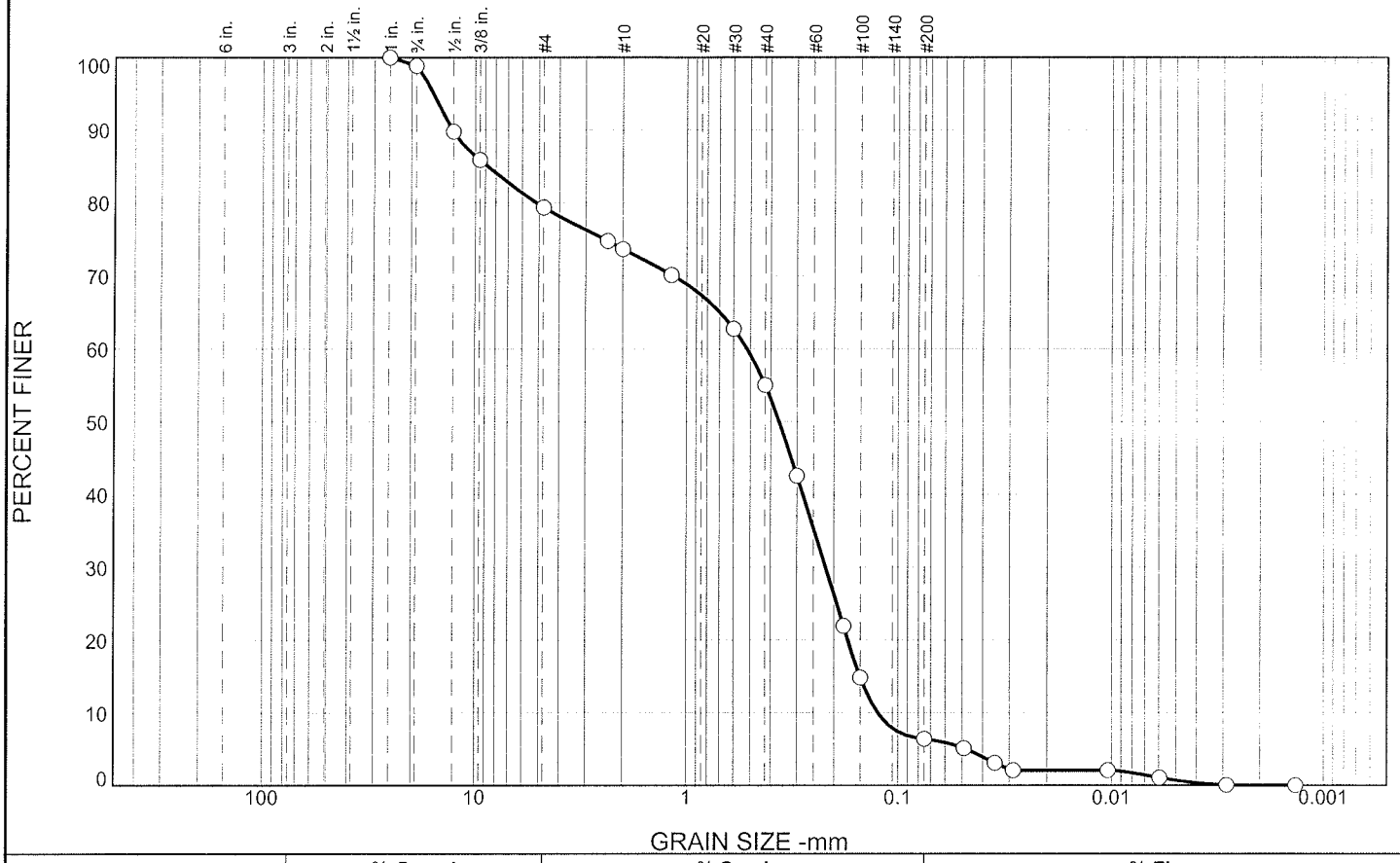
Date: 6/4/14

CGC, Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.1	19.5	5.8	18.6	48.6	5.7	0.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4	98.9		
1/2	89.8		
3/8	85.9		
#4	79.4		
#8	74.8		
#10	73.6		
#16	70.1		
#30	62.7		
#40	55.0		
#50	42.6		
#80	22.0		
#100	14.8		
#200	6.4		

* (no specification provided)

Material Description

Dark Gray to Black Fine to Coarse Sand, Some Gravel, Little Silt, Trace Clay

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 12.8399 D_{85}= 8.7603 D_{60}= 0.5187
D_{50}= 0.3649 D_{30}= 0.2189 D_{15}= 0.1507
D_{10}= 0.1241 C_u= 4.18 C_c= 0.74

Classification

USCS= SP-SM AASHTO=

Remarks

Location: Graham Park Sediment
Sample Number: 452975

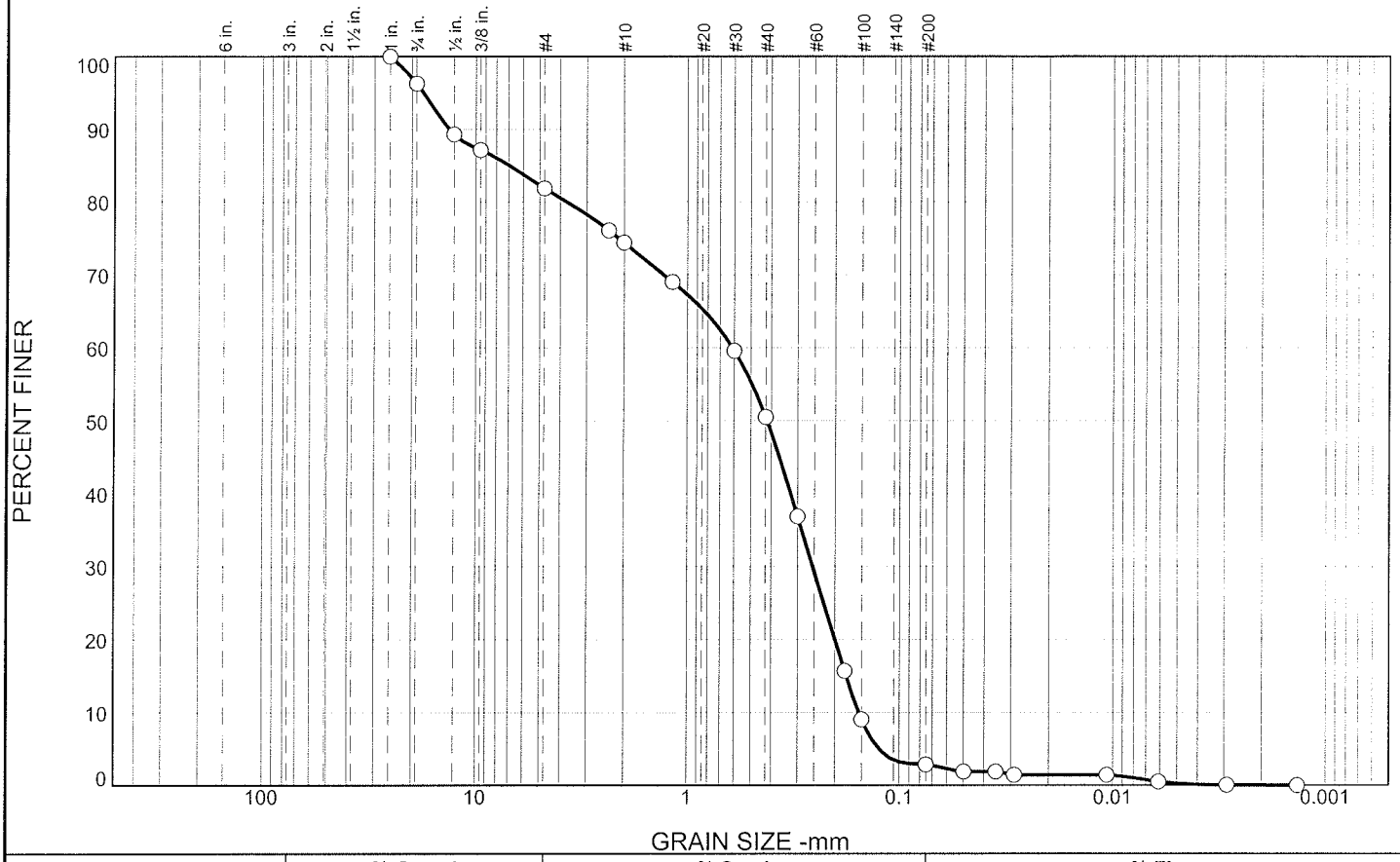
Date: 6/4/14

CGC, Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.7	14.4	7.5	23.9	47.6	2.6	0.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4	96.3		
1/2	89.3		
3/8	87.2		
#4	81.9		
#8	76.1		
#10	74.4		
#16	69.0		
#30	59.6		
#40	50.5		
#50	36.9		
#80	15.7		
#100	9.1		
#200	2.9		

* (no specification provided)

Material Description

Dark Gray to Black Fine to Coarse Sand, Some Gravel, Trace Silt and Clay

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 13.3693 D_{85}= 6.9799 D_{60}= 0.6124
D_{50}= 0.4185 D_{30}= 0.2546 D_{15}= 0.1769
D_{10}= 0.1546 C_u= 3.96 C_c= 0.69

Classification

USCS= SP AASHTO=

Remarks

Location: Graham Park Parent
Sample Number: 452976

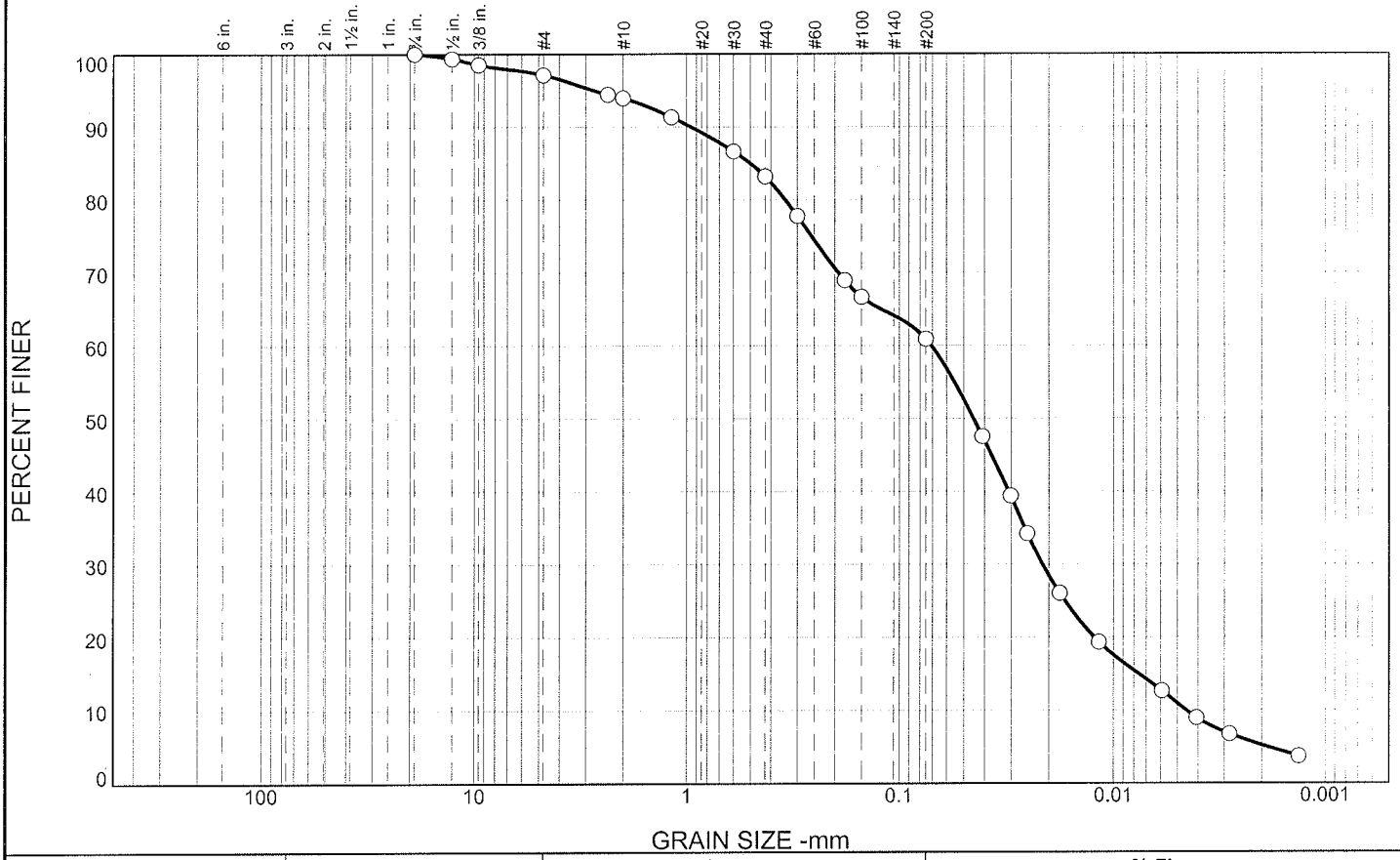
Date: 6/4/14

CGC, Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.9	3.1	10.8	22.3	49.9	11.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	99.3		
3/8	98.5		
#4	97.1		
#8	94.5		
#10	94.0		
#16	91.3		
#30	86.6		
#40	83.2		
#50	77.7		
#80	68.9		
#100	66.6		
#200	60.9		

* (no specification provided)

Material Description

Dark Gray to Black Sandy Silt to Sandy Silty Clay, Trace Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.9538 D_{85}= 0.4998 D_{60}= 0.0709
D_{50}= 0.0451 D_{30}= 0.0215 D_{15}= 0.0076
D_{10}= 0.0045 C_u= 15.58 C_c= 1.43

Classification

USCS= ML/CL-ML AASHTO=

Remarks

* - Visual description only. No Atterberg Limits were performed

Location: Winnequah Sediment
Sample Number: 452977

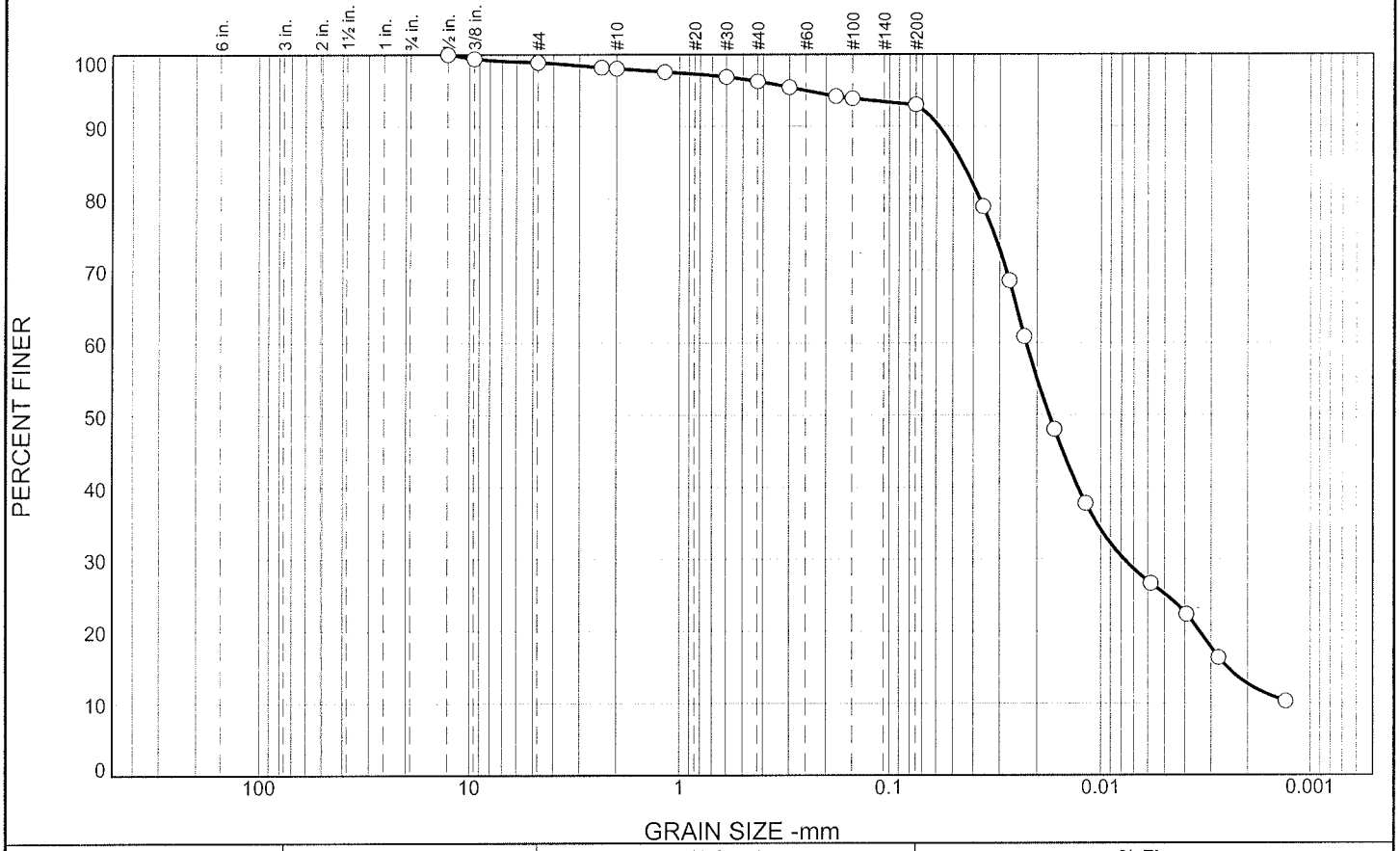
Date: 6/4/14

CGC, Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	0.8	1.9	3.2	67.8	25.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2	100.0		
3/8	99.4		
#4	98.9		
#8	98.2		
#10	98.1		
#16	97.6		
#30	96.9		
#40	96.2		
#50	95.4		
#80	94.2		
#100	93.9		
#200	93.0		

