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**ADDENDUM NO. 2
June 2, 2021**

**2021 Taxiway A Reconstruction – Phase 1 (East)
City of Duluth No. 21-4402
AIP No. 3-27-0024-069-2021
Duluth International Airport (DLH)
Duluth Airport Authority

SEH No. DULAI 159002**

From: Short Elliott Hendrickson Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110-3507
651.490.2000

To: Document Holders

DOCUMENT HOLDERS on the above-named project are hereby notified that this document shall be appended to, take precedence over and become part of the original bidding documents dated May 11, 2021 for this work. Bids submitted for the construction of this work shall conform to this document.

This addendum consists of 1 page and attached Wet Pond Sediment Testing Results, Drawing G0.02 Construction Safety Plan Notes, and Drawing G0.32 Quantities.

Changes to Bidding Requirements:

1. Document 00 41 00 – Bid Form: An updated bid form will be available on [BidExpress](#). Item No. 7 Remove Pavement Marking by Water Blasting estimated quantity was changed from 39,160 SF to 6,160 SF.

Changes to Drawings:

2. Drawing G0.02 Construction Safety Plan Notes: REPLACE with attached G0.02. Note 31 added regarding the addition of passenger boarding bridge gate signs.
3. Drawing G0.32 Quantities: REPLACE with attached G0.32. SEQ Notes (for Reference Only) Notes 5 added regarding the addition of passenger boarding bridge gate signs. Item Notes: Item 5 note added regarding the addition of passenger boarding bridge gate signs. SEQ Item 7 Remove Pavement Marking by Water Blasting estimate quantity was changed from 39,160 SF to 6,160 SF.

Note: Receipt of this Addendum No. 2, dated June 2, 2021 shall be acknowledged on [BidExpress](#). Failure to do so will not allow Bidder to submit Bid.

END OF ADDENDUM

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CONSTRUCTION SAFETY & PHASING NOTES:

GENERAL SAFETY NOTES

- ALL CONSTRUCTION SHALL MEET THE MOST CURRENT REQUIREMENTS OF FAA ADVISORY CIRCULARS WHICH ARE AVAILABLE ONLINE AT WWW.FAA.GOV, OR UPON REQUEST TO THE ENGINEER. APPLICABLE ADVISORY CIRCULARS MAY INCLUDE, BUT ARE NOT LIMITED TO, 150/5340-1, 5370-2, 5210-5, AND 70/7460-1.
- THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE OF CONSTRUCTION OPERATIONS AT LEAST 7 DAYS PRIOR TO THE PRE-CONSTRUCTION CONFERENCE. THE PHASING PLAN AND SCHEDULE MUST BE APPROVED BY THE ENGINEER AND THE OWNER PRIOR TO THE BEGINNING OF CONSTRUCTION OPERATIONS.
- THE CONTRACTOR WILL ADVISE THE ENGINEER AND THE AIRPORT MANAGER 72 HOURS IN ADVANCE OF ANY PROPOSED CONSTRUCTION ACTIVITIES ON THE PROJECT.
- THE AIR OPERATIONS AREA (AOA) CONSISTS OF ALL AREAS OF THE AIRPORT LOCATED WITHIN THE PERIMETER SECURITY FENCE AND INCLUDES RUNWAYS, TAXIWAYS, AIRCRAFT PARKING APRONS, AND OTHER AREAS WHERE AIRCRAFT MAY MOVE UNDER THEIR OWN POWER, AS WELL AS RUNWAY PROTECTION ZONES.
- NO WORK SHALL BE ALLOWED WITHIN THE AOA UNTIL THE REQUIRED AIRFIELD CLOSURES HAVE BEEN MADE AND THE REQUIRED CLOSURE MARKERS AND BARRICADES ARE IN PLACE. ALL NECESSARY NOTICE TO AIRMEN (NOTAMS) WILL BE ISSUED BY AIRFIELD OPERATIONS, WHICH SPECIFICALLY DETAIL THE CURRENT STATUS OF THE AIRPORT DURING CONSTRUCTION. COORDINATE WITH ENGINEER TO FACILITATE NOTAMS.
- WORK MAY BE STOPPED AT ANY TIME BY THE AIRPORT MANAGER OR ENGINEER IF IT IS DETERMINED THAT PROPER SAFETY PRECAUTIONS ARE NOT BEING TAKEN.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH INFORMATION ON THIS SAFETY & PHASING PLAN AND THE SAFETY PLAN COMPLIANCE DOCUMENT CONTAINED IN THE SPECIFICATION.

EQUIPMENT SAFETY REQUIREMENTS

- THE MAXIMUM HEIGHT OF CONSTRUCTION EQUIPMENT TO BE USED ON THE AIRPORT SHALL BE 20 FEET. IF USE OF EQUIPMENT OF GREATER THAN 20 FEET IS NEEDED, THE CONTRACTOR SHALL FILE FAA FORM 7460-1 WITH THE APPROPRIATE FAA OFFICE. FORMS ARE AVAILABLE UPON REQUEST TO THE ENGINEER. FAA FORM 7460-1 SHALL BE SUBMITTED 6 WEEKS PRIOR TO THE ANTICIPATED USE OF EQUIPMENT GREATER THAN 20 FEET.
- ALL AIRPORT AND CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED, AND FLAGGED ACCORDING TO FAA ADVISORY CIRCULARS.
- STOCKPILED MATERIALS AND EQUIPMENT STORAGE ARE NOT PERMITTED WITHIN THE RSA AND OFZ, AND IF POSSIBLE SHOULD NOT BE PERMITTED WITHIN THE OBJECT FREE AREA (OFA) OF AN OPERATIONAL RUNWAY. STOCKPILING MATERIAL IN THE OFA REQUIRES SUBMITTAL OF A 7460-1 FORM AND JUSTIFICATION PROVIDED TO THE APPROPRIATE FAA AIRPORTS REGIONAL OR DISTRICT OFFICE FOR APPROVAL.
- THE CONTRACTORS PARKED EQUIPMENT OR VEHICLES (INCLUDING PERSONAL VEHICLES) SHALL BE STORED IN THE STORAGE AREA LOCATION ON THIS SHEET. LARGE EQUIPMENT THAT IS BEING USED EACH WORKING DAY THAT CANNOT BE EASILY MOVED OUT OF THE AOA MAY BE LEFT OVERNIGHT WITHIN THE AOA AT A LOCATION DESIGNATED BY THE ENGINEER AND AIRPORT OPERATIONS.

LOW PROFILE BARRICADES & LIGHTED CLOSING CROSS MARKERS

- THE CONTRACTOR SHALL MAINTAIN LIGHTED LOW PROFILE BARRICADES THROUGHOUT THE DURATION OF THE PROJECT. MAINTAINING & PLACING DEVICES, MAINTENANCE, BATTERY REPLACEMENT, AND MOVEMENT ARE ALL INCIDENTAL TO MOBILIZATION.
- BARRICADES SHALL BE PROVIDED BY THE AIRPORT, AND PLACED & MAINTAINED BY THE CONTRACTOR. ANY DAMAGE TO THE AIRPORT'S BARRICADES SHALL BE AT THE CONTRACTOR'S EXPENSE.
- TWENTY (20) BARRICADES TO BE PROVIDED BY CONTRACTOR AS DESCRIBED IN BARRICADE DETAIL.
- LOW PROFILE BARRICADES SHALL BE PLACED AT DESIGNATED TAXIWAY CONNECTOR LOCATIONS DURING RUNWAY AND TAXIWAY CLOSURES.
- LIGHTED CLOSING CROSS MARKERS FOR TEMPORARY RUNWAY CLOSURES TO BE PROVIDED BY AIRPORT. CONTRACTOR TO PLACE AND MAINTAIN LIGHTED CROSSES. MAINTENANCE INCLUDES LIGHT BULB REPLACEMENT, FUELING, AND ANY ITEMS TO KEEP THE LIGHTING UNITS OPERATIONAL.
- LIGHTED CLOSING CROSS MARKERS SHALL BE PLACED AT DESIGNATED RUNWAY END LOCATIONS DURING RUNWAY CLOSURES AND APPROVED BY AIRPORT OPERATIONS.

CONSTRUCTION HAUL ROUTES

- THE CONTRACTOR SHALL ESTABLISH A HAUL ROUTE IN THE GENERAL AREA INDICATED ON THE PLAN. THE EXACT LOCATION OF THE HAUL ROUTE SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND AIRPORT OPERATIONS. THIS ROUTE SHALL BE USED FOR DELIVERY AND REMOVAL OF ALL CONSTRUCTION EQUIPMENT AND MATERIALS AND ACCESS TO THE SITE FOR ALL PERSONNEL FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL KEEP THE ROUTE AND ALL PAVEMENTS CLEAR OF DEBRIS AT ALL TIMES. AT A MINIMUM, THE ROUTE SHALL BE SWEEPED AT THE END OF EACH WORKING DAY. ADDITIONAL SWEEPING MAY BE REQUIRED IMMEDIATELY UPON THE NOTIFICATION BY ENGINEER.
- THE ROUTE AND ALL AIRFIELD PAVEMENTS SHALL BE THOROUGHLY CLEANED PRIOR TO REOPENING TO AIRCRAFT USE.
- ROCK CONSTRUCTION ENTRANCES AND/OR TEMPORARY HAUL ROADS MAY BE REQUIRED AS SHOWN ON THE CONSTRUCTION SAFETY PLAN.

ARFF ACCESS

- ARFF ACCESS WILL REMAIN UNCHANGED FROM NORMAL CONDITIONS. RUNWAYS WILL BE CLOSED DURING CLOSURE PERIODS NOTED.
- COORDINATE WITH ARFF PERSONNEL PRIOR TO CONSTRUCTION TO DEVELOP RUNWAY CLOSURE PROCEDURES AND ACCESS TO AIRFIELD.

UTILITIES

- ALL EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND MARKING ANY AND ALL PUBLIC AND PRIVATE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. CALL GOPHER STATE ONE CALL AT 800.252.1166 AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- IN THE EVENT UTILITIES ARE DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPAIR THE DAMAGED UTILITIES TO THE UTILITY OWNER'S REQUIREMENTS AT THE EXPENSE OF THE CONTRACTOR.

SCHEDULE

- CONTRACTOR SHALL BE GIVEN 105 CALENDAR DAYS TO ACHIEVE SUBSTANTIAL COMPLETION, 65 DAYS FOR PHASE 1A AND 40 DAYS FOR PHASE 1B.

PHASING

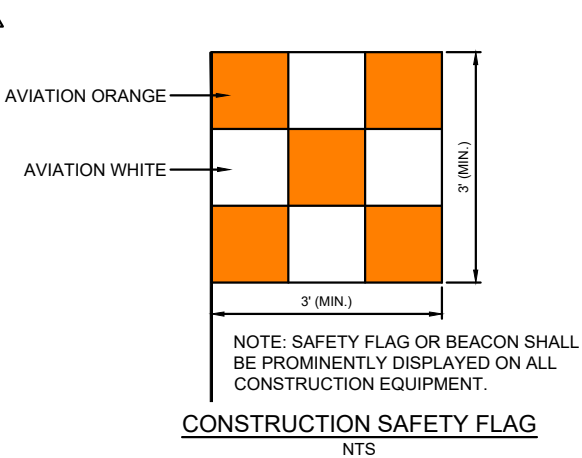
- PRIOR TO REOPENING A CLOSED RUNWAY, THAT PORTION OF THE RUNWAY SAFETY AREA WITHIN 250' OF THE CENTERLINE & 1000' BEYOND END OF RUNWAY MUST MEET FAA CRITERIA. FAA CRITERIA REQUIRES THAT THERE BE NO OPEN EXCAVATIONS OR TRENCHES, THE MAXIMUM PAVEMENT DROP-OFF BE 3 INCHES, AND ALL GRADES IN ANY DIRECTION BE LESS THAN 5 PERCENT. TEMPORARY WEDGING OR GRADING WILL BE REQUIRED TO MEET FAA CRITERIA AND MUST SUPPORT ALL ANTICIPATED AIRCRAFT.
- THE CONTRACTOR SHALL PROVIDE ALL FINAL CLEANUP WORK PRIOR TO A FINAL INSPECTION. THE CONTRACTOR SHALL ALSO CONTINUOUSLY CLEAN UP DURING EACH PHASE OF THE PROJECT.
- ALL NON-STANDARD MARKINGS/LIGHTING DURING PHASE TRANSITIONS SHALL BE NOTAMED APPROPRIATELY.

FOREIGN OBJECT DAMAGE

- CONTRACTOR SHALL NOTIFY ON DUTY AIRPORT OPERATIONS OF DAILY WORK STARTING AND SCHEDULE A CONSTRUCTION INSPECTION WITH AIRPORT OPERATIONS BEFORE CONCLUDING WORK FOR THE DAY.

PASSENGER BOARDING BRIDGE GATE SIGNS

- PASSENGER BOARDING BRIDGE GATE SIGNS: THREE-FACED, CAB-MOUNTED, INTERNALLY ILLUMINATED (LED LIGHTS) SIGNS SHALL BE PROVIDED. THE GATE SIGN SHALL BE INSTALLED ON TOP OF EACH PASSENGER BOARDING BRIDGE. THE SIGN SHALL BE ELEVATED ABOVE THE TOP OF BRIDGE WITH THE BOTTOM OF SIGN A MINIMUM OF 18 INCHES ABOVE THE CANOPY HARDWARE FORWARD OF SIGN. THE SIGN WILL BE WEATHERPROOF AND DESIGNATE THE GATE NUMBER (1-4) ON ALL THREE SIDES. EACH SURFACE OF THE SIGN IS TO BE 30" H x 42" L WITH 18" HIGH WHITE LETTERS ON A BLACK BACKGROUND. THE SIGN SHALL BE CONTROLLED BY A PHOTOCELL LOCATED ON THE UNDERSIDE OF THE PASSENGER BOARDING BRIDGE. ITEM WILL BE PAID FOR BY ITEM NO. 5 TRAFFIC PROVISIONS / AIRPORT SECURITY & DEVICES / PHASING AND SHALL INCLUDE SIGNS, INSTALLATION, MISCELLANEOUS EQUIPMENT, AND MOUNTING HARDWARE TO INSTALL SIGN.

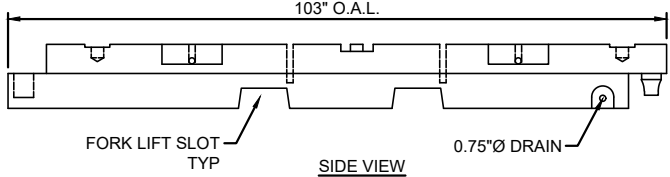
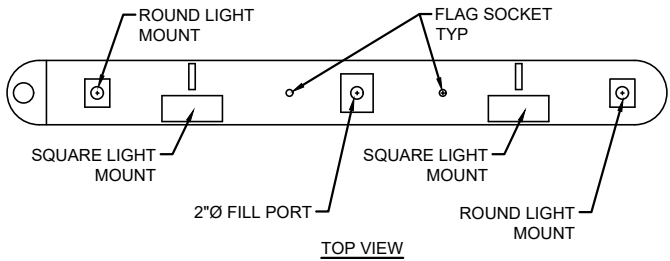
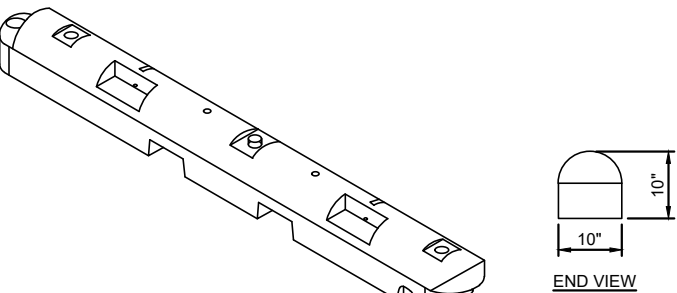


CRITICAL AIRCRAFT DATA	
ELEMENT	EXISTING
WING SPAN	DESIGN GROUP III
APPROACH SPEED	CATEGORY C
TAIL HEIGHT	30'-45'
AIRPORT REFERENCE CODE	C-III

MAX VEHICLE SPEED
15 MPH UNLESS OTHERWISE INFORMED

GROUND FREQUENCY
121.9 MHZ.