* (no specification provided)

Material Description

Gray Lean Clay, Little Sand, Trace Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.0584 D_{85}= 0.0454 D_{60}= 0.0225
D_{50}= 0.0175 D_{30}= 0.0078 D_{15}= 0.0025
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

* - Visual Description only. No Atterberg Limits were performed

Location: Winnequah Sediment
Sample Number: 452978

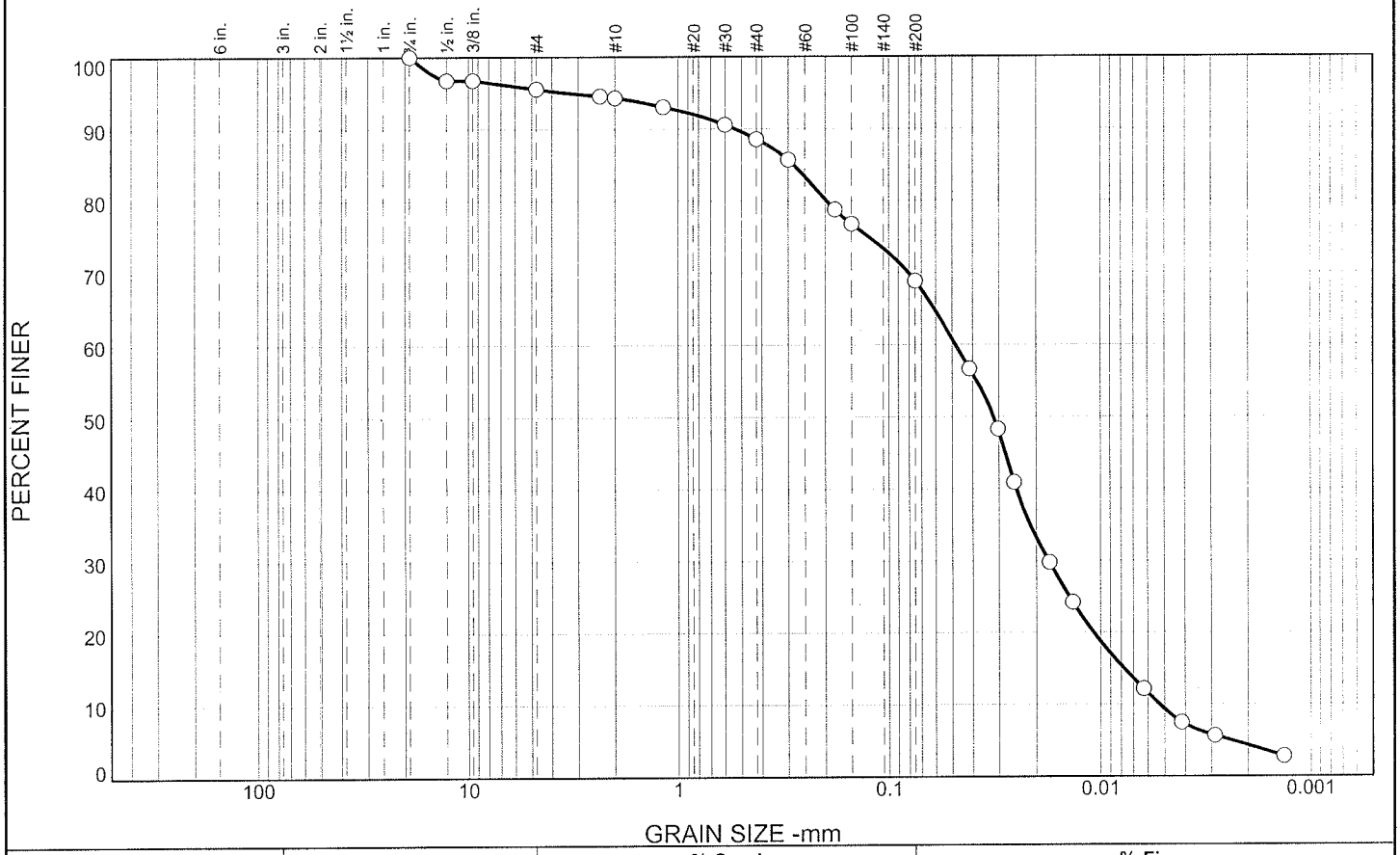
Date: 6/4/14

CGC, Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.4	1.3	5.8	19.7	59.5	9.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	96.8		
3/8	96.8		
#4	95.6		
#8	94.6		
#10	94.3		
#16	93.0		
#30	90.6		
#40	88.5		
#50	85.7		
#80	78.8		
#100	76.8		
#200	68.8		

* (no specification provided)

Material Description

Dark Gray to Black Clayey Silt to Silty Clay, Some Fine to Medium Sand, Trace Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5397 D_{85}= 0.2834 D_{60}= 0.0483
D_{50}= 0.0318 D_{30}= 0.0175 D_{15}= 0.0078
D_{10}= 0.0053 C_u= 9.12 C_c= 1.20

Classification

USCS= ML/CL-ML AASHTO=

Remarks

* - Visual description only. No Atterberg Limits were performed

Location: Nichols Road Sediment
Sample Number: 452979

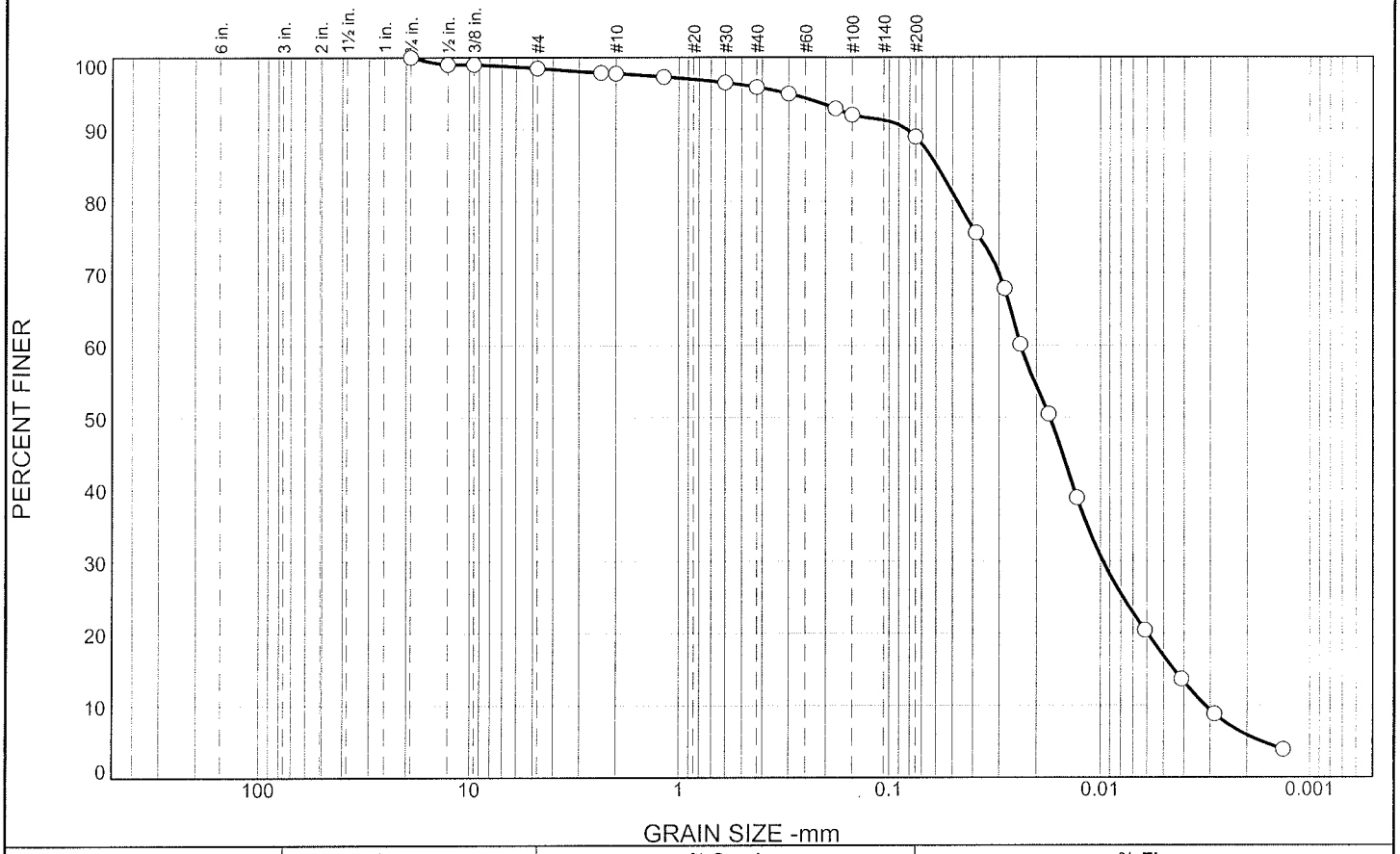
Date: 6/4/14

CGC, Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	0.7	2.0	6.9	72.0	16.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	99.0		
3/8	99.0		
#4	98.5		
#8	97.9		
#10	97.8		
#16	97.3		
#30	96.5		
#40	95.8		
#50	94.9		
#80	92.9		
#100	92.0		
#200	88.9		

* (no specification provided)

Material Description

Dark Gray to Black Clayey Silt to Silty Clay, Little Sand, Trace Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.0829 D_{85}= 0.0596 D_{60}= 0.0237
D_{50}= 0.0173 D_{30}= 0.0097 D_{15}= 0.0045
D_{10}= 0.0032 C_u= 7.49 C_c= 1.25

Classification

USCS= ML/CL-ML AASHTO=

Remarks

* - Visual description only. No Atterberg Limits were performed

Location: Nichols Road Parent
Sample Number: 452980

Date: 6/4/14

CGC,Inc.

Client: CT Laboratories
Project: City of Monona Stormwater Project (PO# 104121 CGC)
Project No: C11167-39 **Figure**

Tested By: DRW **Checked By:** DAS

Rev. 9/2009

WASTEWATER CHAIN OF CUSTODY

Page 1 of 1

Company: Strand Associates, Inc.
Project Contact:
Telephone: (608) 251-4843
Project Name: City of Monona Storm Water Project
Project #: 1093-041
Location: Monona, WI
Sampled By: Steve Small

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Folder #: 104121
Company: STRAND ASSOCIATES
Project: CITY OF MONONA STO
Logged By: TKR PM: ET

am:
RCRA SDWA NPDES
Waste Other _____

Report To:
EMAIL:
Company: Please See
Address: Attached
Note

Invoice To:*
EMAIL:
Company:
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions
Please see attached notes for billing and analysis information

Matrix:
GW - groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample ID Description	Filtered? Y/N	BOD	TSS	pH	Fecal Coliform	Chloride	Nitrate + Nitrite	Phosphorous	Ammonia Nit (NH3-N)	TKN	Lab Filtration				Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
						Fill in Spaces with Bottles per Test															
5/7/14	9:30	S	Comp	Pirate Island Sediment	No																452958
[redacted]																					452975
5/7/14	10:30	S	Comp	Graham Park Sediment	No																452976
5/7/14	10:45	S	Comp	Graham Park Parent	No																452977
5/7/14	14:00	S	Comp	Winnequah Sediment	No																452978
5/7/14	14:10	S	Comp	Winnequah Parent	No																452979
5/7/14	16:00	S	Comp	Nichols Road Sediment	No																452980
5/7/14	16:10	S	Comp	Nichols Road Parent	No																

See Attached Note

Relinquished By:	Date/Time	Received By:	Date/Time
	5/8/14 10:00 AM		
Received by:	Date/Time	Received for Laboratory by:	Date/Time
		TKR	5/9/14 1004

Lab Use Only
Ice Present Yes No
Temperature 2.0°
Cooler # 5221, 5014

TKR 5/9/14 0915

Analyses Requested
City of Monona Sediment Sampling

The following seven sediment/parent material samples are being submitted for laboratory analysis:

* Pirate Island Sediment
* Graham Park Sediment
* Graham Park Parent
* Winnequah Sediment
* Winnequah Parent
* Nichols Road Sediment
* Nichols Road Parent

Please analyze each of the above for:

1. Total Metals (As, Ba, Cd, Cr, Cu, Cn, Fe, Pb, Mn, Hg, Ni, Se, & Zn)
2. PCBs
3. Nitrate
4. Nitrite
5. Ammonia
6. TKN
7. Total Phosphorus
8. Grain Size (by hydrometer)
9. Percent Solids
10. Total Organic Carbon
11. Moisture Content

In addition, please analyze the Winnequah Sediment, Winnequah Parent, Nichols Road Sediment, and Nichols Road Parent samples for PAHs (Method 8270SIM).

Please call with any questions.

Steve Small
Strand Associates, Inc.
910 West Wingra Drive
Madison, WI

To: CT Laboratories
Re: City of Monona Sediment Samples (Quote # 140108 REV)

These sediment samples were collected by Strand Associates, Inc. for the City of Monona, Wisconsin. The City of Monona will be responsible for payment of the analytical services and the invoice should be made out to them (see contact info below).

Please do not send the invoice directly to the city. Instead, please forward it to Steve Small at Strand Associates, Inc. (see contact info below). We will then provide it to the city.

Also, the analytical results should be sent to Strand Associates and not directly to the city.

Please call with any questions.

Thank you,

Steve Small

Contact Information

Invoice Information
City of Monona
c/o Mr. Dan Stephany
5211 Schluter Road
Monona, WI 53716

Results and Invoice Recipient
Strand Associates, Inc.
c/o Steven Small
910 West Wingra Drive
Madison, WI 53715
(608) 251-2129 ext. 1071
steve.small@strand.com

CT LABORATORIES
delivering more than data from your environmental analyses

CT Laboratories LLC • 1230 Lange Ct • Baraboo, WI 53913
608-356-2760 • www.ctlaboratories.com

ANALYTICAL REPORT

STRAND ASSOCIATES
STEVE SMALL
910 W WINGRA DR
MADISON, WI 53715

Project Name: CITY OF MONONA
Project Phase: WINNEQUAH PARK
Contract #: 2418
Project #: 1093-047
Folder #: 119017
Purchase Order #:

Arrival Temperature: See COC
Report Date: 06/02/2016
Date Received: 05/16/2016
Reprint Date: 06/02/2016

CT LAB Sample#: 723601 Sample Description: N-7 SEDIMENT Sampled: 05/12/2016 1000

Analyte	Result	Units	LOD		LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results											
Solids, Percent	**38.1**	%	0.1		0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**63300**	mg/kg	1700		5500	1			05/25/2016 11:23	JJF	L-Kahn/9060A
Organic Results											
Aroclor-1016	<0.021	mg/kg	0.021		0.068	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
Aroclor-1221	<0.052	mg/kg	0.052		0.17	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
Aroclor-1232	<0.037	mg/kg	0.037		0.12	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
Aroclor-1242	<0.026	mg/kg	0.026		0.084	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
Aroclor-1248	<0.034	mg/kg	0.034		0.11	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
Aroclor-1254	**0.176**	mg/kg	0.026		0.086	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
Aroclor-1260	**0.0236**	mg/kg	0.0079	*	0.052	1		05/17/2016 10:15	05/18/2016 13:50	JJY	EPA 8082A
1-Methylnaphthalene	**23.8**	ug/kg	3.7	*	26	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**28.3**	ug/kg	3.8		26	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Acenaphthene	**66.7**	ug/kg	3.4		26	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Acenaphthylene	**46.7**	ug/kg	3.9		26	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723601 Sample Description: N-7 SEDIMENT Sampled: 05/12/2016 1000

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Anthracene	**306**	ug/kg	5.2	26	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**991**	ug/kg	10	34	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**989**	ug/kg	14	50	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**1860**	ug/kg	17	56	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**819**	ug/kg	14	48	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**398**	ug/kg	10	35	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Chrysene	**1050**	ug/kg	10	35	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**176**	ug/kg	12	41	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Fluoranthene	**2310**	ug/kg	6.5	26	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Fluorene	**146**	ug/kg	3.8	26	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**741**	ug/kg	14	51	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Naphthalene	**29.7**	ug/kg	3.7	26	5		05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Phenanthrene	**1200**	ug/kg	6.5	26	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM
Pyrene	**1920**	ug/kg	6.5	26	5	M,Y	05/17/2016 10:00	05/19/2016 12:29	RPN	EPA 8270D-SIM

CT LAB Sample#: 723602 Sample Description: N-8 SEDIMENT Sampled: 05/12/2016 1040

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**32.8**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**55400**	mg/kg	1900	6400	1			05/25/2016 11:33	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.024	mg/kg	0.024	0.079	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A
Aroclor-1221	<0.061	mg/kg	0.061	0.20	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723602 Sample Description: N-8 SEDIMENT Sampled: 05/12/2016 1040

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1232	<0.042	mg/kg	0.042	0.14	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A
Aroclor-1242	<0.030	mg/kg	0.030	0.097	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A
Aroclor-1248	<0.039	mg/kg	0.039	0.13	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A
Aroclor-1254	**0.167**	mg/kg	0.030	0.10	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A
Aroclor-1260	**0.0455**	mg/kg	0.0091 *	0.061	1		05/17/2016 10:15	05/18/2016 12:45	JJY	EPA 8082A
1-Methylnaphthalene	**39.7**	ug/kg	4.3	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**41.7**	ug/kg	4.4	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Acenaphthene	**181**	ug/kg	4.0	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Acenaphthylene	**89.5**	ug/kg	4.6	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Anthracene	**507**	ug/kg	6.1	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**2690**	ug/kg	12	40	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**3610**	ug/kg	84	290	25		05/17/2016 10:00	05/19/2016 17:47	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**7430**	ug/kg	99	330	25		05/17/2016 10:00	05/19/2016 17:47	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**2890**	ug/kg	17	56	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**1540**	ug/kg	12	41	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Chrysene	**4010**	ug/kg	61	210	25		05/17/2016 10:00	05/19/2016 17:47	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**577**	ug/kg	14	47	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Fluoranthene	**8010**	ug/kg	38	150	25		05/17/2016 10:00	05/19/2016 17:47	RPN	EPA 8270D-SIM
Fluorene	**370**	ug/kg	4.4	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**2760**	ug/kg	17	59	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Naphthalene	**62.9**	ug/kg	4.3	30	5		05/17/2016 10:00	05/19/2016 12:49	RPN	EPA 8270D-SIM
Phenanthrene	**3770**	ug/kg	38	150	25		05/17/2016 10:00	05/19/2016 17:47	RPN	EPA 8270D-SIM
Pyrene	**6450**	ug/kg	38	150	25		05/17/2016 10:00	05/19/2016 17:47	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723603 Sample Description: N-9 SEDIMENT Sampled: 05/12/2016 1100

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**41.5**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**56400**	mg/kg	1500	5100	1			05/25/2016 11:40	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.019	mg/kg	0.019	0.062	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
Aroclor-1221	<0.048	mg/kg	0.048	0.16	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
Aroclor-1232	<0.033	mg/kg	0.033	0.11	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
Aroclor-1242	<0.024	mg/kg	0.024	0.076	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
Aroclor-1248	<0.031	mg/kg	0.031	0.10	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
Aroclor-1254	**0.222**	mg/kg	0.024	0.079	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
Aroclor-1260	**0.0525**	mg/kg	0.0072	0.048	1		05/17/2016 10:15	05/18/2016 13:07	JJY	EPA 8082A
1-Methylnaphthalene	**9.85**	ug/kg	3.4 *	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**13.2**	ug/kg	3.5 *	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Acenaphthene	**84.8**	ug/kg	3.1	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Acenaphthylene	**32.9**	ug/kg	3.6	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Anthracene	**260**	ug/kg	4.8	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**1350**	ug/kg	9.6	31	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**1320**	ug/kg	13	46	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**2340**	ug/kg	16	52	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**1120**	ug/kg	13	45	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**673**	ug/kg	9.6	33	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Chrysene	**1370**	ug/kg	9.6	33	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**248**	ug/kg	11	37	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Fluoranthene	**3270**	ug/kg	12	48	10		05/17/2016 10:00	05/19/2016 18:06	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723603 Sample Description: N-9 SEDIMENT Sampled: 05/12/2016 1100

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Fluorene	**164**	ug/kg	3.5	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**1060**	ug/kg	13	47	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Naphthalene	**17.6**	ug/kg	3.4 *	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Phenanthrene	**1450**	ug/kg	6.0	24	5		05/17/2016 10:00	05/19/2016 13:29	RPN	EPA 8270D-SIM
Pyrene	**2660**	ug/kg	12	48	10		05/17/2016 10:00	05/19/2016 18:06	RPN	EPA 8270D-SIM

CT LAB Sample#: 723604 Sample Description: N-10 SEDIMENT Sampled: 05/12/2016 1120

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**37.4**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**80100**	mg/kg	1700	5600	1			05/25/2016 11:46	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.021	mg/kg	0.021	0.069	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
Aroclor-1221	<0.053	mg/kg	0.053	0.18	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
Aroclor-1232	<0.037	mg/kg	0.037	0.12	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
Aroclor-1242	<0.027	mg/kg	0.027	0.085	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
Aroclor-1248	<0.034	mg/kg	0.034	0.11	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
Aroclor-1254	**0.337**	mg/kg	0.027	0.088	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
Aroclor-1260	**0.0822**	mg/kg	0.0080	0.053	1		05/17/2016 10:15	05/18/2016 13:28	JJY	EPA 8082A
1-Methylnaphthalene	**10.4**	ug/kg	3.7 *	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**15.2**	ug/kg	3.8 *	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Acenaphthene	**34.4**	ug/kg	3.4	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Acenaphthylene	**23.4**	ug/kg	4.0 *	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723604 Sample Description: N-10 SEDIMENT Sampled: 05/12/2016 1120

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Anthracene	**85.2**	ug/kg	5.3	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**503**	ug/kg	11	34	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**556**	ug/kg	15	50	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**1090**	ug/kg	17	57	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**539**	ug/kg	15	49	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**306**	ug/kg	11	36	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Chrysene	**596**	ug/kg	11	36	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**112**	ug/kg	12	41	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Fluoranthene	**1280**	ug/kg	6.6	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Fluorene	**73.8**	ug/kg	3.8	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**496**	ug/kg	15	52	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Naphthalene	**17.6**	ug/kg	3.7 *	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Phenanthrene	**541**	ug/kg	6.6	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM
Pyrene	**1100**	ug/kg	6.6	27	5		05/17/2016 10:00	05/19/2016 13:48	RPN	EPA 8270D-SIM

CT LAB Sample#: 723605 Sample Description: N-11 SEDIMENT Sampled: 05/12/2016 1300

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**40.7**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**64400**	mg/kg	1600	5200	1			05/25/2016 11:52	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.020	mg/kg	0.020	0.064	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A
Aroclor-1221	<0.049	mg/kg	0.049	0.16	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723605 Sample Description: N-11 SEDIMENT Sampled: 05/12/2016 1300

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1232	<0.034	mg/kg	0.034	0.12	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A
Aroclor-1242	<0.025	mg/kg	0.025	0.079	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A
Aroclor-1248	<0.032	mg/kg	0.032	0.11	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A
Aroclor-1254	**0.609**	mg/kg	0.025	0.081	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A
Aroclor-1260	**0.177**	mg/kg	0.0074	0.049	1		05/17/2016 10:15	05/18/2016 15:37	JJY	EPA 8082A
1-Methylnaphthalene	**202**	ug/kg	3.4	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**270**	ug/kg	3.6	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Acenaphthene	**93.1**	ug/kg	3.2	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Acenaphthylene	**52.3**	ug/kg	3.7	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Anthracene	**173**	ug/kg	4.9	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**984**	ug/kg	9.8	32	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**1240**	ug/kg	14	47	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**2640**	ug/kg	32	110	10		05/17/2016 10:00	05/19/2016 18:26	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**1270**	ug/kg	14	46	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**607**	ug/kg	9.8	33	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Chrysene	**1450**	ug/kg	9.8	33	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**254**	ug/kg	11	38	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Fluoranthene	**2840**	ug/kg	12	49	10		05/17/2016 10:00	05/19/2016 18:26	RPN	EPA 8270D-SIM
Fluorene	**181**	ug/kg	3.6	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**1180**	ug/kg	14	48	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Naphthalene	**64.7**	ug/kg	3.4	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Phenanthrene	**1430**	ug/kg	6.2	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM
Pyrene	**2330**	ug/kg	6.2	25	5		05/17/2016 10:00	05/19/2016 14:08	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723606 Sample Description: N-12 SEDIMENT Sampled: 05/12/2016 1140

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**38.9**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**70500**	mg/kg	1600	5400	1			05/25/2016 12:04	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.021	mg/kg	0.021	0.067	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
Aroclor-1221	<0.051	mg/kg	0.051	0.17	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
Aroclor-1232	<0.036	mg/kg	0.036	0.12	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
Aroclor-1242	<0.026	mg/kg	0.026	0.082	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
Aroclor-1248	<0.033	mg/kg	0.033	0.11	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
Aroclor-1254	**0.360**	mg/kg	0.026	0.085	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
Aroclor-1260	**0.0796**	mg/kg	0.0077	0.051	1		05/17/2016 10:15	05/18/2016 15:59	JJY	EPA 8082A
1-Methylnaphthalene	**17.4**	ug/kg	3.6	26	5	*	05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**29.8**	ug/kg	3.7	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Acenaphthene	**123**	ug/kg	3.3	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Acenaphthylene	**54.0**	ug/kg	3.8	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Anthracene	**325**	ug/kg	5.1	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**1200**	ug/kg	10	33	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**1210**	ug/kg	14	49	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**2290**	ug/kg	17	55	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**989**	ug/kg	14	47	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**499**	ug/kg	10	34	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Chrysene	**1320**	ug/kg	10	34	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**215**	ug/kg	11	40	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Fluoranthene	**3240**	ug/kg	13	51	10		05/17/2016 10:00	05/19/2016 18:46	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723606 Sample Description: N-12 SEDIMENT Sampled: 05/12/2016 1140

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Fluorene	**229**	ug/kg	3.7	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**943**	ug/kg	14	50	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Naphthalene	**28.2**	ug/kg	3.6	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Phenanthrene	**1850**	ug/kg	6.4	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM
Pyrene	**2550**	ug/kg	6.4	26	5		05/17/2016 10:00	05/19/2016 14:28	RPN	EPA 8270D-SIM

CT LAB Sample#: 723607 Sample Description: N-13 SEDIMENT Sampled: 05/12/2016 1200

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**35.6**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**56100**	mg/kg	1800	5900	1			05/25/2016 12:11	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.022	mg/kg	0.022	0.072	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
Aroclor-1221	<0.056	mg/kg	0.056	0.18	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
Aroclor-1232	<0.039	mg/kg	0.039	0.13	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
Aroclor-1242	<0.028	mg/kg	0.028	0.089	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
Aroclor-1248	<0.036	mg/kg	0.036	0.12	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
Aroclor-1254	**0.200**	mg/kg	0.028	0.092	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
Aroclor-1260	**0.0390**	mg/kg	0.0084 *	0.056	1		05/17/2016 10:15	05/18/2016 16:20	JJY	EPA 8082A
1-Methylnaphthalene	**15.4**	ug/kg	3.9 *	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**21.0**	ug/kg	4.1 *	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Acenaphthene	**40.8**	ug/kg	3.6	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Acenaphthylene	**41.7**	ug/kg	4.2	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723607 Sample Description: N-13 SEDIMENT Sampled: 05/12/2016 1200

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Anthracene	**106**	ug/kg	5.6	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**576**	ug/kg	11	36	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**702**	ug/kg	15	53	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**1570**	ug/kg	18	60	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**706**	ug/kg	15	52	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**351**	ug/kg	11	38	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Chrysene	**846**	ug/kg	11	38	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**145**	ug/kg	13	43	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Fluoranthene	**1580**	ug/kg	7.0	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Fluorene	**84.4**	ug/kg	4.1	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**657**	ug/kg	15	55	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Naphthalene	**25.9**	ug/kg	3.9 *	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Phenanthrene	**546**	ug/kg	7.0	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM
Pyrene	**1330**	ug/kg	7.0	28	5		05/17/2016 10:00	05/19/2016 14:48	RPN	EPA 8270D-SIM

CT LAB Sample#: 723608 Sample Description: N-14 SEDIMENT Sampled: 05/12/2016 1220

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**41.5**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**41200**	mg/kg	1500	5100	1			05/25/2016 12:33	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.019	mg/kg	0.019	0.063	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A
Aroclor-1221	<0.048	mg/kg	0.048	0.16	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723608 Sample Description: N-14 SEDIMENT Sampled: 05/12/2016 1220

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1232	<0.034	mg/kg	0.034	0.11	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A
Aroclor-1242	<0.024	mg/kg	0.024	0.077	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A
Aroclor-1248	<0.031	mg/kg	0.031	0.10	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A
Aroclor-1254	**0.299**	mg/kg	0.024	0.080	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A
Aroclor-1260	**0.150**	mg/kg	0.0072	0.048	1		05/17/2016 10:15	05/18/2016 16:42	JJY	EPA 8082A
1-Methylnaphthalene	**16.0**	ug/kg	0.67	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**28.9**	ug/kg	0.69	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Acenaphthene	**13.2**	ug/kg	0.62	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Acenaphthylene	**17.7**	ug/kg	0.72	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Anthracene	**25.2**	ug/kg	0.95	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**46.2**	ug/kg	1.9	6.2	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**45.5**	ug/kg	2.6	9.1	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**104**	ug/kg	3.1	10	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**43.5**	ug/kg	2.6	8.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**19.0**	ug/kg	1.9	6.4	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Chrysene	**66.4**	ug/kg	1.9	6.4	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**10.9**	ug/kg	2.1	7.4	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Fluoranthene	**139**	ug/kg	1.2	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Fluorene	**34.8**	ug/kg	0.69	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**38.9**	ug/kg	2.6	9.3	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Naphthalene	**14.6**	ug/kg	0.67	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Phenanthrene	**124**	ug/kg	1.2	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM
Pyrene	**135**	ug/kg	1.2	4.8	1		05/17/2016 10:00	05/19/2016 19:06	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723609 Sample Description: N-15 SEDIMENT Sampled: 05/12/2016 1250