IMPORTANT NUMBERS
ON DUTY AIRPORT OPERATIONS CELL 218-391-5697
MARK PAPKO - DAA 218-625-7767
ATCT (24 HOURS OF OPERATION) 218-722-7326
EMERGENCY 911

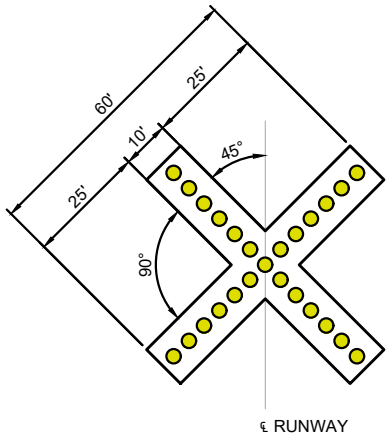


LOW LEVEL LIGHTED BARRICADES (WATER FILLED)

NTS

TEMPORARY LIGHTED CLOSING CROSS NOTES:

- TO BE PROVIDED BY THE AIRPORT. MAINTENANCE, FUELING, PLACEMENT, AND BULB REPLACEMENT RESPONSIBILITY AND PAID FOR BY CONTRACTOR.
- PER 150/5345-55A, SHALL BE A PORTABLE UNIT THAT CAN BE QUICKLY TOWED TO AND FROM THE RUNWAY.
- CONSIST OF LIGHT SOURCES THAT TRANSMIT AN AVIATION WHITE COLOR PER SAE-AS25050. THE LIGHT SOURCES MUST BE ARRANGED IN THE SHAPE OF A LETTER "X" WITH ARMS CROSSED AT AN APPROPRIATE ANGLE TO MAKE THE "X" READILY DISCERNIBLE (SEE FIGURE 2). THE ARMS MUST BE PAINTED YELLOW ON ALL SIDES SO THAT THE UNIT WILL BE CLEARLY VISIBLE WHEN IT IS IN POSITION. THE COLOR MUST BE NO. 13538, AVIATION YELLOW, PER FED-STD-595.
- BE ENERGIZED BY A PORTABLE POWER SUPPLY CAPABLE OF A MINIMUM OF 24 HOURS CONTINUOUS OPERATION. THE LIGHT UNIT MUST ALSO ACCEPT 120 VOLTS ALTERNATING CURRENT EXTERNAL POWER WHEN AVAILABLE ON THE AIRFIELD.
- SIMULTANEOUSLY FLASH ALL LIGHT SOURCES MOUNTED ON THE X AT A RATE OF 2.5 SECONDS ON ($\pm 20\%$) AND 2.5 SECONDS OFF ($\pm 20\%$).
- BE ABLE TO SWITCH BETWEEN DAY AND NIGHT INTENSITIES.
- PROVIDE A MINIMUM DAY EFFECTIVE INTENSITY OF 70,000 CANDELA (CD) AT THE BEAM CENTER, 34,000 CD AT 10 DEGREES RADIUS, 13,000 CD AT 15 DEGREES RADIUS PER FIGURE 1. THE MINIMUM NIGHT EFFECTIVE INTENSITY MUST BE 2,000 CD AT BEAM CENTER, 970 CD AT 10 DEGREES RADIUS, AND 370 CD AT 15 DEGREES.
- PROVIDE FAIL-SAFE PROTECTION TO ENSURE THAT THE UNIT STAYS ON AS CONTINUOUS LIGHT IF THE FLASHER UNIT FAILS.
- INCLUDE AN OPERATIONS PLACARD PLACED IN A CONSPICUOUS LOCATION THAT INSTRUCTS OPERATORS TO VISUALLY CHECK THE OPERATION OF THE DEVICE EVERY 2 HOURS.
- PROVIDE MEANS FOR ADJUSTING AND LEVELING TO ALLOW TILTING TO AN OPTIMUM ANGLE OF 5 DEGREES FROM VERTICAL.
- PROVIDE A MINIMUM LIGHTING ARRANGEMENT WITH AT LEAST 9 LIGHT SOURCES EQUALLY SPACED.



TEMPORARY LIGHTED CLOSING CROSS MARKER

NTS

3535 MADRAS CENTER DR
ST PAUL, MN 55110
TEL: 612.221.1000
FAX: 612.221.1005
WWW.SHIWING.COM



HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR CONTRACT DOCUMENT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

Shawn T. McManis, PE
DATE: MAY 11, 2021 LICENSE NO.: 49856

DULUTH INTERNATIONAL AIRPORT (DLH)
2021 TAXIWAY A
RECONSTRUCTION - PHASE 1
(EAST)
DULUTH, MN

6/2/21 ADDENDUM 2
DATE DESCRIPTION
MARK REVISIONS

SEH FILE NO. DULAL 159002
STATE PROJECT NO. A6901-201
ISSUE DATE MAY 11, 2021
DESIGNED BY STM
DRAWN BY SIL
Shawn T. McManis, Inc. © (SEH)
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SHEET TITLE
CONSTRUCTION
SAFETY PLAN NOTES

SHEET
G0.02

GENERAL NOTES:

1. THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL MINNESOTA'S ONE-CALL NOTIFICATION CENTER (GSOC) AT 1-800-252-1166, AND COORDINATE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING AND UTILITY WORK. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ANY UTILITIES DAMAGED DURING CONSTRUCTION TO THE SATISFACTION OF THE UTILITY OWNER AT NO COST.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS REQUIRED BY THE CONSTRUCTION COVERED IN THE PLANS.
3. ALL WORK SHALL CONFORM TO APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.
4. THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
5. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL QUANTITIES. THE CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS AS SHOWN ON THE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL EXISTING AREAS, PAVEMENTS, STRUCTURES, OR OTHER FACILITIES DAMAGED DURING CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER CONDITION AT NO COST TO THE OWNER.
7. THE CONTRACTOR SHALL REMOVE ALL DEBRIS RESULTING FROM WORK UNDER THIS CONTRACT TO AN APPROVED OFF-AIRPORT DUMP SITE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE OWNER'S REPRESENTATIVE WITH REDLINED PLANS AND AS-BUILT SURVEYS, CERTIFIED BY A PROFESSIONAL LAND SURVEYOR IN THE STATE OF MINNESOTA.
9. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

SECURITY NOTES:

1. GENERAL INTENT: IT IS INTENDED THAT THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE AIRPORT SECURITY PLAN AND WITH THE SECURITY REQUIREMENTS SPECIFIED HEREIN BY AIRPORT OPERATIONS. THE CONTRACTOR SHALL DESIGNATE TO THE ENGINEER AND AIRPORT OPERATIONS, IN WRITING, THE NAME OF THEIR "CONTRACTOR SECURITY AND SAFETY OFFICER (CSSO)." THE CSSO SHALL BE AN EMPLOYEE OF THE CONTRACTOR AND REPRESENT THE CONTRACTOR ON THE SECURITY REQUIREMENTS FOR THE CONTRACT.
2. CONTRACTOR PERSONNEL SECURITY ORIENTATION: THE CSSO SHALL BE RESPONSIBLE FOR SCHEDULING ALL TRAINING REQUIRED FOR CONTRACTOR AND SUBCONTRACTOR PERSONNEL INTENDING TO WORK ON THE SITE. ALL SECURITY REQUIREMENTS WILL BE INCORPORATED INTO A SECURITY PLAN DEVELOPED BY THE CONTRACTOR AND APPROVED BY AIRPORT OPERATIONS. ALL CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON SECURITY REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA. THE AIRPORT SHALL BRIEF AND/OR TRAIN CONSTRUCTION RELATED VEHICLE EQUIPMENT DRIVERS ON OPERATIONS WITHIN AN AIRPORT/AIRCRAFT ENVIRONMENT. AIRPORT MANAGEMENT SHALL PROVIDE PRINTED MATERIAL TO THE CONTRACTOR THAT DEPICTS HAUL ROUTES, PROHIBITED MOVEMENT AREAS, AND DESCRIBE THE CONSEQUENCES FOR NON-COMPLIANCE WITH ESTABLISHED PROCEDURES. THE AIRPORT HAS IMPLEMENTED A ZERO-TOLERANCE APPROACH TO DRIVING VIOLATIONS.
3. PERSONNEL SECURITY FIRM: THE CONTRACTOR IS REQUIRED TO HIRE PROFESSIONAL SECURITY FOR THE PROJECT. THE SECURITY FIRM SHALL PROVIDE GATE GUARDS ANYTIME ACCESS GATES TO THE AIRFIELD ARE UNLOCKED AND IN USE. THE SECURITY FIRM WILL ALSO PERFORM ROUTINE SEARCHES OF DELIVERIES IN ACCORDANCE WITH AIRPORT SECURITY PROCEDURES. THE CONTRACTOR IS REQUIRED TO RECEIVE AIRPORT AUTHORITY APPROVAL ON SELECTION OF SECURITY FIRM.
4. IDENTIFICATION - EMPLOYEES: CONSTRUCTION PERSONNEL ON SITE FOR MORE THAN 5 DAYS (CONTRACTOR AND SUBCONTRACTORS) ARE REQUIRED TO BE BADGED. THE CSSO SHALL BE RESPONSIBLE FOR COORDINATING AND COMPLETING ALL NECESSARY DOCUMENTATION FOR BADGING. AS A REQUIREMENT OF BADGING, EACH EMPLOYEE SHALL ATTEND SAFETY AND SECURITY TRAINING AS CONDUCTED BY OPERATIONS. TRAINING WILL TAKE APPROXIMATELY TWO HOURS. BADGE APPLICATION AND PROCESSING WILL TAKE APPROXIMATELY ONE HOUR. BADGES FOR CONSTRUCTION PERSONNEL REQUIRE A FEE OF \$175 PER BADGE. ALL BADGES MUST BE RETURNED TO THE AIRPORT AFTER PROJECT COMPLETION. FINAL PAYMENT WILL NOT BE MADE TO THE CONTRACTOR UNTIL ALL BADGES HAVE BEEN RETURNED. LOST BADGES RESULT IN A \$200 PENALTY. ALL CONSTRUCTION PERSONNEL SHALL COMPLETE BADGE APPLICATION AND TRAINING AT LEAST SIX WEEKS PRIOR TO NOTICE TO PROCEED. DAILY OPERATIONS SHALL INCLUDE TURNING IN BADGES AT THE END OF THE WORKDAY AND CHECKING OUT THE BADGES AT THE BEGINNING OF THE NEXT WORK DAY. THE PROFESSIONAL SECURITY FIRM SHALL HANDLE THE BADGE CHECK IN/CHECK OUT PROCESS. IN THE RARE EXCEPTION AN EMPLOYEE IS NOT BADGED, THE CONTRACTOR SHALL PROVIDE AN ESCORT FOR THE UNBADGED EMPLOYEE. THE ESCORT CANNOT PERFORM ANY OTHER WORK WHILE ESCORTING AND CAN ESCORT UP TO FIVE PEOPLE MAXIMUM. ESCORT MUST BE WITHIN EARSHOT OF ALL PEOPLE BEING ESCORTED.
5. IDENTIFICATION - VEHICLES: THE CONTRACTOR, THROUGH THE CSSO, SHALL ESTABLISH AND MAINTAIN A LIST OF CONTRACTOR AND SUBCONTRACTOR VEHICLES AUTHORIZED TO OPERATE ON THE SITE OR DELIVER TO THE SITE. THE LIST MAY BE UPDATED, AS NEEDED, TO ACCOUNT FOR DIFFERENT OPERATIONAL COMPONENTS OF THE WORK.
6. SECURE ACCESS TO THE AIRFIELD: CONTRACTOR ACCESS TO THE SITE SHALL BE SHOWN ON THE PLANS. NO OTHER ACCESS POINTS SHALL BE ALLOWED UNLESS APPROVED BY AIRPORT OPERATIONS. ALL CONTRACTOR TRAFFIC AUTHORIZED TO ENTER THE SITE SHALL BE BADGED EMPLOYEES OR ESCORTED BY BADGED CONTRACTOR PERSONNEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL TO AND FROM THE VARIOUS CONSTRUCTION AREAS ON THE SITE. THE SELECTED PROFESSIONAL SECURITY FIRM SHALL BE RESPONSIBLE FOR THE OPERATION AND SECURITY OF THE ACCESS GATES TO THE SITE. NO UNAUTHORIZED CONSTRUCTION PERSONNEL OR TRAFFIC SHALL BE ALLOWED WITHIN THE AIRPORT SECURITY FENCE. ACCESS GATES TO THE SITE SHALL BE LOCKED AND SECURED AT ALL TIMES WHEN NOT ATTENDED BY THE PROFESSIONAL SECURITY FIRM. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF ANY DEBRIS DEPOSITED ALONG THE ACCESS ROUTE AS A RESULT OF CONSTRUCTION TRAFFIC. DIRECTIONAL SIGNING FROM THE ACCESS GATE ALONG THE DELIVERY ROUTE TO THE STORAGE AREA, PLANT SITE, OR WORK SITE SHALL BE AS DIRECTED BY AIRPORT OPERATIONS. CONTRACTOR SHALL PROVIDE VISUAL CUES TO DELINEATE THE WORK AREAS. UP TO 8,000 FEET OF ORANGE SNOW FENCE, ADDITIONAL BARRELS/BARRICADES, AND SIGNAGE MAY BE REQUIRED TO CONTAIN EMPLOYEES WITHIN THE WORK AREA, AT NO ADDITIONAL COST TO THE CONTRACT.

7. COSTS ASSOCIATED WITH SECURITY: ALL COSTS ASSOCIATED WITH SECURITY ARE ASSOCIATED WITH THE TRAFFIC PROVISIONS/AIRPORT SECURITY & DEVICES/PHASING ITEM AS A LUMP SUM.
8. CONSTRUCTION RADIO CAR OPERATOR (CRCO): A CONSTRUCTION RADIO CAR IS NOT REQUIRED FOR THE PROPOSED WORK AREA. COORDINATE WITH ENGINEER OR AIRPORT FOR ACCESS OUTSIDE OF THE APPROVED WORK AREA.
9. MATERIAL DELIVERED TO THE SITE: ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE SITE WILL USE AS A DELIVERY ADDRESS THE STREET NAME ASSIGNED TO THE ACCESS POINT AT THE CONTRACTOR'S STAGING SITE AT THE AIRPORT. THE NAME "DULUTH INTERNATIONAL AIRPORT" SHALL NOT BE USED IN THE DELIVERY ADDRESS AT ANY TIME. THIS WILL PRECLUDE DELIVERY TRUCKS FROM ENTERING INTO THE TERMINAL COMPLEX, OR TAKING SHORT CUTS THROUGH THE PERIMETER GATES AND ENTERING INTO AIRCRAFT OPERATIONAL AREAS INAPPROPRIATELY.
10. FINES: PAYMENT OF ALL FINES ASSESSED TO DULUTH INTERNATIONAL AIRPORT DUE TO VIOLATIONS BY THE CONTRACTOR OF FAA, TSA, OR AIRFIELD SECURITY AND SAFETY REQUIREMENTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 10.1. IF THE RESTRICTED AREA GATE IS FOUND TO BE OPEN OR UNLOCKED AND UNATTENDED, AIRPORT SECURITY POLICE AND/OR TSA MAY ISSUE THE CONTRACTOR A CITATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COURT COSTS AND IMPOSED FINES. IN ADDITION, AN UP TO \$10,000.00 CHARGE MAY BE LEVIED BY THE DULUTH AIRPORT AUTHORITY AND/OR TSA FOR EACH VIOLATION SO DOCUMENTED. ALL FINES AND CHARGES SHALL BE DEDUCTED FROM FINAL PAYMENT TO THE CONTRACTOR IF FINES ARE NOT PAID WHEN DUE.
- 10.2. IN THE EVENT THE CONTRACTOR DEVIATED FROM THE IDENTIFIED CONSTRUCTION LIMITS OR DESIGNATED HAUL ROUTES ONTO ACTIVE RUNWAY, TAXIWAY, OR SAFETY AREA, THE CONTRACTOR WILL BE FINED \$1,000.00 PER OCCURRENCE. ALL FINES AND CHARGES SHALL BE DEDUCTED FROM FINAL PAYMENT DUE TO THE CONTRACTOR IF FINES ARE NOT PAID WHEN DUE.

EARTHWORK SUMMARY & NOTES:

1. STRIPPING, ON SITE STOCKPILING AND PLACING OF STRIPPED AND SALVAGED TOPSOIL WILL BE PAID FOR UNDER COMMON EXCAVATION.
2. EXCAVATION OR FIELD GRADING QUANTITIES OUTSIDE OF THE GRADING LIMITS SHALL BE DETERMINED QUANTITIES FROM A TOPOGRAPHIC SURVEY FROM BEFORE & AFTER THE WORK. THE SURVEY DATA COMPLETED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE ENGINEER.
3. UNCLASSIFIED EXCAVATION QUANTITIES ARE ESTIMATES ONLY. QUANTITIES FOR PAYMENT MUST BE JUSTIFIED FROM A TOPOGRAPHIC SURVEY FROM BEFORE & AFTER THE WORK. THE SURVEY DATA SHALL BE SUBMITTED TO THE ENGINEER.
4. SEE SHEET G0.50 FOR THE EARTHWORK SUMMARY AND NOTES.

SEQ NOTES (FOR REFERENCE ONLY):

1. ALL BITUMINOUS PAVING COURSES CALCULATED AT 115 LB/SY/IN
2. ALL BITUMINOUS TACK COAT CALCULATED AT 0.05 GAL/SY
3. REFLECTIVE MEDIA CALCULATED AT 115 SF/GAL AND 7 IBS/GAL
4. SCHEDULE A / SCHEDULE B CLARIFICATION: THE USE OF SCHEDULES IS FOR GRANT FUNDING PURPOSES ONLY. BOTH SCHEDULES WILL BE INCLUDED IN THE PROJECT. DETERMINATION OF QUANTITIES FOR EACH SCHEDULE WILL BE BY SURVEY, CALCULATION, OR AGREEMENT BETWEEN CONTRACTOR AND ENGINEER.
5. PASSENGER BOARDING BRIDGE GATE SIGNS: THREE-FACED, CAB-MOUNTED, INTERNALLY ILLUMINATED (LED LIGHTS) SIGNS SHALL BE PROVIDED. THE GATE SIGN SHALL BE INSTALLED ON TOP OF EACH PASSENGER BOARDING BRIDGE. THE SIGN SHALL BE ELEVATED ABOVE THE TOP OF BRIDGE WITH THE BOTTOM OF SIGN A MINIMUM OF 18 INCHES ABOVE THE CANOPY HARDWARE FORWARD OF SIGN. THE SIGN WILL BE WEATHERPROOF AND DESIGNATE THE GATE NUMBER (1-4) ON ALL THREE SIDES. EACH SURFACE OF THE SIGN IS TO BE 30" H x 42" L WITH 18" HIGH WHITE LETTERS ON A BLACK BACKGROUND. THE SIGN SHALL BE CONTROLLED BY A PHOTOCCELL LOCATED ON THE UNDERSIDE OF THE PASSENGER BOARDING BRIDGE. ITEM WILL BE PAID FOR BY ITEM NO. 5 TRAFFIC PROVISIONS / AIRPORT SECURITY & DEVICES / PHASING AND SHALL INCLUDE SIGNS, INSTALLATION, MISCELLANEOUS EQUIPMENT, AND MOUNTING HARDWARE TO INSTALL SIGN.