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**39.5**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Total Organic Carbon	**72200**	mg/kg	1600	5300	1			05/25/2016 12:41	JJF	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.020	mg/kg	0.020	0.065	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
Aroclor-1221	<0.050	mg/kg	0.050	0.17	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
Aroclor-1232	<0.035	mg/kg	0.035	0.12	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
Aroclor-1242	<0.025	mg/kg	0.025	0.081	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
Aroclor-1248	<0.033	mg/kg	0.033	0.11	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
Aroclor-1254	**0.315**	mg/kg	0.025	0.083	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
Aroclor-1260	**0.126**	mg/kg	0.0075	0.050	1		05/17/2016 10:15	05/18/2016 17:03	JJY	EPA 8082A
1-Methylnaphthalene	**27.3**	ug/kg	3.5	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**46.5**	ug/kg	3.6	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Acenaphthene	**81.9**	ug/kg	3.3	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Acenaphthylene	**87.3**	ug/kg	3.8	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Anthracene	**181**	ug/kg	5.0	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**663**	ug/kg	10	33	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**752**	ug/kg	14	48	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**1400**	ug/kg	16	54	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**569**	ug/kg	14	47	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**359**	ug/kg	10	34	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Chrysene	**813**	ug/kg	10	34	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**141**	ug/kg	11	39	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Fluoranthene	**1700**	ug/kg	6.3	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723609 Sample Description: N-15 SEDIMENT Sampled: 05/12/2016 1250

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Fluorene	**179**	ug/kg	3.6	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**551**	ug/kg	14	49	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Naphthalene	**38.2**	ug/kg	3.5	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Phenanthrene	**1080**	ug/kg	6.3	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM
Pyrene	**1480**	ug/kg	6.3	25	5		05/17/2016 10:00	05/19/2016 15:28	RPN	EPA 8270D-SIM

CT LAB Sample#: 723611 Sample Description: N-7 PARENT MATERIAL Sampled: 05/12/2016 1005

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**63.3**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.013	mg/kg	0.013	0.041	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A
Aroclor-1221	<0.031	mg/kg	0.031	0.10	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A
Aroclor-1232	<0.022	mg/kg	0.022	0.074	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A
Aroclor-1242	<0.016	mg/kg	0.016	0.050	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A
Aroclor-1248	<0.020	mg/kg	0.020	0.067	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A
Aroclor-1254	<0.016	mg/kg	0.016	0.052	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A
Aroclor-1260	<0.0047	mg/kg	0.0047	0.031	1		05/17/2016 10:15	05/18/2016 17:25	JJY	EPA 8082A

CT LAB Sample#: 723612 Sample Description: N-8 PARENT MATERIAL Sampled: 05/12/2016 1045

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723612 Sample Description: N-8 PARENT MATERIAL Sampled: 05/12/2016 1045

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**66.9**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.012	mg/kg	0.012	0.039	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A
Aroclor-1221	<0.030	mg/kg	0.030	0.099	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A
Aroclor-1232	<0.021	mg/kg	0.021	0.070	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A
Aroclor-1242	<0.015	mg/kg	0.015	0.048	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A
Aroclor-1248	<0.019	mg/kg	0.019	0.064	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A
Aroclor-1254	<0.015	mg/kg	0.015	0.049	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A
Aroclor-1260	<0.0045	mg/kg	0.0045	0.030	1		05/17/2016 10:15	05/18/2016 17:46	JJY	EPA 8082A

CT LAB Sample#: 723613 Sample Description: N-9 PARENT MATERIAL Sampled: 05/12/2016 1105

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**66.8**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.012	mg/kg	0.012	0.039	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A
Aroclor-1221	<0.030	mg/kg	0.030	0.099	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A
Aroclor-1232	<0.021	mg/kg	0.021	0.071	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A
Aroclor-1242	<0.015	mg/kg	0.015	0.048	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A
Aroclor-1248	<0.020	mg/kg	0.020	0.065	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A
Aroclor-1254	<0.015	mg/kg	0.015	0.050	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A
Aroclor-1260	<0.0045	mg/kg	0.0045	0.030	1		05/17/2016 10:15	05/18/2016 18:08	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723613 Sample Description: N-9 PARENT MATERIAL Sampled: 05/12/2016 1105

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method

CT LAB Sample#: 723614 Sample Description: N-10 PARENT MATERIAL Sampled: 05/12/2016 1125

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**70.7**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.011	mg/kg	0.011	0.036	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A
Aroclor-1221	<0.028	mg/kg	0.028	0.093	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A
Aroclor-1232	<0.020	mg/kg	0.020	0.066	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A
Aroclor-1242	<0.014	mg/kg	0.014	0.045	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A
Aroclor-1248	<0.018	mg/kg	0.018	0.060	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A
Aroclor-1254	<0.014	mg/kg	0.014	0.046	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A
Aroclor-1260	<0.0042	mg/kg	0.0042	0.028	1		05/17/2016 10:15	05/18/2016 18:29	JJY	EPA 8082A

CT LAB Sample#: 723615 Sample Description: N-11 PARENT MATERIAL Sampled: 05/12/2016 1305

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**47.8**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.017	mg/kg	0.017	0.054	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A
Aroclor-1221	<0.042	mg/kg	0.042	0.14	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723615 Sample Description: N-11 PARENT MATERIAL Sampled: 05/12/2016 1305

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1232	<0.029	mg/kg	0.029	0.098	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A
Aroclor-1242	<0.021	mg/kg	0.021	0.067	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A
Aroclor-1248	<0.027	mg/kg	0.027	0.090	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A
Aroclor-1254	<0.021	mg/kg	0.021	0.069	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A
Aroclor-1260	<0.0063	mg/kg	0.0063	0.042	1		05/17/2016 10:15	05/18/2016 19:34	JJY	EPA 8082A

CT LAB Sample#: 723616 Sample Description: N-12 PARENT MATERIAL Sampled: 05/12/2016 1145

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**51.7**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.015	mg/kg	0.015	0.050	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A
Aroclor-1221	<0.039	mg/kg	0.039	0.13	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A
Aroclor-1232	<0.027	mg/kg	0.027	0.091	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A
Aroclor-1242	<0.019	mg/kg	0.019	0.062	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A
Aroclor-1248	<0.025	mg/kg	0.025	0.083	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A
Aroclor-1254	**0.0676**	mg/kg	0.019	0.064	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A
Aroclor-1260	<0.0058	mg/kg	0.0058	0.039	1		05/17/2016 10:15	05/18/2016 19:55	JJY	EPA 8082A

CT LAB Sample#: 723617 Sample Description: N-13 PARENT MATERIAL Sampled: 05/12/2016 1205

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723617 Sample Description: N-13 PARENT MATERIAL Sampled: 05/12/2016 1205

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**65.5**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.012	mg/kg	0.012	0.040	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A
Aroclor-1221	<0.031	mg/kg	0.031	0.10	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A
Aroclor-1232	<0.021	mg/kg	0.021	0.072	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A
Aroclor-1242	<0.015	mg/kg	0.015	0.049	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A
Aroclor-1248	<0.020	mg/kg	0.020	0.066	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A
Aroclor-1254	<0.015	mg/kg	0.015	0.050	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A
Aroclor-1260	<0.0046	mg/kg	0.0046	0.031	1		05/17/2016 10:15	05/18/2016 20:17	JJY	EPA 8082A

CT LAB Sample#: 723618 Sample Description: N-14 PARENT MATERIAL Sampled: 05/12/2016 1225

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**65.0**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.012	mg/kg	0.012	0.040	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A
Aroclor-1221	<0.031	mg/kg	0.031	0.10	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A
Aroclor-1232	<0.022	mg/kg	0.022	0.072	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A
Aroclor-1242	<0.015	mg/kg	0.015	0.049	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A
Aroclor-1248	<0.020	mg/kg	0.020	0.066	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A
Aroclor-1254	<0.015	mg/kg	0.015	0.051	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A
Aroclor-1260	<0.0046	mg/kg	0.0046	0.031	1		05/17/2016 10:15	05/18/2016 20:38	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723618 Sample Description: N-14 PARENT MATERIAL Sampled: 05/12/2016 1225

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method

CT LAB Sample#: 723619 Sample Description: N-15 PARENT MATERIAL Sampled: 05/12/2016 1255

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**47.8**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Organic Results										
Aroclor-1016	<0.017	mg/kg	0.017	0.054	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A
Aroclor-1221	<0.042	mg/kg	0.042	0.14	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A
Aroclor-1232	<0.029	mg/kg	0.029	0.098	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A
Aroclor-1242	<0.021	mg/kg	0.021	0.067	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A
Aroclor-1248	<0.027	mg/kg	0.027	0.090	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A
Aroclor-1254	<0.021	mg/kg	0.021	0.069	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A
Aroclor-1260	<0.0062	mg/kg	0.0062	0.042	1		05/17/2016 10:15	05/18/2016 21:00	JJY	EPA 8082A

CT LAB Sample#: 723620 Sample Description: SOUTH SEDIMENT Sampled: 05/12/2016 1415

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**51.4**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Ammonia Nitrogen	**69.3**	mg/kg	7.4	25	2	M	05/27/2016 09:15	05/27/2016 13:47	MER	SM 4500-NH3H
Cyanide	<0.22	mg/kg	0.22	0.76	1		05/17/2016 09:30	05/18/2016 14:26	LJS	EPA 9012A
Phosphorus	**703**	mg/kg	22	73	1	M	05/25/2016 10:00	05/27/2016 12:30	LJS	EPA 365.4
Nitrogen Kjeldahl	**3710**	mg/kg	68	230	2	M	05/18/2016 11:00	05/20/2016 13:02	MER	ASTM D3590

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723620 Sample Description: SOUTH SEDIMENT Sampled: 05/12/2016 1415

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Nitrate Nitrogen	<0.77	mg/kg	0.77	2.7	1		05/20/2016 11:00	05/20/2016 20:59	JJF	EPA 9056A
Nitrite Nitrogen	<2.9	mg/kg	2.9	9.8	1		05/20/2016 11:00	05/20/2016 20:59	JJF	EPA 9056A
Percent Moisture	**48.6**	%	0.1	0.1	1			05/16/2016 17:00	AMA	SM 2540G
Total Organic Carbon	**44100**	mg/kg	1200	4100	1			05/25/2016 12:49	JJF	L-Kahn/9060A
Metals Results										
Arsenic	**8.7**	mg/kg	0.39	1.4	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Barium	**53.0**	mg/kg	0.052	0.18	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Cadmium	<0.025	mg/kg	0.025	0.083	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Chromium	**13.6**	mg/kg	0.091	0.29	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Copper	**13.5**	mg/kg	0.16	0.49	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Iron	**9870**	mg/kg	1.2	3.8	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Lead	**12.7**	mg/kg	0.34	1.1	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Manganese	**196**	mg/kg	0.26	0.84	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Nickel	**13.1**	mg/kg	0.18	0.62	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Selenium	**2.3**	mg/kg	0.65	2.1	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Zinc	**59.4**	mg/kg	0.13	0.43	1		05/19/2016 07:00	05/19/2016 22:46	NAH	EPA 6010C
Mercury	**0.040**	mg/kg	0.00044	0.0015	1		05/18/2016 09:30	05/19/2016 12:47	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.016	mg/kg	0.016	0.050	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A
Aroclor-1221	<0.039	mg/kg	0.039	0.13	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A
Aroclor-1232	<0.027	mg/kg	0.027	0.091	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A
Aroclor-1242	<0.019	mg/kg	0.019	0.062	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A
Aroclor-1248	<0.025	mg/kg	0.025	0.083	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A
Aroclor-1254	**0.0214**	mg/kg	0.019 *	0.064	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723620 Sample Description: SOUTH SEDIMENT Sampled: 05/12/2016 1415

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1260	<0.0058	mg/kg	0.0058	0.039	1		05/17/2016 10:15	05/18/2016 21:21	JJY	EPA 8082A
1-Methylnaphthalene	**5.22**	ug/kg	0.54	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**45.7**	ug/kg	0.56	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Acenaphthene	**4.11**	ug/kg	0.50	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Acenaphthylene	**9.54**	ug/kg	0.58	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Anthracene	**14.2**	ug/kg	0.77	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**33.8**	ug/kg	1.5	5.0	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**31.2**	ug/kg	2.1	7.3	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**81.3**	ug/kg	2.5	8.3	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**28.6**	ug/kg	2.1	7.1	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**13.8**	ug/kg	1.5	5.2	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Chrysene	**43.7**	ug/kg	1.5	5.2	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**7.34**	ug/kg	1.7	6.0	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Fluoranthene	**115**	ug/kg	0.97	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Fluorene	**19.2**	ug/kg	0.56	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**26.6**	ug/kg	2.1	7.5	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Naphthalene	**5.56**	ug/kg	0.54	3.9	1	B	05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Phenanthrene	**43.2**	ug/kg	0.97	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM
Pyrene	**88.9**	ug/kg	0.97	3.9	1		05/17/2016 10:00	05/19/2016 19:26	RPN	EPA 8270D-SIM

Sub Lab Results

Hydrometer	**attached**		N/A	N/A	1			05/23/2016 00:00	SUB	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723645 Sample Description: SOUTH PARENT MATERIAL Sampled: 05/12/2016 1420

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**73.7**	%	0.1	0.1	1			05/16/2016 17:00	AMA	EPA 8000C
Ammonia Nitrogen	**33.5**	mg/kg	5.0	17	2		05/27/2016 09:15	05/27/2016 13:53	MER	SM 4500-NH3H
Cyanide	<0.17	mg/kg	0.17	0.59	1		05/17/2016 09:30	05/18/2016 14:27	LJS	EPA 9012A
Phosphorus	**629**	mg/kg	14	47	1		05/18/2016 11:00	05/20/2016 16:26	MER	EPA 365.4
Nitrogen Kjeldahl	**890**	mg/kg	24	81	1		05/18/2016 11:00	05/20/2016 13:11	MER	ASTM D3590
Nitrate Nitrogen	**3.85**	mg/kg	0.53	1.8	1		05/20/2016 11:00	05/20/2016 21:17	JJF	EPA 9056A
Nitrite Nitrogen	<2.0	mg/kg	2.0	6.7	1		05/20/2016 11:00	05/20/2016 21:17	JJF	EPA 9056A
Percent Moisture	**26.3**	%	0.1	0.1	1			05/16/2016 17:00	AMA	SM 2540G
Total Organic Carbon	**6020**	mg/kg	860	2900	1			05/25/2016 13:07	JJF	L-Kahn/9060A
Metals Results										
Arsenic	**4.5**	mg/kg	0.32	1.2	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Barium	**58.1**	mg/kg	0.042	0.15	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Cadmium	<0.020	mg/kg	0.020	0.068	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Chromium	**12.7**	mg/kg	0.074	0.23	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Copper	**15.1**	mg/kg	0.13	0.40	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Iron	**12900**	mg/kg	0.95	3.1	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Lead	**8.5**	mg/kg	0.28	0.92	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Manganese	**271**	mg/kg	0.21	0.69	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Nickel	**17.8**	mg/kg	0.15	0.51	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Selenium	**1.1**	mg/kg	0.53 *	1.7	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Zinc	**56.6**	mg/kg	0.11	0.35	1		05/19/2016 07:00	05/19/2016 22:52	NAH	EPA 6010C
Mercury	**0.031**	mg/kg	0.00029	0.00098	1		05/18/2016 09:30	05/19/2016 12:49	LJF	EPA 7471B
Organic Results										

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723645 Sample Description: SOUTH PARENT MATERIAL Sampled: 05/12/2016 1420

Analyte	Result	Units	LOD		LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1016	<0.011	mg/kg	0.011		0.035	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
Aroclor-1221	<0.027	mg/kg	0.027		0.089	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
Aroclor-1232	<0.019	mg/kg	0.019		0.063	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
Aroclor-1242	<0.013	mg/kg	0.013		0.043	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
Aroclor-1248	<0.017	mg/kg	0.017		0.058	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
Aroclor-1254	<0.013	mg/kg	0.013		0.044	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
Aroclor-1260	<0.0040	mg/kg	0.0040		0.027	1		05/17/2016 10:15	05/18/2016 21:43	JJY	EPA 8082A
1-Methylnaphthalene	**2.17**	ug/kg	0.38	*	2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**28.8**	ug/kg	0.39		2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Acenaphthene	**0.558**	ug/kg	0.35	*	2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Acenaphthylene	**2.39**	ug/kg	0.41	*	2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Anthracene	**4.35**	ug/kg	0.54		2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**3.31**	ug/kg	1.1	*	3.5	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**2.70**	ug/kg	1.5	*	5.1	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**6.62**	ug/kg	1.8		5.8	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	<1.5	ug/kg	1.5		5.0	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**1.78**	ug/kg	1.1	*	3.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Chrysene	**3.03**	ug/kg	1.1	*	3.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**1.91**	ug/kg	1.2	*	4.2	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Fluoranthene	**8.13**	ug/kg	0.68		2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Fluorene	**1.70**	ug/kg	0.39	*	2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**3.62**	ug/kg	1.5	*	5.3	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Naphthalene	**1.69**	ug/kg	0.38	*	2.7	1	B	05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Phenanthrene	**4.04**	ug/kg	0.68		2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM
Pyrene	**7.29**	ug/kg	0.68		2.7	1		05/17/2016 10:00	05/19/2016 13:09	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 723645 Sample Description: SOUTH PARENT MATERIAL Sampled: 05/12/2016 1420

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Sub Lab Results										
Hydrometer	**attached**		N/A	N/A	1			05/23/2016 00:00	SUB	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes: * Indicates a value in between the LOD (limit of detection) and the LOQ (limit of quantitation). All LOD/LOQs are adjusted to reflect dilution and also any differences in the sample weight / volume as compared to standard amounts.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: Eric T. Korthals
Project Manager
608-356-2760

QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	BOD incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Kansas NELAP ID# E-10368
Kentucky ID# 0023
ISO/IEC 17025-2005 A2LA Cert # 3806.01
North Carolina ID# 674
Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID E871111, Expires Annually
Louisiana ID # 115843
Virginia ID# 7608
Illinois NELAP ID # 002413
Wisconsin (WOSB) ID# WI-5499-WBE
Maryland ID# 344

Particle Size Distribution Report

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	0.4	2.5	76.0	20.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	99.9		
#8	99.8		
#10	99.8		
#16	99.7		
#30	99.5		
#40	99.4		
#50	99.2		
#80	98.2		
#100	97.9		
#200	96.9		

* (no specification provided)

Material Description

Gray Lean Clay to Silty Clay, Trace Sand and Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.0450 D_{85}= 0.0379 D_{60}= 0.0207
D_{50}= 0.0169 D_{30}= 0.0082 D_{15}= 0.0035
D_{10}= 0.0023 C_u= 9.15 C_c= 1.44

Classification

USCS= CL/CL-ML AASHTO=

Remarks

Natural Moisture = 36.4%
* - Visual Classification Only; No Atterberg Limits Performed

Sample Number: South Parent Mat'l

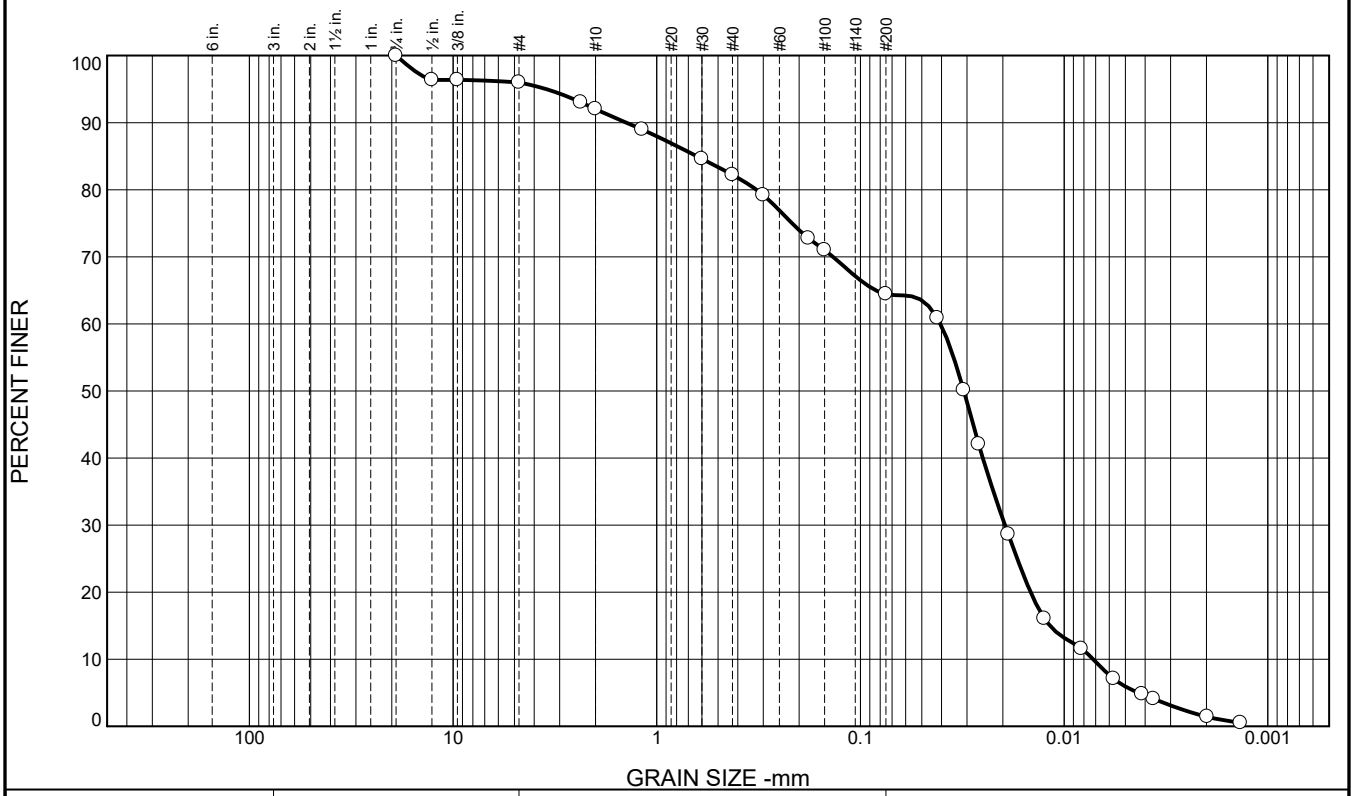
Date: 5/23/16

CGC,Inc.

Client: CT Laboratories
Project: City of Monona
(PO# 119017 CGC)
Project No: C15013-12 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.0	4.0	9.8	17.8	58.5	5.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	96.4		
3/8	96.4		
#4	96.0		
#8	93.0		
#10	92.0		
#16	89.0		
#30	84.6		
#40	82.2		
#50	79.2		
#80	72.8		
#100	71.0		
#200	64.4		

* (no specification provided)

Material Description

Dark Gray to Black Organic Silt, Some Sand, Trace Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 1.4112 D_{85}= 0.6357 D_{60}= 0.0405
D_{50}= 0.0310 D_{30}= 0.0195 D_{15}= 0.0118
D_{10}= 0.0072 C_u= 5.63 C_c= 1.30

Classification

USCS= OL AASHTO=

Remarks

Natural Moisture = 128.3%
* - Visual Classification Only, No Atterberg Limits or Loss-on-Ignition Performed

Sample Number: South Sediment

Date: 5/23/16

CGC,Inc.

Client: CT Laboratories
Project: City of Monona
(PO# 119017 CGC)
Project No: C15013-12 **Figure**

Tested By: DRW **Checked By:** DAS

Rev. 3/2015

CHAIN OF CUSTODY

Page 1 of 2

Company: Strand Associates, Inc.
Project Contact: Luke Hellermann
Telephone: (608) 251-4843
Project Name: City of Monona
Project #: Winnequah Park 1093-047
Location: Monona, WI
Sampled By: Steve Small

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Folder #: 119017
Company: STRAND ASSOCIATES
Project: CITY OF MONONA
Logged By: JLS PM ET

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____
PO #

Report To: Steve Small
EMAIL: Steve.Small@Strand.com
Company: Strand Associates, Inc
Address: 910 W. Wingra Dr
Madison, WI 53715
Invoice To:*
EMAIL:
Company: SAME
Address: ←

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	PCBs	PAHs	TOC	% Solids	Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
						Fill in Spaces with Bottles per Test							
5/12/16	10:00	S	Grab		N-7 Sediment	No	X	X	X	X	1		723601
5/12/16	10:40	S	Grab		N-8 Sediment	No	X	X	X	X	1		723602
5/12/16	11:00	S	Grab		N-9 Sediment	No	X	X	X	X	1		723603
5/12/16	11:20	S	Grab		N-10 Sediment	No	X	X	X	X	1		723604
5/12/16	13:00	S	Grab		N-11 Sediment	No	X	X	X	X	1		723605
5/12/16	11:40	S	Grab		N-12 Sediment	No	X	X	X	X	1		723606
5/12/16	12:00	S	Grab		N-13 Sediment	No	X	X	X	X	1		723607
5/12/16	12:20	S	Grab		N-14 Sediment	No	X	X	X	X	1		723608
5/12/16	12:50	S	Grab		N-15 Sediment	No	X	X	X	X	1		723609
5/12/16	10:05	S	Grab		N-7 Parent Material	No	X				1		723611
5/12/16	10:45	S	Grab		N-8 Parent Material	No	X				1		723612
5/12/16	11:05	S	Grab		N-9 Parent Material	No	X				1		723613

Turnaround Time
(Normal) RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

Relinquished By:	Date/Time	Received By:	Date/Time
			5/16/16 1158
Received by:	Date/Time	Received for Laboratory by:	Date/Time
			5/15/16 9:35

Lab Use Only
Ice Present (Yes) No
Temp 0.9 IR Gun 14
Cooler # 5676

Rev. 3/2015

CHAIN OF CUSTODY

Page 2 of 2

Company: Strand Associates, Inc.
Project Contact: Luke Hellermann
Telephone: (608) 251-4843
Project Name: City of Monona Winnelyrah Park
Project #: 1093-047
Location: Monona, WI
Sampled By: Steve Small

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here:
119017

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO #

Report To: Steve Small
EMAIL: Steve.Small@Strand.com
Company: Strand Associates, Inc.
Address: 910 W. Wingra Dr. Madison, WI 53715

Invoice To:*
EMAIL:
Company: Same
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions
(X) Metals analysis: As, Ba, Cd, Cu, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Se, & Zn
(X) Grain Size (Sieve + Hydrometer)

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time
(Normal) RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	PCBs	Metals (X)	PAH	T.O.C.	Moisture Content	Ammonia, N	Nitrate, N	Nitrite, N	% Solids	Total Phosphorus	TKN	Grain Size (X)				Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test																		
5/12/16	11:25	S	Grab		N-10 Parent Material	No	X															1		723614
5/12/16	13:05	S	Grab		N-11 Parent Material	No	X															1		723615
5/12/16	11:45	S	Grab		N-12 Parent Material	No	X															1		723616
5/12/16	12:05	S	Grab		N-13 Parent Material	No	X															1		723617
5/12/16	12:25	S	Grab		N-14 Parent Material	No	X															1		723618
5/12/16	12:55	S	Grab		N-15 Parent Material	No	X															1		723619
5/12/16	14:15	S	Comp		South Sediment	No	X	X	X	X	X	X	X	X	X	X	X	X				2		723620
5/12/16	14:20	S	Comp		South Parent Material	No	X	X	X	X	X	X	X	X	X	X	X	X				2		723645

Relinquished By:	Date/Time	Received By:	Date/Time
Received by:	Date/Time	Received for Laboratory by:	Date/Time
			5/16/16 1158
			5/15/16 9:35

Lab Use Only
Ice Present (Yes) No
Temp 0.9 IR Gun 14
Cooler # 5676

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ANALYTICAL REPORT

STRAND ASSOCIATES
STEVE SMALL
910 W WINGRA DR
MADISON, WI 53715

Project Name: WINNEQUAH PARK
Project Phase:
Contract #: 2418
Project #: 1093-057
Folder #: 128184
Purchase Order #:

Arrival Temperature: See COC
Report Date: 07/03/2017
Date Received: 06/15/2017
Reprint Date: 07/03/2017

CT LAB Sample#: 880006 Sample Description: N16 SEDIMENT Sampled: 06/14/2017 1040

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**37.9**	%	0.1	0.1	1			06/20/2017 13:59	JAS	EPA 8000C
Total Organic Carbon	**95800**	mg/kg	95	320	1			06/22/2017 10:29	AGK	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.011	mg/kg	0.011	0.037	1	Y	06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
Aroclor-1221	<0.018	mg/kg	0.018	0.066	1		06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
Aroclor-1232	<0.018	mg/kg	0.018	0.058	1		06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
Aroclor-1242	<0.016	mg/kg	0.016	0.050	1		06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
Aroclor-1248	<0.013	mg/kg	0.013	0.045	1		06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
Aroclor-1254	**0.281**	mg/kg	0.013	0.042	1		06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
Aroclor-1260	**0.0999**	mg/kg	0.0079	0.021	1		06/20/2017 15:00	06/28/2017 10:25	JJY	EPA 8082A
1-Methylnaphthalene	<7.3	ug/kg	7.3	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
2-Methylnaphthalene	<7.6	ug/kg	7.6	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Acenaphthene	**67.0**	ug/kg	6.8	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Acenaphthylene	**27.3**	ug/kg	7.8 *	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880006 Sample Description: N16 SEDIMENT Sampled: 06/14/2017 1040

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Anthracene	**167**	ug/kg	10	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**834**	ug/kg	21	68	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**689**	ug/kg	29	99	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**1250**	ug/kg	34	110	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**322**	ug/kg	29	97	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**476**	ug/kg	21	71	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Chrysene	**963**	ug/kg	21	71	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**120**	ug/kg	24	81	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Fluoranthene	**2120**	ug/kg	13	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Fluorene	**110**	ug/kg	7.6	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**425**	ug/kg	29	100	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Naphthalene	**12.2**	ug/kg	7.3 *	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Phenanthrene	**818**	ug/kg	13	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM
Pyrene	**1670**	ug/kg	13	52	10		06/23/2017 08:15	06/27/2017 14:39	RPN	EPA 8270D-SIM

CT LAB Sample#: 880007 Sample Description: N16 PARENT MATERIAL Sampled: 06/14/2017 1100

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**65.0**	%	0.1	0.1	1			06/20/2017 13:59	JAS	EPA 8000C
Total Organic Carbon	**13800**	mg/kg	55	190	1			06/22/2017 15:42	AGK	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.0062	mg/kg	0.0062	0.022	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A
Aroclor-1221	<0.011	mg/kg	0.011	0.038	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880007 Sample Description: N16 PARENT MATERIAL Sampled: 06/14/2017 1100

Analyte	Result	Units	LOD		LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1232	<0.011	mg/kg	0.011		0.034	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A
Aroclor-1242	<0.0092	mg/kg	0.0092		0.029	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A
Aroclor-1248	<0.0077	mg/kg	0.0077		0.026	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A
Aroclor-1254	<0.0077	mg/kg	0.0077		0.025	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A
Aroclor-1260	<0.0046	mg/kg	0.0046		0.012	1		06/20/2017 15:00	06/28/2017 07:09	JJY	EPA 8082A
1-Methylnaphthalene	**0.794**	ug/kg	0.43	*	3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**0.930**	ug/kg	0.45	*	3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Acenaphthene	**0.705**	ug/kg	0.40	*	3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Acenaphthylene	**1.62**	ug/kg	0.46	*	3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Anthracene	**3.78**	ug/kg	0.61		3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**21.8**	ug/kg	1.2		4.0	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**25.3**	ug/kg	1.7		5.8	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**32.9**	ug/kg	2.0		6.6	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**6.74**	ug/kg	1.7		5.7	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**9.56**	ug/kg	1.2		4.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Chrysene	**20.3**	ug/kg	1.2		4.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**2.96**	ug/kg	1.4	*	4.8	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Fluoranthene	**37.3**	ug/kg	0.77		3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Fluorene	**2.94**	ug/kg	0.45	*	3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**13.3**	ug/kg	1.7		6.0	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Naphthalene	**0.834**	ug/kg	0.43	*	3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Phenanthrene	**13.0**	ug/kg	0.77		3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM
Pyrene	**38.8**	ug/kg	0.77		3.1	1		06/23/2017 08:15	06/27/2017 17:42	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880008 Sample Description: N17 SEDIMENT Sampled: 06/14/2017 0940