STATEMENT OF ESTIMATED QUANTITIES					
ITEM NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	FINAL QUANTITY
SCHEDULE A - TAXIWAY A RECONSTRUCTION, PHASE 1 (ELIGIBLE FOR AIP FUNDING)					
1	40-05	MAINTENANCE & RESTORATION OF HAUL ROADS	LS	1	
2	40-08	RESTORATION OF BATCH PLANT AND CONTRACTOR STORAGE AREAS	LS	1	
3	50-06	CONSTRUCTION LAYOUT & STAKING	LS	1	
4	60-05	FIELD OFFICE	LS	1	
5	70-08	TRAFFIC PROVISIONS/AIRPORT SECURITY & DEVICES/PHASING	LS	1	
6	70-10	ORANGE CONSTRUCTION FENCE	LF	8,000	
7	02-41-36	REMOVE PAVEMENT MARKING BY WATER BLASTING	SF	39,160	
8	02-41-36	REMOVE PAVEMENT MARKING, GROUND OFF	SF	935	
9	31-34-10	GEOTEXTILE FABRIC, TYPE V	SY	33,745	
10	32-12-13	PLANT-MIXED ASPHALT PAVEMENT	TON	6,925	
11	C-100	CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)	LS	1	
12	C-102	ROCK CONSTRUCTION ENTRANCE	EA	5	
13	C-102	SILT FENCE, TYPE PREASSEMBLED (INCLUDES MAINTENANCE)	LF	12,400	
14	C-102	FILTER LOG, TYPE WOOD FIBER BIOROLL (INCLUDES MAINTENANCE)	LF	2,200	
15	C-102	EROSION CONTROL BLANKET, CATEGORY 3N (WOOD FIBER HV)	SY	1,200	
16	C-102	INLET PROTECTION, TYPE B (INCLUDES MAINTENANCE)	EA	30	
17	C-105	MOBILIZATION	LS	1	
18	D-701	12IN REINFORCED CONCRETE PIPE (RCP)	LF	690	
19	D-701	15IN REINFORCED CONCRETE PIPE (RCP)	LF	190	
20	D-701	18IN REINFORCED CONCRETE PIPE (RCP)	LF	400	
21	D-701	24IN REINFORCED CONCRETE PIPE (RCP)	LF	515	
22	D-705	DRAIN TILE (6" PERFORATED, INCLUDING TRENCH, BACKFILL, FABRIC)	LF	3,900	
23	D-705	DRAIN TILE (6" SDR35 PVC PIPE, INCLUDING TRENCH, BACKFILL, FABRIC)	LF	450	
24	D-751	DRAIN TILE ACCESS/INSPECTION PIT	EA	16	
25	D-751	48IN DIA MANHOLE / CATCH BASIN	EA	15	
26	D-751	48IN DIA CATCH BASIN (HIGH CAPACITY CASTING)	EA	2	
27	D-751	72IN DIA CATCH BASIN	EA	1	
28	L-108	#6 AWG, 5KV, L-824, TYPE C CABLE, INSTALLED IN DUCT BANK OR CONDUIT	LF	19,404	
29	L-108	#6 AWG, SOLID, BARE, COPPER COUNTERPOISE WIRE, INSTALLED IN TRENCH	LF	9,220	
30	L-110	ELECTRICAL DEMOLITION	LS	1	
31	L-110	NON-CONCRETE ENCASED, ELECTRICAL CONDUIT, 1-WAY, 2-INCH, PVC SCH 40	LS	7,835	
32	L-110	CONCRETE ENCASED, ELECTRICAL CONDUIT, 2-WAY, 2-INCH, PVC SCH 40	LF	805	
33	L-110	DIRECTIONALLY BORED, ELECTRICAL CONDUIT, 3-WAY 2-INCH, HDPE SCH 80	LF	580	
34	L-125	INSTALL L-867B BASE CAN WITH BLANK COVER	EA	5	
35	L-125	INSTALL L-861T (L), T/W ELEVATED LED EDGE LIGHT	EA	42	
36	L-125	INSTALL L-861T (L), T/W ELEVATED LED EDGE LIGHT (EXISTING BASECAN)	EA	29	
37	L-125	INSTALL L-850C, R/W HIRL IN PAVEMENT EDGE LIGHT	EA	4	
38	L-125	INSTALL L-862, R/W ELEVATED EDGE LIGHT	EA	2	
39	L-125	INSTALL L-858(L) SIGN SIZE 1 (INCLUDING SIGN PAD)	EA	3	
40	L-125	INSTALL L-858(L) SIGN SIZE 2 (INCLUDING SIGN PAD)	EA	3	
41	L-125	INSTALL L-858(L) SIZE 2 PANEL REPLACEMENT	EA	1	
42	L-125	L-829 CONSTANT CURRENT REGULATOR	EA	2	
43	L-125	REMOVE AND SALVAGE LIGHT FIXTURE OR SIGN	LS	1	
44	L-125	INSTALL 2-CAN JUNCTION PLAZA	EA	4	
45	L-125	INSTALL HANDHOLE	EA	6	
46	P-101	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	1,330	
47	P-101	REMOVE BITUMINOUS PAVEMENT (FULL DEPTH)	SY	33,890	
48	P-101	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LF	1,510	
49	P-101	REMOVE CONCRETE PAVEMENT (FULL DEPTH)	SY	9,780	
50	P-101	REMOVE STORM PIPE	LF	2,150	
51	P-101	REMOVE STORM STRUCTURE	EA	20	
52	P-101	REMOVE DRAIN TILE CLEANOUT	EA	18	
53	P-101	REMOVE DRAIN TILE	LF	3,100	
54	P-152	COMMON EXCAVATION (EV)	CY	23,410	
55	P-152	UNCLASSIFIED OVER EXCAVATION (EV)	CY	1,000	
56	P-152	MUCK EXCAVATION (EV)	CY	200	
57	P-152	STORM SEWER PIPE JETTING	LF	4,700	
58	P-152	SUBGRADE PREPARATION	SY	31,300	
59	P-154	GRANULAR BORROW (CV)	CY	15,000	
60	P-209	CRUSHED AGGREGATE BASE COURSE (CV)	CY	5,210	
61	P-403	BITUMINOUS SURFACE COURSE	TON	775	
62	P-403	BITUMINOUS BASE COURSE	TON	775	
63	P-501	CEMENT CONCRETE PAVEMENT, 12"	SY	8,970	
64	P-501	CEMENT CONCRETE PAVEMENT, REINFORCED 12"	SY	600	
65	P-501	CEMENT CONCRETE PAVEMENT, 13"	SY	11,715	
66	P-501	CEMENT CONCRETE PAVEMENT, REINFORCED 13"	SY	2,550	
67	P-603	BITUMINOUS TACK COAT	GAL	1,540	
68	P-604	COMPRESSION JOINT SEALS FOR CONCRETE	LF	31,400	
69	P-605	JOINT SEALING FILLER	LF	2,950	
70	P-620	RUNWAY & TAXIWAY PAVEMENT MARKING	SF	71,500	
71	P-620	TEMPORARY PAVEMENT MARKING	SF	1,870	
72	P-620	REFLECTIVE MEDIA	LB	4,460	
73	S-50	WET POND EXCAVATION, HAULING, AND DISPOSAL OF CONTAMINATED SEDIM	CY	700	
74	S-50	WET POND DEWATERING OF CONTAMINATED WATER	EA	2	
75	T-901	SEEDING (INCLUDING FERTILIZER) (CUT LESS SPECIAL OR APPROVED EQUAL)	ACRE	9	
76	T-905	SELECT TOPSOIL BORROW (IMPORT) (CV)	CY	500	
77	T-908	HYDROMULCHING	ACRE	9	
SCHEDULE B - TAXIWAY A RECONSTRUCTION, PHASE 1 (NON ELIGIBLE FOR AIP FUNDING)					
78	32-12-13	PLANT-MIXED ASPHALT PAVEMENT	TON	1,500	
79	P-152	COMMON EXCAVATION (EV)	CY	4,495	
80	P-152	SUBGRADE PREPARATION	SY	5,835	
81	P-154	GRANULAR BORROW (CV)	CY	2,600	
82	P-154	GEOTEXTILE FABRIC, TYPE V	SY	6,440	
83	P-209	CRUSHED AGGREGATE BASE COURSE (CV)	CY	1,285	
84	P-403	BITUMINOUS SURFACE COURSE	TON	75	
85	P-403	BITUMINOUS BASE COURSE	TON	75	
86	P-501	CEMENT CONCRETE PAVEMENT, 13"	SY	4,520	
87	P-501	CEMENT CONCRETE PAVEMENT, REINFORCED 13"	SY	635	
88	P-603	BITUMINOUS TACK COAT	GAL	325	
89	P-604	COMPRESSION JOINT SEALS FOR CONCRETE	LF	5,350	
90	P-605	JOINT SEALANT FOR PAVEMENT	LF	700	

ITEM NOTES:

- ITEM 1: TEMPORARY HAUL ROAD ADJACENT TO TAXIWAY D INCIDENTAL TO MAINTENANCE & RESTORATION OF HAUL ROAD LINE ITEM.
- ITEM 2: RESTORATION INCLUDES GRADING, TURF ESTABLISHMENT, AND ANY OTHER MEASURES REQUIRED TO RETURN THE AREA TO PRE-CONSTRUCTION CONDITIONS OR BETTER, AS APPROVED BY ENGINEER.
- ITEM 5: ITEM INCLUDES FOUR (4) PASSENGER BOARDING BRIDGE GATE SIGNS, THEIR INSTALLATION, MISCELLANEOUS EQUIPMENT, AND MOUNTING HARDWARE TO INSTALL THE SIGNS.
- ITEM 17: MOBILIZATION SHALL BE LIMITED TO 10 PERCENT OF THE TOTAL PROJECT COST.
- ITEM 22: DRAIN TILE PAY ITEM IS TO INCLUDE TRENCHING, BACKFILL MATERIAL, PIPE, AND FABRIC.
- ITEM 23: DRAIN TILE PAY ITEM IS TO INCLUDE TRENCHING, BACKFILL MATERIAL, PIPE AND FABRIC.
- ITEM 47: 50 DUMP TRUCK LOADS OF MILLINGS ARE TO BE SALVAGED ON SITE PER PLANS. REMAINING MILLINGS SHALL BE DISPOSED OF PROPERLY OFF SITE BY CONTRACTOR.
- ITEM 54 : FOR COMMON EXCAVATION BREAK DOWN SEE EARTHWORK SUMMARY SHT. G0.50.
- ITEM 76: ESTIMATED TOPSOIL TO BE IMPORTED FROM OFF SITE SOURCES. SEE EARTHWORK SUMMARY SHT. G0.50 FOR ADDITIONAL INFORMATION.
- ITEM 79: FOR COMMON EXCAVATION BREAK DOWN SEE EARTHWORK SUMMARY SHT. G0.50.

X:\AE\DL\A1159002\5-final-dsgn\51-drawings\65-Aviation\Plans\DLH-159002_ON.dwg 6/2/2021 12:08 PM aandrashko

3535 MADRAS CENTER DR
ST PAUL, MN 55110
TEL: 651.460.7100
FAX: 651.460.7160
VIA FTS: 800.325.3055
www.sehinc.com



HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR SUPPLEMENTARY SHEET WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

[Signature]
Shawn T. McMurphy, PE
DATE: MAY 11, 2021 LICENSE NO.: 08065

DULUTH INTERNATIONAL AIRPORT (DLH)
2021 TAXIWAY A
RECONSTRUCTION - PHASE 1
(EAST)
DULUTH, MN

6/2/21 ADDENDUM 2
5/27/21 ADDENDUM 1
DATE DESCRIPTION
MARK REVISIONS

DLH-159002
STATE PROJECT NO. A6901-201
ISSUE DATE MAY 11, 2021
DESIGNED BY STM
DRAWN BY AKA
Shawn T. McMurphy, Inc. © (SEH)
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SHEET TITLE
QUANTITIES

SHEET

G0.22

June 01, 2021

Erik Bye
SEH, Inc.
3535 Vadnais Center Dr.
Saint Paul, MN 55110

RE: Project: 159002 DULAI
Pace Project No.: 10560833

Dear Erik Bye:

Enclosed are the analytical results for sample(s) received by the laboratory on May 18, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

cc: Joseph Pearson, SEH



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 159002 DULAI

Pace Project No.: 10560833

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01*

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 159002 DULAI

Pace Project No.: 10560833

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10560833001	SED-01	Solid	05/17/21 11:30	05/18/21 09:45
10560833002	SED-02	Solid	05/17/21 11:50	05/18/21 09:45
10560833003	SED-03	Solid	05/17/21 12:15	05/18/21 09:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 159002 DULAI

Pace Project No.: 10560833

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10560833001	SED-01	EPA 8082A	RAG	11	PASI-M
		WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	NS1	2	PASI-M
		EPA 6010D	DCF, DM	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JL5	1	PASI-M
		EPA 8270E by SIM	JNG	18	PASI-M
		EPA 8260D	JT2	72	PASI-M
10560833002	SED-02	EPA 8082A	RAG	11	PASI-M
		WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	NS1	2	PASI-M
		EPA 6010D	DCF, DM	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JL5	1	PASI-M
		EPA 8270E by SIM	JNG	18	PASI-M
		EPA 8260D	JT2	72	PASI-M
10560833003	SED-03	EPA 8082A	RAG	11	PASI-M
		WI MOD DRO	TT2	2	PASI-M
		WI MOD GRO	NS1	2	PASI-M
		EPA 6010D	DCF, DM	7	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JL5	1	PASI-M
		EPA 8270E by SIM	JNG	18	PASI-M
		EPA 8260D	JT2	72	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 159002 DULAI

Pace Project No.: 10560833

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10560833001	SED-01					
WI MOD DRO	WDRO C10-C28	48.3	mg/kg	12.1	05/23/21 17:14	T6
EPA 6010D	Barium	27.3	mg/kg	0.58	05/25/21 12:30	
EPA 6010D	Chromium	11.3	mg/kg	0.58	05/25/21 12:30	
EPA 6010D	Lead	7.4	mg/kg	1.2	05/25/21 14:01	
ASTM D2974	Percent Moisture	18.5	%	0.10	05/24/21 14:42	N2
EPA 8270E by SIM	Benzo(a)anthracene	44.1	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Benzo(a)pyrene	50.6	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Benzo(b)fluoranthene	82.0	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Benzo(g,h,i)perylene	34.7	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Benzo(k)fluoranthene	25.3	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Chrysene	51.9	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Fluoranthene	90.2	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Indeno(1,2,3-cd)pyrene	40.6	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Phenanthrene	30.8	ug/kg	12.3	05/24/21 15:05	
EPA 8270E by SIM	Pyrene	72.4	ug/kg	12.3	05/24/21 15:05	
10560833002	SED-02					
EPA 6010D	Barium	39.2	mg/kg	0.56	05/25/21 12:32	
EPA 6010D	Chromium	20.6	mg/kg	0.56	05/25/21 12:32	
EPA 6010D	Lead	4.6	mg/kg	2.8	05/25/21 14:02	
ASTM D2974	Percent Moisture	14.1	%	0.10	05/24/21 14:42	N2
EPA 8270E by SIM	Benzo(a)pyrene	12.1	ug/kg	11.6	05/24/21 15:24	
EPA 8270E by SIM	Benzo(b)fluoranthene	17.5	ug/kg	11.6	05/24/21 15:24	
EPA 8270E by SIM	Fluoranthene	13.7	ug/kg	11.6	05/24/21 15:24	
EPA 8270E by SIM	Pyrene	12.8	ug/kg	11.6	05/24/21 15:24	
10560833003	SED-03					
WI MOD DRO	WDRO C10-C28	830	mg/kg	119	05/24/21 09:11	T6
EPA 6010D	Arsenic	1.7	mg/kg	1.3	05/25/21 12:34	
EPA 6010D	Barium	39.4	mg/kg	0.67	05/25/21 12:34	
EPA 6010D	Cadmium	0.36	mg/kg	0.20	05/25/21 12:34	
EPA 6010D	Chromium	18.5	mg/kg	0.67	05/25/21 12:34	
EPA 6010D	Lead	9.7	mg/kg	1.3	05/25/21 14:04	
EPA 7471B	Mercury	0.028	mg/kg	0.027	05/26/21 12:57	
ASTM D2974	Percent Moisture	28.7	%	0.10	05/24/21 14:43	N2
EPA 8270E by SIM	Benzo(a)anthracene	23.2	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Benzo(a)pyrene	38.2	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Benzo(b)fluoranthene	69.6	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Benzo(g,h,i)perylene	24.7	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Benzo(k)fluoranthene	21.3	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Chrysene	38.6	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Fluoranthene	56.0	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Indeno(1,2,3-cd)pyrene	29.8	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Phenanthrene	22.4	ug/kg	14.0	05/24/21 15:43	
EPA 8270E by SIM	Pyrene	50.2	ug/kg	14.0	05/24/21 15:43	
EPA 8260D	1,2,4-Trimethylbenzene	272	ug/kg	82.5	05/26/21 04:32	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI
Pace Project No.: 10560833

Sample: SED-01 **Lab ID: 10560833001** Collected: 05/17/21 11:30 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB									
Analytical Method: EPA 8082A Preparation Method: EPA 3546									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	ND	ug/kg	60.2	20.8	1	05/19/21 12:22	05/20/21 14:35	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	60.2	28.2	1	05/19/21 12:22	05/20/21 14:35	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	60.2	24.8	1	05/19/21 12:22	05/20/21 14:35	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	60.2	21.9	1	05/19/21 12:22	05/20/21 14:35	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	60.2	36.0	1	05/19/21 12:22	05/20/21 14:35	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	60.2	32.9	1	05/19/21 12:22	05/20/21 14:35	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	60.2	22.3	1	05/19/21 12:22	05/20/21 14:35	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	60.2	30.0	1	05/19/21 12:22	05/20/21 14:35	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	60.2	28.4	1	05/19/21 12:22	05/20/21 14:35	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	81	%.	59-125		1	05/19/21 12:22	05/20/21 14:35	877-09-8	
Decachlorobiphenyl (S)	74	%.	57-125		1	05/19/21 12:22	05/20/21 14:35	2051-24-3	
WIDRO GCS									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Pace Analytical Services - Minneapolis									
WDRO C10-C28	48.3	mg/kg	12.1	4.5	1	05/19/21 17:58	05/23/21 17:14		T6
Surrogates									
n-Triacontane (S)	84	%.	50-150		1	05/19/21 17:58	05/23/21 17:14		
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil									
Pace Analytical Services - Minneapolis									
Gasoline Range Organics	ND	mg/kg	14.1	4.0	1	05/26/21 14:31	05/27/21 19:30		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	80-150		1	05/26/21 14:31	05/27/21 19:30	98-08-8	
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3050B									
Pace Analytical Services - Minneapolis									
Arsenic	ND	mg/kg	1.2	0.24	1	05/21/21 14:39	05/25/21 12:30	7440-38-2	
Barium	27.3	mg/kg	0.58	0.092	1	05/21/21 14:39	05/25/21 12:30	7440-39-3	
Cadmium	ND	mg/kg	0.17	0.035	1	05/21/21 14:39	05/25/21 12:30	7440-43-9	
Chromium	11.3	mg/kg	0.58	0.12	1	05/21/21 14:39	05/25/21 12:30	7440-47-3	
Lead	7.4	mg/kg	1.2	0.26	2	05/21/21 14:39	05/25/21 14:01	7439-92-1	
Selenium	ND	mg/kg	1.2	0.38	1	05/21/21 14:39	05/25/21 12:30	7782-49-2	
Silver	ND	mg/kg	0.58	0.042	1	05/21/21 14:39	05/25/21 12:30	7440-22-4	
7471B Mercury									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Pace Analytical Services - Minneapolis									
Mercury	ND	mg/kg	0.020	0.0089	1	05/21/21 18:28	05/26/21 12:48	7439-97-6	
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	18.5	%	0.10	0.10	1		05/24/21 14:42		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-01 Lab ID: 10560833001 Collected: 05/17/21 11:30 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/kg	12.3	0.55	1	05/19/21 14:46	05/24/21 15:05	83-32-9	
Acenaphthylene	ND	ug/kg	12.3	0.84	1	05/19/21 14:46	05/24/21 15:05	208-96-8	
Anthracene	ND	ug/kg	12.3	0.39	1	05/19/21 14:46	05/24/21 15:05	120-12-7	
Benzo(a)anthracene	44.1	ug/kg	12.3	0.50	1	05/19/21 14:46	05/24/21 15:05	56-55-3	
Benzo(a)pyrene	50.6	ug/kg	12.3	0.69	1	05/19/21 14:46	05/24/21 15:05	50-32-8	
Benzo(b)fluoranthene	82.0	ug/kg	12.3	0.57	1	05/19/21 14:46	05/24/21 15:05	205-99-2	
Benzo(g,h,i)perylene	34.7	ug/kg	12.3	0.57	1	05/19/21 14:46	05/24/21 15:05	191-24-2	
Benzo(k)fluoranthene	25.3	ug/kg	12.3	0.59	1	05/19/21 14:46	05/24/21 15:05	207-08-9	
Chrysene	51.9	ug/kg	12.3	0.49	1	05/19/21 14:46	05/24/21 15:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.3	0.81	1	05/19/21 14:46	05/24/21 15:05	53-70-3	
Fluoranthene	90.2	ug/kg	12.3	0.74	1	05/19/21 14:46	05/24/21 15:05	206-44-0	
Fluorene	ND	ug/kg	12.3	0.74	1	05/19/21 14:46	05/24/21 15:05	86-73-7	
Indeno(1,2,3-cd)pyrene	40.6	ug/kg	12.3	0.66	1	05/19/21 14:46	05/24/21 15:05	193-39-5	
Naphthalene	ND	ug/kg	12.3	0.55	1	05/19/21 14:46	05/24/21 15:05	91-20-3	
Phenanthrene	30.8	ug/kg	12.3	0.86	1	05/19/21 14:46	05/24/21 15:05	85-01-8	
Pyrene	72.4	ug/kg	12.3	0.79	1	05/19/21 14:46	05/24/21 15:05	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	52	%	50-125		1	05/19/21 14:46	05/24/21 15:05	321-60-8	
p-Terphenyl-d14 (S)	51	%	51-125		1	05/19/21 14:46	05/24/21 15:05	1718-51-0	

8260D MSV 5030 Med Level

Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B

Pace Analytical Services - Minneapolis

Acetone	ND	ug/kg	1170	554	1	05/24/21 15:08	05/26/21 04:50	67-64-1	
Allyl chloride	ND	ug/kg	235	47.5	1	05/24/21 15:08	05/26/21 04:50	107-05-1	
Benzene	ND	ug/kg	23.5	10.8	1	05/24/21 15:08	05/26/21 04:50	71-43-2	
Bromobenzene	ND	ug/kg	58.6	7.7	1	05/24/21 15:08	05/26/21 04:50	108-86-1	
Bromochloromethane	ND	ug/kg	58.6	29.0	1	05/24/21 15:08	05/26/21 04:50	74-97-5	
Bromodichloromethane	ND	ug/kg	58.6	18.6	1	05/24/21 15:08	05/26/21 04:50	75-27-4	
Bromoform	ND	ug/kg	235	77.6	1	05/24/21 15:08	05/26/21 04:50	75-25-2	
Bromomethane	ND	ug/kg	586	110	1	05/24/21 15:08	05/26/21 04:50	74-83-9	v2
2-Butanone (MEK)	ND	ug/kg	293	36.6	1	05/24/21 15:08	05/26/21 04:50	78-93-3	
n-Butylbenzene	ND	ug/kg	58.6	12.9	1	05/24/21 15:08	05/26/21 04:50	104-51-8	
sec-Butylbenzene	ND	ug/kg	58.6	25.7	1	05/24/21 15:08	05/26/21 04:50	135-98-8	
tert-Butylbenzene	ND	ug/kg	58.6	18.2	1	05/24/21 15:08	05/26/21 04:50	98-06-6	
Carbon tetrachloride	ND	ug/kg	58.6	28.5	1	05/24/21 15:08	05/26/21 04:50	56-23-5	
Chlorobenzene	ND	ug/kg	58.6	9.7	1	05/24/21 15:08	05/26/21 04:50	108-90-7	
Chloroethane	ND	ug/kg	586	92.9	1	05/24/21 15:08	05/26/21 04:50	75-00-3	
Chloroform	ND	ug/kg	58.6	25.8	1	05/24/21 15:08	05/26/21 04:50	67-66-3	
Chloromethane	ND	ug/kg	235	31.9	1	05/24/21 15:08	05/26/21 04:50	74-87-3	
2-Chlorotoluene	ND	ug/kg	58.6	14.4	1	05/24/21 15:08	05/26/21 04:50	95-49-8	
4-Chlorotoluene	ND	ug/kg	58.6	7.5	1	05/24/21 15:08	05/26/21 04:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	586	138	1	05/24/21 15:08	05/26/21 04:50	96-12-8	
Dibromochloromethane	ND	ug/kg	235	19.8	1	05/24/21 15:08	05/26/21 04:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	58.6	20.5	1	05/24/21 15:08	05/26/21 04:50	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-01 **Lab ID: 10560833001** Collected: 05/17/21 11:30 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level									
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B									
Pace Analytical Services - Minneapolis									
Dibromomethane	ND	ug/kg	58.6	25.6	1	05/24/21 15:08	05/26/21 04:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	58.6	11.1	1	05/24/21 15:08	05/26/21 04:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	58.6	7.3	1	05/24/21 15:08	05/26/21 04:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	58.6	9.3	1	05/24/21 15:08	05/26/21 04:50	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	235	31.2	1	05/24/21 15:08	05/26/21 04:50	75-71-8	
1,1-Dichloroethane	ND	ug/kg	58.6	26.4	1	05/24/21 15:08	05/26/21 04:50	75-34-3	
1,2-Dichloroethane	ND	ug/kg	58.6	22.4	1	05/24/21 15:08	05/26/21 04:50	107-06-2	
1,1-Dichloroethene	ND	ug/kg	58.6	21.0	1	05/24/21 15:08	05/26/21 04:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	58.6	16.3	1	05/24/21 15:08	05/26/21 04:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	58.6	26.9	1	05/24/21 15:08	05/26/21 04:50	156-60-5	
Dichlorofluoromethane	ND	ug/kg	586	163	1	05/24/21 15:08	05/26/21 04:50	75-43-4	
1,2-Dichloropropane	ND	ug/kg	58.6	26.7	1	05/24/21 15:08	05/26/21 04:50	78-87-5	
1,3-Dichloropropane	ND	ug/kg	58.6	21.6	1	05/24/21 15:08	05/26/21 04:50	142-28-9	
2,2-Dichloropropane	ND	ug/kg	235	22.3	1	05/24/21 15:08	05/26/21 04:50	594-20-7	
1,1-Dichloropropene	ND	ug/kg	58.6	24.2	1	05/24/21 15:08	05/26/21 04:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	58.6	5.7	1	05/24/21 15:08	05/26/21 04:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	58.6	7.4	1	05/24/21 15:08	05/26/21 04:50	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	235	50.0	1	05/24/21 15:08	05/26/21 04:50	60-29-7	
Ethylbenzene	ND	ug/kg	58.6	10.4	1	05/24/21 15:08	05/26/21 04:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	293	26.5	1	05/24/21 15:08	05/26/21 04:50	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	58.6	22.2	1	05/24/21 15:08	05/26/21 04:50	98-82-8	
p-Isopropyltoluene	ND	ug/kg	58.6	18.5	1	05/24/21 15:08	05/26/21 04:50	99-87-6	
Methylene Chloride	ND	ug/kg	235	111	1	05/24/21 15:08	05/26/21 04:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	293	28.0	1	05/24/21 15:08	05/26/21 04:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	58.6	11.7	1	05/24/21 15:08	05/26/21 04:50	1634-04-4	
Naphthalene	ND	ug/kg	235	65.9	1	05/24/21 15:08	05/26/21 04:50	91-20-3	
n-Propylbenzene	ND	ug/kg	58.6	12.3	1	05/24/21 15:08	05/26/21 04:50	103-65-1	
Styrene	ND	ug/kg	58.6	8.4	1	05/24/21 15:08	05/26/21 04:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	58.6	15.5	1	05/24/21 15:08	05/26/21 04:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	58.6	18.9	1	05/24/21 15:08	05/26/21 04:50	79-34-5	
Tetrachloroethene	ND	ug/kg	58.6	27.8	1	05/24/21 15:08	05/26/21 04:50	127-18-4	
Tetrahydrofuran	ND	ug/kg	2350	483	1	05/24/21 15:08	05/26/21 04:50	109-99-9	
Toluene	ND	ug/kg	58.6	25.1	1	05/24/21 15:08	05/26/21 04:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	58.6	18.1	1	05/24/21 15:08	05/26/21 04:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	58.6	14.4	1	05/24/21 15:08	05/26/21 04:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	58.6	25.2	1	05/24/21 15:08	05/26/21 04:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	58.6	29.1	1	05/24/21 15:08	05/26/21 04:50	79-00-5	
Trichloroethene	ND	ug/kg	58.6	24.7	1	05/24/21 15:08	05/26/21 04:50	79-01-6	
Trichlorofluoromethane	ND	ug/kg	235	111	1	05/24/21 15:08	05/26/21 04:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	235	68.4	1	05/24/21 15:08	05/26/21 04:50	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	235	103	1	05/24/21 15:08	05/26/21 04:50	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	58.6	25.8	1	05/24/21 15:08	05/26/21 04:50	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	58.6	18.8	1	05/24/21 15:08	05/26/21 04:50	108-67-8	
Vinyl chloride	ND	ug/kg	58.6	11.6	1	05/24/21 15:08	05/26/21 04:50	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-01 **Lab ID: 10560833001** Collected: 05/17/21 11:30 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis									
Xylene (Total)	ND	ug/kg	176	28.3	1	05/24/21 15:08	05/26/21 04:50	1330-20-7	
m&p-Xylene	ND	ug/kg	117	18.6	1	05/24/21 15:08	05/26/21 04:50	179601-23-1	
o-Xylene	ND	ug/kg	58.6	28.3	1	05/24/21 15:08	05/26/21 04:50	95-47-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	89	%.	73-125		1	05/24/21 15:08	05/26/21 04:50	17060-07-0	
Toluene-d8 (S)	109	%.	75-125		1	05/24/21 15:08	05/26/21 04:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1	05/24/21 15:08	05/26/21 04:50	460-00-4	

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ANALYTICAL RESULTS

Project: 159002 DULAI
Pace Project No.: 10560833

Sample: SED-02 **Lab ID: 10560833002** Collected: 05/17/21 11:50 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB									
Analytical Method: EPA 8082A Preparation Method: EPA 3546									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	ND	ug/kg	57.8	20.0	1	05/19/21 12:22	05/20/21 15:22	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	57.8	27.1	1	05/19/21 12:22	05/20/21 15:22	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	57.8	23.8	1	05/19/21 12:22	05/20/21 15:22	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	57.8	21.0	1	05/19/21 12:22	05/20/21 15:22	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	57.8	34.5	1	05/19/21 12:22	05/20/21 15:22	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	57.8	31.6	1	05/19/21 12:22	05/20/21 15:22	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	57.8	21.3	1	05/19/21 12:22	05/20/21 15:22	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	57.8	28.8	1	05/19/21 12:22	05/20/21 15:22	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	57.8	27.2	1	05/19/21 12:22	05/20/21 15:22	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	83	%.	59-125		1	05/19/21 12:22	05/20/21 15:22	877-09-8	
Decachlorobiphenyl (S)	80	%.	57-125		1	05/19/21 12:22	05/20/21 15:22	2051-24-3	
WIDRO GCS									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Pace Analytical Services - Minneapolis									
WDRO C10-C28	ND	mg/kg	10.1	3.8	1	05/19/21 17:58	05/23/21 18:03		
Surrogates									
n-Triacontane (S)	74	%.	50-150		1	05/19/21 17:58	05/23/21 18:03		
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil									
Pace Analytical Services - Minneapolis									
Gasoline Range Organics	ND	mg/kg	13.1	3.7	1	05/26/21 14:31	05/27/21 19:58		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%.	80-150		1	05/26/21 14:31	05/27/21 19:58	98-08-8	
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3050B									
Pace Analytical Services - Minneapolis									
Arsenic	ND	mg/kg	1.1	0.23	1	05/21/21 14:39	05/25/21 12:32	7440-38-2	
Barium	39.2	mg/kg	0.56	0.089	1	05/21/21 14:39	05/25/21 12:32	7440-39-3	
Cadmium	ND	mg/kg	0.17	0.034	1	05/21/21 14:39	05/25/21 12:32	7440-43-9	
Chromium	20.6	mg/kg	0.56	0.11	1	05/21/21 14:39	05/25/21 12:32	7440-47-3	
Lead	4.6	mg/kg	2.8	0.63	5	05/21/21 14:39	05/25/21 14:02	7439-92-1	
Selenium	ND	mg/kg	1.1	0.37	1	05/21/21 14:39	05/25/21 12:32	7782-49-2	
Silver	ND	mg/kg	0.56	0.041	1	05/21/21 14:39	05/25/21 12:32	7440-22-4	
7471B Mercury									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Pace Analytical Services - Minneapolis									
Mercury	ND	mg/kg	0.020	0.0087	1	05/21/21 18:28	05/26/21 12:53	7439-97-6	
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	14.1	%	0.10	0.10	1		05/24/21 14:42		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-02 **Lab ID: 10560833002** Collected: 05/17/21 11:50 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/kg	11.6	0.52	1	05/19/21 14:46	05/24/21 15:24	83-32-9	
Acenaphthylene	ND	ug/kg	11.6	0.80	1	05/19/21 14:46	05/24/21 15:24	208-96-8	
Anthracene	ND	ug/kg	11.6	0.37	1	05/19/21 14:46	05/24/21 15:24	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.6	0.48	1	05/19/21 14:46	05/24/21 15:24	56-55-3	
Benzo(a)pyrene	12.1	ug/kg	11.6	0.65	1	05/19/21 14:46	05/24/21 15:24	50-32-8	
Benzo(b)fluoranthene	17.5	ug/kg	11.6	0.54	1	05/19/21 14:46	05/24/21 15:24	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.6	0.54	1	05/19/21 14:46	05/24/21 15:24	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.6	0.56	1	05/19/21 14:46	05/24/21 15:24	207-08-9	
Chrysene	ND	ug/kg	11.6	0.47	1	05/19/21 14:46	05/24/21 15:24	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.6	0.76	1	05/19/21 14:46	05/24/21 15:24	53-70-3	
Fluoranthene	13.7	ug/kg	11.6	0.70	1	05/19/21 14:46	05/24/21 15:24	206-44-0	
Fluorene	ND	ug/kg	11.6	0.70	1	05/19/21 14:46	05/24/21 15:24	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.6	0.62	1	05/19/21 14:46	05/24/21 15:24	193-39-5	
Naphthalene	ND	ug/kg	11.6	0.52	1	05/19/21 14:46	05/24/21 15:24	91-20-3	
Phenanthrene	ND	ug/kg	11.6	0.82	1	05/19/21 14:46	05/24/21 15:24	85-01-8	
Pyrene	12.8	ug/kg	11.6	0.75	1	05/19/21 14:46	05/24/21 15:24	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%	50-125		1	05/19/21 14:46	05/24/21 15:24	321-60-8	
p-Terphenyl-d14 (S)	71	%	51-125		1	05/19/21 14:46	05/24/21 15:24	1718-51-0	