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**36.0**	%	0.1	0.1	1			06/20/2017 13:59	JAS	EPA 8000C
Total Organic Carbon	**134000**	mg/kg	100	340	1			06/22/2017 10:42	AGK	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.011	mg/kg	0.011	0.039	1		06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
Aroclor-1221	<0.019	mg/kg	0.019	0.069	1		06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
Aroclor-1232	<0.019	mg/kg	0.019	0.061	1		06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
Aroclor-1242	<0.017	mg/kg	0.017	0.052	1		06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
Aroclor-1248	<0.014	mg/kg	0.014	0.047	1		06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
Aroclor-1254	**0.171**	mg/kg	0.014	0.044	1		06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
Aroclor-1260	**0.0442**	mg/kg	0.0083	0.022	1	P	06/20/2017 15:00	06/28/2017 07:31	JJY	EPA 8082A
1-Methylnaphthalene	**4.46**	ug/kg	0.78 *	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**4.46**	ug/kg	0.81 *	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Acenaphthene	**11.0**	ug/kg	0.72	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Acenaphthylene	**18.5**	ug/kg	0.83	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Anthracene	**52.2**	ug/kg	1.1	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**417**	ug/kg	2.2	7.2	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**369**	ug/kg	3.1	11	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**746**	ug/kg	7.2	24	2		06/23/2017 08:15	06/27/2017 21:48	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**116**	ug/kg	3.1	10	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**207**	ug/kg	2.2	7.5	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Chrysene	**522**	ug/kg	2.2	7.5	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**53.7**	ug/kg	2.5	8.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Fluoranthene	**853**	ug/kg	2.8	11	2		06/23/2017 08:15	06/27/2017 21:48	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880008 Sample Description: N17 SEDIMENT Sampled: 06/14/2017 0940

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Fluorene	**16.9**	ug/kg	0.81	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**179**	ug/kg	3.1	11	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Naphthalene	**4.17**	ug/kg	0.78 *	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Phenanthrene	**268**	ug/kg	1.4	5.6	1		06/23/2017 08:15	06/27/2017 18:02	RPN	EPA 8270D-SIM
Pyrene	**811**	ug/kg	2.8	11	2		06/23/2017 08:15	06/27/2017 21:48	RPN	EPA 8270D-SIM

CT LAB Sample#: 880009 Sample Description: N17 PARENT MATERIAL Sampled: 06/14/2017 0945

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**68.1**	%	0.1	0.1	1			06/20/2017 13:59	JAS	EPA 8000C
Total Organic Carbon	**11300**	mg/kg	53	180	1			06/22/2017 15:53	AGK	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.0058	mg/kg	0.0058	0.020	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
Aroclor-1221	<0.010	mg/kg	0.010	0.036	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
Aroclor-1232	<0.010	mg/kg	0.010	0.032	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
Aroclor-1242	<0.0088	mg/kg	0.0088	0.028	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
Aroclor-1248	<0.0073	mg/kg	0.0073	0.025	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
Aroclor-1254	<0.0073	mg/kg	0.0073	0.023	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
Aroclor-1260	<0.0044	mg/kg	0.0044	0.012	1		06/20/2017 15:00	06/28/2017 07:53	JJY	EPA 8082A
1-Methylnaphthalene	<0.41	ug/kg	0.41	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
2-Methylnaphthalene	<0.43	ug/kg	0.43	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Acenaphthene	<0.38	ug/kg	0.38	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Acenaphthylene	**1.51**	ug/kg	0.44 *	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880009 Sample Description: N17 PARENT MATERIAL Sampled: 06/14/2017 0945

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Anthracene	**1.93**	ug/kg	0.59 *	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**8.53**	ug/kg	1.2	3.8	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**17.4**	ug/kg	1.6	5.6	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**15.6**	ug/kg	1.9	6.3	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**5.51**	ug/kg	1.6	5.5	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**4.25**	ug/kg	1.2	4.0	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Chrysene	**8.62**	ug/kg	1.2	4.0	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**2.17**	ug/kg	1.3 *	4.6	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Fluoranthene	**10.9**	ug/kg	0.74	2.9	1	B	06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Fluorene	**0.778**	ug/kg	0.43 *	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**9.84**	ug/kg	1.6	5.7	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Naphthalene	<0.41	ug/kg	0.41	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Phenanthrene	**2.50**	ug/kg	0.74 *	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM
Pyrene	**16.4**	ug/kg	0.74	2.9	1		06/23/2017 08:15	06/27/2017 18:23	RPN	EPA 8270D-SIM

CT LAB Sample#: 880010 Sample Description: N18 SEDIMENT Sampled: 06/14/2017 0845

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**41.0**	%	0.1	0.1	1			06/20/2017 13:59	JAS	EPA 8000C
Total Organic Carbon	**45000**	mg/kg	88	300	1			06/22/2017 10:54	AGK	L-Kahn/9060A
Organic Results										
Aroclor-1016	<0.0097	mg/kg	0.0097	0.034	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A
Aroclor-1221	<0.017	mg/kg	0.017	0.061	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880010 Sample Description: N18 SEDIMENT Sampled: 06/14/2017 0845

Analyte	Result	Units	LOD		LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1232	<0.017	mg/kg	0.017		0.054	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A
Aroclor-1242	<0.015	mg/kg	0.015		0.046	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A
Aroclor-1248	<0.012	mg/kg	0.012		0.041	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A
Aroclor-1254	<0.012	mg/kg	0.012		0.039	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A
Aroclor-1260	<0.0073	mg/kg	0.0073		0.019	1		06/20/2017 15:00	06/28/2017 08:15	JJY	EPA 8082A
1-Methylnaphthalene	<0.68	ug/kg	0.68		4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
2-Methylnaphthalene	<0.71	ug/kg	0.71		4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Acenaphthene	**4.56**	ug/kg	0.64	*	4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Acenaphthylene	**4.12**	ug/kg	0.73	*	4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Anthracene	**10.5**	ug/kg	0.98		4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**72.1**	ug/kg	2.0		6.4	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**79.1**	ug/kg	2.7		9.3	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**150**	ug/kg	3.2		11	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**28.1**	ug/kg	2.7		9.0	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**50.2**	ug/kg	2.0		6.6	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Chrysene	**101**	ug/kg	2.0		6.6	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**13.1**	ug/kg	2.2		7.6	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Fluoranthene	**170**	ug/kg	1.2		4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Fluorene	**4.78**	ug/kg	0.71	*	4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**47.1**	ug/kg	2.7		9.5	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Naphthalene	**1.22**	ug/kg	0.68	*	4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Phenanthrene	**59.4**	ug/kg	1.2		4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM
Pyrene	**141**	ug/kg	1.2		4.9	1		06/23/2017 08:15	06/27/2017 18:43	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880011 Sample Description: N18 PARENT MATERIAL Sampled: 06/14/2017 0850

Analyte	Result	Units	LOD		LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results											
Solids, Percent	**58.8**	%	0.1		0.1	1			06/20/2017 13:59	JAS	EPA 8000C
Total Organic Carbon	**29000**	mg/kg	61		210	1			06/22/2017 11:03	AGK	L-Kahn/9060A
Organic Results											
Aroclor-1016	<0.0067	mg/kg	0.0067		0.024	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
Aroclor-1221	<0.012	mg/kg	0.012		0.042	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
Aroclor-1232	<0.012	mg/kg	0.012		0.037	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
Aroclor-1242	<0.010	mg/kg	0.010		0.032	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
Aroclor-1248	<0.0084	mg/kg	0.0084		0.029	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
Aroclor-1254	<0.0084	mg/kg	0.0084		0.027	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
Aroclor-1260	<0.0051	mg/kg	0.0051		0.013	1		06/20/2017 15:00	06/28/2017 08:37	JJY	EPA 8082A
1-Methylnaphthalene	<0.47	ug/kg	0.47		3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
2-Methylnaphthalene	<0.49	ug/kg	0.49		3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Acenaphthene	**0.828**	ug/kg	0.44	*	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Acenaphthylene	**1.96**	ug/kg	0.51	*	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Anthracene	**2.32**	ug/kg	0.68	*	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**4.13**	ug/kg	1.4	*	4.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**20.5**	ug/kg	1.9		6.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**13.7**	ug/kg	2.2		7.3	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Benzo(g,h,i)perylene	**7.12**	ug/kg	1.9		6.2	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**4.03**	ug/kg	1.4	*	4.6	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Chrysene	**7.35**	ug/kg	1.4		4.6	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**2.03**	ug/kg	1.5	*	5.2	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Fluoranthene	**6.96**	ug/kg	0.84		3.4	1	B	06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880011 Sample Description: N18 PARENT MATERIAL Sampled: 06/14/2017 0850

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Fluorene	**0.853**	ug/kg	0.49 *	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**10.8**	ug/kg	1.9	6.6	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Naphthalene	<0.47	ug/kg	0.47	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Phenanthrene	**1.11**	ug/kg	0.84 *	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM
Pyrene	**14.7**	ug/kg	0.84	3.4	1		06/23/2017 08:15	06/27/2017 19:04	RPN	EPA 8270D-SIM

CT LAB Sample#: 880012 Sample Description: COMPOSITE SEDIMENT Sampled: 06/14/2017 1130

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results										
Solids, Percent	**37.4**	%	0.1	0.1	1			06/16/2017 13:59	JAS	EPA 8000C
Ammonia Nitrogen	**111**	mg/kg	8.8	29	1	M	06/27/2017 09:00	06/27/2017 14:23	LJS	SM 4500-NH3H
Cyanide	<0.48	mg/kg	0.48	1.6	1	M,Y	06/20/2017 09:00	06/26/2017 10:05	MER	EPA 9012A
Phosphorus	**846**	mg/kg	91	310	1		06/21/2017 12:00	06/23/2017 14:41	MER	EPA 365.4
Nitrogen Kjeldahl	**7340**	mg/kg	510	1700	5	M	06/21/2017 12:00	06/23/2017 13:31	MER	EPA 351.2
Nitrate Nitrogen	<1.1	mg/kg	1.1	3.7	1		06/20/2017 14:40	06/21/2017 09:33	AGK	EPA 9056A
Nitrite Nitrogen	<4.0	mg/kg	4.0	13	1		06/20/2017 14:40	06/21/2017 09:33	AGK	EPA 9056A
Percent Moisture	**62.6**	%	0.1	0.1	1			06/16/2017 13:59	JAS	ASTM D2974-87
Total Organic Carbon	**97500**	mg/kg	96	320	1			06/22/2017 16:00	AGK	L-Kahn/9060A
Metals Results										
Arsenic	<1.4	mg/kg	1.4	4.9	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Barium	**123**	mg/kg	0.098	0.33	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Cadmium	**0.38**	mg/kg	0.096	0.32	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Chromium	**19.0**	mg/kg	2.9	9.5	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880012 Sample Description: COMPOSITE SEDIMENT Sampled: 06/14/2017 1130

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Copper	**35.8**	mg/kg	0.55	1.8	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Iron	**8160**	mg/kg	7.7	26	1	M	06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Lead	**138**	mg/kg	0.59	2.0	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Manganese	**271**	mg/kg	0.96	3.2	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Nickel	**10.4**	mg/kg	0.59	2.0	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Selenium	**5.1**	mg/kg	3.3 *	11	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Zinc	**228**	mg/kg	0.71	2.4	1		06/20/2017 08:30	06/21/2017 13:20	NAH	EPA 6010C
Mercury	**0.041**	mg/kg	0.00060	0.0020	1		06/22/2017 08:00	06/26/2017 09:32	LJF	EPA 7471B
Organic Results										
Aroclor-1016	<0.011	mg/kg	0.011	0.037	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
Aroclor-1221	<0.019	mg/kg	0.019	0.067	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
Aroclor-1232	<0.019	mg/kg	0.019	0.059	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
Aroclor-1242	<0.016	mg/kg	0.016	0.051	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
Aroclor-1248	<0.013	mg/kg	0.013	0.045	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
Aroclor-1254	**0.237**	mg/kg	0.013	0.043	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
Aroclor-1260	**0.0746**	mg/kg	0.0080	0.021	1		06/20/2017 15:00	06/28/2017 10:04	JJY	EPA 8082A
1-Methylnaphthalene	**8.54**	ug/kg	1.5 *	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
2-Methylnaphthalene	**8.49**	ug/kg	1.5 *	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Acenaphthene	**49.1**	ug/kg	1.4	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Acenaphthylene	**29.0**	ug/kg	1.6	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Anthracene	**110**	ug/kg	2.1	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Benzo(a)anthracene	**747**	ug/kg	4.2	14	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Benzo(a)pyrene	**621**	ug/kg	5.8	20	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Benzo(b)fluoranthene	**1290**	ug/kg	14	46	4		06/23/2017 08:15	06/27/2017 20:46	RPN	EPA 8270D-SIM

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB Sample#: 880012 Sample Description: COMPOSITE SEDIMENT Sampled: 06/14/2017 1130

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Benzo(g,h,i)perylene	**234**	ug/kg	5.8	20	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Benzo(k)fluoranthene	**415**	ug/kg	4.2	14	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Chrysene	**927**	ug/kg	4.2	14	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Dibenzo(a,h)anthracene	**97.0**	ug/kg	4.8	16	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Fluoranthene	**1740**	ug/kg	5.3	21	4		06/23/2017 08:15	06/27/2017 20:46	RPN	EPA 8270D-SIM
Fluorene	**76.9**	ug/kg	1.5	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Indeno(1,2,3-cd)pyrene	**331**	ug/kg	5.8	21	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Naphthalene	**7.66**	ug/kg	1.5 *	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Phenanthrene	**698**	ug/kg	2.6	11	2		06/23/2017 08:15	06/27/2017 16:41	RPN	EPA 8270D-SIM
Pyrene	**1540**	ug/kg	5.3	21	4		06/23/2017 08:15	06/27/2017 20:46	RPN	EPA 8270D-SIM

Sub Lab Results

Hydrometer	**attached**		N/A	N/A	1			06/29/2017 00:00	SUB	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes: * Indicates a value in between the LOD (limit of detection) and the LOQ (limit of quantitation). All LOD/LOQs are adjusted to reflect dilution and also any differences in the sample weight / volume as compared to standard amounts.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: Eric T. Korthals
Project Manager
608-356-2760

QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	BOD incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
Louisiana NELAP (primary) ID# ACC20160002
Illinois NELAP Lab ID# 200073
Kansas NELAP Lab ID# E-10368
Virginia NELAP Lab ID# 460203
Maryland Lab ID# WI00061
ISO/IEC 17025-2005 A2LA Cert # 3806.01
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID ACC20160002
Pennsylvania NELAP Lab ID# 68-04201, # 008

WWW.MI-TECH.US

715.359.9400
Mi-Tech Services, Inc.
5707 Schofield Avenue
PO Box 107
Weston, WI 54476

ANALYTICAL REPORT

CT Laboratories
Attn: Mr. Eric Korthals
1230 Lange Court
Baraboo, WI 53913
ekorthals@ctlaboratories.com

PROJECT NAME:	**WINNEQUAH PARK, WI**		
REPORT DATE:	June 28, 2017	CT LABS PO #	128184 MITECH
ANALYSIS:	HYDROMETER	MI-TECH #	10698
METHOD:	ASTM D422	DATE RECEIVED:	06/16/2017

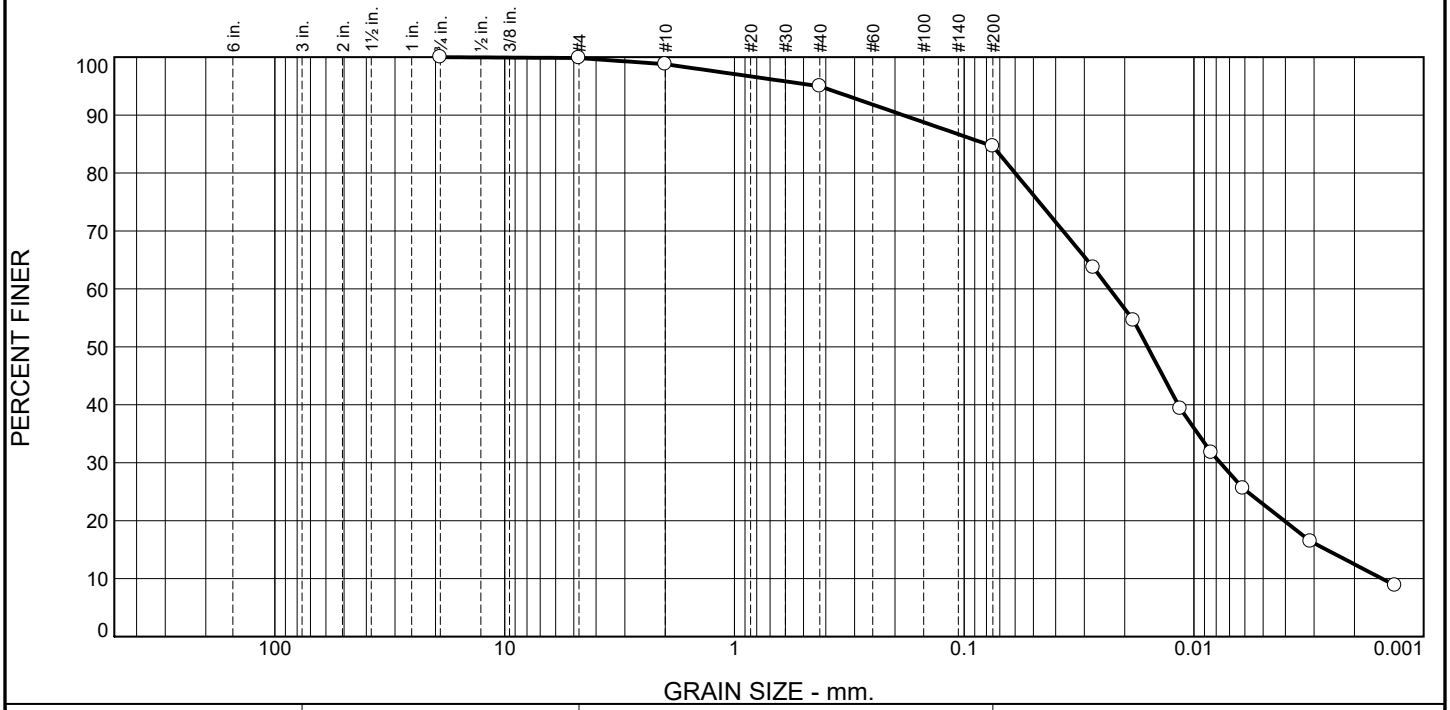
Dear Mr. Korthals:

Analytical results for the above referenced project are enclosed. Thank you for your business.

Sincerely,
Mi-Tech Services, Inc.

Stephanie M. Finamore, M.S., P.G.
Environmental Director

Particle Size Distribution Report - Hydrometer Method



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	1.0	3.8	10.4	61.7	22.9

Test Results (ASTM D 422-63 & ASTM D 2217)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
#4	99.8		
#10	98.8		
#40	95.0		
#200	84.6		
0.0274 mm.	63.7		
0.0183 mm.	54.6		
0.0115 mm.	39.3		
0.0084 mm.	31.7		
0.0061 mm.	25.6		
0.0031 mm.	16.4		
0.0013 mm.	8.8		

* (no specification provided)

Client Sample Description

Composite Sediment

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.1846 D_{85}= 0.0798 D_{60}= 0.0233
D_{50}= 0.0159 D_{30}= 0.0077 D_{15}= 0.0027
D_{10}= 0.0015 C_u= 15.32 C_c= 1.67

Remarks

Date Received: 6-16-2017 **Date Tested:** 6-16-2017

Tested By: DWB

Checked By: SMF

Title: ENVIRONMENTAL DIRECTOR

Sample Number: 880012 **Date Sampled:** 6-14-2017

Mi-Tech Services, Inc.

Weston, WI

Client: CT Laboratories
Project: Winnequah Park, WI
(PO #128184 Mi-Tech)
Project No: VP #10698 **Figure** 1

Rev. 02/2017

CHAIN OF CUSTODY

Page 1 of 1

Company: Strand Associates, Inc.
Project Contact: Luke Hellermann
Telephone: 608-251-4843
Project Name: Winnequah Park
Project #: 1093-057
Location: City of Monona
Sampled By: SSS

Folder #: 128184
Company: STRAND ASSOCIATES
Project: WINNEQUAH PARK
Logged By: BNA PM ET

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

m:
RCRA SDWA NPDES
Waste Other _____

Report To: Steve Small
EMAIL: Steve.Small@Strand.com
Company: Strand Associates, Inc.
Address: 910 W. Wingra Dr.
Madison, WI 53715

Invoice To:*
EMAIL: SAME AS ABOVE
Company:
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions
See attached note for list of Metals

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	TOC	PCBs	PAH	Total Metals*	Nitrate	Nitrite	Ammonia	TKN	Total Phosphorus	Grain Size (Hydrometer)	% Solids	Moisture Content				Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test																		
6/14/17	10:40	S	Grab		N16 Sediment	N	X	X	X													2		880006
6/14/17	11:00	S	Grab		N16 Parent Material	N	X	X	X													2		880007
6/14/17	9:40	S	Grab		N17 Sediment	N	X	X	X													2		880008
6/14/17	9:45	S	Grab		N17 Parent Material	N	X	X	X													2		880009
6/14/17	8:45	S	Grab		N18 Sediment	N	X	X	X													2		880010
6/14/17	8:50	S	Grab		N18 Parent Material	N	X	X	X													2		880011
6/14/17	11:30	S	Comp		Composite Sediment	N	X	X	X	X	X	X	X	X	X	X	X	X				3		880012

Turnaround Time
Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

Relinquished By:	Date/Time	Received By:	Date/Time
	6/14/17 @ 13:00		6/15/17 1000
Received by:	Date/Time	Received for Laboratory by:	Date/Time
			6-15-17 1029

Lab Use Only
Ice Present (Yes) No
Temp 1.8 IR Gun 14
Cooler # 503

To: CT Laboratories
1230 Lange Ct.
Baraboo, WI 53913

Re: City of Monona
Winnequah Park Upstream of Nichols Road
Lagoon Sediment Sampling
Project No. 1093-057

This cooler contains seven sediment/parent material samples including three grab sediment samples, three grab parent material samples, and one composite sediment sample. Please analyze for the following:

Six Grab Samples:

- Total Organic Carbon
- PCB
- PAH

One Composite Sample:

- PAHs
- Total Metals (As, Ba, Cd, Cr, Cu, Cn, Fe, Pb, Mn, Hg, Ni, Se, & Zn)
- PCBs
- Nitrate
- Nitrite
- Ammonia
- TKN
- Total Phosphorus
- Grain Size (by hydrometer)
- % Solids
- TOC
- Moisture Content

Please call with any questions.

Steve Small
Strand Associates, Inc.
910 West Wingra Drive
Madison, WI 53715
(608) 251-4843
Steve.small@strand.com

Winnequah Park Lagoon Sampling
City of Monona
Project 1093.047

Sediment Sampling Field Sheet

Sample Location	Top of Ice to Top of Sediment (Water Depth, feet)	Top of Ice to Parent Material (feet)	Sediment Thickness (feet)
SB-1	11.2	13.3	2.1
SB-2	1.6	4.5	2.9
SB-3	1.3	4.5	3.2
SB-4	1.6	4.5	2.9
SB-5	0.7	3.9	3.2
SB-6	1.4	5.1	3.7

Sample Location	Sample Date	Sample Time	Amount Material Collected	Material Description
SB-1	3/6/15	12:00	Approx. 0.5 Liters	Grey/black loose, wet, clayey silt to silty clay, some fine to medium sand.
SB-2	3/6/15	12:30	Approx. 0.5 Liters	Grey/black loose, wet, clayey silt to silty clay, some fine to medium sand.
SB-3	3/6/15	13:00	Approx. 0.5 Liters	Grey/black loose, wet, clayey silt to silty clay, some fine to medium sand.
SB-4	3/6/15	13:30	Approx. 0.5 Liters	Grey/black loose, wet, clayey silt to silty clay, some fine to medium sand.
SB-5	3/6/15	14:00	Approx. 0.5 Liters	Grey/black loose, wet, clayey silt to silty clay, some fine to medium sand.
SB-6	3/6/15	14:30	Approx. 0.5 Liters	Grey/black loose, wet, clayey silt to silty clay, some fine to medium sand.

Samples collected by Steve Small, Strand Associates, Inc.®
Samples (6 grab samples) were analyzed for PCBs and PAHs at CT Laboratories.

City of Monona
Winnequah Park Lagoon Sampling
Project 1093.047

All samples were collected using a 4-foot Wildco hand core sediment sampler with clear plastic liner/sampling tubes. Sampling was completed May 12, 2016.

Sediment Samples Collected North of Nichols Road

Sample	Depth to Top of Sediment (ft)	Depth to Parent Material (ft)	Sediment Thickness (ft)	Approximate Sampler Thrust (ft)	Core Sample Recovery (ft)
N-7	4.0	8.0	4.0	4.0	1.5
N-8	3.5	5.5	2.0	2.0	1.7
N-9	7.0	9.5	2.5	2.5	2.4
N-10	5.0	8.5	3.5	3.0	2.7
N-11	7.0	12.0	5.0	4.2	3.3
N-12	7.0	10.0	3.0	2.5	2.2
N-13	6.0	8.5	2.5	2.3	2.3
N-14	3.5	8.0	4.5	2.5	2.3
N-15	0.5	4.0	3.5	2.8	2.3

Sediment Samples Collected South of Nichols Road

Sample	Depth to Top of Sediment (ft)	Depth to Parent Material (ft)	Sediment Thickness (ft)	Approximate Sampler Thrust (ft)	Core Sample Recovery (ft)
S-1	1.5	3.5	2.0	1.5	1.4
S-2	2.0	4.5	2.5	2.0	1.7

Sediment Description

The top layer of sediment was typically very loose, watery, black grey MUCK. The thickness of the loose muck layer ranged from 3 to 6 inches and was typically about 4 inches thick.

Beneath the loose muck was grey to black sandy SILT that extended to the depth of parent material. The thickness of the sandy silt ranged from approximately 1.7 to 4.7 feet and contained varying amounts of shells, sticks, hair, leaves, and wood chunks.

The parent material consisted of grey, medium stiff to stiff SILT. Recovery of parent material in the sampler ranged from 1 to 8 inches, but was typically about 4 inches.

Grain size analysis completed on the composite S-1/S-2 sediment sample classified the sediment as dark grey to black organic SILT, some sand, trace gravel. The analysis detected approximately 4% gravel, 32% sand, 59% silt, and 6% clay.

Grain size analysis completed on the composite S-1/S-2 parent material sample classified the sample as grey lean CLAY to silty clay, trace sand and gravel. The analysis detected approximately 0.2% gravel, 3% sand, 76% silt, and 21% clay.

City of Monona
Winnequah Park Lagoon Sampling
Project 1093.057

All samples were collected using a 4-foot Wildco hand core sediment sampler with clear plastic liner/sampling tubes. Sampling was completed June 14, 2017.

Sediment Samples Collected North of Nichols Road

Sample	Depth to Top of Sediment (ft)	Depth to Parent Material (ft)	Sediment Thickness (ft)	Approximate Sampler Thrust (ft)	Core Sample Recovery (ft)
N-16	0.4	4.45	4.05	4.5	3.2
N-17	0.2	2.2	2	2.5	1.7
N-18	0.1	2.7	2.6	3.1	2.3

Sediment Description
The top layer of sediment was typically very loose, watery, black MUCK. The thickness of the loose muck layer ranged from 2 to 3 inches.

Beneath the loose muck was grey to black sandy SILT that extended to the depth of parent material. The thickness of the sandy silt ranged from approximately 8 inches to 2 feet and contained varying amounts of shells.

The parent material consisted of grey to grey/brown, medium stiff, clayey to sandy SILT. Recovery of parent material in the sampler was typically about 4 inches.

Grain size analysis was completed on the composite sediment sample from N-16, N-17, and N-18. The analysis classified the sediment lean SILT (ML). The analysis detected approximately 0.2% fine gravel, 15.2% sand, 61.7% silt, and 22.9% clay.

Attachment E-Anticipated Permitting Requirements
(Confirmed Through Correspondence with WDNR)

Agency	Permit	Responsibility to Obtain	Phase 1 or Phase 2 Project
Wisconsin Department of Natural Resources (WDNR)	Chapter 30 Permit (Dredging, Streambank Restoration (possible riprap exemption), Miscellaneous Structures, Boat Ramps)	City of Monona	Both
WDNR	Carriage and/or Interstitial Water Resulting from Dredging Operations General Permit (WPDES Permit No. WI-004658-05-0)	Construction Contractor	Both
WDNR	Pit/Trench Dewatering General Permit (WPDES Permit No. WI-0049344-4)	Construction Contractor	Both
WDNR	Notice of Intent (NOI) Permit-If disturb over 1 acre of land	City of Monona	Phase 1: No Phase 1&2: Yes
WDNR	Environmental Analysis and Decision on the Need for an Environmental Impact Statement (Form 1600-1): Only needed if greater than 3,000 CY of dredging	City of Monona	Phase 1: No (753 CY) Phase 1&2: No (2,814 CY)
City of Monona	Permit to Construct, Maintain, or Repair within Street Right of Way (City to confirm need)	Construction Contractor	Maybe

Gutoski, Justin J.

From: Peich, Wendy M - DNR <Wendy.Peich@wisconsin.gov>
Sent: Tuesday, November 21, 2017 11:03 AM
To: Gutoski, Justin J.
Cc: Lindert, Jon; Straka, Josh
Subject: RE: City of Monona: North Winnequah Lagoon Improvements Permitting Questions

You are very welcome Justin. Just let me know if any further questions come up! I would be glad to help.

Wendy

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

WENDY PEICH
Phone: (608) 275-3481
Wendy.peich@wisconsin.gov

From: Gutoski, Justin J. [mailto:Justin.Gutoski@strand.com]
Sent: Monday, November 20, 2017 4:52 PM
To: Peich, Wendy M - DNR <Wendy.Peich@wisconsin.gov>
Cc: Lindert, Jon <Jon.Lindert@strand.com>; Straka, Josh <Josh.Straka@strand.com>
Subject: RE: City of Monona: North Winnequah Lagoon Improvements Permitting Questions

Wendy,

Thanks for giving me a call back today after reviewing the project pdf and verifying we will not need to get a wetland delineation or submit a chapter 30 permit for wetlands. We will plan on applying for the permits as outlined below (with the possibility of the riprap exemption). I'll let you know if we have any additional questions while going through the permitting process.

Thanks again!

Justin

From: Gutoski, Justin J.
Sent: Tuesday, November 14, 2017 1:35 PM
To: 'Peich, Wendy M - DNR' <Wendy.Peich@wisconsin.gov>
Subject: RE: City of Monona: North Winnequah Lagoon Improvements Permitting Questions

Hi Wendy,

Thanks for getting back to me. I'm sorry you were unable to open the link. I attached the pdf in this email for reference (the file is very large 17 MB, therefore I tried using our file transfer site). The other questions I had were if a wetland delineation would be required for this submittal? Looking at the water surface data viewer there are no defined wetlands, but there are wetland indicator soils. Also, would there need to be an official

pre-application meeting or does this correspondence meet this requirement? Feel free to give me a call to discuss more.

Thanks!

Justin

From: Peich, Wendy M - DNR [mailto:Wendy.Peich@wisconsin.gov]
Sent: Monday, November 13, 2017 12:19 PM
To: Gutoski, Justin J. <Justin.Gutoski@strand.com>
Cc: Lindert, Jon <Jon.Lindert@strand.com>; Straka, Josh <Josh.Straka@strand.com>; Daniel Stephany <dstephany@ci.monona.wi.us>; Bruun, Brad <BBruun@ci.monona.wi.us>; Peich, Wendy M - DNR <Wendy.Peich@wisconsin.gov>
Subject: RE: City of Monona: North Winnequah Lagoon Improvements Permitting Questions

Hi Justin,
I was unable to download the materials you provided.
Below is an outline of the permit requirements given the narrative of your email.
Let me know if you have further questions!

1. The removal of ~2800 CY of sediment from Winnequah Park Lagoon will require a Dredging Individual permit.
   http://dnr.wi.gov/topic/Waterways/documents/PermitDocs/IPs/IP-dredgingLakesStreams.pdf
   All dredging permits applications have the pre-application requirement to submit project information to the Water Management Specialist PRIOR to the application being submitted.
   The following information should be emailed to me:
   - Name of waterbody and location of project
   - Volume of material to be dredged
   - Brief description of dredging method and equipment, including any containment BMPs to be used
   - Brief description of proposed disposal method and location
   - If a disposal facility is to be used, size of the disposal facility
   - Any previous sediment sampling (including field observations) and analysis data from the area to be dredged or from the proposed disposal site.
   - Copy of a map showing the area to be dredged, the depth of cut, the specific location of the proposed sediment /sampling sites and the bathymetry of the area to be dredged.
   - Anticipated starting and completion dates of the proposed project.