8260D MSV 5030 Med Level

Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B

Pace Analytical Services - Minneapolis

Acetone	ND	ug/kg	1240	584	1	05/24/21 15:08	05/26/21 04:15	67-64-1	
Allyl chloride	ND	ug/kg	247	50.1	1	05/24/21 15:08	05/26/21 04:15	107-05-1	
Benzene	ND	ug/kg	24.7	11.3	1	05/24/21 15:08	05/26/21 04:15	71-43-2	
Bromobenzene	ND	ug/kg	61.8	8.1	1	05/24/21 15:08	05/26/21 04:15	108-86-1	
Bromochloromethane	ND	ug/kg	61.8	30.5	1	05/24/21 15:08	05/26/21 04:15	74-97-5	
Bromodichloromethane	ND	ug/kg	61.8	19.7	1	05/24/21 15:08	05/26/21 04:15	75-27-4	
Bromoform	ND	ug/kg	247	81.8	1	05/24/21 15:08	05/26/21 04:15	75-25-2	
Bromomethane	ND	ug/kg	618	115	1	05/24/21 15:08	05/26/21 04:15	74-83-9	v2
2-Butanone (MEK)	ND	ug/kg	309	38.6	1	05/24/21 15:08	05/26/21 04:15	78-93-3	
n-Butylbenzene	ND	ug/kg	61.8	13.6	1	05/24/21 15:08	05/26/21 04:15	104-51-8	
sec-Butylbenzene	ND	ug/kg	61.8	27.1	1	05/24/21 15:08	05/26/21 04:15	135-98-8	
tert-Butylbenzene	ND	ug/kg	61.8	19.2	1	05/24/21 15:08	05/26/21 04:15	98-06-6	
Carbon tetrachloride	ND	ug/kg	61.8	30.0	1	05/24/21 15:08	05/26/21 04:15	56-23-5	
Chlorobenzene	ND	ug/kg	61.8	10.2	1	05/24/21 15:08	05/26/21 04:15	108-90-7	
Chloroethane	ND	ug/kg	618	97.9	1	05/24/21 15:08	05/26/21 04:15	75-00-3	
Chloroform	ND	ug/kg	61.8	27.2	1	05/24/21 15:08	05/26/21 04:15	67-66-3	
Chloromethane	ND	ug/kg	247	33.6	1	05/24/21 15:08	05/26/21 04:15	74-87-3	
2-Chlorotoluene	ND	ug/kg	61.8	15.2	1	05/24/21 15:08	05/26/21 04:15	95-49-8	
4-Chlorotoluene	ND	ug/kg	61.8	7.9	1	05/24/21 15:08	05/26/21 04:15	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	618	146	1	05/24/21 15:08	05/26/21 04:15	96-12-8	
Dibromochloromethane	ND	ug/kg	247	20.9	1	05/24/21 15:08	05/26/21 04:15	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	61.8	21.6	1	05/24/21 15:08	05/26/21 04:15	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-02 Lab ID: 10560833002 Collected: 05/17/21 11:50 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis									
Dibromomethane	ND	ug/kg	61.8	27.0	1	05/24/21 15:08	05/26/21 04:15	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	61.8	11.7	1	05/24/21 15:08	05/26/21 04:15	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	61.8	7.7	1	05/24/21 15:08	05/26/21 04:15	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	61.8	9.8	1	05/24/21 15:08	05/26/21 04:15	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	247	32.9	1	05/24/21 15:08	05/26/21 04:15	75-71-8	
1,1-Dichloroethane	ND	ug/kg	61.8	27.8	1	05/24/21 15:08	05/26/21 04:15	75-34-3	
1,2-Dichloroethane	ND	ug/kg	61.8	23.6	1	05/24/21 15:08	05/26/21 04:15	107-06-2	
1,1-Dichloroethene	ND	ug/kg	61.8	22.1	1	05/24/21 15:08	05/26/21 04:15	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	61.8	17.2	1	05/24/21 15:08	05/26/21 04:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	61.8	28.3	1	05/24/21 15:08	05/26/21 04:15	156-60-5	
Dichlorofluoromethane	ND	ug/kg	61.8	172	1	05/24/21 15:08	05/26/21 04:15	75-43-4	
1,2-Dichloropropane	ND	ug/kg	61.8	28.2	1	05/24/21 15:08	05/26/21 04:15	78-87-5	
1,3-Dichloropropane	ND	ug/kg	61.8	22.7	1	05/24/21 15:08	05/26/21 04:15	142-28-9	
2,2-Dichloropropane	ND	ug/kg	247	23.5	1	05/24/21 15:08	05/26/21 04:15	594-20-7	
1,1-Dichloropropene	ND	ug/kg	61.8	25.5	1	05/24/21 15:08	05/26/21 04:15	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	61.8	6.0	1	05/24/21 15:08	05/26/21 04:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	61.8	7.8	1	05/24/21 15:08	05/26/21 04:15	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	247	52.7	1	05/24/21 15:08	05/26/21 04:15	60-29-7	
Ethylbenzene	ND	ug/kg	61.8	11.0	1	05/24/21 15:08	05/26/21 04:15	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	309	27.9	1	05/24/21 15:08	05/26/21 04:15	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	61.8	23.4	1	05/24/21 15:08	05/26/21 04:15	98-82-8	
p-Isopropyltoluene	ND	ug/kg	61.8	19.5	1	05/24/21 15:08	05/26/21 04:15	99-87-6	
Methylene Chloride	ND	ug/kg	247	117	1	05/24/21 15:08	05/26/21 04:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	309	29.5	1	05/24/21 15:08	05/26/21 04:15	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	61.8	12.3	1	05/24/21 15:08	05/26/21 04:15	1634-04-4	
Naphthalene	ND	ug/kg	247	69.5	1	05/24/21 15:08	05/26/21 04:15	91-20-3	
n-Propylbenzene	ND	ug/kg	61.8	13.0	1	05/24/21 15:08	05/26/21 04:15	103-65-1	
Styrene	ND	ug/kg	61.8	8.9	1	05/24/21 15:08	05/26/21 04:15	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	61.8	16.3	1	05/24/21 15:08	05/26/21 04:15	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	61.8	19.9	1	05/24/21 15:08	05/26/21 04:15	79-34-5	
Tetrachloroethene	ND	ug/kg	61.8	29.3	1	05/24/21 15:08	05/26/21 04:15	127-18-4	
Tetrahydrofuran	ND	ug/kg	2470	509	1	05/24/21 15:08	05/26/21 04:15	109-99-9	
Toluene	ND	ug/kg	61.8	26.5	1	05/24/21 15:08	05/26/21 04:15	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	61.8	19.0	1	05/24/21 15:08	05/26/21 04:15	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	61.8	15.2	1	05/24/21 15:08	05/26/21 04:15	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	61.8	26.6	1	05/24/21 15:08	05/26/21 04:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	61.8	30.7	1	05/24/21 15:08	05/26/21 04:15	79-00-5	
Trichloroethene	ND	ug/kg	61.8	26.1	1	05/24/21 15:08	05/26/21 04:15	79-01-6	
Trichlorofluoromethane	ND	ug/kg	247	117	1	05/24/21 15:08	05/26/21 04:15	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	247	72.1	1	05/24/21 15:08	05/26/21 04:15	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	247	109	1	05/24/21 15:08	05/26/21 04:15	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	61.8	27.2	1	05/24/21 15:08	05/26/21 04:15	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	61.8	19.8	1	05/24/21 15:08	05/26/21 04:15	108-67-8	
Vinyl chloride	ND	ug/kg	61.8	12.3	1	05/24/21 15:08	05/26/21 04:15	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-02 **Lab ID: 10560833002** Collected: 05/17/21 11:50 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis									
Xylene (Total)	ND	ug/kg	185	29.8	1	05/24/21 15:08	05/26/21 04:15	1330-20-7	
m&p-Xylene	ND	ug/kg	124	19.7	1	05/24/21 15:08	05/26/21 04:15	179601-23-1	
o-Xylene	ND	ug/kg	61.8	29.8	1	05/24/21 15:08	05/26/21 04:15	95-47-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	91	%.	73-125		1	05/24/21 15:08	05/26/21 04:15	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1	05/24/21 15:08	05/26/21 04:15	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	05/24/21 15:08	05/26/21 04:15	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI
Pace Project No.: 10560833

Sample: SED-03 **Lab ID: 10560833003** Collected: 05/17/21 12:15 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB									
Analytical Method: EPA 8082A Preparation Method: EPA 3546									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	ND	ug/kg	69.5	24.0	1	05/19/21 12:22	05/20/21 15:38	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	69.5	32.6	1	05/19/21 12:22	05/20/21 15:38	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	69.5	28.6	1	05/19/21 12:22	05/20/21 15:38	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	69.5	25.3	1	05/19/21 12:22	05/20/21 15:38	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	69.5	41.6	1	05/19/21 12:22	05/20/21 15:38	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	69.5	38.0	1	05/19/21 12:22	05/20/21 15:38	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	69.5	25.7	1	05/19/21 12:22	05/20/21 15:38	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	69.5	34.7	1	05/19/21 12:22	05/20/21 15:38	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	69.5	32.8	1	05/19/21 12:22	05/20/21 15:38	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	74	%.	59-125		1	05/19/21 12:22	05/20/21 15:38	877-09-8	
Decachlorobiphenyl (S)	69	%.	57-125		1	05/19/21 12:22	05/20/21 15:38	2051-24-3	
WIDRO GCS									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Pace Analytical Services - Minneapolis									
WDRO C10-C28	830	mg/kg	119	44.6	10	05/19/21 17:58	05/24/21 09:11		T6
Surrogates									
n-Triacontane (S)	59	%.	50-150		10	05/19/21 17:58	05/24/21 09:11		
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil									
Pace Analytical Services - Minneapolis									
Gasoline Range Organics	ND	mg/kg	17.7	5.0	1	05/26/21 14:31	05/27/21 20:25		G+
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	80-150		1	05/26/21 14:31	05/27/21 20:25	98-08-8	
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3050B									
Pace Analytical Services - Minneapolis									
Arsenic	1.7	mg/kg	1.3	0.27	1	05/21/21 14:39	05/25/21 12:34	7440-38-2	
Barium	39.4	mg/kg	0.67	0.11	1	05/21/21 14:39	05/25/21 12:34	7440-39-3	
Cadmium	0.36	mg/kg	0.20	0.040	1	05/21/21 14:39	05/25/21 12:34	7440-43-9	
Chromium	18.5	mg/kg	0.67	0.13	1	05/21/21 14:39	05/25/21 12:34	7440-47-3	
Lead	9.7	mg/kg	1.3	0.30	2	05/21/21 14:39	05/25/21 14:04	7439-92-1	
Selenium	ND	mg/kg	1.3	0.44	1	05/21/21 14:39	05/25/21 12:34	7782-49-2	
Silver	ND	mg/kg	0.67	0.048	1	05/21/21 14:39	05/25/21 12:34	7440-22-4	
7471B Mercury									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Pace Analytical Services - Minneapolis									
Mercury	0.028	mg/kg	0.027	0.012	1	05/21/21 18:28	05/26/21 12:57	7439-97-6	
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	28.7	%	0.10	0.10	1		05/24/21 14:43		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI
Pace Project No.: 10560833

Sample: SED-03 **Lab ID: 10560833003** Collected: 05/17/21 12:15 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3550C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/kg	14.0	0.63	1	05/19/21 14:46	05/24/21 15:43	83-32-9	
Acenaphthylene	ND	ug/kg	14.0	0.96	1	05/19/21 14:46	05/24/21 15:43	208-96-8	
Anthracene	ND	ug/kg	14.0	0.44	1	05/19/21 14:46	05/24/21 15:43	120-12-7	
Benzo(a)anthracene	23.2	ug/kg	14.0	0.58	1	05/19/21 14:46	05/24/21 15:43	56-55-3	
Benzo(a)pyrene	38.2	ug/kg	14.0	0.79	1	05/19/21 14:46	05/24/21 15:43	50-32-8	
Benzo(b)fluoranthene	69.6	ug/kg	14.0	0.65	1	05/19/21 14:46	05/24/21 15:43	205-99-2	
Benzo(g,h,i)perylene	24.7	ug/kg	14.0	0.65	1	05/19/21 14:46	05/24/21 15:43	191-24-2	
Benzo(k)fluoranthene	21.3	ug/kg	14.0	0.67	1	05/19/21 14:46	05/24/21 15:43	207-08-9	
Chrysene	38.6	ug/kg	14.0	0.56	1	05/19/21 14:46	05/24/21 15:43	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	14.0	0.92	1	05/19/21 14:46	05/24/21 15:43	53-70-3	
Fluoranthene	56.0	ug/kg	14.0	0.85	1	05/19/21 14:46	05/24/21 15:43	206-44-0	
Fluorene	ND	ug/kg	14.0	0.84	1	05/19/21 14:46	05/24/21 15:43	86-73-7	
Indeno(1,2,3-cd)pyrene	29.8	ug/kg	14.0	0.75	1	05/19/21 14:46	05/24/21 15:43	193-39-5	
Naphthalene	ND	ug/kg	14.0	0.63	1	05/19/21 14:46	05/24/21 15:43	91-20-3	
Phenanthrene	22.4	ug/kg	14.0	0.99	1	05/19/21 14:46	05/24/21 15:43	85-01-8	
Pyrene	50.2	ug/kg	14.0	0.91	1	05/19/21 14:46	05/24/21 15:43	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	27	%.	50-125		1	05/19/21 14:46	05/24/21 15:43	321-60-8	S5
p-Terphenyl-d14 (S)	25	%.	51-125		1	05/19/21 14:46	05/24/21 15:43	1718-51-0	S5

8260D MSV 5030 Med Level

Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B
Pace Analytical Services - Minneapolis

Acetone	ND	ug/kg	1650	779	1	05/24/21 15:08	05/26/21 04:32	67-64-1	
Allyl chloride	ND	ug/kg	330	66.8	1	05/24/21 15:08	05/26/21 04:32	107-05-1	
Benzene	ND	ug/kg	33.0	15.1	1	05/24/21 15:08	05/26/21 04:32	71-43-2	
Bromobenzene	ND	ug/kg	82.5	10.8	1	05/24/21 15:08	05/26/21 04:32	108-86-1	
Bromochloromethane	ND	ug/kg	82.5	40.7	1	05/24/21 15:08	05/26/21 04:32	74-97-5	
Bromodichloromethane	ND	ug/kg	82.5	26.2	1	05/24/21 15:08	05/26/21 04:32	75-27-4	
Bromoform	ND	ug/kg	330	109	1	05/24/21 15:08	05/26/21 04:32	75-25-2	
Bromomethane	ND	ug/kg	825	154	1	05/24/21 15:08	05/26/21 04:32	74-83-9	v2
2-Butanone (MEK)	ND	ug/kg	412	51.5	1	05/24/21 15:08	05/26/21 04:32	78-93-3	
n-Butylbenzene	ND	ug/kg	82.5	18.1	1	05/24/21 15:08	05/26/21 04:32	104-51-8	
sec-Butylbenzene	ND	ug/kg	82.5	36.1	1	05/24/21 15:08	05/26/21 04:32	135-98-8	
tert-Butylbenzene	ND	ug/kg	82.5	25.6	1	05/24/21 15:08	05/26/21 04:32	98-06-6	
Carbon tetrachloride	ND	ug/kg	82.5	40.1	1	05/24/21 15:08	05/26/21 04:32	56-23-5	
Chlorobenzene	ND	ug/kg	82.5	13.6	1	05/24/21 15:08	05/26/21 04:32	108-90-7	
Chloroethane	ND	ug/kg	825	131	1	05/24/21 15:08	05/26/21 04:32	75-00-3	
Chloroform	ND	ug/kg	82.5	36.3	1	05/24/21 15:08	05/26/21 04:32	67-66-3	
Chloromethane	ND	ug/kg	330	44.9	1	05/24/21 15:08	05/26/21 04:32	74-87-3	
2-Chlorotoluene	ND	ug/kg	82.5	20.3	1	05/24/21 15:08	05/26/21 04:32	95-49-8	
4-Chlorotoluene	ND	ug/kg	82.5	10.5	1	05/24/21 15:08	05/26/21 04:32	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	825	195	1	05/24/21 15:08	05/26/21 04:32	96-12-8	
Dibromochloromethane	ND	ug/kg	330	27.9	1	05/24/21 15:08	05/26/21 04:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	82.5	28.9	1	05/24/21 15:08	05/26/21 04:32	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-03 Lab ID: 10560833003 Collected: 05/17/21 12:15 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis									
Dibromomethane	ND	ug/kg	82.5	36.0	1	05/24/21 15:08	05/26/21 04:32	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	82.5	15.6	1	05/24/21 15:08	05/26/21 04:32	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	82.5	10.2	1	05/24/21 15:08	05/26/21 04:32	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	82.5	13.1	1	05/24/21 15:08	05/26/21 04:32	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	330	43.9	1	05/24/21 15:08	05/26/21 04:32	75-71-8	
1,1-Dichloroethane	ND	ug/kg	82.5	37.1	1	05/24/21 15:08	05/26/21 04:32	75-34-3	
1,2-Dichloroethane	ND	ug/kg	82.5	31.5	1	05/24/21 15:08	05/26/21 04:32	107-06-2	
1,1-Dichloroethene	ND	ug/kg	82.5	29.5	1	05/24/21 15:08	05/26/21 04:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	82.5	22.9	1	05/24/21 15:08	05/26/21 04:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	82.5	37.8	1	05/24/21 15:08	05/26/21 04:32	156-60-5	
Dichlorofluoromethane	ND	ug/kg	825	229	1	05/24/21 15:08	05/26/21 04:32	75-43-4	
1,2-Dichloropropane	ND	ug/kg	82.5	37.6	1	05/24/21 15:08	05/26/21 04:32	78-87-5	
1,3-Dichloropropane	ND	ug/kg	82.5	30.3	1	05/24/21 15:08	05/26/21 04:32	142-28-9	
2,2-Dichloropropane	ND	ug/kg	330	31.3	1	05/24/21 15:08	05/26/21 04:32	594-20-7	
1,1-Dichloropropene	ND	ug/kg	82.5	34.0	1	05/24/21 15:08	05/26/21 04:32	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	82.5	8.0	1	05/24/21 15:08	05/26/21 04:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	82.5	10.4	1	05/24/21 15:08	05/26/21 04:32	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	330	70.3	1	05/24/21 15:08	05/26/21 04:32	60-29-7	
Ethylbenzene	ND	ug/kg	82.5	14.6	1	05/24/21 15:08	05/26/21 04:32	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	412	37.3	1	05/24/21 15:08	05/26/21 04:32	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	82.5	31.2	1	05/24/21 15:08	05/26/21 04:32	98-82-8	
p-Isopropyltoluene	ND	ug/kg	82.5	26.1	1	05/24/21 15:08	05/26/21 04:32	99-87-6	
Methylene Chloride	ND	ug/kg	330	156	1	05/24/21 15:08	05/26/21 04:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	412	39.4	1	05/24/21 15:08	05/26/21 04:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	82.5	16.4	1	05/24/21 15:08	05/26/21 04:32	1634-04-4	
Naphthalene	ND	ug/kg	330	92.7	1	05/24/21 15:08	05/26/21 04:32	91-20-3	
n-Propylbenzene	ND	ug/kg	82.5	17.3	1	05/24/21 15:08	05/26/21 04:32	103-65-1	
Styrene	ND	ug/kg	82.5	11.8	1	05/24/21 15:08	05/26/21 04:32	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	82.5	21.8	1	05/24/21 15:08	05/26/21 04:32	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	82.5	26.6	1	05/24/21 15:08	05/26/21 04:32	79-34-5	
Tetrachloroethene	ND	ug/kg	82.5	39.1	1	05/24/21 15:08	05/26/21 04:32	127-18-4	
Tetrahydrofuran	ND	ug/kg	3300	680	1	05/24/21 15:08	05/26/21 04:32	109-99-9	
Toluene	ND	ug/kg	82.5	35.3	1	05/24/21 15:08	05/26/21 04:32	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	82.5	25.4	1	05/24/21 15:08	05/26/21 04:32	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	82.5	20.3	1	05/24/21 15:08	05/26/21 04:32	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	82.5	35.5	1	05/24/21 15:08	05/26/21 04:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	82.5	40.9	1	05/24/21 15:08	05/26/21 04:32	79-00-5	
Trichloroethene	ND	ug/kg	82.5	34.8	1	05/24/21 15:08	05/26/21 04:32	79-01-6	
Trichlorofluoromethane	ND	ug/kg	330	156	1	05/24/21 15:08	05/26/21 04:32	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	330	96.2	1	05/24/21 15:08	05/26/21 04:32	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	330	145	1	05/24/21 15:08	05/26/21 04:32	76-13-1	
1,2,4-Trimethylbenzene	272	ug/kg	82.5	36.3	1	05/24/21 15:08	05/26/21 04:32	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	82.5	26.4	1	05/24/21 15:08	05/26/21 04:32	108-67-8	
Vinyl chloride	ND	ug/kg	82.5	16.4	1	05/24/21 15:08	05/26/21 04:32	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 159002 DULAI

Pace Project No.: 10560833

Sample: SED-03 **Lab ID: 10560833003** Collected: 05/17/21 12:15 Received: 05/18/21 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis									
Xylene (Total)	ND	ug/kg	247	39.8	1	05/24/21 15:08	05/26/21 04:32	1330-20-7	
m&p-Xylene	ND	ug/kg	165	26.2	1	05/24/21 15:08	05/26/21 04:32	179601-23-1	
o-Xylene	ND	ug/kg	82.5	39.8	1	05/24/21 15:08	05/26/21 04:32	95-47-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%.	73-125		1	05/24/21 15:08	05/26/21 04:32	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1	05/24/21 15:08	05/26/21 04:32	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1	05/24/21 15:08	05/26/21 04:32	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch:	744738	Analysis Method:	WI MOD GRO
QC Batch Method:	EPA 5030 Medium Soil	Analysis Description:	WIGRO Solid GCV
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10560833001, 10560833002, 10560833003		

METHOD BLANK: 3971604 Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	10.0	2.8	05/27/21 16:44	
a,a,a-Trifluorotoluene (S)	%.	97	80-150		05/27/21 16:44	

LABORATORY CONTROL SAMPLE & LCSD: 3971605

3971606

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	50	50.8	48.3	102	97	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%.				104	100	80-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3971757

3971758

Parameter	Units	10561795001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	63.3	63.3	80.9	79.1	111	108	80-120	2	20	G+
a,a,a-Trifluorotoluene (S)	%.						99	99	80-150			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch: 743865

Analysis Method: EPA 7471B

QC Batch Method: EPA 7471B

Analysis Description: 7471B Mercury Solids

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10560833001, 10560833002, 10560833003

METHOD BLANK: 3967222

Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.020	0.0087	05/26/21 12:45	

LABORATORY CONTROL SAMPLE: 3967223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.43	0.42	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3967224 3967225

Parameter	Units	10560833001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	0.59	0.53	0.60	0.54	98	100	80-120	11	20	

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch:	743659	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3050B	Analysis Description:	6010D Solids
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples: 10560833001, 10560833002, 10560833003			

METHOD BLANK: 3965819 Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.95	0.20	05/25/21 11:58	
Barium	mg/kg	ND	0.48	0.075	05/25/21 11:58	
Cadmium	mg/kg	ND	0.14	0.029	05/25/21 11:58	
Chromium	mg/kg	ND	0.48	0.095	05/25/21 11:58	
Lead	mg/kg	ND	0.48	0.11	05/25/21 11:58	
Selenium	mg/kg	ND	0.95	0.31	05/25/21 11:58	
Silver	mg/kg	ND	0.48	0.035	05/25/21 11:58	

LABORATORY CONTROL SAMPLE: 3965820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	46.3	45.6	98	80-120	
Barium	mg/kg	46.3	48.9	106	80-120	
Cadmium	mg/kg	46.3	47.5	103	80-120	
Chromium	mg/kg	46.3	47.9	103	80-120	
Lead	mg/kg	46.3	46.7	101	80-120	
Selenium	mg/kg	46.3	41.9	90	80-120	
Silver	mg/kg	23.1	23.3	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3965821 3965822

Parameter	Units	10556863001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	3.8	54.5	50.9	44.6	42.6	75	76	75-125	5	20	
Barium	mg/kg	86.5	54.5	50.9	128	139	76	103	75-125	8	20	
Cadmium	mg/kg	0.32	54.5	50.9	42.8	41.7	78	81	75-125	3	20	
Chromium	mg/kg	9.2	54.5	50.9	52.8	53.0	80	86	75-125	1	20	
Lead	mg/kg	9.2	54.5	50.9	50.4	49.7	76	80	75-125	1	20	
Selenium	mg/kg	<1.1	54.5	50.9	37.1	37.1	67	72	75-125	0	20 M1	
Silver	mg/kg	<0.54	27.3	25.4	22.3	20.9	82	82	75-125	6	20	

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch: 744030

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10560833001, 10560833002, 10560833003

SAMPLE DUPLICATE: 3969153

Parameter	Units	10560833001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.5	18.8	2	30	N2

SAMPLE DUPLICATE: 3969154

Parameter	Units	10561491021 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.7	22.7	4	30	N2

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch: 744239

Analysis Method: EPA 8260D

QC Batch Method: EPA 5035/5030B

Analysis Description: 8260D MSV 5030 Med Level

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10560833001, 10560833002, 10560833003

METHOD BLANK: 3969209

Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	50.0	13.2	05/25/21 23:37	
1,1,1-Trichloroethane	ug/kg	ND	50.0	21.5	05/25/21 23:37	
1,1,2,2-Tetrachloroethane	ug/kg	ND	50.0	16.1	05/25/21 23:37	
1,1,2-Trichloroethane	ug/kg	ND	50.0	24.8	05/25/21 23:37	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	200	88.2	05/25/21 23:37	
1,1-Dichloroethane	ug/kg	ND	50.0	22.5	05/25/21 23:37	
1,1-Dichloroethene	ug/kg	ND	50.0	17.9	05/25/21 23:37	
1,1-Dichloropropene	ug/kg	ND	50.0	20.6	05/25/21 23:37	
1,2,3-Trichlorobenzene	ug/kg	ND	50.0	15.4	05/25/21 23:37	
1,2,3-Trichloropropane	ug/kg	ND	200	58.3	05/25/21 23:37	
1,2,4-Trichlorobenzene	ug/kg	ND	50.0	12.3	05/25/21 23:37	
1,2,4-Trimethylbenzene	ug/kg	ND	50.0	22.0	05/25/21 23:37	
1,2-Dibromo-3-chloropropane	ug/kg	ND	500	118	05/25/21 23:37	
1,2-Dibromoethane (EDB)	ug/kg	ND	50.0	17.5	05/25/21 23:37	
1,2-Dichlorobenzene	ug/kg	ND	50.0	9.4	05/25/21 23:37	
1,2-Dichloroethane	ug/kg	ND	50.0	19.1	05/25/21 23:37	
1,2-Dichloropropane	ug/kg	ND	50.0	22.8	05/25/21 23:37	
1,3,5-Trimethylbenzene	ug/kg	ND	50.0	16.0	05/25/21 23:37	
1,3-Dichlorobenzene	ug/kg	ND	50.0	6.2	05/25/21 23:37	
1,3-Dichloropropane	ug/kg	ND	50.0	18.4	05/25/21 23:37	
1,4-Dichlorobenzene	ug/kg	ND	50.0	7.9	05/25/21 23:37	
2,2-Dichloropropane	ug/kg	ND	200	19.0	05/25/21 23:37	
2-Butanone (MEK)	ug/kg	ND	250	31.2	05/25/21 23:37	
2-Chlorotoluene	ug/kg	ND	50.0	12.3	05/25/21 23:37	
4-Chlorotoluene	ug/kg	ND	50.0	6.4	05/25/21 23:37	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	250	23.9	05/25/21 23:37	
Acetone	ug/kg	ND	1000	472	05/25/21 23:37	
Allyl chloride	ug/kg	ND	200	40.5	05/25/21 23:37	
Benzene	ug/kg	ND	20.0	9.2	05/25/21 23:37	
Bromobenzene	ug/kg	ND	50.0	6.6	05/25/21 23:37	
Bromochloromethane	ug/kg	ND	50.0	24.7	05/25/21 23:37	
Bromodichloromethane	ug/kg	ND	50.0	15.9	05/25/21 23:37	
Bromoform	ug/kg	ND	200	66.2	05/25/21 23:37	
Bromomethane	ug/kg	ND	500	93.4	05/25/21 23:37	v2
Carbon tetrachloride	ug/kg	ND	50.0	24.3	05/25/21 23:37	
Chlorobenzene	ug/kg	ND	50.0	8.2	05/25/21 23:37	
Chloroethane	ug/kg	ND	500	79.2	05/25/21 23:37	
Chloroform	ug/kg	ND	50.0	22.0	05/25/21 23:37	
Chloromethane	ug/kg	ND	200	27.2	05/25/21 23:37	
cis-1,2-Dichloroethene	ug/kg	ND	50.0	13.9	05/25/21 23:37	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

METHOD BLANK: 3969209

Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/kg	ND	50.0	4.8	05/25/21 23:37	
Dibromochloromethane	ug/kg	ND	200	16.9	05/25/21 23:37	
Dibromomethane	ug/kg	ND	50.0	21.8	05/25/21 23:37	
Dichlorodifluoromethane	ug/kg	ND	200	26.6	05/25/21 23:37	
Dichlorofluoromethane	ug/kg	ND	500	139	05/25/21 23:37	
Diethyl ether (Ethyl ether)	ug/kg	ND	200	42.6	05/25/21 23:37	
Ethylbenzene	ug/kg	ND	50.0	8.9	05/25/21 23:37	
Hexachloro-1,3-butadiene	ug/kg	ND	250	22.6	05/25/21 23:37	
Isopropylbenzene (Cumene)	ug/kg	ND	50.0	18.9	05/25/21 23:37	
m&p-Xylene	ug/kg	ND	100	15.9	05/25/21 23:37	
Methyl-tert-butyl ether	ug/kg	ND	50.0	10	05/25/21 23:37	
Methylene Chloride	ug/kg	ND	200	94.3	05/25/21 23:37	
n-Butylbenzene	ug/kg	ND	50.0	11.0	05/25/21 23:37	
n-Propylbenzene	ug/kg	ND	50.0	10.5	05/25/21 23:37	
Naphthalene	ug/kg	ND	200	56.2	05/25/21 23:37	
o-Xylene	ug/kg	ND	50.0	24.1	05/25/21 23:37	
p-Isopropyltoluene	ug/kg	ND	50.0	15.8	05/25/21 23:37	
sec-Butylbenzene	ug/kg	ND	50.0	21.9	05/25/21 23:37	
Styrene	ug/kg	ND	50.0	7.2	05/25/21 23:37	
tert-Butylbenzene	ug/kg	ND	50.0	15.5	05/25/21 23:37	
Tetrachloroethene	ug/kg	ND	50.0	23.7	05/25/21 23:37	
Tetrahydrofuran	ug/kg	ND	2000	412	05/25/21 23:37	
Toluene	ug/kg	ND	50.0	21.4	05/25/21 23:37	
trans-1,2-Dichloroethene	ug/kg	ND	50.0	22.9	05/25/21 23:37	
trans-1,3-Dichloropropene	ug/kg	ND	50.0	6.3	05/25/21 23:37	
Trichloroethene	ug/kg	ND	50.0	21.1	05/25/21 23:37	
Trichlorofluoromethane	ug/kg	ND	200	94.7	05/25/21 23:37	
Vinyl chloride	ug/kg	ND	50.0	9.9	05/25/21 23:37	MN
Xylene (Total)	ug/kg	ND	150	24.1	05/25/21 23:37	
1,2-Dichloroethane-d4 (S)	%	89	73-125		05/25/21 23:37	
4-Bromofluorobenzene (S)	%	96	75-125		05/25/21 23:37	
Toluene-d8 (S)	%	113	75-125		05/25/21 23:37	

LABORATORY CONTROL SAMPLE: 3969210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	873	87	62-125	
1,1,1-Trichloroethane	ug/kg	1000	676	68	52-135	
1,1,2,2-Tetrachloroethane	ug/kg	1000	797	80	56-125	
1,1,2-Trichloroethane	ug/kg	1000	885	88	62-125	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	570	57	49-143	
1,1-Dichloroethane	ug/kg	1000	650	65	51-128	
1,1-Dichloroethene	ug/kg	1000	375	38	32-143	
1,1-Dichloropropene	ug/kg	1000	481	48	43-141	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