2. Shoreline restoration may require a riprap and/or biological shore permit application.
   http://dnr.wi.gov/topic/Waterways/shoreline/lake_erosion.html
   There are riprap exemptions and biological shore exemptions available if your project qualifies.
   http://dnr.wi.gov/topic/waterways/documents/permitExemptionChecklists/riprap.pdf
   http://dnr.wi.gov/topic/waterways/documents/permitExemptionChecklists/10-biologicalErosionControl.pdf

3. Depending on the design of the canoe launch, it may be eligible for a boat launch general permit.
   http://dnr.wi.gov/topic/Waterways/recreation/boat_ramp.html
   http://dnr.wi.gov/topic/Waterways/documents/PermitDocs/GPs/GP-BoatRamp.pdf

4. Stone steps for access would fall under “Miscellaneous structures” and require an individual permit application.

http://dnr.wi.gov/topic/Waterways/construction/misc_structures.html

5. Fish habitat structures placed in waterways NOT designated as an Area of Special natural Resource Interest (ASNRI) or in a Public Rights (PRF) feature a be eligible for a permit exemption depending on the design.
   http://dnr.wi.gov/topic/waterways/Permits/Exemptions.html
   http://dnr.wi.gov/topic/Waterways/habitat/fish_wildlife.html

6. The placement of boulders is not categorized as a "habitat structure" and would require a Miscellaneous individual permit to be placed.
   http://dnr.wi.gov/topic/Waterways/construction/misc_structures.html

You are correct that since the total disturbance for the project is over an acre, the NOI permit will cover any grading activity.

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WENDY PEICH
Water Management Specialist, Waterway and Wetland Protection
Wisconsin Department of Natural Resources
South Central Regional Offices
3911 Fish Hatchery Road
Fitchburg, WI 53711
Phone: (608) 275-3481
Fax: 608-275-3338
wendy.peich@wisconsin.gov

dnr.wi.gov

From: Gutoski, Justin J. [mailto:Justin.Gutoski@strand.com]
Sent: Tuesday, November 7, 2017 9:21 AM
To: Peich, Wendy M - DNR <Wendy.Peich@wisconsin.gov>
Cc: Lindert, Jon <Jon.Lindert@strand.com>; Straka, Josh <Josh.Straka@strand.com>; Daniel Stephany <dstephany@ci.monona.wi.us>; Bruun, Brad <BBruun@ci.monona.wi.us>
Subject: City of Monona: North Winnequah Lagoon Improvements Permitting Questions

Hi Wendy,

I'm currently helping the City of Monona on a project that includes dredging of the Winnequah Park Lagoon north of Nichols Road (Click link to see letter and Plans: https://strand.filetransfers.net/downloadPublic/4nk9ipb4tyjcnbl). The project would include removing approximately 2,800 CY of sediment (about 500 CY to landfill pending WDNR concurrence), shoreline restoration (rirap and coir fiber roll), a new canoe launch, stone steps for access, and adding other features in the lagoon such as in-stream boulders and woody debris for fish habitat.

We are requesting your feedback (by November 22, 2017) on the necessary permits that will need to be applied for to construct this project. See Attachment E-Anticipated Permitting Requirements in the link above for our initial thoughts on permitting requirements. Would this project qualify for a general Chapter 30 permit for dredging? Along with that, I was wondering what other activities we would need to apply for this project such as streambank erosion control (for streambank restoration) and fish and wildlife habitat (for woody debris fish habitat or in-stream boulders)? The total disturbance for the project is just over an acre, therefore I believe the NOI permit will cover the grading activity. Based on the water surface data viewer it doesn't appear we will be impacting any wetlands (though there are wetland indicator soils surrounding the lagoon). If we submitted the necessary materials you needed and spoke over the phone would this fulfill the pre-application requirements?

Thanks,

Justin

Justin Gutoski, P.E.
Strand Associates, Inc.®
608.251.4843 ext. 1019
justin.gutoski@strand.com | www.strand.com

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Attachment F-Anticipated Project Schedule

Activity	Anticipated Date
Submit 2017 Lake Management Planning Grant	December 10, 2016
Preliminary Design-Begin Preliminary Engineering Including Surveying, Preliminary Drawings, and Permit Meeting with Regulatory Agencies	February 15, 2017
Preliminary Design-Complete	November 15, 2017
Submit 2018 Lake Management Planning Grant	December 10, 2017
Final Design-Begin Final Engineering Including Final Drawings, Specifications, Permitting, and Bidding	February 15, 2018
Submit Required Permits	October 2018
Public Information Meeting	November 2018
Final Design-Complete	December 2018
Receipt of Permits (Assumed)	January 2019
Advertisement for Bids #1	January 2019
Advertisement for Bids #2	January 2019
Bid Opening	February 2019
Begin Construction	April/May 2019
End Construction (Substantial Completion)	November 2019
Restoration Complete (If Necessary)	Spring 2020

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison, Wisconsin 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

April 25, 2017

▶REQUIRES IMMEDIATE ACTION◀
Lake Planning
Grant# LPL164717
Grant Amount: $25,000.00

Dan Stephany, Director Public Works
City of Monona
5211 Schluter Rd.
Monona, WI 53716-2598

Dear Mr. Stephany:

Congratulations! On behalf of the Governor, we are pleased to announce the following project is approved for funding under Wisconsin's Lake Planning Grant Program: ***North Winnequah Park Lagoon Improvements Preliminary Design***

Please review the agreement including the list of conditions and return the original signed by the authorized individual **within 30 days of this letter's date** to Sandy Chancellor, your regional Environmental Grant Specialist, at 3911 Fish Hatchery Rd, Fitchburg, WI 53711. The second copy is for your file. Funds will be encumbered when the signed agreement is returned.

The period covered by the agreement is from February 15, 2017 through December 31, 2017. If you can't complete your project within this time period, please request an extension from Susan Graham, your Regional Lake Coordinator at 608-275-3329, or Sandy Chancellor at 608-275-7760. You must submit your request for your final payment within six (6) months after all work activity is complete or your grant may be terminated. Should you have any questions about the project, please contact your regional Lake Coordinator. If you have any financial questions, please contact your regional Environmental Grant Specialist above.

Under this grant program, you are entitled to a project advance payment. This advance payment is made available to you to cover costs you may incur in the initial stages of the grant process. The advance payment is equal to 75% of the State grant amount. **If you wish to request the advance payment, please check the blank provided before the signature block on the last page of the project agreement.**

Please note that this grant program is a reimbursement program. This means that the sponsor must pay all expenses incurred **before** the last 25% of the state cost share assistance is paid to the sponsor. Instructions and forms for the financial administration of the project are enclosed. Please submit your final report and final billing to Susan Graham at 3911 Fish Hatchery Rd, Fitchburg, WI 53711. Please write the project number (LPL164717) on all billing material submitted.

Advance or Reimbursement Check: Your advance or reimbursement check will be mailed to City Of Monona, Dan Stephany, 5211 Schluter Rd, Monona, WI 53716-2598. This is the check recipient that appears in our records.

You may be contacted by the Office of the Governor or your state Legislator concerning the issuance of a press release to publicize the grant award. The Department of Natural Resources is pleased to have the opportunity to participate with you in this grant project.

Sincerely,

Mary Rose Teves, Director
Bureau of Community Financial Assistance

C: Susan Graham – SCR
Sandy Chancellor – SCR

State of Wisconsin
Department of Natural Resources
P. O. Box 7921
Madison, WI 53707-7921

SURFACE WATER GRANT AGREEMENT Form 8700-246 Rev. 12-16

Notice: Personally identifiable information collected will be used for program administration and may be made available to requesters as required under Wisconsin's Open Records Law [ss.19.31 - 19.39, Wis. Stats].

Grantee/Project Sponsor	Project Number		
City Of Monona	LPL164717		
Project Title North Winnequah Park Lagoon Improvements Preliminary Design	**Grantee DUNS #:** N/A	**CFDA #** N/A	**State ID #** 370.663
Period Covered by This Agreement From February 15, 2017 Through December 31, 2017	**Name of Program** Lake Planning		

Project Scope and Budget

The City of Monona would like to do a second of 3 projects to plan a large dredging project in North Winnequah Park Lagoon, which was sited many years ago adjacent to a landfill containing PCBs. The lagoon drains eventually to Lake Monona. This project will prepare preliminary engineering plans for dredging, naturalized shoreline stabilization, and a canoe/kayak launch. This will entail holding public meetings; sediment sampling to determine locations and amounts of contaminants; doing a topographic survey of sediments in new locations to build on previously collected data; and finally, preparing an engineering plan set including technical specifications and cost estimates. The engineering plans will be shared with the City Public Works Committee, which is open to the public.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:
Kathy Hanson, Grant Program Manager, 608-266-9426, Kathleen.Hanson@wisconsin.gov

PROJECT FINANCIAL ASSISTANCE SUMMARY:

Total Project Cost	$37,313.43
Cost-share Percentage	67%
State Aid Amount	$25,000.00
Project Sponsor Share	$12,313.43
Advance Payment	$18,750.00

The following documents are incorporated into and made part of this agreement:

1. *Chapter NR 190, Wisconsin Administrative Code*
2. *Surface Water Grant Application Form #8700-284 and all attachments.*

A. General Conditions:

1. The State of Wisconsin Department of Natural Resources (Department) and the Grantee mutually agree to perform this agreement in accordance with the project proposal, application, terms, promises, conditions, plans, specifications, estimates, procedures, maps and also any assurances attached and made a part of this agreement.

2. This agreement, together with any referenced parts and attachments, shall constitute the entire agreement and previous communications or agreements pertaining to the subject matter of this agreement are superseded. Any revisions to the original grant agreement, including cost adjustments, time extensions, and scope changes, shall be made by an amendment to this agreement or other written documentation, cost amendments must be signed by the Department and the Grantee, prior to the termination date of the agreement. Time extensions to the agreement may be granted to the Grantee by the Department in writing without the requirement of the Grantee's signature. The Grantee shall submit each amendment request to the Department contact listed on page 1 of this agreement. To increase the likelihood of a successful amendment request, it is recommended that the Grantee submit the request prior to the end date of this agreement.

3. Failure by the Grantee to comply with the terms of this agreement shall not cause the suspension of all obligations of the State if, in the judgment of the Secretary of the Department, such failure was due to no fault of the Grantee. In such case, any amount required to settle at minimum costs any irrevocable obligations properly incurred shall be eligible for assistance under this agreement, at the Department's discretion.

4. The local share is the portion of the project costs to be paid by the Sponsor. State funds may not be considered part of the local share. Interest earned on fund advances under this grant cannot be considered part of the local share.

The Grantee :

5. Agrees to comply with all applicable Wisconsin Statutes and Wisconsin Administrative Codes in fulfilling terms of this agreement. In particular, the Grantee agrees to comply with the provisions of s. NR 50.17, Wis. Adm. Code, as well as comply with all applicable federal, state and local contract and bidding requirements. The Grantee should consult its legal counsel with questions concerning contracts and bidding.

6. Promises, in consideration of the promises made by the Department, to execute the project described in accordance with this agreement.

7. May decline the offer of financial assistance provided through this agreement, in writing, at any time prior to the start of the project and before expending any funds. After the project has been started or funds expended, this agreement may be rescinded, modified, or amended only by mutual agreement in writing.

8. Agrees, to save, keep harmless, defend and indemnify the Department and all its officers, employees and agents, against any and all liability claims, costs of whatever kind and nature, for injury to or death of any person or persons, and for loss or damage to any property (state or other) occurring in connection with or in any way incident to or arising out of the occupancy, use, service, operation or performance of work in connection with this agreement or omissions of Grantee's employees, agents or representatives. The Grantee is an Independent Contractor for all purposes, not an employee or agent of the Department.

9. Agrees to reimburse the Department for any and all funds the Department deems appropriate in the event the Grantee fails to comply with the conditions of this agreement or project proposal as described, or fails to provide public benefits as indicated in the project application, proposal description or this agreement. In addition, should the Grantee fail to comply with the conditions of this agreement, fail to progress due to non-appropriation of funds, or fail to progress with or complete the project to the satisfaction of the Department, all obligations of the Department under this agreement may be terminated, including further project cost payment.

10. Agrees, in connection with the performance of work under this agreement, not to discriminate against any employee or applicant for employment because of age, race, religion, color, disability, handicap, sex, physical condition, developmental disability as defined in s. 51.01(5), Wis. Stats., or national origin. This provision shall include, but not be limited to, the following: 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. The Grantee further agrees to take affirmative action to ensure equal employment opportunities, as required by law. The Grantee agrees to post in conspicuous places available, for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause.

11. Agrees that accounting for project funds shall conform to generally accepted accounting principles and practices, and shall be recorded by the Grantee in separate account.

12. To submit final reimbursement claims within six (6) months from the project end date. The Grantee may request quarterly reimbursement for grant eligible costs. Reimbursement requests must be accompanied by progress reports detailing activities that have taken place during the time period for which the Grantee is seeking reimbursement and documentation for the costs being claimed.

13. Agrees to keep all financial records, including invoices and canceled checks, that support all project costs claimed by the Grantee and make these available to the Department for inspection for 3 years after receipt of final payment.

14. Agrees that all water chemistry analyses that are part of the project shall be analyzed by either the State Lab of Hygiene or a Wisconsin certified laboratory approved by the Department for sample analysis. The DNR must pre-approved private laboratory eligibility. The grantee will first pay 100% of laboratory costs incurred directly to the laboratory and then request reimbursement from the DNR. This provision does not apply to planning projects conducted by the U.S. Geological Survey.

15. To report data and information acquired as part of the project to the Department in the format specified by the Department's regional contact.

16. Agrees to provide all information (data) gathered under this grant and final report products in electronic format and to submit these materials to the Department's regional contact as part of the final report.

17. Conditions related to invasive species movement. The applicant and operator agree to the following methods required under s. NR 109.05(2), Wis. Adm. Code for controlling, transporting and disposing of aquatic plants and animals, and moving water:
    a. Aquatic plants and animals shall be removed and water drained from all equipment as required by s. 30.07, Wis. Stats., and ss. NR 19.055 and 40.07, Wis. Adm. Code.
    b. Operator shall comply with the most recent Department-approved 'Boat, Gear, and Equipment Decontamination and Disinfection Protocol', Manual Code # 9183.1, available at http://dnr.wi.gov/topic/invasives/disinfection.html

18. Shall agree to have an annual audit performed in accordance with 2 CFR Part 200 Uniform -- Administrative Requirements, Cost Principles, & Audit Requirements for Federal Awards (also known as "Uniform Guidance") and WI State Single Audit Guidelines found at http://www.doa.state.wi.us/Divisions/Budget-and-Finance/Financial-Reporting/state-controllers-office/state-single-audit-guidelines issued by Wisconsin Department of Administration, State Controller's Office, if Grantee expends federal grant funds totaling $750,000 or more during the fiscal year and the those funds were received from a State or Federal agency.

The Department:

19. Promises, in consideration of the covenants and agreements made by the Grantee, to obligate for the Grantee the amount of $25,000.00, and to tender to the Grantee that portion of the obligation which is required to pay the Department's share of the costs based upon the state providing up to the maximum percent of eligible project costs and not to exceed the maximum allowable grant award.

20. Agrees that the Grantee shall have sole control of the method, hours worked, and time and manner of any performance under this agreement other than as specifically provided in this document. The Department takes no responsibility of supervision or direction of the performance of the agreement to be performed by the Grantee or the Grantee's employees or agents. The Department further agrees that it will exercise no control over the selection and dismissal of the Grantee's employees or agents.

21. Reserves the right only to inspect the job site or premises for the sole purpose of insuring that the performance is progressing or has been completed in compliance with the agreement.

22. Will withhold up to 25% of the state share for final payment, subject to a determination that the projects final report, and any required audits have been completed satisfactorily.

B. Special Conditions:

The following special project terms and conditions were added to this agreement before it was signed by the parties hereto:

23. Indirect costs are not eligible for reimbursement under the Surface Water Grants program. This applies to both indirect costs that the grantee may wish to charge the Department and any indirect costs that a subcontractor may wish to charge the grantee. If indirect costs are incurred, they are wholly the responsibility of the grantee.

☐ **Check here if you request advance payment totaling $18,750.00**

The person(s) signing for the Sponsor represents both personally and as an agent of his or her principal that he or she is authorized to execute this agreement and bind his or her principal, either by a duly adopted resolution or otherwise.

By Daniel M. Stephany
(Signature)
Director of Public Works
(Title)
4/26/17
(Date)

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
FOR THE SECRETARY

By
Mary Rose Teves, Director
Bureau of Community Financial Assistance

4-25-17
(Date)