LABORATORY CONTROL SAMPLE: 3969210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichlorobenzene	ug/kg	1000	916	92	54-125	
1,2,3-Trichloropropane	ug/kg	1000	834	83	61-125	
1,2,4-Trichlorobenzene	ug/kg	1000	875	88	56-125	
1,2,4-Trimethylbenzene	ug/kg	1000	787	79	61-129	
1,2-Dibromo-3-chloropropane	ug/kg	2500	2120	85	54-125	
1,2-Dibromoethane (EDB)	ug/kg	1000	727	73	58-125	
1,2-Dichlorobenzene	ug/kg	1000	758	76	57-125	
1,2-Dichloroethane	ug/kg	1000	627	63	53-125	
1,2-Dichloropropane	ug/kg	1000	747	75	55-125	
1,3,5-Trimethylbenzene	ug/kg	1000	715	72	63-128	
1,3-Dichlorobenzene	ug/kg	1000	777	78	57-125	
1,3-Dichloropropane	ug/kg	1000	780	78	59-125	
1,4-Dichlorobenzene	ug/kg	1000	832	83	60-125	
2,2-Dichloropropane	ug/kg	1000	602	60	52-138	
2-Butanone (MEK)	ug/kg	5000	4810	96	44-132	
2-Chlorotoluene	ug/kg	1000	732	73	58-125	
4-Chlorotoluene	ug/kg	1000	724	72	57-125	
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	4510	90	54-125	
Acetone	ug/kg	5000	3360	67	49-145	
Allyl chloride	ug/kg	1000	491	49	40-134	
Benzene	ug/kg	1000	564	56	54-129	
Bromobenzene	ug/kg	1000	718	72	59-125	
Bromochloromethane	ug/kg	1000	634	63	50-126	
Bromodichloromethane	ug/kg	1000	811	81	58-125	
Bromoform	ug/kg	1000	898	90	57-125	
Bromomethane	ug/kg	1000	730	73	44-130 v3	
Carbon tetrachloride	ug/kg	1000	604	60	49-143	
Chlorobenzene	ug/kg	1000	715	72	59-125	
Chloroethane	ug/kg	1000	898	90	44-143	
Chloroform	ug/kg	1000	710	71	56-125	
Chloromethane	ug/kg	1000	862	86	42-125	
cis-1,2-Dichloroethene	ug/kg	1000	607	61	50-128	
cis-1,3-Dichloropropene	ug/kg	1000	702	70	56-127	
Dibromochloromethane	ug/kg	1000	885	88	60-125	
Dibromomethane	ug/kg	1000	661	66	57-125	
Dichlorodifluoromethane	ug/kg	1000	886	89	30-125	
Dichlorofluoromethane	ug/kg	1000	969	97	45-145	
Diethyl ether (Ethyl ether)	ug/kg	1000	439	44	41-126	
Ethylbenzene	ug/kg	1000	698	70	65-125	
Hexachloro-1,3-butadiene	ug/kg	1000	868	87	57-137	
Isopropylbenzene (Cumene)	ug/kg	1000	771	77	60-131	
m&p-Xylene	ug/kg	2000	1380	69	65-129	
Methyl-tert-butyl ether	ug/kg	1000	836	84	60-125	
Methylene Chloride	ug/kg	1000	566	57	50-125	
n-Butylbenzene	ug/kg	1000	718	72	59-132	
n-Propylbenzene	ug/kg	1000	685	69	59-127	
Naphthalene	ug/kg	1000	857	86	55-127	

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

LABORATORY CONTROL SAMPLE: 3969210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/kg	1000	726	73	66-126	
p-Isopropyltoluene	ug/kg	1000	785	78	61-127	
sec-Butylbenzene	ug/kg	1000	823	82	60-131	
Styrene	ug/kg	1000	789	79	62-125	
tert-Butylbenzene	ug/kg	1000	810	81	59-128	
Tetrachloroethene	ug/kg	1000	581	58	51-133	
Tetrahydrofuran	ug/kg	10000	7510	75	47-135	
Toluene	ug/kg	1000	608	61	59-125	
trans-1,2-Dichloroethene	ug/kg	1000	408	41	37-137	
trans-1,3-Dichloropropene	ug/kg	1000	772	77	60-125	
Trichloroethene	ug/kg	1000	595	60	54-131	
Trichlorofluoromethane	ug/kg	1000	908	91	30-150	
Vinyl chloride	ug/kg	1000	873	87	50-125	
Xylene (Total)	ug/kg	3000	2110	70	66-127	
1,2-Dichloroethane-d4 (S)	%			95	73-125	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969211 3969212

Parameter	Units	10561426001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/kg	ND	1640	1640	1690	1370	103	83	46-150	21	30	
1,1,1-Trichloroethane	ug/kg	ND	1640	1640	1290	1070	78	66	44-150	18	30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	1640	1640	1680	1410	102	86	37-150	17	30	
1,1,2-Trichloroethane	ug/kg	ND	1640	1640	1680	1400	102	86	47-150	18	30	
1,1,2-Trichloroethane	ug/kg	ND	1640	1640	1030	951	63	58	35-150	8	30	
Trichlorotrifluoroethane	ug/kg	ND	1640	1640	1220	1060	74	65	40-150	14	30	
1,1-Dichloroethane	ug/kg	ND	1640	1640	682	610	42	37	30-150	11	30	
1,1-Dichloropropene	ug/kg	ND	1640	1640	898	758	55	46	36-150	17	30	
1,2,3-Trichlorobenzene	ug/kg	ND	1640	1640	1810	1510	110	92	39-150	18	30	
1,2,3-Trichloropropane	ug/kg	ND	1640	1640	1720	1460	105	89	51-150	16	30	
1,2,4-Trichlorobenzene	ug/kg	ND	1640	1640	1780	1450	108	88	40-150	20	30	
1,2,4-Trimethylbenzene	ug/kg	ND	1640	1640	1570	1280	96	78	39-150	20	30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	4100	4100	4550	3780	111	92	41-150	19	30	
1,2-Dibromoethane (EDB)	ug/kg	ND	1640	1640	1400	1150	85	70	48-150	20	30	
1,2-Dichlorobenzene	ug/kg	ND	1640	1640	1690	1360	103	83	46-150	22	30	
1,2-Dichloroethane	ug/kg	ND	1640	1640	1160	1010	71	61	39-150	14	30	
1,2-Dichloropropane	ug/kg	ND	1640	1640	1420	1200	87	73	48-150	17	30	
1,3,5-Trimethylbenzene	ug/kg	ND	1640	1640	1520	1270	93	77	45-150	18	30	
1,3-Dichlorobenzene	ug/kg	ND	1640	1640	1600	1300	98	79	45-150	21	30	
1,3-Dichloropropane	ug/kg	ND	1640	1640	1460	1220	89	74	46-150	18	30	
1,4-Dichlorobenzene	ug/kg	ND	1640	1640	1640	1310	100	80	44-150	22	30	
2,2-Dichloropropane	ug/kg	ND	1640	1640	1110	941	68	57	39-150	17	30	

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969211 3969212												
Parameter	Units	10561426001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Butanone (MEK)	ug/kg	ND	8200	8200	10300	8630	126	105	32-150	18	30	
2-Chlorotoluene	ug/kg	ND	1640	1640	1570	1300	96	79	44-150	19	30	
4-Chlorotoluene	ug/kg	ND	1640	1640	1550	1270	94	78	46-150	20	30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	8200	8200	8330	7200	102	88	34-150	15	30	
Acetone	ug/kg	ND	8200	8200	5410	4290	66	52	30-150	23	30	
Allyl chloride	ug/kg	ND	1640	1640	902	775	55	47	30-150	15	30	
Benzene	ug/kg	ND	1640	1640	1050	903	64	55	43-150	15	30	
Bromobenzene	ug/kg	ND	1640	1640	1510	1220	92	75	46-150	21	30	
Bromochloromethane	ug/kg	ND	1640	1640	1180	1010	72	62	42-150	15	30	
Bromodichloromethane	ug/kg	ND	1640	1640	1520	1300	93	79	44-150	16	30	
Bromoform	ug/kg	ND	1640	1640	1760	1440	107	88	39-150	20	30	
Bromomethane	ug/kg	ND	1640	1640	1520	1220	92	74	36-150	21	30	v3
Carbon tetrachloride	ug/kg	ND	1640	1640	1170	948	71	58	42-150	21	30	
Chlorobenzene	ug/kg	ND	1640	1640	1400	1140	85	69	46-150	20	30	
Chloroethane	ug/kg	ND	1640	1640	1930	1520	117	93	30-150	24	30	
Chloroform	ug/kg	ND	1640	1640	1360	1160	83	71	43-150	15	30	
Chloromethane	ug/kg	ND	1640	1640	1600	1380	97	84	31-137	14	30	
cis-1,2-Dichloroethene	ug/kg	ND	1640	1640	1120	974	68	59	44-150	14	30	
cis-1,3-Dichloropropene	ug/kg	ND	1640	1640	1320	1090	80	66	45-150	19	30	
Dibromochloromethane	ug/kg	ND	1640	1640	1690	1400	103	85	45-150	19	30	
Dibromomethane	ug/kg	ND	1640	1640	1270	1030	77	63	48-150	20	30	
Dichlorodifluoromethane	ug/kg	ND	1640	1640	1660	1370	101	84	30-127	19	30	
Dichlorofluoromethane	ug/kg	ND	1640	1640	2010	1670	123	102	30-150	18	30	
Diethyl ether (Ethyl ether)	ug/kg	ND	1640	1640	874	786	53	48	33-150	11	30	
Ethylbenzene	ug/kg	ND	1640	1640	1370	1110	84	68	51-150	21	30	
Hexachloro-1,3-butadiene	ug/kg	ND	1640	1640	1790	1440	109	88	37-150	22	30	
Isopropylbenzene (Cumene)	ug/kg	ND	1640	1640	1550	1250	94	76	43-150	21	30	
m&p-Xylene	ug/kg	ND	3290	3290	2700	2190	82	67	51-150	21	30	
Methyl-tert-butyl ether	ug/kg	ND	1640	1640	1500	1280	91	78	42-150	16	30	
Methylene Chloride	ug/kg	ND	1640	1640	1040	911	60	52	36-150	13	30	
n-Butylbenzene	ug/kg	ND	1640	1640	1680	1350	102	82	44-150	21	30	
n-Propylbenzene	ug/kg	ND	1640	1640	1550	1240	94	76	46-150	22	30	
Naphthalene	ug/kg	ND	1640	1640	1870	1570	114	96	35-150	18	30	
o-Xylene	ug/kg	ND	1640	1640	1450	1170	88	71	52-150	21	30	
p-Isopropyltoluene	ug/kg	ND	1640	1640	1660	1350	101	82	41-150	21	30	
sec-Butylbenzene	ug/kg	ND	1640	1640	1690	1350	103	82	47-150	22	30	
Styrene	ug/kg	ND	1640	1640	1520	1250	92	76	44-150	19	30	
tert-Butylbenzene	ug/kg	ND	1640	1640	1660	1330	101	81	46-150	22	30	
Tetrachloroethene	ug/kg	ND	1640	1640	1260	1010	77	62	42-150	21	30	
Tetrahydrofuran	ug/kg	ND	16400	16400	14500	11400	88	69	37-150	24	30	
Toluene	ug/kg	ND	1640	1640	1180	957	72	58	51-150	21	30	
trans-1,2-Dichloroethene	ug/kg	ND	1640	1640	775	652	47	40	33-150	17	30	
trans-1,3-Dichloropropene	ug/kg	ND	1640	1640	1440	1220	88	74	43-150	17	30	
Trichloroethene	ug/kg	ND	1640	1640	1230	1020	75	62	49-150	18	30	

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3969211 3969212												
Parameter	Units	10561426001		MS		MSD		MS		MSD		Qual
		Result	Conc.	Spike	Conc.	Result	Conc.	% Rec	% Rec	% Rec	RPD	
Trichlorofluoromethane	ug/kg	ND	1640	1640	1640	1870	1440	114	88	30-150	26	30
Vinyl chloride	ug/kg	ND	1640	1640	1640	1680	1400	103	85	35-147	18	30
Xylene (Total)	ug/kg	ND	4930	4930	4930	4150	3360	84	68	51-150	21	30
1,2-Dichloroethane-d4 (S)	%							91	97	73-125		
4-Bromofluorobenzene (S)	%							99	101	75-125		
Toluene-d8 (S)	%							99	99	75-125		

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch:	743141	Analysis Method:	EPA 8082A
QC Batch Method:	EPA 3546	Analysis Description:	8082A GCS PCB
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10560833001, 10560833002, 10560833003

METHOD BLANK: 3962975 Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	50.0	17.2	05/20/21 13:47	
PCB-1221 (Aroclor 1221)	ug/kg	ND	50.0	23.4	05/20/21 13:47	
PCB-1232 (Aroclor 1232)	ug/kg	ND	50.0	20.6	05/20/21 13:47	
PCB-1242 (Aroclor 1242)	ug/kg	ND	50.0	18.2	05/20/21 13:47	
PCB-1248 (Aroclor 1248)	ug/kg	ND	50.0	29.8	05/20/21 13:47	
PCB-1254 (Aroclor 1254)	ug/kg	ND	50.0	27.3	05/20/21 13:47	
PCB-1260 (Aroclor 1260)	ug/kg	ND	50.0	18.4	05/20/21 13:47	
PCB-1262 (Aroclor 1262)	ug/kg	ND	50.0	24.9	05/20/21 13:47	
PCB-1268 (Aroclor 1268)	ug/kg	ND	50.0	23.6	05/20/21 13:47	
Decachlorobiphenyl (S)	%.	87	57-125		05/20/21 13:47	
Tetrachloro-m-xylene (S)	%.	85	59-125		05/20/21 13:47	

LABORATORY CONTROL SAMPLE: 3962976

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	1000	803	80	68-125	
PCB-1260 (Aroclor 1260)	ug/kg	1000	861	86	68-125	
Decachlorobiphenyl (S)	%.			88	57-125	
Tetrachloro-m-xylene (S)	%.			81	59-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962977 3962978

Parameter	Units	10560833001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	1210	1220	995	1020	82	84	70-130	3	30	
PCB-1260 (Aroclor 1260)	ug/kg	ND	1210	1220	984	986	81	81	70-130	0	30	
Decachlorobiphenyl (S)	%.						78	77	57-125			
Tetrachloro-m-xylene (S)	%.						83	84	59-125			

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QUALITY CONTROL DATA

Project: 159002 DULAI
Pace Project No.: 10560833

QC Batch:	743002	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA 3550C	Analysis Description:	8270E Solid PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10560833001, 10560833002, 10560833003

METHOD BLANK: 3962532 Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	10.0	0.45	05/21/21 13:24	
Acenaphthylene	ug/kg	ND	10.0	0.68	05/21/21 13:24	
Anthracene	ug/kg	ND	10.0	0.32	05/21/21 13:24	
Benzo(a)anthracene	ug/kg	ND	10.0	0.41	05/21/21 13:24	
Benzo(a)pyrene	ug/kg	ND	10.0	0.56	05/21/21 13:24	
Benzo(b)fluoranthene	ug/kg	ND	10.0	0.47	05/21/21 13:24	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	0.46	05/21/21 13:24	
Benzo(k)fluoranthene	ug/kg	ND	10.0	0.48	05/21/21 13:24	
Chrysene	ug/kg	ND	10.0	0.40	05/21/21 13:24	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	0.66	05/21/21 13:24	
Fluoranthene	ug/kg	ND	10.0	0.60	05/21/21 13:24	
Fluorene	ug/kg	ND	10.0	0.60	05/21/21 13:24	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	0.54	05/21/21 13:24	
Naphthalene	ug/kg	ND	10.0	0.45	05/21/21 13:24	
Phenanthrene	ug/kg	ND	10.0	0.70	05/21/21 13:24	
Pyrene	ug/kg	ND	10.0	0.65	05/21/21 13:24	
2-Fluorobiphenyl (S)	%	82	50-125		05/21/21 13:24	
p-Terphenyl-d14 (S)	%	84	51-125		05/21/21 13:24	

LABORATORY CONTROL SAMPLE: 3962533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	33.3	27.2	82	56-125	
Acenaphthylene	ug/kg	33.3	26.9	81	47-125	
Anthracene	ug/kg	33.3	28.0	84	60-125	
Benzo(a)anthracene	ug/kg	33.3	28.5	85	69-125	
Benzo(a)pyrene	ug/kg	33.3	27.4	82	63-125	
Benzo(b)fluoranthene	ug/kg	33.3	27.6	83	67-125	
Benzo(g,h,i)perylene	ug/kg	33.3	36.0	108	67-125	
Benzo(k)fluoranthene	ug/kg	33.3	27.4	82	67-125	
Chrysene	ug/kg	33.3	28.7	86	71-125	
Dibenz(a,h)anthracene	ug/kg	33.3	34.7	104	65-125	
Fluoranthene	ug/kg	33.3	26.3	79	65-125	
Fluorene	ug/kg	33.3	27.9	84	63-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	35.6	107	69-125	
Naphthalene	ug/kg	33.3	27.3	82	51-125	
Phenanthrene	ug/kg	33.3	27.4	82	66-125	
Pyrene	ug/kg	33.3	31.1	93	68-125	
2-Fluorobiphenyl (S)	%			83	50-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

LABORATORY CONTROL SAMPLE: 3962533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
p-Terphenyl-d14 (S)	%.			85	51-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962534 3962535

Parameter	Units	10560820001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	0.092 mg/kg	36.7	36.7	80.2	98.5	-31	19	30-140	20	30	M1
Acenaphthylene	ug/kg	0.017 mg/kg	36.7	36.7	33.8	38.7	47	60	30-136	13	30	
Anthracene	ug/kg	ND	36.7	36.7	28.5	43.2	78	118	46-125	41	30	R1
Benzo(a)anthracene	ug/kg	ND	36.7	36.7	25.7	28.5	65	73	30-150	10	30	
Benzo(a)pyrene	ug/kg	ND	36.7	36.7	24.5	26.8	63	70	30-150	9	30	
Benzo(b)fluoranthene	ug/kg	ND	36.7	36.7	25.5	28.7	70	78	30-150	12	30	
Benzo(g,h,i)perylene	ug/kg	ND	36.7	36.7	21.4	22.8	55	58	30-150	6	30	
Benzo(k)fluoranthene	ug/kg	ND	36.7	36.7	24.4	27.0	64	71	30-150	10	30	
Chrysene	ug/kg	ND	36.7	36.7	28.4	31.6	71	79	36-126	11	30	
Dibenz(a,h)anthracene	ug/kg	ND	36.7	36.7	23.8	25.0	64	67	30-147	5	30	
Fluoranthene	ug/kg	ND	36.7	36.7	32.2	36.8	62	75	30-150	13	30	
Fluorene	ug/kg	0.12 mg/kg	36.7	36.7	92.4	120	-86	-10	30-140	26	30	M1
Indeno(1,2,3-cd)pyrene	ug/kg	ND	36.7	36.7	23.0	24.2	60	63	30-150	5	30	
Naphthalene	ug/kg	0.11 mg/kg	36.7	36.7	107	140	3	94	30-138	27	30	M1
Phenanthrene	ug/kg	0.32 mg/kg	36.7	36.7	187	259	-351	-155	30-150	32	30	M1, R1
Pyrene	ug/kg	0.013 mg/kg	36.7	36.7	30.5	34.8	48	60	30-150	13	30	
2-Fluorobiphenyl (S)	%.						65	72	50-125			
p-Terphenyl-d14 (S)	%.						55	61	51-125			

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QUALITY CONTROL DATA

Project: 159002 DULAI

Pace Project No.: 10560833

QC Batch:	743221	Analysis Method:	WI MOD DRO
QC Batch Method:	WI MOD DRO	Analysis Description:	WIDRO GCS
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10560833001, 10560833002, 10560833003

METHOD BLANK: 3963512 Matrix: Solid

Associated Lab Samples: 10560833001, 10560833002, 10560833003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
WDRO C10-C28	mg/kg	ND	10.0	3.7	05/23/21 16:11	
n-Triacontane (S)	%.	91	50-150		05/23/21 16:11	

LABORATORY CONTROL SAMPLE & LCSD: 3963513

Parameter	Units	3963514								Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD			
WDRO C10-C28	mg/kg	80	77.3	69.4	97	87	70-120	11		20	
n-Triacontane (S)	%.				105	93	50-150				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 159002 DULAI
Pace Project No.: 10560833

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
 ND - Not Detected at or above adjusted reporting limit.
 TNTC - Too Numerous To Count
 J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
 MDL - Adjusted Method Detection Limit.
 PQL - Practical Quantitation Limit.
 RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
 S - Surrogate
 1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
 Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
 LCS(D) - Laboratory Control Sample (Duplicate)
 MS(D) - Matrix Spike (Duplicate)
 DUP - Sample Duplicate
 RPD - Relative Percent Difference
 NC - Not Calculable.
 SG - Silica Gel - Clean-Up
 U - Indicates the compound was analyzed for, but not detected.
 N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
 Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
 TNI - The NELAC Institute.

ANALYTE QUALIFIERS

G+	Late peaks present outside the GRO window.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).
T6	High boiling point hydrocarbons are present in the sample.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have a low bias.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 159002 DULAI

Pace Project No.: 10560833

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10560833001	SED-01	EPA 3546	743141	EPA 8082A	743439
10560833002	SED-02	EPA 3546	743141	EPA 8082A	743439
10560833003	SED-03	EPA 3546	743141	EPA 8082A	743439
10560833001	SED-01	WI MOD DRO	743221	WI MOD DRO	743959
10560833002	SED-02	WI MOD DRO	743221	WI MOD DRO	743959
10560833003	SED-03	WI MOD DRO	743221	WI MOD DRO	743959
10560833001	SED-01	EPA 5030 Medium Soil	744738	WI MOD GRO	744898
10560833002	SED-02	EPA 5030 Medium Soil	744738	WI MOD GRO	744898
10560833003	SED-03	EPA 5030 Medium Soil	744738	WI MOD GRO	744898
10560833001	SED-01	EPA 3050B	743659	EPA 6010D	743936
10560833002	SED-02	EPA 3050B	743659	EPA 6010D	743936
10560833003	SED-03	EPA 3050B	743659	EPA 6010D	743936
10560833001	SED-01	EPA 7471B	743865	EPA 7471B	744249
10560833002	SED-02	EPA 7471B	743865	EPA 7471B	744249
10560833003	SED-03	EPA 7471B	743865	EPA 7471B	744249
10560833001	SED-01	ASTM D2974	744030		
10560833002	SED-02	ASTM D2974	744030		
10560833003	SED-03	ASTM D2974	744030		
10560833001	SED-01	EPA 3550C	743002	EPA 8270E by SIM	743779
10560833002	SED-02	EPA 3550C	743002	EPA 8270E by SIM	743779
10560833003	SED-03	EPA 3550C	743002	EPA 8270E by SIM	743779
10560833001	SED-01	EPA 5035/5030B	744239	EPA 8260D	744675
10560833002	SED-02	EPA 5035/5030B	744239	EPA 8260D	744675
10560833003	SED-03	EPA 5035/5030B	744239	EPA 8260D	744675

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: SEA Inc.		Billing Information: Sub consultants @seahinc.com								
Address: 3535 radnais center dr. St Paul, MN 5510		Email To: ebye@SEHINC.COM								
Report To: Erik Bye		Site Collection Info/Address: 4701 Grinden Drive								
Copy To:		State: County/City: MN/St. Louis South								
Customer Project Name/Number: DULAIT 159002		Time Zone Collected: PT [] MT [X] CT [] ET []								
Phone: 218-343-2627		Compliance Monitoring? [] Yes [] No								
Email: jpearson@SEHINC.COM Deloitte International Airport		DW PWS ID #: DW Location Code:								
Collected By (print): Joseph Pearson		Turnaround Date Required: Standard								
Collected By (signature):		Immediately Packed on Ice: [X] Yes [] No								
Sample Disposal: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day		Field Filtered (if applicable): [] Yes [] No								
[] Dispose as appropriate [] Return [] Archive: [] Hold:		Analysis: [] Yes [] No								
* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)										
Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date Time	Res Cl	Blue Dry None	Type of Ice Used: Wet	Packing Material Used:	Radchem sample(s) screened (<500 cpm): Y N NA	Received by/Company: (Signature)	Date/Time: 5/17/21 15:00
SED-01	SL	G	5/17/21 1130	9						
SED-02	SL	G	5/17/21 1150	9						
SED-03	SL	G	5/17/21 1215	9						
Trip Blank				2						
Customer Remarks / Special Conditions / Possible Hazards: Please run TCLP if required due to deloitte area										
Contact PM										
Relinquished by/Company: (Signature)					Received by/Company: (Signature)					
Relinquished by/Company: (Signature)					Received by/Company: (Signature)					
Relinquished by/Company: (Signature)					Received by/Company: (Signature)					

LAB USE ONLY - Affix Worko

ALL SHADE

Container Preservative Type

U 6 b v u u v

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: Y N NA
Sample pH Acceptable Y N NA
pH Strips: Y N NA
Sulfide Present Y N NA
Lead Acetate Strips: Y N NA
LAB USE ONLY: Y N NA
Lab Sample # / Comments:

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: **2549504**

Samples received via: FEDEX UPS Client Courier Pace Courier

Date/Time: **5/17/21 15:00**

Date/Time: **5/18/21 0945**

Date/Time: **5/17/21 15:00**

Date/Time: **5/17/21 15:00**

Date/Time: **5/17/21 15:00**

Date/Time: **5/17/21 15:00**

Date/Time: **5/17/21 15:00**

Lab Sample Temperature Info:
Temp Blank Received: **Y N NA**
Therm ID#: **3**
Cooler 1 Temp Upon Receipt: **5.0** °C
Cooler 1 Therm Corr. Factor: **0.0** °C
Cooler 1 Corrected Temp: **5.0** °C
Comments:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO
Page: of:



Document Name:
Sample Condition Upon Receipt (SCUR) - MN

Document No.:
ENV-FRM-MIN4-0150 Rev.02

Document Revised: 14Apr2021
Page 1 of 1

Pace Analytical Services -
Minneapolis

**Sample Condition
Upon Receipt**

Client Name:

Project #:

WO# : 10560833

PM: TS1

Due Date: 06/02/21

CLIENT: SEH_MN

Courier:

☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Pace ☐ SpeedDee ☐ Commercial

Tracking Number: 6779 88 99 3790

See Exceptions ☐
ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: _____

Temp Blank? ☒ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☒ T3(0459) ☐ OS418-LS ☐ T4(0254) ☐ T5(0489) ☐ 160285052

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 5.0 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions
ENV-FRM-MIN4-0142 ☐ 1 Container

Correction Factor: True Cooler Temp Corrected w/temp blank: 5.0 °C

USDA Regulated Soil: (☒ N/A, water sample/Other: _____)

Date/Initials of Person Examining Contents: CS 5/18/21

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	☒ Yes ☐ No	1.
Chain of Custody Relinquished?	☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC?	☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes ☐ No	4.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other _____
Rush Turn Around Time Requested?	☐ Yes ☒ No	6.
Sufficient Volume?	☒ Yes ☐ No	7.
Correct Containers Used?	☒ Yes ☐ No	8.
-Pace Containers Used?	☒ Yes ☐ No	
Containers Intact?	☒ Yes ☐ No	9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes ☐ No ☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☒ Yes ☐ No	11. If no, write ID/ Date/Time on Container Below: ☐ See Exception ENV-FRM-MIN4-0142
Matrix: ☐ Water ☒ Soil ☐ Oil ☐ Other _____		
All containers needing acid/base preservation have been checked?	☐ Yes ☐ No ☒ N/A	12. Sample # ☐ NaOH ☐ HNO ₃ ☐ H ₂ SO ₄ ☐ Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	☐ Yes ☐ No ☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒ Yes ☐ No ☐ N/A	Positive for Res. ☐ Yes ☒ No ☐ See Exception Chlorine? ☐ No ☐ pH Paper Lot# ENV-FRM-MIN4-0142
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes ☒ No ☐ N/A	13. ☐ See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☒ Yes ☐ No ☐ N/A	
Trip Blank Present?	☐ Yes ☒ No ☐ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☒ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____

Date: 5/18/21

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: _____

Date : 23-MAY-2021 17:14

Client ID: SED-01

Sample Info: 10560833001

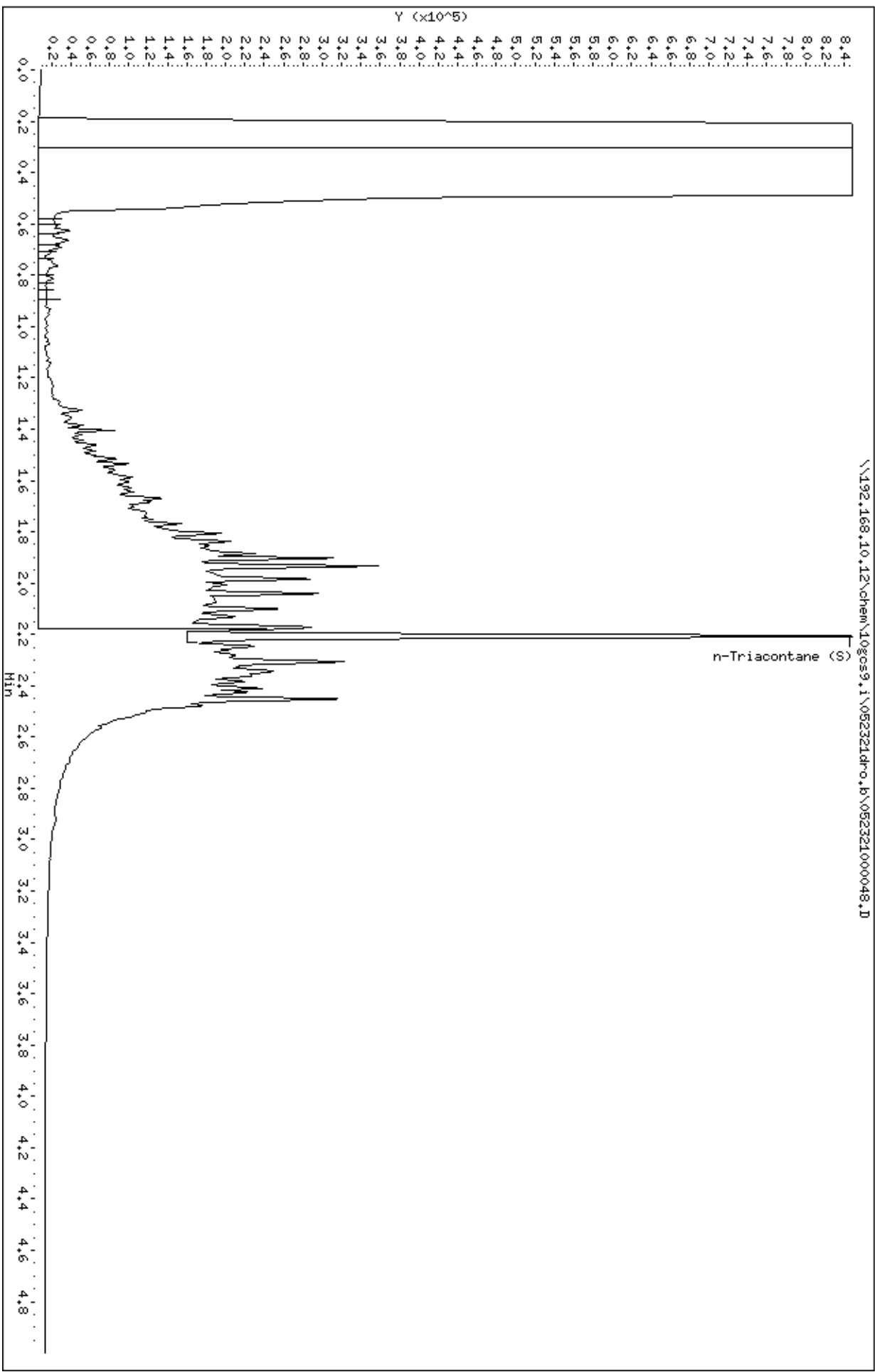
Volume Injected (uL): 1.0

Column phase: DB-5-MS21160008

Instrument: 10gos9.i

Operator: JVH

Column diameter: 0.32



Date : 23-MAY-2021 18:03

Client ID: SED-02

Sample Info: 10560833002

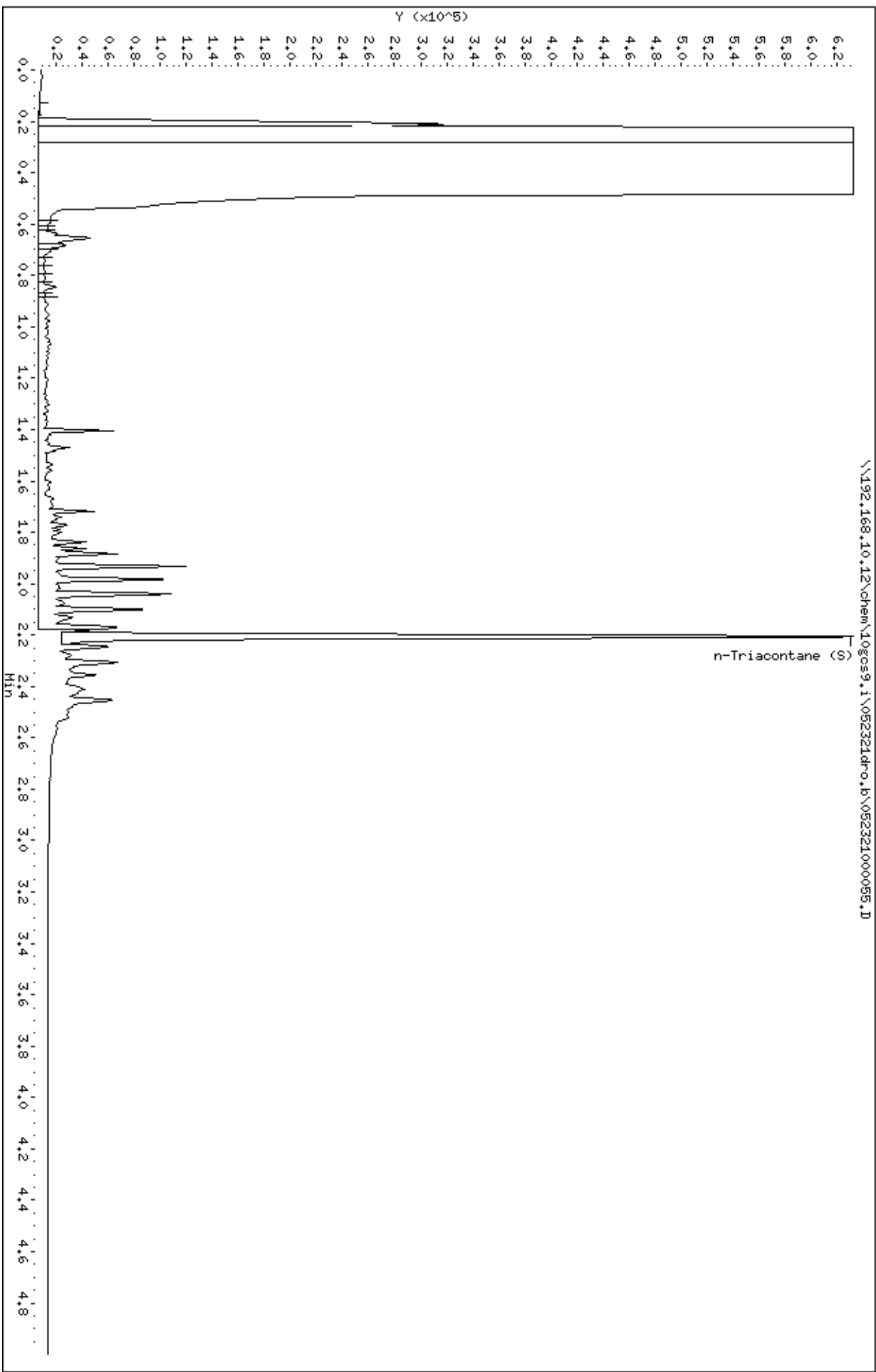
Volume Injected (uL): 1.0

Column phase: DB-5-MS21160008

Instrument: 10gos9.i

Operator: JVH

Column diameter: 0.32



Date : 24-MAY-2021 09:11

Client ID: SED-03

Sample Info: 10560833003X10

Volume Injected (uL): 1.0

Column phase: DB-5-MS21160008

Instrument: 10gos9.i

Operator: TT2

Column diameter: 0.32

